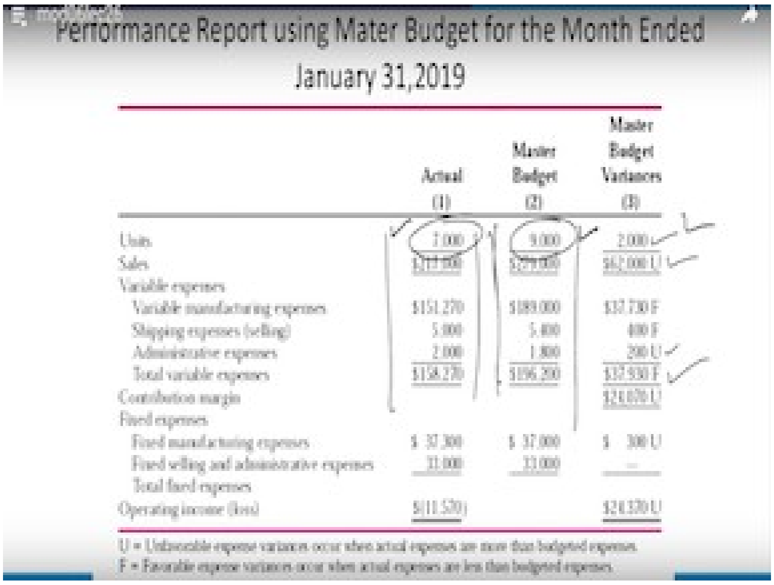
Management Accounting
Professor Anil K. Sharma
Department of Management Studies
Indian Institute of Technology, Roorkee
Lec 26: Flexible Budget and Variance Analysis - III

Welcome students.

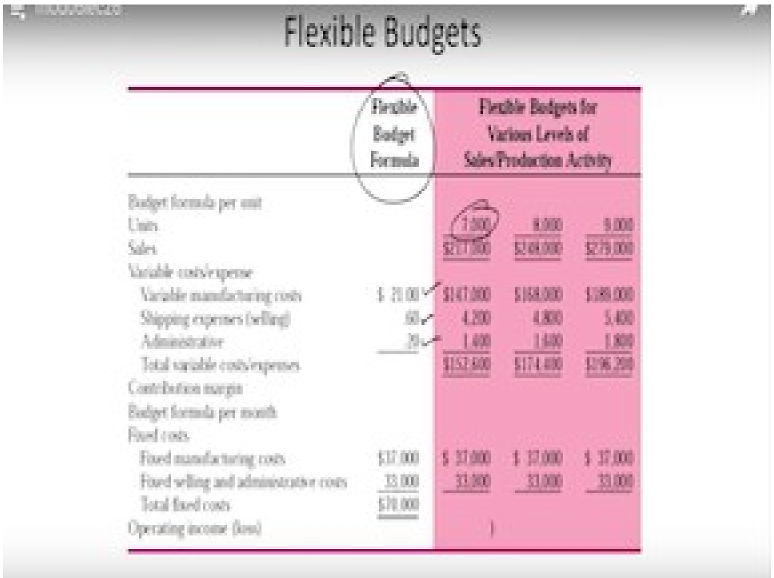
(Refer Slide Time: 0:33)



So we are in the process of learning about the flexible budget and in the previous class I was discussing with you that if we analyze the variances on the basis of the master budget then this way the things go and be we have here put the things like master budget than the actual performance and then the variances we have found out.

This is a master budget information, this is the actual budget, actual performance and these are the variances we have calculated here because we have the two different levels master budget is for 9000 units and actual performance is for the 7000 unit so proper comparison is not possible and finding out the variances will also not be right thing in this case of the in this kind of scenario.

(Refer Slide Time: 1:23)



So because of these limitations or this major limitation of the master budget or the static budget will have to go for the flexible budget and flexible budget is the solution of this kind of the problems in the flexible budget what we are doing here, that we are creating a budget like this, right. So we have three levels of say that the budgeting process, we have done for three levels and in this case in these three levels if you look at this we have created the budget for three levels, 7000 units 8000 units and 9000 units.

