

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

Year	GNP	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)		3.517	3.558

• $GNP_{2015} = GDP + \text{Net foreign factor}$

$358.97 + (9.49 - 75.90) = 292.56$

• GDP_{2014}

$291.53 = GDP + (8.13 - 68.3) = 351.7$

• $Real\ GDP_{2014} = \frac{\text{Nominal GDP}}{\text{Deflator}} = \frac{351.7}{100} = 3.517$

$Real\ GDP_{2015} = \frac{358.97}{100.88} = 3.558$

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	1.95	4.89
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 (%)	7.33	5.33	5.03	4.47

$\text{Inflation rate} = \frac{CPI_N - CPI_0}{CPI_0} \times 100$

$\text{Unemployment rate} = \frac{Un}{un + em}$

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

• $\text{Inflation rate}_{2015} = \frac{107.52 - 102.51}{102.51} \times 100 = 4.89$

• $\text{Unemployment rate}_{2012} = \frac{0.99}{0.99 + 12.50} = 7.33$

• $\text{Unemployment rate}_{2013} = \frac{0.71}{0.71 + 12.6} = 5.33$

Question 3

Calculate GDP and GNP. You must show your work.

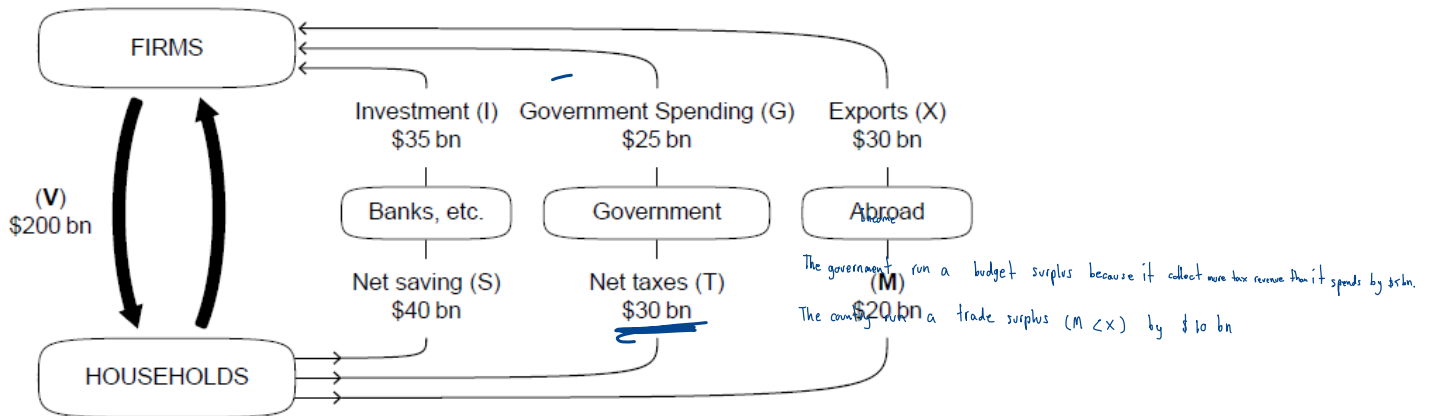
Item	\$ billion	
Imports	289	M
Transfer payments	253	
Saving	82	
Exports	234	X
Income from employment	1160	
Taxation	396	
Consumer spending	745	C
Investment	229	I
Net factor income from abroad	-111	
Government spending on goods and services	437	G

$$\begin{aligned}
 \bullet \text{ GDP} &= C + I + G + X - M \\
 &= 745 + 229 + 437 + 234 - 289 = 1356 \quad \#
 \end{aligned}$$

$$\begin{aligned}
 \bullet \text{ GNP} &= \text{GDP} + \text{Net foreign factor income} \\
 &= 1356 + (-111) = 1245 \quad \#
 \end{aligned}$$

Question 4

Answer the following questions.



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

Income and import

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

The government run a budget surplus because it collect more tax revenue than it spends by \$5 bn.

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

The country run a trade surplus (M < X) by \$10 bn.

