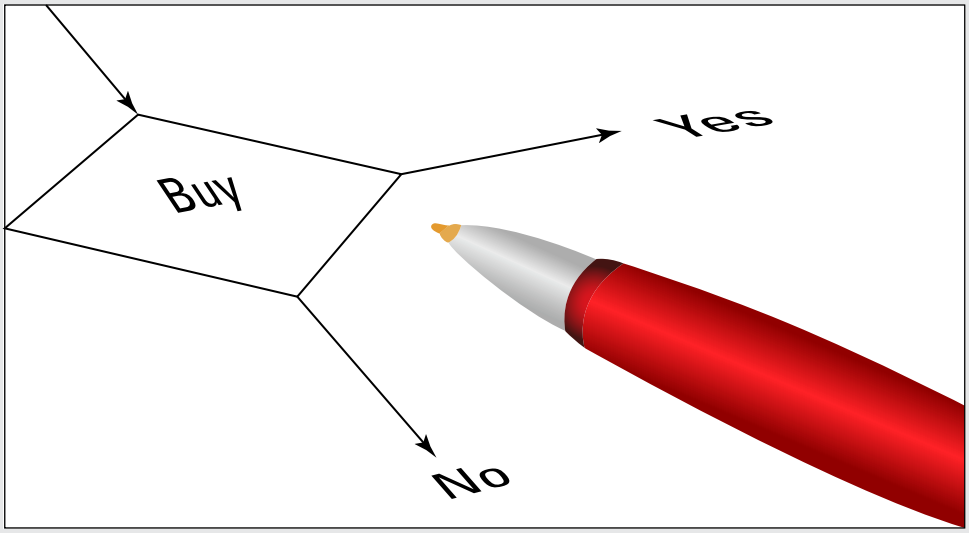
Book VIII

Handling Cash and Making Purchase Decisions



web extras

Don't overlook *opportunity costs* — the cost of missed opportunities when you allocate money to certain business ventures. To find out more about opportunity costs and how to account for them, visit www.dummies.com/extras/accountingaio.

In this book...

- Tell the difference between costs and expenses, figure out which costs you can depreciate, and know when to recognize revenue.
- Take a look at how inventory calculations impact cash flow and other financial statements. Inventory is often your largest asset account balance, so understanding these issues is crucial.
- Determine when something you're thinking of purchasing is likely to pay for itself. Consider the cash inflows that the new purchase helps you generate and calculate your break-even point.
- Grasp the pros and cons of taking on debt to leverage equity. Weigh the cost of interest on a loan with a potential dividend that you would pay a shareholder.

Chapter 1

Identifying Costs and Matching Costs with Revenue

In This Chapter

- Knowing the ins and outs of costs and expenses
- Understanding the difference between product and period costs
- Figuring out which costs to depreciate
- Mulling over revenue recognition

This chapter is your introduction to a company's *tangible* assets, which you can touch and feel — they have a physical presence. Tangible assets, also called *fixed* assets, include property, plant, and equipment (PP&E). Many fixed assets are used for years, and a company relies on a mysterious accounting tool called *depreciation* to keep its financial statements in line with the reality of how long those assets stay in use.

If you read this entire chapter, depreciation won't seem so mysterious anymore. This chapter helps you understand what depreciation is and how it connects a business's costs to its expenses. (Yes, costs and expenses are two different things in the business world.) This chapter also walks you through the information you find in a schedule of depreciation.

Because you match expenses with revenue, this chapter wraps up with a discussion of *revenue recognition* — the event or transaction that determines when revenue is posted to your accounting records.

Defining Costs and Expenses in the Business World

In the world of business, costs aren't the same as expenses. Note this process:

- When a business incurs a *cost,* it exchanges a resource (usually cash or a promise to pay cash in the future) to purchase a good or service that enables the company to generate revenue.
- Later, when the asset is used to create a product or service, the cost of the asset is converted into an *expense.*
- When the product or service is sold, the company generates revenue. The revenue is matched with the expenses incurred to generate the revenue. Businesses use this *matching principle* to calculate the profit or loss on the transaction.

Here's an example of a common business transaction that demonstrates the process:

Suppose you're the manager of the women's apparel department of a major manufacturer. You're expanding the department to add a new line of formal garments. You need to purchase five new sewing machines, which for this type of business are fixed assets.

When you buy the sewing machines, the price you pay (or promise to pay) is a cost. Then, as you use the sewing machines in the normal activity of your business, you *depreciate* them: You reclassify the cost of buying the asset to an expense. So the resources you use to purchase the sewing machines move from the balance sheet (cost) to the income statement (expense).

Your income statement shows revenue and expenses. The difference between those two numbers is the company's *net income* (when revenue is more than expense) or *net loss* (when expenses are higher than revenue).

Still wondering what the big deal is with accountants having to depreciate fixed assets? Well, the process ties back to the matching principle, discussed in the next section.

Satisfying the Matching Principle

In accounting, every transaction you work with has to satisfy the matching principle (see Book I, Chapter 4). You have to associate all revenue earned during the accounting period to all expenses you incur to produce that revenue.

The idea is that the expenses are matched with the revenue — regardless of when the expense occurs.

Continuing with the sewing machine example from the previous section, suppose the life of the sewing machine — the average amount of time the company knows it can use the sewing machine before having to replace it — is five years. The average cost of a commercial sewing machine is $1,500. If the company expenses the entire purchase price (cost) of $1,500 in the year of purchase, the net income for year one is understated and the net income for the next four years is overstated.

Why? Because although the company laid out $1,500 in year one for a machine, the company anticipates using the machine for another four years. So to truly match the sales the company generates from garments made by using the sewing machine, the cost of the machine has to be allocated over each of the years it will be used to crank out those garments for sale.

