



**SILESIA
UNIVERSITY**

SCHOOL OF BUSINESS
ADMINISTRATION IN KARVINA

FLEXIBLE BUDGETS, PERFORMANCE ANALYSIS, STANDARD COSTS AND VARIANCES

Ing. Markéta Šeligová, Ph.D.
MANAGERIAL ACCOUNTING/NANMU

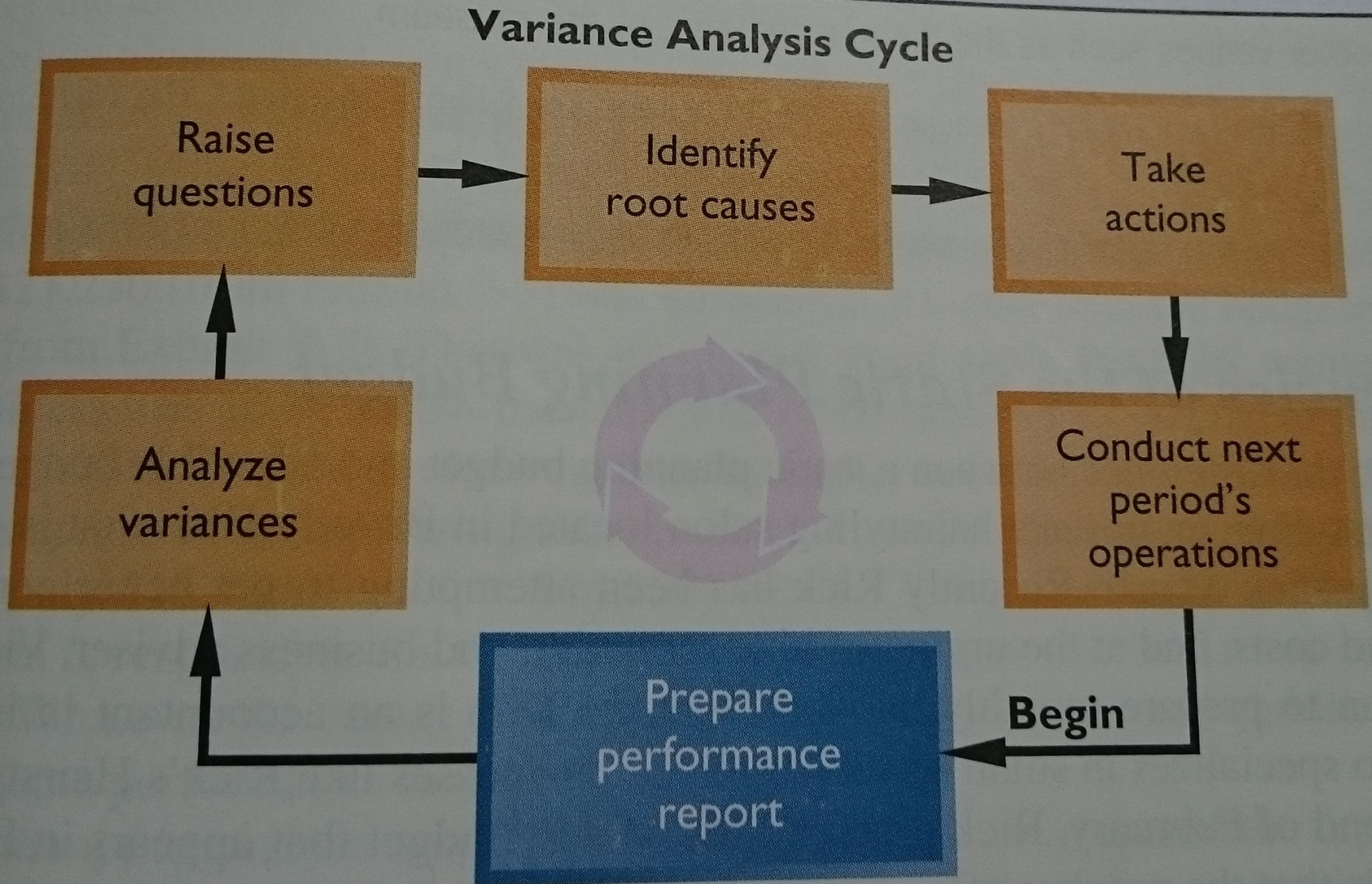
OUTLINE OF THE LECTURE

1. The variance analysis cycle
2. Characteristics of a flexible budget
3. The types of variances
4. The performance reports in cost centers
5. Standard costs

