Security Analysis and Portfolio Management

Prof. C. S. Mishra

Department of VGSOM

Indian Institute of Technology, Kharagpur

Module No. # 01

Lecture No. # 14

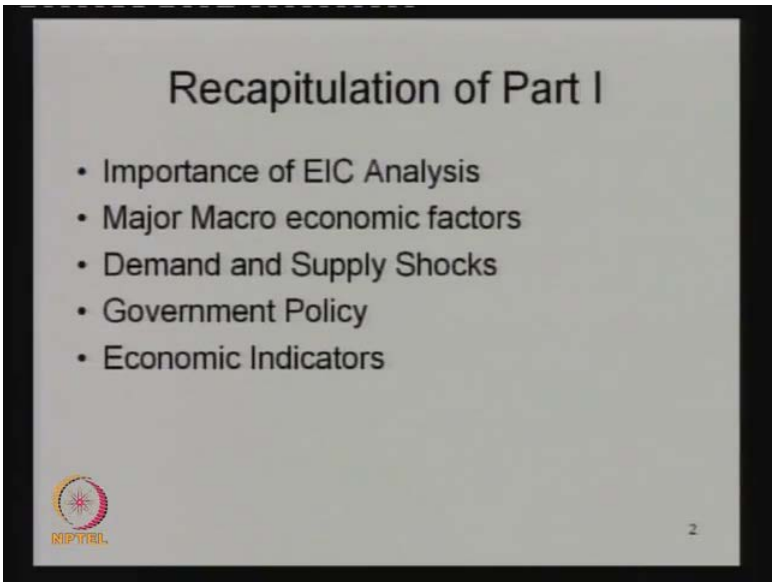
Economic Analysis – II

Hello, in the previous class, we discussed about fundamental analysis fundamental analysis for the particular stock to invest. Fundamental analysis we divide into three parts starting with economic analysis, and then, we have industry analysis and followed by company analysis.

Company is micro in nature as per the analysis, whereas the macro analysis is economic analysis and industries is talking about, which particularly industrial sector that particular company belongs to; a thorough analysis will be done in that case.

The industrial analysis and company analysis will be is covered in the subsequent sessions; last class, we discussed economic analysis part one; now we are going to continue that particular analysis, let us have a recapitulation of what you discussed in the previous class.

(Refer Slide Time: 01:03)



Coming to that, we have discussed about at the importance of an economic and industry analysis EIC analysis for as a part of fundamental analysis, then we talked about the major the macroeconomic factors like GDP growth in industry, employment, monsoon, agriculture all those things are there interested also, all those things are there which is going to which are going to affect an economy subsequent to the industry and also at the end of the day, it is also going to affect particularly companies stocks performance.

Then, we talked about the demand and supply stocks in this economy; demands stocks is something which, because of that, there is some big demand or lower demand for the particular production services in the economy. Supplies are being the supply side like determines something which is affect in the wage rates of the economy, something which affects the cost of material, something affects the cost of capital at the factory production like capital for that matter.

Then you talked about the government policy like physical policy, budgetary policy; we talked about the monitory policy, these are also certain things which affects the economy, whether it is in India or elsewhere for that matter, different government have the different policies physical policy and financial policies are there which effects the particular economy and the sectors and the stock at the end.

Then we talked about the economy indicators, which indicates whether is a boom in that or there is a recession in the particular sector or particular economy for that matter; how it is moving, when the recovery is going to happen or the best phase of growth has taken place, we can look at the different indicators and find it out.

Now, in the economic indicators, we had certain things like cyclically indicators, in cyclical indicator, that means, there will be certain trends in that and there are leading indicators; there is a coincident indicators and lagging indicators, we will also talk about diffusion index in this session and also going to talk about the econometric models which can be used or where you can talk about certain variables which can affect and we can consider to find the performance economy or stock for that matter.

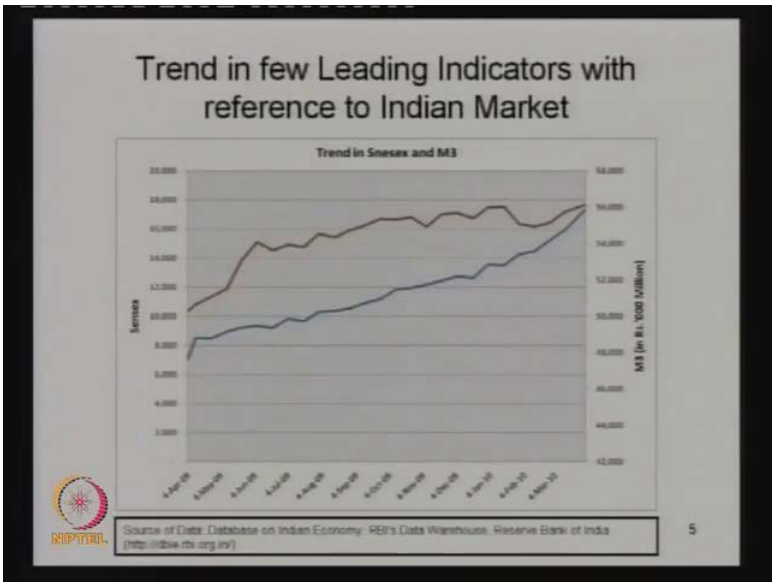
(Refer Slide Time: 03:06)

Then coming to the cyclical indicator that you already discussed, these are the indicators which is in that we have leading indicators leading indicators those indicators which happens earlier to the economic whatever is happening that means, there is a peak in this particular indicator and then comes the growth in the economy.

That means GDP growth will be more and before that this indication might have shown a growth for that matter or this indicator might have shown a decline which will be followed by a decline in the economy as such. So, they lead ahead of the economic trend

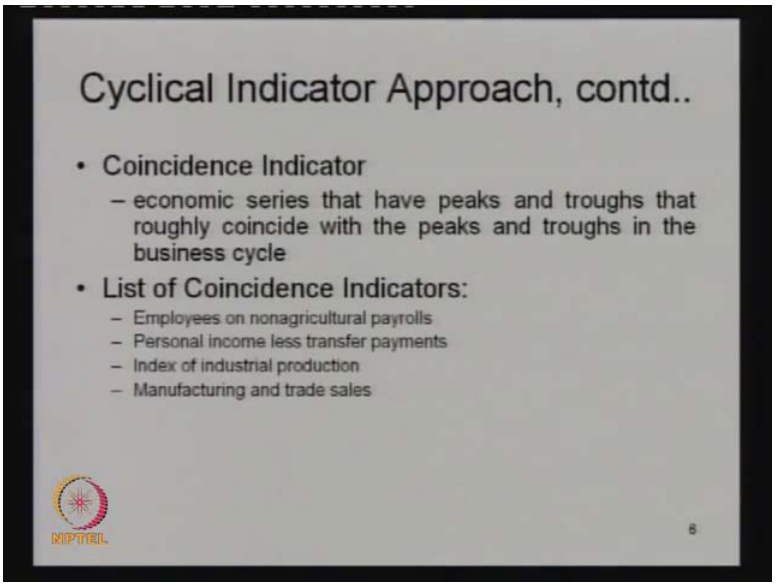
access. So, there is a different heading indicators like that you have manufactures orders, vendor performance, money supply and then stock market performance.

(Refer Slide Time: 03:52)



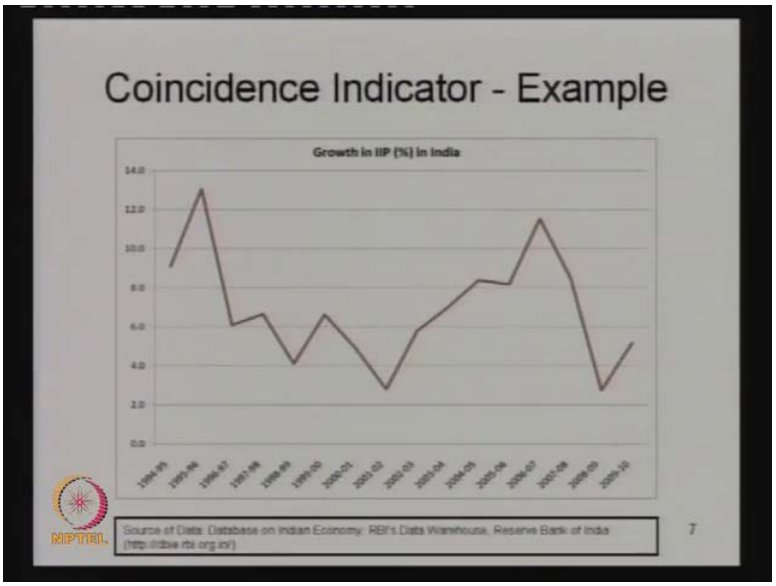
We have an looking In India context, we have these two indicators like there is a trend in Sensex; there is trend in also broad money that is M 3 that is there. So, we have taken from the RBI's database and we found there is an increasing growth in this a long term since two thousand in the last one year, we see there is a continuous growth in both in the Sensex as well as the money supply. So, these are certain things, there are couple of other indicators which can also then combined all these indicators put together, we will talk about whether this overall economy is going to be growing ahead of this, after this growth in this particular sectors a particular indicators are not.

(Refer Slide Time: 04:35)



Coming to the next one, we have about coincident indicator; coincident indicator is something which is which will have the same growth or same tall or whatever same trend in the indicator like the economic growth access. So, there will be like parallel to the economic indicator graph for that matter. So, that means indicator you have is personal income, less transfer payments and index index of industrial production, manufacturing and trade sales.

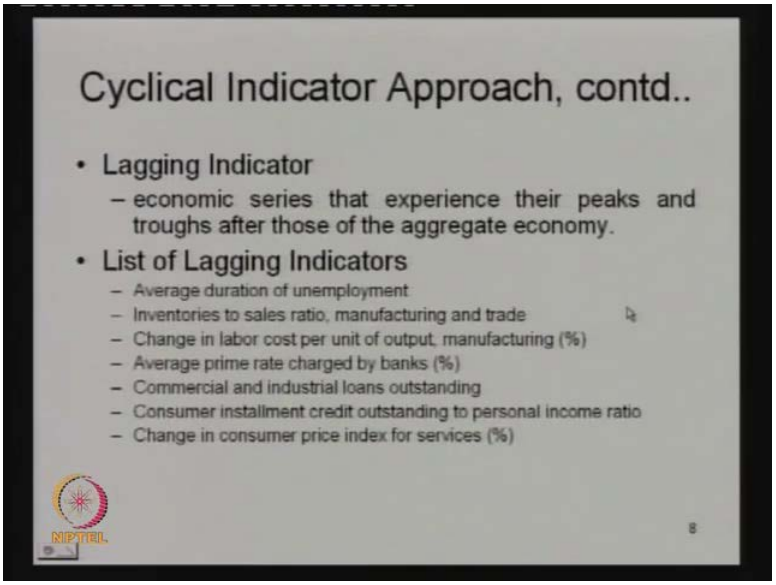
(Refer Slide Time: 05:01)



If you look at one, we have a growth like this, they see this is a growth in index of industrial production in terms of percentage; this growth we can see it which is 94, 95, then 95, 96 to the something around little more 13 percent, which has declined in 96, 97, then like that it has fallen, then it is again recovered in 2006,7, 8 we find there is a peak in this one in the recent trend then it has again fallen.

