

## ECON203 - Midterm Exam Winter 2014 – Section J (Answer Key)

### Multiple Choice

1. B
2. A
3. B
4. D
5. D
6. C
7. C
8. B
9. B
10. B

### True/False

- a) TRUE:  $S + BB = I + NX$ . If  $S$  and  $I$  are fixed, then if  $BB$  is strongly negative,  $NX$  will also be strongly negative to maintain the equality.
- b) FALSE:  $u = (LF - E)/LF$ .  $du/dLF > 0$  meaning that if discouraged workers join the labour force as unemployed people, then  $u$  will increase. This means that the current unemployment rate UNDERstates the problem. You do not have to use derivatives. Using a numerical example is good enough.

### Problem 1

1. Starting from long-run equilibrium, Only short run AS shifts to the left. Now there is a recessionary gap. Unemployment increases, output decreases. Price level increases.
- b. Starting from inflationary gap, Only AD shifts to the right. Now there is a bigger inflationary gap. Output (real GDP) increases, price level increases, unemployment decreases.

### Problem 2

- a)  $CPI_{2011} = 100$   
 $CPI_{2012} = [(1000 \times 297 + 700 \times 25) / (1000 \times 280 + 24 \times 700)] \times 100 = [(297,000 + 17,500) / (280,000 + 16,800)] \times 100 = (314,500 / 296,800) \times 100 = 105.96$
- b) GDP deflator 2010 =

$$\begin{aligned} & [(295 \cdot 1000 + 25 \cdot 780) / (280 \cdot 1000 + 24 \cdot 780)] \cdot 100 = [(295,000 + 19,500) / (280,000 + 18,720)] \cdot 100 \\ & = (314,500 / 298,720) \cdot 100 = 105.28 \\ & \text{GDP deflator}_{2011} = 100 \text{ (2marks)} \end{aligned}$$

$$\text{c) Inflation rate Year}_{2011} = \{(100 - 105.28) / 105.28\} \cdot 100 = \% -5.0152$$

$$\begin{aligned} \text{d) Real and Nominal GDP}_{2011} &= 280,000 + 16,800 = 296,800 \\ \text{NGDP}_{2010} &= (295 \cdot 1000 + 25 \cdot 780) = 295,000 + 19,500 = 314,500 \\ \text{RGDP}_{2010} &= (280 \cdot 1000 + 24 \cdot 780) = 280,000 + 18,720 = 298,720 \\ \text{NGDP growth rate} &= [(296,800 - 314,500) / 314,500] \cdot 100 = \% -5.628 \\ \text{RGDP growth rate} &= [(296,800 - 298,720) / 298,720] \cdot 100 = \% -0.6427 \end{aligned}$$

e) Growth rates are negative, and it is bigger (in absolute values) for nominal GDP, because of deflation. Prices were lower in 2011 compare to 2010.

### Problem 3

$$\begin{aligned} \text{a) } AE &= (45 + 35 + 40 + 40 - 10) + (0.8(1 - 0.1) - 0.12)Y \quad AE = 150 + 0.6Y \\ Y &= AE Y_e = 150 + 0.6Y_e \\ Y_e &= 150 \cdot 2.5 = 375 \end{aligned}$$

$$\begin{aligned} \text{b) Inflationary Gap} &= 375 - 300 = 75 \quad \text{OR} \\ \text{rate} &= [(375 - 300) / 300] \cdot 100 = \% 25 \end{aligned}$$

c) Inflationary Gap

$$\begin{aligned} \text{d) Decrease in government expenditure} \\ \text{Multiplier} &= 1 / (1 - c(1 - t) + m) = 1 / (1 - 0.8(1 - 0.1) + 0.12) = 2.5 \end{aligned}$$

$$\text{Changes in } G = 75 \div 2.5 = 30$$

$$\text{Budget plan before intervention: } BB_b = 0.1Y - 40$$

$$BB_b = 0.1 \cdot 375 - 40 = -2.5 \quad \text{budget deficit before intervention}$$

$$BB_2 = 0.1Y - 10 \quad \text{Budget plan after intervention}$$

No inflationary gap anymore therefore  $SBB = BB_2$

$$SBB = BB_2 = 0.1 \cdot 300 - 10 = 20 \quad \text{budget surplus after intervention}$$

$$\text{e) } SBB = 0.1 \times 300 - 10 = 20 \quad \text{budget surplus}$$