And accordingly we have converted that into the sales and then the cost has also been worked out for all the three levels. So we have means created a formula here, flexible budget formula which is here, flexible budget formulas so with the help of this formula so once this per unit manufacturing cost is available and export in excel from can easily put, change the number of units here, the moment you change the number of units here from 7000 to may be 7500 this will automatically get multiplied by this and then we will get the automatically the cost.

Similarly, the shipping cost, similarly with administrative cost and all these cost this tend converted to the cost which should be for the actual level of production or maybe for recreating of the budget and is comparable to the actual level of production, so if any of the three levels is found.

For example, we are prepared the budget for 8000 units, 7000 units and 9000 units so may be out of the three levels if we have the total amount of the sales means either of the three levels we already have created the budget for that, right, and if still there is a problem that none of these three levels, the sales are the equal to in that case for example it is somewhere between 7000-8000 and total sales are for 7500 units in that case there is no problem at all because we have already put the formula in the system so at the moment you change the number of units from the 7000 to 7500 or from 8000 to 7500 automatically system will multiply it and we will get the budget for the 7500 units flexible budget for the 7500 units which is at par with actual production.

So, we will be able to compare that for the 7500 units of the production what should be the variable cost, total variable cost, what should be the shipping cost, what should be the administrative expenses and what should be the total variable cost, right, and talking about the fixed cost lastly we are expecting that, that would remain the same. So if that has not changed in case of the actual then there is no problem but if it has changed for the actual then we would say that for 7500 units also the fixed manufacturing cost would be 370,000 dollars and if it has gone up may be 380,000 dollar or it has come down 360,000 dollar so we can find out the reasons for that.

Similarly, for fix selling and administrative cost it is estimated here is 33000, right. So if it is 33000 it should be 33000 for all level of production may be ranging between 7000 to 9000 so if it is 33 means we will assume it 33 and compare it with the actual and then try to find out tha variance or the deviation if there is any and then try to find out the reason for that. So we can assume here that once we have graded the three levels not for one level only unlike the static budget, so means it’s quite likely that actual sales may coincide with any of the three levels.

It may be 7000 units, it may be 8000 units or it may be 9000 units and if it is in between any of these three levels may be 7500 or 8500 units in that case also preparing the budget even in the time of comparison or when the actual performance is already available with us will take a few minutes and automatically the system will create a budget, new budget, which will be simply multiplying the number of units with the different information pertaining to the cost and selling price and we'll be able to have the first budget on the flexible level or may be the actual level of production and then comparing it with the budgeted level of the production we can easily find out the variances.

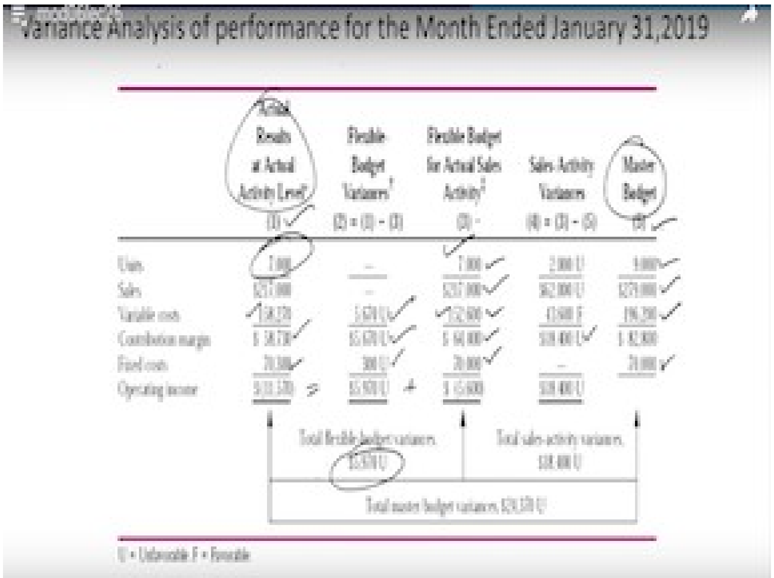
So that makes the sense also because first you have to equate both the levels, what is the budget and what is actual production that level should be same, what are the budget sales, what are the actual sales, that level should be same and then you start back tracking.

