

International Business
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Lecture - 12
Multiplier Effect, Types and its Characteristics

Welcome friends, to the lecture-12 of our course an International Business. So, let me start the lecture today with the current situation that is prevailing in India.

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Present Situation *India*

- Gross domestic product (GDP) grew 5% in the first quarter of FY20, data released by the government showed, marking the slowest growth since the fourth quarter of FY13. GDP growth was 8% in the year-earlier quarter and 5.8% in the preceding one.
- Consumption, the bedrock of growth in the past few years, collapsed to an 18-quarter low of 3.1% from 10.6% in the March quarter, pointing to fragile sentiment.
- The slowdown in investment and consumer demand derailed manufacturing, which grew just 0.6%. A meagre 2% rise in farm sector added to the demand slowdown.

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So, this condition that we are going through in India is, if the Indian economy is in it slightly tough condition, right. So, we all are aware of it that the growth is not happening as desired and things have slowed down, right.

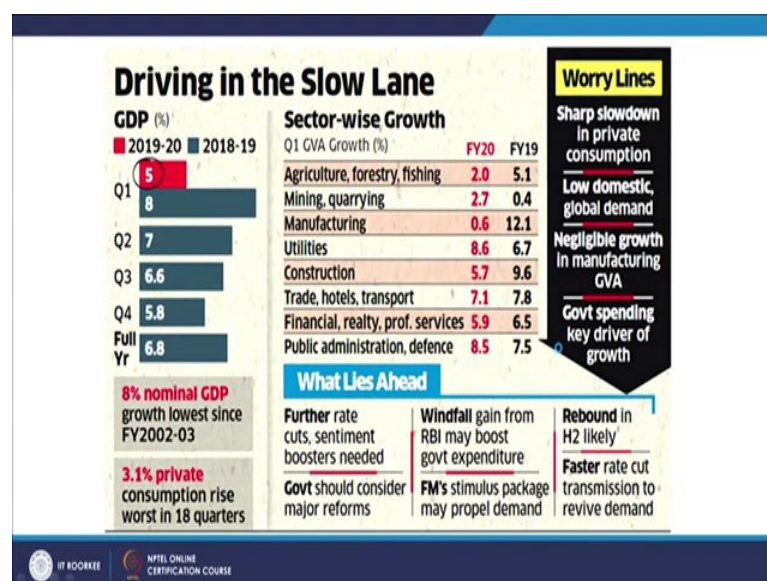
So, what it says is the gross domestic product grew 5 percent in the first quarter of financial year 20 the data, as per the data released by the government. Marking the slowest growth since the fourth quarter of financial year 13, right. So, there is a long time. So, the GDP growth was 8 percent in the year earlier quarter and 5.8 percent in the preceding one.

So, this 5 percent growth is somewhere a scary figure, right. So, we are scared that the economy is not going the way it should be. The consumption, which is a bedrock or the major factor behind the growth of the economy or you know, has collapsed to an 18-

quarter low of 3.1 percent from 10.6 percent in the March quarter, pointing to a fragile sentiment, that means, the consumers are not very happy, they are scared.

The slowdown in investment and consumer demand derailed the manufacturing, which grew just 0.6 percent, right. A meagre 2 percent rise in farm sector added to the demand slowdown.

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So, if you can see, this numbers are very dangerous, right. Looking at, this is what I have brought from the economic times. So, you can look at it, that this 5 percent is the concern that we have, ok.

And if you look at the, you know the last years average complete full years growth GDP was 6.8 percent, but we are worried, if this is the way we are start we have started with 5 percent, then we might end up very low and then it could be disastrous, ok. The 8 percent nominal GDP is a growth is lowest, since financial year 2002-2003; that means, around 16- 17 years back, right; that means, we are really having a slump, ok.

3.1 percent private consumption rise is the worst in the 18 quarters. So, I am not trying to discourage or create a negative impact, but this is the truth. Sector wise growth also if you see, for example, look at manufacturing; it is 0.6 percent only, which is almost negligible. In comparison it was 12.1 percent during the same time in the financial year 19.

If you look at agriculture, which is one of the largest employers, it is 2.2 percent growth, right; again decimal figure. Whereas, the government has been thinking of doubling the farmers income, right and creating more employment through you know, through agriculture forestry and fishing.

But, on the other side we are finding a growth of only 2 percent, which is quite dangerous. Other things also if you see mining, quarrying, only 2.7 percent growth and last year it was 0.4. So, although it seems a positive slight positive, but that it is not actually positive, it is only 2.7 percent growth over this.

So, overall; that means, if you see, none of the industries have are doing well, right. So, only thing we can be happy in maybe a few, for example, which is substantially still, ok; is utilities you know, and defense where the government is spending largely and they are doing well, right. What lies ahead; what are the worry lines and what are the you know; what lies ahead? Further rate cuts, sentiments boosters needed, right.

