ECON 6090 - TA Section 2

Feiyu Wang & Yuxuan Ma

September 6, 2024

Exercises

WARP and Consumer Choice

1. (2004 Prelim 1) In year 0 , a consumer has wealth $w^0 = 1,000$, prices are $\left(p_x^0, p_y^0\right) = (10, 10)$ and the consumer chooses $\left(x^0, y^0\right) = (50, 50)$. In year 1 , the consumer has wealth $w^1 = 1,250$ and prices are $\left(p_x^1, p_y^1\right) = (15, 9)$. Suppose the consumer's demand satisfies HOD0 and Walras Law. For what range of choices of y_1 can you conclude that the consumer's choices are inconsistent with the weak axiom?

2. (2016 Prelim 1) A consumer makes choices of the amounts of three goods, $x = (x_1, x_2, x_3)$, to purchase at prices $p = (p_1, p_2, p_3)$, using wealth w. You observe the choices of good 1 and 2, all prices and wealth. You do not observe the quantity of good 3 that the consumer purchases. You do know that the consumer's demands satisfy homogeneity of degree 0 and Walras Law.

   (a) In observation a, prices are $p^a = (1, 1, 2)$, wealth is $w^a = 13$ and you observe $\left(x_1^a, x_2^a\right) = (2, 3)$. In observation b, prices are $p^b = (2, 1, 1)$, wealth is $w^b = 12$ and you observe $\left(x_1^b, x_2^b\right) = (1, 2)$. Are these choices consistent with WARP? Explain.

   (b) Now, you can no longer observe purchases of good 2. You only observe prices, wealth and purchases of good 1 . In observation a, prices are $p^a = (1, 1, 1)$, wealth is $w^a = 20$ and you observe $x_1^a = 10$. In observation b, prices are $p^b = (2, 1, 2)$, wealth is $w^b = 30$ and you observe $x_1^b = 5$. What restrictions on the purchases of goods 2 (in observation a and b) must be satisfied for the information you have to be consistent with WARP?