But if you compare 9000 to 7000 or 7000 to 9000 units that does not make any sense then variance are ought to be there and what are the variances, are means controllable, non controllable, acceptable, non acceptable, that it's a very difficult situation, right. So it’s always better to go for the flexible budgets or create the budget for more than one level of expected activity.

Now after this, means once the flexible budget is ready with us we go for the variance analysis and this is the statement which is of very significant use to you because this statement is a very useful statement as far as the variance analysis is concerned and ultimate purpose of any budgeting exercise is to compare the budgeted performance with actual performance and find out the variances, right.

So we have to find out the variances and then we will have to try to find out the reasons for the variances and control those variances, so that next time these variances do not occur this situation, do not measure, does not arise and we are able to control the operations in every respect in every sense and finally arrived at the estimate which we want to means that targets, the goals, the objective we want to achieve, right.

(Refer Slide Time: 7:21)



Now look at this statement, how interesting it is, the statement is variance analysis of performance for the month ended January 31, 2019, right. Now in this case we have created some columns here, first of all it is a master budget. Master budget for how many units, 9000 units, right, and what is the actual performance, actual results at actual activity level are these, it means budget was for 9000 but actual performance was only up to the 7000 units which we could sell in the market, so it means if you could compare this column or column number 5 with the column number 1 or vice versa then it doesn't make any sense because cost at 7000 unit is expected to be different and the cost at 9000 level of 9000 units level of production and sales is certainly expected to be different.

So, we will now have to create a budget, which is the flexible budget for the same level of production, which is actual in the sense that it is 7000 but we have to have two kinds of the variances. I told you that we calculate the variances like sales activity variances and second is the flexible budget variance. Sales activity variances we first calculate that is between the budgeted level and the actual level, why? The actual sales activity has come down from the anticipated or budgeted 9000 unit to 7000 units, first we will have to find out the reason for that, right.

And then we will have to create a flexible budget for 7000 units if it is already not in place and then make a comparison of the budgeted 7000 and actual 7000 performance and find out the flexible budget variances, right. Now in this case first of all you look at the column number 1 column number 5, right, so these are the two column is actual performance is the master budget, so since comparison was not possible between 7 and 9 so we created this column also, that is a column number 3. Means we created a budget for the 7000 unit's level and then we first compare the column number 5 with the column number 3 and the column number 3 with the column number 1, right.

So two variances have been found out, first of all the level of activity has come down from the 9 to 7, so 9000 units level of production and sales if this much is the expected cost and finally the, so how actually it has, it should be in case of the 7000 units, so we have found out here that your budgeted level was 9000 units actual is 7000 so we created a budget for 7000 and the variance came up is the activity level variance is a 2000 negative unfavorable.

Because the activity has come down from the budget 9000 to the actual 7000 by 2000 units then the sales figure is certainly come down because sales value was expected to be 279 but looking at the selling price now it is 217,000 dollar so the variance of the 62,000 dollar because selling price is remaining the same number of units coming down so naturally the sales value will come down and there is a variance which is unfavorable, it is same because the number of units has come down by 2000.

Now the variable cost we talk about, variable cost is certainly has to be favourable because variable cost for the 9000 units is more as compared to the variable cost for the 7000 units. So variable cost of the 9000 units was 196200 and variable cost expected for the 7000 units is 15600, so naturally the variances has to be there and in case of this situation we have found fortunately the favourable variance that is 43600, right.

