Chapter 9
Activity-Based Costing

SUMMARY

This chapter deals with the allocation of indirect costs to products. Product cost information helps managers make numerous decisions, such as pricing, keeping or dropping a product, estimating the cost to make a similar product, and determining how to reduce the costs of making products.

Activity-based costing assigns costs first to activities and then to the products based on each product's use of activities. Activity-based costing is based on the premise that products consume activities and activities consume resources. Activity-based costing involves these four steps:

1. Identify the activities that consume resources and assign costs to those activities.
2. Identify the cost driver(s) associated with each activity.
3. Compute a cost rate per cost driver unit or transaction.
4. Assign costs to products by multiplying the cost driver rate by the volume of cost driver units consumed by the product.

The following summarizes the key ideas tied to the chapter's learning objectives.

LO 9-1 Understand the potential effects of using reported product costs for decision making. When product costs are used for making decisions, the assumption about proportionality of the cost and output can distort decisions.

LO 9-2 Explain how a two-stage product costing system works. A two-stage system first allocates costs to departments or activities and then allocates costs from the departments or activities to the products or services.

LO 9-3 Compare and contrast plantwide and department allocation methods. A single-stage cost allocation system uses a single, plantwide, rate to allocate costs. A two-stage cost allocation system, which allocates costs to departments in the first stage, allows managers to choose cost drivers that are appropriate for each department, rather than having to select a single driver.

LO 9-4 Explain how activity-based costing and a two-stage product system are related. An activity-based cost system is a two-stage system in which the first stage assigns costs to activities.

LO 9-5 Compute product costs using activity-based costing. Product costs are computed by multiplying the cost driver rate by the number of units of the cost driver in each product.

LO 9-6 Compare activity-based product costing to traditional department product costing methods. Costs for low-volume products under activity-based costing are typically higher than under traditional department costing systems.

LO 9-7 Demonstrate the flow of costs through accounts using activity-based costing. The flow of activity-based costs through the ledger is the same as their flow using traditional methods except that the accounts are based on activities, not departments.

LO 9-8 Apply activity-based costing to marketing and administrative services. ABC methods can be used in service or administrative units of companies. Activities drive costs, regardless of industry or functional area. ABC information can help decision makers manage these costs.

REVIEW QUESTIONS

9-1. Give examples of cost drivers commonly used to allocate overhead costs to products and services.

9-2. The product costs reported using either plantwide or department allocation are the same. The only difference is in the number of cost drivers used. True or false? Explain.

9-3. Why do companies commonly use direct labor-hours or direct labor cost but not the number of units to allocate overhead?

9-4. What are the costs of moving to an activity-based cost system? What are the benefits?

9-5. What are the basic steps in computing costs using activity-based costing?

9-6. Cost allocation allocates only a given amount of costs to products. The total allocated is the same; therefore the choice of the system does not matter. True or false? Explain.

9-7. What type of organization is most likely to benefit from using activity-based costing for product costing? Why?

9-8. In what ways is implementing an activity-based costing system in a manufacturing firm's personnel department the same as implementing it in the plant? In what ways is it different?

Solutions to Review Questions

9-1

Common allocation bases are direct labor-hours, direct labor costs, and machine-hours. Somewhat less common is direct material costs.

9-2

False. Department allocation is a two-stage process, so the first-stage assignment of costs and the choice of cost drivers affects the allocation of costs to products. The total product costs are the same under either approach, but the individual product costs differ. This can affect the decisions managers make regarding individual products.

9-3

Most companies produce multiple products and simply adding them up does not account for differences in complexity of the use of resources. As an extreme example, suppose a company produced airplanes and staplers. Allocating overhead on the basis of units would assign the same overhead cost to a stapler and a plane.

9-4

The costs include the systems and the software, but the most important cost is managers' time. Managers need to make many decisions about the activities and the cost drivers and managers need to make many of the first-stage allocations. The benefits come from having better information about the use of resources and better information for decisions.

