Management Accounting – Performance Evaluation

Analysing cost variances is no easy task, because a single variance may contain four different elements. Falconer Mitchell offers his guide to interpreting them.

Standard cost variances provide feedback information designed to help managers control operations in accord with the plans they have set. They highlight the difference between the planned costs of a period – ie, the standard costs that are determined before the period starts – and the actual costs incurred over that time. Consequently, they are reported after costs have been incurred and are intended to prompt a managerial reaction if they show that things aren’t going to plan.

It’s the managers’ job to analyse the cost variance information reported to them and decide whether any action is needed and, if so, the appropriate action to take.

Cost variances comprise several different elements that together make up the total reported variance. The factors causing variances can be divided into two broad categories. First, there are operational causes that relate to operational activity – ie, the purchase and use of resources. Where these causes are controllable, managers can use variance information to trigger corrective action. Second, there are non-operational causes that relate to problems in the administration of the standard costing system. They provide feedback to the accountants running the system and their identification and elimination focuses attention on operational causes. This makes variance interpretation difficult, because each of these potential elements in a variance can have a different significance. Non-operational causes provide feedback to those who set the standards and run the standard costing system, while some operational causes can be acted upon and are, therefore, of interest to managers. Panel 1 illustrates the four elements of a cost variance.

Element one: costing system errors
If the system itself malfunctions, variances may be reported wrongly. For example, the issue of material stock from stores at an erroneously high price would generate unfavourable material price variances. Likewise, inaccurate direct labour time recording can result in false labour efficiency variances.

Such variances are caused by errors and are signals that the way the standard costing system is being run needs to be improved. Eliminating the “noise” caused by this type of variance means that managers can assume that reported variances are attributable to the other three elements.

Element two: inappropriate standards
The standard cost that’s set is one of the two figures from which variances are computed. Consequently, the level at which the

1 THE ELEMENTS OF A COST VARIANCE

Reported variance

Non-operational causes

Operational causes

Element one: costing system errors
Element two: inappropriate standards
Element three: uncontrollable random factors
Element four: controllable variances
standard has been set can directly influence the variances. For example, the standard may be deliberately set tightly at a level above what is considered attainable in order to motivate employees. All variances will be unfavourable as a result, but this will not indicate that corrective action is needed.

Alternatively, the standards may become obsolete if they were set some time ago and have not been recently revised. If this is the case, the standard may well represent a technology that no longer exists or supply conditions that have altered or a workforce that has become more experienced. Variances are likely to be favourable under these circumstances, but they will be attributable to a loose and obsolete standard rather than good operational performance. Because these variances result from inadequacies in the standard they represent feedback to the planning function to set more current standard costs.

Standards are static in nature, as they are set at one level and applied to a period in which costs may act in a dynamic way. This mismatch may also give rise to variances. If inflation is a feature of costs, the standard may be set to represent expected cost levels at the midpoint of the accounting period. Assuming that inflation accrues evenly over the period, this is likely to mean that favourable variances will be produced in the first half of the period and unfavourable variances in the second half simply because one static estimate cannot adequately represent the dynamic change inherent in inflation.

Moreover, standard costs are set on the assumption that a particular volume of output is to be achieved in a forthcoming period. Where the actual output varies significantly from this level the accuracy of the standard again comes into question. As panel 2 illustrates, total variable costs are affected by the scale of operations (positively and negatively by economies and diseconomies of scale respectively). At output levels X1 and X2 the total standard cost respectively overestimates and underestimates the expected level of total costs. As total costs are unlikely to behave in the linear manner assumed in standard costing, the total standard cost will be compromised as a realistic target and variances will be caused. So variances can be caused by unit cost standards set for output levels that do not match the scale of operations actually achieved.

Element three: uncontrollable random factors

It’s unlikely that any standard will be achieved continuously where there is human involvement in the work being done. Inevitably, human performance lacks consistency. Even simple and familiar tasks performed by skilled individuals will show small amounts of random variation if timed. Managers cannot take action to stop these small variances. Because they are inevitable they are also uncontrollable, and this variance element is not a signal that action is required.