Now the contribution margin contribution margin is the we have to see that the contribution margin is negative now because variable cost is favourable and the sales level has come down so it means now the contribution margin, what was expected contribution margin as per comparing the variable cost and the this is a sales variable, this is a variable cost, this is a sales variable, this is a variable cost, right.

So sales minus variable cost the contribution expected what 82800 at the level of a master budget but actually at the level of 7000 units now it has come down and it will come now so because sales have come down it is 64400, so this variance will also be negative and there is no special problem or any serious problem about it.

Then we talk about the fixed cost, fixed cost is going to remain the same at 9000 also 70,000, at 7000 also 70,000 so there is no variance expected so if you compare these two columns, columns 3 and column 5 these two columns are for the budgets, right, so we had 9000 budget actual performance 7000 so we created a budget for 7000 so that this budget, flexible budget for the 7000 units become the benchmark.

To compare the actual performance of the 7000 units manufactured and sold in the market, right. Now we will go for the second level of analysis and second level of analysis is the flexible budget variance, means finding out the flexible budget variances by comparing the actual results at actual activity level and flexible budget at the actual sales activity level, which are again the 7000 units. Now 7000, 7000 sales are expected to be looking at the selling price 217000, 217000, so it is same, fine, we have achieved the same amount of the sales because we have not been able to increase or decrease the selling price per unit.

Now the variable cost, variable cost as per the budget for the 7000 units was expected how much 1,52,600, how much actually the variable cost has occurred, this is 1,58,270 it means variable cost has increased, means there is a negative variances of 5670 which is a serious cause of concern. Variable cost you should also have proportionately come down when the level of activity has come down from the 9000 to 7000 and in the 7000 looking at this 9000 level of performance for the 7000 units the budgeted variable expenses was expected to be 152600 and actually it is 1,58,270 so there is a negative variances your variable cost is increased as compared to the expected or the budgeted cost.

So the contribution margin has got reduced by this amount that expected contribution margin was 64400 dollars and actual contribution is 58730 so there is negative variances of 5670 which is again a cause of concern. Now we come to the lower level. What was the fixed cost expected, 70000 at 9000, 70000, at 7000 it should be 70000 but here, this is very very say alarming situation that the fixed cost has also increased by $300 which is a very very serious issue, the fix of cannot be allowed to increase for a given level of activity, rather than remaining static it has gone up by $300 which is a very serious cause of concern.

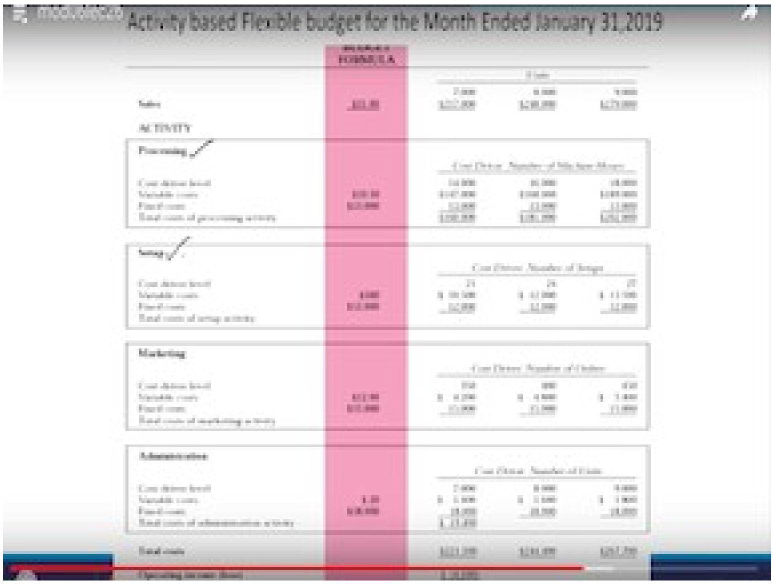
In case of the variable cost we can accept that may be the cost of material has gone up during the period of say the period of the actual performance, may be that the time of preparing the budget that was the different price but actually the while purchasing from the market the price of the material has gone up or maybe because of some wastages of the material that the cost and gone up but in case of the fixed cost this cost should not increase, fixed cost should not increase that should remain the same.

