

Cumpston Sarjeant

—— CONSULTING ACTUARIES ——

The Valuation of Economic Loss Claims: An Actuarial Perspective

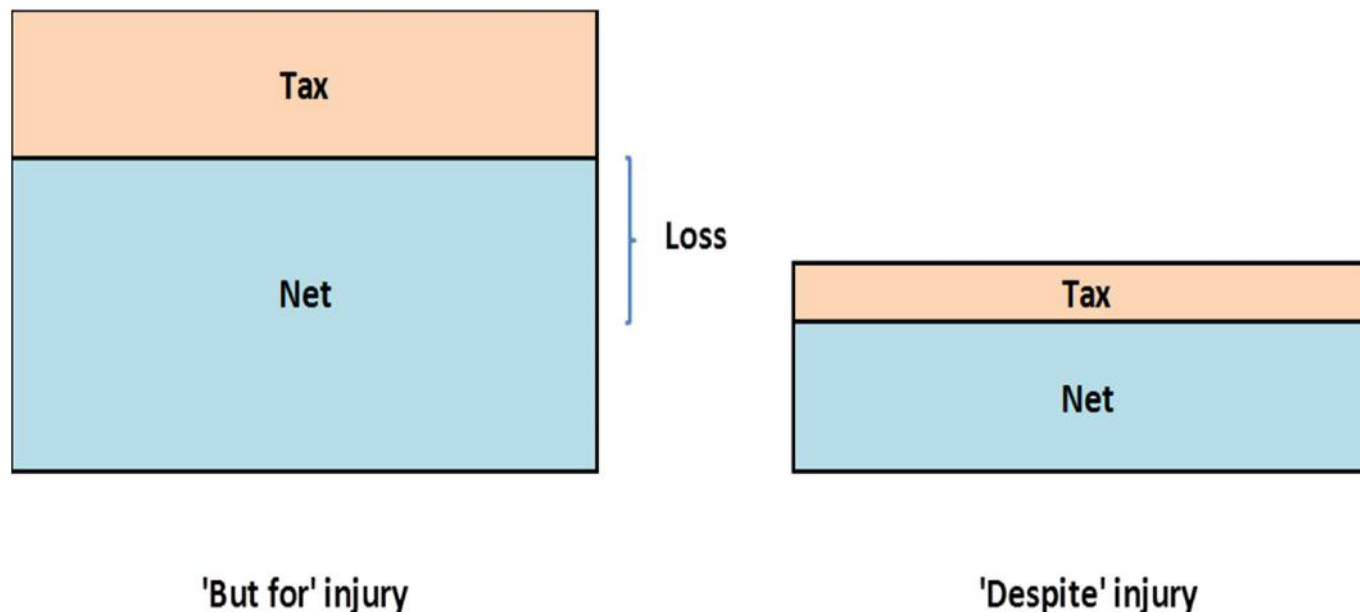
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Economic loss presentation overview

- Our role - What we do and what we don't do
- Acting as an expert witness; our expertise, our reports
- Principles of valuation and constraints within the legal environment
- Instructions vs Assumptions we make; hierarchy of data
- Earnings and superannuation, other benefits of employment
- Other areas where we're asked to provide reports

Our role and reports

- Estimation of economic loss. Primarily earnings and superannuation, both past (from date of injury to date of trial/mediation) and future (from date of trial/mediation until retirement age)
- Losses calculated as: After tax earnings and superannuation (but for the injury) *less* after tax earnings and superannuation (despite the injury)



Expert witness role

- Acting as an expert witness
- Meet definition of expert via training, education, qualifications, experience
- Take obligations very seriously
- Paramount duty to the Court, not acting as advocate
- Obligation to narrow the issues in dispute
- Obligation to ensure costs are reasonable and proportionate
- No matters of significance regarded as relevant withheld from Court
- Acting under instructions
- “Bit players” in the process?
- “Sophisticated calculators” (how much “opinion” evidence?)

Actuarial approach

- As actuaries, we believe that factors which distinguish us from other valuation professionals are:
 - Expertise in the 'time value of money'
 - Expertise in probability, statistics
 - Ability to allow for uncertainty (mortality is a specific example)
- If we were given free rein, and were asked to estimate losses of earnings and superannuation, we would apply financial and actuarial principles, and would probably come up with a range or distribution of possible outcomes.
- Range of specific assumptions such as inflation, investment earnings, taxation, superannuation etc.
- However, there are factors within the legal environment that constrain our calculation methodology and assumptions.

