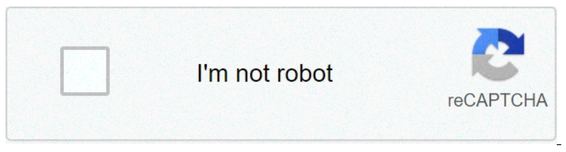

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Variable overhead expenditure

Overhead spending variance is the difference between actual expenses incurred and the budgeted allowance based on actual hours worked. If actual expenses incurred are more than budgeted allowance based on actual hours worked, an unfavorable spending variance occurs. If actual expenses incurred are less than budgeted allowance based on actual hours worked, a favorable spending variance occurs. Overhead spending variance is calculated when overall or net overhead variance is further analyzed using three variance method. Other two variances that are calculated in three variance method are overhead idle capacity variance and overhead efficiency variance. Formula: Following formula is used for the calculation of this variance: Spending variance = Actual factory overhead - Budgeted allowance based on actual hours worked Example: From the following data calculate factory overhead spending variance: Actual overhead $7,384 Actual hours worked 3,475 Units produced during the period 850 Standard hours for one unit 4 Standard factory overhead rate: Variable $1.20 Fixed $0.80 $2.00 Normal Capacity in labor hours 4000 hours Solution: Actual factory overhead $7,384 Budgeted allowance based on actual hours worked: Fixed expenses budgeted $3,200 Variable expenses (3,475* actual hours worked × $1.20 variable overhead rate) 4,170 $7,370 Spending variance $14 unfav This variance consists of variable expense only and can also be computed as follows: Actual variable expenses ($7,384 - $3,200) $4,184 Allowed variable expenses for actual production 4,170 Spending variance $14 unfav Who is Responsible For Spending Variance? the spending variance is the responsibility of the department manager, who is expected to keep actual expenses within the budget.Relevant Articles: The difference between actual variable overhead based on costs for indirect material involved in manufacturing, and standard variable overhead based on the budgeted costs. Variable overhead spending variance arises from difference in the costs of indirect material compared to budgeted costs. It is favorable if actual costs of indirect material – for example, paint and consumables such as oil and grease – are lower than standard variable overhead. It is unfavorable if actual costs are higher than budgeted costs. Explaining 'Variable Overhead Spending Variance' Variable overhead spending variance is one of the two components of total variable overhead variance, the other being variable overhead efficiency variance. For example, in the case of a widget manufacturer, if variable overhead spending variance is favorable $5,000 (because actual indirect materials costs were lower than budgeted) and variable overhead efficiency variance is unfavorable $4,000, then total variable overhead variance is favorable $1,000. 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Variable overhead spending variance is the difference between the actual cost of variable production overheads versus what they should have cost given the output during a period. You can use this information for decision making purposes by analyzing variances in your business. This allows you to make better decisions about future operations based on current performance levels. This article discusses how to calculate and analyze variable overhead spending variance. It is favorable if actual costs of indirect material are lower than standard variable overhead. It is unfavorable if actual costs are higher than budgeted cost. Variable production overheads include costs that cannot be directly attributed to a specific unit of output. Variable Overhead Spending Variance It arises from the difference in the costs of indirect material compared to budgeted costs. Home » Bookkeeping » How are fixed and variable overhead different?Typically fixed overhead costs are stable and should not change from the budgeted amounts allocated for those costs. However, if sales increase well beyond what a company budgeted for, fixed overhead costs could increase as employees are added, and new managers and administrative staff are hired. Also, if a building must be expanded or the rental of a new production facility is needed to meet increased sales, fixed overhead costs would need to increase to keep the company running smoothly.For example, if the cost of a kilowatt of electricity went up or if a purchaser had to pay more on machine supplies than usual, there could be a spending variance. Unfavorable efficiency variances occur when the factory uses more variable overhead per unit than expected.How do you calculate variable overhead rate variance?Variable Overhead Spending Variance is the difference between what the variable production overheads actually cost and what they should have cost given the level of activity during a period. Variable overhead spending variance is unfavorable if the actual costs are higher than the budgeted costs.The unfavorable efficiency variance is due to the actual use of 59,000 machine hours instead of the budgeted 57,600 hours. A spending variance is the difference between the actual amount of a particular expense and the expected (or budgeted) amount of an expense. To understand what variable overhead spending variance is, it helps to know what a variable overhead is. Variable overhead is a cost associated with running a business that fluctuates with operational activity.As production output increases or decreases, variable overheads move in tandem. Overheads are typically a fixed cost, for example, administrative expenses. The difference between actual and standard overhead is referred to as a variance.The traditional variance analysis presented below is based on Exhibit 2, p. 41. The variable overhead (VO) spending