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

Yes, because leakages = injections. $S + T + M = I + G + X = 90$ #

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

The GDP price deflator is a more comprehensive inflation measure than the CPI index because it isn't based on a fixed basket of goods.

Question 6 Answer the following questions.

		Price per unit in dollars (\$)	
		2013	2014
Pizza	10	12.50	12.90
Chocolate milk (litres)	100	1.15	1.25
Jazz concert	10	45.00	46.00
Total cost of the typical basket		690	714

$$2013 \rightarrow (12.5 \times 10) + (1.15 \times 100) + (45 \times 10) = 690$$

$$2014 \rightarrow (12.9 \times 10) + (1.25 \times 100) + (46 \times 10) = 714$$

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.

$$\bullet \text{ CPI in 2013} = \frac{690}{690} \times 100 = 100$$

$$\bullet \text{ CPI in 2014} = \frac{714}{690} \times 100 = 103.48$$

6.2 Calculate the inflation rate of 2014.

$$\text{Inflation rate} = \frac{\text{CPI}_{2014} - \text{CPI}_{2013}}{\text{CPI}_{2013}} \times 100 = \frac{103.48 - 100}{100} \times 100 = 3.48\%$$

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

Year	Nominal GDP (\$ billions)	GDP deflator	^N Real GDP (\$ billions)	Annual real growth rate (%)	Population	Real GDP per capita (\$)
2014	308.12	98.9	311.55		13 273 644	23 471.1
2015	321.99	100	321.99	3.35	13 340 012	24 137.16
2016	332.65	102.2	325.49	1.09	13 473 412	24 157.89

$$\text{Annual real growth rate} = \frac{\text{RGDP}_N - \text{RGDP}_0}{\text{RGDP}_0} \times 100$$

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

$$\text{Real GDP}_{2015} = \frac{321.99}{100} \times 100 = 321.99$$

$$\text{Real GDP}_{2016} = \frac{332.65}{102.2} \times 100 = 325.49$$

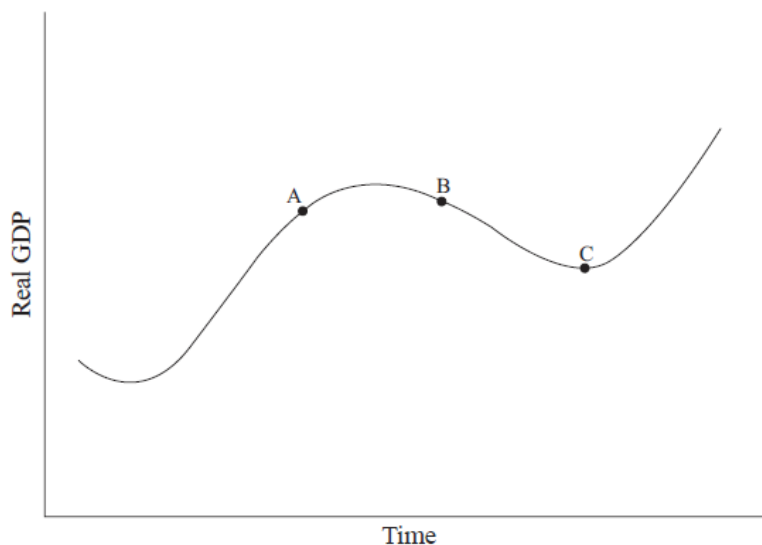
$$\text{GDP per capita}_{2014} = 23 471.1$$

$$\text{GDP per capita}_{2015} = 24 137.16$$

$$\text{GDP per capita}_{2016} = 24 157.89$$

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

$$\text{Annual growth rate}_{2016} = \frac{325.49 - 321.99}{321.99} \times 100 = 1.09$$

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

The position A → B is the best position because between A to B is normal upward trend, the economy is expansion or business-cycle peak.

Question 9 Answer the following questions.

$$MPS = 0.25$$

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.

$$\text{Investment multiplier} = \frac{1}{1-MPC} = \frac{1}{1-0.75} = 4$$

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.

$$200 = X \left(\frac{1}{0.75} \right), \quad X = 800 \quad | \quad \therefore \text{Initial investment is } 800$$

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, because country B's MPC is large, multiplier will also be large since country B have large MPC than country A.