
A Eliminating discrimination in work

This appendix addresses discrimination in work. Employment plays a pivotal role in providing people with disabilities with a sense of inclusion, not only in the workplace but also in other social networks. Having a job can provide the means to improved participation in other areas of life, and the interactions that result from this can greatly enhance the wellbeing of people with disabilities. Accordingly, discrimination that erects barriers to the full and equal involvement of people with disabilities in the workforce can have widespread and profound negative ramifications.

Following a brief overview of the past and current employment situation of people with disabilities (section A.1), this appendix examines the available evidence on the nature and prevalence of disability discrimination in the labour market (section A.2). The possible role played by the *Disability Discrimination Act 1992* (DDA) is then examined (section A.3).

A.1 People with disabilities in the labour market

This section provides an overview of the employment, unemployment and wages situation of people with disabilities. It concentrates on those who are employed in the ‘open’ (or external) labour market, where they compete with workers without disabilities. The labour market situation of those workers with disabilities who are assisted or employed by disability employment agencies funded by the Australian Government is not considered here (see chapter 15).

Employment status

Disability discrimination could affect the willingness of people with disabilities to seek employment and their chances of gaining employment if in the labour force.

Labour force participation and unemployment

According to the Australian Bureau of Statistics (ABS) Survey of Disabilities, Ageing and Carers (SDAC), the labour force participation rate of people with

disabilities in 1998 was 53.2 per cent, or only two thirds that of people without disabilities (table A.1).

Table A.1 Labour force participation and unemployment rates of people^a with and without disabilities, 1988, 1993, 1998 and 2001

	<i>People with disabilities</i>				<i>People without disabilities</i>			
	1988	1993	1998	2001 ^b	1988	1993	1998	2001 ^b
	%	%	%	%	%	%	%	%
Labour force participation rate	51.5	54.9	53.2	54.6	75.3	76.9	80.1	79.8
Unemployment rate	11.5	17.8	11.5	10.6	8.1	12.0	7.8	6.1

^a Persons aged 15–64 years living in households. ^b Productivity Commission estimate based on the 2001 Household, Income and Labour Dynamics in Australia (HILDA) survey. Excludes persons living in non-private dwellings or institutions.

Sources: ABS, cat. no. 4430.0 (various issues); 2001 Household, Income and Labour Dynamics in Australia (HILDA) survey.

Between 1988 and 1993, the labour force participation rate for people with disabilities rose proportionately more than that for people without disabilities. However, from 1993 (the first full year of application of the DDA) to 1998, the rate for the former group fell, while the rate for the latter group continued to rise.

A Productivity Commission estimate of the labour force participation rate of people with disabilities in 2001, based on the more recent Household, Income and Labour Dynamics in Australia (HILDA) survey, suggests that there may have been a slight increase from the 1998 value—that is, 54.6 per cent in 2001 compared with 53.2 per cent in 1998. However, the SDAC and HILDA surveys are not strictly comparable in their definition of disability and the HILDA estimate is only indicative.¹

The fall between 1993 and 1998 in the labour force participation rate for people with disabilities occurred despite 145 000 more persons with disabilities being in the labour force at the end of that period. This divergence is explained by the representation of people with a disability in the general population increasing even more rapidly than that in the labour force between 1993 and 1998. Possible reasons for the rising prevalence of disability in the population are explored in chapter 3. One reason is a broadening of the SDAC definition of disability between 1993 and 1998. If that change in definition had affected people in and out of the labour force

¹ Based on the HILDA survey, an inquiry participant calculated that the labour force participation rate of people with disabilities was only 51.3 per cent in 2001, and that their unemployment rate was 10.8 per cent (Val Pawagi, sub. DR271). The differences with Commission estimates arise because of the choice of variable with which to denote disability and because of post-survey adjustments to the number of persons receiving the Disability Support Pension.

to a different extent, then the decline in labour force participation rate of people with disabilities shown in table A.1 would be partly a statistical construct.

However, the decline in the participation rate is robust to adjustments for definitional differences in the two successive SDAC surveys (Wilkins 2003) (table A.2). The divergence in trends for people with and without disabilities is particularly apparent for females: while the labour force participation rate of females with disabilities fell by approximately 1 percentage point between 1993 and 1998, the rate for females without disabilities increased by almost 3 percentage points. In contrast, the rates for both males with disabilities and for males without disabilities fell during that period, by a comparable amount.

Table A.2 Labour force participation rates of males and females with and without disabilities, 1993 and 1998^a

	1993	1998
	%	%
Females		
With a disability	47.3	46.2
Without disabilities	69.5	72.7
Males		
With a disability	64.0	62.8
Without disabilities	93.3	92.6

^a Population estimates for persons aged 15–64 living in households. The definition of disability has been adjusted in both years to create a consistent 1993–98 match.

Source: Based on Wilkins 2003, table 6.5.

When in the labour force, people with disabilities are at greater risk of being unemployed than those without disabilities (table A.1). The unemployment rate differential between the two groups ranged between 3.4 percentage points in 1988 and 5.8 percentage points in 1993, and was 3.7 percentage points in 1998..

People with disabilities experience longer periods of unemployment, on average, than experienced by people without disabilities. Based on the HILDA dataset, the Productivity Commission estimates that people with disabilities who were unemployed in 2001 spent an average of two years and 14 weeks out of work, compared with one year and 43 weeks for people without disabilities.

The combination of a lower labour force participation rate and a higher unemployment rate means that people with disabilities are significantly less likely than people without disabilities to be employed. Based on the raw figures in table A.1, the former group was 23 per cent less likely than the latter group to be in

employment in 1993, and 26 per cent less likely in 1998.² This latter figure put Australia below the Organisation for Economic Cooperation and Development (OECD) average for the late 1990s, in terms of the relative probability of employment of people with disabilities (OECD 2003, p. 34). International comparisons must be interpreted with caution, however, because definitions of disability vary from country to country.

Labour supply and demand

Both the labour force participation rate and unemployment rate of people with disabilities (or any other group of workers) are influenced by demand and supply conditions in the labour market.

On the demand side, employers might demand relatively less labour from people with disabilities because they view (rightly or wrongly) these workers as less productive, or because they discriminate against them. Employer demand for workers with disabilities is analysed in more detail in chapter 7.

On the supply side, there are many reasons why people with disabilities might be less inclined than people without disabilities to enter the labour force. They might foresee that, because of perceived lower productivity and/or discrimination, they would be offered no jobs, or only jobs at discriminatory wages. But there may be other reasons unrelated to disability discrimination. First, their disabilities might mean that they are not capable of working, or are only capable of working intermittently. Second, their disabilities might mean that the additional costs they would face if working (or looking for employment) make it unprofitable for them to work. Such additional costs might include extra transport costs, the purchase of disability aids and the loss of part or whole of their government income support entitlements.

There may also be reasons apart from discrimination why, when they are in the labour force, they might experience a higher unemployment rate. In the United States, Baldwin and Schumacher (2002) found that, compared with workers without disabilities:

- workers with disabilities experienced a higher rate of involuntary separation from their employers. The authors argued that—apart from possible discrimination—this is due to employers facing greater uncertainties when hiring workers with disabilities, and having to lay them off because of lower-than-expected productivity relatively more often.

² These figures do not account for possible differences in the demographic and other characteristics of the two groups. A more rigorous, multivariate analysis is undertaken in section A.2.

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- workers with disabilities experienced a higher rate of voluntary separation in some years. This could be due to workers with disabilities overestimating their capacity to do a job in the first place, or finding that their capacity was impaired by a worsening of their condition.³

Following a separation, unemployed workers with disabilities will usually take longer to secure another job. A longer job search is required because achieving a good job match is more difficult for them, given their functional limitations, than for their counterparts with no disability.

Higher involuntary and (possibly) voluntary separations, combined with longer search periods, mean that, at any point in time, a higher proportion of the labour force with a disability is classified as unemployed, for reasons that may not be discrimination-related.

There is another reason why people with disabilities are more likely to be out of the labour force or unemployed. The foregoing analysis rests on the assumption that a person's disability status influences both their decision to work or not, and their chances of gaining (or retaining) employment. However, it has also been shown that reverse causality can exist. That is, disability can be a consequence as well as a cause of disadvantage. Jenkins and Rigg (2003) showed that *not* being in paid employment significantly increased the chances of disability onset in the UK.⁴ For some people with disabilities, therefore, labour market disadvantage predates the onset of the disability. The 'reverse causality' effect has been partly corroborated in Australia by Cai and Kalb (2004). In a survey of the literature, Bradbury et al. 2001 suggest that it may be explained by such factors as poor nutrition, lack of access to health services and risk-taking behaviour. Whatever its causes, this effect would be reflected in a significant association of disability and disadvantage at a point in time, but one which would be unrelated to disability discrimination.

Characteristics of employment of people with disabilities

Most people with disabilities experience one or more restrictions in their daily lives (see chapter 3). The nature and degree of severity of those restrictions influence a person's likelihood of being out of the labour force or unemployed (table A.3). People with profound or severe restrictions in the areas of communication, mobility

³ Baldwin and Schumacher (2002) note, however, that a lack of worthwhile alternative wage offers might counteract the propensity of workers with disabilities to leave voluntarily. This might explain why these authors found the rate of voluntary separation for this group to be not significantly different from that of workers without disabilities in some years.

⁴ Compared to jobless individuals, people in paid employment were one third less likely to acquire a disability within the next six years.

or self-care ('core' restrictions) fare worst in terms of labour force participation. Moreover, the participation rate of people with profound restrictions declined between 1993 and 1998, while that of people with severe restrictions stagnated. By contrast, the labour force participation rate of people with moderate or mild core restrictions improved considerably in that period. People with schooling or employment restrictions experienced the greatest fall in labour force participation of all people with disabilities, with a 10 percentage point reduction between 1993 and 1998.