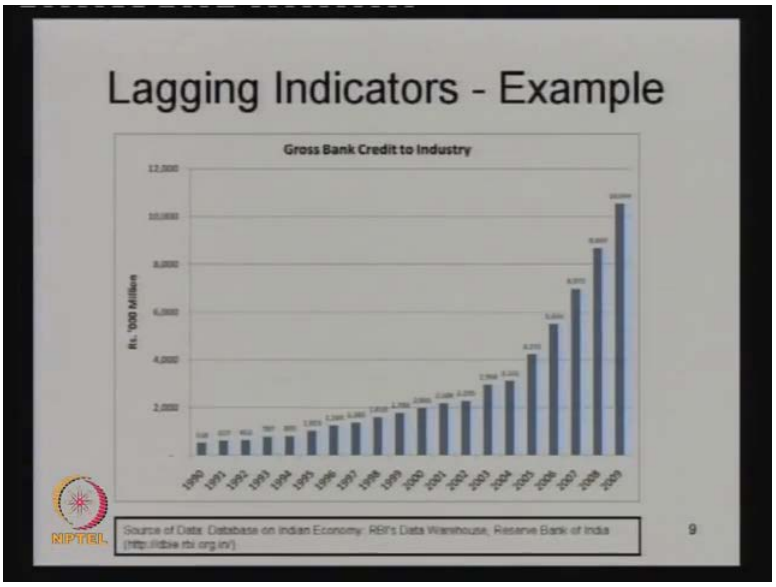
So, this you can see this particular fall in the growth rate is almost same like the fall in the overall market also; there you can would say that the market growth was the GDP growth was not that higher 2008- 9, which is expect to recover in 2009-10 which is also reflected in this particular graph that 2009-10, there is going to be little more industrial growth in IIP and percentage going to more and you are expecting that the overall economy also going to be little better than the last year.

(Refer Slide Time: 06:01)



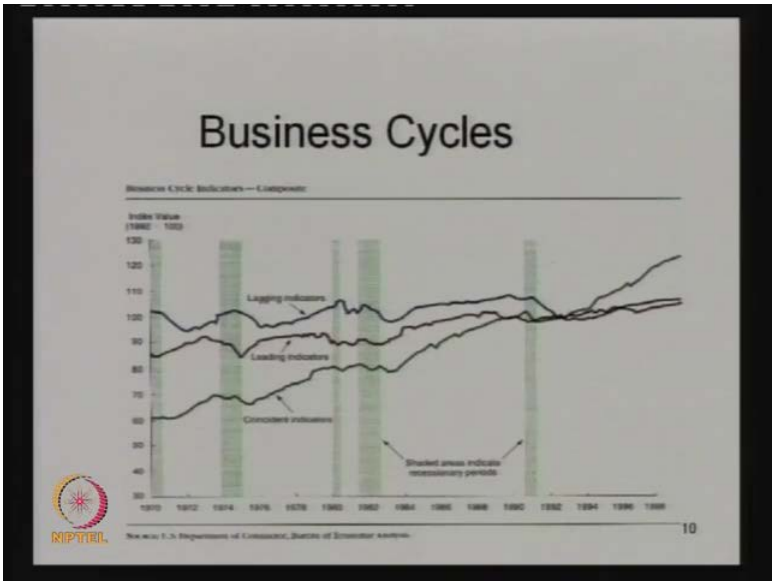
Then coming to the next one, we have lagging indicator, these are the indicators lag behind the economic indicators; certain examples you have is unemployment, then inventory sales ratio, then we have prime rate charge by banks, then you have loans outstanding, that means, there is an economy going to be better, subsequently this growth is there will be a growth in these particular indicators afterwards. So, there is going to be a lagging, after the growth has taking place, there is growth in this particular, there is a decline in the overall economy then the decline happens there.

(Refer Slide Time: 06:34)



Then we can see an example here, the lagging indicator you have about gross bank credit to industry which is increasing, but one has to plot this particular thing with reference to the overall economic growth and find out how much is lags compared to the economic growth for that matter.

(Refer Slide Time: 06:52)

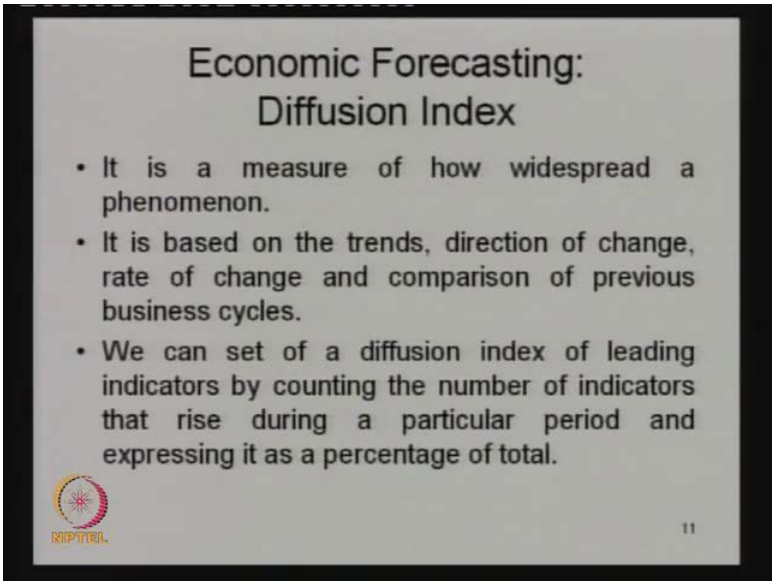


Then having done all those things, these are all the things again what happens, we plot in case of business cycle, this is an example taken from the US data access; one can see here, there are different recessionary periods here, the green shades, then you have what

lagging indicators there, then you have what the leading indicators their overall, then there is a coincident indicators.

So, this is one can take a very long range of data long period data and plot this indicators against the recession or whatever that mean there against the economic growth and find out how they are moving as such.

(Refer Slide Time: 07:32)



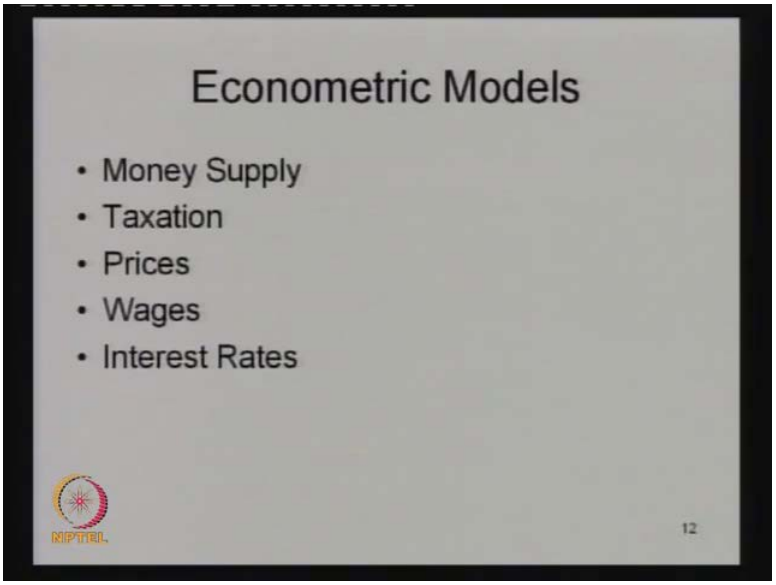
Then coming to the next thing that you have got, that is we are talking about diffusion index; it is a looking at this index one can find out how widespread is the phenomenon as such, that means, in particular set of indicator there could be couple of indicators, let us say coincident indicator or the lagging indicators or leading index for that matter.

Among that the 10 indicators are there, how many of them are actually moving in tandem? They are going up as if let us say the 10 indicators are there, may be 8 of them or going up, in a up increasing that should be there; rest two may not be increasing in that way. So, that means, that is little prevalent, these that growth is going to happen, this is going to more justified and that particular indicator is more useful for that matter.

Then we can also look at the direction of change, how it is going to happen? The the rate of change for that matter, this indicators are going up in a upward movement, that means, there is an increasingly increasing or decreasingly increasing growth for that matter; that means, growth is there, but the maybe 10 percent was an add as an 8 percent. So, how it

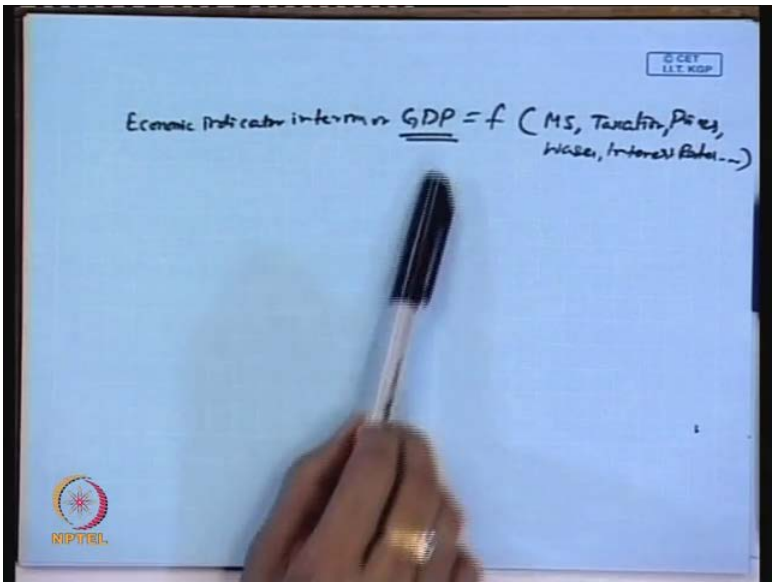
is going our 10 percent rather let us say it become 12 percent, it is 14 increasing growth rate for that manner looking at that the broad trends can be found out; how these all the overall indicators are moving, what is the growth there and all these things can be the where you talk about diffusion index.

(Refer Slide Time: 08:58)



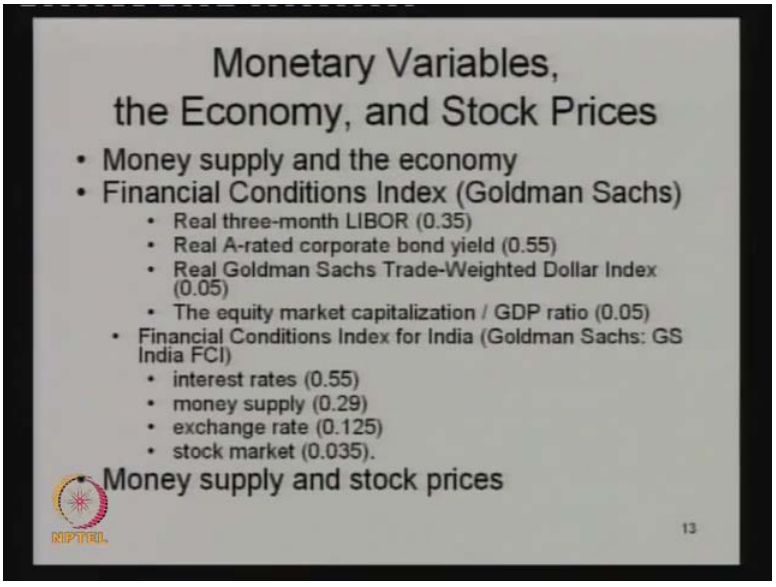
Then we move around to the econometric models here, where you talk about the, that means, when you talk econometric model, we talk about that yes, the function of the or the output one economy let it GDP or whatever that maybe is dependent upon certain factors like money supply, taxation prices, wage rates or wages for that matter; interest rates these are five broad things; there could be couple of other things can also be there which affect the performance of the economy and so what can happen?

(Refer Slide Time: 09:29)



One can have a relationship like economic indicator in terms of let us say GDP is a function of all those things like money supply, taxation prices of the commodities and all wages and interest rates and among other things. So, these are could be there which say and we can have a relationship there and find out a model, where we talk about how these different variables are affecting the economy in regulating GDP or growth in GDP for that matter.