9-5

1. Identify activities that consume resources.
2. Identify the cost driver associated with each activity.
3. Compute a cost rate per activity unit (e.g., rate per setup, rate per part, rate per machine-hour).
4. Allocate costs to products by multiplying the activity rate times the volume of activity consumed by the product.

9-6

False. While the total cost allocated is the same, the reported costs for individual products will differ. Because managers make decisions at the product level, it is important that the reported costs reflect, to the extent possible, the use of resources by the products.

9-7

Activity-based costing will benefit most companies with high overhead costs and diverse products and processes. If there is little overhead or if there is a single product, the allocation process will not result in significantly different product costs. (Even if there are only a few, relatively homogeneous products, activity-based costing may be useful for cost management. See chapter 10 for a discussion.)

9-8

A personnel department provides its services by completing a set of activities using resources. In this way, implementing activity-based costing in an administrative function is the same as implementing it in a manufacturing firm. However, the products and activities may be much harder to define, making it less like a manufacturing environment.

Chapter 11
Service Department and Joint Cost Allocation

SUMMARY

Cost allocation is the process of assigning common costs to two or more cost objects. Ideally, cost allocation reflects a cause-and-effect relation between costs and the objects to which they are allocated.

Service department cost allocations are required to ensure that the costs of support services are included in the costs of products. The three major methods of service department cost allocation are the direct method, the step method, and the reciprocal method. The methods differ by the extent to which services provided by one service department to another are considered in the allocation process.

Joint cost allocations arise from the need to assign common costs to two or more products manufactured from a common input. The usual objective of joint cost allocation is to relate the costs of the inputs to the economic benefits received. There is no direct way to do this for joint products, so approximations are necessary. The two methods of joint cost allocation distribute joint costs based on the use of the net realizable value method (or *estimated* net realizable value) or the physical quantities method. These methods are acceptable for financial reporting purposes, but care must be exercised before attempting to use the data for decision-making purposes because of the inherent arbitrariness in joint cost allocations.

The following summarizes key ideas tied to the chapter's learning objectives.

- **LO 11-1** Explain why service costs are allocated. Costs are allocated to inform managers about the costs of running departments that use the services of other departments. Cost allocations are required for external financial reporting and tax purposes.
- **LO 11-2** Allocate service department costs using the direct method. The direct method allocates service department costs to user departments and ignores any services used by other service departments.
- **LO 11-3** Allocate service department costs using the step method. Based on an allocation order, the step method allocates service department costs to other service departments and then to production departments. Once an allocation is made from a service department, no further costs are allocated back to that department.
- **LO 11-4** Allocate service department costs using the reciprocal method. The reciprocal method allows for the simultaneous allocation of service department costs to and from all other service departments.
- **LO 11-5** Use the reciprocal method for decisions. By applying the reciprocal methods to the variable costs in the service departments, the resulting costs for these departments provide an estimate of the total variable cost of each service department, accounting for the reciprocal use of other service departments.
- **LO 11-6** Explain why joint costs are allocated. Joint costs are allocated to assign common costs to two or more products manufactured from a common input. Companies allocate costs to establish a cost basis for pricing or performance evaluation.
- **LO 11-7** Allocate joint costs using the net realizable value method. The net realizable value method allocates joint costs to products in proportion to their relative sales values. If additional

processing is required beyond the split-off point before the product can be sold, an estimate of the net realizable value can be derived at the split-off point by subtracting the additional processing costs from the estimated sales value.

- **LO 11-8** Allocate joint costs using the physical quantities method. The physical quantities method allocates joint costs to products in proportion to a physical measure (for example, volume or weight).
- **LO 11-9** Explain how cost data are used in the sell-or-process-further decision. Management must often decide whether to sell products at split-off points or process them further. Joint cost allocations are usually irrelevant for these decisions.

