NCERT Macroeconomics Solutions Class 12 Chapter 6

1. Differentiate between balance of trade and current account balance.

Basis of Comparison	Balance of trade	Current account balance
Definition	The difference between the import and export of all goods	The difference between the import and export of goods as well as services
Transaction type	Transactions of visible items i.e. goods takes place	Transactions of visible items (goods) and invisible items (services) takes place
Scope	It is a narrow concept and forms a part of current account balance	It is a wider concept that comprises of balance of trade

2. What are official reserve transactions? Explain their importance in the balance of payments.

Transactions that are carried out by monetary authority of a country which makes changes in official reserves is known as official reserve transaction or ORT. Transactions such as purchase and sale of currency in exchange market for other assets and foreign currencies. By selling foreign currencies in exchange market during period of deficit and purchasing them during surplus period. The increase and decrease in official reserve is called as balance of payments surplus and deficit respectively.

Importance of Official reserve transaction in balance of payments are:

1. Helps in adjusting deficit or surplus in balance of payments

2. Purchasing of own currency is regarded credit item in balance of payments where selling is regarded as a debit.

3. Distinguish between the nominal exchange rate and the real exchange rate. If you were to decide whether to buy domestic goods or foreign goods, which rate would be more relevant? Explain.

Nominal exchange rate is defined as the relative price of two currencies. It means how much units of domestic currency needs to be utilised to purchase a unit of foreign currency and vice versa. Real exchange rate measures how much quantity of goods can be purchased with domestic currency for the similar price in terms of foreign currency. It measures foreign prices with respect to domestic prices or it can be said as ratio of foreign prices to domestic prices. For e.g. if 1kg of rice can be purchased with 4 USD, then how much rice can be purchased in India considering the price of rice in India is Rs.20 per kg.

Real exchange rate : $\dfrac{eP_f}{P}$

Where Pf – price level of foreign currency

P – Price level of domestic currency

e – Nominal exchange rate

Real exchange rate is more relevant in cases of buying domestic and foreign goods

4. Suppose it takes 1.25 yen to buy a rupee, and the price level in Japan is 3 and the price level in India is 1.2. Calculate the real exchange rate between India and Japan (the price of Japanese goods in terms of Indian goods). (Hint: First find out the nominal exchange rate as a price of yen in rupees).

According to the question

Pf = 3

P = 1.2

Now, real exchange rate = e (Pf / P)

Where e= Nominal Exchange Rate

Pf = Price level in Japan

P= Price level in India

Now,

Price of 1.25 yen = 1 rupee

Price of 1 yen = 1/1.25 rupee

= 0.8

Now nominal exchange rate (e) is 0.8

Real exchange rate = e (Pf / P)

= 0.8 (3 / 1.2)

= 0.8 × 2.5

= 2

So, the real exchange rate is 2.

5. Explain the automatic mechanism by which BoP equilibrium was achieved under the gold standard.

In Gold standard system, gold is considered as a common unit to measure another nation's currency or in other words value of a currency was defined in terms of gold. The exchange rates was fixed in upper and lower limits and it was allowed to fluctuate within those limits. Therefore exchange rates became stable under the gold standard and due to this reason all countries maintained their individual stock of gold which was used for currency exchange.

6. How is the exchange rate determined under a flexible exchange rate regime?

In a flexible exchange rate regime, rate of exchange is determined on the basis of demand and supply. The equilibrium is attained when demand and supply are equal to each other.
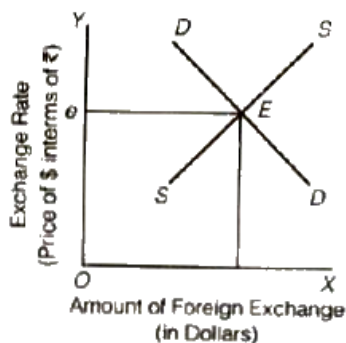
In this figure X axis represents demand for foreign currency while the Y axis represents exchange rates. Demand curve DD is sloping downward that shows the inverse relation between rate of exchange and demand for the foreign currency. The supply curve SS is upward sloping which shows the positive development of rate of exchange and supply of foreign currency. E is the point where equilibrium exchange rate is reached.

7. Differentiate between devaluation and depreciation.

Devaluation	Depreciation
Devaluation is when currency exchange rate is officially lowered by the government in comparison to another country's exchange rate.	Currency depreciation occurs by forces of demand and supply in the global market instead of government
Devaluation occurs by lowering fixed exchange rate in international market	Depreciation occurs on a floating exchange rate.
There is no fixed time for devaluating currency	It occurs every day in global markets

8. Would the central bank need to intervene in a managed floating system? Explain why.

A managed floating system is a system where exchange rates fluctuate on a day to day basis. The role of a central bank in such a system is to maintain balance by purchasing of foreign exchange when the floating rate is low in order to raise its rate and similarly selling foreign exchanges when floating rate is high in order to bring the rate down.

