

Home Assignment

UEC-51806 Advanced Microeconomics, Part 1, Fall 2021

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Please read the paper by Hamilton, S. F. and Richards, T. J. 2019. Food Policy and Households Food Waste. *American Journal of Agricultural Economics*, 101 (2): 597–611.

Tasks:

1. Using their numerical model and the provided parameters, replicate their Figures 1–5.
2. Using equations (4) – (6) derive the comparative statics for $\frac{\partial X}{\partial \theta}$, $\frac{\partial \gamma}{\partial \theta}$, and $\frac{\partial Q}{\partial \theta}$. What does the sign of these derivatives depend on? Please explain.
3. Now assume the rate of food waste is exogenous (i.e., only take into account equations (4) and (6)) and is 50 percent. Calculate the Equivalent Variation (EV) and Compensating Variation (CV) corresponding to halving the rate of food waste rate to 25% (remember: γ is the utilization rate in this paper; the food waste rate is $1 - \gamma$). Assume income $I = 10$. Can you calculate the EV and CV given that the market prices do not change? Please explain.