(Refer Slide Time: 10:09)



Moving on further in little more elaboration on these particular aspects, we have got first thing that we talked about is the monitory variables, the economy and the stock prices; the first thing that we talk about in this case is money supply.

Money supply can be controlled by the particular federal bank in US or Reserve Bank of India in is India having company open market operations, change in the interest rate, change in the cash reserve ratio, change in the say circular liquidity ratio all those things can be there where money supply can be controlled.

Now, what happens in the economy? The money supply is controlled, let say RBI tends to buy the securities from the government, securities from the market and what will happen, because there is a demand, so there will be interest; there is a more demand going to be there. So, price of the particular bond is going to be higher and if the price is going to be higher and there is always an inversion relation in the price and the yield or for that matter interest rate. So, the interest rate is going to decline; if the interest rate is going to decline and that interest will reflect in the borrowing rate of the different corporate will also expect to decline.

Because ultimately this particular interest rate in a government security is an indication for the other market like financial market or capital market, where the lending and borrowing can take place and there the interest rate can also decline; if the interest rate declines, then obviously, they expect return from the equity investment also can decline.

Because that is that can the bond interest rate can be a benchmark for the equity rate of return expect from the equity investment, which will be more than the bond interest rate, but can be one could be leading to the assets. So, that is what will happen, the value of the particular stock may go up for that matter, and then similarly, because the interest rates decline. So, that is why the one of the cost of the particular company also decline. So, performance is going to be better, like that is going to be chain reaction with this one.

So, similarly, the negative reaction can be there; if the government relaxes, the economy has more money supply, then interest rate may increase and that similarly can have different effects on the stock prices, then this is one overall thing.

Then there are certain agencies like Goldman Sacs for that matter, they have developed certain financial conditions index, where they ensure taking only money supply, they have taken certain core indicators like the real 3 month labor that is short term interest rate London interbank offer it; we have a contemporary thing in Indian case like Mibor this Mumbai interbank offered rate.

Then you have got real A- rated corporate bond yield, then you have got real Goldman Sacs Trade-Weighted Dollar Index, then equity market capitalization. If you look at this particular factor, that is, a FCI GS FCI, it is known as the Real Three Time Libor that is interest rate as well as Real A- rated corporate bond; it is also an interest rate; it has got 90 percent vertex in this particular thing.

So, one can see their overall index can be there; one can find out there is a 1 percent growth or 1 percent movement in the GSFCI and they could give 1 percent growth in GDP or some form of the relations can also be there.

And GSFCI also has been developed from India, where there is same thing we have about interest rates, but you have got something called money supply is given weightage there, then is an exchange rate is given some weightage in stock market is 0.035. So, weighted age is given.

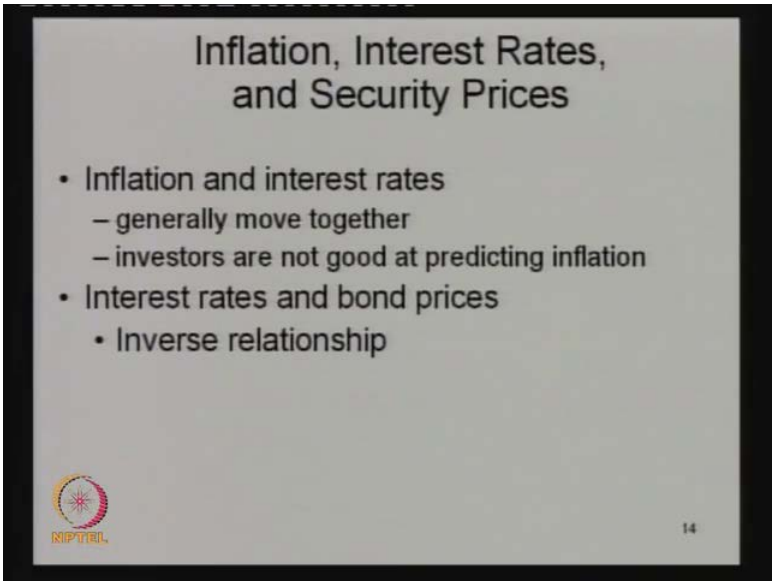
So, these are the things that we have in case of financial conditions index which instead of taking a one particular factor, it takes into accounts different 3 4 factor which are supposed to be talking about what is the financial condition in the market and how it is going to affect the and we can see have a relationship between this financial condition index and the overall economic growth for that matter.

Then as you discussed earlier, so money supply and stock prices can be related. So, as you discussed money supply, there is a contraction in the money supply; that means, the there is a buying of the government securities by the Reserve bank of India in Indian case. Then the price of the particular bonds are going to be increasing and price increases interest rate falls and if the interest rate falls, then there could be two effect because of that that is the the one of the cost of the company like borrowing cost can be reduced that will improve the bottom line the profit will be improving, then second thing is the overall

rate of return expected by the investor also decrease and this things can have a positive impact on the stock prices for that matter.

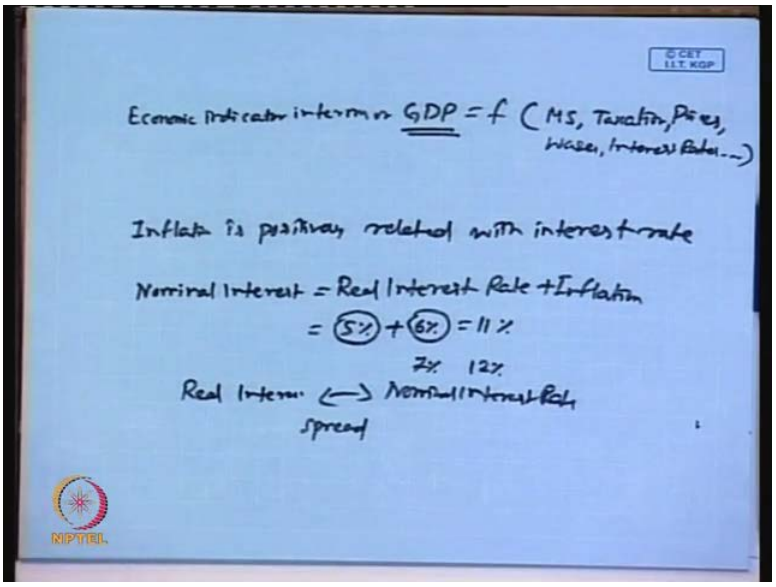
So, all those variables are equally important, there will be important to look at the they have got certain effect as a main matter as a lagging effect leading effect or a what are the chain reaction they are going to affect the performance of the particular underlying stock for that matter.

(Refer Slide Time: 14:54)



Then we move on to other factors like in the macroeconomic factors that is we have got something like inflation, then we have got interest rates and how it is going to affect the security prices. If you look at the inflation and the interest rate usually they move together; that means, the inflation is going to be higher is expectation higher.

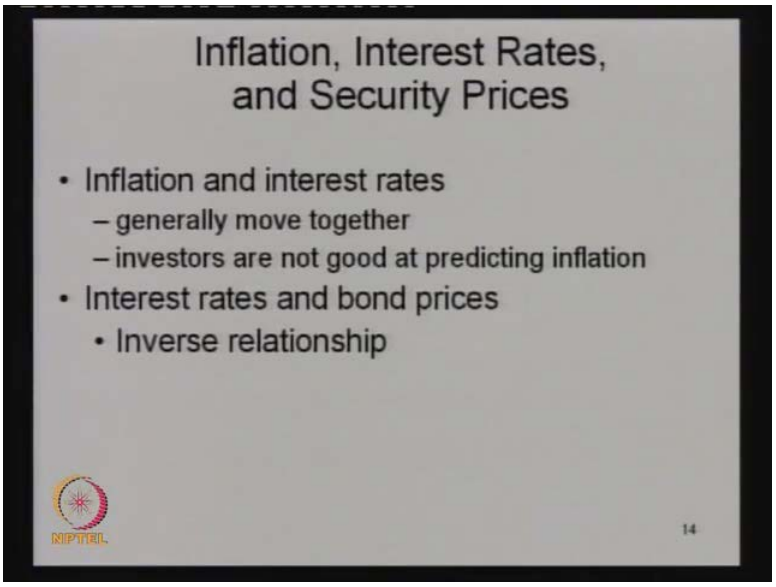
(Refer Slide Time: 15:14)



So, the inflation is positively related or interest rate related with interest rate; that means, the interest rate. In fact, when you talk about the nominal interest rate, it is nothing but the real interest rate plus inflation plus inflation. So, the in the real interest rate is expected, let us say 5 percent and the inflation is going to let us say 6 percent. So, interest rate can be now 11 percent this is remaining constant; if this is going to be more or less because of the inflation. So, it becomes 7 percent that will become 12 percent. So, like that it will be there.

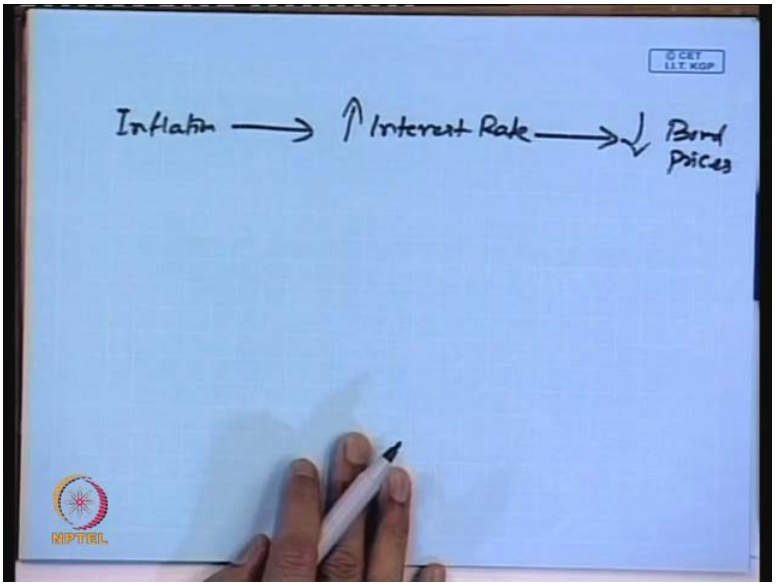
So, there is going to be spread between the real interest rate and nominal interest rate. So, this spread is going to be there, usually one will find the spread to be almost constant or may be little variation, but sometimes what happens, there will be a higher spread between these two particular things that could be because the investors are not able to predict the inflation in proper manner.

(Refer Slide Time: 16:39)



So, they are not good at spreading that is why this particular gap may be actually increasing as such, then we have got an interest rates and bond. So, what happens if the inflation leads to increase in interest rate?