Legal constraints – worker's compensation

- Serious Injury requirement (reflecting >30% impairment or narrative test)
- 6%pa discount rate (see later slides)
- “Blanket” deductions for vicissitudes (see later slides)
- Caps and thresholds
- Precedent (particularly in the area of superannuation - see later slides)
- Little consideration of investment returns on past losses

Multipliers

- Multipliers are the mechanism whereby a stream of future cash flows are converted into a present value at the date of calculation (trial, mediation).
- They are designed to allow for (i) inflation, (ii) investment returns and (iii) taxation on investment earnings.
- Accordingly the resultant present value amount could be invested, the ongoing investment income taxed, with withdrawals of inflated future cash flows for the required period.
- They are usually applied to current value cash flows (multiplier includes inflation)
- For reports of Loss of Earnings and Superannuation for Workers' Compensation, we are required to apply a statutory discount rate of 6%pa.
- Where there is no statutory discount rate we are typically asked to apply a 3%pa discount rate (*Todorovic v Waller*).

Discount rates

- Looking at the High Court decision in *Todorovic v Waller*, we can derive the reasoning of the court. Remembering that the multipliers and the adopted discount rate are meant to allow for inflation and after-tax investment income.

Replication of <i>Todorovic v Waller</i>	1981	2018
Long term government bond rate	13.0%	2.8%
plus bond premium	3.0%	1.0%
Long term "market" bond rate	16.0%	3.8%
less allowance for taxation	23.0%	24.0%
After-tax investment rate	12.3%	2.9%
less long-term inflation rate	-10.0%	-2.2%
Net, after tax investment rate	2.3%	0.7%

- So using the same reasoning as *Todorovic v Waller*, an appropriate discount rate reflecting long term economic parameters as at November 2018 is in the order of 1%.
- Even if we consider current economic parameters to be somewhat unusual, we might deem it appropriate to adopt say 2%pa.
- Yet the discount rate that applies to workers' compensation in Victoria is 6%pa

Discount rates

- For a 35 year term (1,826 weeks), the weekly multiplier is
 - 1,541 @ 1%pa
 - 1,313 @ 2%pa
 - 1,130 @ 3%pa
 - 763 @ 6%pa
- For a 32 year old earning \$1,000 after tax per week, and an assumed retirement age of 67 the loss of earnings is
 - \$1.5m @ 1%pa, \$1.3m @ 2%pa, \$1.3m @ 3%pa, \$763k @ 6%pa
- Put another way, if you give this 32 year old \$763k which they invest in a bank, the withdrawals of \$1,000 pw (inflated) the money will run out before they are 50.
- A tension arises. The requirement to use a statutory discount rate appears to be incompatible with attempts to indemnify a plaintiff for loss of earnings as a result of injury.

Assumptions regarding earnings

- In order to establish losses, we need to compare past and future salary had the plaintiff not been injured, with their actual past and prospective salary.
- Consistent with our duties, we are very careful to “stick in our lane”. It’s not usually within our expertise to know future salary outcomes. Typically we are asked to make assumptions in the letter of instruction. Consistent with our duty to consider relevant matters, we may comment on these assumptions (i.e. they appear reasonable or otherwise).
- We are very careful in distinguishing between what we have assumed (and its basis) vs what we have been asked to assume.

Hierarchy of data

We realise there are legal issues with respect to data (but happy to leave those to you)

- Tax returns
- Statement of Earnings (PAYG)
- Payslips
- Relevant Awards
- Letter or contract of employment
- Business or partnership tax returns and financial statements
- Superannuation statements (and potentially trust deeds)
- Bank statements?

Despite injury earnings

- “Simplest” where there is no retained work capacity. In such a case there is no despite injury earnings or superannuation.
- Past despite injury amounts typically from tax returns.
- Usually relying on assumptions that are put to us, particularly if no capacity.
- For those employees with some residual capacity, often useful to consider different scenarios e.g. 30% capacity, 50% capacity. This seems inherently sensible, and consistent with our Actuarial Code of Professional Conduct where we must consider uncertainty.
- Retirement age is important where there is some residual capacity.

But-for injury earnings

- Where we have a good history of past information (say tax returns for several years prior to injury), reflecting reasonable past increases, then it's relatively straightforward to establish the level of pre-injury salary and earnings.
- Indexation of pre-injury earnings to date of calculation (AWE?, Award increases).
- While there is a prohibition on including general wage increases, we are sometimes asked to allow for promotional increases. Makes inherent sense particularly for young people that are in structured employment e.g. military, teachers, nurses, and/or employed under an award (where we can see classifications).
- Increasingly we're asked to estimate economic loss in cases where injury occurred many years earlier (particularly sexual abuse cases). There is often scant detail of actual earnings. While we act under instructions, this is an area where it makes sense to perform different scenarios of but for injury earnings (e.g. AWE, 80% of AWE). Often also have to make similar assumptions and scenarios for the despite injury earnings (e.g. 50% of AWE).

