

ECO1102B, 1st Midterm: October 21, 2016

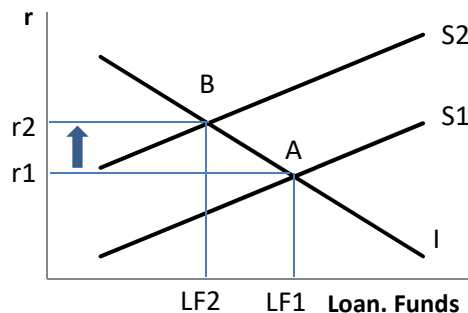
Answer Key

Multiple Choice (60 points; 2 points each)

1. D	7. D	13. A	19. A	25. D
2. A	8. C	14. D	20. B	26. C
3. A	9. C	15. A	21. C	27. D
4. D	10. A	16. D	22. C	28. C
5. B	11. B	17. C	23. B	29. C
6. C	12. A	18. C	24. C	30. B

Short Answer (40 points)

31. (12 points in total; 6 points for the graph) Using a graph representing the market for loanable funds, show and explain how and why interest rates and investment would be affected if the government budget goes from surplus to deficit.



(6 points for explanation) The initial equilibrium in the market for loanable funds is at point A in the graph, with an equilibrium interest rate of  $r_1$  and an equilibrium quantity of saving and investment of  $LF_1$ . If the government budget goes from surplus to deficit, there will be less public and national saving in the economy at each interest rate, and the supply curve for saving will shift left from  $S_1$  to  $S_2$ . This will cause a shortage of funds and put upward pressure on the interest rate. A new equilibrium will be established at point B, with a higher equilibrium interest rate,  $r_2$ , and a lower equilibrium level of saving and investment,  $LF_2$ . Thus, the budget deficit would cause the interest rate to rise and investment to fall.

32. (15 points in total) The following questions deal with the Consumer Price Index (CPI).

- a) (3 points) The CPI for fresh or frozen pork was 49.0 in 1980 and 143.2 in 2016. If the price of pork was \$2.50 per kilogram in 1980, how much would a kilogram of pork cost in 2016 dollars?  
The per-kilogram price of pork in 2016 is  $2.50 \times \frac{143.2}{49.0} = \$7.31$ .
- b) (2 points) Based on the CPI, what was the rate of inflation in pork prices over the period 1980 to 2016?  
The rate of inflation in pork prices from 1980 to 2016 was  $\frac{143.2-49}{49} \times 100 = 192\%$ . (In other words, pork prices almost tripled over the period.)
- c) (6 points) What are the three major problems in using the CPI as a measure of the cost of living?
1. Substitution bias: The CPI ignores the fact that consumers substitute toward goods that have become relatively less expensive.
  2. Introduction of new goods: Because the CPI uses a fixed basket of goods, it does not take into account the increased well-being of consumers created when new goods are introduced.

## ECO1102B, 1st Midterm: October 21, 2016

### Answer Key

3. Unmeasured quality change. Not all quality changes can be measured or measured accurately.
  - d) (4 points) What are two important differences between the CPI and the GDP deflator?
    1. The GDP deflator uses all final goods and services produced in the domestic economy, while the CPI uses a basket of about 600 goods and services purchased by a typical consumer. This means that changes in the price of imported goods affect the CPI, but not the GDP deflator. It also means that changes in the price of domestically produced capital goods affect the GDP deflator, but not the CPI.
    2. The goods and services in the GDP deflator change every year, while the CPI basket changes only every two years. This matters if relative prices change.
33. (13 points in total; 7 for explaining the catch-up effect) The catch-up effect says that countries with low income can grow faster than countries with higher income. However, in statistical studies that include many diverse countries, we do not observe the catch-up-effect unless we take account of (or control for) other variables that affect productivity. Using a diagram of the production function, explain how the catch-up effect works. Then, considering the determinants of productivity, list and explain four factors that could prohibit or limit a poor country's ability to catch up with rich ones.

See slide 16 of my notes for chapter 7 for the diagram.

The argument that poor countries will tend to catch up with rich ones is based on the idea that an additional unit of capital will increase productivity and output more in a country that has a small amount of capital to begin with, than in a country that already has a lot of capital. So, if the amount of savings were the same in the rich and the poor country, the poor country would grow faster than the rich one. In other words, the output of the poorer country will “catch up” to the output of the richer country over time.

(6 points for four factors affecting productivity; 1.5 points for each) However, this argument assumes that “other things are the same”, in other words, that all other determinants of productivity and output, other than capital, are held constant. More than four factors that would tend to prohibit or limit a poor country’s ability to catch up with rich ones are listed below.

- If the share of GDP invested in the poor country were lower, the capital stock would not increase as much.
- If the level of education (investment in human capital) were lower in the poorer country, productivity would be lower.
- If it had higher population growth, the poorer country could have lower educational attainment and productivity.
- If the level of health care were lower in the poorer country, its workers would be less healthy and less productive.
- If property rights were not respected or there was political instability, economic growth in the poorer country would be smaller.
- If there were legal or geographic restrictions on trade, there would be lower productivity in the poorer country since it could not focus on producing what it produces best.
- If there were restrictions on the foreign ownership of domestic capital in the poorer country, there would be less foreign investment and technology transfer.
- If support for technological process were lower in the poorer country, there would be lower productivity.