Econ 342 - Global Economic History
College of William and Mary
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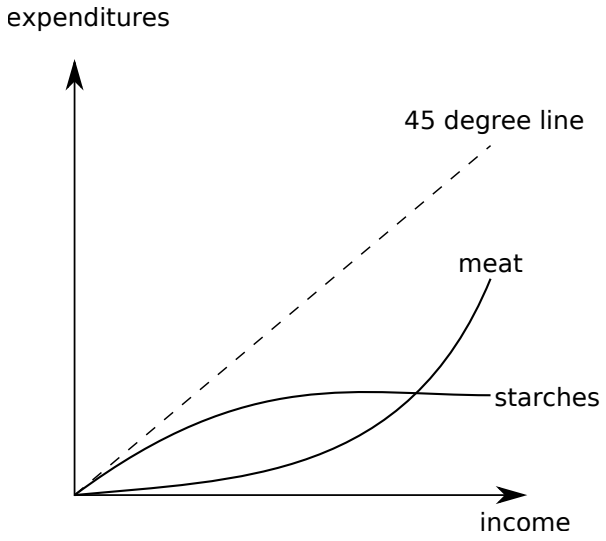
February 28, 2018

Midterm Exam

You have until 10:50am to complete the exam, be certain to use your time wisely. Answer all questions directly on the exam. You may use any printouts and notes that you brought with you. No electronic devices may be used during the exam. Answer questions completely but concisely. Including additional incorrect information in an otherwise correct answer may result in a loss of points. Remember to put your name on the exam. Good luck!

Name:

1. (25 points) The graph below, reproduced from the Clark reading, shows the Engel curves for meat and starches.



The horizontal axis measures real income. The vertical axis measures real expenditures.

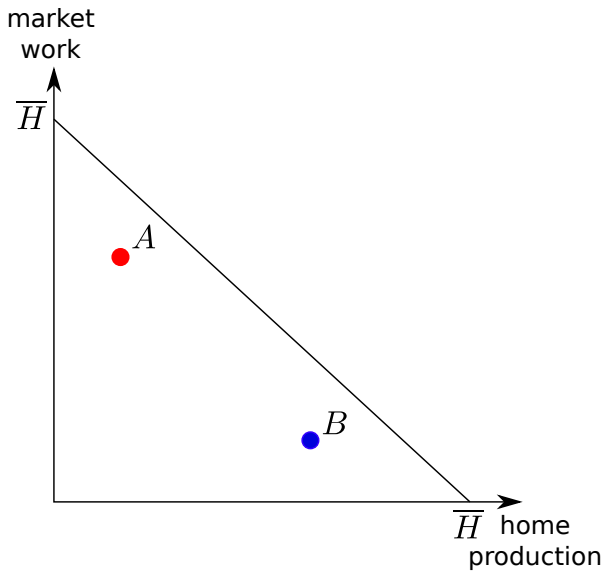
(a) Explain why total expenditures on starches may provide a useful proxy for income per capita in Malthusian economies but not in modern economies. Your answer should include explicit references to the graph above but can also bring in additional information from lecture or readings.

(b) Would stature be a better or worse proxy than caloric intake for income per capita in a Malthusian society? Be certain to fully explain your answer.

(c) Would stature be a better or worse proxy than caloric intake for income per capita in a modern economy? Be certain to fully explain your answer.

Page left blank to provide space to answer Question 1

2. (20 points) Below is a graph showing the possible combinations of time spent in market work and time spent in home production for an individual. The individual has a total of $\overline{H}$ hours available. Any combination of hours of market work and hours of home production on or below the line is feasible. Two specific combinations, A and B, are shown on the graph.



   (a) Suppose that both points A and B on the graph above correspond to preindustrial labor effort allocations in Britain, one for the typical male allocation and one for the typical female allocation. Given the work of De Vries and the evidence we have seen in class, explain which point is most likely to correspond to males and which point is most likely to correspond to females.

   (b) Explain why both points lie below the line connecting $(0, \overline{H})$ and $(\overline{H}, 0)$.

   (c) On the graph, draw two new points, one showing the time allocation of British males during the Industrial Revolution and one showing the time allocation of British females during the Industrial Revolution. Clearly label the points and provide a written explanation for their positions relative to the original points.

   (d) On the graph, draw another set of points showing the time allocation for males and females by the mid-20th century in Britain. Cleary label the points and provide a written explanation of their positions relative to the points from part (c).

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3. (35 points) When discussing the technology curve in our Malthusian model, we have assumed that natural resources are fixed. As a result, the marginal product of each additional laborer is lower than that of the previous laborer.

   (a) Do you consider this a reasonable assumption for the preindustrial world? Briefly explain your answer.

   (b) Explain why this assumption leads to a negative slope for the technology curve relating population to income per capita.

   (c) Suppose that the marginal product of labor was actually constant: each additional worker adds just as much output as the previous worker did. Explain how an improvement in technology would impact total output, income per capita, and population size in the short run and the long run. Assume that births and deaths still follow our standard Malthusian assumptions (birth rate increases and death rate decreases as income goes up). Use both graphs and a written explanation to justify your answer.

4. (20 points) Consider Mokyr's description of advances in medical technology during the Industrial Revolution. He notes that there were substantial advances in medical science and corresponding improvements in longevity from the mid-1850s to the early 1900s, something we also discussed in the context of the demographic transitions in Europe and the United States. However, he also notes that progress in medicine was minimal prior to 1850.

   (a) Mokyr states that "on the whole, medical progress was constrained by the narrow epistemic base of the medical profession, and especially the failure to understand the nature of infectious diseases including their etiologies and models of transmission." How is this situation for technological change in medicine similar to or different than the issues surrounding technological change during the Industrial Revolution in the sectors of textiles, steam engines, and iron?

   (b) Suppose that instead of medical technology advancing after the beginning of steady technological change in industrial sectors, it had advanced well before these sectors. In other words, suppose that the growth in our understanding of the nature of infectious disease and bacteriology occurred in the middle ages. How would this improvement in medical technology impact population, output and income per capita in the preindustrial world? Be certain to fully explain your answer.