

Question 1 Fill in the blanks. You must show your work.

Year	2014	2015
Nominal gross national income (GNI) (\$ billion)	291.53	292.56
Factor income sent abroad (\$ billion)	68.30	75.90
Factor income earned abroad (\$ billion)	8.13	9.49
Nominal gross domestic product (GDP) (\$ billion)	351.7	358.97
GDP deflator	100	100.88
Real GDP (\$ billion)	351.7	355.84

$$\text{GNI} = \text{GDP} - \text{income sent} + \text{income earn} = 358.97 - 75.90 + 9.49 = 292.56$$

$$\text{GDP} = \text{GNI} + \text{income sent} - \text{income earn} = 291.53 + 68.30 - 8.13 = 351.7$$

$$\text{Real GDP } 2014 : 100 = \frac{351.7}{\text{Real GDP}} \times 100 = 351.7$$

$$\text{Real GDP } 2015 : 100.88 = \frac{358.97}{\text{Real GDP}} \times 100 = 355.84$$

Question 2 Fill in the blanks. You must show your work.

Year	2012	2013	2014	2015
Consumer price index (CPI)	99.08	100.55	102.51	107.52
Inflation rate (%)	-0.92	1.48		
Employed (millions)	12.50	12.60	12.85	13.05
Unemployed (millions)	0.99	0.71	0.68	0.61
Population (millions)	20.75	21.48	21.82	22.02
Unemployment rate (%)			5.03	4.47

$$\text{Inflation rate } 2014 = \frac{102.51 - 100.55}{100.55} \times 100 = 1.95\%$$

$$1) \quad 2015 = \frac{107.52 - 102.51}{102.51} \times 100 = 4.89\%$$

$$\text{Unemployment rate } 2012 = \frac{\text{unemploy}}{\text{employ} + \text{unemploy}} = \frac{0.99}{12.50 + 0.99} \times 100 = 7.34$$

$$1) \quad 2013 = \frac{0.71}{12.60 + 0.71} \times 100 = 5.33$$

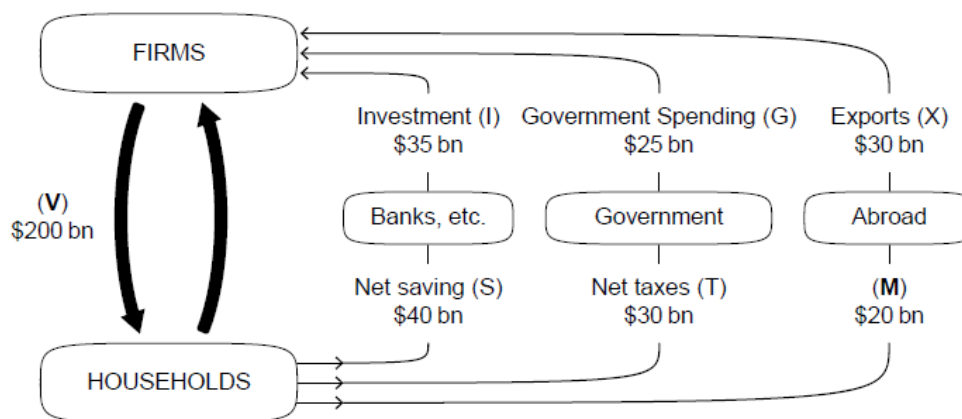
Question 3 Calculate GDP and GNP. You must show your work.

Item	\$ billion
Imports	289
Transfer payments	253
Saving	82
Exports	234
Income from employment	1160
Taxation	396
Consumer spending	745
Investment	229
Net factor income from abroad	-111
Government spending on goods and services	437

$$GDP = C + I + G + (X - M) = 745 + 229 + 437 + 234 - 289 = 1356$$

$$GNP = GDP + \text{Net factor income from abroad}$$

$$= 1356 - 111 = 1245$$

Question 4 Answer the following questions.

4.1 What do the flows (V) and (M) represent?

$V = \text{Goods \& Services}$, $M = \text{imports}$

4.2 Does the government run a budget deficit or surplus? By how much?

budget surplus by \$5 bn

4.3 Does the country run a trade deficit or surplus? By how much?

trade surplus by \$10 bn

4.4 Is the economy in equilibrium? Why or why not?

equilibrium because injection equal leakage

Question 5 Why does CPI tend to be higher than GDP deflator?

Year	Consumer price index (CPI)	GDP deflator	GDP (\$ million)
2014	100	100	4465
2015	105.35	105.11	4814
2016	109.21	108.92	5026

It fixed quantity but price can change it make overall CPI have higher than GDP deflator.

Question 6 Answer the following questions.

	Price per unit in dollars (\$)	
	2013	2014
Pizza	12.50	12.90
Chocolate milk (litres)	1.15	1.25
Jazz concert	45.00	46.00
Total cost of the typical basket	690	714

The typical basket of goods purchased by an average consumer consists of 10 pizzas, 100 litres of chocolate milk and 10 jazz concerts.