Normally it doesn't change, it changes per unit but the total cost remains the same, so in this case we are found a very serious problem that your fixed cost has also gone up by 300 dollar and that is the reason that your operating income final operating income has been affected negatively that operating income expected at the 7000 units of the output and sales was 5600 dollars and in this case means it was not operating income but you can see it is operating loss after subtracting, we had a positive contribution. We were expecting your positive contribution of 64400 dollars and subtracting from the contribution the fixed cost to the tune of 70,000 dollars, the loss, operating loss expected was 5,600 dollars, but since the variable cost is also gone up in actual performance fix cost has also gone up in the actual performance, so your operating loss has gone up by the same amount of 5970, so it is 5600 plus 5970, it is the total loss is equal to 11570.

So it means, its again a very serious from and budgeting helps us to understand that we have to compare the actual performance with the budgeted performance try to find out the variances and the reasons for the variances and control those variances for the future so that in future any kind of the variances especially the negative variances do not take place. So you see these variance in which are between the master budget and the flexible budget they are called as a total sales activity variances which is to the tune of 18400 unfavorable but this variances is the serious cause of concern that is 5970 which was not expected to be there because these two levels are same.

7000 budget, 7000 actual performance, so these two were not expected to be same but has happened but these were expected to be same but it has not been same, so your variable cost has increased, your fix cost has increased and finally total flexible budget variance has become negative here, and the total master budget variance is this plus this is equal to 24370. So this is not very important for us it can be ignored also but this is very important for us because the variances between the same level of budget and same level of the actual performance should not be there.

(Refer Slide Time: 18:35)



Now we go for the further clarification on the flexible budget, I told you that the flexible budget is not only prepared in the absolute firm, for the firm as a whole on the organisation as a whole but for the different units and sub units, different departments and the sub departments, so that when the total cost goes up you can easily find out while preparing the activity based level flexible budget that why the cost has increased, what was the reason, which department, which, sections subsections contribution has been to make the variance is negative or to increase the or to decrease the actual performance against the budgeted or the budgeted performance against the actual.

So it,s better always to divide the whole firm, whole budgeting process into the different activities or to create a flexible budget which is known as activity wise or activity based flexible budget so that when there is anything happens which is not desirable we can find out the reasons for that and once you have divided the whole firm into the different activities so you can easily find out where the problem has come up, in which department the problem has come up, under which activity the problem has come up and we can find the reasons for that and take the action against the reasons responsible for that negative variances.

For example in this case we have divided the whole firm, whole business operations into how many? 1, 2, 3, 4, four activities. One activity is a processing, so purchasing of the raw material, supplying it to the production departments and processing it, so it means we have created this activity and processing level we are saying the variable cost should be how much, that is 10.5 dollars, fixed cost is expected to be 13,000 dollars, so this is the standard we have set for the processing level of the activity in the firm.

Second activity is the setup, setup means, setup means changing of the machines for the manufacturing of the different type of product example when we manufacture different type of the products in the same machine, then what happens that sometime two project are not same in all respects. So first you manufacture one lot of the product X and then you have to manufacture second lot of the product Y, so you have to make some little changes, those changes are called as a setup changes.

When you change the setup for manufacturing a different type of the product in that case it takes the time of the say engineers and setting up the machine also take some time so that also causes the cost. So for change of the setup one activity is every time you changing the setup for manufacturing the different products on the same plant of the machine so it causes the cost, so how much time the setup has taken and how much cost it has caused.

So we created a standard here that the variable cost for the change of setup should be 500 dollars on an average and the fixed cost can be 12,000, means the fixed cost can be the salaries of those people who are engineers who change the machine, who clean the machine, who re-setup the machine, for example, I tell you that there is a firm who is manufacturing the four different type of pens, right.

