

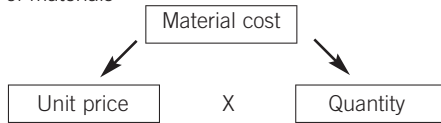
VARIETY PACK

In part two of a three-part series, Mary Ofili explains standard costing and direct materials usage variance

STANDARD DIRECT MATERIALS

The standard cost of direct materials is made up of:

- The quantity of materials expected to be used; and
- The unit cost of materials



The total direct materials variance can be split into the following two variances:

- Direct materials price variance.
- Direct materials usage variance.

These two variances will enable management to narrow down and identify what would have caused the variance – whether the unit price or the quantity of materials used in the production process.

The direct materials price variance has been covered in the last edition and now we will be covering the direct materials usage variance.

DIRECT MATERIALS USAGE VARIANCE

This is the difference between the standard cost of the expected quantity of materials to be used for the actual production and the standard cost of the actual quantity of materials used for the production.

This variance focuses on the quantity of materials which was supposed to be used for the actual level of production and compares this with the actual quantity used for the production at the standard unit rate. It measures how much of the difference between the expected and actual cost of materials is due to using different quantity of materials.

Where we have the standard quantity of materials to be used for the actual production and the actual quantity (both priced at the standard price) being compared, any difference arising can only be as a result of the quantity of the materials used.

This variance will indicate whether the quantity of materials actually used in the production is more or less than the standard usage for that level of production. In this case, we are comparing the actual quantity to the standard quantity for the actual level of production and therefore, when valuing these quantities, the same standard price must be used.

	£
Standard quantity required for actual production at standard price	X
Actual quantity used for actual production at standard price	X
Material usage variance	X

If the actual quantity is less than the standard quantity, then the variance will be favourable and if the actual quantity is more than the standard quantity, then the variance will be adverse. This will mean that:

ACTUAL QUANTITY > STANDARD QUANTITY = ADVERSE variance

ACTUAL QUANTITY < STANDARD QUANTITY = FAVOURABLE variance

Where there is a favourable direct material usage variance, it indicates to management that there was some efficiency in the quantity of materials used for the production when compared to the budget, and where there is an adverse variance it indicates that there was some inefficiency in the quantity of materials used which has contributed to the total material variance.

For example, if the standard cost of materials for a product called 'Product F' is as shown in the following table:



1 unit of Product F	Quantity	Cost per yard (£)	Total cost per unit (£)
Materials	3.2 yards	16.00	51.20

4,200 yards of materials, which cost a total of £76,860 was used for the production of 1,300 units during the month. What will be the material usage variance.

SOLUTION



Material usage variance:

Standard quantity required for actual production at standard price (3.2 yards x 1,300 units x £16) £66,560

Actual quantity used for actual production at standard price (4,200 yards x £16)

£67,200

Material usage variance £640 Adverse**

Also:

Standard quantity (3.2 yards x 1,300 units) 4,160 yards

Actual quantity 4,200 yards

Quantity variance 40 yards Adverse

Material usage variance = 40 yards x £16 = £640 Adverse**

Note:

You may have noticed that the standard quantity for the 1,300 units produced should have been 4,160 yards but the actual quantity used was 4,200 yards, which establishes an adverse quantity variance since the quantity of materials used was higher than the budgeted quantity supposed to be used. This is then multiplied by the standard price of materials, and with this, you arrive at the material usage variance. **PQ**

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Part 3 of this article will feature in the next issue of PQ magazine