

Deductions for vicissitudes when estimating the value of future earnings

THIS ARTICLE DETAILS an actuarial study on vicissitudes in relation to future earnings. The figures arrived at are often much lower than those applied by courts in many jurisdictions.

Introduction

When making awards for loss of future earning capacity, Australian courts normally make some deduction for the risks that earnings would not have continued until the assumed retirement age. These deductions vary widely between jurisdictions - Western Australian courts often deduct 2% to 6%, while Queensland courts often deduct 15% to 25%.

This note uses Australian data on mortality, unemployment, disability and strikes to suggest deductions to age 65. The suggested deductions for males vary between 5% and 13%, and those for females between 3% and 9% (see Table 1). The suggested deductions are highest for older workers, and for those in manual jobs. No allowance has been made here for favourable contingencies, such as promotion, completion of higher qualifications, obtaining a better job or starting a business.

In Victoria, South Australia and the Northern Territory, earning capacity losses are often estimated using \$1 per week multipliers that allow for the risks of death. In such cases, lower deductions for the remaining risks are appropriate. Suggested deductions are in Table 2.

Although there is general agreement that the risks affecting particular plaintiffs have to be considered, appeal court decisions show no consistent pattern. Tables 1 and 2 are intended to help personal injury lawyers make reasonable deductions for vicissitudes at every stage of a claim - when advising clients, making offers, in mediations and in court. The suggested deductions may result in generally higher awards for loss of future earning capacity.

Example of use of Table 1

Suppose that an award for future earnings losses is being made to a seriously injured 27-year-old male plumber in NSW. Assuming a statutory discount rate of 5% pa, and making no allowance for mortality, the value of \$1 a week to age 65 is \$902. Evidence on comparable employees might suggest potential earnings of \$50,000 pa, or \$786 a week after tax. The award for future earnings capacity losses, before deductions, might thus be estimated as

902 by 786 ie \$708,966

Table 1 suggests that a deduction of about 7% for unemployment, sickness, disability and strikes is appropriate for a young tradesman. The award after this deduction would be

\$708,966 less 7% ie about \$659,000

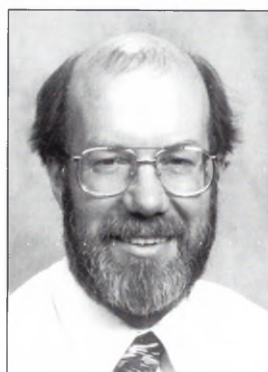
Example of use of Table 2

Suppose that an award for future earnings losses is being made to the same seriously injured 27-year-old male plumber in Victoria. Assuming a statutory discount rate of 3% pa, and mortality rates as in the Australian Life Tables 1996-98, the value of \$1 a week to age 65 is \$1153. Evidence on comparable employees suggests potential earnings of \$50,000 pa, or \$786 a week after tax. The award for future earning capacity losses, before deductions, might thus be estimated as

1153 by 786 ie \$906,258

Table 2 suggests that a deduction of about 5% for unemployment, sickness, disability and strikes is appropriate for a young tradesman. The award after this deduction would be

\$906,258 less 5% ie about \$861,000



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Data sources for estimates

The sources for our estimates are

- Australian mortality rates by sex and age from "Australian Life Tables 1996-98", in "Deaths 1998", Australian Bureau of Statistics catalogue no 3302.0, pp 68-69.
- Australian unemployment rates, subdivided by sex and age, and by sex and occupation, from "Labour force Australia", ABS catalogue no 6203.0, for each August from 1996 to 2000
- Australian disability insurance claim frequencies and durations, subdivided by age, sex and occupation group, from Table G1 of the "1997 Report of the Disability Committee", Institute of Actuaries of Australia. The values used were for claims with a 1 month deferment, and represent the durations within the first 2 years benefit period. The claims were reported by 18 life insurers for the years 1992 to 1995.
- Australian total and permanent disablement (TPD) claim frequencies, subdivided by sex and age, derived from 1994-95 claim data provided by 29 industry funds (from

"Report on the Industry Funds Investigation 1994-95", Institute of Actuaries of Australia June 2000).