- **LO 11-10** Account for by-products. By-products are relatively minor outputs from a joint production process. The two methods most commonly used to account for by-products are (1) to reduce the cost of the main product by the net realizable value (sales value minus by-product processing cost) of the by-product or (2) to treat the net realizable value of the by-product as other income.
- **LO 11-11** (Appendix) Use spreadsheets to solve reciprocal cost allocation problems. Spreadsheets are used to solve complex reciprocal cost allocation problems by inverting the service department usage matrix.

REVIEW QUESTIONS

- **11-1.**Why do companies allocate costs? What are some of the advantages and disadvantages to doing so?
- **11-2.**What are the similarities and differences among the direct method, the step method, and the reciprocal method of allocating costs?
- **11-3.**What criterion should be used to determine the order of allocation from service departments when the step method is used? Explain why.
- **11-4.**What is the objective of joint cost allocation?
- **11-5.**Why would a number of accountants express a preference for the net realizable value method of joint cost allocation over the physical quantities method?
- **11-6.**When would a physical quantities method for allocation be preferred?
- **11-7.**What is the basic difference between the allocation of joint costs to (*a*) joint products and (*b*) by-products?
- **11-8.**What costs are irrelevant for the decision of whether to sell a joint product or process it further?

Solutions to Review Questions

11-1

Companies allocate costs to estimate or assess the costs of their activities (products, processes, etc.). It is an estimate and subject to the problem that cost allocation

contains an arbitrary element. Not allocating costs, however, is also an estimate—an estimate of zero. This may be appropriate for some decisions, but not for others.

Some of the disadvantages (costs) include:

(1) Additional bookkeeping;

(2) Additional management costs in selecting allocation methods and allocation bases;

(3) Costs of making the wrong decision if the allocations provide misleading information.

Some of the advantages (benefits) of cost allocation include:

(1) Instilling responsibility for all costs of the company in the division managers;

(2) Relating indirect costs to contracts, jobs, and products;

(3) Constructing performance measures ("net profit") for a division that may be more meaningful to management than contribution margins.

11-2

The essential difference is the allocation of costs among service departments. The direct method makes no inter-service-department allocation, the step method makes a partial inter-service-department allocation, while the reciprocal solution method fully recognizes inter-service-department activities. All three methods allocate costs to the production departments based on the production department's relative use.

11-3

Allocations usually begin from the service department that has provided the greatest proportion of its services to other service departments, or that services the greatest number of other service departments. This criterion is used to minimize the unrecognized portion of reciprocal service department costs. (Recall that the amount of service received by the first department to allocate in the step allocation sequence is ignored.)

Another criterion employed is the amount of cost incurred by the service department. As with other allocation problems, it is a combination of the diversity (the proportion of resources used by other service departments) and the costs involved that are important in making this choice.

11-4

Joint cost allocations are usually made to assign a cost to a product after the split-off point. This is usually done for external reporting, tax, or rate-making purposes or to satisfy contract requirements. Because the joint costs are common to the outputs, it is not possible to find a direct way of relating the costs. Rather, the costs are related to economic benefits on the basis of some measure of relative outputs.

11-5

Because net realizable values of the output provide a measure of the economic benefit received from each output from the production process, this method is usually preferred when it can be implemented. Further, the physical quantities may be difficult to compare (e.g., weights versus volumes).

11-6

It could be preferable to use a physical quantities measure if it reflects the economic benefit ultimately obtainable from the production process, particularly if there is no objective selling price for joint products. Some examples include public utility rate setting, energy price regulation, new market setting, and new product price setting. In all of these cases, it is not possible to use the relative sales value method. Of course, the physical quantity measure used must make sense. Thus, ounces of lead should not be added to ounces of silver for joint cost allocation purposes.

11-7

For joint products, costs of the inputs up to the split-off point are allocated to each of the products. Costs prior to split-off are not allocated to by-products in the same way as to the main (joint) products. Either joint costs (costs incurred prior to split-off) equal to the sales value of the by-product are allocated to the by-product, reducing the costs allocated to the main products (Method 1 in the text) or no joint costs are allocated to the by-product and it is credited with its sales value (Method 2).