(Refer Slide Time: 16:47)

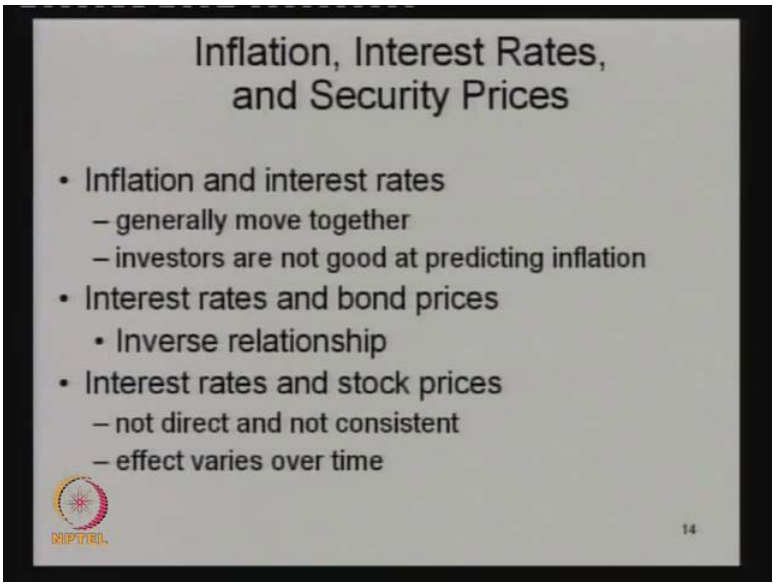


Now, this will lead to fall in the bond prices. So, there is because there is an inverse relations between interest rate and bond, the higher the interest rate, lower will be bond price rate or lower the interest rate; higher is going to be the bond price or you can say

the yield and the bond price as a yield and the price are the inverse related. So, it is interest rate is going up, because inflation or for whatever reason for that matter

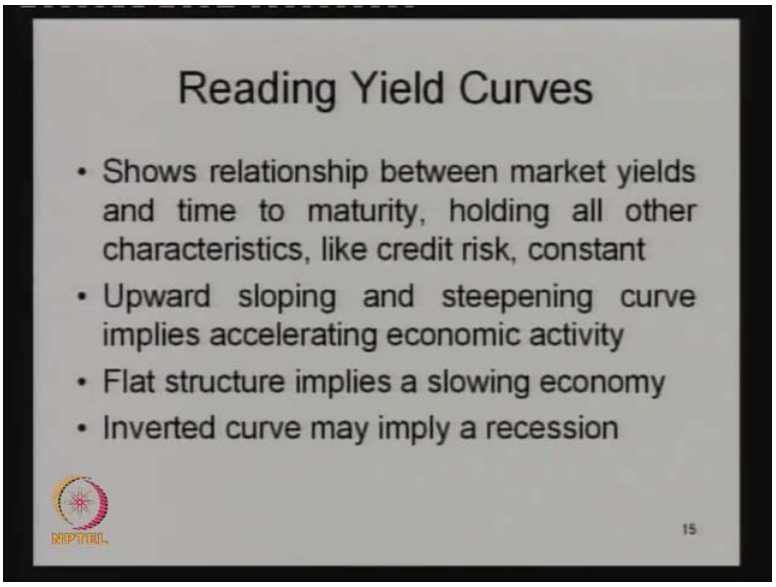
The interest rate is going to go up because of this whatever reason, then the bond price is going to be more or it is going to be less for that matter and it will also have another effect on the stock prices, the share prices, the overall interest is going to be increasing; the share price is also going to decline which we are going to discuss in this subsequent time as in this session itself.

(Refer Slide Time: 17:52)



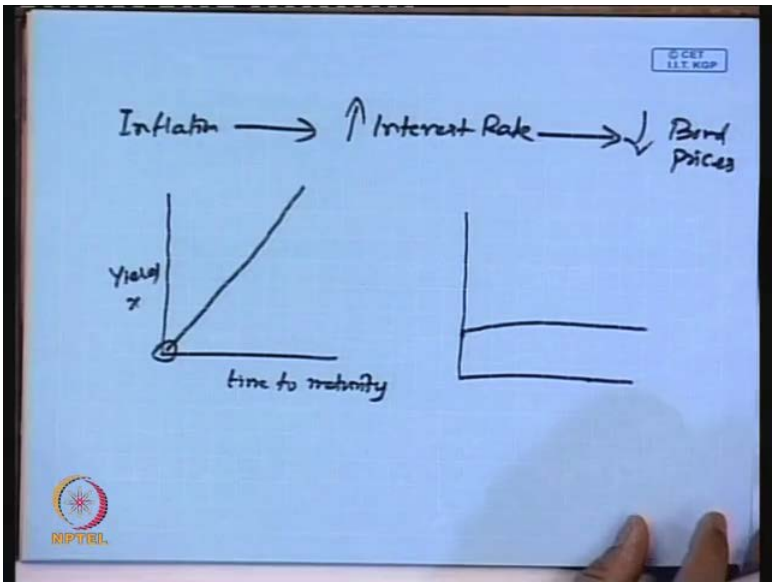
Then we move on to the next slide, we next as I talked about interest in the stock prices. So, there may not be a very direct relationship, but not consistent, but there is going to be something as you discussed interest rate can lead to the higher; interest rate can lead to the reduction in the price of the stock for that matter. And this effect can also vary from time to time; there may be conflict unlike the bond, these particular relations may be so much consistent as such.

(Refer Slide Time: 18:20)



Then another thing that you talk about looking at the yield curve yield is the yield from the government securities or the dated securities are for the bonds or the corporate bonds for that matter. So, if you look at the yield curve assets, the it has relation between market yields and time to maturity and you will we keep other things constant like credit is a something like that it is constant; how is yield is going to say higher the time period more yield or higher the time period less less yield or there is no difference in the yield depending on the time to maturity.

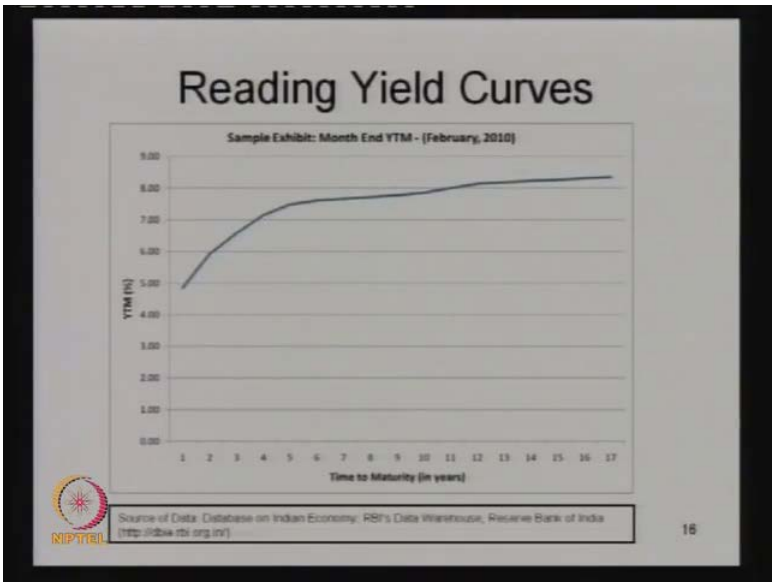
(Refer Slide Time: 19:02)



So, if the yield curve is upward sloping and in that case, if you look at the yield to maturity here, this is the time to maturity and this is the yield in percent. So, if this is in upward slope, then we can say that there is a going to be increasing activity in accelerating continuing activity as such.

And sometimes the yield curve of course, yield curve will not start at the origin axis, it will start something above because it is a unlikely that you have some yield which is 0 percent. So, you may have yield curve which is flat. So, that means, there is no neither increase or nor decrease in the economy activity, sometimes the the yield curve can also decline and this can be declining that case, we can say that the particular economies in a declining phase as such and that is or you can have an inverted curve look at that, if there is a going to be fall in the economic activity or this is looking at there is an the session that is going to be happen.

(Refer Slide Time: 20:02)

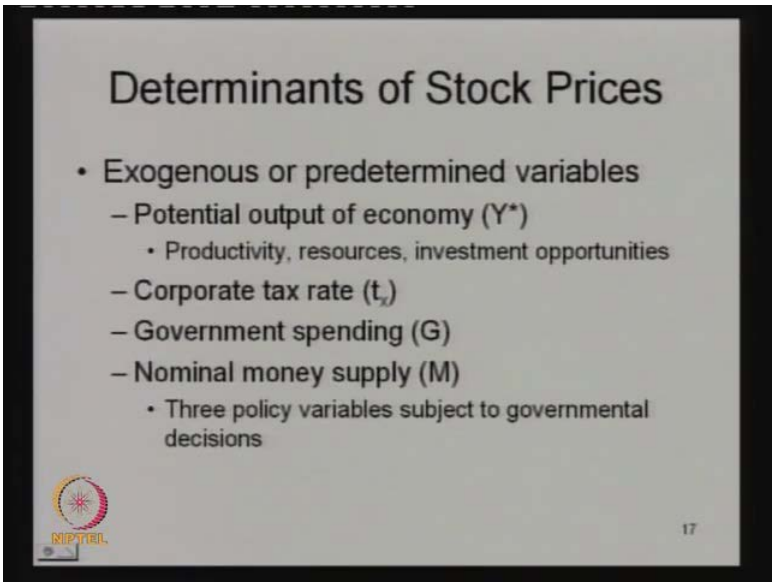


If you look at the in sample example here, we are got the yield curve as you look at time to maturity and the x axis, then you have about on the y axis; the yield to maturity there and these are taken from the February 2010 data.

At that point of time from the RBI's which we have taken, we can see that there is an increasing and got over the period there is a little flat here. So, that indicates that there is a growth is not so flat, notice that parallel to the x axis for that matter if there is an increasing trend here. And we can see that the there is going to there is going to be a better or better economy activity in future. So, we can in Indian case we can say there is the growth is going to be there in the economy that is indicated by the yield curve for that matter.

It is not that very stiff slow phases, but there is a positive slope here which is going to say is not a flat curve so much; it is not an inverted curve for that matter. So, which indicates that there is going going to be a growth in the economy if you look at from today.

(Refer Slide Time: 21:05).



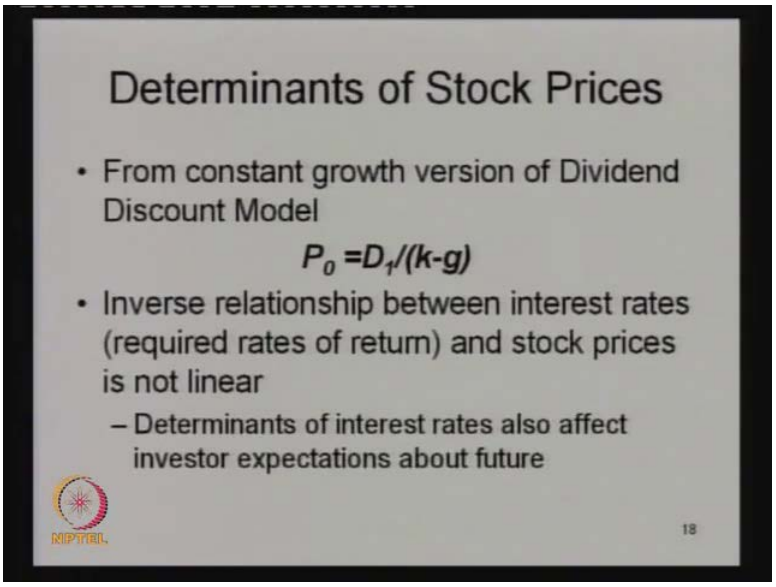
Then we move on to other factors that affects the stock prices, they are called different predetermined variables; there are there are different models that is available, that is given by different author, different researchers for that matter.

But if you look at these, one of the models which is a general model for that matter, the the stock prices can be function of potential output of the economy, which will be indicated by productivity, resources, the investment opportunities projects taken by different companies for that matter, then corporate tax rate for that matter that is going to also affect. the; Obviously, this is a simple thing, the corporate tax rate is going to be decline is declining; it is going to have a positive effect on the share price of a particular if the particular company for that matter, if the company is actually taxable in nature.

Then the government spending also can have effect; the government spend depends government spend more on infrastructure there is going to lead to the infrastructure sector growth and the companies which supplies to the goods to the infrastructure, but then there is going to better performance for that matter.