The government had to enter, has to interfere. The finance minister's stimulus package may propel the demand, but before that we should look at the you know, worry lines. Sharp slowdown in the private consumption. There was article where it said parley is going to cut down 10,000 jobs, because even people are not ready to pay, buy a pack of biscuits worth 10, 5 rupees. So, that shows how consumer psychology is down.

Low domestic growth global demand, low domestic and global demand. Negligible growth in manufacturing, right. So, the gross value added is negligible. Government spending is the key driver, and we hope the government does something which will rebound; which will help the industry to bounce back, ok.

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The slide is titled "Measures" in a blue header. Below the title, there is a handwritten note in red ink: $\rightarrow + 10010 = 20000$. Below this, there is a bulleted list of three measures. The first bullet point is "Special ₹10,000 crore window to extend funding to incomplete housing projects". The second bullet point is "The Reserve Bank of India (RBI) has cut interest rates four times since January to 5.4% by August, to help boost loan growth." The third bullet point is "The government announced a slew of measures in three dosages which include a special window for real estate, export incentives, bank consolidation and sops for micro, small and medium enterprises (MSMEs) and the automobile sector." The text "the automobile sector" is underlined in red. At the bottom of the slide, there are logos for "IIT ROORKEE" and "NPTEL ONLINE CERTIFICATION COURSE".

Measures

$\rightarrow + 10010 = 20000$

- Special ₹10,000 crore window to extend funding to incomplete housing projects
- The Reserve Bank of India (RBI) has cut interest rates four times since January to 5.4% by August, to help boost loan growth.
- The government announced a slew of measures in three dosages which include a special window for real estate, export incentives, bank consolidation and sops for micro, small and medium enterprises (MSMEs) and the automobile sector.

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So, what are the measures? As one of the measures the finance minister has been taking; now, the finance minister has and the think tank has been thinking's, you know seriously on this and they have you know started some measures.

For example, a 10,000 crore window, which is actually 10,000 from the government + 10,000 from the private makes it 20,000 actually, = 20,000, right; to fund the incomplete housing projects, right. Because the real estate sector has been in you know, in a very bad condition for last many years now.

The RBI has cut the interest rates four times, right; since January to 5.4 percent by to August, right; to help the to help boost the loan growth, right. So that people take more loans at a lower interest rate and thus, maybe production will increase.

The government has announced a slew of measures in 3 dosages which include a special window for real estate, export incentives, bank consolidation, and you must have heard of the major banks being, you know merged together. And sops for micro small and medium enterprises and the automobile sector which is a key sector, right.

So, taking the if the right measures are taken then I am sure the economy will do well, but if something is not done correctly, if something happens, then we can see difficult time, right. So, you can see, the always the stock market is a mirror to which reflects the

sentiments of the market and you can see the stock market bleeding very badly, at the moment.

So, in such a time as it says here, if you can see, further rate sentiment boosters are needed.

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Multiplier Effect *Income* *Inv. x 2*

"Investment multiplier is the ratio of change in equilibrium income and change in investment that causes it."

According to Samuelson, "The multiplier is the number by which the change in investment must be multiplied in order to determine the resulting changes in total income."

Actually the concept of multiplier was firstly developed by famous economist R.F. Kahn through an article "The Relation of Home Investment to Unemployment" published in 1931 (i.e. employment multiplier)

Concept of multiplier propounded by John Maynard Keynes lays emphasis on the significance and utility of public investment which refers to govt. expenditure on public works and public welfare activities. The purpose of this investment is not to earn profit, as is the case with private investment. It is called autonomous investment, because it is independent of profit motive but to increase employment and stimulate business during acute depression

FORMULA:

$$M = \frac{\Delta \text{Inc.}}{\Delta \text{Inv.}}$$

Multiplier = Change in Income / Change in Initial Investment

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So, we will talk about a topic today which is very important, which is called the Multiplier effect. So, what is this multiplier effect? Let us start with it. Investment multiplier is the ratio of change in equilibrium income and change in investment that causes it, right.

So, what change happens when an investment is done? So, what is the change in income, when investment is done by the government or maybe some private investment comes in?

Samuelson the Nobel laureate says, multiplier is the number by which the change in investment must be multiplied. This is a number which should be multiplied with the change in the investment. So, what is the change in investment in the last year to this year? In order to determine the resulting changes in total income; that means, it says income changes income changes when there is a change in the investment.

So, this investment change, when multiplied with some number, let us say with some number, magic number, then this number will help you to find out the change in the total

income, right. This concept of multiplier, so you can understand, what is a multiplier? Multiplier is to multiply something, so it multiplies.

So, when you, when the government invests in some sector or in the totality in the growth of the nation, so, or anybody for example, let us say. Then what happens is, because of the investment, the wages, the salaries, the income of people will grow and as a result of it, this consumption will grow and as a result of the increase in consumption production will grow, right.