11-8

The joint costs of the product are irrelevant to this decision. Using the principle of differential costs, the joint costs are not differential in this decision. They are sunk costs, because they must be incurred under either decision.

Chapter 13
Planning and Budgeting

SUMMARY

This chapter has discussed and illustrated the budget process. The budget is part of the overall plan for achieving an organization's objectives. The master budget is usually a one-year plan that encompasses budgeted sales and production, the budgeted income statement, the balance sheet, and the cash flow statement, as well as supporting schedules.

The following summarizes key ideas tied to the chapter's learning objectives.

- **LO 13-1** Understand the role of budgets in overall organization plans. Budgets, which are used as a blueprint for operations, help companies determine the means for achieving their goals by outlining projected sales, production costs, and marketing and administrative costs.
- **LO 13-2** Understand the importance of people in the budgeting process. Budgets are based on people's estimates, which are affected by their own goals, values, and abilities. Managers should consider these “soft” factors when collecting information for budgets.
- **LO 13-3** Estimate sales. The key to the budget is a good sales forecast because many other parts of the budget depend on the sales forecast. The sales forecast usually is derived from multiple sources of data, including data provided by sales personnel, market researchers, and statistical analyses.
- **LO 13-4** Develop production and cost budgets. After sales forecasts have been developed, the number of units to be produced is estimated. This process derives the cost of goods sold. An estimate of marketing and administrative costs also is made based on the previous period's actual and budgeted amounts adjusted for several factors, including inflation and changes in operations.
- **LO 13-5** Estimate cash flows. Preparing a cash budget requires that all revenues, costs, and other transactions be examined in terms of their effects on cash.
- **LO 13-6** Develop budgeted financial statements. Budgeted sales, production costs, and marketing and administrative costs are combined to form the budgeted income statement. To complete the budgeted financial statements, projected cash flows and a balance sheet are prepared.
- **LO 13-7** Explain budgeting in merchandising and service organizations. Retail and wholesale organization budgets are similar to manufacturing budgets except that they have no production budget. Service organizations are similar except that they have no inventories. The budget is not only a planning tool but also a legal authorization for expenditure in governmental (nonprofit) units.
- **LO 13-8** Explain why ethical issues arise in budgeting. Conflicts of interest often arise when employees are asked for input to help establish a budget. Incentives exist for employees to provide targets that are relatively easy to achieve. Conversely, companies typically hope to establish challenging goals and reward employees for meeting the challenge. As a result, employees do not always provide accurate information for the budgeting process. In addition, if budget targets are difficult to meet, employees could turn to fraudulent financial reporting.
- **LO 13-9** Explain how to use sensitivity analysis to budget under uncertainty. Uncertainty is an important part of preparing budgets and plans. In addition to many formal models, managers use

sensitivity analyses to better understand the range of outcomes likely to occur. Spreadsheet software has made sensitivity analysis much easier to perform.

REVIEW QUESTIONS

- **13-1.**Which has more detail, the budget for the coming period or a long-range forecast? Why?
- **13-2.**What is the purpose of the cash budget if the budgeted income statement will indicate whether the firm expects to be profitable?
- **13-3.**Describe four methods used to estimate sales for budgeting purposes.
- **13-4.**What role does the master budget play in the planning and budgeting exercise?
- **13-5.**What problems might arise if a firm relies solely on management estimates in preparing the master budget?
- **13-6.**What is the coordinating role of budgeting?

Solutions to Review Questions

13-1

Next period's budget has more detail because it is closer in time than the longer-range forecasts. The budget plan is a blueprint for operations in the coming period. It must be sufficiently detailed so that it provides adequate direction to the various people responsible for operations.

13-2

Cash receipts and disbursements often take place in different time periods from when items are recognized in the income statement and balance sheet. Thus, a company needs to prepare a cash budget to ensure that cash needs will be met.

13-3

Answers will vary, but examples include:

a. Econometric methods—using economic data to forecast using statistical models;

b. Delphi technique—collecting and synthesizing the opinion of experts;

c. Estimates from salespeople and other knowledgeable personnel;

d. Trend analysis—statistical analysis of historical data;

e. Market research—collecting information on the macroeconomic trends in the industry and in the local markets.