One pen is of the blue ink, second is with the black ink, third is with the red ink and fourth is with the purple ink, right. So these four pens are manufactured. So when we first manufacture the blue pen, right. After that we want to manufacture the black pen, so there is not much difference in the blue and black but still you need to clean the that bowl in which you are going to create the, or you going to prepare the ink, right.

So their cleaning is required but that cleaning will take less time when you are converting or you are manufacturing the blue pen and then you want to manufacture the black pen.

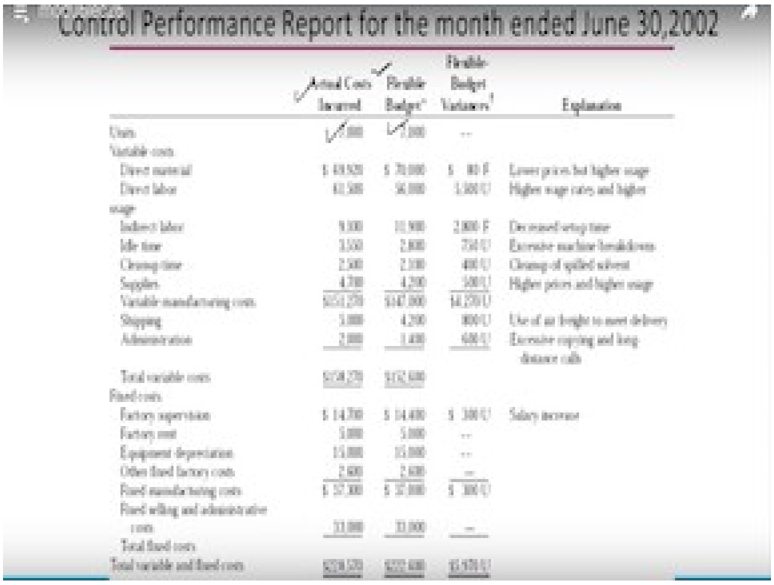
But when you have to manufacture the red pen, when you have to manufacture the red pen, now that bowl where the ink is being prepared that already has the black colour in it and if you don't clean it properly then it can affect your red colour, it can affect your purple colour.

So cleaning of the setup and re setup of the machine while manufacturing blue to black will take lesser time but from black to read it will take more time because even iota of the black ink, if it is left in that vessel then that will disturb the colour.
So the setup time will change, the time will differ and you have to change the setup because you cannot manufacture that black pen after blue and red pen after the black so you have to every time re setup the machine or change the machine and set it up again. So it takes the time, so it means we have divided the whole process in to different four activities.

Processing is one, setup is one, marketing is one and administration is the one, so that way the total cost has been bifurcated, so and the finally will have to calculate the total you can call it is operating income of the loss, which has come up here, that is 4.1, so it means in this case you can say that we have the sales level is 7000 units and our selling price is 31 but if you calculate the total cost here, that total cost becomes is 221 dollars.

Against the total sales value of the 217,000 dollars, so finally we have got a loss of 4.1 dollars so it means that loss is here because of what reasons, which department has contributed, to what extent and why the loss has occur that we will be trying to find out, so dividing the whole flexible budget into the different departments, sub departments, units and subunits is not measure, is very much desirable and though it's going to take some more time but it's very much desirable is very much useful because it will support all your that entire say the manufacturing process has played the comparison between that budgeted and the actual performance.

(Refer Slide Time: 25:21)



Now the last about the flexible budgeting, last statement which we prepare is something like this, now we hack finalize the whole thing and we got now the final information that is the actual cost at the flexible budget, right, level is same, here it is 7000 units, here it is 7000 units, right.

Now for the 7000 units what was the actual cost, means what was the budgeted cost expected, what is the actual cost expected, what is actual cost that has been recorded or calculated and now this column is giving us the variances, in this case direct material cost budgeted was 70,000 dollars, actually we have been able to manage the show with 69,920 dollars, so it means now we have got the 80 dollar favourable variances, right, and now we have to find out the reasons for that.