variance is $44,844F and the variable overhead efficiency variance is $44,844U.How budgeting works for companiesTo reach this standard rate, the annual overhead cost is divided by the cost center’s practical capacity. Practical capacity is used so that idle capacity may be found and put to better use. The standard rates calculated for batch and product level activities do not vary with production volume.Variable Overhead Spending VarianceThe variable overhead (VO) spending variance is $44,844F and the variable overhead efficiency variance is $44,844U.The traditional variance analysis presented below is based on Exhibit 2, p. 41.These variances are calculated using machine hours as the cost driver. The favorable VO spending variance can be attributed to generating the budgeted variable overhead costs ($1,845,000) despite using extra machine hours.The accountant then multiplies the rate by expected production for the period to calculate estimated variable overhead expense. If the business plans to produce 200 units in the next period and the standard rate is $3 per unit, the estimated variable expense is $600.It is unfavorable if the actual costs are higher than the budgeted costs. Before production begins, a business will typically calculate a standard or estimated variable manufacturing overhead for the year. Accountants come up with this figure by analyzing historical data and determining how much variable overhead expense the company tends to incur per unit produced. For example, if variable overhead costs are typically $300 when the company produces 100 units, the standard variable overhead rate is $3 per unit.Within manufacturing overhead, some costs are fixed — meaning, they don’t tend to change as production increases — and others are variable. Variable manufacturing overhead costs differ based on how much the company produces. Variable overhead spending variance is favorable if the actual costs of indirect materials are lower than the standard or budgeted variable overheads. In accounting, all costs can be described as either fixed costs or variable costs. Variable costs are inventoriable costs – they are allocated to units of production and recorded in inventory accounts, such as cost of goods sold.For example, if a machine needed more replacement supplies and parts than usual but didn’t produce more inventory, there would be an efficiency variance. Variable manufacturing overhead costs are a set of expenses that fluctuate as production levels change. Businesses calculate and use variable manufacturing overhead to estimate future costs and analyze past performance. If variable manufacturing costs are significantly different than expected, the business will perform variance analysis to identify the underlying cause. The first step in activity-based variance analysis is to assign all overhead costs to a level of activity.If the variance is significant, management will investigate what caused the variance. Variances in variable manufacturing overhead are classified as either a spending variance or an efficiency variance. Unfavorable spending variances occur when the factory purchases items at a higher rate than expected.Fixed costs, on the other hand, are all costs that are not inventoriable costs. All costs that do not fluctuate directly with production volume are fixed costs. Fixed costs include various indirect costs and fixed manufacturing overhead costs. Variable costs include direct labor, direct materials, and variable overhead.This is a fundamental difference between ABC and traditional variance analysis. Variable overhead spending variance is favorable if the actual costs of indirect materials — for example, paint and consumables such as oil and grease—are lower than the standard or budgeted variable overheads.The three primary components of a product cost are direct materials, direct labor and manufacturing overhead. Manufacturing overhead is a catch-all account that includes all manufacturing costs a business incurs other than direct materials and direct labor.What Are the Types of Costs in Cost Accounting?By looking at the unfavorable unit-level cost variances in Exhibit 3, we can tell that there is no idle capacity. This may tell managers to expect a greater number of machine hours in the future. Variable Overhead Spending Variance is essentially the difference between what the variable production overheadsactuallycost and what theyshouldhave cost given the level of activity during a period. Recall that the standard cost of a product includes not only materials and labor but also variable and fixed overhead. It is likely that the amounts determined for standard overhead costs will differ from what actually occurs. This will lead to overhead variances. In a standard cost system, overhead is applied to the goods based on a standard overhead rate. This is similar to the predetermined overhead rate used previously. The standard overhead rate is calculated by dividing budgeted overhead at a given level of production (known as normal capacity) by the level of activity required for that particular level of production. Usually, the level of activity is either direct labor hours or direct labor cost, but it could be machine hours or units of production. To determine the overhead standard cost, companies prepare a flexible budget that gives estimated revenues and costs at varying levels of production. The standard overhead cost is usually expressed as the sum of its component parts, fixed and variable costs per unit. Note that at different levels of production, total fixed costs are the same, so the standard fixed cost per unit will change for each production level. However, the variable standard cost per unit is the same per unit for each level of production, but the total variable costs will change. We continue to use Connie’s