But-for injury earnings

- What if no earnings history? For example an injured child. May receive instructions to assume Average Weekly Earnings. Alternatively, have received instructions such as: Both parents have postgraduate degrees and high earning professionals, older sibling had excellent school results and now enrolled at university, so higher income expected.
- Retirement ages also subject to uncertainty, and scenarios help (different to despite injury?).
- Comparable employees.
- Business or partnership earnings add a level of complication, although provided we have tax returns and financial statements, can usually trace through the earnings.
- Realise that often business earnings are structured with tax benefits in mind, and many of the profits may be retained in the business (realisation of value upon sale?). There may also be economic benefits not available to employees.
- Concept of value of replacement employees i.e. the business must now employ one or more people to replace the injured party.

Superannuation

- Superannuation is an important employee benefit, and an area of particular expertise for actuaries.
- For most employees, superannuation on a defined contribution basis under Superannuation Guarantee Legislation. Currently 9.5% of superable salary; legislated to increase to 12% from 2025/26.
- We allow for the legislated increases. We don't make any adjustment for discontinuities in wage increases at the time of SG increases (relatively low materiality in context of other uncertainties).
- While most employees' contributions taxed at 15%, lower income levels have 0% contributions tax, with higher earners' contributions taxed at 30%.
- Fees typically low (\$1.50 per week). We do not make separate allowance for insurance within superannuation (whole of life insurance, disability insurance, income protection).
- Some employees receive contributions higher than SG as part of their award.
- Inherent in superannuation is the trade off between concessional taxation treatment vs delayed access (i.e. satisfaction of a condition of release).

Superannuation

- Variations to “normal” superannuation arrangements. Employees may choose to salary sacrifice whereby they choose to make additional contributions above SG into a superannuation fund. There is the advantage that these amounts will be taxed concessionally, and may even be eligible for matching Commonwealth government co-contributions.
- We often see evidence for business cases where the worker has made the maximum concessional contributions in past years. Would seem sensible that this would have continued, notwithstanding the concessional caps have reduced over time.
- In contrast, self-employed people are responsible for their own superannuation, but if they haven’t made contributions in the past, we would assume they wouldn’t make such contributions in future.
- Defined benefit schemes (government, universities, older schemes) are typically more generous than defined contribution schemes. Such schemes can present particular issues for valuation, particularly within the context of 6%pa discount rates. In addition, many defined contribution schemes include disability benefits whereby an employee receives credit for future service – in these cases there may be no superannuation loss.

Superannuation valuation

- No strict method accepted in Victorian jurisdictions, whereas other states and territories have legislated or “accepted” methods.
- In workers’ compensation we usually adopt the *Cremona* method. From an actuarial and financial point of view it has some shortcomings, but I consider it the “best of a bad bunch”.
- The *Cremona* method effectively “mirrors” a superannuation account, allowing for tax on contributions, fund expenses and investment returns. It then discounts the balance at retirement using the statutory discount rate.
- Some jurisdictions require a percentage method, where the relevant SG percentage is applied, but there is no specific allowance for tax on contributions.

Weekly benefits

- Weekly income replacement benefits paid from an accident compensation scheme are not considered as earnings post injury.
- We are usually asked to make a calculation of the tax effect on such payments in accordance with *Fox v Woods*. Principle is that upon a Common Law settlement for economic loss, the plaintiff will effectively repay the statutory weekly benefits. The plaintiff must pay back the gross-of-tax amount, whereas they have only received the net-of-tax amount.
- For Victorian workers' compensation, we now also make similar calculations for superannuation contributions (payable after twelve months of weekly benefits).
- We think it is logical to allow for other income first, then to allow for statutory benefits. Accordingly we effectively apply marginal rates (and Medicare levy) to the payments, rather than an average rate of taxation. For superannuation contributions, usually a flat 15%.
- While we realise these issues may be wrapped up in a single settlement figure, we've never had clear guidance on exactly how Worksafe calculates these tax amounts.

