



Semester 1/2011

EE 311 Microeconomic Theory

Exercise 5: Consumption under uncertainty (Dr. Sirilaksana)

1. Suppose that Noi's utility function is given by $u(I) = I^{0.5}$, where I represents annual income in thousands of Baht.
 - (a) Is Noi risk loving, risk neutral, or risk averse? Explain.
 - (b) Suppose that Noi is currently earning an income of ten thousand Baht ($I = 10$) and can earn that income next year with certainty. She is offered a chance to take a new job that offers a 0.5 probability of earning ฿16,000 and a 0.5 probability of earning ฿5000. Would she take the new job?
 - (c) In (b), would Noi be willing to buy insurance to protect against the variable income associated with the new job? If so, how much would she be willing to pay for that insurance?
 2. Suppose that drivers are fined if they are caught speeding on the highway from Bangkok to Pattaya. However, the number of accidents remains high and the government is considering two alternative actions: (1) raising the size of the fine by one percent, or (2) increasing the number of police patrol cars on the highway, so that the probability of catching speeders is increased by one percent.
 - (a) Illustrate the initial situation where Y_0 is the driver's income and F_0 is the initial fine, and indicate the expected income.
 - (b) What is the expected value of income after the fine or the probability of being caught have been increased?
 - (c) After the fine is increased, what is the income loss if caught?
 - (d) Suppose that you have researched the effects of the two alternative actions and you conclude that raising the fine by one per cent has a smaller effect than increasing the probability of being caught by one percent. What do your research findings indicate regarding the utility function of speeders?
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