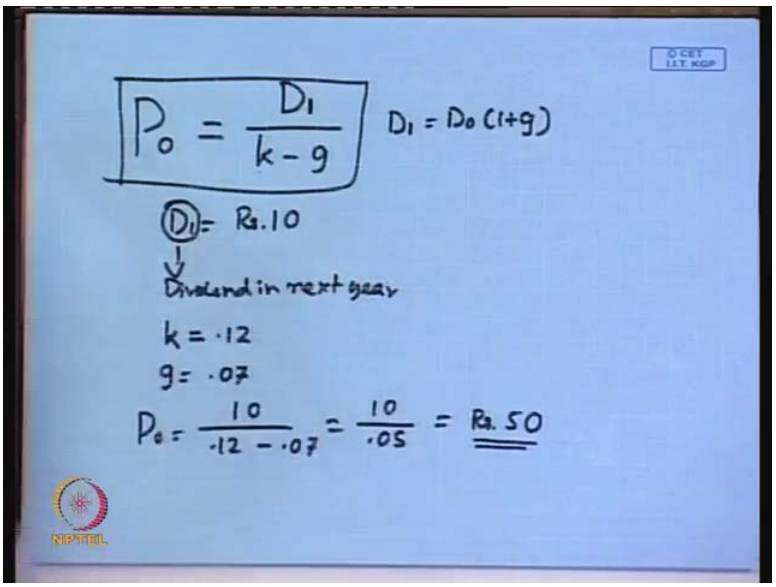
Then obvious as you discussed, there is a money supply is going to be more or less contracting policy or a relaxing policy that is going to affect the interest rate and obviously, even stock price is going to be affected. So, these three different policy variables subject to government decisions.

(Refer Slide Time: 22:22)



Then we move on to the how we are going to capture this particular thing that determining these stock prices from constant applying the particular classic model of dividend discount model and if you look at the classic model, dividend discount model is as is given in the graph, we have got the P 0 is equal to D 1 divided by k minus g.

(Refer Slide Time: 22:51)



So, if you look at the example as you discussed earlier, price of a particular stock today is nothing but D 1 divided by k minus g. So, this is a classic dividend discount model.

So, if you apply this particular formula with data, so let us say D 1 is equal to rupees 10 and D 1 is nothing but the dividend in next year expected dividend in the next year.

So, if the cost of capital or the rate of return expected by the investor is equity holder is let us say 12 percent and the growth in dividend expected is going to be let us say 7 percent 0.07, then the price of the stock is going to be 10 divided by 0.12 minus 0.07 is nothing but 10 divided by 0.05 is nothing but, if you take this currency rupee INR, then it becomes rupees 50.

Now, the point that we talk about here is that, this particular price of a stock depends upon the expect dividend of the next year; there is in a numerator and also depends on the denominator that is we have got the cost of capital, they expect return of the investors equity investors and also the growth rate in this particular dividend.

So, in fact, if the it is a constant growth rate and model and here D 1 is nothing but D the provision dividend into 1 plus growth rate. Now, this numerator is a function of the past dividend and the growth in dividend is going to happen; denominator is function of the cost of capital or cost of equity or rate of return expected by the equal investor and the growth that is going to happen.

Now, there could be several factors which can affect this particular denominator or numerator. So, the numerator has you discussed in the previous slides, if it is a cost of equity rate of return expected by the equity holders that is going to be affected by the overall market condition. if some For some reason, if the cost of the overall rate of expected rate bond holder is going to be more, naturally equity holder is also going to expect little more return from the equity investment.

Because equity investment is supposed to be more risky than the bond investment, so because if let us not for anything else nothing not for the credit research for that matter, it is only for the macroeconomic factor the interest rate is going go up.

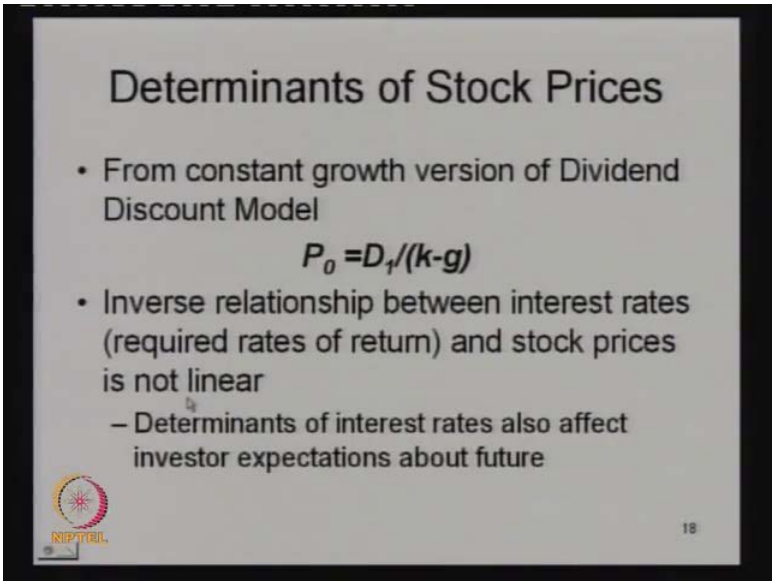
Then they expect return from the bond is going to up and expect return expected return from the equity also is going to go up. So, in that case what will happen, this k is going to increase; at the movement the k increases, the denominator is going to increase assuming that these two things do not change and the price is going to fall.

So, similarly if there is going to be good activity in the economy because of several policy of the government, then there is a going to be good growth and there is a movement of growth is going to be higher in the profit which reflected in dividend growth, then in the denominator there is as affect is that is a negative sign to growth. So, what will happen, the denominator is going to decline

So, if this is held constant, then the price is going to be more similarly another thing that is going to affect the D 1 is also going to increase because of this growth. So, what will happen, in that case if the growth is going to be higher, there is a numerator is going to increase; denominator is going to fall and price is going to be double effected that is because of numerator increase as well as denominator decrease as such.

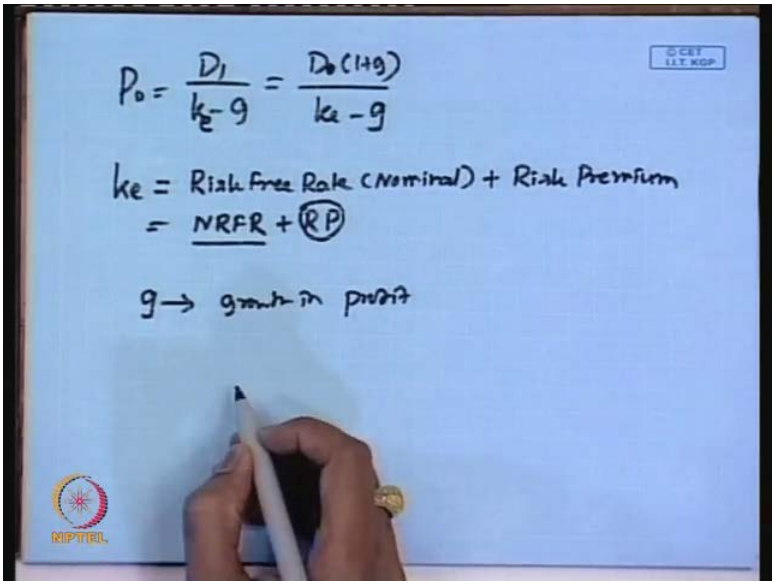
So, this is way one can find relationship between different variables in the model and this this this variables in this particular model are also affected by different economic condition.

(Refer Slide Time: 26:42)



So, look at this, we have invest relation between interest rate and the stock price, but may not be that linear, but it is going to have an effect; they will not have a direct positive relationship, but there is going to be a relations in that.

(Refer Slide Time: 26:58)



Now, what happens, coming to the dividend for that matter as you have discussed in the last model that is P 0 is equal to D 1 by k minus g. In fact, we say if it is k e, if you look at the cost of equity who can one can (( )) there are different formula to estimate this one; the best thing that we can have is the risk free rate of return, risk free rate in nominal term plus the risk premium.

So, let us have a short form for this NRFR nominal risk free rate of return plus the risk premium. So, the risk free rate of return is nothing but the there is a return, where there is not going to be any decline, any fall that is not going to vary, that means, the variation in this particular return is going to be almost 0 or negligible.

Which first which type of instrument is going to be like that where you have to the more risk as say, that we discuss in some of the previous classes, the government security yield that suppose somebody is investing in a 5 year bond or 1 year bond or whatever the government security access, the gilt edged security for that matter they are supposed to be risk related. Because we cannot expect the government is to default on the money borrowed for that matter. So, that is supposed to a risk free rate of return. Now, it is that is indicated by the yield on the dated securities.

So, what you all can happen, if the investment is having a particular time horizon looking at the time horizon, let us say 5 year, 8 year, 7 year, 10 years for that matter the investor can also look at a comparable dated securities of that particular period let us say 8 years for that matter if it is time horizon is investor horizon is 8 years.

So, from that they can found out and that particular 8 year government bond yield is depends upon as I discussed the previous sessions previous slides that it is going to be affected by the macroeconomic factors like money supply can itself affect that or government policy can also affected. So, that can be increasing or decreasing. Coming to the risk premium, the risk premium is the extra return that the investor expects over and over the risk free rate of return because equity is a risky investment.

And this risk premium can depend upon different factors like macroeconomic factors industries. So, that particular industry may not be that good, there are some variation is possible and this particular company's condition may not be that good or may be very good depending on the RP can also increase or decrease.

So, that is that is the overall this cost of equity is going to the affected by different conditions economy and the company's condition also now coming to the next thing that is in this case g as well as this is nothing but D 0 into 1 plus g.

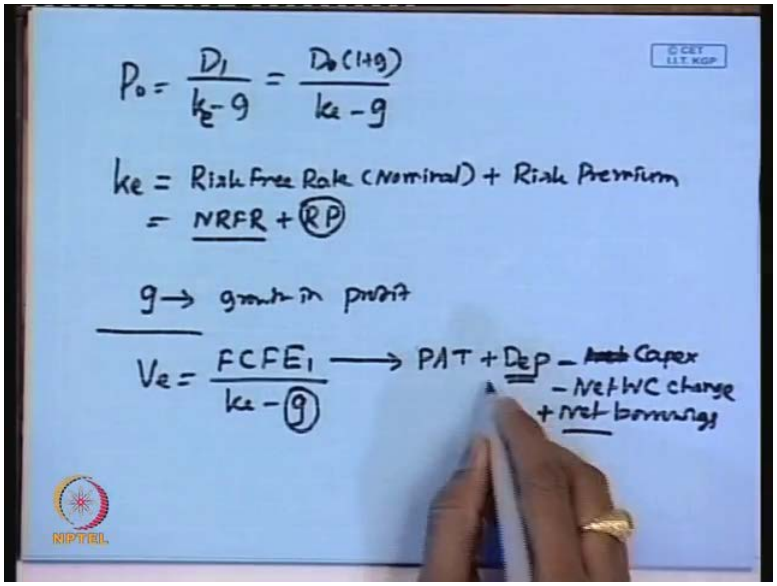
So, we have got growth rate and this particular growth is nothing,,, but growth in dividend which depends upon the growth in profit of the company and the profit of the particular company depends upon the revenue depends upon the expenses because revenue minus expense is going to be profit depends upon the tax all those things are going to be activated again further by something else like overall demand condition in the market supply condition, then the supply condition is not that good the cost of production may be higher. So, profit is going to be lower.

Demand condition is good. So, demand is going to good. So, your realization for the revenue is going to higher. So, revenue is higher. So, that is going to affect the profit is going to be positively affected. So, profit is going to be higher.

So, all those things then the company can go for a capital expenditure more expenditure. So, it can it can company can claim more depletion then the profit can be lower for that matter.

So, all those thing that is going to affect the company's top line, bottom line or the intermediate things like the cost structure for that matter, they are going to affect the bottom line of the company there will be profit and that profit is going to increase or decrease and that can be because different as we discussed in the different macroeconomic variables and that is going to be there. So, in that case, this particular dividend is also a function of profit; the profit is a function of the cost and revenue structure of the company and revenue is a function of the company's products as well as the industry condition as well as the macroeconomic conditions all those things are ultimately going to affect the value of the share of a particular company if you go by the this particular classic dividend discount model.