6.1 With 2013 as the base year, calculate CPI of 2013 and 2014.

$$\begin{aligned}
 \text{CPI}_{2013} &= \frac{P_T \cdot Q_{\text{base}}}{P_{\text{base}} \cdot Q_{\text{base}}} \times 100 & \text{CPI}_{2014} &= \frac{P_T \cdot Q_{\text{base}}}{P_{\text{base}} \cdot Q_{\text{base}}} \times 100 \\
 &= \frac{690}{690} \times 100 & &= \frac{714}{690} \times 100 \\
 &= 100\% & &= 103.48\%
 \end{aligned}$$

6.2 Calculate the inflation rate of 2014.

$$\text{inflation rate} = \frac{\text{CPI}_{\text{new}} - \text{CPI}_{\text{old}}}{\text{CPI}_{\text{old}}} \times 100 = \frac{103.48 - 100}{100} \times 100 = 3.48$$

Question 7 Fill in the blanks. You must show your work.

Year	Nominal GDP (\$ billions)	GDP deflator	Real GDP (\$ billions)	Annual real growth rate (%)	Population	Real GDP per capita (\$)
2014	308.12	98.9	311.55		13 273 644	23471.32408
2015	321.99	100	321.99	3.35 %	13 340 012	24137.1597
2016	332.65	102.2	325.49	1.09 %	13 473 412	24157.949

$$\text{Real GDP 2014} : 98.9 = \frac{308.12}{\text{Real GDP}} \times 100 = 311.55$$

$$)) \quad 2015 : 100 = \frac{321.99}{\text{Real GDP}} \times 100 = 321.99$$

$$)) \quad 2016 : 102.2 = \frac{332.65}{\text{Real GDP}} \times 100 = 325.49$$

$$\text{Annual rate growth rate 2015} : \frac{321.99 - 311.55}{311.55} \times 100 = 3.35 \%$$

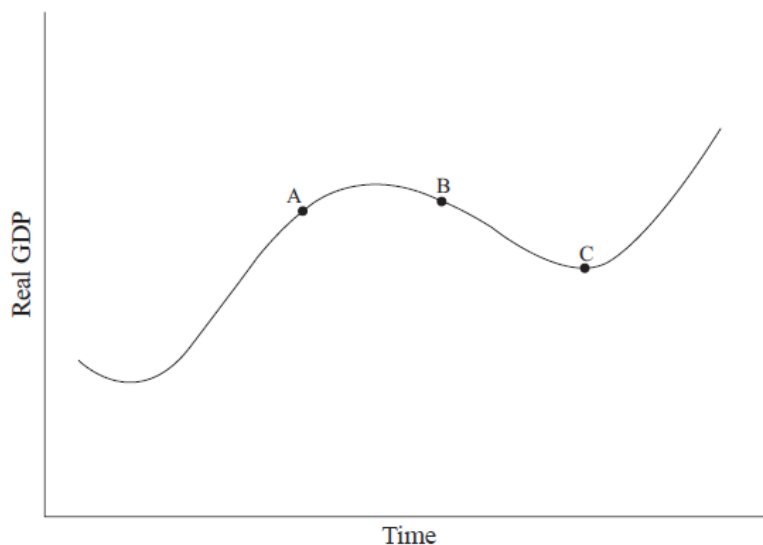
$$)) \quad 2016 : \frac{325.49 - 321.99}{321.99} \times 100 = 1.09 \%$$

$$\text{Real GDP per capita 2014} : \frac{\text{Real GDP}}{\text{Population}} = \frac{311.55 \times 10^9}{13273644} = 23471.32408$$

$$)) \quad 2015 : \frac{321.99 \times 10^9}{13340012} = 24137.1597$$

$$)) \quad 2016 : \frac{325.49 \times 10^9}{13473412} = 24157.949$$

Question 8 Based on the data above, which position – A, B, or C – best describes the economy in 2016? Why?



Position B because the annual growth rate from 2014 to 2015 is 3.35% but in 2015 to 2016 it decrease to 1.09%, so at point B can best describe from the data above.

Question 9

Answer the following questions.

Country A is a closed economy with no government. The marginal propensity to save in the country is 0.25.

9.1 Calculate the value of the (investment) multiplier.

$$MPS = 0.25, MPC = 0.75 \quad (MPS + MPC = 1)$$

$$\frac{1}{1-MPC} = \frac{1}{1-0.75} = \frac{1}{0.25} = 4 \times$$

9.2 Due to the initial investment made by firms and the multiplier effect, the (equilibrium) output in the economy has increased by \$200m. Calculate the value of the initial investment.

$$\text{if } y \text{ increase by 200 units, the initial investment} = 200 \times 4 \\ = 800$$

Country B is an open economy with government.

9.3 Do you think the multiplier effect in Country B will be larger than that of Country A? Why or why not?

Yes, in open economy mpc is marginal propensity for saving and mpm is marginal propensity for import, but in closed economy marginal propensity to import in an open economy which makes the denominator larger and multiplier smaller.