- Australian numbers of working days lost per 1000 employees from "Industrial disputes", ABS catalogue no 6322.0, for each year from 1995 to 1999 (excluding days lost in disputes lasting less than 10 days).
- Australian weekly earnings, subdivided by sex and occupation, from "Employee earnings, benefits and trade union membership Australia August 1999", ABS catalogue no 6310.0, 18/2/00, page 12.

Estimation assumptions in Table 2

It is assumed that an award is being made for level future earnings losses to age 65.

A multiplier allowing for the probabilities of death before retirement is assumed to be used. Deductions of four different types are estimated:

- deductions for unemployment, based on the average unemployment rates by age and sex in the 5 years to August 2000, and allowing for the differences between occupational groups

Table 1: Deductions for death, unemployment, sickness, disability and strikes

Occupation	Age 25	Age 35	Age 45	Age 55
Males				
Managers and administrators	5%	5%	6%	7%
Professionals	5%	6%	7%	7%
Associate Professionals	6%	6%	7%	8%
Tradespersons & related workers	7%	8%	10%	11%
Advanced clerical & service workers	6%	7%	8%	8%
Intermediate clerical, sales & service workers	7%	8%	9%	9%
Intermediate production & transport workers	8%	9%	11%	11%
Elementary clerical, sales & service workers	6%	6%	8%	8%
Labourers & related workers	10%	11%	13%	13%
Females				
Managers & administrators	3%	4%	5%	6%
Professionals	3%	4%	5%	6%
Associate Professionals	4%	4%	5%	6%
Tradespersons & related workers	5%	6%	7%	9%
Advanced clerical & service workers	4%	5%	6%	7%
Intermediate clerical, sales & service workers	4%	5%	6%	7%
Intermediate production & transport workers	5%	6%	8%	9%
Elementary clerical, sales & service workers	3%	4%	5%	5%
Labourers & related workers	5%	6%	8%	9%

Table 2: Deductions for unemployment, sickness, disability & strikes

Occupation	Age 25	Age 35	Age 45	Age 55
Males				
Managers and administrators	2%	3%	3%	3%
Professionals	2%	3%	3%	4%
Associate Professionals	3%	3%	4%	4%
Tradespersons & related workers	5%	6%	7%	7%
Advanced clerical & service workers	3%	4%	5%	5%
Intermediate clerical, sales & service workers	4%	5%	6%	6%
Intermediate production & transport workers	6%	7%	8%	8%
Elementary clerical, sales & service workers	3%	4%	4%	5%
Labourers & related workers	8%	8%	10%	10%
Females				
Managers & administrators	2%	2%	3%	4%
Professionals	2%	2%	3%	4%
Associate Professionals	2%	3%	3%	4%
Tradespersons & related workers	3%	4%	5%	7%
Advanced clerical & service workers	2%	3%	4%	5%
Intermediate clerical, sales & service workers	3%	3%	4%	5%
Intermediate production & transport workers	4%	5%	6%	7%
Elementary clerical, sales & service workers	2%	2%	2%	3%
Labourers & related workers	4%	5%	6%	7%

- and the lower unemployment rates applying for persons who have worked full-time for at least a fortnight in the last two years
- deductions for temporary sickness and disability, based on Australian insurer experience from 1992 to 1995, by age and sex for each occupational class, for benefits from one month to two years (sick leave is assumed to meet the first month)
 - deductions for total and permanent disablement, based on Australian industry fund experience in 94-95 by age and sex, assumed to apply after two years (the average period elapsing before payment of such benefits was 23 months)
 - deductions for working days lost as a result of industrial disputes, based on Australian experience from 1995 to 1999.