13-4

The master budget links long-term objectives and short-term, tactical plans. Organization goals are broad-based statements of purpose. Strategic plans take the broad-based statements and expresses them in terms of detailed steps needed to attain those goals. Budgets are the short-term plans used to implement the steps included in the strategic plans.

For example, a company might have a goal of "Becoming the number 1 company in the industry." The strategic plans would include such statements as: "Increase sales volume by 20% per year." The master budget would state the number of units that are needed to be produced and sold in the coming period to meet the 20% volume increase as well as the production and marketing costs necessary to attain that objective. The master budget would also include estimates of the levels of cash, accounts receivable, inventories, and fixed assets needed to support the budgeted level of activity.

13-5

Because middle management has better knowledge about operations at lower levels in the organization, and because budgets are usually used to evaluate performance or compute bonuses for middle management, middle management might have a tendency to underestimate revenues and overestimate costs. This bias arises because if the biased plans are adopted, middle management will find it easier to meet targets and to achieve bonus awards. Of course, if upper management always "tightens" the budget plans suggested by middle management, gaming might result. The disadvantage of this gaming is that the planning effectiveness might be reduced.

13-6

Budgeting aids in coordination in a number of ways. By relating sales forecasts to production activities it is possible to reduce the likelihood of over- or under-production. It coordinates production so that plants making subassemblies are making the appropriate number at the right time as needed by the plant making the final assemblies. In addition, the budget process is used to make certain that adequate cash is on hand to finance company activities for the coming period. Guidelines are set for administrative and selling departments so that their costs are commensurate with the company’s income and output goals.

Chapter 16
Fundamentals of Variance Analysis

SUMMARY

This chapter discusses the computation and analysis of variances. A *variance* is the difference between a budget, or standard, and an actual result.

The following summarizes the key ideas tied to the chapter's learning objectives.

LO 16-1 Use budgets for performance evaluation. *Budgets* provide a view of anticipated operations and enable management to measure the performance of employees in various areas of the production and sales processes.

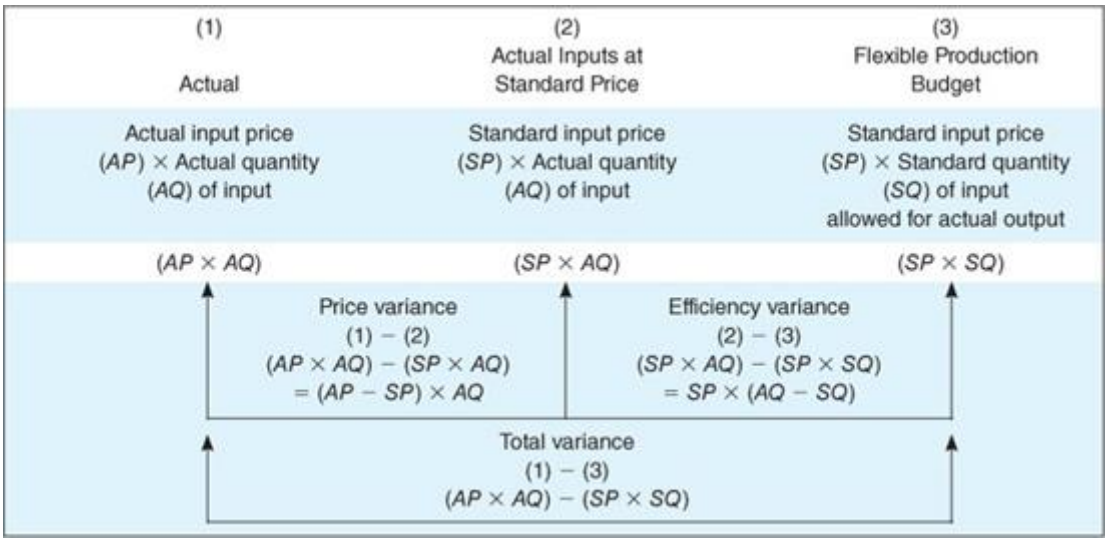
LO 16-2 Develop and use flexible budgets. The *master budget* is typically static; that is, it is developed in detail for one level of activity. A *flexible budget* recognizes that variable costs and revenues are expected to differ from the budget if the actual activity (for example, actual sales volume) differs from what was budgeted. A flexible budget can be thought of as the costs and revenues that would have been budgeted if the activity level had been correctly estimated in the master budget. The general relationship between the actual results, the flexible budget, and the master budget follows:

Actual	Flexible Budget	Master Budget
Actual costs and revenues based on actual activity	Cost and revenues that would have been budgeted if actual activity had been budgeted	Budgeted costs and revenues based on budgeted activity

LO 16-3 Compute and interpret the sales activity variance. The sales activity variance is the difference between the operating profit in the master budget and the flexible budget. This difference (or variance) occurs because the actual number of units sold is different from the number budgeted in the master budget.

LO 16-4 Prepare and use a profit variance analysis. The *profit variance analysis* outlines the causes of differences between budgeted profits and the actual profits earned. Variances are separated into four categories: production, marketing and administrative, sales price, and sales activity.

LO 16-5 Compute and use variable cost variances. The model used for calculating variable production cost variances is based on the following diagram, which divides the total variance between actual and standard into *price* and *efficiency* components:



LO 16-6 Compute and use fixed cost variances. Fixed production costs have no efficiency variance. The price variance is the difference between actual fixed costs and the fixed costs in the flexible budget. If fixed costs are unitized and assigned to units produced, a production volume variance also can arise. The production volume variance is the difference between the budgeted fixed costs and the amount applied to production.

LO 16-7 (Appendix) Understand how to record costs in a standard costing system. In a standard costing system, work in process is recorded at standard costs, and variance accounts collect the difference between actual and standard costs. Variances are closed to cost of goods sold (because we assume that production equals sales in this chapter).

REVIEW QUESTIONS

16-1. What are the advantages of the contribution margin format based on variable costing compared to the traditional format based on full absorption costing?

16-2."The flexible budget for costs is computed by multiplying average total cost at the master budget activity level by the activity at some other level." Is this true or false? Why or why not?

16-3.A flexible budget is:

a) Appropriate for control of factory overhead but not for control of direct materials and direct labor.
b) Appropriate for control of direct materials and direct labor but not for control of factory overhead.
c) Not appropriate when costs and expenses are affected by fluctuations in volume.
d) Appropriate for any level of activity.*(CPA adapted)*

16-4. What is the basic difference between a master budget and a flexible budget?

a) A flexible budget considers only variable costs; a master budget considers all costs.
b) A master budget is based on a predicted level of activity; a flexible budget is based on the actual level of activity.
c) A master budget is for an entire production facility; a flexible budget is applicable only to individual departments.

d) A flexible budget allows management latitude in meeting goals; a master budget is based on a fixed standard.*(CPA adapted)*

16-5. Standards and budgets are the same thing. True or false?

16-6. Actual direct materials costs differ from the master budget amount. What are the three primary reasons for the difference?

16-7. Fixed cost variances are computed differently from the variances for variable costs. Why?

Solutions to Review Questions

16-1

For performance evaluation purposes, the costing format should identify the actual costs for comparison with expected costs during the relevant period. Under absorption costing, the manufacturing fixed costs are allocated on a per unit basis. An increase in production results in a lower per unit cost. If all of the production is sold, all of the fixed cost will be charged against profit. However, if some of the costs are assigned to inventory, the result can be a deferral of costs that should be evaluated at this time. This problem is highlighted by the suggestion that one can increase production in times of declining sales in order to “help the bottom line by spreading fixed costs over more units.” Because variable costing excludes fixed overhead for inventory valuation (fixed overhead is treated as a period expense), there is no motivation to produce goods for inventory.