Table A.3 Labour force participation and unemployment rates of people with disabilities, by type of restriction, 1993 and 1998^a

<i>Type of restriction</i>	<i>Labour force participation rate</i>		<i>Unemployment rate</i>	
	1993	1998	1993	1998
	%	%	%	%
Core activity restriction ^{b, c}				
Profound	19.9	18.9	20.9	7.4
Severe	39.9	40.2	22.2	11.6
Moderate	42.9	46.3	18.0	13.1
Mild	51.3	56.5	18.5	9.3
Schooling or employment restriction ^d	56.2	46.4	27.6	12.9
All persons with restrictions	46.5	49.3	21.0	11.7
Disability with no restriction	77.9	77.0	12.6	10.7

^a Persons aged 15–64 years living in households. ^b Core activities comprise communication, mobility and self-care. ^c The 1993 survey used the term 'handicap' instead of 'restriction'. ^d In the 1993 survey, this category also included people whose only limitation was 'does not use the toilet'.

Source: ABS, cat. no. 4430.0 (various issues).

Changes in unemployment rates by type of restriction were more uniform, in that these rates all fell between 1993 and 1998, reflecting general trends in the economy (table A.3). However, whereas the highest unemployment rate in 1993 was among people with a restriction in schooling or employment, in 1998 it was for the 'moderate' core restriction group. In relative terms, people with profound core restrictions experienced the largest proportional reduction in their unemployment rate (a fall of almost two thirds). However, rather than reflecting an improvement in the employability of this group, this fall probably results from those least likely to find employment exiting the labour market.

The labour force participation and unemployment rates of people with a disability also vary by age and gender (table A.4). This means that part of the movements in the overall rates between 1993 and 1998 (tables A.1 and A.2) can be explained by population ageing and greater female participation over that period.

Table A.4 Labour force participation and unemployment rates of people with and without disabilities, by age and gender, 1993 and 1998

Gender	Age	<i>People with disabilities</i>				<i>People without disabilities</i>			
		<i>Labour force participation rate</i>		<i>Unemployment rate</i>		<i>Labour force participation rate</i>		<i>Unemployment rate</i>	
		1993	1998	1993	1998	1993	1998	1993	1998
		%	%	%	%	%	%	%	%
Females									
	15–24	54.7	66.0	30.7	15.6	61.7	79.0	22.0	14.7
	25–34	61.3	55.9	20.4	9.8	70.7	73.3	11.4	7.0
	35–44	61.1	55.9	17.3	7.2	76.3	78.2	9.1	5.8
	45–54	45.4	50.3	10.7	6.6	70.4	76.8	7.8	5.5
	55–64	20.6	21.9	8.7	6.8	31.3	40.1	4.4	2.7
Males									
	15–24	60.8	78.4	33.7	31.5	70.0	87.1	23.0	14.1
	25–34	79.4	72.6	21.2	16.3	97.4	95.6	13.1	6.7
	35–44	78.1	73.5	16.6	7.6	97.5	97.3	7.3	5.4
	45–54	67.1	62.0	12.2	10.8	96.1	96.8	4.9	5.3
	55–64	40.4	38.2	16.1	9.9	76.7	75.0	8.1	5.5

Source: ABS, cat. no. 4430.0 (various issues); Wilkins 2003, table 4.4.

Between 1993 and 1998, the labour force participation rate of males with disabilities fell in all age groups except those aged 15–24 years. By contrast, for males without disabilities, the labour force participation rate remained broadly constant across age groups (except for the youngest age group, which increased its participation rate).

In the same period, females with disabilities recorded an increase in participation in the youngest age group and among those aged 45–64 years. By contrast, female participation fell in the intermediate groups (those aged 25–44 years). The labour force participation of females without disabilities increased across all age groups.

In both 1993 and 1998, the labour force participation rate of people with disabilities began to decline approximately 10 years earlier than that of people without disabilities (from 45 years and 55 years of age respectively), particularly for males. This early withdrawal from the labour force may be due to many influences including the combination of the effects of the disability and the disincentive effects created by social security benefits (section A.3).

Between 1993 and 1998, unemployment rates fell across all age groups, for both genders and for both people with disabilities and people without disabilities, in a

reflection of broad economic trends. The fall in unemployment rates was relatively greater for people with disabilities, of both genders.

When employed, people with disabilities are less likely than people without disabilities to work full time (table A.5). However, both groups were affected to a similar extent by the casualisation of the labour force during the 1990s, which led to a decrease in the incidence of full-time work. There are no major differences in the number of hours worked (full time and part time) on average each week by people with disabilities and those without disabilities. Between 1993 and 1998, average weekly hours increased for those in full-time employment (both groups) and fell for those in part time employment.

Table A.5 Employment tenure of people with and without disabilities, 1993 and 1998^a

	<i>Units</i>	<i>People with disabilities</i>		<i>People without disabilities</i>	
		<i>1993</i>	<i>1998</i>	<i>1993</i>	<i>1998</i>
Percentage employed ^b	%	45.6	48.4	71.6	73.8
Percentage employed full time	%	73.3	67.1	76.5	71.3
Mean hours ^c worked full time	Hrs/week	47.4	49.4	46.6	48.3
Mean hours ^c worked part time	Hrs/week	18.4	17.6	19.2	17.3

^a Population estimates for persons aged 15–64 years living in households. ^b Data are not consistent with table A.1, because estimates here are based on an adjusted definition of disability in 1993–98, designed to create a consistent match. ^c Weekly hours worked in all jobs.

Source: Productivity Commission estimates based on unpublished ABS data, cat. no. 4430.0 (various issues).

People with and without disabilities differ in terms of their industry and occupational distribution (table A.6).⁵

Relative to the occupational distribution of the population without disabilities, people with disabilities are more likely to be found at the opposite ends of the occupational spectrum—that is, in the categories ‘managers and administrators’ and ‘labourers and related workers’. This pattern applies to both persons with restrictions and those with a disability but no restriction. The overrepresentation of people with disabilities in the ‘labourers ...’ category may be expected because of the generally lower levels of educational attainment of people with disabilities (see chapter 5 and appendix B) and because that category covers manual professions that are more likely to result in work-related disabilities. According to Wilkins (2003),

⁵ Due to changes in occupational and industrial classifications used by the ABS, no comparison is possible between 1993 and 1998.

Table A.6 **Employment of people with disabilities, by occupation and industry, 1998**

<i>Group</i>	<i>Persons with restrictions</i>	<i>Disability with no restriction</i>	<i>Persons without disabilities</i>
	%	%	%
Occupation			
Managers and administrators	9.4	9.2	7.0
Professionals	16.8	15.7	18.2
Associate professionals	9.9	9.8	10.4
Tradespersons and related workers	13.7	14.1	14.0
Advanced clerical and service workers	3.6	5.3	4.6
Intermediate clerical, sales and service workers	15.8	16.3	16.9
Intermediate production and service workers	8.9	9.2	9.3
Elementary clerical, sales and service workers	8.9	7.0	10.5
Labourers and related workers	12.9	13.3	9.3
Total^a	100.0	100.0	100.0
Industry			
Agriculture, forestry and fishing	7.4	4.5	3.9
Mining	1.3	1.1	1.1
Manufacturing	13.0	17.8	12.9
Electricity, gas and water	0.7	0.7	0.6
Construction	7.4	9.6	7.3
Wholesale trade	4.8	6.6	5.9
Retail trade	11.6	9.0	15.5
Accommodation, café and restaurants	4.3	3.3	4.8
Transport and storage	4.2	6.2	4.7
Communication services	1.6	2.6	1.7
Finance and insurance	2.7	3.6	3.7
Property and business services	10.7	11.9	10.9
Government administration and defence	4.9	2.0	4.3
Education	8.3	8.8	7.1
Health and community services	10.8	6.3	9.3
Cultural and recreational services	2.4	1.5	2.5
Personal and other services	4.1	4.9	3.8
Total	100.0	100.0	100.0

^a Columns may not add up to 100 due to rounding.

Source: ABS 1999b, cat. no. 4430.0.

the fact that people with disabilities are also overrepresented in the ‘managers ...’ category may be due to the fact that the rate of exit from this occupation following the onset of a disability is kept low by the nature of the work and the opportunity

cost of exit. However, people with and without disabilities may be in very different professions within the same occupation. Such intra-occupational variations are impossible to detect in aggregated data, yet they may be important for explaining why people with disabilities are relatively more represented in a particular category (see ‘occupational segregation’ in section A.2).

In terms of industry of employment, persons with a restriction are relatively more represented in ‘agriculture, forestry and fishing’, whereas those with a disability but no restriction are relatively concentrated in the manufacturing sector. Relative to people without disabilities, people with disabilities (with and without restrictions) are underrepresented in the retail trade sector. A number of factors can influence the industry distribution of people with disabilities. Employment discrimination is one possible factor, but so is the age composition of the industry, and whether jobs in that industry can lead to physical injury or stress.