Identifying Product and Period Costs

The way a company classifies a cost depends on the category the cost falls into. Using generally accepted accounting principles (GAAP) as explained in Book IV, Chapter 1, business costs fall into the two general categories in the following list:

- **Product costs:** Any costs that relate to manufacturing or merchandising an item for sale to customers. A common example is inventory (see Chapter 2), which reflects costs a manufacturing company incurs when buying the raw materials it needs to make a product. For a merchandiser (retailer), the cost of inventory is what it pays to buy the finished goods from the manufacturer.
- **Period costs:** Costs that, although necessary to keep the business's doors open, don't tie back to any specific item the company sells. You can also think of period costs as costs you incur due to the passage of time, such as depreciation, rent, interest on a loan, and insurance premiums.

Discovering Which Costs Are Depreciated

When a company purchases a fixed asset (see Book IV, Chapter 3), such as a computer or machine, the cost of the asset is spread over its useful life, which may be years after the purchase. Therefore, depreciation is a *period cost:* As time passes, the fixed asset is used to generate revenue. The cost of the fixed asset is converted into an expense.

Your next question may be: "Which costs associated with purchasing a fixed asset do you add together when figuring up the entire cost? Just the purchase price? Purchase price plus tax and shipping? Other costs?"

Except for the allocation of cost between land and buildings (see the section, "Allocating costs between land and buildings"), figuring depreciated cost is straightforward. Per GAAP, the business has to record all fixed asset purchases on its balance sheet at their original cost plus all the ordinary and necessary costs to get the fixed asset ready to use. The total cost of the fixed asset is referred to as its *depreciable base.*

For example, a company makes pencils and buys a new machine to automatically separate and shrink-wrap ten pencils into salable units. Various costs of the machine may include the purchase price, sales tax, freight-in, and assembly of the shrink-wrapping machine on the factory floor. (*Freight-in* is the buyer's cost to get the machine from the seller to the buyer.)

Handling real property depreciation

Now, what about *real property* — land and buildings? Both are clearly fixed assets, but the cost of the land a building sits on isn't depreciated and has to be separated from the cost of the building. Your financial statements will list land and building as two separate line items on the balance sheet. Why? The answer is that GAAP mandates that separation — no *if*s, *and*s, or *but*s about it.

The cost of land is never depreciated either under GAAP or on the company's tax return. That's because the land a building stands on is assumed to retain its value. In other words, it won't be used up or run down through use over time.

So, if a company pays $250,000 to purchase a building to manufacture its pencils and the purchase price is allocated 90 percent to building and 10 percent to land, how much of the purchase price is spread out over the useful life of the building? Your answer is: $250,000 × 0.90 = $225,000.

Allocating costs between land and buildings

Frequently, a company pays one price for both a building and the land that the building sits on. Figuring out the allocation of costs between land and building is a common challenge. The best approach is to have an appraisal done during the purchasing process.

An *appraisal* occurs when a licensed professional determines the value of real property. If you've ever purchased a home and applied for a mortgage, you're probably familiar with property appraisals. Basically, the appraisal provides assurance to the mortgage company that you're not borrowing more than the property is worth.

Even if a business doesn't have to secure a mortgage to purchase a real property asset, it still gets an appraisal to make sure it's not overpaying for the property. Alternatively, the county property tax records may show an allocation of costs to land. However, that allocation is just for property tax purposes; it may not be materially correct for depreciation purposes. Just remember to subtract land cost from the total before calculating real property depreciation (depreciation on just the building).

Land *improvements,* such as fences, roads, and gates, are depreciable. Land improvements should be shown as a separate line item on the balance sheet (see Book IV, Chapter 3).

If a business purchases a piece of raw land and constructs its own building, the accounting issue is more straightforward, because you have a sales price for the land and construction costs for the building.

Expensing repairs and maintenance

Preventative repair and maintenance costs are expensed in the period in which they're incurred. For example, on June 14, a florist business has the oil changed and purchases new tires for the flower delivery van. The cost of the oil change and tires goes on the income statement as an operating expense for the month of June.

The next month, the delivery van's transmission goes completely out, stranding the driver and flowers at the side of the road. Rebuilding the transmission significantly increases the useful life of the delivery van, so you have to add the cost of the new transmission to the net book value of the van on the balance sheet. *Net book value* (or *book value* for short) is the difference between the cost of the fixed asset and its accumulated depreciation at any given time.

Preparing a Depreciation Schedule

Book III, Chapter 1 explains the different methods a business can use to calculate depreciation and how the methods compare to each other. A company may use different depreciation methods for different types of assets.

All businesses keep a depreciation schedule for their assets showing all the relevant details about each asset. Here is the basic information that shows up on a depreciation schedule:

- **Description:** The type of asset and any other identifying information about the fixed asset. For a truck, the description may include the make and model of the truck and its license plate number.
- **Cost:** The purchase price of the asset plus any other spending that should be added to the asset's cost. See "Discovering Which Costs Are Depreciated," earlier in this chapter for an explanation of other costs that are included with the purchase price. Although most additions to purchase price take place when the company acquires the asset, the fixed asset cost can be added to after the fact if material renovations are performed. (Think about the truck transmission example from the earlier section "Expensing repairs and maintenance.")
- **Life:** How long the company estimates it will use the fixed asset.
- **Method:** The method of depreciation the company uses for the fixed asset.
- **Salvage value:** The estimated value of the fixed asset when the company gets rid of or replaces it.
- **Date purchased:** The day the asset was purchased.
- **Current depreciation:** The depreciation expense booked in the current period.
- **Accumulated depreciation:** The total amount of depreciation expensed from the day the company placed the fixed asset in service to the date of the financial report.
- **Net book value:** The difference between the fixed asset cost and its accumulated depreciation.

