

Microeconomics

Fall 2011

Class #7: Consumer Theory: comparative statics, consumer surplus and substitution-income effects decomposition.

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Classes: 40, 41

Question 1

Consider a consumer who has 200€ of income to spend in good 1 and good 2. His preferences are well described by the following utility function: $U(x_1, x_2) = \ln(x_1) + x_2$.

- a) Formalize the problem of this consumer and determine his demand functions.
- b) Suppose that $p_1 = 4€$ and $p_2 = 1€$. What is the optimal choice of x_1 and x_2 for this consumer?
- c) Now suppose that the price of good 1 increases to $p'_1 = 5$. Determine the new choice.
- d) Decompose the change in consumption of both goods into substitution and income effects à la Hicks. Justify your answer and illustrate graphically.
- e) Compute the variation of consumer surplus.
- f) Compute the lump-sum transfer (compensating variation) the consumer would need to reach its initial utility after the change in p_1 .
- g) Compute how much more money the consumer would pay before the price increase to avert the price increase (equivalent variation).

Question 2

Peter has 480€ of income per month to spend in magazines (M) and food (F). His preferences are well described by the following utility function: $U(F, M) = F^{0.5}M^{0.5}$. In each month, if the price of magazines is 1€, Peter will buy 60 units of food.

- a) Suppose that the price of magazines doubles. What is the consumption bundle after the price increase?
- b) Decompose the change in consumption of magazines into substitution and income effects à la Hicks. Illustrate graphically.
- c) Is a magazine a normal good? Justify.