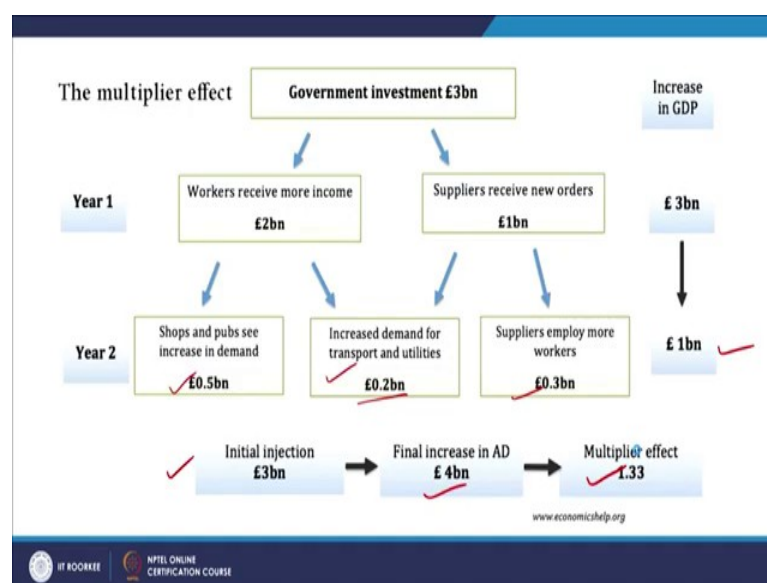
So, automatically there will be a demand. So, this demand this change in effect, due to the change in income as a result of the investment of the government or anybody is called the multiplier effect. The concept of multiplier was first said by the famous economist R. F. Kahn, in an article titled “The Relation of Home Investment to Unemployment”. So, in 1931, where he talked about for the first time the, employment multiplier, right.

John Maynard Keynes was the one who talked about the, where he introduced the concept, where he talked about the governments intervention to boost up the economy, and he says, he emphasized on the significance and utility of public investment, right; government which refers to government expenditure on public works and public welfare activities.

The purpose of this investment is not to on profit, right. As is the case with private investment, it is called autonomous investment, because there is no private of a profit intention behind for the government, because it is independent of profit motive. But to increase employment and stimulate the business during acute cases of depression. There may be depression there may not be a few anticipate, there is a depression going to come or a recession going to come, the government should do this, right.

So, what is it saying? So, multiplier is equal to change in income divided by the change in initial investment. So, multiplier M is equal to change in income ΔI divided by the change in the initial investment. So, let me say investment, right. So, income by investment. So; that means, what? The change in investment into the multiplier is nothing, but the change in income, ok.

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Now, look at this example, let us say, the government finds that there is a slowdown in the economy and the government makes a investment of 3 billion dollars, ok; for certain work, for example, development work, road work, anything could be. So, what happens in the first year, the workers receive more income, right.

So, there is an increase in 2 billion income. The suppliers receive new orders worth of 1 billion. So, this 3 billion increase in GDP you see. So, there is a 3 billion you know, income the government has put in and it has been split.

What happens in the next year? Now, there is an increase in demand. The shops and pubs see there is an increase in demand of 0.5 billion. Increase demand of transportation and utilities is of 0.2 billion and suppliers employ more workers and pay around 0.3 billion. So, there is an addition 1 billion that comes in.

So, what happens happened here you see, the initial injection by the government was 3 billion, final increase, right is 4 billion. So, what is the multiplier effect? The multiplier effect is 4 upon 3, the change, right. So, this is the 1.33, the multiplier effect is 1.33.

So, government; what it basically says is that, when there is an investment from the government, it does not have one direct effect, but it has a chain of effects. So, that is why it is called a multiplier effect, right. So, as the demand will grow, the consumption will grow.

People will have more consumption, will have more demand for new products. So, the production will grow, people will you know, they will earn better and everybody will have a positive advantage.

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The slide is titled "Size of multiplier". It contains the following text: "The size of multiplier depends on the value of marginal propensity to consume or marginal propensity to save". Above "marginal propensity to consume" is the handwritten label "MPC" in red. Above "marginal propensity to save" is the handwritten label "MPS" in red. Below this text is a numbered list: "1. The larger the marginal propensity to consume the larger is the multiplier." and "2. The larger the marginal propensity to save the smaller the multiplier." At the bottom of the slide, there are logos for "WU ROOMER" and "NPTEL ONLINE CERTIFICATION COURSE".

What is the size of the multiplier? The size of the multiplier depends on the value of the marginal propensity to consume or marginal propensity to save. So, this is marginal propensity to consume, this is the marginal propensity to save, right. So, the multiplier size depends on this consumption propensity or the saving propensity. Propensity is the habit of the people, right.

So, the larger the marginal propensity to consume, the larger is the multiplier. I will show you the relationship, right. And what it says? The larger the marginal propensity to save the smaller the multiplier. That means, in simple terms if I understand, if people consume more, they say the US is a consumer you know, driven you know economy, right; a consumption economy sorry consumption economy or consumer driven economy, right.