The total of these deductions is then reduced by a percentage reflecting possible social security benefits from newstart allowances, sickness allowances or disability support pensions potentially receivable but for injury. This percentage was estimated by dividing the single newstart and sickness allowance by the average weekly earnings for all persons in the sex and occupation group. This recovery percentage may be too low for persons with a non-working partner, and too high for those with a working partner.

Table 3: Deductions before relativities and social security

Type of deduction	Sex	Age 25	Age 35	Age 45	Age 55
Death	Male	2.6%	2.9%	3.5%	3.6%
Death	Female	1.3%	1.7%	2.2%	2.2%
Unemployment	Male	6.6%	5.9%	6.1%	7.2%
Unemployment	Female	5.7%	5.1%	4.4%	3.6%
Disability (up to 2 years)	Male	0.5%	0.7%	1.0%	1.3%
Disability (up to 2 years)	Female	1.0%	1.5%	2.2%	4.1%
TPD (after 2 years)	Male	1.8%	2.5%	3.1%	2.4%
TPD (after 2 years)	Female	0.9%	1.3%	1.8%	1.1%

Table 4: Unemployment, disability and TPD relativities

Occupation	Unemployment		Disability	TPD
	Males	Females	Males & Females	
Managers and administrators	15%	13%	100%	62%
Professionals	23%	14%	100%	62%
Associate Professionals	36%	33%	100%	62%
Tradespersons & related workers	56%	50%	221%	136%
Advanced clerical & service workers	35%	24%	158%	97%
Intermediate clerical, sales & service workers	60%	41%	158%	97%
Intermediate production & transport workers	78%	71%	221%	136%
Elementary clerical, sales & service workers	58%	47%	158%	97%
Labourers & related workers	129%	79%	298%	184%

Example of estimation process

For the 27-year-old tradesman used as an example above, the calculations leading to the overall deduction of 5% in Table 2 were:

deduction for future unemployment for 25 year old male	6.6%
times unemployment relativity for tradesman	56%
<i>deduction for future unemployment for 25 year old tradesman</i>	3.70%
deduction for future disability for 25 year old class A male	0.5%
times disability relativity for tradesman	221%
<i>deduction for future disability for 25 year old tradesman</i>	1.02%
deduction for future TPD for 25 year old male	1.8%
times TPD relativity for tradesman	136%
<i>deduction for future disability for 25 year old tradesman</i>	2.40%
<i>deduction for industrial disputes</i>	0.04%
total deductions	7.16%
<i>less social security recovery percentage</i>	30%
overall deduction	5.01%
where the social security recovery percentage was estimated as after-tax newstart allowance per week for single person	168
<i>divided by after-tax average weekly earnings of tradesman</i>	556
social security recovery percentage	30%
The 7% deduction in Table 1 also allowed for the probabilities of death before age 65. This estimate was derived as 100% less deduction for unemployment, sickness, disability & strikes	95.0%
times value of \$1 pw to 65 at 5% discount, allowing for death	894.1
<i>divided by value of \$1 pw to 65 at 5% not allowing for death</i>	917.7
	92.5%

Subtracting this result from 100% gave the overall deduction for death, unemployment, sickness, disability and strikes.

Unemployment rates vary little by age (although can be much higher below age 25). Disability and TPD rates increase with age. Surprisingly, disability rates are higher for females, while TPD rates are lower for females.

Unemployment relativities were obtained by dividing the employment rate of persons who had worked full-time for a fortnight in an occupation during the last two years, by the average unemployment rate for all persons in the workforce. They are generally much less than 100%, as persons who have been in

Table 5: Assumed social security recovery rates

Occupation	Recovery	
	Males	Females
Managers & administrators	20%	21%
Professionals	22%	29%
Associate professionals	24%	33%
Tradespersons & related workers	30%	47%
Advanced clerical & service workers	27%	37%
Intermediate clerical, sales & service workers	33%	44%
Intermediate production & transport workers	31%	47%
Elementary clerical, sales & service workers	47%	57%
Labourers & related workers	42%	57%

full-time employment have better employment prospects. Disability relativities for each occupation were obtained by dividing their claim rate by that for the safest occupation. They are thus all equal or greater than 100%. TPD relativities were estimated from the disability relativities for each class by dividing by the average disability relativity for all employed persons. No allowance was made for mortality rate differences between occupations.