THE VARIANCE ANALYSIS CYCLE

- companies use the variance analysis cycle to evaluate and improve performance
- the cycle begins with the preparation of performance reports in the accounting department
- these reports highlight variances, which are the differences between the actual results and what should have occurred according to the budget
- the variance analysis cycle should not be used to assign blame for poor performance

THE VARIANCE ANALYSIS CYCLE



CHARACTERISTICS OF A FLEXIBLE BUDGET

- flexible budgets take into account how changes in activity affect costs
- a flexible budget is an estimate of what revenues and costs should have been, given the actual level of activity for the period
- when a flexible budget is used in performance evaluation, actual costs are compared to what the costs should have been for the actual level of activity during the period rather than to the static planning budget
- a flexible budget approach recognizes that a budget can be adjusted to show what costs should be for the actual level of activity

THE TYPES OF VARIANCES

- the difference between the actual level of activity and the level of activity in the planning budget from the beginning of the period, they are called **activity variances**
- **a revenue variance** is the difference between the actual total revenue and what the total revenue should have been, given the actual level of activity for the period
- **a spending variance** is the difference between the actual amount of the cost and how much a cost should have been, given the actual level of activity

PERFORMANCE REPORTS IN NONPROFIT ORGANIZATIONS

- the performance reports in non-profit organizations are basically the same as the performance reports we have considered so far - with one prominent difference
- Non-profit organizations usually receive a significant amount of funding from sources other than sales
- for example, universities receive their funding from sales, from endowment income and donations, and - in the case of public universities - from state appropriations
- this means that, like costs, the revenue in governmental and non-profit organizations may consist of both fixed and variable elements

THE PERFORMANCE REPORTS IN COST CENTERS

- performance reports are often prepared for organizations that do not have any source of outside revenue
- in particular, in a large organization a performance report may be prepared for each department - including departments that do not sell anything to outsiders
- for example, a performance report is very commonly prepared for production departments in manufacturing companies
- because the managers in departments are responsible for costs, but not revenues, they are often called **cost centers**

STANDARD COSTS

- a *standard* is a benchmark for measuring performance and are found everywhere
- *standards* are also widely used in managerial accounting where they relate to the *quantity* and acquisition *price* of inputs used in manufacturing goods or providing services
- *quantity standards* specify how much of an input should be used to make a product or provide a service
- *price standards* specify how much should be paid for each unit of the input
 - if either the quantity or acquisition price of an input departs significantly from the standard, managers investigate the discrepancy to find the cause of the problem and eliminate it

SETTING DIRECT MATERIALS STANDARDS

- **the standard quantity per unit** defines the amount of direct materials that should be used for each unit of finished product, including an allowance for normal inefficiencies, such as spoilage
- **the standard price per unit** defines the price that should be paid for each unit of direct materials and it should reflect the final, delivered cost of those materials

SETTING DIRECT LABOR STANDARDS

- direct labor quantity and price standards are usually expressed in terms of labor-hours or a labor rate
- **the standard hours per unit** defines the amount of direct labor-hours that should be used to produce one unit of finished goods
- **the standard rate per hour** defines the company's expected direct labor wage rate per hour, including employment taxes and fringe benefits

SETTING VARIABLE MANUFACTURING OVERHEAD STANDARDS (1)

- as with direct labor, the quantity and price standards for variable manufacturing overhead are usually expressed in terms of hours and a rate
- **the standard hours per unit** for variable overhead measures the amount of the allocation base from a company's predetermined overhead rate that is required to produce one unit of finished goods
- **the standard rate per unit** that a company expects to pay for variable overhead equals **the variable portion of the predetermined overhead rate**

SETTING VARIABLE MANUFACTURING OVERHEAD STANDARDS (2)

