

Unpacking the Personal Injury Discount Rate for International Travel

Valuing a US birth-injury case in the UK and US

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The session question

A US economist is asked to value a UK case, or to put a US-resident claimant's UK award on US footing. How do the two methods differ, and where does a US economist help? At the bird's-eye view:

- The **UK** method is the **Ogden Tables**: one multiplier \times one annual figure, at a single statutory real rate.
- The **US** method has no single instrument. The courts admit everything from a flat-earnings rule to a full year-by-year build. (We use JWE as the case example; other approaches exist.)

Today: run one case through both, and show what a US economist would re-pack to move Ogden onto US footing.

Two methods, one common axis

- **Ogden is deliberately compact:** $PV = \text{multiplicand} \times \text{multiplier}$, with mortality and the discount rate (the **PIDR**) pre-packed into one published number.
- **JWE is deliberately elaborate:** value each year on its own, $\text{profile} \times \text{growth} \times \text{survival} \times \text{Markov work-life} \times \text{discount}$, + benefits.
- The contrast conceals an *equivalence*: Ogden arrives with a net rate baked in; JWE never names a rate but **implies** one.
- Both are **capitalization systems**. Back the JWE rate out and the two sit on a common axis: a single rate beside the PIDR.

Example: Jane Plaintiff

- Female, **born and injured at birth**; valued at age **1.40**.
- Catastrophic injury: **no residual earning capacity**; **\$22,000/yr** lifetime life-care plan.
- Life expectancy: **80.5 more years**, to age 81.5.
- Two “but-for” scenarios: **high school** and **college**.

Why an infant

Earnings history increases the degrees of freedom.

The US (JWE) method: a column at a time

Value **each year** from labor-market entry to SSA retirement age 67, then sum:

$$PV = \sum_{\text{age}} [\text{profile} \times \text{growth} \times \text{survival} \times \text{work-life} \times \text{discount}] + \text{fringe}$$

- **Profile:** a Missouri age-earnings quadratic. **Growth:** a two-regime real index (ECI, then Moody's).
- **Survival** \times **work-life:** conditional survival, then a Markov active-share for disability and unemployment. **Discount:** the real TIPS curve. **Fringe:** 14.45%.

Medical: each life-care item priced to the plan, the lower of annuity-certain and mortality-weighted (here the **life annuity**, the like-for-like Table 2 comparator).

The US (JWE) result

	High school	College
Lost earning capacity	\$752,161	\$1,184,432
Future medical / life care	\$914,808	\$914,808
Total	\$1,666,969	\$2,099,240

These four numbers are the benchmark. Now the Ogden calculation for the *same* claimant.

The UK (Ogden) method: multiplier \times multiplicand

- One **multiplier** capitalizes a £1/yr loss: it folds in **accelerated receipt + mortality** at a single statutory real rate, the **PIDR**.
- **UK PIDR** = +0.5%: a single real rate UK-wide since the 2024/25 reviews (it was -0.25% in England & Wales until 11 Jan 2025).
- Earnings multipliers get a **Section B** reduction factor for contingencies other than mortality.
- The annual loss (the **multiplicand**) is supplied separately, **net of tax** (the *Gourley* rule).

Ogden for a claimant who has not started work

Ogden's earnings tables start at age 16. Explanatory-Note **para 38** for a child:

$$\text{multiplier} = \underbrace{T_{12}(\text{work-start})}_{\text{earnings to 68}} \times \underbrace{T_{35}(\text{deferment})}_{\text{trial} \rightarrow \text{work-start}} \times \underbrace{\text{Table C}}_{\text{contingencies}}$$

- **Table 12** (female, to pension 68) at the assumed work-start age. The earnings tables run only at retirement ages 50/55/60/65/68/70/75/80, so 68 is the nearest grid point to US NRA 67 (a production calc would interpolate 65 ↔ 68).
- **Table 35** deferment factor, trial → work-start. At +0.5% it is < 1 (under the former negative rate it exceeded 1).
- **Table C** reduction factor: **0.81** (HS / Level 2), **0.88** (college / Level 3).

Reading Table 12: interpolation to the work-start age

Jane starts work at a **fractional age**, but Table 12 is published only at whole ages. Section A of the 8th edition sanctions **linear interpolation** between the integer-age rows, so the work-start multiplier is read *between* two published anchors:

- **High school:** work-start age 18.49: between $T_{12}(18) = 43.60$ and $T_{12}(19) = 42.81 \Rightarrow$ **43.21**.
- **College:** work-start age 23.50: between $T_{12}(23) = 39.63$ and $T_{12}(24) = 38.83 \Rightarrow$ **39.23**.

The **T12** column on the next slide is interpolated.

Reading Table 35: deferment back to the trial date

Table 35 discounts the earnings multiplier back from the work-start age to trial: a **term-certain deferment factor**, $1/(1+i)^n$ at the +0.5% PIDR. The term n (trial \rightarrow work-start) is fractional too, so it is interpolated between integer terms, exactly as Table 12 is across ages:

- **High school**: term 17.09 yr: between 0.9187 (17 yr) and 0.9141 (18 yr) \Rightarrow **0.9183**.
- **College**: term 22.09 yr: between 0.8961 (22 yr) and 0.8916 (23 yr) \Rightarrow **0.8957**.

At a positive rate the factor is < 1 (a future loss is worth less today); under the former negative PIDR it **exceeded 1**.

