

# 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

## 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 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**