So, because it is a consumption driven economy that is why the US does much better on it is investments than the rest of the other countries. Whereas, if you see most of the developing or underdeveloped countries, they have a large propensity to save, because they have a fear of the future.

They are they do not have insurance; they do not have safety measures; so, they are always you know afraid of their future. So, they would like to save more and more. And saving itself, what happens is the money does not circulate. And as the money does not circulate, so there is no growth in demand; that there is no growth in production. So, when there is no consumption there will be no production obviously. So, as a result of it the multiplier effects becomes very small, right.

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Marginal Propensity to Save (MPS)

$S = I - C$ ✓

- MPS refers to the increase in the proportion of saving (Saving = Income - Consumption) as a result of increase in the level of income.
- It can be defined as the ratio of change in saving to change in income.
- MPS values will always range from 0 to 1.
- Symbolically, $MPS = \Delta S / \Delta Y$
- Where, ΔS = Change in saving; ΔY = Change in income

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So, let us see, what is this marginal propensity to save? Let us define understand it. So, it refers to the increase in the proportion of saving; which is saving is equal to saving is equal to income minus the consumption, right. So, refers to the increase in the saving, right; as a result of the increase in the level of income.

So, when income grows when income is growing, what happens to the saving? So, is saving growing or consumption growing? What is happening? It can be defined as the ratio of change in saving to change in income, right.

So, what it says symbolically? MPS; marginal propensity to save is equal to the change in saving divided by the change in income. So, Y is the change in income, right and change in saving.

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Quick Quiz

As income rises from Rs 50,000 to Rs 60,000, Savings increases from Rs 10,000 to Rs 18,000. In this case, what is the MPS?

a. 0.80 ✓
b. 0.20
c. 0.10
d. 0.90

$$\frac{8000}{10000}$$

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Now; let us see, an income rises from rupees 50,000 to rupees 60,000. Saving increases from rupees 10,000 to rupees 18,000. In this case, what is the MPS, find out? So, what did it says? Change in saving, if you look at it, change in saving by change in income. So, change in saving is how much? Here, change in saving is 8,000, right; change in income is 10,000, right. So, what is the ratio? So, this is the 1, right.

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Quick Quiz

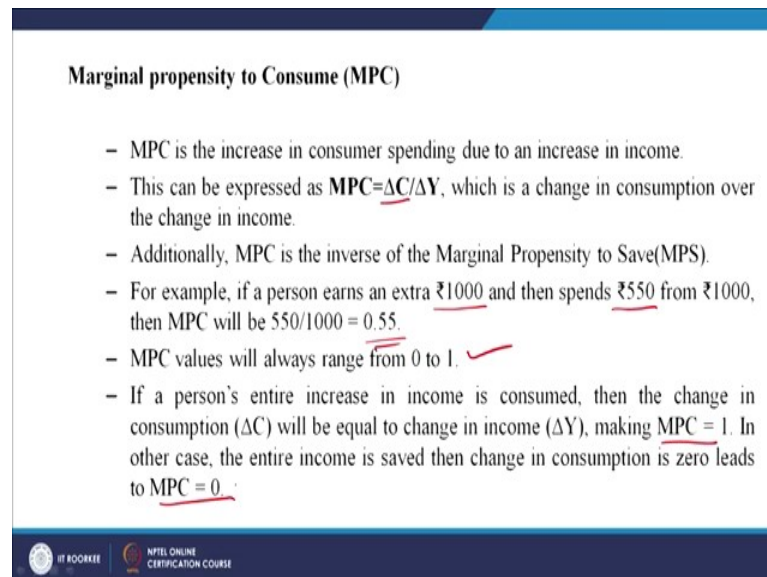
Assume that consumption spending is Rs 16,000. For every Rs 200 increase in disposable income, saving goes up by Rs 20. Which of the following statements is true?

a. The marginal propensity to save is .10.
b. The marginal propensity to save is .20.
c. The marginal propensity to consume is .20.
d. The marginal propensity to consume is .10.

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Similarly, there are other questions you might answer. Assume that the consumption spending is 16,000. For every rupees 200 increase in disposable income, saving goes up by rupees 20. Which of the following statements is true? Try to answer it, right.

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Marginal propensity to Consume (MPC)

- MPC is the increase in consumer spending due to an increase in income.
- This can be expressed as $MPC = \Delta C / \Delta Y$, which is a change in consumption over the change in income.
- Additionally, MPC is the inverse of the Marginal Propensity to Save (MPS).
- For example, if a person earns an extra ₹1000 and then spends ₹550 from ₹1000, then MPC will be $550/1000 = 0.55$.
- MPC values will always range from 0 to 1.
- If a person's entire increase in income is consumed, then the change in consumption (ΔC) will be equal to change in income (ΔY), making $MPC = 1$. In other case, the entire income is saved then change in consumption is zero leads to $MPC = 0$.

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Then we come to the marginal propensity to consume. MPC is the increase in consumer spending due to an increase in income. So, when income is growing either a person will tend to save it or he will tend to consume it.

