CHAPTER III

NATIONAL INCOME ACCOUNTING

COMPONENTS OF GDP

MEASURING INFLATION

1. COMPONENTS OF DEMAND

Analysis of demand for output

- Output is split into components of demand
- Total demand for domestic output is made up of following four components:
  - Consumption spending of the households (C),
  - Investment spending of the businesses (I)
  - Government's purchases of goods and services (G)
  - Foreign demand (NX)

The four components of the total output is expressed into following identity:

$$Y = C + I + G + NX \qquad (1)$$

- It (1) is called national income accounting identity

2. CONSUMPTION

- Main component of demand is consumption (Table-1)
- Consumption includes spending on anything (e.g. food to golf lessons)
- It also involves consumption spending on durable goods (e.g. automobiles)
- Such spending normally regarded as investment rather than consumption

Table – 1: Components of demands 2007

Components of GDP	$ Billions	Percent (%)
Consummations	5 139.00	68.1
Investment (domestic)	1 096.00	14.5
Government Sector	1 409.00	18.7
Net Export	- 119.0	-1.3
Total GDP	7 545.00	100%

Division of GDP in the USA from 2007 shows that:

- Consumption made 68.1% of GDP in USA
- Share of Investments is 14.2%
- Share of government sector is 17.7%
- And Share of Foreign Demand is 1.1%
- Share of the components are not constant
- They vary from Year to Year and country to country

Division of GDP in Japan from 2003 shows that:

- Japan consumes a far smaller share of GDP than USA
- Rising share of consumption in USA in 1980s was important reasons for poor economic performance

Higher consumption means:

- Less investment
- Larger trade deficits
- Lower saving

3. GOVERNMENT

Government spending includes:

- Salaries of government employees
- Government spending for purchases of goods and services
- Defence expenditures
- Costs of transport and communication
- Government transfer payments as social security and unemployment benefits

4. INVESTMENT

Investment includes:

- Investment increases ability to produce output
- Building of plants
- Construction of factories and offices
- Including new machineries
- Additions to a firm's inventories

Expenditure also for education means investment

- Human capital means ability to produce
- Investment in education is regarded as investment in human capital
- However, personal educational expenditures as consumption
- But public educational expenditures is government investment spending

5. NET EXPORTS

- ‘Net exports’ account the difference between domestic spending on foreign goods and foreign spending on domestic goods
- When foreigners purchase our goods, their spending adds to the demand of our domestic goods
- When we purchase foreign goods has, it decreases demand for our domestic goods
- The difference between exports and imports is ‘Net Export’
- US net export is negative since the 1980s (Table-1)
- It means a deficit of trade-balance
- In some years net exports have been close to zero

7. SOME IMPORTANT IDENTITIES

- Let us introduce some notations and conventions
- It will be followed throughout the book

Let us first simplify our analysis making following assumptions:

- Let us denote C for consumption and I for investment spending
- Let us output produced equals output sold
- Let us the economy has neither a government nor foreign trade

- Hence, we can write: $Y = C + I$ (1)
- Identity (2) shows the allocation of income
- It means the Nation Income could be either consumed or invested

Let us establish a relationship among saving, consumption, and GDP:

- Again the National Income could be either consumed or saved
- Hence, we can write: $Y = C + S$ (2)
- This (3) shows the components of demand

From (1) and (2), we have:

- $C + I = Y = C + S$ (3)
- $I = S$ (4)

- It means (4), in a simple economy investment equals saving

Let analysis this conclusion

- More is saved more is invested
- More consumption means less investment
- Less consumption means more investment
- The conclusion is it is better to save more, them more saving means investment & growth

3. REINTRODUCING GOVERNMENT AND FOREIN TRADE

Let us now introduce government and external sector in the model above

Let us:

- **Government purchases equals G**
- **Government taxes equals TA**
- **Transfers (Social Transfer) to the private sector equals TR**
- **Net exports (Exports - Imports) is NX**

- **Output produced is either consumed, invested (saved), or used by government**

Hence:

$$Y = C + I + G + NX \qquad (5)$$

- **Let us introduce concept of output and disposable income**
- **We know that output equals disposable income (YD)**

It means:

$$Y = YD \qquad (6)$$

- **Disposable income could be used either for consumption or investment**
- $YD = C + S \qquad (7)$