Depending on the size of the company, the depreciation schedule may also have the fixed asset's identifying number, the location where the fixed asset is kept, property tax information, and many more facts about the asset.

In order to audit fixed assets, auditors may perform a physical count of the assets. (See Book IX for more about auditing.) If you store tools and equipment in a warehouse, for example, the auditors want to verify that each asset on your fixed asset listing (accounting records) is actually located in the warehouse. Assigning each asset a unique number is important, so that the number on the fixed asset listing can be matched to the same number on the asset itself. That policy allows the audit process to go smoothly.

Having a nicely organized depreciation schedule allows the company to keep at its fingertips a summary of activity for each fixed asset. Check out Figure 1-1 to see the basic organization for a depreciation schedule.

Figure 1-1: Example of a depreciation schedule.

Description	Cost	Life	Method	Salvage Value	Date purchased	Current year depreciation expense	Accumulated Depreciation	Net Book Value
Delivery van	30,000	5	Units-of-production	2,000	01/15/2012	3,060	6,200	23,800
Computer	1,500	3	Straight-line	0	05/20/2012	500	1,000	500
Furniture	2,500	3	Straight-line	300	09/15/2012	733	1,466	1,034
Fixtures	700	10	Straight-line	100	03/10/2012	60	240	460

Deciding When to Recognize Revenue

The matching principle requires that you match costs incurred with the revenue a company generates. Previously in this chapter, you explore the costs side of the matching principle. You wrap up this chapter by considering the revenue side of the matching principle.

Going over the revenue recognition principle

The *revenue recognition principle,* first mentioned in Book I, Chapter 4, requires that, if you use the accrual basis of accounting, you recognize revenue by using these two criteria:

- Revenue is recorded when it has been *earned*
- Revenue is considered earned when the revenue generation process is substantially complete

Generally, the revenue generation process is complete when you deliver your product or service. So, when the clothing store receives jeans from the manufacturer, the company that produced the jeans should recognize revenue. If you're a tax accountant, you recognize revenue when you deliver the completed tax return to the client.

Recognizing revenue and cash flow

With accrual accounting, you can recognize revenue prior to receiving any payment from the client. A company recognizes revenue as soon as it delivers the goods or services.

For businesses that use accrual accounting, revenue recognized for the month may be very different from cash inflows for sales for the same period. Specifically, the increase in cash may not equal sales for the month. (See Book V, Chapter 2 for more about cash flows.)

A business using cash-basis accounting recognizes revenue when the cash is received from the client. (See Book I, Chapter 4 for more about the difference between cash- and accrual-basis accounting.) If you review the checkbook of a cash-basis company, the deposits for the month will match the revenue for the month. Most businesses, however, use the accrual-basis of accounting.

Chapter 2

Exploring Inventory Cost Flow Assumptions

In This Chapter

- Seeing how inventory calculations impact financial statements
- Comparing service companies and manufacturers
- Recognizing a variety of inventory types
- Sampling inventory valuation methods
- Looking at an inventory worksheet

Some people think that inventory is only the merchandise available for sale in a store, commonly called *retail* or *merchandise inventory.* This chapter covers retail inventory, but it also introduces you to other kinds of *product inventory* used by manufacturers, including direct materials, work in process, and finished goods.

You also find out in this chapter about two methods a company may use to keep track of merchandise inventory, as well as the four methods businesses may use to value ending inventory: specific identification; weighted average; last-in, first-out; and first-in, first-out.

Some businesses, such as service companies, may not carry *any* inventory. Although they may carry a minimal amount of office supplies, they're in the business of selling a service (legal advice, consulting) rather than a product.

Discovering How Inventory Valuation Affects the Financial Statements

In accounting, you're preparing financial statements for users outside the business, such as investors and lenders (see Book I, Chapter 4). They need accurate financial statements to make informed decisions on whether they want to invest in the company or loan it money.

Comparing merchandising and manufacturing companies

For *manufacturing* companies (which make products) and *merchandising* companies (which sell the products made by the manufacturers), inventory can be a big part of the balance sheet. Along with accounts receivable, inventory may be the largest current asset account. So proper accounting for inventory is important, and that includes the value placed on ending inventory. A company can inadvertently prepare a set of highly inaccurate financial statements by expensing purchases rather than keeping them on the balance sheet as inventory (an asset account).

So which costs are okay to expense directly on the income statement, and which costs should stay on the balance sheet as assets? Here's a quick and dirty answer: Any item that a company buys for eventual sale to a customer should be recorded as inventory, which appears on the balance sheet.

Connecting inventory to revenue

Inventory ties into both the revenue process and the cost of goods sold (see Book IV, Chapter 6). Associating inventory with cost of goods sold makes common sense — you have to buy something before you can sell it. But you may be wondering how revenue and inventory relate to each other. Well, remember that you need to use generally accepted accounting principles (GAAP), introduced in Book IV, Chapter 1. GAAP's matching principle dictates that expenses are matched with revenue earned for the period.

How does inventory come into the revenue equation? Book IV, Chapter 6 shows how to compute cost of goods sold for both a merchandising and a manufacturing company. Consider this process:

- *Product costs* are any costs that a company incurs when purchasing or manufacturing an item for sale to customers. Product costs are part of inventory (an asset account).
- When a sale occurs, product costs are posted to cost of goods sold (an expense account).
- Any product costs for unsold inventory remain in the inventory (asset) account at the end of the period.

Logging Inventory for Service Companies

Although discussions of inventory focus on manufacturing and merchandising companies, you also need to consider *service companies:* those that don't provide a tangible good and normally don't have any appreciable inventory. However, if a service company keeps a large amount of office or other supplies on hand, it may inventory them instead of applying the cost of supplies purchased to the supply expense each month.