Candy Company to illustrate. Suppose Connie’s Candy budgets capacity of production at 100% and determines expected overhead at this capacity. Connie’s Candy also wants to understand what overhead cost outcomes will be at 90% capacity and 110% capacity. The following information is the flexible budget Connie’s Candy prepared to show expected overhead at each capacity level. Units of output at 100% is 1,000 candy boxes (units). The standard overhead rate is the total budgeted overhead of ?10,000 divided by the level of activity (direct labor hours) of 2,000 hours. Notice that fixed overhead remains constant at each of the production levels, but variable overhead changes based on unit output. If Connie’s Candy only produced at 90% capacity, for example, they should expect total overhead to be ?9,600 and a standard overhead rate of ?5.33 (rounded). If Connie’s Candy produced 2,200 units, they should expect total overhead to be ?10,400 and a standard overhead rate of ?4.73 (rounded). In addition to the total standard overhead rate, Connie’s Candy will want to know the variable overhead rates at each activity level. Using the flexible budget, we can determine the standard variable cost per unit at each level of production by taking the total expected variable overhead divided by the level of activity, which can still be direct labor hours or machine hours. Looking at Connie’s Candies, the following table shows the variable overhead rate at each of the production capacity levels. Production Capacity Variable/Unit 90% ?3,600/1,800 = ?2 100% ?4,000/2,000 = ?2 110% ?4,400/2,200 = ?2 Sometimes these flexible budget figures and overhead rates differ from the actual results, which produces a variance. There are two components to variable overhead rates: the overhead application rate and the activity level against which that rate was applied. If we compare the actual variable overhead to the standard variable overhead, by analyzing the difference between actual overhead costs and the standard overhead for current production, it is difficult to determine if the variance is due to application rate differences or activity level differences. Thus, there are two variable overhead variances that will better provide these answers: the variable overhead rate variance and the variable overhead efficiency variance. The variable overhead rate variance, also known as the spending variance, is the difference between the actual variable manufacturing overhead and the variable overhead that was expected given the number of hours worked. The variable overhead rate variance is calculated using this formula: Factoring out actual hours worked, we can rewrite the formula as If the outcome is favorable (a negative outcome occurs in the calculation), this means the company spent less than what it had anticipated for variable overhead. If the outcome is unfavorable (a positive outcome occurs in the calculation), this means the company spent more than what it had anticipated for variable overhead. Connie’s Candy Company wants to determine if its variable overhead spending was more or less than anticipated. Connie’s Candy had this data available in the flexible budget: Connie’s Candy also had this actual output information: To determine the variable overhead rate variance, the standard variable overhead rate per hour and the actual variable overhead rate per hour must be determined. The standard variable overhead rate per hour is ?2.00 (?4,000/2,000 hours), taken from the flexible budget at 100% capacity. The actual variable overhead rate is ?2.80 (?7,000/2,500), taken from the actual results at 100% capacity. Therefore, \(\text{Variable Overhead Rate Variance}=\left(?2.80–?2.00\right)\phantom{\rule{0.2em}{0ex}}×\phantom{\rule{0.2em}{0ex}}2,500=?2,000\phantom{\rule{0.2em}{0ex}}\left(\text{Unfavorable}\right)\) This produces an unfavorable outcome. This could be for many reasons, and the production supervisor would need to determine where the variable cost difference is occurring to make production changes. Let us look at another example producing a favorable outcome. Connie’s Candy had this data available in the flexible budget: Connie’s Candy also had this actual output information: To determine the variable overhead rate variance, the standard variable overhead rate per hour and the actual variable overhead rate per hour must be determined. The standard variable overhead rate per hour is ?2.00 (?4,000/2,000 hours), taken from the flexible budget at 100% capacity. The actual variable overhead rate is ?1.75 (?3,500/2,000), taken from the actual results at 100% capacity. Therefore, \(\text{Variable Overhead Rate Variance}=\left(?1.75–?2.00\right)\phantom{\rule{0.2em}{0ex}}×\phantom{\rule{0.2em}{0ex}}?2,000=–?500\phantom{\rule{0.2em}{0ex}}\text{or}\phantom{\rule{0.2em}{0ex}}?500\phantom{\rule{0.2em}{0ex}}\left(\text{Favorable}\right)\) This produces a favorable outcome. This could be for many reasons, and the production supervisor would need to determine where the variable cost difference is occurring to better understand the variable overhead reduction. Interpretation of the variable overhead rate variance is often difficult because the cost of one overhead item, such as indirect labor, could go up, but another overhead cost, such as indirect materials, could go down. Often, explanation of this variance will need clarification from the production supervisor. Another variable overhead variance to consider is the variable overhead efficiency variance. The variable overhead efficiency variance, also known as the controllable variance, is driven by the difference between the actual hours worked and the standard hours expected for the units produced. This variance measures whether the allocation base was efficiently used. The variable overhead efficiency variance is calculated using this