Disposable income (YD) is equal to income plus transfers less taxes (TA)

- $YD = Y + TR - TA$ (8)
- Combination of the identities (7) and (8), we have:
- $C + S = Y + TR - TA$ (9)
- $C + S = Y + TR - TA$ (10)

From equation (5) and equation (10), we have:

- $C + S = Y + TR - TA$
- $C + S = C + I + G + NX + TR - TA$

  $[Y = C + I + G + NX]$
- $S - I = (G + TR - TA) + NX$ (12)

Case-I

If saving equals investment, then maximum possible investment is achieved:

- **In this case, government spending and net export is zero**
- **It means, there is no government spending**
- **And either there is no foreign trade or trade is balanced**
- **Net export could be zero, if there is no foreign trade or trade-balance is zero**

- **However, government spending could never be zero**

Case-II

- By unchanged government spending, investment could be increased by increasing imports
- Apparently, it means that if more is imported more could be invested
- This is correct, but more and more capital goods (and not luxury) have to be imported
- However, only more and more export enables import of more and more capital goods that ensure growth
- Hence, export must be enhanced, but by import in place of luxury goods import of capital goods must be ensured

Conclusion

Investment and hence growth could be enhanced:

- Minimizing government spending
- Promoting export and import of more and more capital goods
- Cutting tax
- Increasing consumption cutting tax
- Supporting income through social and other supports
- All of these support consumption and saving that foster growth

4. BUDGET, TRADE, SAVING AND INVESTMENT

- Let us explain impact of government spending and net export on investment with an example (Table-2)

Case-1

- In case-1 saving is $1000 and there is no BD and TBD
- Saving $1000 was fully invested
- If there is no BD and TBD, saving is fully invested

Table – 2: Budget, Trade, Saving and Investment (Billions Dollars)

$$Y = C + I + [G + TR - TA] + NX$$

$$Y = C + I + [BD] + NX$$

	Saving	Investment	Budget	Trade Balance
Case-1	1000	1000	0	0
Case-2	850 (1000 – 150)	850	- 150	0
Case-3	1150 (1000 + 150)	1150	+ 150	0
Case-4	1150 (1000 + 150)	1150	0	+ 150
Case-5	850 (1000 – 150)	850	0	- 150
Case-6	1050 (1000 + 150 – 100)	1050	150	- 100
Case-7	950 (1000 - 150 + 100)	950	- 150	+100

Case-2

- In case-2 there was no TBD, but Budget of $150
- So, savings $150 was eaten up by BD
- Hence, investment decreased to the amount of $150
- If there is Budget deficit a part of saving is eaten up by BD
- For growth it is better not to have any Budget deficit

Cae-3

- In case-3 trade balance was 0, but there was budget surplus of $150
- So, the saving and investment increased to the amount of $150.
- The Investment was $1150
- That means, savings were increased by the amount of trade balance surplus
- So, growth is fostered by trade balance surplus

Case-4

- In case 4 there was no Budget deficit, but a trade balance surplus of $150
- So, the saving and Investment increased to the amount of $150. The investment was $1150.
- If there is a trade balance surplus, but no budget deficit, the investment increases to amount of trade balance surplus

Case-5

- In cae-5 there was no budget deficit, but a trade balance deficit of $150
- So, savings was decreased by trade balance deficit of $150
- So, investment was only $850 ($1000-$250)
- If there is no budget deficit, but a trade balance deficit, the investment is reduced to amount trade balance deficit

Case-6

- There is budget surplus of $150 and trade balance deficit of $ 100
- So, savings and investment was increased by $50
- The investment was $1050 ($1000+$50)
- If there is budget surplus but a trade balance deficit, the saving and investment increases to the amount of budget surplus decreases to the amount of trade balance deficit

Case-7

- There is budget deficit of $150 and trade balance surplus of $ 100
- So, savings and investment decreases to the amount of $50
- The investment was $950 ($1000-$50)
- If there is budget deficit but a trade balance surplus, the saving and investment decreases to the amount of budget deficit decreases to the amount of trade balance deficit

Questions

- Describe the different components of GDP and explain the relationship among the components saving, investment and government sector.
- Explain the relation between savings and investment using the national income accounting identities.
- Explain the impact of national budget, trade balance on savings and investment using an example.

End of the Chapter

Thank You Very Much

For Patient Listening