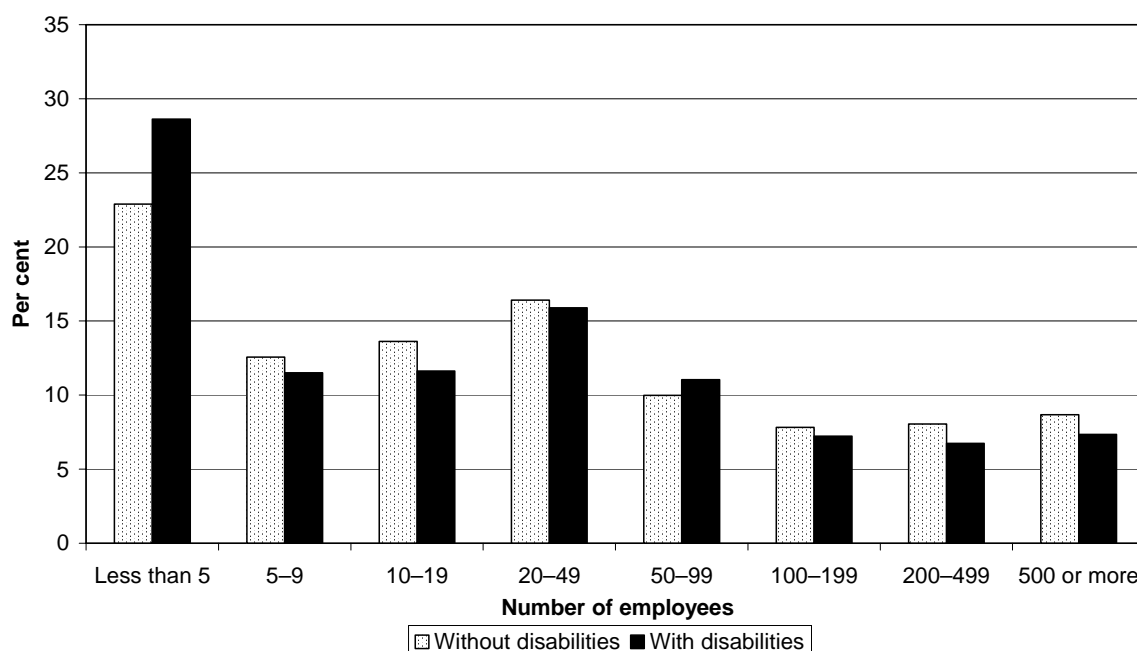
Compared with employees without disabilities, employees with disabilities are much more likely to be working in very small workplaces (less than five employees) (figure A.1). This could be an indication that people with disabilities tend to be employed in family-run businesses.

Wages and income

When in employment, people with a disability earn lower wages, on average, than earned by workers without disabilities. Based on the HILDA dataset, the Productivity Commission estimates that females with disabilities earned, on average, \$17.5 per hour in gross wages from their main job in 2001, compared with \$18.8 for females without disabilities. For males, the corresponding figures were \$19.3 and \$20.6 respectively. People with disabilities thus earn approximately 93 per cent of what people without disabilities earn, on average.

However, differences in average wages obscure the fact that wages accruing to people with disabilities vary considerably because of, among other things, differences in capacity to work within that group. This is reflected in 1998 income figures provided by Wilkins (2003), which show average income declining as the severity of the core restriction experienced increases (table A.7). These figures also show that income varies according to the type of impairment; impairments which are more readily accommodated by employers (sensory and mobility) do not appear to restrict income as much as those impairments that are more difficult to accommodate (mental). Contrary to expectations, the effect of multiple impairments on a person’s income earning capacity does not appear to be cumulative.

Figure A.1 **Distribution of employees by disability status and workplace size, 2001^{a, b}**



^a The height of the bars measures the percentage of each group that is employed in workplaces of a particular size. For example, 29 per cent of employees with disabilities are employed in workplaces with less than 5 employees, compared to 23 per cent of employees without disabilities. ^b Includes part time employees and casuals. Excludes contractors.

Data source: Productivity Commission estimates based on the 2001 HILDA survey.

Table A.7 **Mean weekly income of people with disabilities, by severity of core restriction and type of impairment, 1998^a**

	<i>Females</i>	<i>Males</i>
	\$	\$
Severity of core restriction		
Profound/severe	272.7	327.9
Moderate/mild	320.3	437.8
None	385.0	582.8
Type of impairment		
Sensory	414.8	652.6
Mobility	331.1	486.4
Mental	286.6	323.3
Multiple	268.3	316.8

^a Persons aged 15-64 years living in households.

Source: Wilkins 2003, tables 4.5 and 4.6.

To some extent, wage differentials between people with and without disabilities are due to the fact that the two groups have differing social, economic and demographic characteristics. As shown in table A.6, for example, people with disabilities are overrepresented in the ‘labourers and related workers’ occupational category, which could account for part of the observed overall wage differentials. Comparing wages received by employees in each of the nine occupation groups reveals that hourly wages received by employees with disabilities, while generally lower, exceed those accruing to their counterparts without disabilities in three occupations (table A.8).

Table A.8 Average gross hourly wages of people with disabilities, by occupation, 2001^a

Occupation	<i>People with disabilities (A)</i>	<i>People without disabilities (B)</i>	<i>Ratio (A/B)</i>
	\$	\$	%
Managers and administrators	23.9	26.4	90.5
Professionals	22.7	24.8	91.5
Associate professionals	19.0	20.7	91.8
Tradespersons and related workers	18.6	17.3	107.5
Advanced clerical and service workers	25.2	21.7	116.1
Intermediate clerical, sales and service workers	16.1	18.5	87.0
Intermediate production and service workers	17.7	16.2	109.3
Elementary clerical, sales and service workers	13.7	14.6	93.8
Labourers and related workers	14.1	14.2	99.3

^a Population estimates for persons aged 15–64 years living in households.

Data source: Productivity Commission estimates based on the 2001 HILDA survey.

Aside from occupation, many other worker characteristics influence wages, for example, educational attainment. Education influences human capital, which influences labour productivity, which means that wages generally increase with educational qualifications. Because average educational attainment is lower for people with disabilities than for people without disabilities (see appendix B), it would be necessary to control for education as well as occupation in the kind of approach used table A.8. Given the number of likely influences on a person’s labour earnings, controlling for all these influences to isolate the effects of disability is only possible in the context of multivariate analysis. Such analysis typically observes the characteristics of thousands of individuals to deduce the role played by each characteristic in isolation (see appendix F).

Brazenor (2002) adopted this method in examining the impact of disability on labour earnings in Australia. He found, holding all other characteristics constant in a multivariate analysis, that having a disability reduced the average gross weekly earnings of females by \$110 (24 per cent) and those of males by \$105 (17 per cent) in 1998, compared with people without disabilities. Further, he found that the

earnings differential varied considerably with the source of the disability—for example, males and females with emotional and nervous conditions or shortness of breath experienced the largest differential. Other conditions appeared to affect the earnings of males and females differently—for example, blackouts, fits and loss of consciousness had a stronger effect on the earnings of males than that of females, and vice versa for disfigurement and deformity. Brazenor hypothesised that these gender-specific impacts may be explained by occupational preferences and social norms.

An important caveat applies to Brazenor’s results. He estimated labour earnings on the basis of the SDAC’s measure of gross weekly cash income from all sources. This measure includes income from sources other than wages and salaries (for example, investments) and receipts of government pensions. While Brazenor netted out the disability support pension, he was unable to remove non-wage income. His analysis is likely to accentuate the gap in wages if, as is likely, people with disabilities earn less non-wage, non-pension income than earned by people without disabilities.

Another caveat is necessary about measured wage differentials in general. Differentials such as those calculated by Brazenor and presented in table A.8, refer to *observed* wages only—that is, the wages of persons from each group who opted to join the labour market and found employment. This observed wage differential may or may not be the ‘true’ wage differential, based on differences in wages offered (or *offer* wages). Because some people decide not to accept job offers, observed wages represent only a subset of the wages offered by employers. If the way in which observed and offer wages are related differs for people with disabilities and those without disabilities, then sample selection bias will affect wage differentials based on observed wages. Such bias would arise if, for example, only those members of one group who received above-average wage offers accepted them. Below-average wage offers would then not be observed, resulting in a biased estimate of the average wage offered to that group.

Thus, when assessing the impact of disability on wages, whether due to discrimination or other factors, it is necessary to correct for any potential difference between observed and offer wages. Failure to do so is likely to result in an underestimate of the wage gap, because people with disabilities receiving low wage offers (possibly due to discrimination) will not be observed in the labour market. An illustration of this problem is presented in section A.2 and a technical treatment is provided in appendix F.

Lower relative wages and lower labour force participation for people with disabilities translate into lower relative income levels. Wilkins (2003) found that the mean weekly income (from all sources, including non-labour income) of females

(males) with a disability was 22 per cent (32 per cent) lower in 1998 than that of females (males) without disabilities.⁶ In a related result, he found that 49 per cent of females and 43 per cent of males with disabilities relied on government pensions and allowances for their principal source of income in 1998, compared with 25.6 per cent and 10.1 per cent respectively for those without disability.

The importance of employment for achieving adequate income levels is illustrated by the position of people with disabilities in the income distribution. While people with disabilities were overrepresented in the second and third lowest income quintiles for working-age Australians in 1998 (figure A.2), those persons who also experienced a schooling or an employment restriction were even more likely to be found in those quintiles.⁷

A.2 Discrimination in the labour market

Wage and employment differentials between people with and without disabilities have been observed in other countries (see, for example, Acemoglu and Angrist 1998; Bound and Waidmann 2002; Kidd et al. 2000). The two main reasons for these differentials are:

- the possibility that workers with disabilities have lower productivity than that of workers without disabilities
- discrimination against people with disabilities.

