Nominal GDP = Goods are valued at current prices.
Real GDP = Goods are valued at constant prices.

$$\text{GDP Deflector} = \frac{\text{Nominal GDP}}{\text{real GDP}} \times 100.$$

Present value = 1000/-
intrest - 10%.
Number of years - 2

* Future value = $f = p(1+i)^n$

$$= 1000(1+10)^2$$

* Present value = $p = \frac{f}{(1+i)^n}$

Q. A person deposite sum of rupees 20 thousand at the intrest rate of 18% compound rate for 10 years. Find the ~~on~~ maturity value for 10 years.

$$f = p(1+i)^n$$
$$= 20000\left(1+\frac{18}{100}\right)^{\cancel{10}\,2}$$
$$= 20000 \times \cancel{10}^{10}\left(\frac{118}{100}\right)^2$$
$$= 27848.$$

Q.2 A person wishes to have future sum of 1Lakh rupees for his son's edulation after 10 years. What is the single payment that he should deposite now so that he could disere the amount. rate of intrest is 15%.

$$P = \frac{100000}{\left(1+\frac{15}{100}\right)^{10}}$$

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Chapter. 3

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Interdepence of gain from Trade :

Q: why Interdepence is a Norm ?

A. Interdependence occurs because people are better off when they specialize & trade with others.

Q2 what determines production & trade ?

A: Factors of production means trade depends on differences in opportunity cost.

→ There are two theorems of International trade.
(i) Theory of Comparative cost advantage
(ii) Theory of absolute advantage.

(a) Theory of Comparative Cost Advantage :

when the producer produces goods & services by using less amount of opportunity cost, then we can say producer has Compiled the cost advantage in producing those products.

(b) Theory of absolute advantage :

when the producer produces goods & services by using less amount of inputs, then we can say producer has absolute advantage in producing goods.

Q. To produce one bunch of meat, farmer takes 60 minutes & rancher takes 20 minutes. similarly to produce one ounch of Patatos, farmer takes 15 minutes & rancher takes 10 minutes. In 8 hours how many ounch of meat, farmer can produced ?

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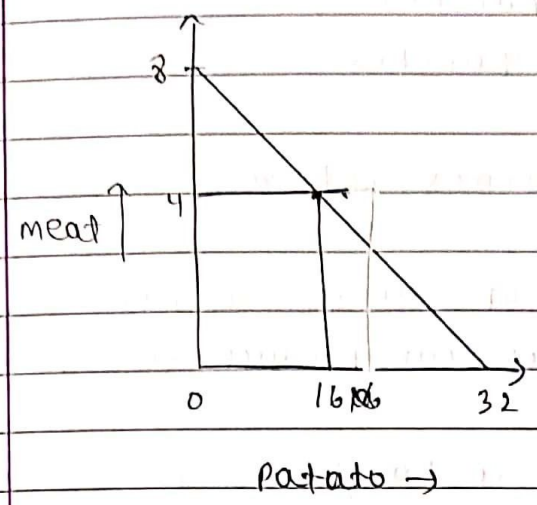
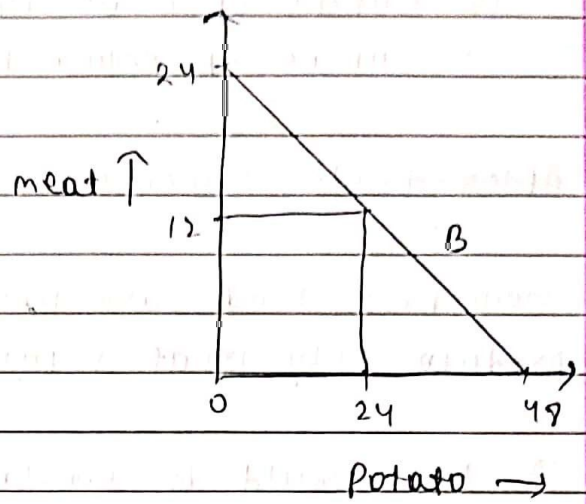
A: In 8 hours, farmer produces 8 ounces of meat & 32 ounces of potato.
Rancher produces 24 ounces of meat & 48 ounces of potato.



(farmer's PPF)



(Rancher's PPF)

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Production opportunities of farmer & rancher
minutes needed to make 1 ounce.

	Meat	Potato
farmer	60 min	15 min
Rancher	20 min	10 min.

Q. why PPF is called CPF in the absence of trade?

A: In the absence of trade, PPF may be called CPF, (Consumption possibilities frontier) because whatever they produce, they will consume.

Rancher told the farmer "I have thought a deal for you. I know how to improve life for both of us. I think you should stop producing meat all together & give all 8 hours towards producing potatoes.".

Rancher told "If you gave me 15 ounces of potatoes out of 32, in exchange of 5 ounces of meat. If you

go with my plan, then you will have more of both the goods." Rancher will devote 6 hours to the producing of meat & 2 hours to the production of potato. ~~10 ounces of meat by Rancher~~

18 ounces of meat by Rancher.

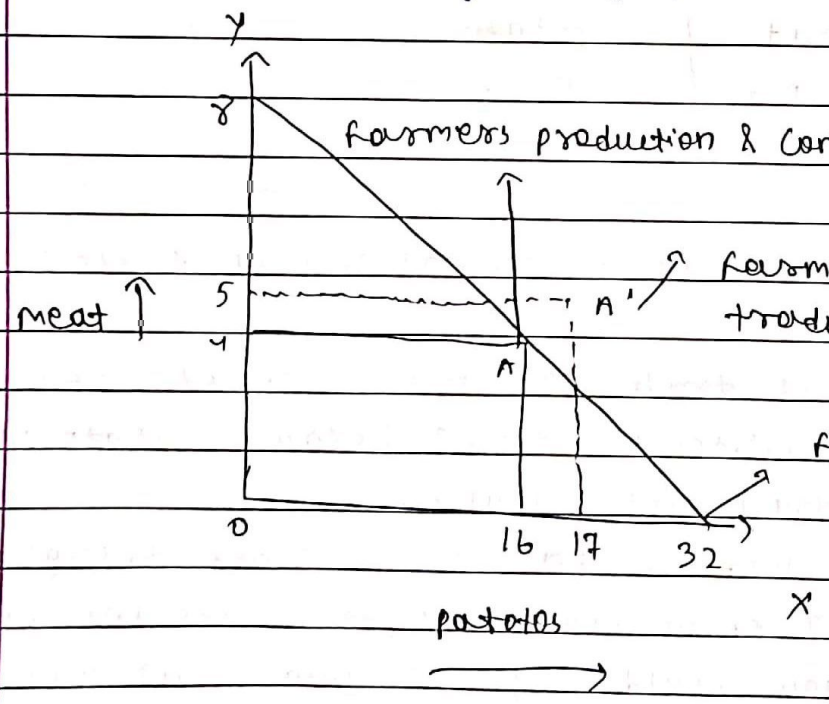
12 ounces of potato by Rancher.

After trade, Rancher & Farmer both are benefited.

(i) Gain from trade are most obvious if the Rancher can produce only meat & farmer can produce only potato.

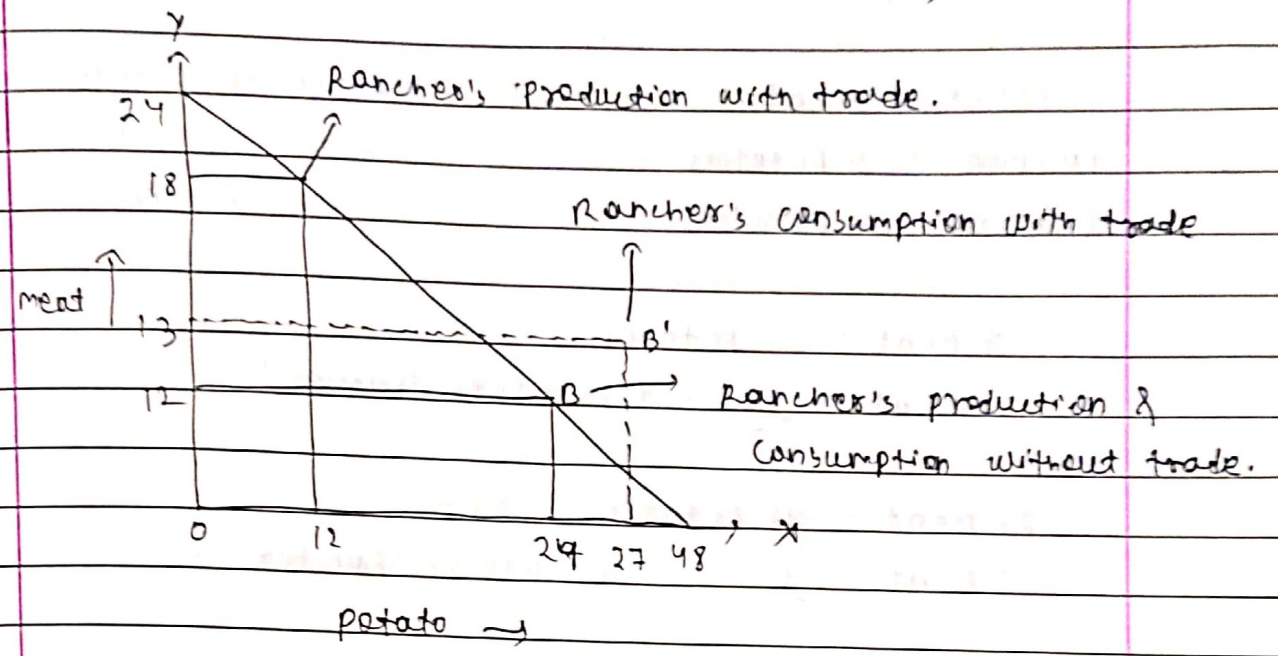
(ii) The Gain would be similar if Rancher & farmer were each capable of producing the other good but only at great ~~deat~~. cost.

(iii) Gain from trade are less obvious when one person is greater at producing every goods.



Farmer's PPF (After trade) production possibilites frontier.

Rancher's PPF (production & consumption)



Gain from trade :

	Farmer		Rancher	
	meat	potato	meat	potato
without trade	40 z	160 z	120 z	240 z
production & consumption with trade	0 z	320 z	180 z	120 z.
Trade	give 40 z.	give 150 z	give 50 z	give 150 z.
Consumption gains	50 z	170 z	130 z	270 z.
from trade	+10 z	+10 z	+10 z	+30 z.