formula: Factoring out standard overhead rate, the formula can be written as If the outcome is favorable (a negative outcome occurs in the calculation), this means the company was more efficient than what it had anticipated for variable overhead. If the outcome is unfavorable (a positive outcome occurs in the calculation), this means the company was less efficient than what it had anticipated for variable overhead. Connie’s Candy Company wants to determine if its variable overhead efficiency was more or less than anticipated. Connie’s Candy had the following data available in the flexible budget: Connie’s Candy also had the following actual output information: To determine the variable overhead efficiency variance, the actual hours worked and the standard hours worked at the production capacity of 100% must be determined. Actual hours worked are 2,500, and standard hours are 2,000. The standard variable overhead rate per hour is ?2.00 (?4,000/2,000 hours), taken from the flexible budget at 100% capacity. Therefore, \(\text{Variable Overhead Efficiency Variance}=\left(2,500–2,000\right)\phantom{\rule{0.2em}{0ex}}×\phantom{\rule{0.2em}{0ex}}?2.00=?1,000\phantom{\rule{0.2em}{0ex}}\left(\text{Unfavorable}\right)\) This produces an unfavorable outcome. This could be for many reasons, and the production supervisor would need to determine where the variable cost difference is occurring to make production changes. Let us look at another example producing a favorable outcome. Connie’s Candy had the following data available in the flexible budget: Connie’s Candy also had the following actual output information: To determine the variable overhead efficiency variance, the actual hours worked and the standard hours worked at the production capacity of 100% must be determined. Actual hours worked are 1,800, and standard hours are 2,000. The standard variable overhead rate per hour is ?2.00 (?4,000/2,000 hours), taken from the flexible budget at 100% capacity. Therefore, \(\text{Variable Overhead Efficiency Variance}=\left(1,800–2,000\right)\phantom{\rule{0.2em}{0ex}}×\phantom{\rule{0.2em}{0ex}}?2.00=–?400\phantom{\rule{0.2em}{0ex}}\text{or}\phantom{\rule{0.2em}{0ex}}?400\phantom{\rule{0.2em}{0ex}}\left(\text{Favorable}\right)\) This produces a favorable outcome. This could be for many reasons, and the production supervisor would need to determine where the variable cost difference is occurring to better understand the variable overhead efficiency reduction. The total variable overhead cost variance is also found by combining the variable overhead rate variance and the variable overhead efficiency variance. By showing the total variable overhead cost variance as the sum of the two components, management can better analyze the two variances and enhance decision-making. (Figure) shows the connection between the variable overhead rate variance and variable overhead efficiency variance to total variable overhead cost variance. Variable Overheard Cost Variance. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license) For example, Connie’s Candy Company had the following data available in the flexible budget: Connie’s Candy also had the following actual output information: The variable overhead rate variance is calculated as (1,800 × ?1.94) – (1,800 × ?2.00) = –?108, or ?108 (favorable). The variable overhead efficiency variance is calculated as (1,800 × ?2.00) – (2,000 × ?2.00) = –?400, or ?400 (favorable). The total variable overhead cost variance is computed as: \(\text{Total Variable Overhead Cost Variance}=\left(–?108\right)+\left(–?400\right)=–?508\phantom{\rule{0.2em}{0ex}}\text{or}\phantom{\rule{0.2em}{0ex}}?508\phantom{\rule{0.2em}{0ex}}\left(\text{Favorable}\right)\) In this case, two elements are contributing to the favorable outcome. Connie’s Candy used fewer direct labor hours and less variable overhead to produce 1,000 candy boxes (units). The same calculation is shown as follows in diagram format. As with the interpretations for the variable overhead rate and efficiency variances, the company would review the individual components contributing to the overall favorable outcome for the total variable overhead cost variance, before making any decisions about production in the future. Other variances companies consider are fixed factory overhead variances. The fixed factory overhead variance represents the difference between the actual fixed overhead and the applied fixed overhead. There are two fixed overhead variances. One variance determines if too much or too little was spent on fixed overhead. The other variance computes whether or not actual production was above or below the expected production level. Sweet and Fresh Shampoo Overhead Biglow Company makes a hair shampoo called Sweet and Fresh. They have the following flexible budget data: What is the standard variable overhead rate at 90%, 100%, and 110% capacity levels? Solution 90% = ?315,000/14,000 = ?22.50, 100% = ?346,000/16,000 = ?21.63 (rounded), 110% = ?378,000/18,000 = ?21.00. Purchasing Planes The XYZ Firm is bidding on a contract for a new plane for the military. As the management team is going over the bid, they come to the conclusion it is too high on a per-plane basis, but they cannot find any costs they feel can be reduced. The information from the military states they will purchase between 50 and 100 planes, but will more likely purchase 50 planes rather than 100 planes. XYZ’s bid is based on 50 planes. The controller suggests that they base their bid on 100 planes. This would spread the fixed costs over more planes and reduce the bid price. The lower bid price will increase substantially the chances of XYZ winning the bid. Should XYZ Firm keep the bid at 50 planes or increase its bid to 100 planes? What are the pros and cons to keeping the bid at 50 or increasing to 100 planes?