Other benefits

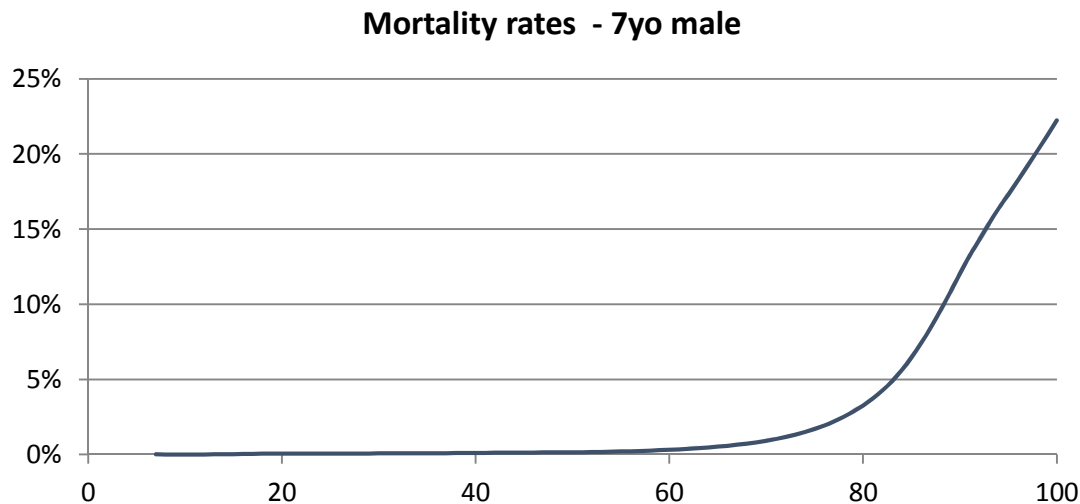
- Incolink and Coinvest within building industry.
- Car and phone benefits from employers.
- Fringe benefits. Particularly relevant for employers that are not tax paying entities e.g hospitals, charities, universities. While the benefits don't have the same tax advantage they once did, there is still a limited tax advantage for such employers.
- For a tax paying employer, fringe benefits to employees attract fringe benefits tax (FBT; paid by employer). Non-tax paying entities are able to provide fringe benefits with no applicable tax; accordingly the employee receives the benefit "tax free".
- Bonuses, incentives, profit share arrangements.

Long Service Leave

- Long Service Leave (LSL) is an entitlement of employment whereby additional leave is granted after an employee has been employed for more than a specified period.
- Employees either take the leave in service, or are paid out remaining entitlements on resignation or retirement.
- In Victoria typically get 13 weeks leave for 15 years service (i.e. 0.867 weeks per year). Employees are entitled to a pro-rata amount after 7 years, and can take leave in service after 10 years (recently or soon to become 7 years). If an employee leaves prior to seven years' service they have zero entitlement.
- Suppose an employee has been with an employer for 6 years prior to becoming injured. As a result of the injury he or she can no longer work. Had they not been injured they would have continued with the same employer and if they'd worked for another year would become entitled to 6 weeks additional leave. Is this a source of economic loss?
- We've never been asked to calculate such a loss? Legal prohibition?
- If we were asked to value LSL, I think we would only consider an amount assumed to be saved until resignation or retirement. For leave taken in service, as with annual leave, we wouldn't make any separate calculation.

Vicissitudes

- Unless we are requested we don't make deductions for vicissitudes.
- We're aware that often 15% of future amounts are deducted for vicissitudes.
- While we realise that such deductions should reflect individual circumstances, our actuarial view is that in most cases it's difficult to justify such a large deduction.
- We don't allow for mortality in our multipliers.



Vicissitudes

- Previously we produced a publication attempting to estimate vicissitudes by broad employment category for females and males.
- These used publicly available statistics for mortality, disability, and unemployment.
- The publication is probably a bit out of date, so we don't include extracts in our standard reports anymore.

Occupation	Age 25	Age 35	Age 45	Age 55
Males				
Managers & administrators	5%	5%	6%	7%

Statutory benefits

- (Very) occasionally we are asked to make a comparison of the value of statutory benefits.
- Realise this depends on ongoing meeting of impairment and medical requirements, rather than a 'once and for all' settlement.
- A valid comparison of statutory vs common law benefits is significantly more complicated than first thought. Also need to consider government benefits such as disability pension. Plaintiffs that receive a Common Law settlement have a 'preclusion period' where they are not entitled to disability benefits.

Other reports

- Dependency losses. Typically in wrongful death cases.
- Relies upon average household expenditure as reflected in the ABS Household Expenditure Survey.
- Expenditure divided into personal vs household. Relevant percentages depend on household income level, family size. The percentages of non-personal expenditure are then applied to the deceased's income and superannuation to estimate the loss.
- Can also have specific loss of services e.g. gardening, home maintenance, cleaning.
- Gratuitous care valuation: Hours x Average weekly earnings x multiplier@5%pa.



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