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opportunity cost of

1 ounce of meat		1 ounce of potato
Farmer	4 potatoes	1/4 of meat
Rancher	2 potatoes	1/2 of meat

8 meat = 32 potatoes

1 meat = $\frac{32}{8}$ = 4 potatoes (Farmer)

24 meat = 48 potatoes

1 meat = $\frac{48}{24}$ = 2 potatoes. (Rancher)

32 ~~potatoes~~ = 8 meat

1 potato = $\frac{8}{32}$ = $\frac{1}{4}$ of meat (Farmer)

48 potatoes = 24 meat

1 potatoes = $\frac{24}{48}$ = $\frac{1}{2}$ of meat (Rancher)

It is possible for one person to have an absolute advantage in both the products. But it is impossible for one person to have comparative advantage in both the goods because opportunity cost of one good is the inverse of the other.

The gain from specialization & trade is based not on absolute advantage but on comparative advantage.

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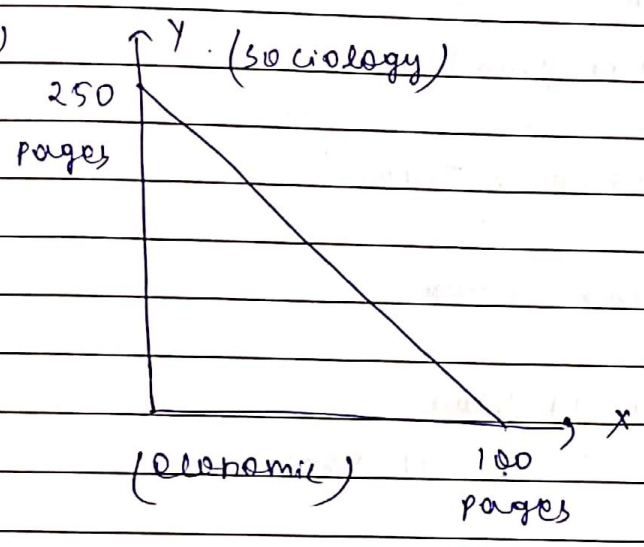
Q. Masin can read 20 pages of economics in one hour. She can also read 50 pages of sociology in one hour. She spends five hours per day studying.

(i) Draw Masin's PPF for reading sociology & economics.

(ii) What is Maria's opportunity cost of reading 100 pages of sociology?

A: 20 pages of economics in one hour.
50 pages of sociology in one hour.
5 hours per day struggling.

(i)



Q. American & japanese workers can each produce four cars per ~~day~~ year. An american worker can produce 10 tons of grain. Japanese worker can produce 5 tons of grain per year.
Suppose there are 100 million workers?

(i) Draw PPF for American & Japanese workers.

(ii) What is opportunity cost of car & grain in USA?

(iii) Which country has an absolute advantage in producing ~~gain~~ & grain & car?

(iv) Which country has comparative advantage in grain & car.

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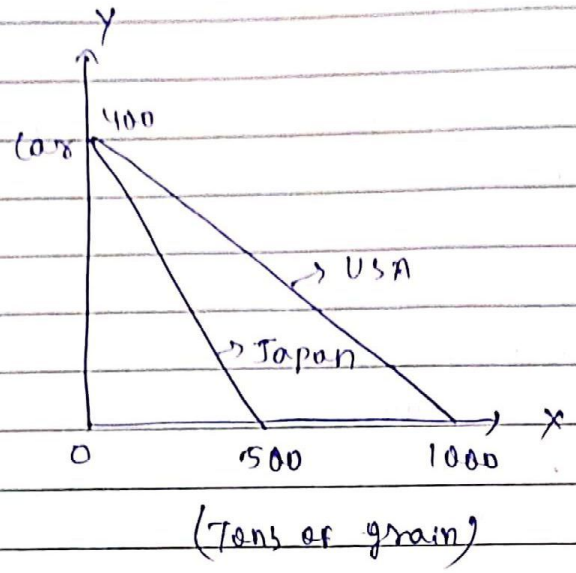
(v) Q. Without trade half of each country

A. (i)



(PPF of America & Japan)

(ii) Opportunity cost of car in USA

4 car → 10 tons of grain

1 " → $\frac{10}{4} = \frac{5}{2}$ tons of grain.

Opportunity cost of car in Japan

4 car → 5 tons of grain

1 " → $\frac{5}{4}$ tons of grain.

Opportunity cost of ~~car~~ grain in USA.

10 tons → 4 car

1 " → $\frac{4}{10} = \frac{2}{5}$ ~~tons~~ car

Opportunity cost of grain in Japan

~~4 car → 10 ton~~ 5 ton → 4 cars

→ 1 car → 1 ton = $\frac{4}{5}$ car.

(iii) In USA, absolute advantage in producing grain & car.

(iv) In Japan, comparative advange in producing car.
In USA, Comparative advange in producing grain.

(v)

Q. Pat & Kris are roommate. Pat takes 4 hours to prepare a galon of fruit bear. & 2 hour to prepare pizza. Kris takes 6 hours to prepare a galon of fruit bear. & 4 hour to prepare pizza.

(i) what is each roommate opportunity cost of making a pizza who has the absolute advantage in making pizza.

(ii) similarly who has the comparative advantage in making pizza.

(ii) If Pat & Kris trade goods each other who will trade away pizza in exchange of fruit bear.

(iii) The price of pizza can be express in terms of galon of fruit bear. what is the highest price at which pizza can be traded that would both roommate better off. & what is the lowest price & explain.

(i) for Pat.

~~2 hour~~ →

4 hours to prepare fruit bear.

1 hour → $\frac{1}{4}$ of fruit bear.

2 hour → $\frac{1}{4} \times 2 = \frac{1}{2}$ gallon of fruit bear.

for Kris,

$\frac{1}{4}$ pizza $\rightarrow$ $\frac{1}{6}$ gallon.

1 " $\rightarrow$ $\frac{1}{6} \times 4 = \frac{2}{3}$ gallon.

Pat has absolute advantage in making pizza.
Pat has comparative " " " pizza.

(ii) As pat has comparative advantage in making pizza, he will trade out pizza with Kris in exchange of fruit bear.

(iii) The highest price of pizza in terms of fruit bear that will make both will make better off is 2/3 gallon of fruit bear. if the price is higher than that, then Kris will prefer making it's own pizza, rather than trading for pizza that pat makes.

The lowest price of pizza in term of fruit beer that will make both better off is 1/2 gallon of fruit beer, if price is lower than that then pat would prefer making own fruit beer rather than trading for beer.

Dt. 14. 10. 2022

Q.5 suppose that there are 10 million workers in Canada & each of these workers can produce either two cars or 30 bushes of wheat in a year.

(i) what is the opportunity cost of producing car in Canada. & also the opportunity cost of producing bushes of wheat in Canada. Explain the ~~opportunity cost~~. relation between two opportunity cost.

(ii) Draw the PPF if canada chooses to consume 10 million cars then how much wheat can be consumed without trade. label this points on PPF.

(iii) suppose the united states offers to buy 10 million car from canada then in exchange for 20 bushes of wheat

for canada. if canada continue to consume 10 million car. How much wheat does deal allow canada to consume. should the canada accept the deal ?

(i) A: Opportunity cost of producing car in canada.

2 Car → 30 bushes wheat

1 car → $\frac{30}{2}$ = 15 bushes of wheat.

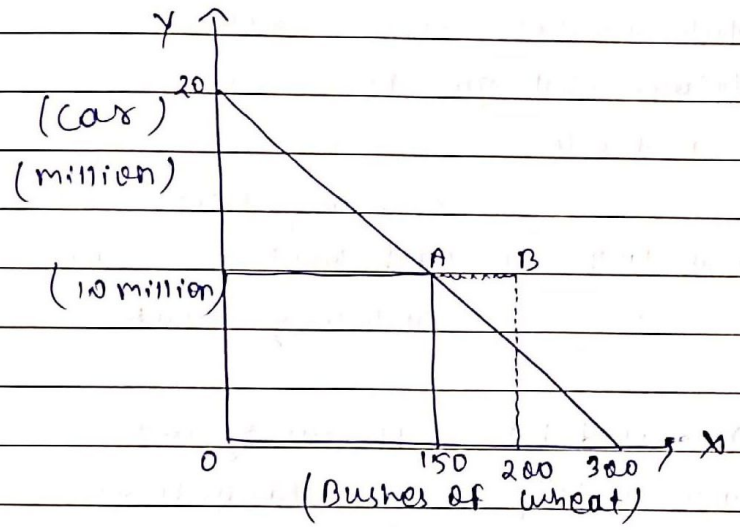
Opportunity cost of producing wheat in canand.

30 bushes wheat → 2 car

1 wheat → $\frac{2}{30} = \frac{1}{15}$ car.

The relation between two opportunity cost is inverse.

(ii)



If all 10 million workers produce 2 car each. then total car production will be 20m.

If all 10 m. works produce 30 bushes wheat. then total production will be 300m.

As the trade of between car & wheat always same that's why PPF is always straight line.

If canada choosen to consume 30.m car between 5 m. workers to produce wheat, then total production will be

30x5 = 150 m.

(iii) If united states buy 10 m. cars from Canada & Canada continues to consume 10 m. car then the Canada will be produce 20 m. car.

Q.6 England & Scotland both produce scones & sweaters. suppose an English worker can produce 50 scones per hour. or one sweater for hour. ~~spo~~ suppose the scotties worker can produce 40 scones per hour or 2 sweater for hour.

(i) which country has the absolute advantage in each goods? which country has comparative advantage in each goods.

(ii) If england & scotland decide to trade which commodity will scotland trade to england.

(iii) If a scottish worker could produce 1 sweater for hour would scotland still gain from trade.? would England still gain from trade?

A (i) Absolute advantage in ~~each goods~~ producing scones. - England

(ii) Absolute " " producing sweaters - scotland.

* English workers would have opportunity cost of $\frac{1}{50}$ sweater for scone. have a comparative advantage in scone production over scotish worker.

opportunity cost of scones in Eng = 1/50

" " " " " scottish = 1/20.

