1 Cole's Problem August 2014

Consider the following two period insurance problem. Assume that there is a risk-neutral principal with deep pockets who cares only about the discounted expected value of any transfers τ_t he recieves. Assume that there is a risk averse agent who is subject to stochastic income shocks. Assume that these income draws $y \in Y$ are i.i.d. over time with p.d.f. $f(y)$. Assume that the principal's payoff is given by

$$E\left\{\sum_{t=0,1} \beta^t \tau_t\right\},$$

while that of the agent is given by

$$E\left\{\sum_{t=0,1} \beta^t u(y_t - \tau_t)\right\}.$$

Note that both the principal and the agent discount at the same rate.

A) Define a contract and construct he contracting problem that delivers efficient risk-sharing. In so doing, assume that all of the rents accrue to the agent, so the principal just breaks even.

B) Try and characterize the efficient contract, and describe it's important characteristics.

C) Now assume that the principal has the option of paying a fixed cost γ to learn what the agent's second period income realization was. How would this change the definition of the contract and the contracting problem.

D) Would the principal end up using some sort of cut-off to determine when to monitor? If so, why? If not, why?

E) Can you say anything about how this will change the efficient insurance arrangement?