Lower productivity

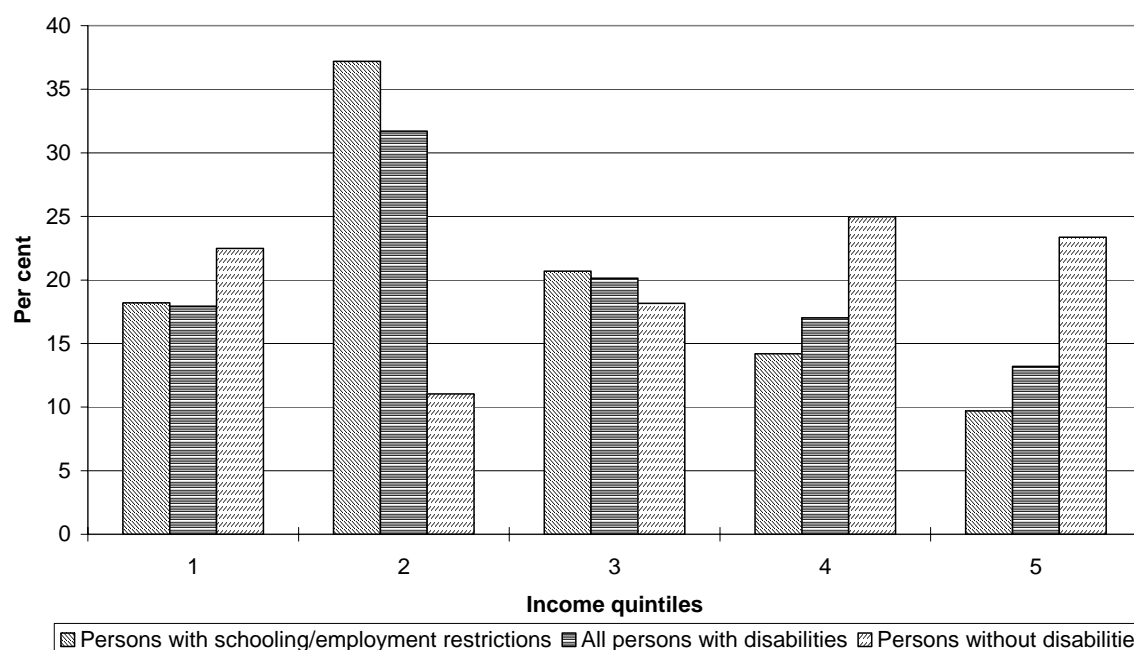
Whether a person is offered a job and at what level of remuneration are decisions that are influenced by an employer's demand for labour. The demand from a non-disability discriminating employer is determined solely by reference to a prospective employee's contribution to the organisation's costs and revenues. The former consist mainly of wages or salary, on-costs and the costs of possible adjustments. The latter consist of the market value of the employee's output. A

⁶ These differentials differ from those calculated by Brazenor (2002), previously mentioned. There are two reasons for this discrepancy: (1) Wilkins used overall cash income from all sources, whereas Brazenor attempted to use labour earnings; and (2) Wilkins used bivariate analysis, whereas Brazenor used multivariate analysis.

⁷ The overrepresentation of people without disabilities in the first quintile may be due to the inclusion of people with nil income and people who reported no source of income. An alternative interpretation is that the disability support pension acts as an effective 'safety net', preventing people with disabilities from experiencing very low (reported) incomes.

non-discriminating, profit maximising employer will voluntarily hire the employee providing the greatest net benefit to the firm.

Figure A.2 **Distribution of persons with schooling/employment restrictions, with and without disabilities, by total weekly cash income quintile, 1998^{a, b, c}**



^a The height of the bars measures the percentage of each group that is found in a particular income quintile. For example, 37 per cent of persons with schooling or employment restrictions are in the second income quintile, compared to 32 per cent of all persons with disabilities and 11 per cent of persons without disabilities. ^b Persons aged 15–64 years living in households. ^c Quintiles based on the population aged 15 years and over. Quintiles exclude 'income not stated'. First quintile excludes refusals to respond.

Data source: ABS 1999b, cat. no. 4430.0.

In a free market, a person with a disability who is hired will necessarily earn a wage commensurate with their level of productivity, discounted for the costs of any adjustments required. (This assumes no anti-discrimination legislation that prohibits such discounting.)

In this framework, people with disabilities will be out of the labour force or unemployed only if:

- their disabilities make them technically unable to work at any wage
- they require workplace adjustments which make it unprofitable for employers to hire them, given their level of productivity

-
- their productivity (and possible adjustment costs) only warrants job/wage offers which it would be unprofitable for them to accept.⁸

In a non-discriminating environment, employment differentials can only result from the lower employability, lower productivity, or lower preparedness to work of people with disabilities. Wage differentials, for their part, can only arise due to lower productivity. The impact of adjustment costs on both types of differential is uncertain; on one hand, the DDA effectively prohibits employers from taking adjustment costs into account when deciding whether to hire people with disabilities, or what wages to pay them. On the other hand, employers can claim unjustifiable hardship if adjustment costs are too high.

In theory, the framework outlined above is sufficient to explain the wage and employment differentials between people with and without disabilities, observed in the preceding section. However, it does not recognise a range of other reasons why such differentials might arise. These other reasons are linked to disability discrimination. They include prejudice, statistical discrimination, occupational segregation and pre-market discrimination.

Prejudice

In contrast to the model outlined above, a prejudiced employer's attitude to hiring and paying workers with disabilities is not based on any consideration of net economic profitability. This type of employer will refuse people with disabilities a job, or offer them a reduced wage, even when their relative productivity, need for adjustments and willingness to work make them the most suitable candidates. Typically, a prejudiced employer makes no attempt to discover information about the productivity or needs for adjustments of candidates from the minority group.

Statistical discrimination

Like a prejudiced employer, an employer who engages in statistical discrimination will reject a job candidate with a disability on principle, without attempting to determine whether he or she is the best person for the job. However, in contrast to the prejudiced employer, the statistical discriminator's behaviour is not based on personal animosity. Instead, it is the product of the employer's strategy to reduce hiring costs. Faced with imperfect information about a candidate's productivity, an employer has a choice between (1) spending time and money on acquiring extra information, and (2) applying a cost-effective 'filter', based on relevant information.

⁸ Possibly as a result of the additional costs they would encounter if in the labour force, or the loss in income that might result if they stopped receiving the Disability Support Pension.

Thus, perhaps based on previous experience, an employer might view disability as a proxy for lower productivity, in which case the candidate will not be hired or will be offered lower wages. Whether this approach is ultimately of benefit to the employer will depend on the filter's accuracy in predicting productivity. Statistical discrimination is discussed in more detail in chapter 7.

Occupational segregation

Occupational segregation is also known as discrimination in occupation. It was first identified in relation to the employment of women. It describes the fact that 'women with the same training and productive potential are seen as shunted into lower paying occupations or levels of responsibility by employers, who reserve the higher paying jobs for men' (Ehrenberg and Smith 1994, pp. 402–3).

Occupational segregation has also been noted in relation to other minority/disadvantaged groups:

Similar discriminatory processes operate along the lines of race, ethnic origin, age, disability and health status, among others, and result in the undervaluation and segregation of groups of workers into jobs with less favourable terms and conditions of employment. (ILO 2003, p. 44)

Two inquiry participants (Anti-Discrimination Commission Queensland, sub. 119; New South Wales Anti-Discrimination Board, sub. 101) endorsed the views expressed by the International Labour Organisation (ILO) in a recent study of discrimination:

While an anti-discrimination legal model based on prohibiting discriminatory practices has proven successful in eliminating the most blatant forms of discrimination, such as direct pay discrimination, it has encountered less success with the more subtle forms, such as occupational segregation. (ILO 2003, p. 60)

Occupational segregation can be difficult to detect at a fairly aggregated level. Table A.6 shows, for example, that people with disabilities were relatively more likely to be employed in the 'managers and administrators' occupational category in 1998. Yet, within that occupation, people with disabilities were approximately twice more likely than people without disabilities to be 'farmers and farm managers' and twice less likely to be 'generalist managers'. Similarly, within the 'labourers and related workers' occupation, people with disabilities were relatively more likely to be 'cleaners' and relatively less likely to be 'factory workers'.⁹

⁹ Productivity Commission estimates based on the 2001 HILDA survey.

Pre-market discrimination

The term ‘pre-market discrimination’ refers to discrimination occurring upstream of the labour market, usually in education. The ILO noted:

To a significant extent, higher unemployment among disabled persons is a result of discrimination in education and training. The educational system is often not organized to meet the needs of disabled persons, and training offered in specialized centres often provides a narrow range of skills. (ILO 2003, p. 35)

As discussed in appendix B, disability discrimination in education may be one factor explaining the difference in average educational attainment between people with and without disabilities. The education gap would be reflected in a labour earnings gap between the two groups. The earnings gap would not initially be attributed to discrimination if all people with the same educational qualifications received the same pay. However, this would overlook the fact that the education gap is due to discrimination.

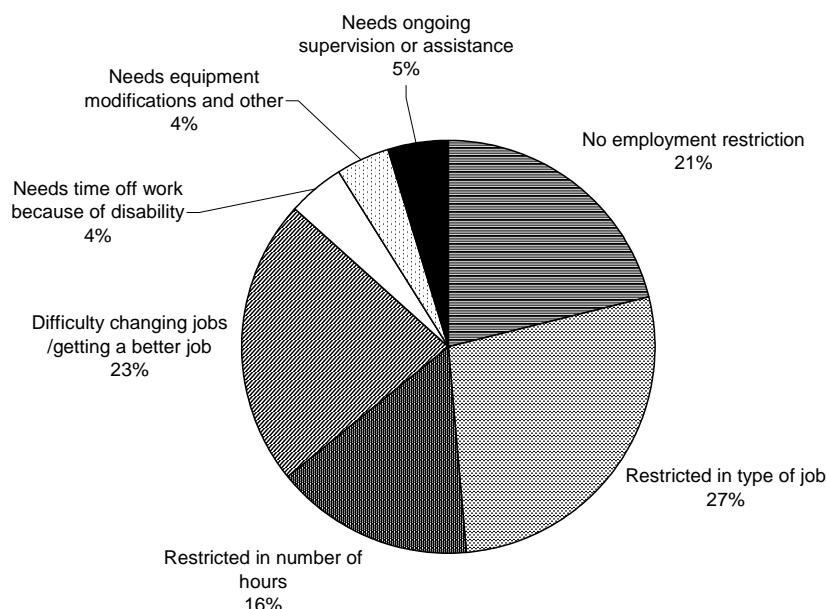
Productivity differential or discrimination?