* scottish worker who have 20 scones of sweater have comparative advantage in sweater production over english worker.

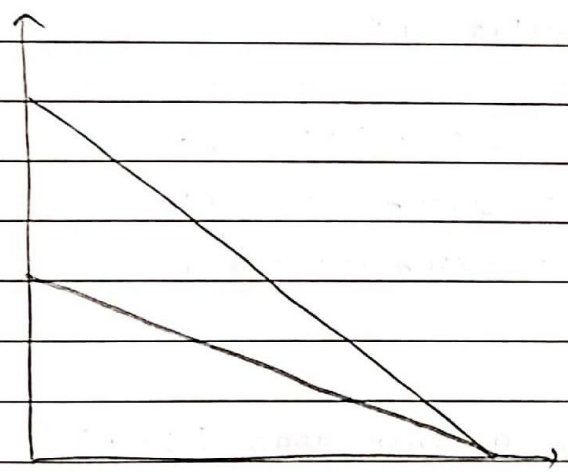
opportunity cost of sweater in Eng = 50

" " " " in scott = 20.

(ii) ~~If~~ ~~England~~
Trade with a price between 20 & 50 scones for sweater will benefit both countries between they are getting traded good at a lower price than their opportunity cost to producing goods in their own country.

(iii) Even if scottish worker produce just one sweater per hour the country will still gain from trade. because scotland would still have a comparative advantage in producing sweater. it's opportunity cost for sweater would be higher than before. (40 scones for sweater insted of 20 scones before). There are still gain from trade since England has a higher opportunity cost (50 cones for sweater).

Q.7 suppose in a year American worker can produce 50 shirts or 10 computer. while chinese worker can produce 50 shirts or 5 computer. ~~Ans~~
(i) draw the PPF for two countries? suppose that without trade the workers in each country spend half their time to producing each good. identify the point from the graph.



Chapter-24 Consumer price Index

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BLS → Bureau of labour statistic

Consumer price Index is the measures of overall cost of goods & services bought by a typical consumer.

Steps which have been undertaken to Calculate CPI:

Step-1

Fixed the basket of goods & services.

Hot dog (4)
Hamburger (2)

A consumer buys the basket of 4 Hot dog & 2 Hamburger, once we fixed it will continue till we get the result.

Step-2

Fixed the prices of the product.

Year	price of Hotdog	price of Hamburger
(Base year) 2010	\$1	\$2 (1×4) + (2×2)
2011	\$2	\$3 (2×4) + 3×2
2012	\$3	\$4 (3×4) + (4×2)

Step-3

Compute the Basket cost.

In year 2010 = 1×4 + 2×2 = \$8
" " 2011 = 2×4 + 3×2 = \$14
" " 2012 = 3×4 + 4×2 = \$20

Step-4

Choose one year as base year (2010) & compute the consumer price Index in each year.

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Price Index in each year :

$$CPI = \frac{\text{Cost of the basket of goods \& services in current year}}{\text{cost of the basket of goods \& services in base year}} \times 100$$

$$2010 = \frac{88}{88} \times 100 = 100$$

$$2011 = \frac{154}{88} \times 100 = 175$$

$$2012 = \frac{20}{8} \times 100 = 250$$

Step-5

Calculate the inflation rate

for calculating inflation rate, we take the data of two consecutive years.

$$\text{inflation rate (2010)} = \frac{\text{CPI in 2011} - \text{CPI in 2010}}{\text{CPI in 2010}} \times 100$$

$$= \frac{175 - 100}{100} \times 100 = 75\%$$

$$2012 = \frac{\text{CPI in 2012} - \text{CPI in 2011}}{\text{CPI in 2011}} \times 100$$

$$= \frac{250 - 175}{175} \times 100 = 43\%$$

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Q. The cost of the basket of goods & services in 2002 is \$1200. the cost of the same basket in 2004 is \$1236. then what % change in price ?

A CPI in 2004 = $\frac{\cancel{1236}^{103}}{\cancel{1200}} \times 100$

= 103

Inflation = $\frac{103 - 100}{\cancel{100}} \times \cancel{100}$

= 3%.

Dollar value at different times :

Baseball player gets \$80,000
(Babe Ruth) (1931)
what is the value of his salary in 2001.

[CPI of 1931 : 152
CPI of 2001 : 177]

Salary in 2001 = salary of 1931 × $\frac{\text{CPI } 2001}{\text{CPI } 1931}$

= $80000 \times \frac{177}{152}$

= 93157

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problems arise in measuring CPI :

(i) substitution bias
(ii) Introduction of new product
(iii) unmeasured quality change

Apple : Orange :
price less price more

(i) substitution bias :

(a) The basket does not change to reflect the consumer reaction to changes in relative prices.
(b) Consumer substitute towards goods that have become relatively less expansive.
(c) The index or CPI over look the increase in cost of living by not considering consumer substitution.

(ii) Introduction of new product :

(a) The basket does not reflect the changes in purchases power brought on by the ~~indr~~ introduction of new product.
(b) New product result in greater variety which in ~~terms~~ turns makes each dollar valuable.
(c) Consumers need fewer dollar to maintain any given standard of living.

(iii) unmeasured quality change :

(a) If the quality of a good rises from one year to next year, then the value of dollar rises even if the price of the good remain same.

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(b) The quality of goods falls from one year to next year, the value of the dollar fall even if the price of the goods remain same.

(c) Due to these difficulties, BLS tries to adjust the price for constant quality, but such differences hard to measure

Producer price Index :

→ PPI is the measure of the cost of basket of goods & services bought by farms. because farms eventually pass on their cost to consumer in form of higher consumer prices.

→ Changes in PPI are often thought to be useful in predicting changes in CPI.

Indexation :

An automatic correction by law of contract of a dollar amount for the effect of inflation.

COLA - Cost of living allowance

When price increases COLA automatically increases the wage (salary).

Interest Rate :

(i) Real Interest Rate
(ii) Nominal Interest Rate

Nominal Interest Rate :

→ The nominal Interest Rate is the interest rate usually reported & not corrected for Inflation.

→ It is the interest rate that Bank pays.

Real Interest Rate :

→ The real Interest is the nominal interest rate that is corrected for Inflation.

- Suppose the nominal interest rate is 15% & inflation rate is 10%. Then the Real interest is $\boxed{15 - 10 = 5\%}$

→ Nominal interest rate tells you how fast the number of dollars in your bank account rises over time. where as Real interest rate tells you how fast the purchasing power of your bank account rises over time.

Example :

Q. Suppose a person deposite one thousand rupees in a bank, & after one year rate of interest is 10%. ~~then~~ suppose the person is going to purchase DVD.

in case of 0 inflation, that is 10% change in purchasing power.

(1000) → 100 DVD

(1100) → 110 DVD

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Q. if there is 6% inflation, then what is the % change in purchasing power ?

A.

$$100 \rightarrow 106$$

$$1 \rightarrow \frac{106}{100}$$

$$10 \rightarrow \frac{106}{100} \times 10 = 10.6.$$

$$P. \frac{1100}{10.6} = 103.77 \approx 104.$$

~~Purchang~~ change in purchasing power : $\frac{104 - 100}{100} \times 100$

$= 4\%.$

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Chapter 23

Measuring Nation's Income :

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GDP : (Gross domestic production)

→ GDP is the market value of all final goods & services that is produce domestically in a given period of time.

→ GDP equalises income & expenditure.

→ value of goods & services can be express in terms of price.

for example, if the price of an apple is twice the price of the orange then apple contribute twice as much does by an orange.

→ All :

→ It include all items produce in the economy and sold ligally in the market. GDP measures the market value of all types of fruit, hair cut & heath care etc.

→ GDP also Includes market value of housing services.

~~GDP also~~ for rental housing the value is equals to tenant expenditure and the landlord incomes.

→ GDP also include the value of owner ocupied housing by estimate the rental value.

→ GDP exclude the value of illigal drugs because it is sold illegally. then GDP exclude the goods that is produce & consume at home.

→ Final goods :

It measures the value of final goods but not intermediate goods because if we include intermediate goods in the calculation of GDP then it will lead to double in counting. The value of intermidiate goods exclude from GDP.

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An important exception :

when An intermediate goods is produce but without being use it is kept in inventory During that period it is regarded as final goods for the moment. it's value as inventory investment is included as a part of GDP.

- goods & services :

GDP include both Tangible goods & intangible services.

tangible goods → Fruits, cloth

intangible services → hair cloth, house cleaning, doctor visit.

when you buy a CD of your favourite band you are buying a tangible good & the purchase price is a part of GDP. but when you pay to here a concert by the same band, you are buying a intangible service & the ticket price is a part of GDP.

- produced with in a Country :

the meaning is GDP include goods & services that is currently produced.

Ex: when the company produce & sell new car the value of car is include in GDP. but when one person sell a used a car to another person, then it is not include in GDP.

- Within a Country :

Items which are included in nations GDP, if they produce domestically regardless of the nationality of the producer.

Ex: when a Canadian worked in USA, then he his production will be part of USA GDP.

D. Given period of time:

normally GDP calculated on yearly basis. if it is calculated in quarterly basis, then the result is multiplied by four.

Dt. 29.10.2022

Component of GDP:

(GDP) $Y = C + I + G + NX$

C → Consumption expenditure
I → investment expenditure
G → Government expenditure
NX → net export (Export - import)

D Consumption Expenditure:

It means spending by households on goods & services ~~and~~ with the exception of purchasing of new housing expenditure on durable & nondurable like foods, cloth, automobiles etc.

D Investment Expenditure:

→ Investment is the purchase of goods that is used in future to producing more goods and services.
→ spending on capital equipment, inventories structure including household purchase of new housing
Ex: when Dell produces computer & adds to it's inventory instead of selling it, Dell is assume

to have purchase the computer itself. Now the computer is added to Dell's inventory instead of investment spending. when Dell sells the computer then the inventory investment became negative.

Dt. 03.11.2022

Q:) This inventory investment different from financial investment.

□ Government Expenditure:

→ spending on goods & services by the local state and federal government.
→ It includes the salary of government workers as well as the expenditure on public works program. & also the salary for army personal, school teachers etc.
→ salary is a part of Government purchase.
→ The benefit which is given by the Government towards social security benefit is called transfer payment.
→ Transfer payment are not paid in exchange of currently produced goods & services. thatswhy the transfer payment are not counted as part of government purchase.

