Economics 113: Second Midterm

Spring 2005

Do Part I (1/3 of exam):

I. Identifications: do twelve of out of fifteen: one sentence each defining the terms and giving their significance in the context of the course:

1. Woodrow Wilson
2. National Labor Relations Act (NLRA) and National Labor Relations Board (NLRB)
3. Henry Ford
4. Civil War
5. Investment Banking
6. Limited Liability
7. Sharecropping
8. Federal Reserve Board
9. Herbert Hoover and Balanced Budgets
10. Immigration
11. Gilded Age
12. Progressive Era
13. National Recovery Act
14. Gold Standard
15. Money Stock in the Great Depression

Do two of Parts II, III, and IV (2/3 of exam):

II. The Great Depression and the Likelihood of Another Such

Begin with our extremely simple macro model;

$$Y = C + I + G$$
$$C = \alpha Y - T$$

Where Y, C, I, G, and T are GDP, consumption spending, investment spending, government purchases, and taxes, respectively; where Y is also (remember the circular flow of economic activity) total economy-wide income; and where α is a parameter that tells you how much of each extra dollar in income for households is spent on consumption goods and services.

    (a)   Solve for Y in terms of I, G, T, and α.

    (b)   Suppose that $\alpha = 0.8$. By how much would you expect a $10 billion fall in investment spending I to reduce GDP Y?

(c)   Suppose that $\alpha = 0.5$. By how much would you expect a $10 billion fall in investment spending I to reduce GDP Y?

(d)   Back in 1986, economists J. Bradford DeLong and Lawrence H. Summers ("The Changing Cyclical Variability of the American Economy," in Robert J. Gordon, ed., *The American Business Cycle* (University of Chicago Press for NBER) argued that the fact that many Americans today owned their own houses (and so could mortgage them) meant that the parameter α had declined significantly since 1929. What effect do you think this had on their assessment of the likelihood of a repeat of the Great Depression? Why?

(e)   Are there any ongoing economic changes you can think of that might be raising the value of the parameter α in today's economy? If so, what are they?

III. The Persistence of Slavery

Take the 800 thousand or so slave households in the United States in 1860.

Suppose that—while enslaved—the average slave household would produce output worth $250 a year, of which $100 a year would have to go to support the slaves.

Suppose further that had all the slaves had been free, that they all would have sought work in agriculture, and that there were 700 thousand good (white-owned) farmsteads on which a slave household could produce crops worth $400 per year, and that there was a large additional supply of (unowned, frontier) farmsteads on which a slave household could produce crops worth $300 a year.

(a)   What would be the total profits of slaveholders in the real world, in which slaves were enslaved? What would be the total value of production?

(b)   What would be the rent of a (good) farmstead in the unreal world in which slaves were free?

(c)   What would be the total profits of white landlords—who we'll assume to be the same people as real-world slaveholders—in the unreal world in which slaves were free? What would be the total value of production?

(d)   Does this simple model help you understand why there was no significant movement for emancipation among the whites of the American south in 1860? Why or why not?

(e)   Suppose that there was no frontier in 1860—that the Mississippi River was in fact the Pacific Ocean, that the 700,000 (white-owned) farmsteads were all the land there was, and that those African-American households that did not rent farms had to work in the cities for $150 a year. What do you think then would happen in the unreal world in which the slaves were free?

IV. Gilded Age and Inequality

Suppose that we have a production function for the industrial sector:

$$Y/L = \$300 \times (K/L)^{0.5}$$

And suppose:

- Output per worker is equal to $300 (per year) times the square-root of the capital labor ratio.
- 1 unit of capital costs $600 in 1870, at the start of the Gilded Age
- 1 unit of capital $300 in 1910, at the end of the Gilded Age-Progressive Era.
- **The value** capital-output ratio is 2:1 in both 1870 and 1910: **the value of** the capital stock per worker is twice **the value of** annual output per worker.

(a)   For this model, solve for what output per worker Y/L and capital per worker K/L are in the industrial sector 1870.

(b)   For this model, solve for what output per worker Y/L and capital per worker K/L are in the industrial sector in 1910.

(c)   If the wages of a marginal worker outside the industrial sector—in agriculture—are $240 per year in 1870, what would you expect the rate of profit to be in 1870? Wages plus profits must add up to the total value of output, and the rate of profit is equal to the value of profits divided by the value of the capital stock.

(d)   If the wages of a marginal worker outside the industrial sector—in agriculture—are $420 per year in 1910, what would you expect the rate of profit to be in 1910?

(e)   Does this—overly simple—model shed any light on why America became a much more unequal country between 1870 and 1910?