As mentioned earlier, the economic attractiveness of an employee to a non-discriminating employer rests on a comparison of the benefits and costs associated with that employee. Wage and employment differentials between workers with and without disabilities, therefore, may be due to differences in cost or productivity or both. If the employer also is prejudiced or engages in statistical discrimination, then further differentials could ensue. This section assesses the relative importance of productivity and discrimination as sources of observed differentials.

Evidence of productivity or cost differentials

From the range of employment restrictions reported by employed workers with disabilities, it might be inferred that the productivity of some workers with disabilities is lower, and the costs associated with their employment are higher, than for workers without disabilities (figure A.3).

Figure A.3 **Employed workers with disabilities, by nature of employment restriction, 1998^{a, b}**



a Full time and part time workers. **b** Arrangements covered under 'Needs time off work because of disability' includes sick leave, flexible hours, leave without pay and other arrangements. Arrangements covered under 'Needs equipment modifications and other' include special equipment, modifications to buildings/fittings, help from someone at work, training/retraining, different duties and other arrangements. 'Needs ongoing supervision or assistance' includes provision and no provision of a disability support person.

Data source: ABS 1999b, cat. no. 4430.0.

There is limited direct evidence about the relative productivity of workers with disabilities in Australia. In a case study of a Telstra call centre, Hindle et al. (1999) found that employees with disabilities equalled the performance of their counterparts without disabilities in four of five productivity-related areas: attendance, task engagement, efficiency and effectiveness. In the fifth area—length of service—employees with disabilities exceeded the mean result for the rest of the workforce. Hindle et al. concluded 'The axiom that workers with a disability are less productive is dead. It is no longer an axiom. It is a myth' (1999, p. 6). However, as the authors acknowledged, it is impossible to generalise the results of a single case study to all workplaces employing people with disabilities.

In another Australian study, Graffam et al. (1998) surveyed employers who employed one or more persons with disabilities through an Australian Government funded disability employment service between 1996 and 1998.¹⁰ When employers were questioned about the productivity costs and benefits of employing this group of workers, they gave more reports of positive effects than of negative effects (61

¹⁰ Of all the employers approached, 643 responded, giving a response rate of 12.1 per cent.

per cent and 39 per cent respectively).¹¹ ‘Changes to training methods’ was the main source of both productivity benefits and costs. ‘Workplace modifications’ received the least number of reports on productivity effects, either positive or negative.

Reports of positive effects also dominated those of negative effects in relation to other aspects of an organisation’s operation, such as profits, staff skills, staff practices, work practices, staff relations and customer relations. Accounting for all these impacts on the organisation, 20 per cent of reports indicated positive financial repercussions from employing people with disabilities, 65 per cent reported neutral financial repercussions, and 15 per cent mentioned negative consequences.

Graffam et al. (1998) attempted to measure the costs and benefits linked to the employment of people with and without disabilities. However, it is doubtful whether employers’ responses were consistent or comparable. Overall, the applicability of Graffam et al.’s results to the wider employer population is uncertain. Employers who deal with disability employment services providers might be relatively more inclined to report benefits from employing people with disabilities.

Although, in 1995, between 20 per cent and 36 per cent of Australian private sector workplaces provided specific facilities for their employees with disabilities (Pérotin et al. 2003), data on the costs of adjustments to employers are scarce. Some insights into these costs can be gained from the costs of workplace adjustments funded by the Department of Family and Community Services under the Workplace Modifications Scheme (WMS) (box A.1). However, these figures are indicative at best, for a number of reasons. First, eligibility criteria for the funding of adjustments under that scheme specifically exclude employers who have a duty to make ‘reasonable adjustments’ under the DDA. The Productivity Commission was unable to determine how that criterion is applied in practice. However, it is likely to mean that the nature and costs of adjustments made under the WMS and the DDA will differ.

Second, some types of adjustment are not within the scope of the WMS. One excluded adjustment is the provision of Auslan interpreters for people with hearing impairments. The Australian Federation of Deaf Societies estimated the cost of an Auslan interpreter for the recruitment of a deaf worker at \$1280. It also estimated the minimum annual interpreting costs for that worker at \$4160 (sub. DR363).

¹¹ Individual employers were able to submit several reports.

Box A.1 **Workplace Modifications Scheme**

The Workplace Modifications Scheme (WMS) reimburses employers for the costs involved in modifying the workplace or purchasing special equipment for new workers with disabilities. To qualify for assistance, companies must employ the person for at least eight hours a week in a job that is expected to last for at least three months.

In order to be eligible, a worker must be previously unemployed and a client of an Australian Government funded disability employment agency.

Between 1998 and 2002, the WMS assisted 1006 employers and 1096 workers, at a total cost of \$2.7 million. An average of \$2200 was paid for each workplace modification approved under the scheme. Although a cap of \$5000 normally applies for each new worker, flexibility exists to exceed that amount. In 1998-2002, the 20 highest reimbursements cost between \$7815 and \$14636.

People with a visual impairments are the most numerous recipients of assistance under the WMS, and they also receive the highest amount of assistance on average (\$3373). Their number almost doubled between 1998 and 2002. By contrast, the proportion of recipients with intellectual disabilities fell from 17 per cent to 3 per cent in the same period.

Source: Department of Family and Community Services, sub. DR362.

Third, the WMS only covers monetary outlays by employers. Typically, the costs of adjustment exceed the 'hard' costs of equipment and workplace modifications. Workplace adjustments usually also involve 'soft' costs, such as the opportunity cost of time spent by management on implementing adjustments and of possible disruptions to work processes. Ability Technology Limited provided an example of the combination of hard and soft costs accompanying the provision of voice activated software for an employee with a disability:

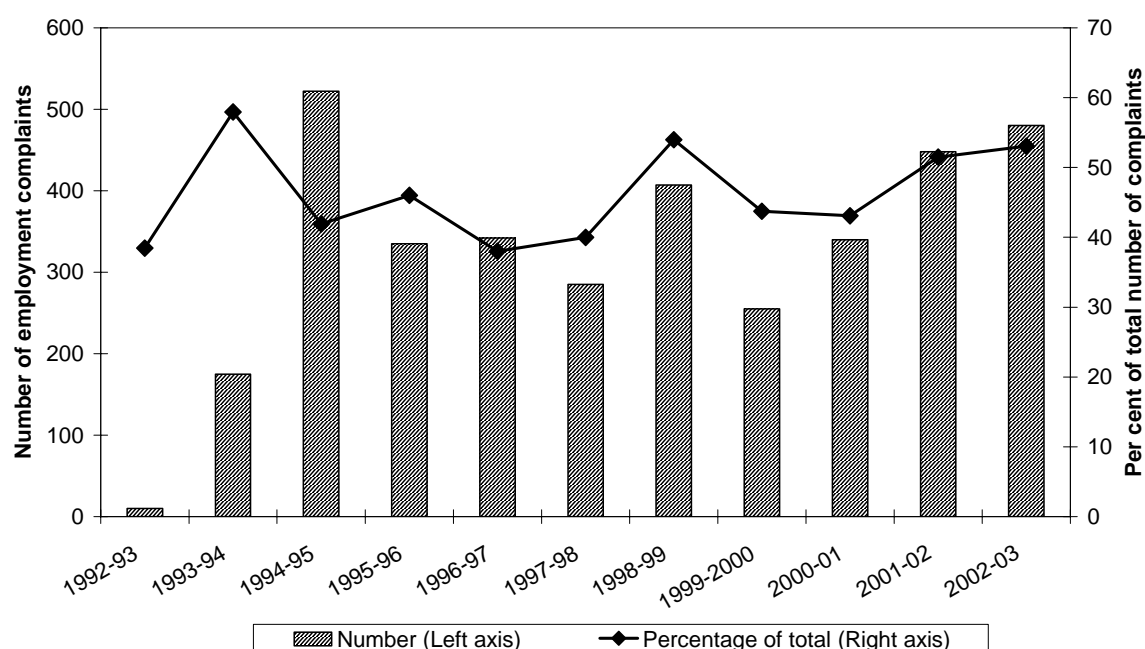
Not only must the employer identify the need for such software and procure it, but they must also customise it to the needs of the individual, identify and obtain possible alternative microphones and pointing devices, integrate the system to existing phone systems and computer networks (many of which are hostile to the introduction of extraneous input devices and drivers) provide training on the job, arrange upgrades and seek technical support. (sub. DR295, pp. 2-3)

Fourth, even where only monetary outlays are concerned, the WMS refunds only part of the cost of a given adjustment. Employers are required to share in the costs of workplace adjustments approved under the WMS, to an extent which is unknown (ACE National Network, sub. DR361).