□ Net Export : (Export - import)

These substraction is made because other component of GDP includes the import of goods & services.
for example: suppose a person buy a car for dollar 30 thousand from volvo company, that transaction increase the consumption by dollar 30 thousand. because car

purchase are the part of spending. Consumer expenditure. It also reduces the net export by $30000.

GDP :-

1. Nominal GDP
2. Real GDP

→ Economy requires adjusting nominal GDP to real GDP by using GDP deflator.

→ **Nominal GDP :**

when goods & services are valued at current prices.

Real GDP :

When goods & services are valued at constant price.

→ If the total spending or expenditure rises from one year to next year, then we may call economy is producing larger amount if goods & services ~~or~~ are being sold at higher price.

Price & Quantities

	Year	Price of hot dog	Quantity of hot dog	Price of Hamburger	Quantity of Hamburg
(Base Year)	2010	$1	100	$2	50
	2011	$2	150	$3	100
	2012	$3	200	$4	150

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Calculation Nominal GDP in year 2010

$= (1 \times 100) + (2 \times 50) = \$200$

Nominal GDP in year 2011

$(2 \times 150) + (3 \times 100) = \$600$

Nominal GDP in year 2012

$(3 \times 200) + (3 \times 150) = \$1200$

→ [Nominal GDP = Current price × total consumption]

Calculation Real GDP in year 2010

$(100 \times 1) + (50 \times 2) = \$200$

Real GDP in year 2011

$(150 \times 1) + (100 \times 2) = \$350$

Real GDP in year 2012

$(200 \times 1) + (150 \times 2) = \$500$

GDP deflator describe the relation between Real GDP

→ $\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100.$

GDP deflator in year 2010

$= \frac{200}{200} \times 100 = 100$

in year, 2011, $= \frac{600}{350} \times 100 = 172$

in year 2012,

$$\frac{1200}{500} \times 100 = 240$$

* GDP deflator for base year is always equals to 100. GDP deflator for subsiquent year measure the change in Nominal GDP from the base year that can't be attributable in change in real GDP.

Difference between GDP deflator, Real GDP & Nominal GDP

→ Suppose Quantity produce in the economy rise over time but price remains the same. in this case nominal GDP & real GDP both are rise together. so GDP deflator remains constant.

→

Suppose prices rise overtime but Quantity is produced remains same, nominal GDP rises but the real GDP remains same. & the GDP deflator rises as well.

Rate of Inflation by GDP Deflator :-

→ Inflation rate in 2011 (2nd) = $\frac{\text{GDP deflation in 2011} - \text{GDP deflation in 2010}}{\text{GDP deflator in base year (2010)}} \times 100$

→ Inflation rate (2012) = $\frac{\text{GDP deflator in 2012} - \text{GDP deflator in 2011}}{\text{GDP deflator in 2011}} \times 100$

$$= \frac{240 - 171}{171} \times 100$$

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$= \frac{69}{171} \times 100 = 40\%$

in 2011, $\frac{171 - 100}{100} \times 100$

71%

- nominal GDP uses current prices to place of value on economics production of goods & services.
- real GDP uses constant base year prices to place of value on economics production of goods & services.

because Real GDP is not affected by changes in prices. & changes in real GDP reflects in only changes in amount being produced.

- Real GDP reflects the economics ability to satisfy peoples need and desire. so thats why it is called Real GDP is the ~~bettue~~ better way to measure economic wellfare rather than nominal GDP.

Q. Real GDP is the better way to measure wellbeing?

Q. If GDP is a good measure of economic wellbeing?

Yes it is a good measure of economic wellbeing, but it is not perfect measure of economic wellbeing, because something that contribute to wellbeing are not included in GDP.

(i) the value of leisure time

(ii) the value of clean environment

(iii) the value of almost all activity that take place outside of the market. such as the value of time parents spend with their children. & the value of volenture work.

Q. Consider an Economy produces at chocolate bar. in the year 1st, the quantity produce is 3 bars, & the price is $4. in year 2nd, Quantity produce is 4 bars & the price is $5. in year 3rd, Quantity produce is 5 bars & price is $6. year 1st is the base year.

(a) what is the Nominal GDP for each year.

(b) what is the Real " " "

(c) " " GDP Deflator in "

(d) " " percentage growth rate in real GDP from year 2 to year 3.

(e) what is the inflation rate as measure by the GDP deflator from year 2 to year 3.

Solⁿ

Year	Price	Quantity
1st	$4	3 bar
2nd	$5	4 bar
3rd	$6	5 bar.

(a) Nominal GDP in year 1st

$= 4 \times 3 = \$12$

Nominal GDP in year 2nd

$= 5 \times 4 = \$20$

Nominal GDP in year 3rd

$= 6 \times 5 = \$30$

(b) Real GDP in year 1st

$= 4 \times 3 = \$12$

Real GDP in year 2nd

$= 4 \times 4 = \$16$

Real GDP in year 3rd

$= 4 \times 5 = \$20$

(c) GDP deflator in year 1st

$$= \frac{12}{12} \times 100 = 100$$

in year 2nd, $\frac{20}{16} \times 100 = 125$

in year 3rd,

$$\frac{30}{20} \times 100 = 150$$

(d) percentage growth rate from year 2 to 3

$$\frac{20-16}{16} \times 100$$

$$= \frac{4}{16} \times 100 = 25\%$$

(e) Inflation rate $= \frac{150-125}{125} \times 100$

$$= \frac{25}{125} \times 100$$

$$= 20\%$$

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Q: Compute NGDP, RGDP, GDP deflator & rate of Inflation.

year	price of milk	Qty of milk	price of honey	Qty of honey
2010	1	100	2	50
2011	1	200	2	100
2012	2	200	4	100

Q. In which year there was most economic welbing?

A Calculate Nominal GDP:

in year 2010,

$1 \times 100 + 2 \times 50 = 200$ Rs

in year 2011,

$1 \times 200 + 2 \times 100 = 400$ Rs

in year 2012,

$2 \times 200 + 4 \times 100 = 800$ Rs.

Calculate Real GDP:

in year 2010,

$1 \times 100 + 2 \times 50 = \cancel{150 \text{ Rs}}$ 200 Rs

in year 2011,

$1 \times 200 + 2 \times 100 = 400$ Rs

in year 2012,

$2 \times 200 + 2 \times 100 = 600$ Rs

GDP deflator in 2010,

$\frac{200}{200} \times 100 = 100$

in year 2011,

$\frac{400}{400} \times 100 = 100$

in year 2012,

$\frac{800^2}{400} \times 100$

$= 200$.

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inflation Rate:

in year 2010,

$$\frac{100 - 100}{100} \times 100 = 0\%$$

In year 2012,

$$\frac{200 - 100}{100} \times 100 = 100\%$$

percentage change in NNDP

in 2010 = 0%.

2010 to 2011 = $\frac{400 - 200}{200} \times 100$

= 100%.

2011 to 2012,

$$\frac{800 - 400}{400} \times 100 = 100\%$$

% change in RGDP.

in 2010 = 0%.

2010 to 2011,

$$\frac{400 - 200}{200} \times 100 = 100\%$$

2011 to 2012,

$$\frac{400 - 400}{400} \times 100 = 0\%$$

Year	Price of Milk	Qty of Milk	Price of Honey	Qty honey	NNDP	RNDP	GDP deflator	Rate of inflation	% NNDP ch.	% fin
2010	1	100	2	50	200	200	100	0%	0%	0
2011	1	200	2	100	400	400	100	0%	100	100
2012	2	200	4	100	800	400	200	100%	100	0

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* In ~~the~~ basis of Real GDP, we can calculate economic of welbeing.
so 2011 there was most economic welbeing.

Other's measures of Income :

GNP → Gross National product.

GNP is the total income earned by the resident of a country + the net income earned by domestic residence from overseas investment − the net income earned by foreign residence from domestic investment.

$$(GNP)\ Y = C + I + G + Nx + Z.$$

Z : ~~investment~~ overseas investment by domestic resident − income of foreigners from domestic investment.

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→ GNP is the total income earned by a nation permanent resident of a country.
→ It differs from GDP by ~~using~~ included income that ours citizen earn abroad. & excluding the income that foreigner earned here.
For ex: when canadian citizen works temporarly in United states, his production is a part of US GDP. but it is not a part of U.S GNP, rather than it is a part of Canadian GNP.
→ If a domestic resident are responsible for the domestic production, in that case GNP is equal to GDP.

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NNP (Net National product) :-

GNP - losses due to depriciation

Depriciation :- Decrease in the value of fixed asset with passage of time.

(1) Depriciation causes:
- (i) wear & tear
- (ii) absolescence
- (iii) mishandling of machine.

National income :

→ National income is the total income earned by nation's resident in the production of goods & services.
→ It is also identical to NNP.

Personal Income :

→ It is the Income that household & non-corporate business receive.
→ It is Exclude retained earnings.
→ It is also substract indirect business taxes such as sell tax, Corporate income tax & the contribution of the social security benefit.
→ In addition to ~~per~~ it, personal income includes intrest income that house hold receive from their holding of government loan Beside it also include the transfer program by government.

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→ Disposable personal income

= personal income - personal taxes.

Q: Suppose a barber collect $400 for hair cut. Over his this day his equipment deprises by value $50. of the remaining $350 he sents $30 to the Government in sealtax & takes $220 in wages & ratines $100 in his business ~~fn~~ towards new equipment in ~~fet~~ future. ~~from $220,~~ From $220 he will pay $70 for income tax. Calculate GDP, NNP, National income, personal income & disposable personal income,

A: GDP = $400

NNP = $400 - 50 = $350

National income = NNP - sealtax

= 350 - 30

= $320.

personal income = National income - retain item

= 320 - 100

= $220

Disposable personal income = 220 - 70

= $150

(Ans)

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Value Added method :

Def. Value Added is defined as the value of a producer output - the value of a intermideate goods. that the producer buy to make the output.

Q.1 A ~~farmer~~ farmer grows wheat which is send to a miller for $100. miller turns the wheat into flour which is sells to a the baker for $150. the beaker turns the wheat into bread, which is sells to the consumer for $180. then consumer eat the bread.

(i) what is the GDP in the economy.