Suppose a service company purchases supplies *on account,* which means the company promises to pay for them at a later date. The supplies cost $700 at the beginning of September. The $700 represents purchases. For this example, no beginning inventory exists for September. On the last day of September, an inventory is taken and supplies in the amount of $230 remain in the cabinet.

Your journal entry to record the purchase is to debit supplies (an asset account) and credit accounts payable for $700. So far you haven't affected the income statement.

Now at the end of the month, you have to adjust supplies inventory to the actual on hand, which involves expensing the portion of supplies used. The company purchased $700 of supplies and only $230 remain, so you know that $700 – $230 = $470 of supplies were used and should be expensed for the month of September. So your journal entry is to debit supplies expense (an income statement account) and credit supplies (an asset account).

Classifying Inventory Types

Depending on the type of business, you'll encounter different types of inventory. To make it easier for you to understand, this section breaks out the subject between inventory for merchandising companies and inventory for manufacturing companies.

Accounting for merchandising company inventory

Accounting for merchandise inventory is generally easier than accounting for manufacturing inventory. That's because a merchandising company, such as a retail store, has only one class of inventory to keep track of: goods the business purchases from various manufacturers for resale.

Here's an example of the basic flow of inventory for a retailer: A linen sales associate at a major department store tells the manager that a certain style of linen is in low supply. The manager follows the store's purchasing process, and the store receives a shipment of linens from its vendor.

This transaction is a purchase (cost), but it's not an expense until the department store sells the linens. So the business records the entire shipment of linens on the balance sheet as an addition to both inventory and accounts payable (see Book IV, Chapter 3). A*ccounts payable* is used instead of *cash* because the department store has payment terms with this vendor and money has yet to change hands during this transaction.

Say that in August, the store sells linens to customers for $150 that cost the company $75 to purchase from the vendor. Sales revenue increases by $150, cost of goods sold increases by $75, and inventory decreases by $75. Matching the expense to revenue, the effect to net income is $150 sales – $75 cost of goods sold = $75 profit on sale.

Pretty basic stuff. The company buys inventory and sells it. Next, you consider how retail shops normally track inventory. Two major types of inventory systems exist: perpetual and periodic.

Perpetual system

Most larger retailers have electronic cash registers (ECRs) that scan the bar code of each product and record the sale into the system, along with an increase to cash. If the business also uses a *point-of-sale system,* which means transactions at the register automatically update all accounting records, the inventory count is updated constantly, *perpetually,* as the ECR records the item sold. This means that the cost of the item sold is taken out of the asset inventory account and moved to cost of goods sold (COGS).

With point-of-sale systems, transactions taking place at the cash register update all inventory, COGS, and sales information throughout the system in real time as the transactions occur.

Suppose you go into a national chain retailer and buy a birthday card for a friend. As you check out, the point-of-sale software updates the greeting card department records showing that one less birthday card is available for sale. The software also updates COGS showing the cost for the card and revenue to reflect the retail price (what you just paid) for the birthday card.

Even if a company uses a point-of-sale system, taking a physical inventory at year-end (or periodically) is still important to verify that the perpetual system is working correctly. Taking a physical inventory is also the best way to identify breakage and theft issues. If the inventory accounting records differ from the inventory items counted, the company may need to adjust the dollar amount of inventory on the books.

Periodic system

With a periodic system, the physical inventory is taken periodically, and the resulting figure is used to adjust the balance sheet "inventory asset" account. This is the same inventory count and adjustment process you see with the perpetual system. However, the perpetual system updates inventory *constantly,* whereas the periodic system doesn't.

Retail shops using periodic inventory usually take inventory at their particular year-end. However, inventory could be taken more often, such as quarterly or at the end of every heavy sales season (such as Valentine's Day, Mother's Day, and the December holidays).

Keep in mind this formula for calculating ending inventory:

Ending inventory = Beginning inventory + Purchases – Cost of goods sold

Here's how the periodic system works:

- The business takes *ending inventory,* coming up with a dollar amount for all unsold inventory, as of the last day of the accounting period. Say ending inventory is $1,000.
- Next, the company's accounting department subtracts ending inventory totals from the sum of beginning inventory ($2,000) and purchases made during the period ($1,500).
- Finally, the accounting department plugs the three inventory items into the previous formula to calculate cost of goods sold (COGS).

The formula looks like this:

$1,000 = $2,000 + $1,500 – $2,500

Using the periodic system, COGS can be determined with accuracy only after the physical inventory is taken. When companies prepare financial statements and a physical inventory isn't taken, they use an estimate. That estimate is based on the previous formula. Specifically, a business uses the beginning and ending inventory amounts, along with purchases during the period. Because inventory may be a large part of a firm's total assets, a physical inventory count is highly recommended.

Don't include *consignment goods* in inventory. With a consignment arrangement, the merchandiser (consignee) is acting as a middleman between the owner of the goods (consignor) and the customer. The merchandiser doesn't have title to the goods. If the consigned item is sold, the sales proceeds are transferred to the owner. For providing the consignment as a service, the merchandiser receives a fee or a percentage of the sales proceeds from the owner.

Accounting for manufacturing company inventory

To account for all expenses it incurs while making products for resale, a manufacturing company has a cost of goods manufactured account. The cost of goods manufactured includes three types of inventory: direct materials, work in process, and finished goods. Head over to Book VII, Chapter 1 for more on these three types of assets.

Direct material inventory

The *direct material* (also known as *raw materials*) inventory reflects all the materials the company uses to make a product. For example, for a car manufacturer this includes the steel to form the body, leather or fabric for the seats, and all those other gizmos and parts that go under the hood. In essence, any materials that you can directly trace back to making the car are direct material inventory.

