

STRATEGIC COST MANAGEMENT AND PERFORMANCE EVALUATION

Preface to the Notes

This notes has been prepared for the benefit and use of CA Final students. Other Professional Course students can also use the material for respective topics of their syllabus. Being notes, the topics have been condensed and are presented in a synopsis manner. Yet, they cover the complete issues involved in respective topics and give the reader good understanding of the subject. This has been prepared for the ease of students preparing for Examinations. The issues have been explained in simple language supported by examples as well. If students desire to have more in-depth knowledge on any topic(s) then they need to refer relevant Text Books.

This paper of the CA Final course had substantial change in the contents and syllabus as compared to the erstwhile Advanced Management Accounting. There is a marked shift from more of the earlier Figure Work to Theory and Figure work in current syllabus. The syllabus has included more of the practical aspects of Management Accounting and Performance Evaluation with Case Studies. To answer practical cases, a student needs to have:

- Thorough understanding of the Theory;
- Application of theoretical knowledge to Practical business scenarios for solutions: and
- Figure work analysis.

In this part, only theory has been considered.

I hope this notes will be of good use to students.

Readers are requested to mail suggestions and feed back to ram_pv@rocketmail.com for improving the contents.

Good wishes and Happy Reading
P V Ram

CHAPTER 12: Standard Costing

Broad Contents of the Chapter are:

1. Planning and Operational Variances.
2. Variance Analysis in ABC environment.
3. Impact of Learning Curve on Variance Analysis.
4. Relevant Cost approach to Variance Analysis
5. Variance Analysis and Throughput Accounting.
6. Variance Analysis in High-tech environment.
7. Variance analysis in Service Sector.
8. McDonaldisation.

Planning and Operational Variances

The environmental conditions that prevail at the time of preparing Standards / Budgets may not prevail at the time of their execution. This will make the routine analysis of variances improper. To correct this, variances are to be ascertained from revised targets based on current environmental situations. This is done by calculating Planning and Operational Variances.

Planning Variance simply compares the Original Standard with Revised Standard.

Operational Variance simply compares the Revised Standard with Actual operating data to calculate realistic variances.

Thus there will be 2 Standards: Ex-ante (i.e Before the event) mostly called as Budgets and Ex-Post (i.e After the event) mostly called as Revised Standard. Ex-ante and Ex-post data is used for Planning Variances and Ex-post and actuals data is used for Operational Variances.

$$\text{Traditional Variance} = \text{Planning Variance} + \text{Operational Variance}$$

Formulae that hold good for Traditional variances also hold good Planning and Operational Variances also.

Similarly, the same principles and Formulae are applicable for Material, and Labour and Sales Variances.

Controllable Variances are those variances which arise due to inefficiency of a Cost Centre / Department. Uncontrollable Variances are those variances which arise due to factors beyond the control of the management or concerned department of the organization.

Variance Analysis in ABC environment: Variance Analysis can be done in ABC environment also. It can be applied to costs such as Setup

Costs, Product Testing Costs, etc. to know why Actual costs vary from Standard Costs. ABC is based on the principle that Overheads are basically variable. They are not variable with the volume of units but Variable with regard to number of setups, number of times tested, number of purchase orders etc. Formulae applicable in Traditional Variance Analysis hold good here also in similar manner.

Learning Curve Impact of Variance Analysis: If an operation is done repeatedly by the same person (who is new to the job) then the average time taken for doing the same job by the same person will keep coming down. This is called Learning effect. Learning effect is usually observed in labour intensive units. In non labour intensive units learning effect will be very low. In cases where learning effect exists or is anticipated, then Standards are to be fixed considering Learning effect. Accordingly variances are to be calculated on the basis of output and corresponding relating to that learning level. There will be no change in the formulae. The Learning Formulas are:

$$Y_x = A X^b \quad \text{Where,}$$

Y_x = Cumulative average cost of x units or lots;
 A = Average cost of the first unit or lot;
 X = Cumulative Number of units or lots;
 b = Learning coefficient which is calculated by the formula:
 $b = \log \text{ of learning ratio } / \log 2$

Further, $Y_x = A X^b$ implies
 $\log Y_x = \log A X^b = \log A + \log X^b = \log A + b \log X$

$$\text{Learning Ratio} = \frac{\text{Avg. Labour cost of first } 2N \text{ units}}{\text{Avg. Labour cost of first } N \text{ units}}$$

Relevant Cost Approach to Variance Analysis: Traditional approach to variance analysis is to compute variances based on total actual cost for production inputs and total standard cost applied to the production output. This is ambiguous, when inputs are limited. Failure to use limited inputs properly leads not only to increased acquisition cost but also to a lost contribution. Therefore, it is necessary to consider the lost contribution in variance analysis. When this approach is used, price or expenditure variances are not affected.

Variance Analysis and Throughput Accounting: Throughput accounting does use variance analysis, but not the ones used by a traditional system. Instead, its main emphasis is on tracking variations in the size of the inventory buffer placed before the constrained resource, to confirm that the constraint is never halted due to an inventory shortage. For example, when a terminal upstream from the constrained resource

runs out of work, a manager functioning under throughput accounting system will shut it down in order to avoid the formation of an unnecessary level of work-in-process inventory. However, this will result into a negative labor efficiency variance, since the terminal's staff is not actively producing anything.