(ii) Assuming there is no intermidiate goods, beyond those describe above, Calculate the value Added for each of there production ?

(ii) A- Value Added for farmer = $100.

value Added for miller = $150 - $100 = $50.

value Added for baker = $180 - $150 = $30.

(i) GDP of the Economy = 100 + 50 + 30

= $180

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Difference & similarities between GDP Deflator & Consumer Price Index :

→ GDP Deflator is the ratio of Nominal GDP to real GDP. because Nominal GDP is the current output valued at current prices. & real GDP is the current output valued at base year prices.

→ GDP Deflator reflects the current label of prices relative to the label of prices in the base year.

→ there are two Difference between GDP Deflator & CPI.
(a) GDP Deflator reflects the price of all goods & services produced domestically. where as CPI reflects the prices of all goods & services bought by typical consumer.

Example:
suppose the price of an aeroplane which is made by an company & sold to the ~~ae~~ ~~airforce~~ airforce increases. This ~~raise~~ rise in price of the airplane will be shown in GDP Deflator. even though the plane is part of a GDP but it is not a part of basket of goods & services purchase by the typical consumer.

• suppose the volvo company which is in suden rises the prices of the car. The rise in price will be shown in CPI. The car is part of basket of goods & services. but it is not a part of US GDP.

• when the price of oil rises it will shown in CPI more than the GDP Deflator. when US produces oil, we use oil which is imported. ~~although US~~ consumer uses more oil product like gasolin & heating oil than the oil

included in GDP
produce by GDP.

- The CPI compares the price of fixed basket of goods & services to the price of goods & services of the base year. only ocasinally BLS changes the basket of goods.

- GDP deflactor compares the price of currently produced goods & services to the price of same goods & services in the base year. group of goods & services used to compute GDP deflactor changes automatically over time.

- The difference is not important when all prices are changing proportionaly.

~~Q. why real GDP is~~

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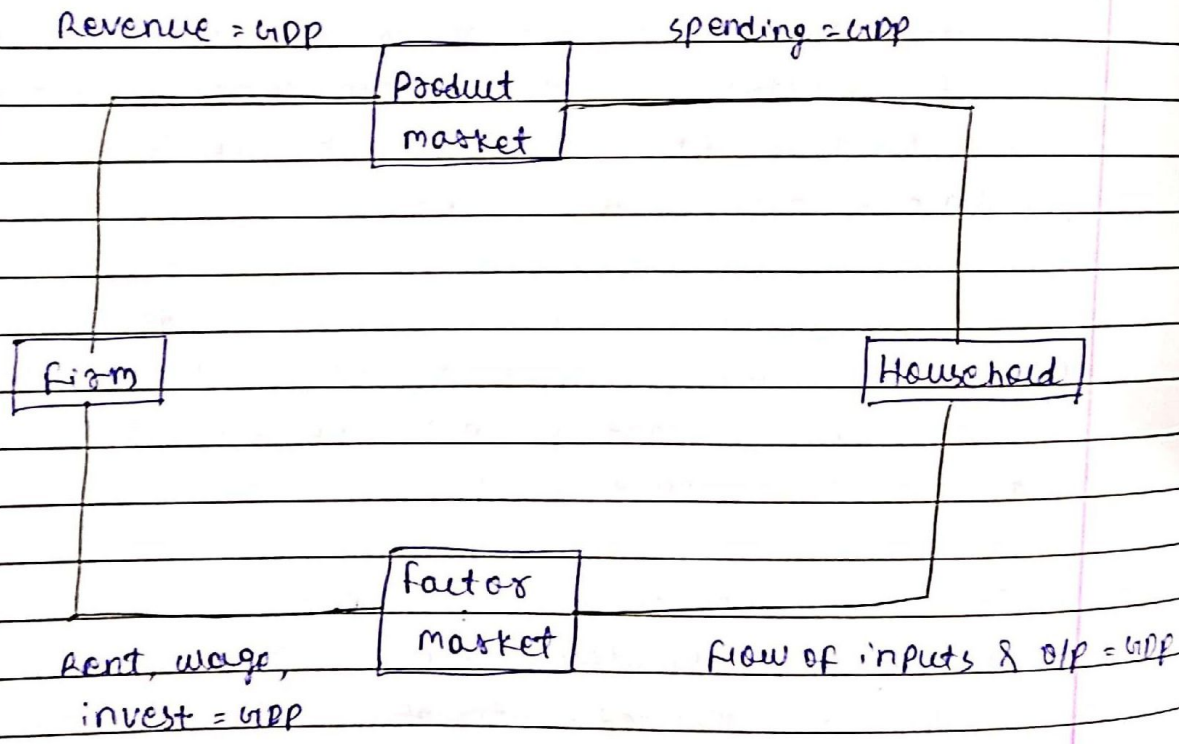
Two Sealer Economy :



In the si

→ The circular flow of economy activities & income assumes that these are only two player in the economy.
(i) consumer (house hold)
(ii) producer (firms)

→ There is no government interference in the economy activities & the country neither import good nor export anything.

→ The ~~mee~~ nature of interdependent is such that consumer needs to pay the price of these goods & services. Hence the household provide services in terms of factor input to the firm & get paid for these services which the spend of consumption. so the money & economics activites g flowing between firms to household create a circular flow.

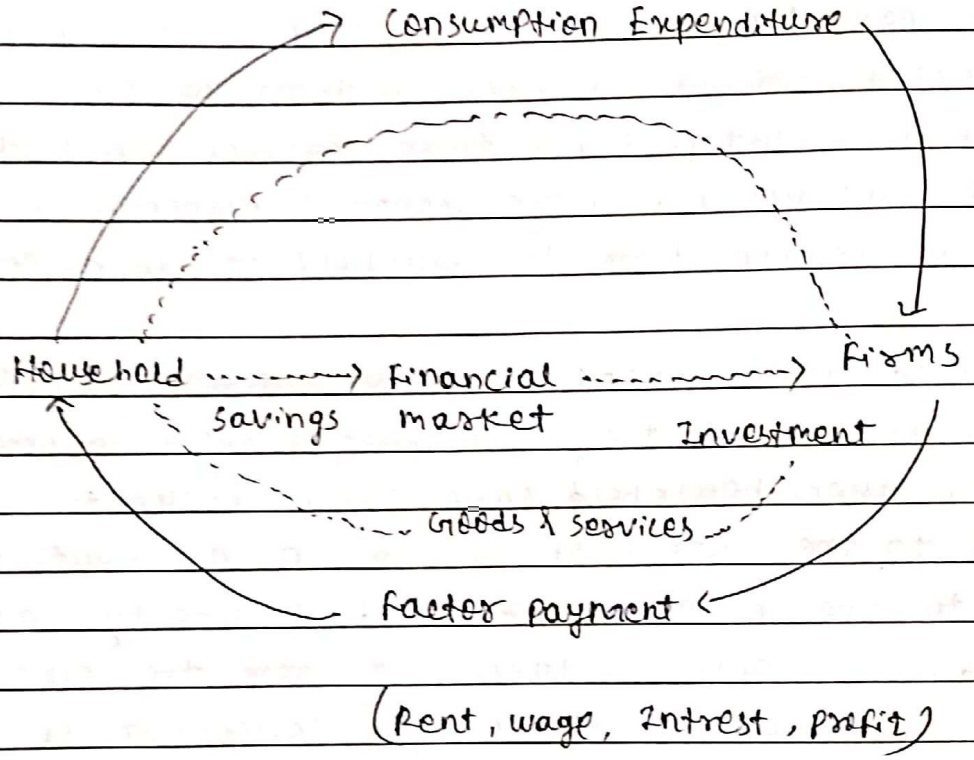
→ household donot spend their ~~ou~~ entire money on consumption instead they save part of their income for future. when household save, their consumption will decline to the extend of saving. as a result money flows to the business firm would decline by same extend. so money is taken out from the circular flow & saving would be consider as component of withdraws if this savings are kept in the household, that will result leakages in the money flow.

But the saving of household come to the financial ~~institution~~ market through bank, financial institution, insurance company & stock market.

→ firms borrow these saving from financial market for their investment in capital goods. so the saving of the household deposited in the financial market

go to the firm as their investment expenditure which is called Injection.

→ Savings is the withdraw of money from circular flow. while Investment is the injection of money in the circular flow. so withdrawl of money should be equal to the injection money. for the circular flow to continue on these term client saving must be equal to client investment.



Chapter-25 Production & Growth

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Productivity :

Productivity means the quantity of goods & services produced for each labour input.

MP → marginal production
TP → Total production

Labour	Output
10	100
11	110

MP = 10

Labour employed	Output (TP)	(MP)
2	100	
3	130	130-100 = 30
4	180	50

Determinants of productivity :

(i) Physical Capital per worker
(ii) Human Capital per worker
(iii) natural Resources per worker
(iv) Technological knowledge per worker

(i) Physical Capital per worker :

→ The stock of equipment & structures that are used to produce goods & services.
→ Physical Capital allow the worker to produce the product quickly & accurately.

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(ii) Human Capital per worker :

The knowledge & skills that workers aquires through education education, training & expesience. Human Capital includes skills accumilated in childhood program, high school, College, professional institution & training, grading school.

~~Merts~~ Merits of Human Capital :

→ It raises the nation's ability produce goods & services depend on supply of human capital.

→ Human Capital also regarded as factor of production like Physical production.

→ Producing Human Capital requires input like teachers, libraies, student time, reading text book & preparing note book etc.

(iii) Natural Resources per worker :

The inputs which are used to produced goods & services are provided by natures such as land, river, oil, mineral deposit etc.

1. Renewable Resources like forest, solar energies.
2. Non-Renewable Resources like minerals, Fossil fuel.

→ Differences from natural Resources are responsible for differences in standard of living.

For Ex:

USA in rich in supply of Agricultural land.

Qet & South Arabia are rich for supply of oil.

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natural resources are not responsible for raising productivity.

Japan is one of the richest country in the world inspite of few natural resources.

→ International trade makes Japan's success possible.

→ Japan import natural resources & export manufacture good.

(iv) Technological knowledge for workers :

Society's understanding is the best way to produce goods & services.

There are 3 types of Technological knowledge.

(i) Common knowledge
(ii) proprietary for long period
(iii) proprietary for short period

(i) Common knowledge :

Suppose a new technique is developed if 1 person uses it everyone becomes aware of him & all are allow to use it.