Keep in mind that manufacturing companies can use the perpetual inventory tracking method described in the previous section to keep track of their direct material inventory. For example, components that a computer manufacturer needs to assemble laptops may have serial numbers. Those numbers are scanned in when components are purchased from the manufacturer. The scan posts the cost to the direct material account. The components are scanned again when incorporated into the computer. At that point, the cost is moved to the work-in-process account (discussed in the next section). Thus, the manufacturer keeps a running total of components in inventory.

Work-in-process inventory

At any point in the manufacturing process, the company probably has items that are in the process of being made but aren't yet complete, which is considered *work in process.* With a car manufacturer, imagine the car going down the production line. At the stroke of midnight on the last day of the accounting period, cars up and down the line are in various stages of completion. The company values its work-in-process inventory based on how far each product has been processed.

Finished goods inventory

Finally, the costs you associate with goods that are completely ready for sale to customers, but haven't yet been sold, are classified as *finished goods inventory.* For the car manufacturer, this category consists of cars not yet sold to individual dealerships.

Obviously, any finished goods that haven't been matched with a customer are part of the manufacturer's inventory. But suppose the finished goods have a buyer and are in transit to that customer. Who owns the finished goods then?

To make this determination, you need to find out whether the terms of the sale are for *free on board (FOB) shipping point* or *FOB destination.* FOB shipping point means the customer owns the merchandise as soon as it leaves the manufacturer's loading dock; ownership (title) transfers to the buyer at the shipping point to the common carrier (a trucking company, for example). FOB destination is the opposite: The customer owns the inventory only after receipt; any merchandise in transit to the customer is still counted as part of the seller/manufacturer's inventory.

Getting to Know Inventory Valuation Methods

Most companies choose one of four methods to value their ending inventory: specific identification; weighted average; first-in, first-out (FIFO); and last-in, first-out (LIFO). The amount transferring from the balance sheet inventory account to the income statement cost of goods sold can vary, depending on which method you choose. These variations are similar to the variations you get by using different depreciation methods (see Book III, Chapter 1 for more about depreciation methods).

The readers of the financial statements must know which inventory method the company uses. The method is always spelled out in the notes to the financial statements; see Book V, Chapter 4. If the method used is unclear, any comparison of one company's financial statements to another will be inaccurate because the user may be comparing financial results from dissimilar valuation methods.

The following sections walk you through each method, explain how to calculate the valuation by using each of the four methods, and show you the dollar amount differences when the same number of items in ending inventory are valued by using three of the methods: weighted average, FIFO, and LIFO.

Understanding guidelines used for all methods

Before you dive into each inventory method, you should understand these guidelines. Each of these guidelines holds true, regardless of the inventory method you use:

- **Units:** The number of units in beginning inventory, ending inventory, purchases, and cost of sales is the same regardless of the inventory method used. The dollar amounts for each method, however, may be different.

- **Total dollars:** The total dollars to account for are the same for each inventory method. One method may allocate more or fewer dollars to ending inventory, for example. The total dollars representing *the sum of* beginning inventory, ending inventory, purchases, and cost of sales are the same.
- **Allocating costs:** At the end of a month or year, you can post your inventory costs to only one of two places. If you *sold* the inventory, the cost is in cost of sales. If you *didn't sell* the inventory, the cost is in ending inventory.

Keep these concepts in mind as you consider the different inventory methods.

Specific identification

Using the *specific identification method,* you can trace the exact cost of each individual item in inventory. Usually that's because each item in inventory is unique or is equipped with a serial number that can be traced to its purchase price. As a result, ending inventory is the total of all payments made to the particular vendors from whom the company purchases the inventoried goods less the cost of items sold. This inventory method is used for businesses with expensive individual inventory items, such as a car dealership.

For example, an art gallery selling a bronze casting by a particular artist can quickly identify how much it cost to originally purchase the casting by checking out that particular invoice from the artist. So if the gallery paid the artist $500, when the item is sold, the accounting department debits cost of goods sold for $500 and credits inventory for the same amount — reducing ending inventory by $500.

Weighted average

When a company uses the weighted average method, inventory and the cost of goods sold are based on the average cost of all units purchased during the period. This method is generally used when inventory is substantially the same, such as grains and fuel.

If the company sells running shoes, the total cost of all running shoes available for sale is divided by the total pairs of running shoes available for sale (total units). Multiply that figure by the number of running shoes remaining in inventory at the end of the period to get your ending inventory figure.

The upcoming section "Comparing inventory cost-flow assumptions," presents an example of this method at work.

First-in, first-out (FIFO)

Using the FIFO method, the company assumes that the oldest items in its inventory are the ones first sold. Consider buying milk in a grocery store. The cartons or bottles with the most current expiration date are pushed ahead of the cartons that have more time before they go bad. The oldest cartons of milk may not always actually be the first ones sold (because some people dig around looking for later expiration dates), but the business bases its numbers on the oldest cartons being sold first.

The *inventory cost flow assumption* states that under FIFO, the oldest units are presumed to be sold first, regardless of whether they actually are. Because prices generally increase over time (due to inflation), the oldest goods are usually the least expensive. With FIFO, you sell the oldest (and cheapest) goods first. The oldest goods aren't always the cheapest, but you may see that trend.

Last-in, first-out (LIFO)

With this method, the company assumes that its newest items (the ones most recently purchased) are the first ones sold. Imagine a big stack of lumber in a hardware store. If a customer wants to buy a plank, for convenience's sake, he takes one off the top. As customers purchase the planks, more planks are added on top of the old ones instead of redistributing the old planks so they move to the top of the pile. Therefore, the newest planks are consistently sold to customers rather than the older ones.