Variance Analysis in Advanced / High Tech Manufacturing Firms:

In case of High Tech firms (like Automobiles, Audio Technology, Electrical and Electronic Engineering, Information Technology, Nano Technology, Computer Engineering, Telecommunications Etc. there will be High automation leading to High Fixed Costs. Similarly labour employed also will be highly skilled thereby making their cost as Committed Cost. So, labour variances will be of no use as the Firm will not risk to lose its skilled employees. The two largest variables will be Materials and Power Consumption which require Variance Analysis.

Standard Costing in Service Sector: Standard Costing is applicable to Service Sector industries (like Accountants Office, Hotels, Schools, Transport Sector, Hospitals etc.) also but it is difficult to apply. Major portion of the expenditure will be in the form of Overheads and not production expenses. Variance analysis by Traditional Costing methods will not be of much use. However, Variance analysis based on ABC will be very useful.

McDonaldisation: McDonaldisation is a process of rationalisation, which takes a task and breaks it down into smaller tasks until all tasks have been broken down to the smallest possible level. The resulting tasks are then rationalised to find the single most efficient method for completing each task. All other methods are then deemed inefficient and discarded.

McDonaldisation helps in fixing standards more accurately for assessment of deviations. It can be easily ascertained that how much time and cost should go into each activity. The principles can be applied to many other services, such as hairdressing, dentistry, or opticians' services.

Sales Variances: Sales Variances are mostly calculated in terms of Profit and / or Contribution. While working Profit / Contribution, usually Standard Cost of sales is used instead of Actual Cost of Sales. This is because Sales personnel will no way be accountable for fluctuations in cost of sales which is the botheration of production personnel. The formulas used for material and labour variances hold good here also except for sign reversal.

Market Size Variances: Market Size Variance represents the difference between:

- a. Sales units as per Budget Share of Actual Market at Budget Contribution / unit and

b. Budget Contribution.

This indicates the change in contribution or margin caused by a change in the size of the market.

Market Size Variance = (Actual Industrial Sales Volume in Units – Budget Industrial Sales Volume in units) x Budget Market Share % x Budget Contribution Margin / Unit

Market Share Variance: Market Share Variance indicates the difference between:

- a. Actual Sales at Budget Contribution per unit and
- b. Sales Units representing the budgeted share of actual market at Standard Contribution / unit

This indicates the change in contribution or margin caused by a change in market share.

Market Share Variance (MShV) = (Actual Market Share % - Budget Market Share %) x Actual Industry Sales Volume in units x Budget Average Contribution Margin / unit

Further,

Mkt. Size Var. + Mkt. Sh. Var. = Sales Qty. Var.

Investigation of Variances: Variances focus attention on deviations. All deviations may not be out of control. Analysis of variances also involves some cost. Therefore, cost benefit analysis is to be done before taking a call on analysing variances. Further, Variances are to be looked into on Total basis rather than on probing them in isolated manner. Interpretation may suggest possible cause of deviation but investigation must be made to arrive at the correct causes and corrective action is to be taken. Investigation of variances creates positive behavioural reinforcements on employees like motivation, aspiration etc.

Methods used for Identification of Variances for Investigation:

- a. Variances are selected for probing by means of identifying them by simple **Thumb Rule** based on experience and expertise.
- b. **Statistical and Probability Distribution** may also be used to identify the variances whether they are within acceptable ranges or not and the variances not confirming to the acceptable ranges are taken up for further investigation. Normal Distribution tables are also used to in this regard.

For instance let's take average time for a unit of output is 2.5hrs. and the actual observations are normally distributed with a Standard Deviation of 15 minutes. If the actual time taken is 3hrs. per unit, then we can find the probability of completing the unit by 3hrs. or more by finding the Standard Variate (Z) and using the Normal Distribution Tables by the following formula:

$$Z = \frac{\text{Actual time taken} - \text{Average Time}}{\text{Standard Deviation}}$$

$$= (3 - 2.5) / .25$$

$$= 2.00$$

Value of 2 from Normal Distribution tables is .9772. This implies that the Probability of completion of the product in 3hrs. or more is 97.72% and also the probability of not completion of the product in 3hrs. is 2.28% (1-97.72%).

- c. **Statistical Control Charts** can also be used. A control chart is a graphic presentation of a series of past observations in which each observation is plotted relative to pre-set points on the expected distribution. Only observations beyond specified pre-set control / tolerance limits are considered for investigation. The control limits are set based on a series of past observations of a process conforming to normal distribution.

Reporting of Variances: Variance Reports should be prepared according to their use and periodicity. Reports should highlight the deviations and possibilities for their improvements. Variance reports should consider the following points:

- a. Concerned executives should be informed about what the cost should have been.
- b. What the Actuals are against respective Standards.
- c. Analysis and cause of Variances.
- d. Reports should be based on the principle of management by exception.
- e. Magnitude of Variances should be indicated.

Standard Costing in Contemporary Business Environment: In current Business Environment, most of the operations are getting automated and Robotics will become order of the day. Features of Standard Costing will be as below:

- a. Products in these days tend to be no longer standardised.
- b. Standard Costs become outdated frequently and quickly.
- c. Production is getting increasingly Automated.
- d. Modern environments are using Ideal Standards instead of Current Standards.
- e. Emphasis is on continuous improvement (Kaizen Costing). Pre set Standards are becoming outdated fast. Added to this constant technological improvements are also taking place.
- f. Variance analysis may not give enough details.
- g. Variance Reports may arrive too late to solve a problem.

Despite the above limitations, still Variance Analysis helps as a good tool to the Management to have control over operations in the short run.

