

LET'S GET TECHNICAL

Gareth John has variances in his sights in this month's technical article for AATs

Management accounting involves many specific activities: costing, decision-making, budgeting and, most importantly for the purposes of this article, control. Control is the process of comparing the actual performance of a business against what was expected to identify where improvements are needed. One common tool for exercising control is variance analysis.

A variance is simply a difference. If sprint ace Usain Bolt challenged me to a 100-metre race there would be a large variance in our finish times; with all his recent media commitments his training has slumped quite badly since the last Olympics!

For the purposes of this article I am going to focus on the direct material cost variances using the following example:

Budget – 1,000 units using 5,000 kg of material at a total material cost of £50,000.

Actual – 1,100 units using 5,390 kg of material at a total material cost of £59,290.

DERIVING STANDARD INFORMATION

Standards are the targets we expect to meet for each unit produced. They are therefore derived from budgeted information we were given:

Standard usage of material = 5,000 kg/1,000 units = 5 kg per unit.
Standard price of materials = £50,000/5,000 kg = £10 per kg.
Standard cost of materials = £50,000/1,000 units = £50 per unit (or 5 kg per unit x £10/kg)

These standard figures are what we 'expect'.

CALCULATING THE TOTAL VARIANCE

The total variance is the difference between the cost in the flexed budget and the actual cost incurred. Notice that we compare the actual result to the flexed budget rather than the original budget to make sure that we are comparing 'like with like' in terms of volume. It is hardly surprising that we spent more than the original budget of £50,000 as we produced more than the 1,000 units that we were budgeting.

There are different ways to calculate variances but the approach I have always found easiest to use is to learn proformas (or templates) that we can insert figures into. The proforma for the total direct material cost variance (with figures inserted) is:



Total direct material cost variance

Based on actual production in units	
– Should cost (1,100 units x £50/unit)	£55,000
– Did cost	£59,290
Variance (£)	£4,290 (adverse)

This is an adverse variance as we have clearly spent more than expected even when the increase in volume is accounted for. This will reduce the profit that the business makes.

BREAKING DOWN THE TOTAL VARIANCE

We can dig a bit deeper into the reasons that we spent more than expected. This could be down to two main factors: the price we paid for each kg of material purchased, and the quantity of kg's used for each unit produced. These are the material price and material usage variances.

Material price variance

Based on actual purchases in kg	
– Should cost (5,390 kg x £10/kg)	£53,900
– Did cost	£59,290
Variance (£)	£5,390 (adverse)

The price variance is adverse as we spent more than the £10/kg that we expected. This will reduce profit.

Material usage variance

Based on actual production in units	
– Should use (1,100 units x 5kg/unit)	5,500 kg
– Did use	5,390 kg
Variance (kg)	110 kg (favourable)
Valued at the standard cost per kg	£10
Variance (£)	£1,100 (favourable)

The usage variance is favourable as we used less than the 5 kg/unit that we expected. This will improve profit.

You can check that if you combine the material price and material usage variances, you get the total direct material cost variance. £5,390 (A) plus £1,100 (F) does indeed give £4,290 (A).

INTERPRETING VARIANCES

As well as calculating variances it is important that you understand what may have caused a particular variance to arise. For instance, in our example here:

- The adverse material price variance means that we spent more per kg than expected which could have been caused by a market shortage of the material resulting in an increased price.
- The favourable material usage variance means that we used less material than expected which could have been caused by reduced levels of wastage in the production process.

LINKS BETWEEN VARIANCES

It is particularly exciting if we can think of a single reason why both variances may have arisen. For instance in this example, perhaps the business made a decision to purchase higher quality materials than in the past. Higher quality materials will tend to be more expensive (hence the adverse price variance) but hopefully requires a reduced quantity in production (hence the favourable usage variance).

Now here's one for you to attempt dealing with labour variances. Once you have had a go watch me working through my solutions at

www.firstintuition.co.uk/blog/aat-blog.html

Budget – 2,000 units using 6,000 labour hours at a total cost of £48,000.

Actual – 1,800 units using 5,760 labour hours at a total cost of £43,200.

1. Calculate the standard information for labour.
2. Calculate the total direct labour cost variance.
3. Calculate the labour rate and labour efficiency variances.
4. Suggest some reasons why the variances calculated may have arisen. **PQ**

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