If you again assume that prices for purchases increase over time, the LIFO method means that you sell the most recently purchased items first. Those items are generally more expensive than the older units. Again, this isn't always true, but that's a pattern you may see.

Comparing inventory cost-flow assumptions

Understanding how to value ending inventory by using weighted average, FIFO, and LIFO is easier if you have an example of each method. (The specific identification method is pretty straightforward, so it's not included here.) This section offers some practical calculations that should mimic what you encounter in real world accounting.

The ending inventory calculation examples use a retail sporting goods shop called Fast Feet Sporting Goods, which sells a variety of items — specifically running shoes. The upcoming sections figure out this shop's ending running shoe inventory.

Figure 2-1 shows beginning inventory and purchases from July 1 to the end of the calendar year (no purchases were made in December). Your job is to figure ending inventory and cost of goods sold as of December 31.

Date of Purchase	Number of Units	Cost per Unit	Total Cost
July 1 (beginning inventory)	200	$ 10	$ 2,000
July 15	250	12	3,000
August 5	100	15	1,500
September 6	450	9	4,050
October 3	325	13	4,225
November 21	50	11	550
Total available for sale	1,375		$15,325
Units sold	600		
Units remaining in December 31 inventory	775		

Figure 2-1: Fast Feet inventory analysis.

Depending on which method a business uses, ending inventory for the same facts and circumstances ranges from $8,375 to $8,635. Although this isn't a dramatic difference, consider what a difference the accounting method makes when a company has sales in the thousands or millions of units!

The accounting inventory methods shown in this example assume the inventory is valued at cost rather than *market,* which is the price the company can charge when it sells its merchandise. If your client sells items whose market value is less than what the company paid for the inventory, your client may have to value its inventory by using the lower of cost or market. If you want to find out more about this advanced financial topic, check out Accounting Research Bulletin No. 43 at the Financial Accounting Standards Board website (`www.fasb.org`).

Figuring ending inventory and cost of goods sold by using FIFO

Using FIFO, you start at the top of the running shoe list because the shoes in beginning inventory are first in, followed by the shoes purchased on July 15, those purchased on August 5, and 50 of the 450 purchased on September 6. As you can see from Figure 2-2, cost of goods sold is $6,950. That means ending inventory is $15,325 – $6,950 = $8,375.

FIFO Date of Purchase	Number of Units	Cost per Unit	Total Cost
July 1 (beginning inventory)	200	$ 10	$ 2,000
July 15	250	12	3,000
August 5	100	15	1,500
September 6	50	9	450
Total	600		$6,950

Figure 2-2: FIFO cost-flow assumption.

Figuring ending inventory and cost of goods sold by using LIFO

Using LIFO, you start at the bottom of the running shoe list because the company assumes that the last shoes purchased are the first ones sold. That gives you the running shoes purchased on November 21, October 3, and 225 of the shoes purchased on September 6. As you can see from Figure 2-3, cost of goods sold is $6,800. That means ending inventory is $15,325 – $6,800 = $8,525.

LIFO Date of Purchase	Number of Units	Cost per Unit	Total Cost
November 21	50	11	$ 550
October 3	325	13	4,225
September 6	225	9	2,025
Total	600		$ 6,800

Figure 2-3: LIFO cost-flow assumption.

Figuring ending inventory and cost of goods sold by using weighted average

Last but not least, here's the calculation for weighted average: The total cost divided by the total number of running shoes available for sale equals cost per unit: $15,325 ÷ 1,375 = $11.15. The shop sells 600 pairs of shoes in the second half of the year. Multiply 600 units sold times an average cost of $11.15 to get a cost of goods sold of $6,690. Ending inventory is $15,325 – $6,690 = $8,635.

Preparing an Inventory Worksheet

Take a look at a simple inventory worksheet. Using Fast Feet as an example (see the previous section for more on this fictional company), Figure 2-4 shows all running shoes theoretically in stock as of December 31. The last column, "Actual Count," is filled in by Fast Feet employees while taking a physical inventory.

Fast Feet Sporting Goods
Physical Inventory Worksheet

Item Name	Item Description	Qty. on Hand	Actual Count
Running shoes			
Ladies	Ladies XYZ brand running shoes	210	_____
Ladies	Ladies ABC brand running shoes	125	_____
Men's	Men's XYZ brand running shoes	250	_____
Men's	Men's ABC brand running shoes	115	_____
Children	Children's Lil' Tike running shoes	75	_____
		775	

Figure 2-4: Partial inventory worksheet.

Even if a retail shop uses the perpetual method, taking a physical inventory at year-end is important to identify theft and breakage. If, after totaling up the "Actual Count" column, the company has a figure less than 775, it knows that running shoes left the shop in other ways than by being carried out by paying customers. Under GAAP, the company has to prepare a journal entry to record the cost of the missing footwear — in other words, it adjusts the inventory balance to the actual count. If the inventory physically counted is less than the accounting records, the company must debit cost of sales and reduce (credit) inventory.

Chapter 3

Answering the Question: Should I Buy That?

In This Chapter

- Distinguishing between opportunity and incremental costs
- Using the cash payback method to figure when an investment will pay for itself
- Understanding time value of money and the net present value method
- Estimating internal rate of return
- Keeping qualitative factors in your sights

Before investing big bucks in a long-term project, managers must carefully plan all the project's details and determine how likely it is to deliver reasonable returns for the company. This planning means estimating the future cash flows that the project will bring in and coming to a determination that the project's cash inflows will exceed its cash outflows (total cost).

