INDIRECT ECONOMIC DAMAGES

In personal injury and employment

Edward Foster
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SOURCE OF IED

- In addition to direct economic damages from a tort there is an indirect economic damage (IED): Distortion in the distribution of spending over time.
  - After the plaintiff realizes loss but before learning how much compensation she will receive, she reduces spending.
  - If no compensation, she then reduces spending further.
  - If she gets compensation, she increases spending again.

SOURCE OF IED

- Even if later fully compensated, the temporary dip in spending means a loss in utility – the IED
  - For a given level of wealth, she would prefer smooth consumption.
  - The tortious act is responsible for the loss because it created the uncertainty and plaintiff's mitigating adjustment in spending.
  - Indirect damages are not treated as part of economic loss by FEs.
- NB: If not compensated, the fact that spending was not decreased sufficiently during interim also causes an IED that magnifies the economic damages.

SO WHAT?

- Testimony would probably not be admissible.
- If IED were significant, it would be worth trying to change the law.
- My question: Are these damages large enough to care about?
- Preliminary conclusion: Only in extreme cases.
- Rest of talk gives
  - Sketch of model I use to approach the question;
  - Measure I use for IED;
  - Summary of preliminary results.

ECONOMIC MODEL

- Plaintiff expects income of 1 in each of *n* periods, with death at end of period n.
- Buys a single consumption good each period.
- May borrow or save; bankruptcy not allowed.
- No bequests, no uncertainty about date of death.
- For illustrative calculations, interest rate and subjective rate of time preference = 0.

ECONOMIC MODEL

- Without tort, chooses $c_1, c_2, \cdots, c_n$

  To maximize $\sum_1^n u(c_t) = \sum_1^n \ln(c_t)_n$

  Subject to an income constraint $\sum_1 c_t = n$

  (Note on using natural log for utility function).

  Solution is $c_1 = c_2 = \cdots = c_n = 1$

- Tort at beginning of period 1 causes loss of income in amount *L*.
- I assume she will learn at beginning of period 2 whether she will get full recovery or zero recovery.
- Must choose c_1 in face of uncertainty.

ECONOMIC MODEL

- To extend model to encompass uncertainty, assume that alternative states of the world s_i may exist, with known probability π_i, (normally with prices, utility functions and other features of the economy being *state dependent)*.
- For our purposes there is one state of the world in period 1 (that where the tort is known to occur).
- There are two states in period 2 and later.
- In state s_1 plaintiff is fully compensated and in s_2 she is not compensated at all.
- Assume that the plaintiff maximizes expected utility, with the utility function independent of the state of the world.
- I simplify by assuming that the π_i are exogenous (though in fact they may be influenced at a cost) and each = 0.5.

ECONOMIC MODEL

- This leads to the problem: Maximize with respect to consumption in each period and each state of the world

$$E\left(U\left(c_1,\ldots,c_n\right)\right)=\ln\left(c_1\right)+0.5\left(\sum_{2}^{n}\ln\left(c_{t1}\right)+\sum_{2}^{n}\ln\left(c_{t2}\right)\right)$$

Subject to two income constraints, one for each state of the world:

$$c_1+\sum_{2}^{n}c_{t1}=n;\ c_1+\sum_{2}^{n}c_{t2}=n-L$$

(Note on absence of markets between alternative states of the world)

MEASURE OF IED

1. Calculate U(win), *ex post* utility if state 1 occurs (the plaintiff wins the case)
2. Calculate E, the equivalent certain loss of income:
   a. Set $\hat{c}_1 = \hat{c}_2 = \cdots = \hat{c}_n = (n - E)/n$

      This maximizes utility when total lifetime income is known to be (n - E).

   b. Calculate $\sum_{1}^{n} \ln(\hat{c}_t) = U(E)$

   c. Adjust E so that $U(E) = U(\text{Win})$

      This calculates the *certain* loss E equivalent to IED in its impact on utility.
3. Calculate E/L to measure the importance of the IED.

RESULTS

n	L	E	E/L	c_1	c_{21}	c_{22}
2	1	0.159	15.9%	0.61	1.39	0.39
3	1	0.038	3.8%	0.78	1.11	0.61
4	1	0.016	1.6%	0.85	1.05	0.72
5	1	0.009	0.9%	0.89	1.03	0.78
10	1	0.002	0.2%	0.95	1.01	0.89
20	1	0.0004	0.0%	0.97	1.001	0.95
2	0.5	0.026	5.1%	0.84	1.16	0.66
3	1.5	0.117	7.8%	0.63	1.18	0.43
3	2	0.295	14.8%	0.45	1.27	0.27
10	5	0.082	1.6%	0.66	1.04	0.48
10	6.67	0.218	3.3%	0.49	1.06	0.32