So, if he makes more consumption then what happens, right? This is expressed as ΔC by ΔY ; that means, change in consumption divided by the change in income, right. MPC is the reverse or the inverse of the marginal propensity to save, right. So, it is either if you save you cannot consume, if you consume you cannot save, as good as that. For example, if a person earns 1,000 extra and spends 550. So, the marginal propensity to consume will be 550 divided by 1,000; which is 0.55, ok.

This ranges between 0 to 1, ok, because it cannot go beyond the income. You will, it is understood, this is an assumption of the you know, assumption that you can always lie within the up to the income you can reach; so, maximum, right. So, the numerator and denominator will be only same. It cannot, the numerator cannot be more than the denominator, ok.

If a person's entire increase in income is consumed, then the change in consumption will be equal to the income, same income making MPC is equal to 1. So, you can understand; change in consumption, you saying if everything is consumed; that means, whatever income you had you consumed everything, so income and consumption is same. So, the value becomes 1, right.

If the entire income is saved and nothing is consumed then it is 0. So, MPC becomes 0, right. If you save, everything you do not consume anything then it is a again a hypothetical situation which is 0, right. So, 0 and 1 actually are hypothetical situations.

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Numerical

Mr. Rajesh receives ₹ 10,000 bonus apart from his annual salary. Now he has an extra income of ₹ 10,000 to spend that he didn't before. Suppose that the individual decides to spend ₹ 8,500 of ₹ 10,000 on a vacation and remaining amount will be saved for future purposes.

Find the Marginal Propensity to Consume (MPC) and Marginal Propensity to Save of Mr. Rajesh.

What will be the MPC:- a) If the individual saves the entire ₹ 10,000.
b) if the individual spends the entire ₹ 10,000.

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Mr. Rajesh receives 10,000 bonus apart from his annual salary. Now, he has an extra income of 10,000 to spend, that he did not before. You get bonus during Diwali there are incentives.

Suppose; example, right suppose that the individual decides to spend 8,500 of this 10,000 on a vacation and remaining amount will be saved for future purposes. Find the Marginal propensity to consume and the marginal propensity to save. What will be the MPC; if the individual saves the entire 10,000; individual spends the entire 10,000, right.

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Solution

$MPC = \Delta C / \Delta Y$ $MPS = \Delta S / \Delta Y$

Marginal Propensity to Consume will be $8,500/10,000 = 0.85$.
Marginal Propensity to Save will be $1,500/10,000 = 0.15$.

a) if the individual saves the entire ₹ 10,000 then MPC will be 0. ($\Delta C / \Delta Y = 0/10,000$)

b) if the individual spends the entire ₹ 10,000 then MPC will be 1. ($\Delta C / \Delta Y = 10,000/10,000$)

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So, look at this. So, what it saying? Marginal propensity is change in consumption by change in income. Saving is; change in saving by change in income. So, propensity to consume, marginal propensity to consume MPC will be 8,500, right; look at it. So, 8,500 he is spending on 10,000. So, which is equal to 0.85.

What is the saving? Obviously, 15,00 the remaining; so, 0.15. If the individual saves the entire 10,000 the MPC will be? He is not consuming anything, so it is 0 by 10,000. If the individual spends the entire 10,000 then MPC will be 1. So, this is the condition, right.

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Complete the following table:

Income Level (₹)	Consumption Expenditure (₹)	Saving (₹)	MPS	MPC
1000	900	100	--	--
1200	1060			
1400	1210			
1600	1350			
1800	1480			
2000	1600			

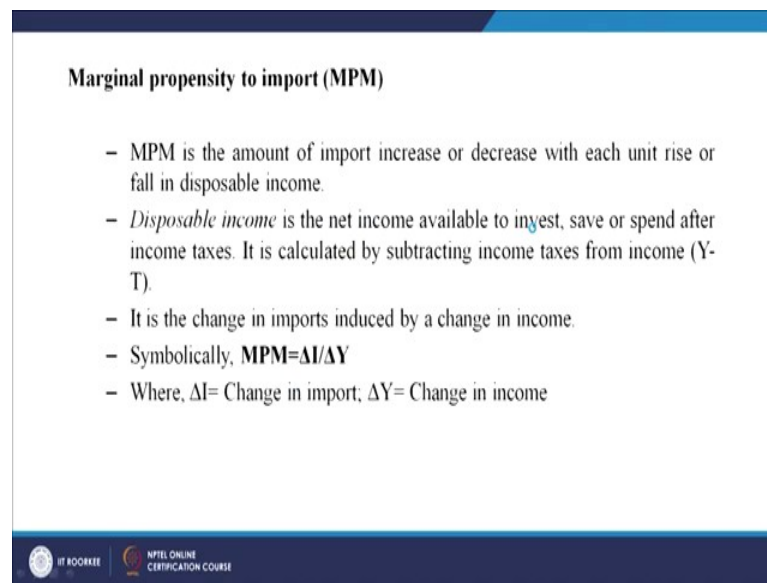
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So; this is a case, you can complete this table. This data, you can see. So, what is happening? So, this is income this is, consumption expenditure, right. So, how much is the saving this time? 100.

