Vivekananda College,
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NAAC ACCREDITED 'A' GRADE

Topic: National Income Accounting

Course Title: ECOA-CC-2-3-TH

Paper: III

Unit: 1

Semester: II

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Name of the Department: Economics

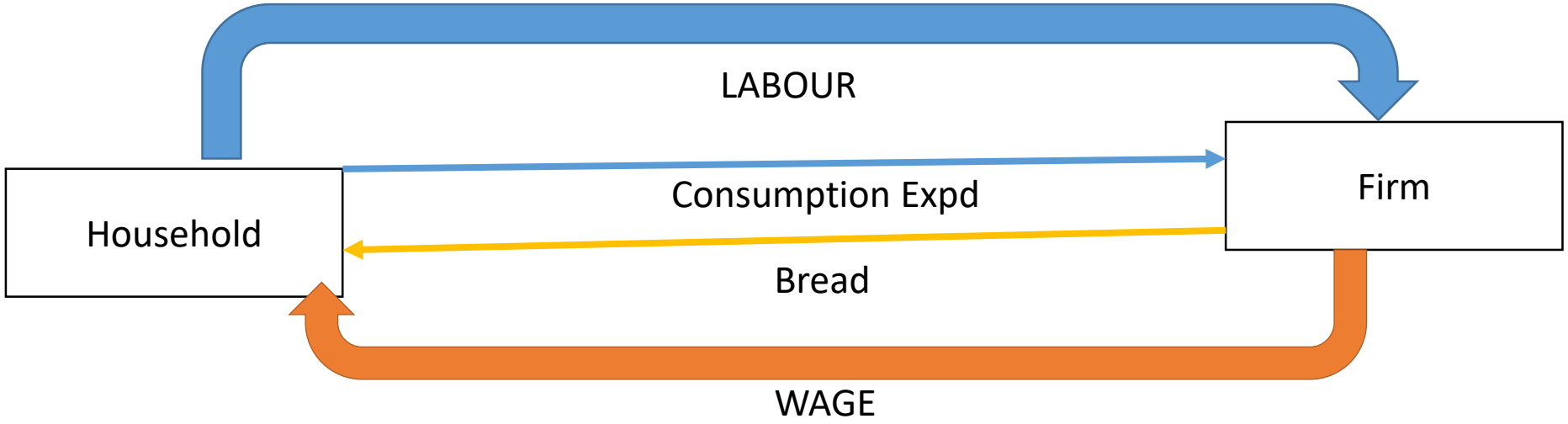
UNIT—1: National Income Accounting

- Why this is required in Macroeconomics
- Answer: Actually in Macroeconomics our one major goal is to find out the policy or policies through which the country can develop. Now to do this we have to know where we are? This unit will tell us where we are?
- If I say that Prof. Thakur is a person of upper middle class then how I come to this conclusion.
- I have come to this conclusion because I know the income of a Professor (without tuition income as Prof Thakur is not giving pvt tuition). So ‘income’ is the key word.

So for a country…

- It is income of a country which tells you where the country is now.
- And income of country=National Income
- National income is a big term it involves two terms: 1) National and 2)Income
- So to understand this big term we have to go through this topic.
- So we start with a very simple economy with one Household and one firm
- One Household supplying labour, one firm producing Bread