These recovery percentages were estimated by dividing the newstart allowance by the average earnings for the occupation, after allowing for tax at 00-01 rates. They are lowest for the occupations with the highest earnings. These recovery percentages are intended to allow approximately for the social security that the injured person might have received in the future, had they not been injured. Given the very long exclusion periods that apply to many common law recipients, it is likely that any social security benefits they receive will be far into the future, and of little value when discounted.

Decisions by appeal courts

In *Wynn v NSW Insurance Ministerial Corporation*, a suit by an executive, the trial judge made a 5% deduction for contingencies, the NSW Court of Appeal 28%, and the High Court 12.5% (1995 184 CLR 485). In *Gessey v Morrison* the NSW Court of Appeal accepted a 5% deduction as within the judge's discretion, though expressing concern that it was low (1995 23 MVR 103). But in *Commercial Union Assurance Co of Australia Ltd v Pelosi*, the NSW Court of Appeal considered 5% instead of the usual 15% inappropriate, even though reduction had already been made for time out of workforce, because of allowance for additional spousal support (2/2/96, unreported, BC9600077). Although there is general agreement that the risks affecting particular plaintiffs have to be considered, these and other decisions cited by Luntz in *Assessment of damages for personal injury and death* (Butterworths, fourth edition, forthcoming) show no consistent pattern.

Comparisons with estimates by Luntz

In the new edition of his book, Luntz concludes

...a reasonable allowance in the average case of a person in regular employment for contingencies other than death causing loss of income, after taking into account sick leave, social security and other benefits appears to be less than 5.5%, being at most 0.4% for sickness, injury and unpaid holidays; at most 0.1% for industrial disputes; and at most 4% for unemployment.

In Table 2 we have estimated deductions ranging from 2% to 10% for males, and from 2% to 7% for females. Although unemployment rates are relatively stable with age, disability and TPD claim rates increase with age. Unemployment, disability and TPD rates all vary strongly between occupations. Our estimates in Table 2 are higher than Luntz's 5.5% for some manual occupations, particularly at older ages.

Table 6: Deductions for vicissitudes made by Australian courts

Discussions with personal injury lawyers in each jurisdiction suggest the following:		
Area	allowance for mortality in 41 pw multipliers	Deduction for vicissitudes
NSW	No	15%
Victoria	Yes	15%
Queensland	No	15%-25%
SA	Yes	15%-30%
WA	No	2%-6%
Tasmania	No	10%-15%
NT	Yes	15%
ACT	No	15%

Comments

Our estimates are intended as general guides, to be modified taking into account individual circumstances. For example, a plumber on \$50,000 a year has above-average earnings for a tradesperson, and future social security payments if unemployed or sick would be a lower than average percentage of earnings. The plumber might however be entitled to building industry retrenchment and salary continuance benefits, making a lower deduction for vicissitudes appropriate.

The suggested deductions in Tables 1 and 2 have been calculated assuming a discount rate of 5%. Slightly higher deductions are obtained with a discount rate of 3%, and slightly lower with a rate of 6% or 7%. Tables 1 and 2 assume earnings to age 65, and slightly lower deductions would apply to ages 55 or 60.

Acknowledgments

We are very grateful to Peter Barker, Peter Barr, Angela Bentley, Richard Faulks, Harold Luntz, Dylan McKimmie, Ron Meldrum, Andrew Morrison, Stephen Lieschke and Sukhwant Singh for their helpful comments. ■