When you find out the reason for that in the last column the explanation is also given lower prices but higher usage. So what we anticipated is the price per unit of the raw material. The budgeted price we expected was higher, actual price we paid was less, so we could have managed the show with still much lesser cost of material but usage of material somehow went down.

So now we have to find out the reason for that, it is a favorable variance you can't stop here, that the variances is favourable so we have to find out find out. Price has come down, fine, why the price has come down, we have to look for that also and why the usage has increased you have to look for that, that also and then try to find out whether the reasons are controllable, uncontrollable and if were controllable but was not controlled, it means that necessary action should be taken against the purchase people so that any type of the variances do not take place, variances do not take place in future.

Similarly now we are comparing the labour, budgeted labour cost was 56,000 dollars, actual labour cost is 61,500 dollars, so it means there is a negative variances of 5500 and the reason given here is higher wage rates and the higher usage, so it means this is uncontrollable factors, because wage rates are not controlled by the firm. Wage rates are controlled by the labour market depending upon the demand and supply of labour, the wage rates are decided.

So you cannot means influence the wage rate, so it's a uncontrollable factor, so no action can be taken against anybody, and if you talk about the, say usage of the labour, so why the number of hours have increased that you will have to look for, that means more time was used for producing the same level of production then it means you can say you go for that other kind of things for example now the uses cost in say example the variances is favourable, they have given a reason, decrease the setup time then for the idle time, excessive machine breakdown, why machines have broken down so frequently.

We have to look for that, whether the machine needs replacement, whether the machine needs repair or any upkeep, there is the problem in the upkeep, lubrication or servicing of the machine all these reasons have to be found out and then we'll talk about the cleaning, say next thing is the cleaning of time, cleanup of spilled solvents so it means, it is the variance is also unfavorable, it means we have to look for this then variable manufacturing cost or supplies. Supplies mean small small materials, some materials like lubricant, oils and other kind of the small materials for higher prices and the higher usages, so this is again a very important point we will have to be careful.

Then we talk about shipping cost, so use of air freight to meet the delivery, so maybe it is not estimated that we have to use the air freight, it was expected to be sent by ship, by road, by train but we have to somehow change that mode of transportation, so cost is increased, look for the reasons.

Administration again unfavorable so excessive copying and the long distance calls so a telephone expenses and other things have gone, photocopy expenses and then other things are gone up, we have to look for the reasons and then you talk about the factory cost so here again it is in the salaries part supervision, factory supervisor cost is gone up, salaries have increased, this is the unfavorable variances.

And we will have to find out the reason for that but since salaries cost is again, again depends upon the external factors so largely you can you too much things here, so the factors which are within the control they have to be found out and controlled and the factors which are beyond the control, uncontrollable you identify those factors but we can't do anything because finally all efforts have been made to control the cost but it's not possible it is beyond the control.

So look at this statement is now how convincing this statement is you are preparing the budget, you are comparing with actual, finding out the variances and in the last column they are giving the explanation, now this explanation, this statement will be placed before the decision making committee of the top management and in the board meeting of the company this statement will be discussed and there the suggestive actions on preventive actions will be taken will be suggested by the board and next time when the budgets are prepared every caution is taken and when the actual performance comes, so that will be the comparison between the budgeted and the actual, for the future period.

Do not create this kind of the situation and no variances are found out or the minimum variances are found out which are within the control or within the permissible limit. So you would understand now the basic difference between the flexible budget and the master budget and you would agree with me that flexible budgets are the better options as compared to the static budget because, because it adjust with the actual level of production and when the budgets are as same as for the actual level of the production, so it means comparisons are much better, more facilitated and they are more useful.

So on this conceptual part, this discussion I will stop here and means after explaining it to you, to the largest possible extent, now I will take up one case where we will understand and try to learn how to prepare the flexible budgets and how that entire analysis can be done and how different budgeting statements under the flexible budgets can be prepared and that case I will discuss with you in the next class. Thank you very much.