Ex:

If FORD Company introduce production in Assembly line then other car company will follow it.

(ii) proprietary for long period :

It is known only by the Company who discovers it.

Ex:

Cocacola Company knows the secret recipe for making it's famous soft drinks. & that will continue for the longer period of time.

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(iii) Proprietory for short period : (patent system)

when a pharasutal company ~~to~~ discover a new drug, then the patent system gives the company on temporary rights to be it's exclusively manufature. when the patent expires, the other company all allow to to make the drugs.

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Government policy to raise the productivity & standard of living :-

(i) Saving & Investment
(ii) Investment from abroad (foreign investment)
(iii) Education
(iv) Health & Nutrition
(v) free trade
(vi) property, right & political stability.
(vii) Research & Development
(viii) Population.

(i) Saving & Investment :-

→ we know capital is produced means of production. If today's economy produces large quantity goods then tomorrow it will have a large number of capital & we able to produce more goods & services. so to raise the future productivity we have to investment more of current resources the production of capital, then they have to sacrifies their consumption to increase saving.

→ rate of saving is the percentage of GDP devoted to saving rather than consumption.

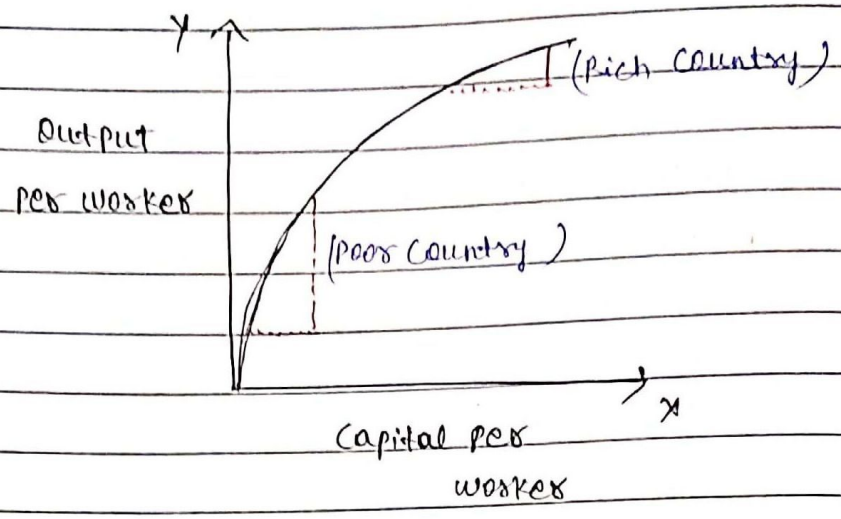
But how long does this higher rate of growth

continue. because growth of capital is subject to law of diminishing return.

Labour	total product	Marginal product	Average product	stage of operation
1	20	–	20	
2	50	50-20 = 30	50/2 = 25	stage of
3	90	90-50 = 20	90/3 = 30	increasing return
4	120	30	120/4 = 30	
5	140	20	140/5 = 28	stage of
6	150	10	150/6 = 25	diminishing
7	150	0	150/7 = 21.5	return.
8	130	-20	16.25	Negative return
9	100	-30	11.1	

→ as stock of capital increases the extra output produced from ~~a~~ an additional unit of capital falls or reduces. because workers already have a large quantity of capital to use in producing goods & services. Giving them an additional unit of capital increasing their productivity only slightly. because of diminishing return, an increase in saving rate leads to higher grow only for a moment.

→ Diminishing return have another implimintation called catchup effect. This catch up effect can explain through a diagram.



For rich Country :-

When the economy has a high level of Capital an extra unit of Capital leads to small increase in output.

For poor Country :-

When the economy has low level of Capital, an extra unit of Capital leads to large increase in output.

(This is called Catchup effect)

The figure shows how the amount of Capital per worker influences the amount of output per worker. Other determinants of output like human Capital, technological knowledge & natural resources are held Constant.

The curve becomes flatter as the amount of Capital increases because of diminishing return of Capital.

Catchup effect :-

Other things equal it is easier for a country to grow fast if it's starts out relatively poor. this effect of initial Conditions of subsequent grow, sometimes called catchup effect.

Example :-

~~From~~ From 1962 to 1990, South Korea & U.S devoted similar share of GDP to investment. but yet over time U.S experience 2% growth rate whereas South Korea experience 6% growth rate.

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(ii) Investment from abroad :- (Foreign Investment)

(a) Foreign direct Investment
(b) Foreign portfolio Investment

(a) Foreign Direct Investment :

A capital Investment that is owned & operated by foreign entity is called foreign direct Investment.

Example :-

FORD motor company might build a factory in mexico.

(b) Foreign portfolio Investment :

An Investment that is finance by foreign money ~~&~~ but operated by domestic resident. that is called foreign portfolio Investment.

In this ways American saving being used to finance in mexican Investment.

In this way ~~for~~ FORD company increases capital stock ~~that~~ these fax increases mexican productivity & it will help mexican's GDP to increase.

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* GDP means Income earned within a Country by both resident & non-resident.
* GNP means Income earned by resident of a Country both at home & abroad.

merits:-

(i) Investment from abroad is necessary for economic growth.
(ii) It is necessary for poor countries to learn the stage state of the art technology develop & used by richer country.
(iii) ~~It is n~~ An organisation that tries to encourage the flow of capital to the poor countries is world bank. world Bank obtain fund from the word advance Country like USA, Japan, england, Canada etc. & use the resources to make loan to less develop countries so that they can Invest in construction of road, hospital, educational institution etc.

(3) Education :-

→ Education means investment in human capital.
→ In less develop Country, where human developement is limited. the gape of wage between educated & un-educated is more.
→ Investment in human capital as an opportunity cost.
→ when students are in school, they are sacrifice the wages they could have earn as a member of labour force.
→ In less developed country the number of drop-out is more because there labour is needed to gave the financial help to the family.
→ Human capital promotes ~~positivite~~ positive externalities.
An educated person might generates new ideas about how best to produce goods & services.

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if these ideas enter into the society of full of knowledge so every one can use them which is also called External benefit of the education.

Braindrain :-

One of the difficulties arise in poor country is known Braindrain which mean highly educated workers of poor country sometime go to richer country for higher education. After education instead of returning to the home country they continue to stay there.

(4) Health & Nutrition :-

Healthier workers are more productive than the un-Healthy one. Standard of living also depend on health.

→ According to Robert Fogel (1993) the significant factor in economic growth is improved health from better nutrition.

→ He explain, if people eat more then population gets taller. From 1775 - 1975 he has explained the average Callory intake in Great Britain rose by 26%. & height of the average man increase by 3.6%. Height is the indicator of productivity.

→ Mal Nutrition is rare in developed nation such as great Britain, US etc. but in developing nation poor health & inadiquated nutrition remain obstacle to higher productivity & improved living standard.

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(5) Property right & political stability :-

→ Another way for attending economic grow is to protect property right & political stability

→ Production depends on two thing.
1. Cordination among the firms.
2. Cordination between firms & consumer.

→ Market prices are the instrument with which the invisible hand brings supply & demand into balance.

→ An important pre-required price system ~~towards~~ to work is to respect of property right.

Property Rights :-

→ Property rights refers to ability of people to exercise the authority to over the resources they own.

→ Court & police should protect the property rights.

→ Political stability is very much essential to protect the property right.

There are 3 factors to protect the property rights.
(a) efficient core system
(b) Honest Government officials
(c) stable Constitution

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(b) Free Trade :-

(a) Inward oriented policy
(No interaction with Rest of the world)

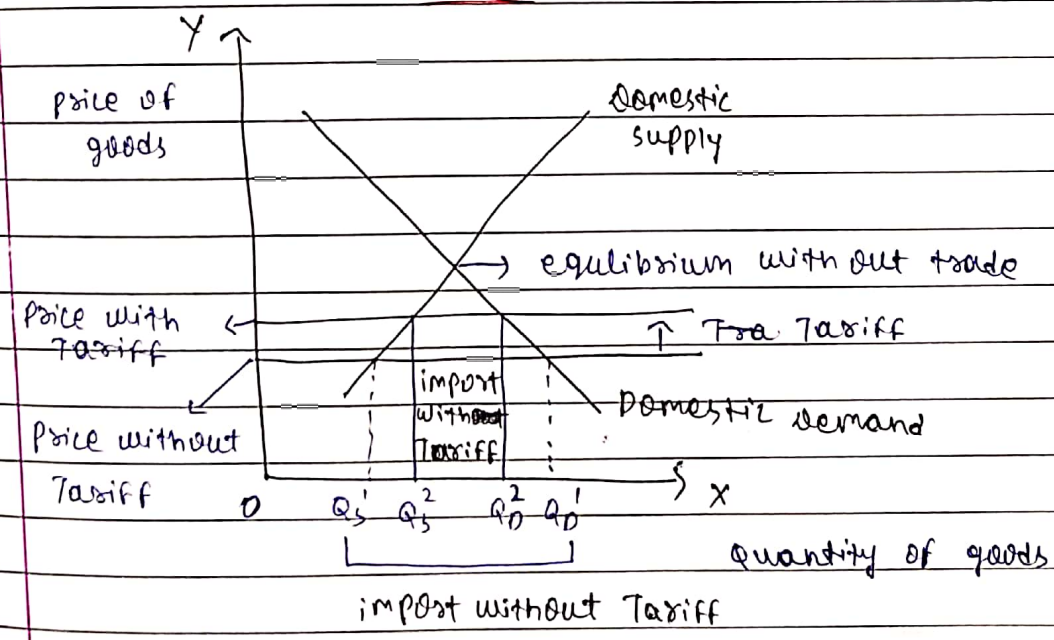
(b) Outward oriented policy
(Interaction with rest of the world)

→ A country that eliminate trade restrication will experience same kind of economic growth that would occure after a major technological advance.

→ Removing trade restrication like tariff would lead to more rapid economic growth because the removal of trade restriction acts like improvment in technological & free trade allow all country to consume more goods & services.

→ Countries with natural sea-port find trade easier. similarly on land-lock-countries find international trade is more difficult.

Tariff



(7) Research & Development :-

→ Most technological advances come from private Research by firms & individuals. but there is also public interest in promoting these efforts. because knowledge is a public goods.