- **a standard cost card** shows the standard quantity (or hours) and standard price (or rate) of the inputs required to produce a unit of a specific product
- **the standard cost per unit** for all three variable manufacturing costs is computed the same way
- the standard quantity (or hours) per unit is multiplied by the standard price (or rate) per unit to obtain the standard cost per unit

A GENERAL MODEL FOR STANDARD COST VARIANCE ANALYSIS (1)

- standard cost variance analysis decomposes spending variances from the flexible budget into two elements - one due to the price paid for the input and the other due to the amount of the input that is used
- **a price variance** is the difference between the actual amount paid for an input and the standard amount that should have been paid, multiplied by the actual amount of the input purchased
- **a quantity variance** is the difference between how much of an input was actually used and how much should have been used and is stated in dollar terms using the standard price of the input

A GENERAL MODEL FOR STANDARD COST VARIANCE ANALYSIS (2)

- **the standard quantity allowed** (when computing direct materials variances) or **standard hours allowed** (when computing direct labour and variable manufacturing overhead variances) refers to the amount of an input that should have been used to manufacture the actual output of finished goods produced during the period
- the standard quantity allowed for the actual output and its computation can be stated in formula form as follows

*Standard quantity allowed for actual output = Actual output X
Standard quantity*

USING STANDARD COSTS – DIRECT MATERIALS VARIANCES (1)

- **a materials price variance** measures the difference between an input's actual price and its standard price, multiplied by the actual quantity purchased
 - a price variance is labeled unfavorable if the actual purchase price exceeds the standard purchase price
- **the materials quantity variance** measures the difference between the actual quantity of materials used in production and the standard quantity of materials allowed for the actual output, multiplied by the standard price per unit of materials
 - it is labeled as unfavorable (favorable) when the actual quantity of material used in production is greater than (less than) the quantity of material that should have been used according to the standard

USING STANDARD COSTS – DIRECT MATERIALS VARIANCES (2)

- **the labor rate variance** measures the difference between the actual hourly rate and the standard hourly rate, multiplied by the actual number of hours worked during the period
 - the variance is labeled favorable in case the actual hourly rate is less than the standard hourly rate
 - if the actual hourly rate had been greater than the standard hourly rate, the variance would have been labeled unfavorable
- **the labor efficiency variance** measures the difference between the actual hours used and the standard hours allowed for the actual output, multiplied by the standard hourly rate
 - possible causes of an unfavorable labor efficiency variance include poorly trained or motivated workers; poor-quality materials, requiring more labor time; faulty equipment, causing breakdowns and work interruptions; poor supervision of workers; and inaccurate standards

USING STANDARD COSTS – VARIABLE MANUFACTURING OVERHEAD VARIANCES

- **the variable overhead rate variance** measures the difference between the actual variable overhead cost incurred during the period and the standard cost that should have been incurred based on the actual activity of period
- **the variable overhead efficiency variance** measures the difference between the actual level of activity and the standard activity allowed for the actual output, multiplied by the variable part of the predetermined overhead rate