(Refer Slide Time: 31:34)



In fact, this particular model can be further as you discussed in the previous class in valuation of securities we have something like valuation of equity is nothing but free cash flow for equity of the next, if it is a constant growth model then k e minus g.

So, this growth is in growth in this particular precast flow to the equity, but instead of taking dividend of the model somebody, may question it because investor do not invest

in the stock because of dividend rather you go for more popular approach that you come out come the people have come that is precast flow equity.

So, this precast flow equity is a function of profit after taxes, then what you would do you add by the depreciation, because depreciation does not involve any cast outflow. So, that is getting added, then we take out the net cape or a net investment, then take out net working capital change right, and then, you have got other things which is a committed commitment for the company and we can go for net borrowing.

So, all those things are there net borrowings. Now, if you look at, as you discussed earlier, profit of tax is function of revenue and cost, then your depression is a function of what it is a function of existing assets as well as expansion in the fixed assets.

So, the depression can be more, because there is a fixed assets itself as grown, then coming to the net capex or the capex, for the but it is not net capex; it is a capex that is capital expenditure capital expenditure net of depression because net capex. So, capital expenditure is nothing but the investment in capital assets and fixed assets for that matter.

So, that is going to be more if there is an there is an expected demand for the particular product is going to more in subsequent year. So, you have to build up on a capacity and produce more so that you can produce more in future.

So, the capex is going to be more, then we need money for regular activities working capital like an inventory, we can have someone you require, then you will have some receivables addition receivables we need to have some additional cast.

So, that will be reflected in the working capital and we will some current reliability support. So, in that case a native working capital is going to be nothing but current assets minus current liability. So, how much extra working capital is going to be there that is the nothing but change in (( )). So, that is also going to be taken out of this particular profit.

Then we may have a borrowing from the market or from the lenders from the or through the help of debentures bonds for that matter. So, this borrowings can also net borrowings

nothing but the new borrowings, less the repayment that has taken place during a particular year and this borrowing is going to also affect the cash flow let me increase.

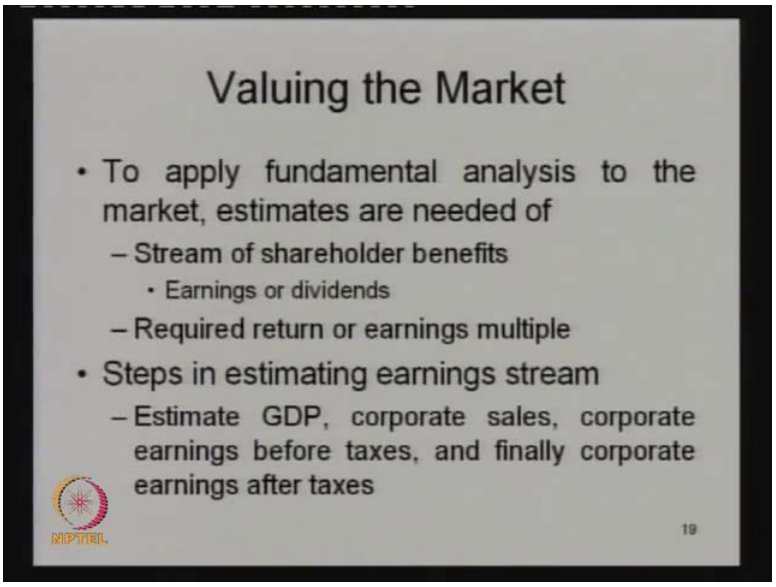
And the borrowing will depend upon again what first thing is that you require finances for the expansion possibly, second thing is that even if you require finances we do we we may feel comfortable with taking a borrowing or may not be feel comfortable taking going for a borrowing assets.

So, if the company goes for only equity for financing, then net borrowing is going to be negative depending upon this borrowing; there is a repayment of borrowing that is going to take place. So, all those things that we are talking about this particular factors that is affecting the FEFC arrivals which affect the precast flow equity are in turn affected by certain conditions related to company economy overall economy of course with the reflecting the international economy.

For instance, it is the export oriented unit and the export is going to be more or going to be less because of the economic condition elsewhere, then that is going to affect the revenue that is going to affect the profit after tax and all other things are going to affect access.

So, all those things have to be considered for the valuation of a particular stock and and or determining for to how much to pay for the particular stock or to go for buying or a selling or whatever that may be. So, these macroeconomic factors, economic factors are going to be very much important factors from the valuation of stock or that invest decision for that matter.

(Refer Slide Time: 35:38)



Now, we move on to the next that what you do how do you value the market as you discussed in previously, overall we talked about the dividend discount model, we talked about the precast flow model, then you talk about the fundamental analysis you can affect the economic factors that is stream of shareholders benefits that is earnings or dividends.

And then required return and earnings multiple. So, earnings or dividend that could be the expectation like the earnings per share or dividend per share then having that particular value then we can talk about and the what is the value of the particular share

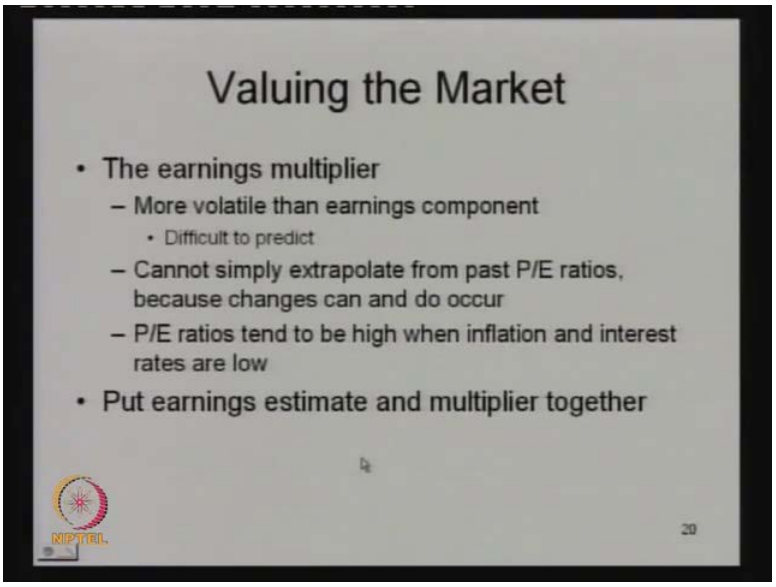
Then the earnings stream as you discuss in the previous few minutes back estimated GDP the corporate sales the corporate earnings before tax then corporate earnings after tax which is nothing but after the tax deducted from there all those things are going to affect the over particular stocks performance the underlying performance.

And accordingly what will happen one stock then you has about couple of other stocks also that are going to be affected and overall index is going to market index like sensex or nifty in Indian context or SNP in US context and Nasdaq for that matter.

They are nothing but the combination of different stocks for the matter these stocks are affected by this and the overall index is going to more better or worse for that matter

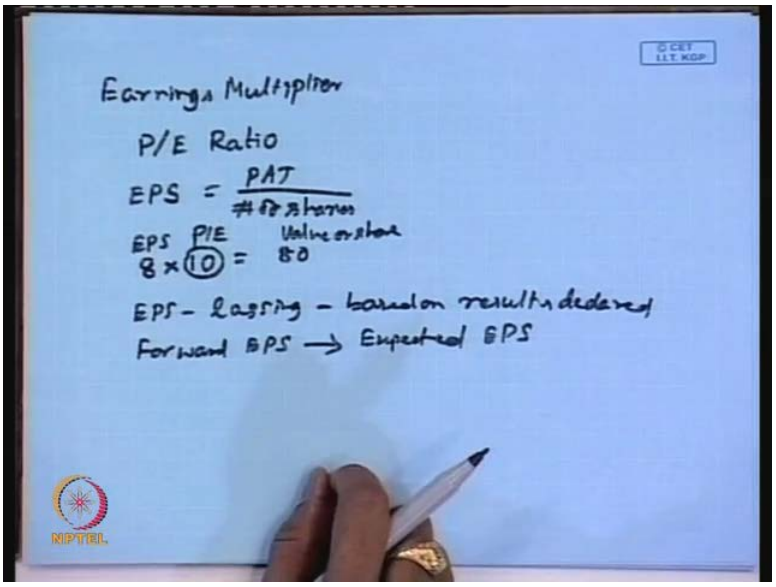
increasing decreasing trend all these things happen which are eventually affected by different macroeconomic factors assets.

(Refer Slide Time: 37:11)



Then we have got other models like we have got one model here the dividend model we also have something called earnings multiplier.

(Refer Slide Time: 37:21)



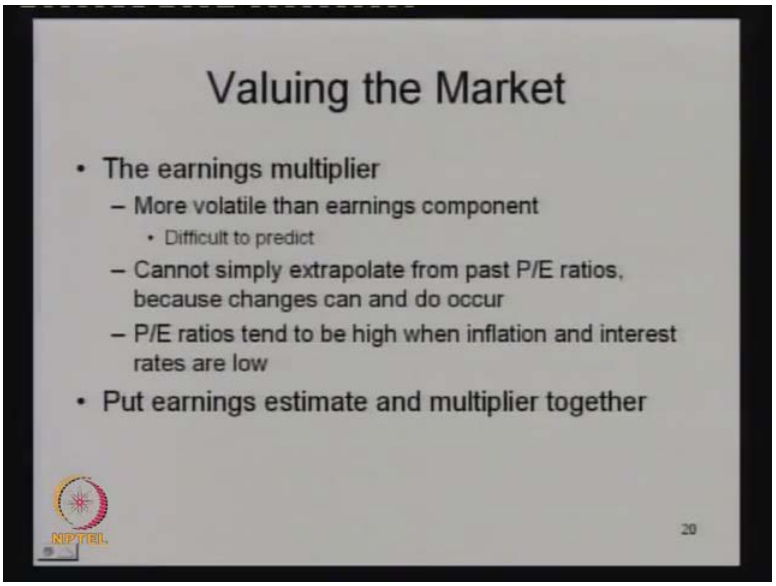
The celebrated earnings, the celebrated multiplier we did discussed about these in valuation of securities applying relative valuation; we have got a celebrative model like price to earnings ratio.

So, if the EPS has been estimated, EPS is nothing but profit after tax divided by number of shares, then if the PE ratio is also estimated, is this earnings per share is expected to be 8 and the PE ratio is expected, let us say there is a benchmark by someone is PE ratio is let us say 10, then the value of share is going to be expected is going to be 80 rupees. So, this is the value of share which is nothing but a product of earning per share and the price earnings ratio.

That means the investor is expecting that 10 times the EPS the valuation should be now the point is here is that this EPS can be the lagging EPS, that is, the earnings per share which already declared based on the results declared already and another can be that you have got a forward EPS.

So, forward EPS is now more prominent which nothing but the expected EPS earnings per share in the next quarter or next year for that matter and once you know expected EPS is a function of the expected revenue, expected revenue of a particular company is function of beside the company's factors, company's products demand for the particular product in the economy for that matter.