9. Are the concepts of demand for domestic goods and domestic demand for goods the same?

No, both the concepts are not same as demand for domestic goods means demand for goods that are produced domestically in both domestic and international markets whereas domestic demand for goods means domestic demand of goods that are produced domestically or internationally. Demand for domestic goods is a broader concept includes domestic demand for goods.

10. What is the marginal propensity to import when M = 60 + 0.06 Y? What is the relationship between the marginal propensity to import and the aggregate demand function?

Marginal propensity to import is the change in import values which is brought about by additional income of the country. It is the extent to which a country's import increases/decreases in relation to the change in GDP.

Here we see that M = 60 + 0.06Y

Now, m = 0.06 (Marginal propensity to import)

Aggregate demand function is negatively affected by the marginal propensity to import. Therefore with increasing income, there is a decrease in aggregate demand as additional income is spent on importing foreign products.

11. Why is the open economy autonomous expenditure multiplier smaller than the closed economy one?

The Equilibrium level of income in a closed economy is given by the following equation

$Y = C + cY + I + G$

Or, $Y - cY = C + I + G$

Or, $Y (1 - c) = C + I + G$

Therefore, $Y = C + I + G / 1 - c$

Let, $C + I + G = A_1$

$Y = A_1/ 1 - c$

$\Delta Y/\Delta A_1 = 1 / 1 - c$ (eq1)

The Equilibrium level of income in an open economy is given by the following equation

$Y = C + cY + I + G + X - M - mY$

Or, $Y - cY + mY = C + I + G + X - M$

Or, $Y (1 - c + m) = C + I + G + X - M$

Or, $Y = (C+I+G+X-M) / 1-c+m$

Let autonomous expenditure $(A_2) = C + I + G + X - M$

Or, $Y = A_2 / 1-c+m$

$\Delta Y/\Delta A_2 = 1 / 1 - c + m$ (eq2)

On comparing the two equations and the denominators of the two multipliers, it can be concluded that multiplier in an open economy is smaller than the closed economy as denominator of open economy is greater than the closed economy.

12. Calculate the open economy multiplier with proportional taxes, *T* = *tY*, instead of lump−sum taxes as assumed in the text.

The open economy multiplier with proportional taxes will be

$Y = C + c(1 - t)Y + I + G + X - M - mY$

$Y - c(1 - t)Y + mY = C + I + G + X - M$

$Y[1 - c(1 - t) + m] = C + I + G + X - M$

$Y = C + I + G + X - M / 1 - c(1 - t) + m$

Autonomous expenditure $(A) = C + I + G + X - M$

Therefore, open economy multiplier with proportional taxes will be

$Y = A / 1 - c(1 - t) + m$

$\Delta Y / \Delta A = 1 / 1 - c(1 - t) + m$

13. Suppose *C* = 40 + 0.8 *Y D*. *T* = 50, *I* = 60, *G* = 40, *X* = 90, *M* = 50 + 0.05 *Y*

(a) Find equilibrium income

(b) Find the net export balance at equilibrium income

(c) What happens to equilibrium income and the net export balance when the government purchases increase from 40 to 50?

According to the question, the following values are given

$C = 40 + 0.8YD$ $T = 50$ $I = 60$ $G = 40$ $X = 90$ $M = 50 + 0.05Y$

(a) Equilibrium level of income is determined by the equation

$Y = C + c(Y - T) + I + G + X - M - mY$

$$Y = \frac{A}{1 - c + m}$$

Where, $A = C - CT + I + G + X - M$

$$= \frac{C - cT + I + G + X - M}{1 - c + M}$$

$$= \frac{40 - 0.8 \times 50 + 60 + 40 + 90 - 50}{1 - 0.8 + 0.05}$$

$$= \frac{40 - 40 + 60 + 40 - 90 - 50}{1 - 0.75}$$

$$\frac{140}{0.25} = \frac{140}{25} \times 100$$

$$= 560$$

Therefore, equilibrium income is Rs.560

(b) Net exports at equilibrium income is determined by

NX = X − M − mY

= 90 − 50 − 0.05 × 560

= 40 − 28 = 12

Therefore net exports at equilibrium income is 12.

(c) When Government income increases from 40 to 50, the changes are:

Equilibrium income $(Y) = \dfrac{C - cT + I + G + X - M}{1 - c + m}$

$= \dfrac{40 - 0.8 \times 50 + 60 + 50 + 90}{1 - 0.8 + 0.05}$

$= \dfrac{40 - 40 + 60 + 50 + 90}{0.25}$

$= \dfrac{150}{0.25} = \dfrac{150}{25} \times 100 = 600$

Therefore, the equilibrium income becomes 600.

Net export balance at equilibrium income

NX = X − (M − mY)

= 90 − 50 + 0.05 × 600

= 40 − 30 = 10

Net export balance at equilibrium income is 10.

14. In the above example, if exports change to *X* = 100, find the change in equilibrium income and the net export balance.