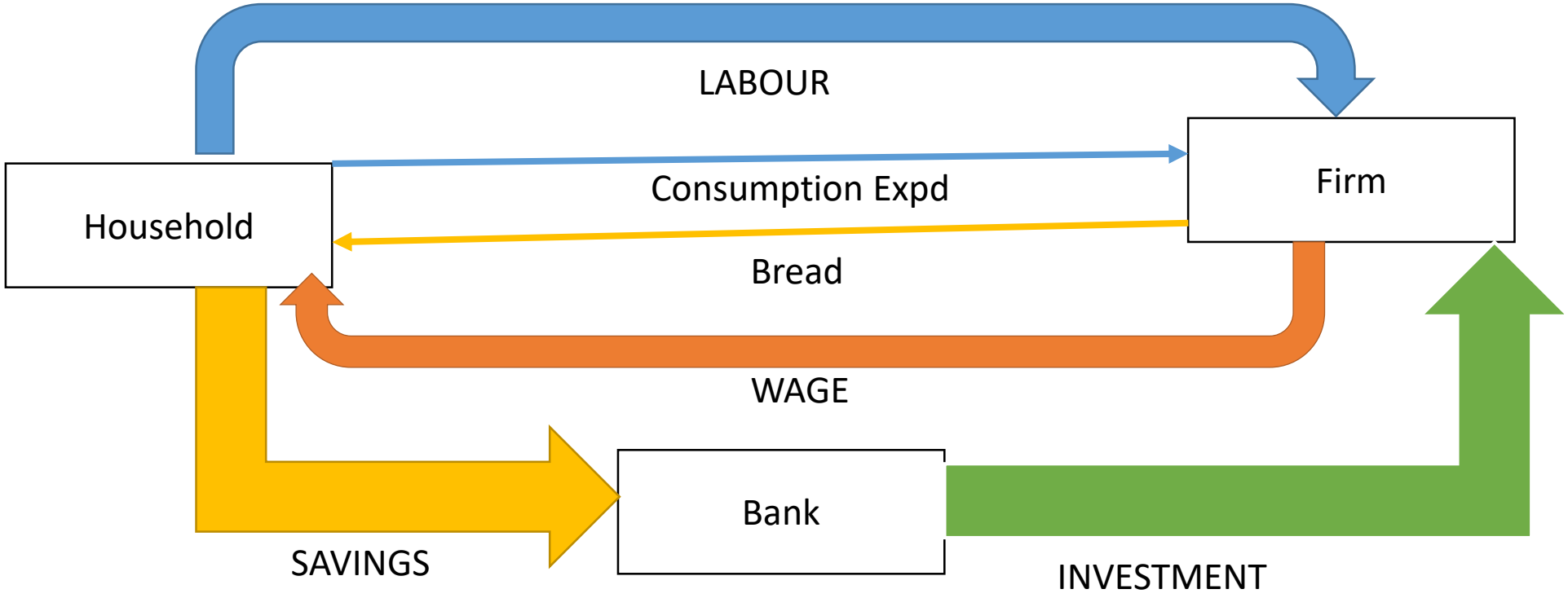
Circular flow



National Income in Simple Economy

- So here National income is Wage which is the income of the Household
- The total output (GDP, will explain later) is the value of bread which we can get from the Consumption expenditure.
- Now we introduce two things:
- First we assume that the House will save a certain percentage of income and consume the rest.
- The firm also gets some investment also.