This chapter shows you several techniques for making decisions about whether to pursue long-term capital projects. First, it reviews the idea of incremental and opportunity costs — how a project may change some costs but not others. The chapter then describes an easy technique called *payback period* for determining how long a project will take to become profitable. Here, you gain an understanding of time value of money concepts to explain how to estimate the net present value and the internal rate of return of a long-term capital project. Finally, you consider qualitative factors, such as product safety and employee loyalty, when making decisions about budgeting capital.

If you're new to the time value of money, read this chapter from beginning to end. Each section takes a step toward helping you understand this topic. If you're reviewing this topic, feel free to skim and skip.

Identifying Incremental and Opportunity Costs

When faced with two or more alternatives, *incremental costs* are those costs that change, depending on which alternative you choose. Suppose you want to buy a new bicycle. Incremental costs of buying the bike include the actual price of the bike plus any accessories. You also need to pay for gas to drive to and from the bike store — another incremental cost. On the other hand, the cost of buying lunch after purchasing the bike isn't an incremental cost because you need to pay for that regardless of whether you buy the bike.

As you analyze budgeting decisions, take special care to consider only incremental costs and to ignore all other costs.

Choosing one option may mean you lose money because you turned down another alternative. These incremental costs are called *opportunity costs.* For example, say you choose to take the day off from work to go bike shopping, losing $100 in income. That lost income is an opportunity cost. When considering decisions to invest in long-term projects, one of the most significant opportunity costs is how much you could have earned by investing your money elsewhere.

When analyzing for incremental costs (and especially for opportunity costs), remember that they're expected to happen in the future. That's how you know that you can't include *sunk costs* (costs that you incurred in the past). For example, say you already bought a new bike last week that you really liked and that just got stolen. The cost of the missing bike is a sunk cost. Because you can't change sunk costs, you can ignore them completely. How much that stolen bike cost you isn't relevant to your current purchase decision, because that bike is gone.

Keeping It Simple: The Cash Payback Method

Companies invest in capital projects — buying big things like factories, equipment, and vehicles — to earn profits and a return on their investment. Therefore, managers need tools and techniques to evaluate different capital projects and decide which ones to invest in and which ones to avoid.

One such tool is the *cash payback method,* which estimates how long a project will take to cover its original investment. You can calculate the cash payback method whether you have equal payments each period or unequal payments. The main benefit of the cash payback method is that you can calculate it on the fly to quickly screen out investments.

Although it's quick and easy, the cash payback method doesn't account for the full profitability of the project; it ignores any payback earned after the cash payback period ends. Furthermore, because this approach neglects the time value of money, managers should use a more sophisticated model, such as the net present value method described later in the chapter, before investing company funds into any project.

Using the cash payback method with equal annual net cash flows

The cash payback method uses the following formula to compute how long a given project will take to pay for itself. When computing cash payback period, annual net cash flow should include all revenues arising from the new project less expected incremental costs. Note that *net* means "to offset," and *net cash flows* means that you're subtracting cash outflows from cash inflows (or vice versa). Therefore, to compute annual net cash flow, you estimate any potential revenues and then add in savings in materials, labor, and overhead associated with the new project. Offset any additional costs associated with the new project against these cash inflows.

The following formula works in a situation where each year's net cash flows from the investment are expected to be equal:

Cash payback period = Cost of investment ÷ Annual net cash flow

Simply divide the cost of the investment — how much you initially paid for the investment — by the estimated net cash flow the investment generates each year. The higher the cash payback period, the longer the time needed to recover your investment.

For example, suppose you need to decide whether to buy a new computer costing $500; you expect the computer to increase your net cash flow by $300 per year. Plug the numbers into the formula:

Cash payback period = Cost of investment ÷ Annual net cash flow
= $500 ÷ $300/year = 1.67 years or 1 year and 8 months

Here you can see that the computer would take one year and eight months to pay for itself.

When making investment decisions, one consideration is to compare the cash payback period of one project with that of another and select projects that offer the quickest cash payback period. Suppose a less-expensive computer has a cash payback period of only nine months; compared to one year and eight months, the nine-month cash payback period suggests that the less-expensive computer is probably a better investment for your company.

Of course you need to consider several factors when choosing which computer to buy. Keep in mind that cash payback period doesn't account for the time value of money and several other factors that may impact your decision.

Applying the cash payback method when annual net cash flows change each year

When computing cash payback period, remember to include all revenues arising from the new project less expected incremental costs in each year's net cash flows. When preparing this computation, the net cash flow will probably vary each year. If so, just project the net cash flows that you expect to realize or incur each year.

For example, suppose that your new $500 computer is expected to yield different net cash flows each year, as shown in Figure 3-1.

Figure 3-1: Computing cash payback period when net cash flows change each year.

Year	Initial Investment	Net Cash Flow	Cumulative Net Cash Flows
2013	($500)		
2014		$200	$200
2015		150	350
2016		400	750
2017		200	950

The computer will be fully paid off in 2016, when cumulative net cash flows of $750 exceed the initial investment of $500. To be more specific, the $500 cost will be fully recovered sometime *during* 2016. You start the year 2016 with $350 in cash inflows. A total of $400 additional dollars are received during 2016. Depending on when the dollars come in, you may receive the last $150 in May or June of the year. That additional $150 means that you have recovered all your costs.

When computing net cash flows, use cash flow rather than accrual income amounts. For example, use projected cash receipts from customers rather than sales.

It's All in the Timing: The Net Present Value (NPV) Method

Over time, the value of money changes. Given the choice between receiving $1,000 today and receiving $1,000 a year from now, most people would take the cash now because the value of money decreases with time. The later the cash flow, the less it's worth. The decline in value is due to *inflation,* which is defined as the overall increase in prices over time.

Understanding and estimating how the value of money changes over time is the premise for evaluating the *time value of money,* an extremely important financial tool for making investment decisions.