→ Public goods like national defence like encourage, Research & development in new technology.

Ex:
In U.S Government through airforce & NASA has supported aerospace research becomes the leading makes of rocket & plane.
Government has taken research grand from national science foundation & national institution of health.

→ Government also reduces the rate of tax for the firms who are engaged with research & development.

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(8) Population :-

→ A large population means more workers to produce goods & services. similarly more consumer consumes goods & produces.

→ High population growth reduces capital per worker.

→ If population is more than the worker is equipped less amount of capital. when capital per worker reduces then productivity will ~~far~~ fall also standard of living will fall.

Ex:

US population rises 1% per year where as in the African country population rises 3% per year.

The growth of population promotes technological progress.

→ If there are more people, then there are more scientist, enventers & engineers to contribute the technological knowledge.

→

Q- Rohan & suresh each spend 8 hours per day in painting & wall papering rooms.

	Paint	wall paper
Rohan	2hr/room	8 hr / room
suresh	4hr/room	10 hr / room

draw the Rohan & suresh PPF.

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A. Rohan paint

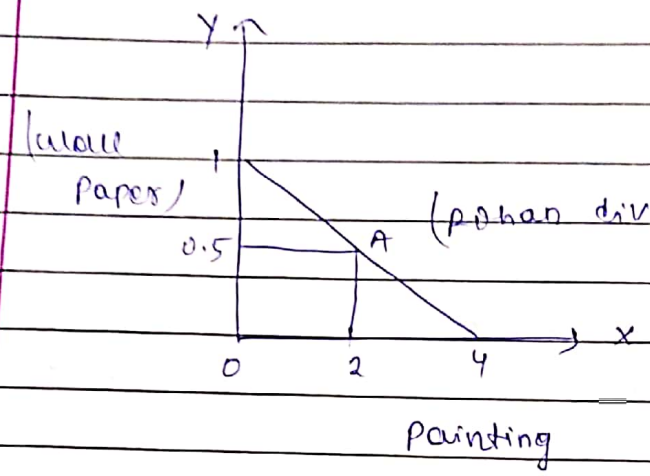
2 hours = 1 room

1 hour = $\frac{1}{2}$

8 hour = $\frac{1}{2} \times 8^{4}$ = 4 room

Rohan wall paper

8 hour = 1 room



(rohan dived his time equally)

Suresh Paint

4 hour = 1 room

1 hour = $\frac{1}{4}$

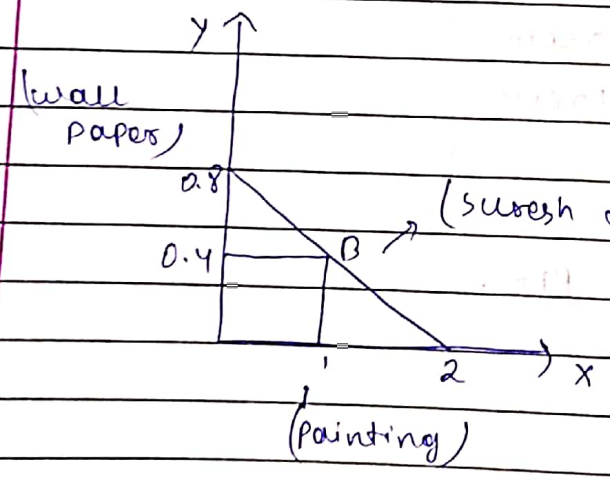
8 hour = $\frac{1}{4} \times 8$ = 2 room

Suresh wall paper

10 hour = 1 room

1 hour = $\frac{1}{10}$

8 " = $\frac{1}{10} \times 8$ = 0.8 room



(suresh divided his time equally between the ~~Outlines~~ two activities)

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Q.2 Country produces two products :-

Year	price of football	Quantity of football	price of basketball	Quantity of basketball
1	10	120	12	200
2	12	200	15	300
3	14	180	18	275

a. Calculate nominal GDP & real GDP for three year.
b. Compute the inflation rate for year 2 to 3.

a. Calculate nominal GDP for each year :-

in year 1

$10 \times 120 = 1200 + 12 \times 200 = 1200 + 2400 = 3600$

in year 2

$12 \times 200 = 2400 + 15 \times 300 = 2400 + 4500 = 6900$

in year 3

$14 \times 180 + 18 \times 275 = 2520 + 4125 = \cancel{6645}\ 7470$

(b) Real GDP for each year :-

in year 1

$10 \times 120 + 12 \times 200 = 1200 + 2400 = 3600$

in year 2

$10 \times 200 + 12 \times 300 = 2000 + 3600 = 5600$

in year 3

$10 \times 180 + 12 \times 275 = 5100$

(ii) Inflation rate for year 2 to 3 :

GDP deflator in year 1 = 100

" " in year 2 = $\frac{6900}{5600} \times 100 = 123.21$

" " in year 3 = $\cancel{5600}$ $\cancel{6645}\ 7470 / 5100 \times 100 = \cancel{130.29}\ 146.47$

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inflation rate for 2 = $\frac{123.21 - 100}{100} \times 100 = 23.21\%$

inflation rate for 3 = $\frac{146.47 - 123.21}{\cancel{146.47}\ 123.21} \times 100 = 18.88\%$

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Chapter-26

Saving, investment & financial system:-

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Financial system:-

Financial system consist of the institution that help to match one person's saving with another person investment.

→ Q. How does the Group of institution manage the financial system.

→ The Reationship between Financial system & macro economic variable like saving & Investment.

→ A model is developed to determine supply & Demand for fund in the financial market.

Financial system depends on two institution.

(a) Financial market

(b) Financial intermediate.

(a) **Financial market:-**

The financial market are financial institution through which a person wants to save can directly supply fund to the person who wants to borrow.

- Financial market is of two type.
  - (i) Bond market
  - (ii) stock market

- Financial Intermediaries of two type.
  - (a) Bank
  - (b) mutual fund

Bond:-

→ Bond is a certificate of indebtedness.

→ It is the obligation of the borrow to the holder of the bond. that loan is repaid after the date of maturity.

→ The rate of Intreest paid periodcally until the loan mature.

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The buyer can ~~hold~~ hold the bond until maturity or can sell the bond at earlier date to a someone else.

NSC : National saving certificate (one type of bond)

Characteristics of Bond :-

(i) Bond's term or time period

(a) short term Bond (issued within few months or within a year)

(b) Long term Bond (Issued upto 30 years or more than that)

(c) Perpetuity (Issued upto 50 years or more than that)

Perpetuity :-

→ The British Government have even issued of Bond that never matures called perpetuity.

→ This Bond pays intrest for even but the principal is never repay.

→ ~~Rate~~

□ Rate of Intrest decided on the basis of time period. long term Bond pays higher rate of intrest because it is riskier than the short term bond. Holder of the long term bond has to wait for larger period for repayment of principal.

→ If holder needs money before the date of maturity, he has to sell the bond to someone else perhaps at a reduce price.

(ii) It has Credit Risk :-

→ If the borrow fails to pay some of the interest & principle such failure to pay is called Default.
→ Borrow can sometime default on their loan by declaring ~~bank~~ co bankruptcy.
→ If the probability of Default is high then the Demand higher interest rate to compenhate their risk.

Bankruptcy :-
It means it is the legal status of a person that can't be repay the deft it owes to it's creditors. It is imposed by Countorder.

(iii) It has tax-treatment :-

Interest income is taxable.

The bond which are issued by local Government, state Govt. Federal Government of municipality charges lower rate ~~of interest~~. interest.

□ Junk bond :-

It is a highyielding, highrisk security typically issued by a company to seeking to raise capital quickly in order to finanes take over.

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STOCK :-

Stock is a partial ownership in a firm.

Difference between Bond & Stock :-

(a) (i) The sale of stock to raise money is called equity finance.
(ii) The sale of bond to raise money is called debt finance.

(b) (i) The owner of shares of intel stock is a part owner of intel.
(ii) The owner of an Intel bond is a creditor of the corporation.

(c) (i) If intel is very profitable the stock holder enjoy the benefit of these profit / progress.
(ii) The bond holder only get interest of their bond.

(d) (i) In case of stock offer the holder both higher risk & higher return.
(ii) If Intel bond runs into financial difficulty the bond holders are paid what they are due before the stock holder's receive anything at all.

Determination of stock price :-

- Corporation issues stock by selling sto shares to the public & these share trade among stock holders on organise stock exchange.

The price at which shares straight in stock exchanges are determine by supply of & demand by these companies.

Demand for stock reflects people perception of the corporation future profitable.

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when people become optimistic about the companies future then they raise their demand for the stock, so the price of the stock increases.

when people expect companies to have little profit or even loses the price of share falls.

Financial Intermediaries :-

(i) Bank
(ii) mutual fund

→ funds are supplied indirectly from savers to investors.
→ Bank & mutual fund act as mediater.

functions of Bank :-

primary functions :-

(i) It accept's deposit from public
(ii) It advances loan to public.

for deposit :-
(a) fixed or time deposit
(b) current or demand deposit
(c) savings account deposit.

for Loan :-
(a) Direct Loan
(b) cash credit
(c) overdraft system

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Secondary Function :-

(i) Secondary function include later of credit
(ii) undertaking safe custody of valuables (locar system)
(iii) providing consumer finance using check system
(iv) Educational loan

Mutual Fund :-

→ An Institution that ~~sh~~ sell shares to the public & uses the proceeds to buy of portfolio of stock & bund.
→ The share holder of mutual fund accepts all the risk & return associated with the portfolio.
→ If the value of portfolio rises, the shareholder benefits.
→ The value of portfolio falls, then the share holder suffer the lose.

Advantages of mutual fund :-

(i) It allows the people with small amount of money to diversefy their holdings. because holding of single kind of bond or stock is very risky, people who hold the diverse portfolio of stock & bonds less risk because they have only a small stock in each company. Mutual fund makes these deversification easy.

(ii) mutual fund gives an ordinary people access to the skills of professional money managers.
These manager gives flows attentation to company propeet in which buy the stock. They buy the stock of the companies having profitable future & sell the stock of companies with less promising prospect.
→ mutual fund is also called Index fund.

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Saving, Investment & National Income account :-

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Mutual fund is also called Index-fund.