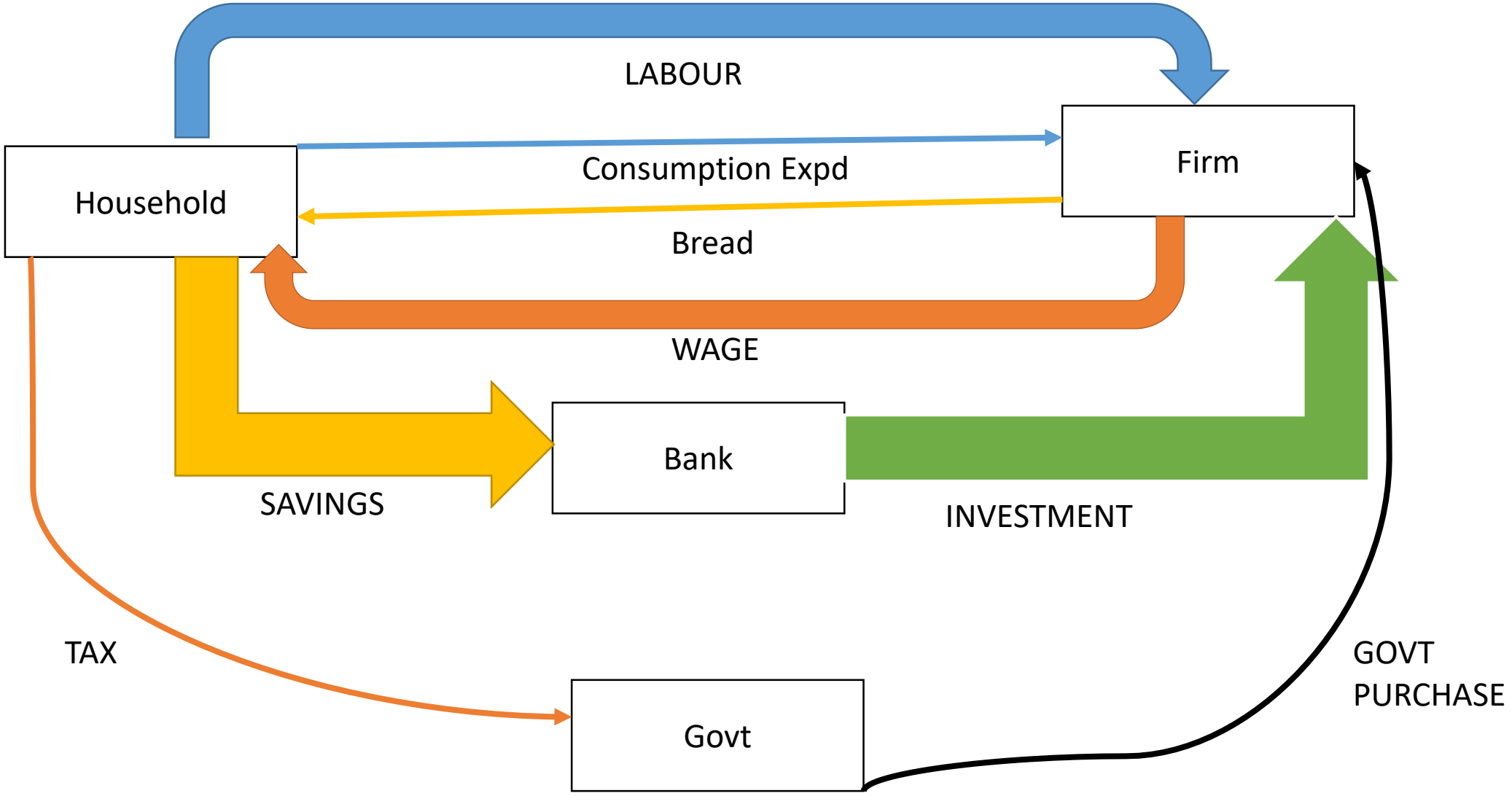
Circular flow



So What is National Income?

- The National Income is sum of Consumption Expenditure and Savings
- Or we can get the income by adding up Consumption expenditure and Investment.
- Now we introduce Government.
- Government will collect tax which Govt’s income and govt will spend this for welfare activity.

Circular flow



Circular Flow of Income

- So Household is supplying labour to Firm
- Firm is paying wage to them, this is one loop.
- Another loop is Firm gives HH bread, the payment HH is making is the Consumption Expenditure.
- With this HH is also savings some out of their income which in turn used as Investment for the Firm
- HH is also paying Tax to the Government which Govt uses it to purchase ventilator
- Now I think we understand the circular flow of income.

GNP & GDP

- GNP: The value of all final goods and services produced by domestically owned factors of production at home or abroad in the current year.
- Now think that an American Consultant is working in IBM at Bangalore center and an India is professor in an US university.
- The income of American Consultant will not be a part of Indian GNP but the income of Indian Professor will be included in India GNP.
- GDP: The value of all final goods and services produced in the current year within the geographic boundary of a country.
- GNP=GDP+ Income of India residing abroad – income of foreign nationals

NNP & NDP

- All capitals wear out in the course of production. This is termed as Depreciation or Cost of Capital. This is set aside to maintain the stock of capital at its present position.
- NNP = GNP – Depreciation
- NDP = GDP – Depreciation
- Now all the above variables are evaluated at market price.
- Remember the Circular flow of Income again. The firm produce goods and services and sell it. With this revenue they are paying the factors of production, indirect business tax (IBT) and they are getting sunsidy.