Circumstantial evidence of discrimination

Since the introduction of the DDA, employment has consistently attracted the largest proportion of complaints made under the Act (figure A.4). While this proportion has fluctuated over the years, there has been no discernible increasing or decreasing trend. The total number of complaints, which had been broadly decreasing between 1994-95 and 1999-2000, has been increasing steadily since then. The majority of DDA employment complaints are lodged by people with a physical disability and by persons who have suffered a work injury. Perhaps indicating the importance of the latter as a reason for discrimination, or perhaps as a reflection of the difficulty of complaining about recruitment decisions, complaints about unlawful work termination outweigh complaints about recruitment (HREOC, sub. 235).

Figure A.4 DDA employment complaints, 1992-93 to 2002-03



Data source: HREOC annual reports.

Employment complaints to HREOC and State and Territory anti-discrimination bodies, coupled with most inquiry participants' views about employment discrimination (see chapter 5) suggest that disability discrimination in employment remains a significant issue in Australia. However, neither complaints nor individual reports of discrimination constitute proof that disability discrimination is occurring on a large scale, given the number of people with disabilities who are employed, and the relatively small number of total complaints. Further, raw wage and

employment differentials between people with and without disabilities can stem from productivity differences or non-disability forms of discrimination, and do not, therefore, offer conclusive proof of widespread disability discrimination. Before concluding that disability discrimination in employment is a pervasive phenomenon, more rigorous analysis is required.

Empirical evidence of discrimination

There is a sizeable economics literature that attempts to go beyond anecdotal and complaints-based evidence of discrimination to measure the amount of discrimination present in the labour market and other markets. The two main approaches in this area are known as direct and indirect testing of discrimination. The Productivity Commission does not know of any direct testing of disability discrimination in Australia, and existing overseas studies are of limited applicability (box A.2).

Box A.2 Direct testing for discrimination

Direct testing involves controlled field experiments that compare the degree of success by testers with and without a particular attribute in various markets. An example would be two candidates with identical resumés—one male, one female—applying for the same advertised position, in person, by phone or in writing. After this experiment is repeated a number of times, a statistical measure of sex discrimination (in this case) can be obtained. Direct testing has been used extensively in measuring sex and race discrimination (see Riach and Rich 2002 for a survey of results in Australia and overseas). It has been used less frequently to measure disability discrimination. Riach and Rich (2002) cite the results of three overseas studies that found statistically significant labour market discrimination (at the written job application stage) on the basis of disability.

Direct testing is most suited to measuring discrimination at the job application stage (that is, pre-interview). It is not so suited to measuring discrimination in job offers (post-interview) or wages. Moreover, direct testing cannot account for employment discrimination occurring when jobs are advertised by ‘word of mouth’ to persons already in the labour market.

To the Productivity Commission’s knowledge, there has been no direct testing of disability discrimination in Australia.

Indirect testing relies on the use of large datasets of observations on the social, demographic and economic characteristics of many individuals to measure wage and employment discrimination. Wage discrimination can be detected by applying a technique known as an Oaxaca–Blinder decomposition (Oaxaca 1973; Blinder 1973) to these data. This approach relies on separate modelling of wages earned by

workers with and without disabilities. Using a standard human capital model of a person's earnings, the calculations measure how much of each group's average earnings can be explained by their respective human capital endowments and other characteristics. Part of the gap in wages between the two groups is thus 'explained'. The remaining 'unexplained' gap is then interpreted as a measure of employer discrimination towards people with disabilities. That is, it cannot be attributed to differences in any observable individual characteristics such as age or education. That an unexplained gap arises is due to the two groups being 'rewarded' differently for identical human capital characteristics (for example, possessing a university degree or 10 years of work experience).

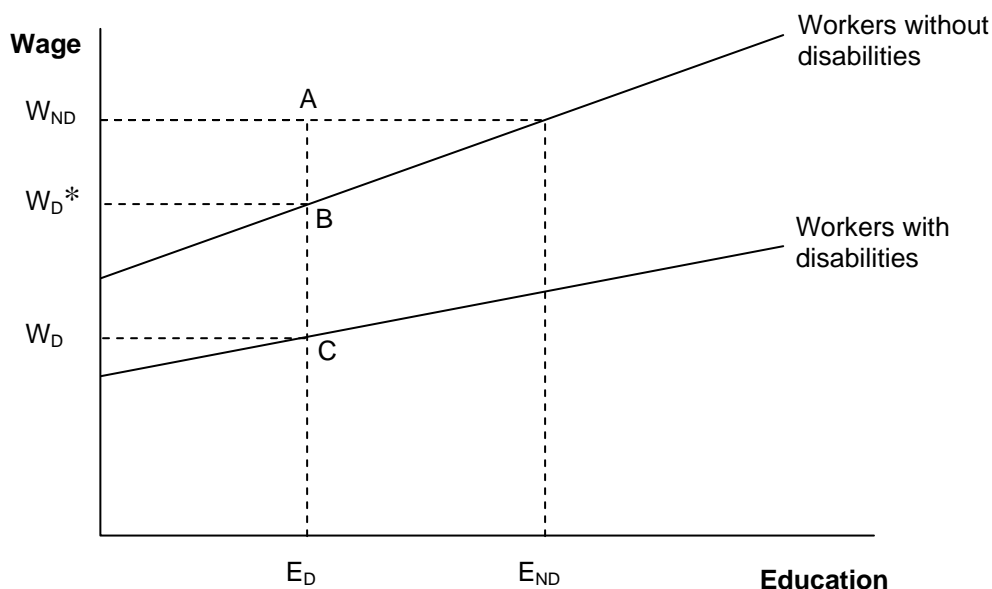
The Oaxaca–Blinder decomposition approach can be represented graphically in the simplified way of figure A.5. This representation assumes that education is the only influence on wages received and that wages increase with the level of education. The average wage level of workers without disability is thus determined by their average level of education (E_{ND}) and equal to W_{ND} . The average level of education of workers with disabilities is lower, at E_D . In the absence of discrimination, this group's average wage would be W_D^* . However, if discrimination is present, the wages of workers with disabilities will start off from a lower base and increase less steeply with education. This means that the actual (discriminatory) wage is W_D . It is possible, therefore, to decompose the total gap between the average wages of workers with and without disabilities (distance A–C) into two components:

- the explained gap: distance A–B
- the unexplained gap: distance B–C.

The interpretation of the unexplained gap as a measure of discrimination is not irrefutable. The gap may stem from the existence of omitted variables or from differences in unobservable characteristics, such as motivation or intelligence. While the former problem is amenable to modelling refinements, the latter is typically impossible to take into account quantitatively, except where longitudinal (panel) data are available. A further caveat is that part of the explained gap can also stem from discrimination. As mentioned earlier, it may be that the difference in educational attainment levels between persons with and without disabilities is due to pre-market discrimination in schools or universities.

These issues notwithstanding, studies have shown that statistical measures of wage discrimination based on Oaxaca-Blinder decompositions are significantly correlated with perceptions of inadequate remuneration by people with disabilities, relative to people without disabilities (Hallock et al. 1998) and with the strength of popular prejudice against different impairments (Baldwin and Johnson 2000). This suggests that such decompositions are a valid technique for measuring the magnitude of wage discrimination against people with disabilities.

Figure A.5 Schematic representation of the Oaxaca–Blinder decomposition



Although Oaxaca–Blinder decompositions have been widely used to measure wage discrimination on the grounds of gender and race (Baldwin and Johnson 1996; Kidd and Viney 1989; Miller and Rummery 1989), they have been used less frequently to investigate disability discrimination (Baldwin and Johnson 1994, 2000; Kidd et al. 2000).

Baldwin and Johnson (2000) decomposed offer wage differentials for males in the United States in 1990. Their preferred model indicated that 60 per cent of the offer wage differential between males with and without disabilities could not be explained by differences in physical limitations and other productivity-related characteristics. Moreover, they found that the size of the unexplained differential was weakly correlated with the strength of the prejudice against different impairments. This seems consistent with Brazenor’s (2002) finding that the labour earnings ‘penalty’ in Australia varied with the type of disability for males and females.

Baldwin and Johnson also estimated the disincentive effects that discriminatory wages for males with disabilities had on their probability of being employed. Such effects arise due to the reservation wage¹² of some individuals exceeding the discriminatory wage offer that they receive, but being below the corresponding non-discriminatory wage offer. Baldwin and Johnson calculated, in the absence of

¹² The reservation wage is the lowest wage at which a person would be prepared to work.

discrimination, that 55 000 more males with disabilities would have been employed in the United States in 1990.

Using the same techniques as Baldwin and Johnson, Kidd et al. (2000) found that differences in productivity-related characteristics explained only around 50 per cent of the offer wage differential between males with disabilities and males without disabilities in the United Kingdom in 1996. While they found that discriminatory wages reduced the labour force participation of males with disabilities, they did not find this effect to be very strong.

Following Baldwin and Johnson (2000) and Kidd et al. (2000), the Productivity Commission implemented an Oaxaca–Blinder decomposition using the most recent and detailed dataset available for Australia—the 2001 wave of the HILDA survey. The analysis is detailed in appendix F and results are shown in table A.9.

Table A.9 Oaxaca–Blinder decomposition of the log hourly wage differential between people with and without disabilities, 2001

	<i>Observed wages</i>		<i>Offer wages</i>	
	<i>Females</i>	<i>Males</i>	<i>Females</i>	<i>Males</i>
Log observed wages differential ^a (A)	0.052	0.060	0.043	0.065
Log offer wages differential ^a (B)	na	na	0.079	0.043
Explained log wage differential	0.041	0.031	0.044	0.032
Unexplained log wage differential (C)	0.010	0.030	0.035	0.011
Percentage unexplained ^b	% C/A = 20.0	C/A = 49.2	C/B = 44.0	C/B = 26.6

^a Difference in the averages of the logged hourly wages of individuals belonging to the two groups. For each gender, figures for the log of the observed wage differential differ between observed wages and offer wages columns because a different number of observations were used in the regressions. ^b Percentage explained may not exactly match figures in columns due to rounding. **na**: Not applicable.