(Refer Slide Time: 39:15)



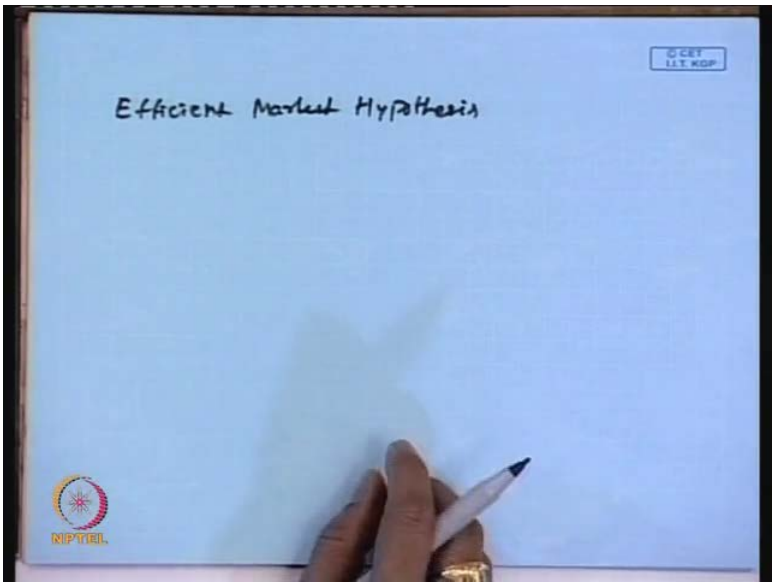
Now, it may not be easy for us to extrapolate from the past P/E ratio of the P/E ratio because you can have different change that can happen and we this observed empirically that P/E ratios are higher when inflation interest is going to be lower for that matter. And so what can happen here, one can do is that, one one can put the earnings estimate and the multiple together and look at the valuation of the particular share.

So, the earnings has to be estimated and the multiplier also going to be estimated; the multiplier cannot remain constant across the time period; it is going to change because of the expect return or the expectation of the investors based on the economy condition or the industrial condition for that matter.

(Refer Slide Time: 40:01)

Then we move on to the next thing that is how able how much we can actually forecast the changes in the market. It is not so easy to forecast the market continuously in particular in the short term and another problem that we have.

(Refer Slide Time: 40:18)

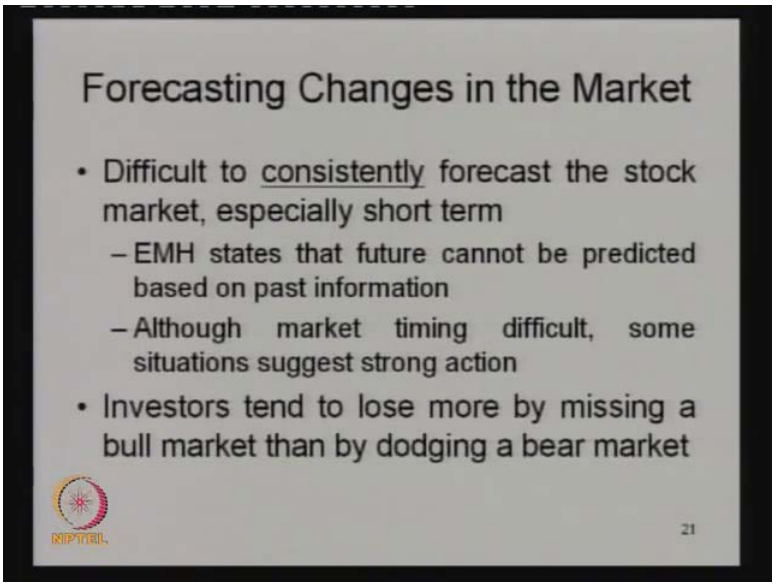


That is one efficient market hypothesis EMH, there are different forms of efficient market; as it has been discussed, it is going to be discussed in other sessions on efficient market hypothesis theory as such. And this says that, we in a very strong form, we will say that the price what whatever the sensitive forward, the price delivery information that is available for the in the market, it is known to all the investors at once only. So, there is no question that somebody has got certain price sensitive information and another person does not have everybody knows that.

So, another thing is that the EMH is also talks about that we cannot the past is not an indicator of the future. So, the future depends upon, then whatever the particular information available, which is instantly available for these for the investors.

But it is also true that all the market in economy in the entire world and not having this very strong form of efficiency, there are certain week form of efficiency in that case, we can find that possibly the previous stock prices can affect the future or the present stock prices.

(Refer Slide Time: 41:37)



But if you go for very strong strong form of efficiency, then we can say the future cannot be predicted based on past information. So, in that case one can simply say that nobody we need not go for an economic analysis ,because in any case these past indicators whatever is happen, they are not going to affect the stock market performance stock market, performance depend on something else information readily available in that case.

Possibly if somebody rejects this particular analysis, possibly somebody may look for a something technical analysis as another mechanism to go for a stock investment decision to buy or sell decision for that matter. But the market timing also something like that and certain times what happens, you have to even if you believe in economic analysis, this has got certain influence in the stock market; timing is also going to be a difficult; that means, one has to be able to predict yes, the economy is going to up and so, the stock price particular thing is going to be higher. So, this may be the right time for me to buy this stock so that I we can book the profit in future and the actually prices go up.

Similarly, if I can one can forecast that the economy is going to decline in that case, if the I am holding a stock and that particular stock is effect effected by the economy as such and economy is going to decline, the particular stock price is going to decline.

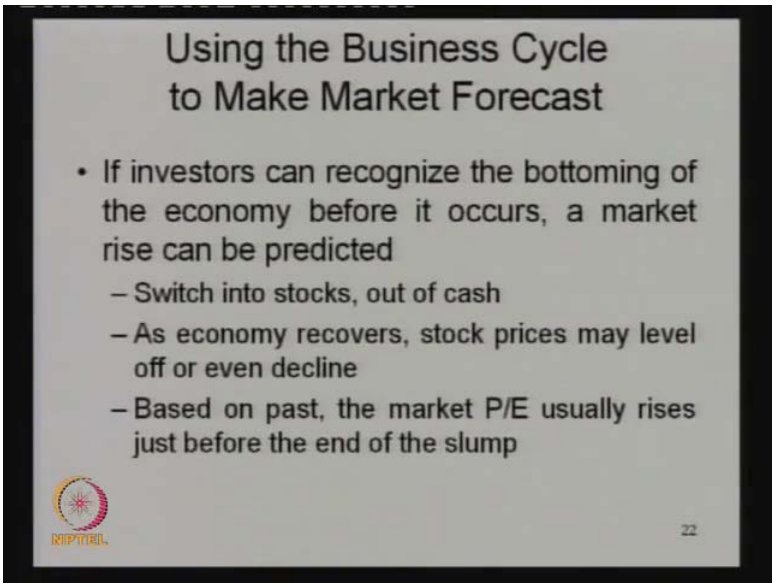
So, keeping that in mind, I may sell this stock a today and book the profit now itself and I do not suffer the losses in future, but that is the problem that all the investors that they

face, they may not be able to forecast the market so diligently, so accurately so that they can take the decision and take the advantage of the condition in the market.

So, what happens the people actually lose more by missing a bull market; most of the times the people may lose the lose or they do not have the opportunity to gain because they miss the bull market; whereas the bear market, they may not be able to avoid and so they are not be able to gain out of the market in the bull market and there rather going to lose, because they are anyway trap in the bear market.

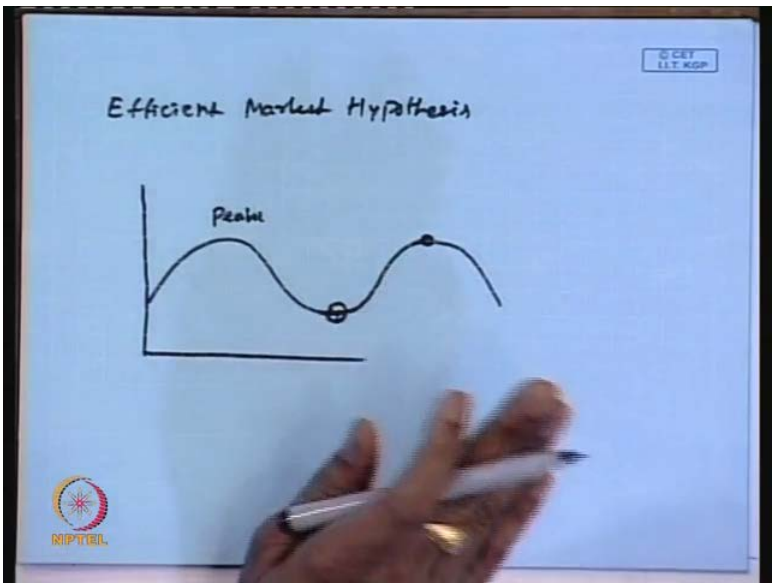
So, they are going to lose, because they have to sell the shares at a lower price or their investment value is going to be lower even they if they do not sell this share, the value, the investment is going to lower, because there is a market price, overall market that rates of the index or everything stock prices have declined the market for that matter.

(Refer Slide Time: 44:03)



Now, we move on to the how do we use this business cycle to make the market forecast. So, as we discussed, again in the previous slides, if the investors can recognize the bottoming of the market economy that means, there is going to be a flat and…

(Refer Slide Time: 44:24)



So, the let us say we have an economic cycle like this, where you have got a peak, then there is a fall this is a redesigning condition. So, obviously, we cannot explain that is going to decline ;decline declining less there is going to be decline after a peak and this decline is going to be up if there is an intelligent investor there is available in the market or unless available. So, if the investors can forecast yes, now this is the last point in the market that is the economy and this particular thing is going go up. So, this may be the right time which you can recognize to buy certain go for invest in this stock; if you have got a cast liquid as such, it is better there you convert them into financial asset like stock further.

Because there is going to be a recovery in the market, a recovery in a market growth in market economy indicator, is an we are going to the stock price also, because they are supposed to be something like lagging leading indicators if the stock price index and all those things.

So, that is is going to be more. So, that stock price is going to go up because there is demand and accordingly so that will be more, that will be happening only when all if you

people feel like that yes, there is going to be recovery and all people will go now go for buying this stock.

So, when they going to buy the stock, the price is going to be higher and the movement the price is going to be higher, there is going to increasing trend that will be followed by the increasing trend in the economy. So, you can say here that yes, the as you discuss in the indicators, that is, in cyclical indicator that you talked about the leading indicators, the stock price index or stock price for that matter is a leading indicator of the economy this is way one can explain that for that matter.

Similarly, if after reaching the particular top line top in the particular work in the economy and if you somebody can predict yes, this is the time, this is the ultimate point the economy can reach and now there is going to be remain a flattening here itself, then it is a if you may then predict, then if you are holding this stock, there is likely that it is the particular economy is going to decline.

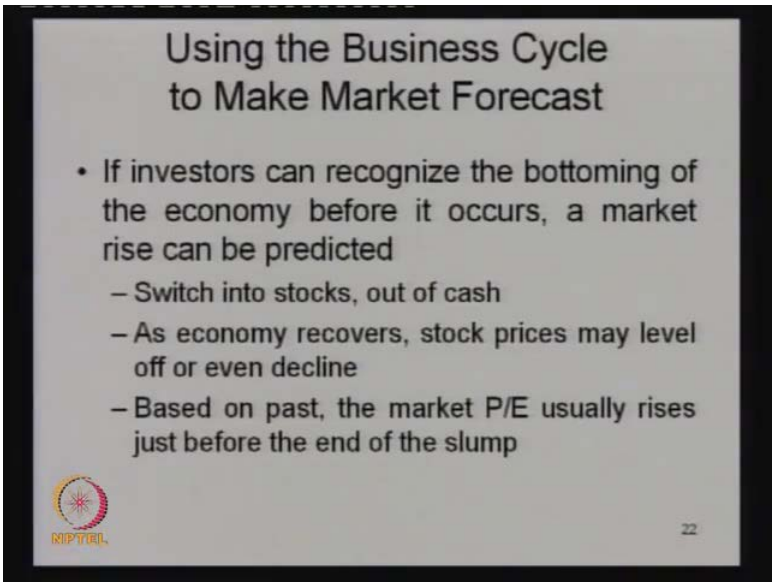
So, ultimately stock price is going to be lower in the future. So, it is better that we sell the shares now and book the profit and then it falls. So, that we do not have any the investor, even have any problem when the actually there is a decline in the market, if because the ultimate maximum gain as already happened.