Contd……

- So we can write:
- GDP = sum of all payments to factors + IBT – Subsidies

= ∑ Wages + ∑ Rent + ∑Interest + ∑Profit + IBT – SUB

∑ Wages + ∑ Rent + ∑Interest + ∑Profit = GDP – IBT + SUB

GDP at factor cost

or

National Income (NI) at factor cost

Now the task is to measure it.

But HOW??????

Measuring NI

- There are three methods:
- 1. Income Method
- 2. Expenditure Method
- 3. Value Added Method
- Income Method

Here we sum all the factors payment or income of all factors of production. That mean we have to add Wages & Salaries, Rent, Interest and Profit.

Income Method

- So in very simple closed economy without Government (Recall the Circular Flow of Income) the HH income which is actually NI is equal to Consumption (C) + Savings (S),
- Now if we introduce govt here the what is the income of Govt.: Tax
- So NI (Y) = C + S + Tax
- But Govt also transfer (Tr) some money to different welfare activities like pension
- So Y = C + S + Ta-Tr or Y = C+S+NT (NT = Net Tax)
- Now if we open the economy then another component of income will come: Net income from Abroad (Rf) so Y = C+S+NT+Rf

Expenditure Method

- To get the value of final goods and services here we try to sum all the expenditure made by people and govt.
- But the number of individual buyers are so vast that it is near impossible to get the data.
- So output is grouped into three major categories: Consumption Output, Investment output and output for Govt purchase.
- Now if economy is closed means no export and import then the value of GDP or NI is given by:
- $Y = C + I + G$

Expenditure Method

- But if the economy is open then there export as import.
- The output which is exported is produced here but not marketed within the economy.
- On the other imported goods are not produced here but marketed here.
- So every expenditure has two components: expenditure on Domestically produced goods and expenditure on imported goods.
- $C = C_d + C_m$ where C_d = Expd on domestically produced goods and
- C_m = Expd on Imported Goods

Contd…..

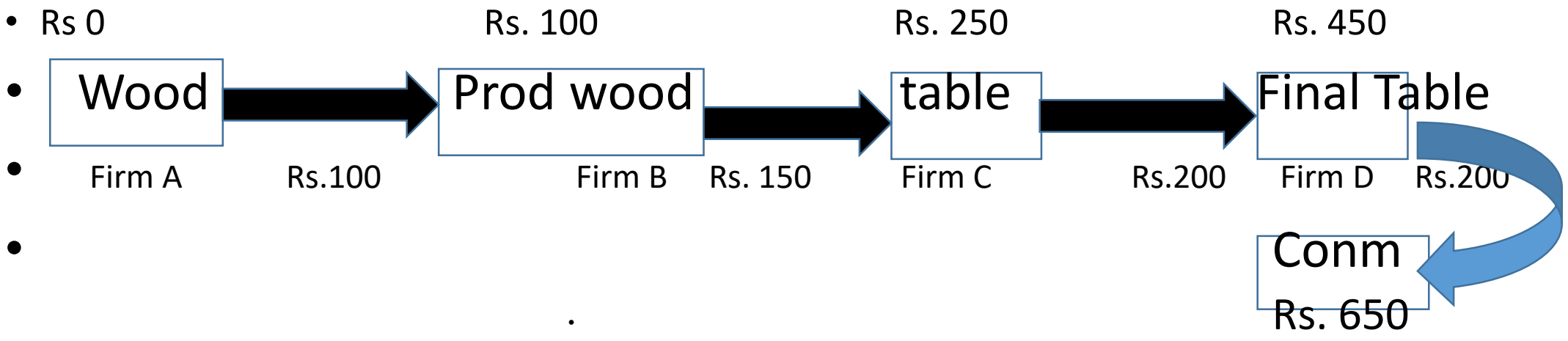
- Similarly $I = I_d + I_m$ and $G = G_d + G_m$
- So GDP = $C_d + I_d + G_d + X$; X= Export
- GDP = $C - C_m + I - I_m + G - G_m + X$
- $= C + I + G + X - (C_m + I_m + G_m)$
  - total Import (M)
- So GDP (Y) = C + I + G + (X – M)

The problem of Double Counting

- The problem of double counting is a major problem for both the above two processes.
- In case of expenditure method the problem of double counting arises because sometimes it is very difficult to differentiate between final and intermediate goods
- In case of income method the problem arises due to problem of differentiating between income and non-income.
- Value Added Method is used for overcoming this problem

Value Added Method

- Under this method the Value Added by all the production units (including those producing intermediate goods and services) are summed up to arrive at the value of final production.