Source: Productivity Commission estimates based on the 2001 HILDA survey.

Depending on the modelling approach adopted, the unexplained portion of the log wage differential ranged from 20 per cent (observed wages) to 44 per cent (offer wages) for females, and from 26.6 (offer wages) per cent to 49.2 (observed wages) per cent for males. The preferred modelling approach is the ‘offer’ wages method, because it corrects for the possible effects of sample selection bias (see appendix F for details). The results from the offer wage approach indicate that if all wage offers were accepted and could thus be observed, then between one quarter and nearly one half of the difference between the hourly wages of people with and without disabilities would be unrelated to differences in the demographic, health and human capital characteristics of the two groups.

As noted, wage discrimination is one possible reason for the existence of an unexplained wage gap in an Oaxaca–Blinder decomposition. Results in table A.9

therefore suggest that such discrimination towards people with disabilities existed in Australia in 2001. However, even if this interpretation of the gap is correct, the amount of wages lost through disability discrimination is likely to be low, given the small overall hourly wage differential that exists between people with disabilities and those without disabilities. Irrespective of whether it is based on observed wages or offer wages, this differential does not exceed 10 per cent of the wages of people without disabilities.

Results by gender are consistent with those of Brazenor (2002), in that they show females experiencing relatively more wage discrimination (as measured by the unexplained component of offer wages) than experienced by men. However, the estimates contained in table A.9 may be considered more reliable than Brazenor's, because they are based on exact measures of hourly wages.

Based on the same technique and assumptions used by Baldwin and Johnson (1994, 2000) and Kidd et al. (2000), the Productivity Commission estimates that the amount of male offer wage discrimination reported in table A.9 has resulted in 14 128 men with disabilities choosing not to become employed because they received discriminatory wage offers that were below their reservation wage (see appendix F for details).¹³

Following an Oaxaca-Blinder decomposition, it is possible to decompose further the explained gap into the respective contributions of groups of explanatory variables, such as education variables, work experience variables, industry of employment, health status, and occupation (Kidd et al. 2000). The purpose of such decomposition is to show the relative importance of each category of variables in explaining the non-discriminatory wage gap between people with and without disabilities. The analysis shows some similarities and some differences between men and women, in terms of the determinants of the explained wage gap (table A.10). The main similarity is that work experience acts to reduce the gap for both genders (hence the negative sign for that group of variables in table A.10). This is a reflection of the fact that people with disabilities are older, on average, than people without disabilities, and have therefore accumulated more work experience on the whole. This suggests that, if work experience were the only factor influencing wages, people with disabilities would have higher wages than people without disabilities.

There are important gender differences as well; poor health is a very important wage limiting factor for women with disabilities but not so much for men. Conversely, educational qualifications and occupation matter much more for men

¹³ Following the studies cited in the text, only results for males are reported. Unlike for males, the number of hours that females supply to the labour market cannot be assumed to be a positive monotonous function of the gap between the offer wage and the reservation wage.

than for women. This might be due to the existence of sex discrimination in the labour market. Such discrimination limits the rewards to education for women, and segregates women in low-paying occupations. In so doing, it dampens the detrimental effects of disability discrimination on wages for this group. Put another way, disability discrimination is of less negative consequence for women, because they already experience compressed wage structures and limited occupational choices relative to men.

Table A.10 Decomposition of the explained log hourly wage differential between people with and without disabilities, 2001

Percentage of the explained wage differential due to: ^a	Observed wages		Offer wages	
	Females	Males	Females	Males
	%	%	%	%
Educational qualifications	12.8	39.2	11.0	41.0
Industry of employment	21.7	35.0	23.4	32.6
Health status	67.4	28.8	69.0	18.8
Occupation	19.6	35.7	22.2	43.8
Work experience	-13.6	-30.7	-16.0	-33.7
Other ^b	-8.0	-8.1	-9.6	-2.5
Total	100.0	100.0	100.0	100.0

^a A positive (negative) percentage denotes that the wages of people with disabilities are lowered (raised), relative to those of people without disabilities, by a particular class of variables. ^b Category 'Other' includes whether a person is a city dweller, born in a non-English speaking country, works for a business with less than 20 employees, works less than 35 hours a week, works for a Government-owned business, or belongs to a trade union (see appendix F for a description of HILDA variables).

Source: Productivity Commission estimates based on the 2001 HILDA survey.

These gender differences are potentially important in that they suggest that policies designed to reduce disability discrimination in schools, for example, may prove much more effective at improving the earnings of men with disabilities than of women. For women to benefit to the same extent as men from reductions in pre-market discrimination, these would need to be accompanied by reductions in sex discrimination.

A.3 Effects of anti-discrimination legislation on employment

The question arises of whether the DDA has reduced discrimination, leading to an improvement in the employment situation of Australians with disabilities. This question may be answered qualitatively or quantitatively. Qualitative evidence—in the form of views expressed by inquiry participants about the effectiveness of the DDA—is discussed in chapter 5.

Quantitative answers would ideally require time series data on the wages and employment of people with and without disabilities, covering a period extending before and after the introduction of anti-discrimination legislation. Unfortunately, no such data series is available for Australia, which may explain the lack of Australian studies comparing the employment situation of people with disabilities in the pre- and post-DDA periods.

A different situation prevails in the United States, where repeated surveys—such as the Current Population Survey and the Survey of Income and Program Participation—straddle the introduction of the Americans with Disabilities Act 1990 (ADA). Researchers have thus been able to examine the effects of the ADA by comparing the periods preceding and following its introduction. Given the broad similarities between the DDA and ADA in terms of their employment provisions (see chapter 8), this research may offer some insights into the likely effects of the DDA in Australia.

The Americans with Disabilities Act and the US experience

Anti-discrimination legislation can have both positive and negative effects on the demand for workers with disabilities. On one hand, it may increase demand for their labour, because employers are under threat of litigation if they discriminate in hiring or firing (assuming they would discriminate in the absence of legislation). On the other hand, such legislation adds to the cost of hiring a worker with a disability. Economic theory suggests that cost-minimising employers, faced with an increase in the price of one type of labour, will try to substitute other factors in its place. A reduction in the demand for workers with disabilities would thus be expected.

The costs to an employer of complying with anti-discrimination legislation fall into two broad categories. First, employers face the cost of mandated adjustments if they hire a person with a disability who requires workplace modifications. In the absence of compulsion, an employer would undertake workplace modifications only if profitable to do so (see chapter 7). Under the ADA or DDA, employers cannot adopt such a narrow view. Unless they can claim unjustifiable hardship, they may have to carry out adjustments in the knowledge that it will be at a net cost to their organisation.

Second, an employer may face litigation costs. One such cost could be for wrongful termination when attempting to fire a worker with a disability.¹⁴ Other possible

¹⁴ According to Acemoglu and Angrist (1998), 70 per cent of the employment complaints lodged under the ADA have been for wrongful termination (July 1992 to September 1997). In

sources of litigation may be the failure to hire a person with a disability or to provide adjustments after the worker has been hired.

Acemoglu and Angrist (1998) estimated the average weekly costs of litigation and adjustment per employee with a disability at US\$12 and US\$23 respectively in 1990. Overall, they estimated that the introduction of the ADA led to an increase of 10 per cent in the average cost of employing a person with a disability.

US data indicate that 51 per cent of adjustments provided by employers cost nothing. On the other hand, the median cost per adjustment is US\$500, while 12 per cent of adjustments cost more than US\$2000, 4 per cent cost more than US\$5000 and 2 per cent cost more than US\$20 000 (DeLeire 2000). As noted by Stein (2003), the reported cost of implemented adjustments is likely to underestimate the true cost of adjustments, as it ignores those adjustments that were sought but not provided.

Using time series data, Acemoglu and Angrist (1998) and DeLeire (2000) found that the introduction of the ADA has had a detrimental impact, on the whole, on the employment of people (especially males) with disabilities in the United States. DeLeire found that employment of males with disabilities was 7.2 percentage points lower post-ADA, on average, than before the ADA was passed (DeLeire 2000). Acemoglu and Angrist (1998) found that the ADA hurt the employment prospects of males of all ages, and of females aged 21–39 years. They also found that the detrimental employment effects of the ADA occurred through reductions in hiring rather than increases in firing, suggesting that adjustment costs are of more concern to employers than are the costs of litigation.

By contrast, both Acemoglu and Angrist (1998) and DeLeire (2000) failed to detect an impact of the ADA on the relative wages of workers with disabilities.

The thrust of the two studies seems to indicate that US employers reacted in the manner predicted by economic theory: that is, faced with an increase in the relative cost of employing workers with disabilities, they reduced their demand for that group's labour. Thus, some authors perceive the ADA as having hurt those it was designed to help, because of the impositions it placed on employers.

Other authors, however, have challenged this pessimistic conclusion. Their rebuttals can be grouped into two broad categories. First, the observed decline in employment of people with disabilities in the US during the 1990s might have been due to economic phenomena other than the response of employers to the ADA. Hotchkiss (2003) argued that the decline in employment probabilities among Americans with disabilities during the 1990s was a labour supply phenomenon, not

Australia, DDA employment complaints data indicate that the corresponding percentage was 66 per cent, on average, between 1998-99 and 2002-2003 (HREOC, sub. 235).

the result of an increase in employment barriers for individuals with disabilities who were in the labour force. Her claim is consistent with results from Bound and Waidmann (2002), who argued that the fall in the employment of people with disabilities in the United States during the same period might have been caused by the work disincentive effects created by the trend expansion of social security benefits, particularly of disability pensions. Other explanations for the fall in employment of people with disabilities observed around the time when the ADA was introduced are the continuation of pre-ADA trends (Schwochau and Blanck 2000) and the influence of business cycles (Kruse and Schur 2003).

