

Optimal Demand for Insurance

→ Given Info

- > Initial wealth level: w (or w_0)
- > Probability of loss: π
- > Amount of Loss: L
- > Premium rate offered by insurance company: p
- > Consumer has a utility function $u(Y)$ which is concave

→ Approach 1: Using Calculus, we derive the first-order condition for maximizing

$$Eu(c) = (1-\pi)u(W-pC) + \pi u(W-L+(1-p)C)$$

> First-Order Condition:

$$\pi(1-p)u'(W-L+(1-p)C) = p(1-\pi)u'(W-pC)$$

Rearrange:

$$\frac{(1-p)}{p} = \frac{(1-\pi)u'(W-pC)}{\pi u'(W-L+(1-p)C)}$$

Magnitude of the slope of the contracts line

Magnitude of slope of the indifference curve at the optimal level of C (C^*)