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Here GDP = Rs. 650

Interpretation of VA from Income Side

- Start with single firm.
- VA = TR – CII Where TR= Total Revenue & CII= Cost of Intermediate Inputs
- Now Profit of the Firm $\prod$ = TR – TC ; TC = Total Cost
- Now TC = CII + Payments to the Factors of Production
- = CII + Wage Bill (W) + Rent Bill (T) + Interest Bill (K)
- W = wL ; T = rt; K = iK ; w=wage rate, L=Labour employed; r=rent for Land, t= amount of Land used; i = interest rate; K= Amount of Capital used
- $\prod$= TR – CII – (W+T+K) => VA = W + T + K + $\prod$
- So for n no. of firms $\sum VA_i = \sum W_i + \sum T_i + \sum K_i + \sum \prod_i$

Some Identities

- In Case of Simple closed economy without govt.
- $Y \equiv C + S$
- $Y \equiv C + I$
- $C + I \equiv Y \equiv C + S$
- $I \equiv Y - C \equiv S$
- That is the Saving-Investment Identity.
- Now we introduce Government and Foreign Trade.

Some identities

- $Y \equiv C + I + G + NX$
- A part of NI is spent on taxes (TA) and the private sector also gets some payment as Transfer (TR) (will detail out all these later) and that gives the Disposable Income (YD):
- $YD \equiv Y + TR - TA$
- Example: Suppose I earn Rs. 100 as wage, I pay taxes of Rs. 10 and I get some transfer payment from my friend of Rs. 20. So
- $Y = 100$ and $YD = 100 + 20 - 10 = 110$
- $YD = C+S$

Contd……

- YD –TR +TA ≡ C + I + G + NX
- C + S –TR + TA ≡ C + I+ G +NX
- S – I ≡ (G + TR – TA) + NX ⟶ Trade Deficit/Trade Surplus

Govt Budget Deficit

(G + TR) is Govt Spending and TA is Govt Income

Now if (G+TR) > TA => Budget Deficit

< => Budget Surplus

If S = I the Budget Deficit (Surplus) = Trade Surplus (Deficit)

Summary of NI Identities

- GNP at market price – Capital Consumption Allowance (Depreciation) = NNP at market price
- NNP at market – Indirect Business Tax (IBT) + Subsidy = NI
- NI = Wages & Salaries + Proprietor's income + Rental Income of Persons + Corporate Profit + Net Interest
- Rental Income of Persons: Imputed income of owner-occupied houses
- Net Interest: Interest paid by domestic business and rest of the world to domestic individuals and firms – interest paid by household to business and household & firms to the rest of the world.
- Corporate Profit (Corp ∏) – Corporate profit tax = After tax corporate profit

Contd….

- After tax Corporate profit = Distributed Corporate Profit (DC∏) + Undistributed Corporate Profit (UC∏)
- Corp ∏ - Corp ∏ tax = DC∏ + UC∏; DC∏= Dividend
- = Dividend + UC∏
- Personal Income (PI)= NI - Corp∏ + Dividend – Social Insurance Contribution + Transfer receipts + (Personal Interest Income – Net Interest)
- Disposable Personal Income (DPI)= PI – Personal tax and non-tax payment.

Exercise

- The following information is give for an economy:
- GNP=2400, Gross Investment= 400, Net Investment= 150, Consumption=1500, Govt Purchase=480, NI=1925, Wages & Salary=1460, Proprietor's income+rental income of person=160, Dividends=50, Govt Budget Surplus= 15, Interest Adjustment=60, Govt transfer to persons=260, Business Transfer payment=0, Personal tax and non-tax payment=300, Personal Interest Income=190.
- What is a) NNP, b) Net export, c) Indirect Tax, d) Corporate profit, e) Taxes-Transfer, f) Personal Income, g)DPI, h) Personal Savings.