Element four: controllable variances with operational causes

Lastly, there are variances caused by operating factors that managers can influence. For example, an employee may suggest and introduce a new working method that leads to faster production and increased output. The resulting favourable efficiency and volume variances may signal the value of this initiative to a manager, who might then incorporate it as part of the normal working routine. On the other hand, a machine fault or the provision of inadequate training can lead to unfavourable efficiency and volume variances. The reporting of such cost variances can trigger managerial action. This is, therefore, the variance element that operational managers are most interested in identifying.

Even with reported variances of this type, there may not be a clear causal relationship, as one variance can still have many causes. For example, a materials price variance can result from the use of a different type of material from that specified in the standard; from purchasing decisions that fail to deliver expected volume discounts; or from an unexpected change of supplier. The danger is that one of these underlying causes may have a large favourable effect on the material price variance while another may have a large unfavourable effect. So the standard
costing system can report small variances even where there are significant controllable issues that need to be addressed.

Another complication is that the effect of one operational cause may be spread over several variances so that no single variance gives an accurate indication of its significance. For example, a machine fault can affect material usage, labour efficiency and overhead volume variances. So variances must be interpreted with care, because they do not necessarily match cause and effect in an easily identifiable manner.

Any reported variance may contain all four elements, which makes variance analysis a challenge. The interpretation depends on the manager’s experience, although there are some general guidelines that can be followed.

First, rule out any element one content in the variance by checking that the standard costing system is functioning properly. Consider the following questions: is there a history of errors? Is the system being operated by competent people? Has the internal audit department recently reviewed the standard costing procedures in use?

Second, consider whether element two is a likely component of the variance. Find out when the standard cost was set and how regularly it is revised. An old standard, particularly in a dynamic industry, may quickly turn into a loose target and become a significant cause of variance, which, assuming that actual performance improves over time, will be predominantly favourable. Universally favourable variances should raise suspicions about the age and accuracy of the standard. Also, where the standard is used as a motivator, it will have been set deliberately at a level of a not-quite-attainable “tightness” to encourage greater effort and, therefore, will inevitably result in unfavourable variances. Where this pattern of variances is apparent, it should be determined whether or not cost standards are being deliberately used to motivate employees. Consider also whether the organisation is operating at or near the output level specified in the budget. If it isn’t, then the variance may not accurately reflect the effects of scale on costs. You need, therefore, to determine how the standard has been set and interpret the resulting variances accordingly.

Third, try to distinguish element three and four components by assessing the size of the reported variance. Relatively large variances are more likely to have a controllable cause and, therefore, fall within element four. Size limits would suggest that this sort of variance can be established on the basis of managerial experience or, more formally, on a statistical basis using past figures. The latter approach can be used to monitor the variance over time on a control chart. This will indicate clearly when the variance is of a size that merits action, as control limits indicating statistical significance can be incorporated in the chart. For relatively small variances, the chart will also show whether they are exhibiting a trend (element three variances are random and so will show no trend) and a rate of change that suggests they should be investigated. But remember that small variances or even no variances don’t necessarily mean that no underlying problems exist. Factors worthy of management attention may have a compensating effect on a variance.

It’s best, therefore, to consider variances in context. This can be done by obtaining evidence of element four variances from the shop floor. Is there physical evidence that correctable problems exist? For example, waste material will be apparent (material usage variance), as will stock shortages and machine breakdowns (volume and efficiency variances). These will support the case for action. If there are discernable patterns across a set of variances, this may also be a sign that action is required. A favourable material price variance accompanied by unfavourable efficiency and volume variances is consistent with the use of lower-quality materials than those specified in the standard. Unfavourable overhead expenditure variances combined with material usage and labour efficiency variances can suggest that support services and maintenance work have been neglected.

Interpreting variances is challenging, because they can contain all of the different elements discussed above but do not reveal, in themselves, which of these elements are present. A variance does not indicate why it has arisen — ie, its specific cause. The value of variances lies not in providing ready-made solutions to problems, but in attracting management attention and identifying the likely functional responsibility — eg, purchasing for material price variances or production for labour efficiency variances. It then stimulates the questions that, if correctly answered, may lead to the actions that can improve operational performance.

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