
Midterm Exam

You have until 3:20pm to complete the exam, be certain to use your time wisely. Answer all questions directly on the exam. You may use printouts of the required readings with any notes you have written on them. No other materials may be used during the exam. Remember to put your name on the exam. Good luck!

Name:

1. (15 points) Consider our discussion in class of Peter Temin's approach to testing whether the Industrial Revolution was driven by technological change in a small handful of industries or by widespread innovation across many industries. Explain how the same logical arguments employed by Temin could be used to test the validity of the traditional view of the Agricultural Revolution as a cluster of innovations dramatically improving British agricultural productivity relative to other countries. What empirical evidence do we have to apply this test and what does it tell us about the traditional view of the Agricultural Revolution?

2. (20 points) Use our Malthusian model from class to analyze the effects of the Neolithic Revolution and corresponding demographic transition on the standard of living. Be certain that you account for all of the major features of the transition discussed by Bocquet-Appel (2011). Your answer should rely on clearly labeled graphs of the birth rate, death rate and technology curves as well as a written explanation.

3. (20 points) Explain two advantages of using skeletal evidence rather than wage data to measure historical changes in the standard of living. Explain two limitations of relying on skeletal evidence as a proxy for the standard of living.

4. (20 points) Consider a country that undergoes a period of industrialization that allows it to transition from a Malthusian trap to sustained modern economic growth. Several decades after the country first industrializes it undergoes and completes a demographic transition similar to those completed by Western European countries. On a graph with time on the horizontal axis and growth rates on the vertical axis, graph the following variables over time:
- the growth rate of output (g_Y)
 - the growth rate of output per worker (g_y)
 - the growth rate of technology (g_A)
 - the growth rate of land and natural resources per worker (g_z)

Your graph should include time periods before the start of industrialization and time periods after the completion of the demographic transition. You should label the following points in time on the horizontal axis: the start of industrialization, the start of the demographic transition, the end of the demographic transition. Include a one paragraph explanation of your graph.

5. (15 points) Explain two reasons why the Industrious Revolution had particularly profound impacts on the textile industry in Britain (as compared to other industries that grew during the Industrial Revolution).

6. (10 points) Consider Mokyr's (2008) discussion of internalist and externalist theories of technological change, quoted below:

The progress of technology has been explained by both internalist and externalist theories. Internalists see an autonomous logic, an evolutionary process in which one advance leads to another, in which contingency plays a major role, in which the past largely determines the future. Externalists think of technological change as determined by economic needs, by necessity stimulating invention, by induced innovation being guided by factor prices and resource endowments.

How do the innovations in the coal and textile industries during the Industrial Revolution relate to these two different views of technological change?