16-2

False. Only variable costs and revenues “flex” with changes in activity. Fixed costs are expected to remain the same when operations are in the relevant range.

16-3

(d) Appropriate for any level of activity.

16-4

(b) A master budget is based on a predicted level of activity, while a flexible budget is based on the actual level of activity.

16-5

False. A standard is related to a cost per unit. Budgets focus on totals.

16-6

The three primary sources of variances are:

a. price variances, which arise because actual material prices differ from standards;

b. efficiency variances which occur when the relationship between the usage of input factors (labor, materials, variable overhead) differs from that which would be expected to produce a given level of output; and

c. activity variances, which represent differences between, planned (master budget) output levels and the output levels actually attained during the period.

16-7

The fixed cost variances differ from variable cost variances because fixed costs do not vary with the level of production activity. Therefore, the fixed costs in the flexible budget will be the same as in the master budget (within the relevant range). Additionally, there are no efficiency variances for fixed costs because there is no input-output relationship that can be applied.

Appendix
Capital Investment Decisions: An Overview

REVIEW QUESTIONS

A-1. What are the two most important factors an accountant must estimate in the capital investment decision?

A-2. What does the *time value of money* mean?

A-3. What is the difference between revenues and cash inflows?

A-4. What is the difference between expenses and cash outflows?

A-5. What is the difference between depreciation and the tax shield on depreciation?

A-6. Given two projects with equal cash flows but different timing, how can we determine which (if either) project should be selected for investment?
A-7. What are the four types of cash flows related to a capital investment project and why do we consider them separately?
A-8. Is depreciation included in the computation of net present value? Explain.
A-9. "The total tax deduction for depreciation is the same over the life of the project regardless of depreciation method. Why then would one be concerned about the depreciation method for capital investment analysis?" Comment.
A-10. "Working capital is just the temporary use of money during the life of the project. What is initially contributed is returned at the end, so it can be ignored in evaluating a project." Comment.

Solutions to Review Questions

A-1

The *timing* is important because cash received earlier has a greater economic value than cash received later. There is an opportunity cost and risk involved by having funds tied up in capital investment projects. Determining the *amount* is important in estimating the future cash flows. The timing and amount together are used to determine the economic value of the project.

A-2

The time value of money merely states that cash received earlier has a greater value than cash received later because the dollar received today can be earning interest between now and later.

A-3

Revenues represent the accounting measure of inflows to the firm. Revenues might be recognized when, before, or after cash is received. Revenues are recognized based on generally accepted accounting principles.

A-4

Expenses represent the accounting measure of outflows from the firm. Expenses are matched with revenues and, therefore, might be recognized when, before, or after cash is spent.

A-5

Depreciation is an accounting measure of the use of a capital asset and is not a cash flow. The tax shield on depreciation is the savings in taxes associated with the depreciation expense recorded for tax purposes and is a cash flow.

A-6

To determine which, if either, project should be approved, the net present value of each project should be determined. Once the timing and amount of cash flows has been determined, they should be discounted to the present by determining and applying appropriate discount rates. Any project with a positive net present value could be justified and the project with the greater net present value should be approved under normal circumstances.

A-7

The four types of cash flows are:

(1) investment cash flows,

(2) periodic operating flows,

(3) depreciation tax shield, and

(4) disinvestment flows.

We consider them separately because each type of flow results from different activities and gives rise to different tax consequences.

A-8

No. Depreciation is not a cash flow item. However, the tax shield which arises from depreciation deductions for tax purposes is a cash flow item and is included.

A-9

The total amount depreciated over the life of the machine (and, therefore, often the tax savings associated with that depreciation) is the same regardless of the depreciation method used. However, for capital investment decisions, the timing of the savings is important because it affects the net present value of the depreciation tax shield.

A-10

Although the working capital might be assumed to be returned to the firm at the end of the project, the firm does not have the use of those funds during that time. Therefore, the present value of the working capital returned is less than the present value of the working capital contributed.