But the point is that no single investor is only intelligent investor avail in the market all the investors also have all the same almost at particular the informed invest of the all of the all the information and they can also think in that way and that case what will happen

There will be a demand; there will be a supply; there will be sale of the shares and the movement the sale of the share takes place, the price of the share is going to be decline and the price of decline there is a bull, there is a bear market and because why it is bear market? Now, because they are expecting, the economy is going to do worse in future; the recession is going to happen or decline that might be get happen.

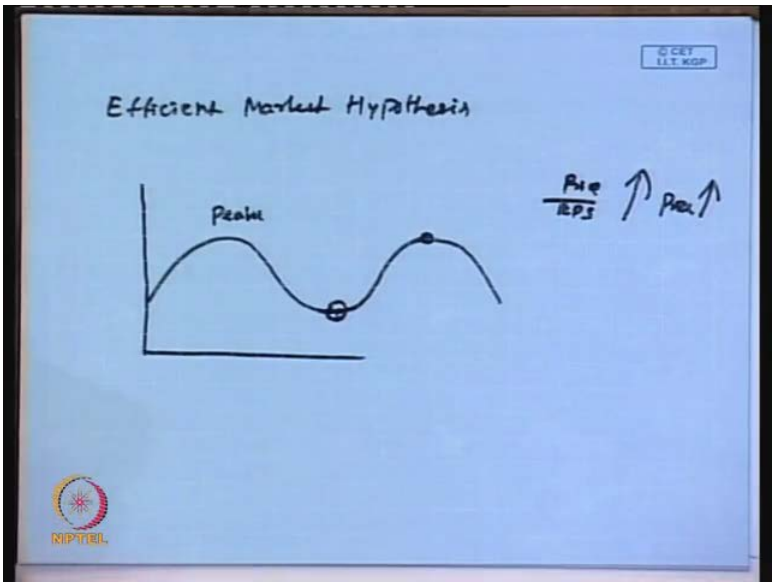
So, that will now be leading that yes, now there is this this stock price is falling because an anticipation that tomorrow the corporate earnings is going to decline because economy itself is declining.

(Refer Slide Time: 47:37)



So, depending upon that condition, one can go for switch into stocks out of cash or the economy recovers, stock price is may level or may even decline and based on the past, the market P/E usually rises before the end of the slump. This is in observation by different enlist, different researches that the market price earnings ratio will rise just before the end of the slump.

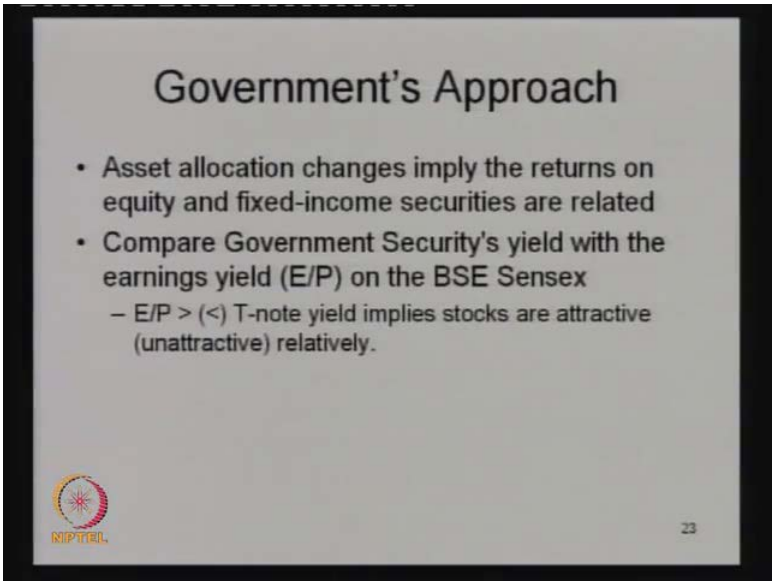
(Refer Slide Time: 48:06)



That means, at this point of time, this is the slump is ending; at this point of time, the PE ratio is going to be higher. And PE ratio is going to be higher why, because whatever

EPS is there, then your price this is going to be up when and the price is going to be up; that means, expecting the price of the share is going to up, some that is why the PE ratio is going to be higher; after certain point of time, then this may stable remain stable also.

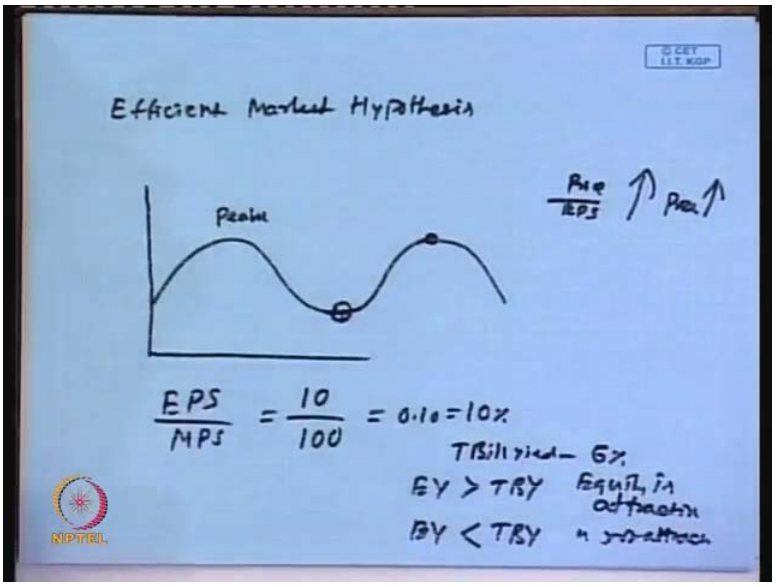
(Refer Slide Time: 48:33)



Then we move on to the other thing that you have, how the government's policy can also affect the asset allocation changes imply the returns on equity and fixed income securities are related. So, what happens, the asset allocation means if somebody has certain amount of money, where he or she can put this money into stock or into fixed income security, they are having a balance of both the things as such.

Now, what will happen, one can fixed income securities will yield will be there will be related to government securities; if it is fixed income, security government is going to be same as government security's yield; if it is the fixed income, security is going to be in the corporate bond or something like that is going to be little more than government security's yield assets. Because corporate bonds are little risky or so they expect return is going to be little higher than the government bond which is supposed to be risky free investment.

(Refer Slide Time: 49:31)

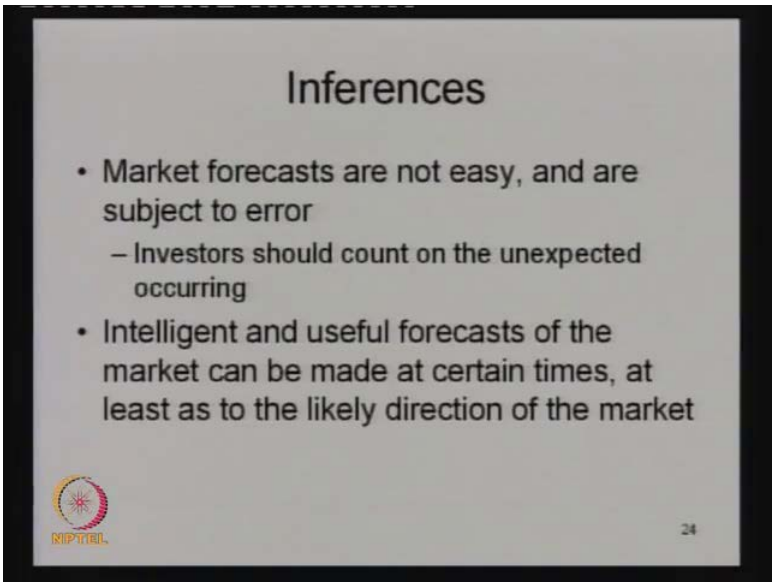


Now, we can one can compare this government security's yield with the earnings yield that is earnings by PE or that is nothing but EPS by market price per share. So, the earnings per share is 10 market price is 100. So, earnings yield is 0.10 or 10 percent.

It is earnings to PE ratio, the earnings yield is more than the bond treasury note at the government security yield, that means obviously, it shows that there is a T bill yield is let us say 6 percent, then obviously, earnings yield is more than the T bill yield.

So, that means, the equity investment is more attractive similarly if the; that means, equity is attractive, whereas the earnings yield is less than T bond yield and equity investment is not attractive, that means, not attractive, but that means, that the government securities are or the date securities are actually attractive.

(Refer Slide Time: 50:32)

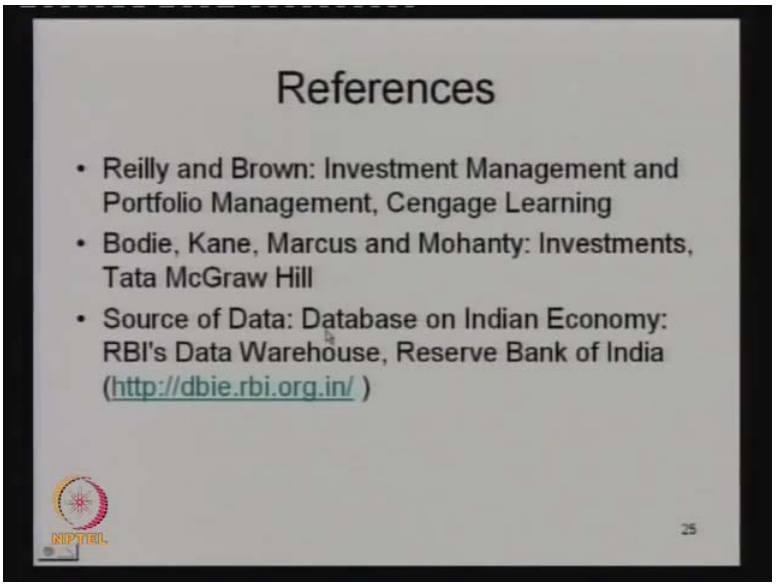


Then coming to the next thing as we ultimately what we conclude from the discussion, market forecasts are easy and not are subject, but are subject to lot of error. So, forecasting has to be done by the investors, by the analyst, by the economist, but the errors also can also be possible. So, instead you ready for the error that is going to happen, that means, you forecast something, but ultimately something may happen something else may happen.

So, these errors are expected; one has to take that in straight and go for economic analysis, and then, if not the exact forecast that how much is exactly growth is going to the, let us say 10 percent growth in GDP or 5 percent growth in GDP or 8 percent growth in GDP, at least can there be little growth in the economy or it is going to decline in the economy or may be between some range of economic growth like 5 to 7 percent or 7 to 8 not exact one, at least a direction can be inferred from the whatever the analyst that we have discussed.

So, at least a rising trend or declining trend or is a flat trend is going to be happen all the things can be there from the economy analysis one can find out.

(Refer Slide Time: 51:41)



Then these are the certain references that you have referred for the books and coming to the Indian context, we have a for the all these economy indicators, you have got certain data and Reserve Bank of India has a particular, if you once look at this particular side, the part of the as a part of the Reserve Bank of India, it has got almost all macroeconomic variables that are available.

So, an interested analyst or a investor or a educational or a faculty member, whether a student for that matter can visit this particular site and extract the data or the download the data for that matter for doing his or her own economic analysis. As we have seen certain gross that have been taken from this particular data and one can use this particular source extensively this data is obviously available free on the RBI's website, then this is your concluding session of economic analysis. Now, in the subsequent session, we talk about discuss about industry analysis followed by the company analysis.

Thank you.