So, first year we are not giving any saving and consumption. We do not have the data, right. From next year onwards, you can count it; you can do that. So, try to fill up this figure and find out the answer, right, ok.

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Marginal propensity to import (MPM)

- MPM is the amount of import increase or decrease with each unit rise or fall in disposable income.
- *Disposable income* is the net income available to invest, save or spend after income taxes. It is calculated by subtracting income taxes from income (Y-T).
- It is the change in imports induced by a change in income.
- Symbolically, $MPM = \Delta I / \Delta Y$
- Where, ΔI = Change in import; ΔY = Change in income

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There is one more term, the marginal propensity to import. What it is saying? The marginal propensity to import is the amount of import increase or decrease with each unit rise or fall in the disposable income.

What it is saying? The amount of import increases or decreases import means; to get the raw materials from outside with each unit or you know, rise or fall in the disposable income, that extra income that I have, right.



What is disposable income is a net income available to invest save or spend after my taxes income taxes calculated by subtracting income taxes from income, it is the change in imports induced by change in income. So, delta I imports by delta income, right, ok.

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Types of multiplier

- **Employment multiplier:** ✓
The employment multiplier is the ratio of increase in total employment to the increase in primary or original employment.
- **Foreign trade multiplier:** ✓
The ratio of change in total income to change in export income is called foreign trade multiplier.

$$\frac{\Delta E}{T E}$$
$$\frac{\Delta T I}{\Delta E I}$$

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There are two types of multipliers; as I said, one was given by Kahn, which was said as the employment multiplier; the other was given by Keynes, John Maynard Keynes, John Maynard Keynes and he said foreign trade multiplier, right.

So, he did not exactly say about it, but then what is this? Let us see, the employment multiplier is the ratio of increase in total employment. What it is saying? The ratio of increase in total employment. So, change in employment, right; to the increase in primary or original employment to the total employment, right. So, change in employment to the over total employment.

Similarly, there is one more term called the foreign trade multiplier. Now, what is this foreign trade multiplier? The ratio of change in total income to the change in the export income, right. So, total income change in the total income change, only the change divided by the change in the export income is called the foreign trade multiplier. So, let us see.

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Characteristics of multiplier

1. Aggregate Demand, That is, the investment and consumption, cause the multiplier effect. Economists generally associate multiplier with change in investment. However, change in consumption or government expenditure or exports can have the same effect.
2. It works in both directions, i.e., forward and backward
3. There is an inverse relationship between marginal propensity to save and the size of the multiplier
4. Size of the multiplier depends upon the size of marginal propensity to consume. Higher the marginal propensity to consume, greater will be the size of multiplier
5. Size of multiplier is reduced proportionate to the leakages of the current income flow. ✓
6. Multiplier effect can operate continuously only if there are continuous and autonomous changes in expenditure in the economy.

Static Dynamic
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First, let us understand some of the characteristics of the multiplier. So, what it says? It is dependent on the aggregate demand. Now, aggregate demand is the total demand or the requirement or the demand for services or products goods is called the aggregate demand.

So, that is the investment and consumption, cause the multiplier effect. Economists generally associate multiplier with change in investment. However, change in consumption or government expenditure or exports can have the similar effect.

Another multiplier effect is that it works both forward and backwards. Suppose, there is a cut in the spending, so there could be a backward effect, ok. There is an inverse relationship between marginal propensity to save and the size of the multiplier, right. Size of the multiplier depends upon the size sorry size of marginal propensity to consume, right. Higher the consumption, greater will be the size of the multiplier, ok.

The size of the multiplier is reduced proportionate to the leakages in the current income flow, right. So, what are the leakages? What are the you know, points where there are leakages, right? That also has an effect on the size of the multiplier.

Multiplier effect can operate continuously only if there are continuous and autonomous changes in expenditure in the economy. So, there has to be, it cannot be a static model.

There are two models static and dynamic. So, earlier. In fact, the criticism for Keynes is that, Keynes had given a static model, but today's economists are talking about that the multiplier effect is built on a dynamic model. It is constantly changing. You cannot predict anything you know, the on linearly, right; so they are saying it is a dynamic effect.

What are the importance? First of all let us talk about the importance of the multiplier.