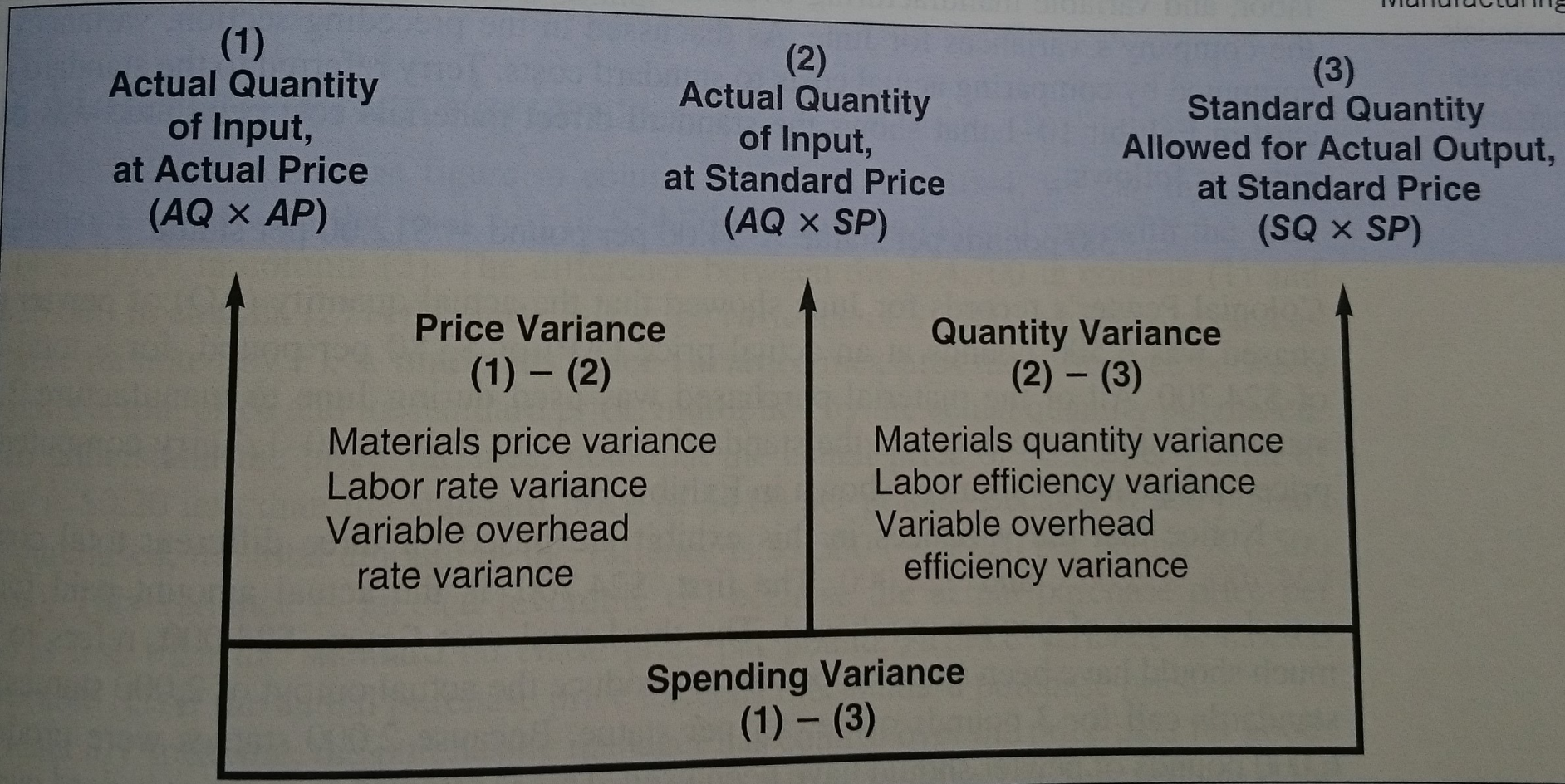
ADVANTAGES OF STANDARD COSTS (1)

- standard cost systems have a number of advantages
 - Standard costs are a key element in a management by exception approach. If costs conform to the standards, managers can focus on other issues. When costs are significantly outside the standards, managers are alerted that problems may exist that require attention. This approach helps managers focus on important issues.
 - Standards that are viewed as reasonable by employees can promote economy and efficiency. They provide benchmarks that individuals can use to judge their own performance.

ADVANTAGES OF STANDARD COSTS (2)

- standard cost systems have a number of advantages
 - Standard costs can greatly simplify bookkeeping. Instead of recording actual costs for each job, the standard costs for direct materials, direct labor, and overhead can be charged to jobs
 - Standard costs fit naturally in an integrated system of responsibility accounting. The standards establish what costs should be, who should be responsible for them, and whether actual costs are under control

FLEXIBLE BUDGETS, PERFORMANCE ANALYSIS, STANDARD COSTS AND VARIANCES



FLEXIBLE BUDGETS, PERFORMANCE ANALYSIS, STANDARD COSTS AND VARIANCES

(1) Actual Quantity of Input, at Actual Price (AQ × AP)	(2) Actual Quantity of Input, at Standard Price (AQ × SP)	(3) Standard Quantity Allowed for Actual Output, at Standard Price (SQ × SP)
6,500 pounds × \$3.80 per pound = \$24,700	6,500 pounds × \$4.00 per pound = \$26,000	6,000 pounds* × \$4.00 per pound = \$24,000
Price variance = \$1,300 F		Quantity variance = \$2,000 U
Spending variance = \$700 U		

*2,000 units × 3.0 pounds per unit = 6,000 pounds.
F = Favorable; U = Unfavorable.