National Income Account :-

1. closed Economy
2. opened Economy

1. Closed Economy :-
Absence of international trade, international borrowing & lending.

2. open Economy :- presence of international trade, international borrowing & lending.

$$Y = C + I + G + Nx$$

according to GDP,
open Economy, $Y = C + I + G + Nx$
closed Economy, $Y = C + I + G$ (here $Nx = 0$)

$$Y = C + I + G$$

If we substract C & G from both side, then we desire

$$Y - C - G = C + I + G - C - G$$

$$S = I$$

$\because$ S => national saving
I => Investment
S = private saving + public saving.

let T = ~~tax~~ indicates government collects tax from house hold — the amount it is pays back to the household in form of transfer payment. (in the form of social selusity benefit)

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$$S = (Y - T - C) + (T - G)$$

total saving — (private saving) — (public saving)

when $T > G$ = Budget surplus

$T < G$ = Budget deficiet

Private saving :-

The income that house hold have left after paying taxes & consumption.

Public saving :-

The tax revenue that the Government has left after paying for it's spending.

Q. Suppose GDP is 8 dollar trillium. Taxes are 1.5 dollar trillium. Private saving is 0.5 dollar trillium. & Public saving is 0.2 dollar trillium. Assumeing this economy in closed. Calculate

(i) Consumption

(ii) Government purchase

(iii) national saving

(iv) nation ~~saving~~ & investment.

A: $Y = C + I + G$

$Y = 8$ dollar trillion.

$Y - T - C = 0.5$

$T - G = 0.2$

$T = 1.5$

$T - G = 0.2$

$1.5 - G = 0.2$

(ii) $G = -0.2 + 1.5 = 1.3$ dollar trillion.

$8 - 1.5 - C = 0.5$

$\Rightarrow 6.5 - C = 0.5$

(i) $\Rightarrow C = 6.5 - 0.5 = 6$ dollar trillion.

$Y = C + I + G$

$8 = 6 + I + 1.3$

$\Rightarrow 8 = 7.3 + I$

(iv) $I = 8 - 7.3 = 0.7$ dollar trillion.

$S = (Y - T - C) + (T - G)$

$= (8 - 1.5 - 6) + (1.5 - 1.3)$

$= 8 - 2.1 + 0.2$

$= 5.9 + 0.2$

$= 6.1$ dollar trillion.

(iii) $I = S = 0.7$ dollar trillion.

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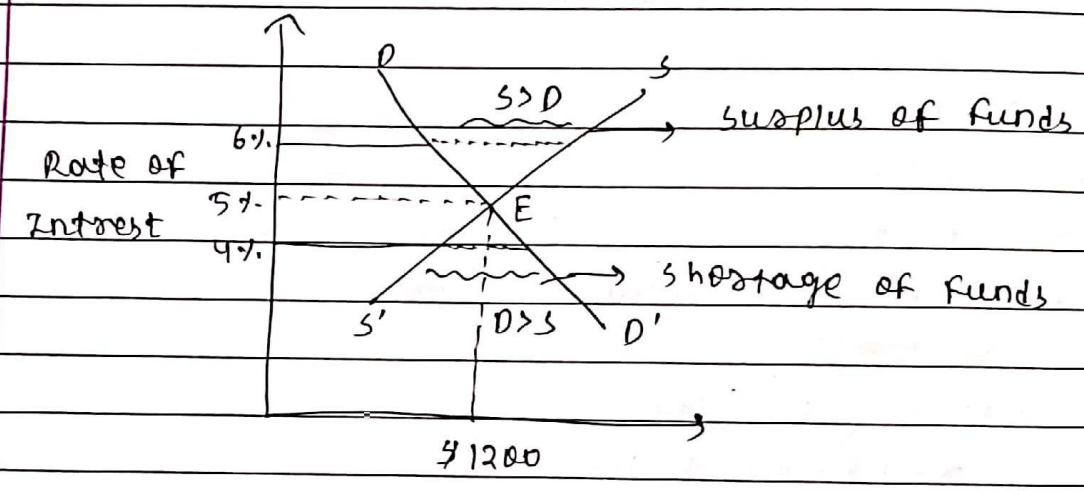
Market for loanable fund : (financial market)

(i) savers
(ii) Investors

- market in which those who wants to save supply funds & those who want to borrow demand borrow.
→ saving is the source of supply for loanable funds.

→ Investment is the source of demand for loanable funds.
→ There is one Investment rate which may be treated as return to saving & cost of borrowing.



Market for loanable fund

Government Policy implemented on the Market for loanable fund :-

Policy 1 :

Saving incentive (tax incentive)

Policy 2 :

Investment incentive

Policy 3 :-

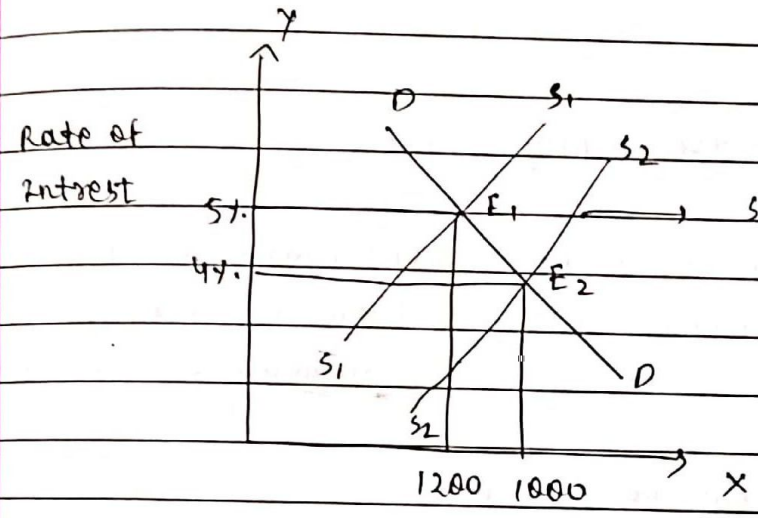
Budgetary surplus & Budgetary deficit.

This policies are explained through three steps :-

Step 1 :-
what is the impact of these policies on the market for loanable fund.
It would affect supply or demand curve.

Step 2 :-
In which direction the curve would shift.

Step 3 :-
we can compare the old & new equlibrium.



saving incentive increases the supply of loanable fund.

(Quantity demand & supply)

1) saving incentive increases the supply of loanable fund. change in tax laws to encourage firms & household to save more would shift the supply curve of loanable fund from S_1 to S_2. & equlibrium quantity of loanable funds save & intrested rises from 1200 to 1600.

D If a reform of a tax law encourage greater saving, the result would be lower interest rate & greater investment.

→ If income is equal to expenditure, the government will run balance budget.

→ If income is more than expenditure then government runs surplus budget.

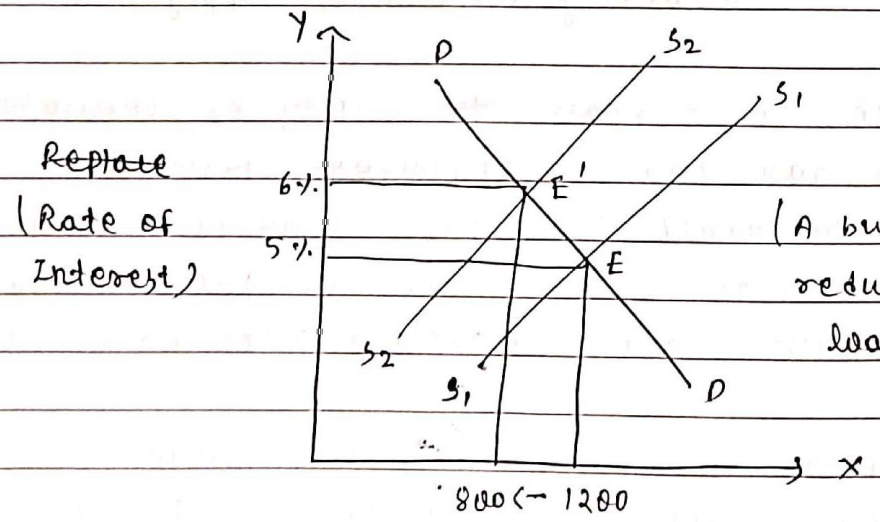
→ If income is less than the expenditure then government will run the deficit budget.

Government finance deficit budget ~~like~~ by borrowing in the bond market & the accumulation of past govt. borrowing is called government debt.

Step-1:
It would affect the supply curve.

Step-2:
Supply curve would shift to left ward as a result of decreasing national saving. [Due to tax cut & increase in expenditure].

Step-3:
Compare old & new equlibrium.



when the Government spends more than it receive in tax revenue, the resulting budget deficit lower national saving. The supply of loanable fund decreases & equlibrium interest rate rises. So the Government borrows to finance its budget deficit it crowds out household & firms that otherwise would borrow finance investment.

when the supply curve shifts S_1 to S_2, the equlibrium rises interest rate rises from 5% to 6%, & equlibrium quantity of loanable funds saved & invested falls from \$1200 to \$800.

- Crowd Out :-

It means decrease in investment that result from Government borrowing.

Conclusion:

when Government reduces national saving by running a budget deficit, the interest rate rises & investment falls.

- So the budget surplus increases the supply of loanable funds & reduces the rate of interest & simulate investment.

Ch-3 Q.1 Suppose a worker in Germany can produces 50 computers or 5 tons of grain per month. Similarly worker in poland can produce 4 computers or 4 tons of grain per month. each country has 10 workers. Calculate what is the opportunity cost of computer & grains in Germany. similarly what is the opportunity cost of computer & grains in poland. which country has an absolute advantages in producing computer & grain. similarly which country has comparative advantages in producing pro computer & grain.

(ii) each country should tend towards specialization in production of which food & why.

Sol^n For Germany.

50 computer → 5 tons grain

1 " = $\frac{5}{50}$ = 0.1 ton grain.

opportunity cost of computer is 0.1 tons of grain.

5 tons of grain → 50 computer.

1 " " = $\frac{50}{5}$ = 10 computer.

opportunity cost of grain is 10 computer.

For Poland:

4 computer → 4 tons grain

1 " → $\frac{4}{4}$ = 1 tons of grain.

opportunity cost of computer is 1 tons of grain.

4 tons grain → 1 computer

1 " → 1 tons of grain.