According to question

C = 40 + 0.8 YD   T = 50   I = 60   G = 40   X = 100   M = 50 + 0.05Y

Equilibrium income (Y) $= \dfrac{A}{1 - c + m}$

$= \dfrac{C - cT + I + G + X - M}{1 - c + m}$

$= \dfrac{40 - 0.8 \times 50 + 40 + 60 + 100 - 50}{1 - 0.8 + 0.05}$

$= \dfrac{40 - 40 + 40 + 60 + 100 - 50}{0.25}$

$= \dfrac{150}{0.25} = \dfrac{150 \times 100}{25} = 600$

Equilibrium income is 600.

Now

Net export balance NX = X − M − 0.05Y

= 100 − 50 − 0.05 × 600

= 50 − 0.05 × 60

= 50 − 30 = 20

Therefore, net export balance becomes 20.

15. Explain why _G_ − _T_ = (_S^g_ − _I_) − (_X_ − _M_).

Savings and income are equal at equilibrium level in an economy while in an open economy savings and investments are different.

Y = C + I + G + X – M

NX = NX = X - M

Y = C + I + G + NX

Y - C - G = I + NX (eq.1)

Y - C - G can be regarded as national savings (S) or the net national income which is obtained after all consumption and government spending.

Therefore it can be written that

Y - C - G = S

Or, S = I + NX

S = Private Savings (Sp) + Government Savings (Sg)

Now

S = Sp + Sg

Sp + Sg = I + NX (as S = I + NX)

NX = Sp + Sg - I (eq.2)

We know,

Sp = Y - C - T

Sg = T - G

Putting the values in eq.2 we get

NX = Y - C - T + T - G - I

NX = Y - C - G – I

G = Y - C - I – NX

Now subtracting T from both sides

G - T = Y - C - I - NX - T

G - T = Y - C - T - I – NX

G - T = (S^p- I) – NX

Where, NX = X - M

G - T = (S^p- I) - (X - M)

16. If inflation is higher in country A than in Country B, and the exchange rate between the two countries is fixed, what is likely to happen to the trade balance between the two countries?

Exchange rate plays an important role in the level of trade taking place in a country. In this question we see that country A is having a higher inflation than B. As exchange rate is fixed in this context it will be beneficial for the country A to import goods from country B and for B to export goods to country A. Therefore country A will be experiencing trade deficit as import is more than export and similarly country B will experience trade surplus as there is more export and comparatively less imports.

17. Should a current account deficit be a cause for alarm? Explain.

An excess of import of goods, services and transfers over total exports of goods, services and transfers is called as current account deficit. This situation makes a country debtor to all other nations of the world. But this generally cannot be considered an alarming situation because countries can be having deficits which is used for increasing productivity and exports in future.

18. Suppose $C = 100 + 0.75\,Y\,D$, $I = 500$, $G = 750$, **taxes are 20 per cent of income,** $X = 150$, $M = 100 + 0.2Y$.
Calculate equilibrium income, the budget deficit or surplus and the trade deficit or surplus.

According to the question

C = 100 + 0.75YD

I = 500

G = 750

X = 150

M = 100 + 0.2Y

We know Equilibrium income (Y) = C + c (Y −T) + I + G + X − M − mY

Putting all the values in the equation we get

$$Y = 100 + .75 \left(Y - \frac{20}{100}Y \right) + 500 + 750 + 150 - 100 - 0.2Y$$

Or, $\quad Y = 1400 - \dfrac{75}{100} \times \dfrac{4Y}{5} - 0.2Y$

Or, $\quad Y = 1400 + \dfrac{3}{5}Y - 0.2Y$

Or, $\quad \dfrac{6Y}{10} = 1400$

Or, $\quad Y = \dfrac{1400 \times 10}{6} = \dfrac{7000}{3}$

Government expenditure = 750

Government receipts (taxes) $= \dfrac{20}{100} \times \dfrac{7000}{3} = \dfrac{1400}{3} = 466.6$

Since, government expenditure is more than government receipts. It shows the government is running budget deficit.

$NX = X - M - MY$

$$= 150 - 100 - \frac{0.2}{10} \times \frac{7000}{3}$$

$$= 150 - 100 - \frac{1400}{3}$$

$$= 150 - 100 - 466.66$$

$$= 150 - 566.66$$

$$= -416.66$$

As NX is negative, it implies trade deficit.

19. Discuss some of the exchange rate arrangements that countries have entered into to bring about stability in their external accounts.

The following exchange rate arrangements helped bring stability in external accounts:

1. Crawling peg is a system of continuous and regular adjustments that allows a variation of 1% at any given time.

2. Under the system of wider bands adjustments are allowed in fixed exchange rates. A variation of 10% is applied between currencies of any two countries. A country can depreciate its currency to improve Balance of payments. It will lead to increase in demand of domestic goods as purchasing power of other currencies increase which results in more exports.

3. The third type is called as managed floating where the government has the authority to make changes in the exchange rate as per situation. The variation is not limited unlike the previous two measures.