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Importance of multiplier

- **Income Propagation:** concept of multiplier tells us that income spread is a natural process. It tells that increase in employment, income and output is due to increase in investment.
- **Importance of Investment:** it is the initial increase in the investment that results in multiple increase in income. As a matter of fact, investment is that dynamic element on which changes in employment depend.
- **Trade Cycles:** trade cycles are those cycles which tell business fluctuations take place over a period of long run. Sometimes there is a boom and at another time there is depression in business. So multiplier helps in understanding trade cycles.
- **Full Employment:** Multiplier's concept is of great importance while formulating policy regarding full employment. It shows that to attain full employment situation a thrust of net investment should be made in the economy.
- **Deficit Financing:** deficit financing helps in removing bad effects of depression. It is so because as a result of deficit financing investment increases and increase in investment causes multiple increase in income in terms of multiplier effect.
- **Equilibrium between Saving and Investment:** According to Keynes theory of Employment, Equilibrium is established when Saving and Investment are equal. Equilibrium between Saving and Investment can be achieved through change in the level of income. If saving is low in an economy, it can be known from the concept of marginal propensity to save how much increase in income is needed to get the required increase in saving. And to increase the level of income how much investment is needed, can be determined from the co-efficient of multiplier.
- **Public Investment:** concept of multiplier testifies that if during depression, a little increase in public investment is made, it will lead to multiple increase in income such an increase in income will help in controlling depression and unemployment.

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The concept of multiplier tells us, that income propagation is a, propagation means; spread, is a natural process, right. It tells that increase in employment income and output is due to the increase in investment, ok.

Importance of investment second; it is the initial increase in the investment that results in multiple increase in income. As I said; right, the workers will get more money. If they get more money they will spend more, right. If they spend more there will be more production, right. As a matter of fact, investment is a dynamic element on which changes in employment depend.

Trade cycles; these are those cycles which tell business fluctuations take place over a period of long run. Trade cycles do not happen in very short period of time, they take time, because there are lots of elements involved. So, it has its own time, right.

So, the market tends to resist any change. So, but when it changes. So, it takes sufficient time to make those visible changes.

Sometimes there is a boom and another time there is a depression in the business. So, multiplier helps in understanding these trade cycles, right. Full employment; multiplier's concept of is of great importance while formulating policy regarding full employment. It shows that to attain full employment situation, net investment should be increased, and thus, you can generate investment.

You can see, some of the cases in even US when general motors Ford and Chrysler were going through a very bankruptcy condition, the government saved them from bankruptcy by injecting a lot of revenue into it, right.

Another point is deficit financing; now, deficit financing sometimes; that means, what? It as you can understand, this is a deficit financing by taking loans or something you are on a deficit, right. It helps in removing the bad effects. So, sometimes the criticism is there.

The deficit financing is good or bad so, but it sometimes has a positive effect, because as a result of the deficient financing, investment increases. The increase in investment causes multiple increase in income in terms of the multiplier effect.

So, what you have invested through deficit financing need not be equal to the growth. So, the growth is much more. So, on a net if you result you see finally, the growth is more than the investment. So, finally, you are making some profits over the deficit financing.

Equilibrium between saving and investment. Now, Keynes theory of Employment. Equilibrium is established when saving and investment are equal. Saving is equal to the investment. Equilibrium between saving and investment can be achieved through change in the level of income.

If saving is low, it can be known from the concept of marginal propensity to save how much increase in income is needed to get the required increase in saving. So, it helps you to understand the equilibrium between saving and income and to, let us say to understand the concept of marginal propensity to save you need to understand the increase in income; how much increase in income is needed to get the required increase in saving.

And to increase the level of income how much investment is needed, that can also be determined. Another importance of multiplier is; so, multiplier helps you to think [FL] how much of saving is required for every individual in a country, because every country is different. How much of you know, consumption should be done? All these factors, right. How much income should be there, so that people can spend?

Concept of multiplier testifies that if during depression, a little increase in public investment is made, it will lead to multiple income increase and will help in controlling the depression and unemployment. This is the basic you know, idea which is talked for multiplier effects.

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Employment multiplier

According to R F Khan increase in investment will cause in increase in employment not only in those very industries where in such investment has been made but in other industries also.

Employment increases in two ways.

- 1) Primary Employment ✓
- 2) Secondary Employment ✓

Employment Multiplier can be expressed by an equation as follows.

$$K_1 = N_2 / N_1$$

(Here K_1 = employment multiplier, N_2 = Total employment, N_1 = Primary employment.)

$$K_1 = \frac{TE}{PE}$$

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Now, let us come, first two types of multiplier; the first one the employment multiplier given by a Kahn, where R F Kahn says, that increase in investment will cause in increase in employment. So, if you invest the if you increase the investment employment will grow, right. In those very industries, where in such investment has been made, but in other industries also.

So, he says, not only in the directly in the industries where you have made the investment, but in the other industries also which are connected to it. For example, let us say, if we invest in a production in a plant. So, if the plant grows; obviously, there would be more of buyers, suppliers coming to that local place to buy those inventory. So, to

stay they would need hotels, lodges, motels, so and maybe other items. So, automatically the secondary you know, businesses are also getting benefited, right.

The service industries largely for example, so, it creates primary employment it creates secondary employment. So, how does it show? Now, $K = 1$ which is the employment multiplier is equal to total employment, right; N_2 divided by the primary employment.

So, what is the total employment? Divided by the primary employment, right. So, this is what it says is the, right; employment multiplier, ok.