FLEXIBLE BUDGETS, PERFORMANCE ANALYSIS, STANDARD COSTS AND VARIANCES

Standard Cost Variance Analysis—Direct Labor

(1)
Actual Hours
of Input,
at Actual Rate
(AH × AR)

$$1,050 \text{ hours} \times \$21.60 \text{ per hour} = \$22,680$$

(2)
Actual Hours
of Input,
at Standard Rate
(AH × SR)

$$1,050 \text{ hours} \times \$22.00 \text{ per hour} = \$23,100$$

(3)
Standard Hours
Allowed for Actual Output,
at Standard Rate
(SH × SR)

$$1,000 \text{ hours}^* \times \$22.00 \text{ per hour} = \$22,000$$

Labor rate variance
= \$420 F

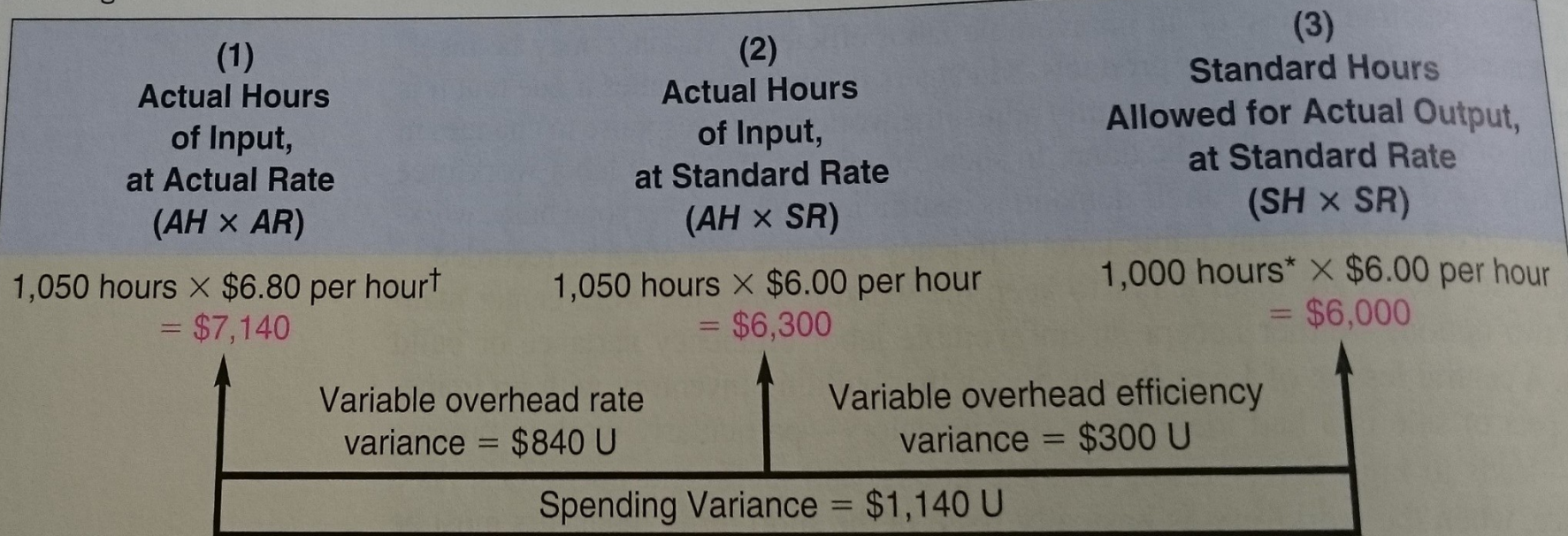
Labor efficiency variance
= \$1,100 U

Spending variance = \$680 U

*2,000 units × 0.5 hours per unit = 1,000 hours.
F = Favorable; U = Unfavorable.