Reading Table C: a discrete band read

Table C is the Section B reduction for **contingencies other than mortality**: unemployment, illness, caring interruptions. It nets out *only* those contingencies; mortality is already inside Table 12.

Table C is a **discrete read** from a grid of *employment status* \times *education level* \times *age band*. Jane is taken as **female, not disabled** (her pre-injury state) and **would-be employed**, read at her work-start age band:

- **High school**: Level 2 (GCSE / A-level), band 16–19 \Rightarrow **0.81**.
- **College**: Level 3 (degree), band 20–24 \Rightarrow **0.88**.

{The Level 3 factor is blank in the 16–19 band: Ogden publishes no degree factor before 20–24 (one cannot yet hold a degree. Explanatory Note para 80).}

Ogden lost earnings: +0.5% PIDR on US-\$ multiplicands

Scenario	T12	x T35	x Table C	= Mult.	x Multiplicand	= Ogden PV
High school	43.21	0.9183	0.81	32.14	\$48,763	\$1,567,203
College	39.23	0.8957	0.88	30.92	\$83,085	\$2,569,271

Lifetime life-care: **Table 2** (whole-of-life, female, age 1.4) = $71.9 \times \$22,000/\text{yr} =$
\$1,581,861.

{Earnings multiplicands = career-average JWE today-\$ profile + 14.45% benefit load, so both systems value total compensation.}

The gap

Component	JWE PV	Ogden PV (UK)	Gap	Ogden / JWE
Earnings — HS	\$752,161	\$1,567,203	\$815,043	2.08 x
Earnings — College	\$1,184,432	\$2,569,271	\$1,384,839	2.17 x
Life care / medical	\$914,808	\$1,581,861	\$667,053	1.73 x

Ogden is $\sim 1.7\text{--}2.2\times$ the JWE figure on every component. This is **not a modelling error in either system**: it is the **capitalization layer** (the discount rate together with the real wage growth the PIDR omits) compounded over a child's horizon. Across ~ 80 years even a couple of points of rate becomes a *multiplicative* gap.

So: what single rate does the JWE method imply?

The bridge: JWE's *all-in capitalization rate*

Treat the JWE **today-dollar earning-capacity** stream as given (the current-dollar profile, *before* wage growth and decrements):

$$\sum_t \frac{\text{earning capacity}_t \text{ (today \$)}}{(1+r)^t} = \text{JWE reported PV} \Rightarrow r = ?$$

Scenario	JWE PV	JWE all-in rate	Ogden PIDR (UK)	Spread
High school	\$657,206	2.89%	0.50%	2.39%
College	\$1,034,906	2.63%	0.50%	2.13%

Even UK courts freed from the statutory rate (Helmut, Bermuda) adopt a separate, lower earnings rate: the same correction, by lowering the rate rather than growing the multiplicand.

Same multiplicand, different multiplier

Component	Multiplicand	Ogden (+0.5%)	JWE-implied
Earnings — HS	\$48,763	32.1	15.4
Earnings — College	\$83,085	30.9	14.3
Life care / medical	\$22,000	71.9	41.6

Hold the multiplicand fixed. Now total compensation on both sides (the 14.45% benefit load rides on each). The **multiplier** is where the systems part company, and almost all of that difference is the capitalization layer (rate + omitted wage growth).

Adjusting Ogden for US data: what a US economist re-packs

A US-resident claimant on US footing means replacing every layer of the published multiplier:

Layer	UK (Ogden)	US (re-pack)
Discount rate	PIDR +0.5%	net rate \approx 2.6–2.9%
Mortality	ONS 2018	SSA / CDC
Inflation	inside the PIDR	medical-CPI by item
Work-life	Section B (A–D)	Markov work-life
Retirement	grid 65/68/70	continuous, NRA 67
Tax	net of tax (<i>Gourley</i>)	gross, IRC §104(a)(2)

The punchline

- You **cannot** re-price the *published* Ogden multipliers for the US. Table 2 and Table 12 fuse **UK mortality** + **the UK rate** into a single number.
- Rebuilding them on US terms
 - ▶ **US life table, US net rate, US Markov work-life, gross (untaxed) earnings, un-bundled medical-CPI**
 - ▶ *is the JWE year-by-year engine.*
- The **all-in capitalization rate** is the one number that would have to replace +0.5%.

Ogden is compact. JWE is not different in principle, it is the same economics, disaggregated.

Takeaways

1. Same claimant, two methods: **\$1,666,969–\$2,099,240** (JWE) vs **\$3,149,064–\$4,151,132** (Ogden UK).
2. The gap is the **capitalization layer** (discount rate + omitted real wage growth), not a flaw in either method.
3. The **all-in capitalization rate** ($\sim 2.89\%$ here) is the bridge — broader than the PIDR, which carries only real interest.
4. For a cross-border case, a US economist re-packs Ogden with US mortality, US rate, US work-life, and **gross, untaxed** earnings — which rebuilds the year-by-year engine.

Sources

- Government Actuary's Department, *Ogden Tables, 8th Edition* (rev. 8 Aug 2022) — Tables 2, 12, 35; Section B Table C; Explanatory Notes para 38, Example 2 (interpolating retirement age 67 between Tables 10 and 12).
- *Damages Act 1996; Civil Liability Act 2018*; Damages (Investment Returns) orders, E&W / Scotland / N. Ireland — PIDR set to +0.5% **UK-wide** (E&W eff. 11 Jan 2025; Scotland & N. Ireland eff. 27 Sep 2024).