Final Exam. Econ499. Spring 2011

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UNC

Instructions:

- The exam consists of 5 questions.
- Answer all questions.
- *Explain* your answers – do not just state them.
- *Show* your derivations – do not just state the final result.
- Do not refer to any notes or books. You may use a calculator.
- The total time is 75 minutes.
- The total number of points is 100.

1 The U.S. Saving Rate

1. [13 points] According to the life-cycle model of consumption / saving, how do the following shocks affect the aggregate saving rate? Explain your answers:

   (a) A permanent cut in Social Security benefits.

   (b) The government budget deficit increases.

2. [12 points] In the data, rising aggregate household wealth seems to be associated with lower saving. Give an example of a shock that raises household wealth but also *raises* saving. Explain how this works.

2 Walrasian Labor Market

1. [12 points] Show effects of a *current temporary* increase in labor productivity on employment and wages. Illustrate your answer in a graph. Explain in terms of income and substitution effects.

2. [12 points] Show the effects of a *future permanent* increase in labor productivity. Why does your answer differ from #1?

3 College Wage Premium

The college wage premium (the average wage earned by college graduates relative to high school graduates) has been rising sharply since 1980. At the same time the share of college educated workers has been rising.

1. [12 points] How can these two observations be reconciled in a Walrasian labor market model? Illustrate your answer in a graph. What exogenous "shocks" could have caused this development?

2. [10 points] Given that the wages of college graduates have been rising, should we expect that college educated persons work longer hours as time goes by? Explain.

4 European Unemployment

[17 points] Explain what Figure 1 suggests about why unemployment has been rising in Europe since the 1970s. Illustrate in a Walrasian labor market diagram.

Figure 1: European Unemployment

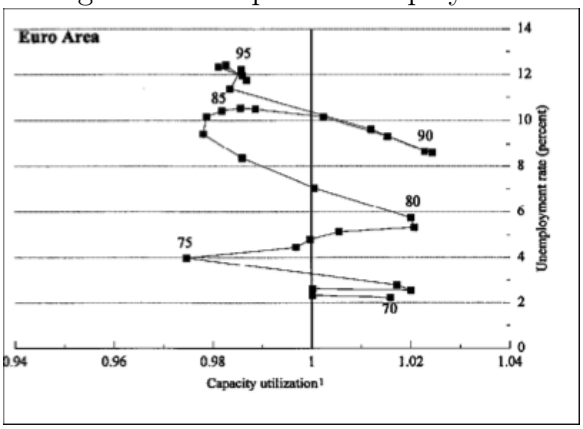
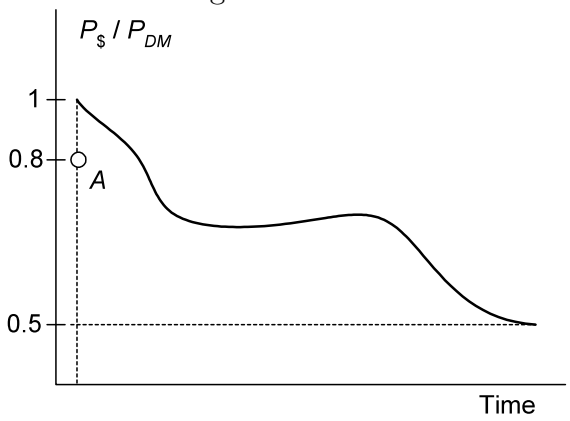


Figure 2: PPP



5 Purchasing Power Parity

[12 points] Figure 2 shows the ratio of U.S. to German price indices over a period of time. Draw the time path of the exchange rate [\$/DM] assuming that relative PPP holds with E = 0.8 \$/DM at the initial date (point A). In your answer briefly **define** relative PPP and **explain** how the line is drawn.

End of exam.

6 Answers

6.1 Answer: U.S. Saving Rate

1. How do shocks affect saving rate?

   (a) Cut in Social Security benefits: In the life-cycle model, the young or middle aged save and the old dissave. Giving less income to the old increases saving, so that consumption can remain smooth.

   (b) People expect higher taxes in the future. They save more. One should really talk about what the government does with funds, but let's ignore that complication.

2. Any shock that makes the old poorer relative to the young will do. One example: cut Social Security benefits. Shocks that raise the rate of return to saving could also work (if one can find those).

6.2 Answer: Walrasian Labor Market

1. Current: small income effects, but substitution effects. Move along a fixed labor supply curve. Labor demand increases. Employment and wages rise.

2. Future: only income effects. Labor supply decreases. No change in labor demand. Employment declines and wages rise.

6.3 College Wage Premium

1. We need demand for college educated labor to shift out faster than supply. Skill biased technical change and international trade are two candidate explanations.

2. One could expect college workers to move up along a fixed labor supply curve. But income effects shift the supply curve left all the time (higher lifetime incomes when wages rise permanently). The net effect on hours is not clear.

6.4 European Unemployment

We did this in class. The figure can be explained if centralized wage bargaining fails to reduce wages in recessions but raises wages in expansions.

6.5 Answer: PPP

1. Absolute PPP requires $RER = P/(EP^*) = 1$ or $E_{\$/DM} = P_\$/P_{DM}$. Under absolute PPP the line representing E coincides with that representing $P_\$/P_{DM}$.

2. Relative PPP requires that RER be constant (here at 0.8). Therefore and the line representing E is parallel to that representing $P_\$/P_{DM}$. This is actually not exactly right because the ratio of E to prices is constant, not the difference, but it's close enough.

End of answers.