FLEXIBLE BUDGETS, PERFORMANCE ANALYSIS, STANDARD COSTS AND VARIANCES

Standard Cost Variance
Analysis—Variable
Manufacturing Overhead

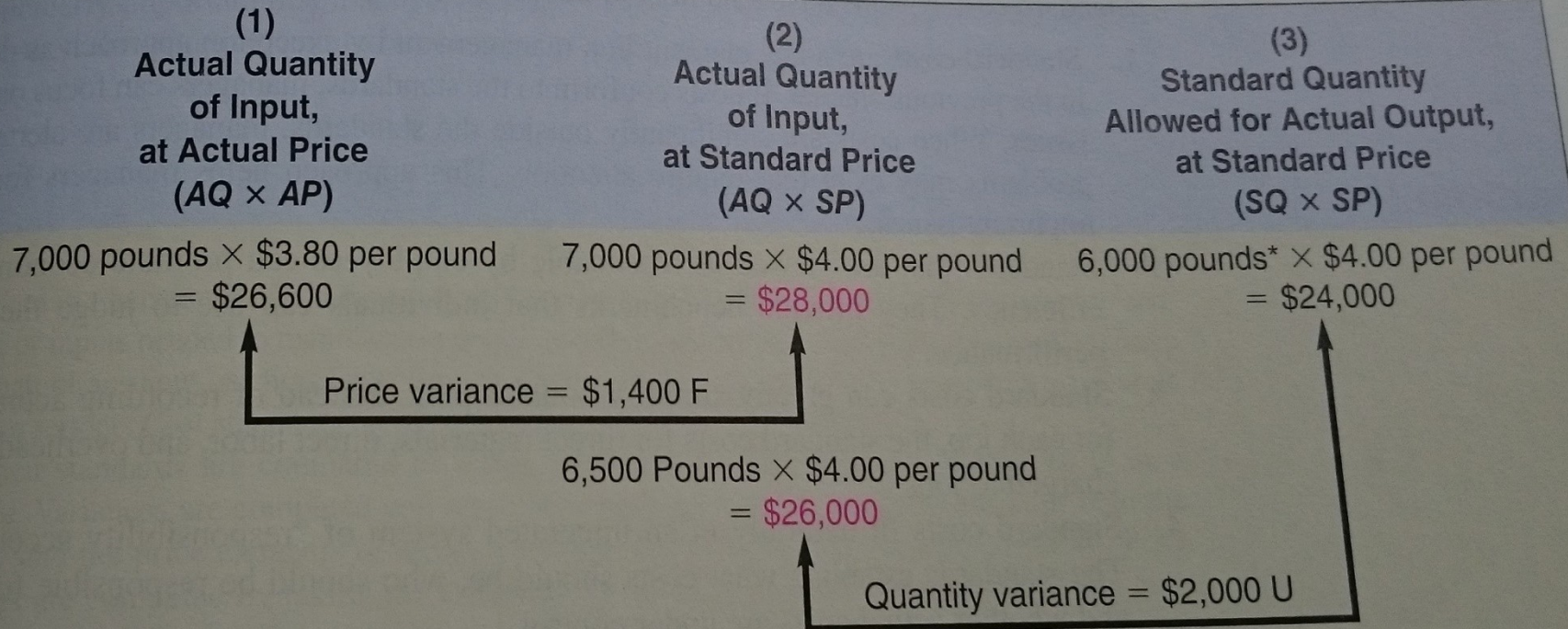


*2,000 units \times 0.5 hours per unit = 1,000 hours.

[†]\$7,140 \div 1,050 hours = \$6.80 per hour.

F = Favorable; U = Unfavorable.

FLEXIBLE BUDGETS, PERFORMANCE ANALYSIS, STANDARD COSTS AND VARIANCES



In this case, the price variance and the quantity variance do not sum to the spending variance because the price variance is based on the quantity purchased whereas the quantity variance is based on the quantity used in production, and the two numbers differ.

*2,000 units × 3.0 pounds per unit = 6,000 pounds.

F = Favorable; U = Unfavorable.

Thank you for your attention.