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Foreign Trade Multiplier

- *Foreign Trade Multiplier* is the amount by which the **national income** of a country will be raised, by a unit increase in **domestic investment on exports**.
- It is also known as the **export multiplier**.
- The concept of foreign trade multiplier was given by **Mr. Leighton**.
- The foreign trade multiplier is based on the following **assumptions**:-
 1. There is **full employment** in the domestic economy.
 2. There is a **direct link** between domestic and foreign country in exporting and importing goods.
 3. It is based on a **fixed exchange rate system**.
 4. There are **no tariff barriers and exchange controls**.
 5. The **government expenditure** is constant.

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Next, today maybe we will wind up here. Just I will explain, what is the Foreign Trade Multiplier. Here, it says that it is the amount by which the national income of a country will be raised, by a unit increase in domestic investment on exports, ok.

Also known as the export multiplier. What it is saying? Foreign trade multiplier are known as export multiplier is the amount by which the national income of a country will be increased; raised when there is a increase, unit increase in the domestic investment.

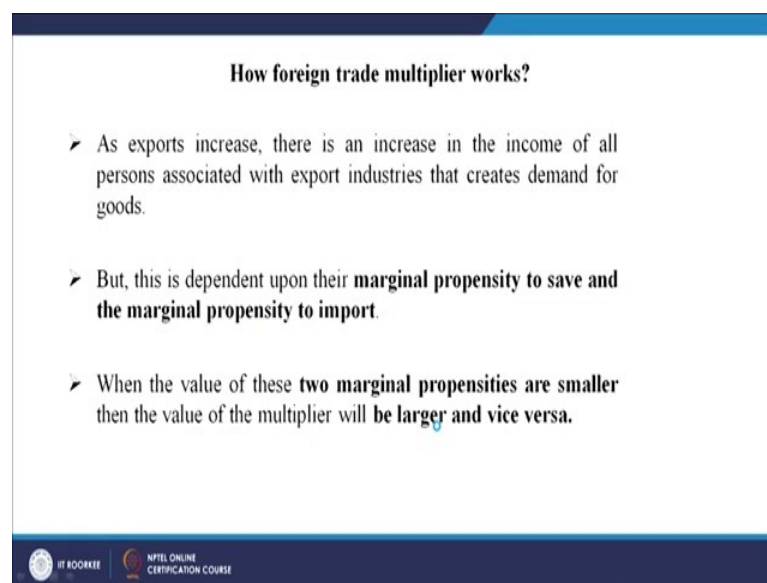
So, if I invest more, what is the change in the exports? How much increase in exports is happening, right? This was given by Leighton, right, but large work has been done you know by Keynes on this also.

The foreign trade multipliers based on the following assumptions: so, these are some of the assumptions what it says, there is full employment. Which might not be correct. There is a direct link between domestic and foreign country in exporting and importing goods. So, there is a direct link. So, there maybe a free movement.

It is based on a fixed exchange rate system, but that is not true, right. Most of the time we are on a flexible exchange rate system. There are no tariff barriers and exchange controls, which is highly untrue, right. So, there are some of other tariff barriers so; obviously, the motive behind the you know, beyond globalization is to remove the tariff barriers, but still now it is not possible, it is not done, right.

The government expenditure is constant; that is also not true, but still these are some of the assumptions that we have to take, right.

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How foreign trade multiplier works?

- As exports increase, there is an increase in the income of all persons associated with export industries that creates demand for goods.
- But, this is dependent upon their **marginal propensity to save and the marginal propensity to import**.
- When the value of these **two marginal propensities** are smaller then the value of the multiplier will **be larger and vice versa**.

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What I will do is, I will carry on for this multiplier effect in the next lecture, because there is a lot to be discussed. I hope, today you have understood what is this multiplier effect. In simple terms, sometimes there is a criticism for multiple effort also, because we say it makes the same you know, statement again and again, there is a criticism for that, right.

So basically, if I understand the more we invest in times of at least bad times or during depression or recessions.

The investment will lead to higher spurt in growth in the industries, which will increase in the income of the people and thus, will incur effect the consumption of the people, consumption patterns and thus, the overall economy will grow, right. But if there is more of saving and very less of consumption, it is also dangerous, right. If there is too much of consumption and you know, then we say then there is a chance that there will be high demand for the products, right.

So, this condition will differ from country to country as per the policies of the government. Where in some countries the government gives lot of free education, free insurance, free policies for you know, and even you know there is a for unemployed people also there is some fixed income. So, such countries the kind of saving and consumption differs to a country; for example, like India, Bangladesh, Pakistan around these Asian countries, which in which there is a serious fear about the future.

So, if we understand this, the government can even take action in putting in it is productive money into such sectors; development of such sectors, so that people will not try to save the income and they would like to consume, because if consumption happens then only the demand will grow.

So, if government can take up the security of the people, then automatically demand for the products will rise and economy will do better; there is no doubt about it, right, but we will talk about in the next class. I hope you enjoyed the lecture.

Thank you very much.