**NRU HSE-2020, Microeconomics Class-04**

# Consumer theory. Choice under uncertainty

**1.** Consider a consumer with linear demand function forcompact discs. If a price of compact discs is $25 each or higher, he buys no CD and he purchases CDs at any lower price. If the price falls to $10 each, he buys 30 CDs per year.

**(a)** How much would this consumer pay per year for the right to purchase CDs at $10 rather than face the $25 price? Provide algebraic solution and illustrate by graph.

**(b)** Suppose there is a special offer that allows this consumer to purchase CDs at $4 per CD but consumer should purchase a bundle that includes 50 CDs. Will this consumer choose the special offer or the regular $10 price if it is not possible to resell the CDs? Provide algebraic solution and illustrate by graph. Explain the result.

**2.** Mary expects her future earnings to be worth $100. If she falls seriously ill, however, Mary’s expected future earnings are only $49. She believes that the chance of falling ill is 1/3. Mary’s utility function is , where  stays for earnings. Suppose that an insurance company offers to insure Mary against loss of earnings caused by illness.

**(a)** What is the maximum premium (Xmax) that Mary would be willing to pay for full insurance?

**(b)** Consider a risk neutral insurance company and find the minimum premium (Xmin) that this company is willing to accept for full insurance.

**(c)** Provide graphical solution for (a) and (b) using wealth-utility diagram. Compare X max and X min and explain the result intuitively.

**(d)** Assume that insurance is not available but Mary can pool risks with Michael who faces an identical but independent risk that he could fall ill and his earnings fall from $100 to $49.

**(i)** Will Mary agree to pool risks with Michael?

**(ii)** Will Michael agree to pool risks with Mary if he is a risk-lover?