

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:

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

- ◆ It (1) is called national income accounting identity 2

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 (%)
Consumptions	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% 3

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:

$$\square C + I = Y = C + S \quad (3)$$

$$\square I = S \quad (4)$$

◆ 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, then more saving means investment & growth

3. REINTRODUCING GOVERNMENT AND FOREIGN 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:

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

- ◆ **Let us introduce concept of output and disposable income**

- ◆ **We know that output equals disposable income (YD)**

It means:

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

- ◆ **Disposable income could be used either for consumption or investment**

- ◆ $YD = C + S \quad (7)$

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

Case-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 case-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-\$150)
- ❖ 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