

Problem Set #6 Questions & Solutions
Posted May 2, 2002
Due May 9, 2002

50 Points, 5 points for each question (Parts I-II) or sub-part (Part III)

NOTE TO GRADERS: ITALICIZED PORTIONS OF ANSWERS ARE NOT REQUIRED, THEY ARE FOR ELUCIDATION ONLY!

Part I. True/False Questions.

Answer “true” or “false”, and justify your answer with a short argument.

(Points are awarded based on the *explanation only*.)

1. When bond prices increase, interest rates increase.

False. In general $\$P = \$\text{face value}/(1 + \text{discount factor})$, where the discount factor is determined by the relevant interest rate(s). So bond prices are a decreasing function of the interest rate.

2. The change in a country’s debt to GDP ratio depends (in part) on the relative magnitudes of its real interest rate and its growth rate of output.

True, when r is large relative to g_y , then interest payments on the debt grow faster than GDP, and therefore debt accumulates faster than GDP, holding net government spending constant.

(For example, $r > g_y$ worked to push the U.S.’s debt ratio up in the 1990; this was counteracted by contractionary fiscal policy.)

3. Public debt-to-GDP ratios that are “too high” can raise interest rates.

True. As debt increases, investors (e.g., potential buyers of government bonds) may get nervous that the government will not be able to pay back its debt (e.g., make the promised payments on its bonds), and require higher yields (i.e., higher rates, i.e., lower prices) on government bonds.

4. Contractionary fiscal policy must decrease output in the short-run. (Hint: consider the role of expectations.)

False. The effects are ambiguous with expectations. If economic agents are forward-looking, and if they expect that the lower net government spending will persist into the future, they will foresee the medium- and long-term benefits of fiscal policy (lower interest rates, higher investment, and thus higher output) and actually increase consumption and private investment, which works to counteract the reduction in (G-T). *(This reaction stems from a recognition that lower interest rates and higher future income both increase in the present value of expected lifetime wealth, so people feel richer immediately.)*

5. A central bank should not consider targeting zero inflation, since inflation is simply a nominal phenomenon and does not change the real price of anything

(Hint: see, e.g., the summary at the end of Chapter 26.)

False, for several reasons. (*Graders-- any one of these is sufficient for full credit*):

- ✂✂ Inflation can cause distortions when combined with an imperfectly indexed tax system.
- ✂✂ Inflation can lead to bad decisions, because of **money illusion** (i.e., some people and firms don't understand inflation is a nominal thing) and/or **uncertainty**.
- ✂✂ Price stability (i.e., zero inflation) offers simplicity and credibility relative to a positive inflation target.

6. The obvious solution to reforming Social Security in the United States is to switch from a pay-as-you-go system to a fully funded system based on private saving, effective immediately.

False. *Although a fully-funded system is arguably superior in steady-state, since it provides solvency and higher capital accumulation, an immediate switch would impose undue burdens on current workers— they would have to pay for the retirement benefits of current retirees, and save for their own retirements in full as well. A gradual transition from our current steady-state (with a pay-go system) to a new steady-state with a fully-funded system is advisable, but will take a very long time and still prove very costly for the “transition generation(s)”. See the lecture notes for more details.*

II. Multiple Choice

1. Which was NOT a main ingredient of the Thailand financial crisis?

(Hint: see Prof. Brinner's lecture notes)

- a. Devaluation of Chinese currency
- b. Appreciation of US currency
- c. Huge, growing current account deficits
- d. Poor institutions for regulating financial markets
- e. Declining secondary education rates

Answer:

e. No big changes in secondary education rates, and the relatively high education level (compared to other developing countries) of Thailand and some other Asian countries is long-term strength.

2. Which is NOT a *potential* source of convergence in output *per capita* between poorer and richer countries?

(Hint: See Prof. Brinner's lecture notes on financial crises, and Blanchard p. 239)

- a. Technology transfer
- b. International markets for human capital
- c. Population growth
- d. Capital Accumulation
- e. neither c. nor d.

Answer: **c. only**. Population growth won't increase GDP per capita, by definition, and thus can't help poor countries "catch-up" in this sense. *One might be tempted to answer e., but capital accumulation is a potential (and evidently in the case of Asia, an actual) source of convergence, even though: a) in the long-run capital may not produce a higher growth rate (but it will produce a higher growth rate during the often lengthy transition to the new steady-state at a higher level of output); b) capital accumulation does not in fact appear to be a source of actual convergence among richer countries post-World War II (Blanchard p. 239).*

III. Short Answer

a. Why would a developing country choose a "hard peg" to (i.e., a fixed exchange rate with) the dollar? (Hint: think about what type of credibility this provides, and the resulting benefits.)

- ⌘⌘ A hard peg is a commitment to keep money growth low; i.e., it is a commitment to fight inflation.
- ⌘⌘ This commitment is often extremely beneficial (and necessary) in an environment of hyperinflation, as reducing expected (and thereby actual) inflation, can greatly improve the functioning of markets (which often collapse under hyperinflation) and thereby improve productivity, employment, etc. *(In the case of Argentina, the "hard peg" initially helped generate 4 years of very high growth in per capita GDP).*

b. What are the main problems with a "hard peg"?

- ⌘⌘ It is difficult for developing country to maintain a competitive currency (*read the Feldstein article to learn why*), so there is a tendency for imports and borrowing abroad to be effectively subsidized, leading to dangerously high debt levels/ratios.
- ⌘⌘ Eventually, these high debt levels/ratios can lead to financial instability (*see Feldstein, or Blanchard p. 528 on the "vicious circle" that high debt levels/ratios can create*).