Second, there are a number of definitional issues which raise questions about the validity of the results obtained by Acemoglu and Angrist (1998) and DeLeire (2000).

- Definitions of disability used by these two studies are narrower than the definition used in the ADA. This could have led to their categorising of some people covered by the ADA as ‘not disabled’. If employment trends for the non-disabled group did not mirror those of people categorised as ‘disabled’, then it is not possible to draw inferences about the employment effects of the ADA on *all* persons with disabilities (Kruse and Schur 2003).
- The introduction of the ADA might have caused some people to classify themselves as having a disability, thus introducing compositional bias into time series analyses (Schwochau and Blank 2000; Kruse and Schur 2003).
- Because US courts have interpreted the definition of disability under the ADA very narrowly, only around twenty per cent of disability discrimination complaints lodged to date by employees have been successful (Lee 2003). This suggests that studying the employment record of people with disabilities will yield different results depending on whether the disability is self-reported (for example, in a labour force survey) or whether it accords with the courts’ interpretation of the definition of disability (Schwochau and Blanck 2003)

Given the numerous empirical problems in defining disability, Kruse and Schur (2003) concluded that:

These results do not permit a clear overall answer to the question of whether the ADA has helped or hurt the employment of people with disabilities, since both positive and negative signs can be found. Rather, the main conclusion is that there is reason to be cautious about findings of either positive or negative effects given the limitations of existing measures in reflecting who is covered by the ADA. (Kruse and Schur 2003, p. 62)

Employment effectiveness of the Disability Discrimination Act

Given the lack of relevant Australian time series data, gauging the effectiveness of the DDA in reducing employment discrimination and improving the employment prospects of people with disabilities is difficult. Nonetheless, quantitative analysis comparing successive snapshots may reveal broad changes over time.

Empirical evidence

One way of assessing the DDA's effectiveness in employment is to measure changes in how disability affects the probability of being employed. If the DDA has been successful in deterring employment discrimination and in encouraging workplace adjustments, then the probability of being employed should have risen between 1993 and 1998.

Based on the 1998 SDAC, Wilkins (2003) estimated, keeping other social, economic and demographic characteristics constant, that having a disability reduced the probability of being employed by 29.2 per cent for males and 22.6 per cent for females. The Productivity Commission has replicated Wilkins' approach, using data from the 1993 SDAC survey. Comparative results for 1993 and 1998 are presented in table A.11.

Table A.11 **Effect of disability on the probability of being employed, 1993 and 1998**

	<i>Females</i>		<i>Males</i>	
	1993	1998 ^b	1993	1998 ^b
	%	%	%	%
Disability effect ^a	-19.9	-22.0	-30.6	-27.8

^a Measured as the percentage change in the probability of being employed ($0 < p < 1$) when the disability dummy changes from 0 to 1. All other explanatory variables measured at the means. All effects are significant at the 1 per cent level. ^b Disability effects for 1998 differ slightly from those reported in Wilkins (2003) as a result of adjustments to the definition of disability, required for 1993–1998 comparability.

Source: Productivity Commission estimates based on unpublished data from the 1993 and 1998 Survey of Disability, Ageing and Carers (ABS 1999b, cat. no. 4430.0).

These results suggest that the negative impact of disability on the probability of being employed diminished between 1993 and 1998 for males, but increased for females. To the extent that these effects reflect employment discrimination and/or the lack of adjustments, then the DDA appears to have been more effective in promoting male employment than in promoting female employment. An alternative interpretation is that employment discrimination targeted at females is converging

on that experienced by males, as labour force participation and employment patterns of women increasingly resemble those of men.

Notwithstanding that employment discrimination against males might have fallen between 1993 and 1998, the effect of having a disability on the probability of being employed was still high for both genders in 1998. This suggests that employment discrimination against people with disabilities occurs mainly at the hiring and firing stages, rather than in the form of lower wages (as noted, the hourly wage differential between people with disabilities and those without disabilities is relatively low).

The view that anti-discrimination legislation that offers selected workers mandated benefits (such as workplace adjustments or paid maternity leave) has a more beneficial impact in terms of wages than in terms of employment has received support from theoretical analyses conducted by Jolls (2000). In a baseline scenario, Jolls (2000) showed, given anti-discrimination legislation that effectively prohibits wage and employment differentials between workers with and without disabilities, that the relative (and, in some cases, absolute) situation of the former group will improve (box A.3). However, she contended that only wage restrictions can be fully binding under anti-discrimination legislation such as the ADA. She argued that employment differentials are non-binding or only partly binding, because discrimination in hiring and firing is difficult to prove.

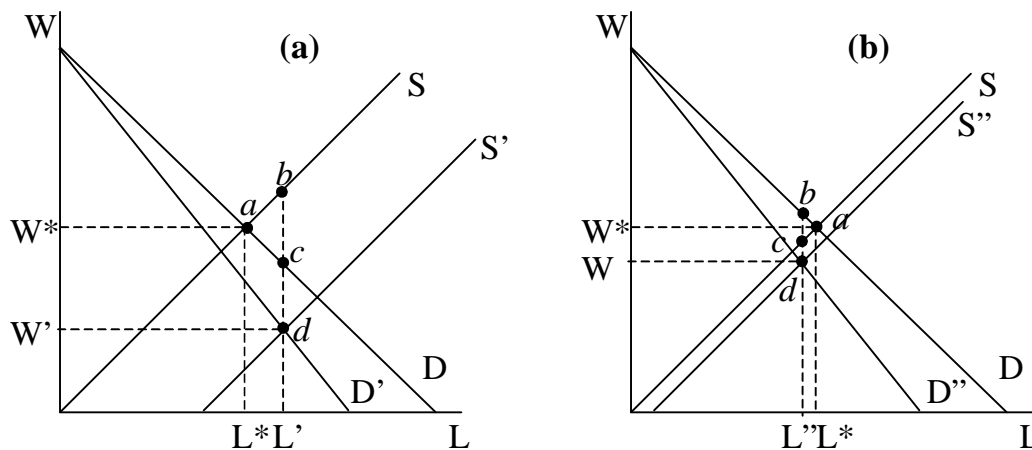
Jolls predicted that, when wage differentials are binding but employment differentials are not, the relative employment of people with disabilities will fall, while their relative wages will rise or stay the same. That is, employers will substitute away from workers with disabilities if they have to (1) pay them the same wage as before but also take on the costs of adjustment or (2) increase their wage so they now comply with the legislation.

Jolls' view of the impact of the ADA might apply to the DDA also, given the anecdotal evidence from inquiry participants that discrimination in hiring is difficult to prove and therefore more widespread than wage discrimination (see chapter 5). Her predictions might explain, therefore, why results presented in this appendix suggest a prevalence of employment discrimination over wage discrimination.

However, this conclusion is tempered somewhat by empirical evidence showing that wage restrictions are likely to be binding only for workers who acquire a disability on the job and return to work for the same employer. Gunderson and Hyatt (1996) showed, for that group of workers, that employers absorb most of the costs of adjustment, rather than passing them on to workers in the form of lower wages. Conversely, workers who changed jobs following their injury experienced substantial pay cuts, possibly to compensate employers for the costs of adjustment.

Box A.3 Jolls' analytical framework of mandated benefits

In panel (a), pre-adjustment labour supply and labour demand in the market for disadvantaged workers are denoted by the curves S and D respectively. Equilibrium in that market lies at point a initially, with wage W^* and employment level L^* . Following the introduction of the compulsory workplace adjustment provisions, supply and demand curves shift downward. The S curve shifts to S' because workers, now that they are receiving mandated benefits, are willing to supply more labour at any given wage rate. The magnitude of the shift in the supply curve (distance $b-d$) measures the value of the benefit derived by disadvantaged workers from employer adjustments. The labour demand curve shifts from D to D' because employers, now facing higher labour costs due to compulsory adjustments, are willing to employ less labour at any given wage rate. The vertical distance between the two demand curves (for example, $c-d$) measures the (variable) average cost of the mandated benefit.



Depending on the respective shifts in the supply and demand curves, the compulsory adjustment provision will be efficient or inefficient. In panel (a) above, the outcome is efficient because the value of the adjustment to the workers (distance $b-d$) is greater than its cost to employers (distance $c-d$). By contrast, in panel (b), the size of the shifts is such that the mandated adjustment is inefficient—that is, the costs to employers $b-d$ exceed the benefits to workers $c-d$.

Jolls' framework allows some predictions regarding the wage and employment effects of anti-discrimination legislation. In the scenario in panel (a), the situation of disadvantaged workers has improved in absolute as well as relative terms. First, their absolute employment level has increased from L^* to L' . Second, even though their absolute wage has fallen from W^* to W' , the combined value of their wage and the adjustment benefits is greater than the original wage. Moreover, it can be shown, provided the legislative prohibition on wage and employment differentials between the two groups is binding, that relative employment of disadvantaged workers will increase, while their relative wages will increase or stay the same.

Source: Adapted from Jolls 2000.

Gunderson and Hyatt's results suggest, therefore, that the relative importance of employment and wage discrimination in the labour market is at least partly a function of the proportion of workers returning to the same employer and those returning to a different employer.