Net present value techniques use time value of money tools to estimate the current value of a series of future cash flows. For example, suppose you hit the lottery, winning $1 million a year for the next 20 years. The state lottery board will publicize your winnings as a $20 million prize, but that figure is misleading. After all, time value of money principles say that the $1 million received a year from now is somewhat less valuable than the $1 million received today. The next installment, two years from now, would be worth even less than that, and so on. Therefore, simply multiplying $1 million by 20 years overstates the amount of the prize.

In fact, the net present value of a 20-year series of annual payments of $1 million (assuming a 5-percent interest rate and that the first payment is received immediately) is equal to $13,085,321. (If you're wondering where this number came from, read the later section "Calculating NPV with a series of future cash flows.") In other words, $1 million a year for the next 20 years is really worth $13,085,321 today.

Because net present value (NPV) techniques consider changes in the value of money, they offer an informative tool for managers making capital project decisions. After all, new investments, such as purchasing a machine, should be expected to yield future cash inflows.

You may see several different terms that refer to the rate used to calculate present value or future value. You see the term "interest rate" in the previous example. You may also see the term "inflation rate" or "desired rate of return." To keep it simple, remember that all these terms refer to the rate at which payments are adjusted for present value or future value.

You have several options for computing the time value of money:

- Tables (found online and at the back of many accounting textbooks)
- Formulas (which require familiarity with exponents)
- Microsoft Excel spreadsheets (which entail understanding how to use certain Excel formulas and functions, such as NPV)
- Financial calculators (which have idiosyncratic commands explained in their instruction manuals)

This section uses the formula approach because it doesn't require you to look up tables, run Excel, or buy a new calculator. Don't worry; the formulas aren't difficult to remember.

Because the value of money decreases over time, use the variable *PV* (present value) to measure a cash flow today and the variable *FV* (future value) to estimate the value of a cash flow at some point in the future. Set the interest rate as variable *i,* expressed as a decimal (for example, 12 percent interest equals 0.12). The following sections walk you through time value of money and NPV calculations for various scenarios.

Calculating time value of money with one payment for one year

Consider a company that has $100 right now (a $100 present value), on which it can earn a 12 percent rate of interest:

$PV = \$100$

$i = 0.12$

To determine the future value of this investment after one year, multiply the present value by one plus the interest rate:

$PV\,(1 + i) = FV$

$\$100 \times (1 + 0.12) = \$100 \times 1.12 = \$112$

This formula works in both directions. Suppose you know that you need $500 one year from now, and the expected interest rate is 11 percent. To figure out the present value, plug the $500 future value into the formula:

$PV\,(1 + i) = FV$

$PV \times (1 + 0.11) = \$500$

$PV = \$500 \div 1.11 = \$450.45$

In this case, if you start with $450.45 today and put it away to earn 11-percent interest for one year, you'll have $500 one year from now.

To simplify the math in time value of money problems, and to avoid having to memorize long formulas, focus on the interest factor of "one plus the interest rate," or $(1 + i)$. Use this factor to convert back and forth between present and future values: To get the future value, multiply this factor by the present value. If you need the present value, divide the future value by this factor.

For example, if the interest rate is 12 percent, you focus on the interest rate factor, which equals 1 + 0.12 = 1.12. If present value is equal to $100, the future value equals $100 × 1.12, or $112. Working in the opposite direction, the present value of $112 is $112 ÷ 1.12, or $100.

Finding time value of money with one payment held for two periods or more

Obviously, companies hold most long-term investments for longer than one year. To determine the future value of this investment for longer periods of time, multiply the interest factor by itself for each year the investment is held. In other words, take the interest factor to the power of the number of years held, *n:*

$$PV \times (1 + i)^n = FV$$

Suppose a company invests $400 today for five years, at an interest rate of 12 percent. What's the future value of this investment?

$PV = \$400$

$i = 12\%$

$n = 5$

$PV \times (1 + i)^n = FV$

$\$400 \times (1 + 0.12)^5 = FV = \$400 \times 1.76 = \$704$

Investing $400 today and holding it for five years at 12 percent eventually gives you $704. You can also use this formula to find the present value required to reach a known future value. If you know that you need to have exactly $900 four years from now (that's the future value) and that the expected interest rate is 9 percent, you can plug these values into the formula to figure out the present value:

$i = 9\%$

$n = 4$

$FV = \$900$

$PV \times (1 + i)^n = \$900$

$PV \times (1 + 0.09)^4 = \$900$

$PV \times 1.41 = \$900$

$PV = \$900 \div 1.41 = \$638$

Therefore, if you sock away $638 now at 9-percent annual interest, you'll have $900 in four years.

As with the one-year version of the formula in the preceding section, treat the unit of $(1 + i)^n$ as a single factor to avoid using long formulas to convert between present value and future value.

These examples apply time value of money formulas based on year-long periods, designating the variable *n* to measure the number of years. For more-precise results, apply time value of money formulas based on shorter periods of time, such as months or even days. Then, the variable *n* measures the number of months or days. That said, the interest rate, or *i,* always measures the interest rate per period. Therefore, if *n* equals one year, an annual interest rate of 12 percent is apropos. However, if *n* equals one month, you should also express the interest rate by months — say, as 1 percent per month (12 percent divided by 12 months). Bankers call this *monthly compounding.* To try daily compounding, where *n* equals one day, express the interest rate in days. For example, 12 percent divided by 365 days equals 0.0329 percent per day, so that $i = 0.000329$.

Calculating NPV with a series of future cash flows

Most capital projects are expected to provide a series of cash flows over a period of time. The following sections walk you through the individual steps necessary for calculating NPV when you have a series of future cash flows: estimating future net cash flows, setting the interest rate for your NPV calculations, computing the NPV of these cash flows, and evaluating the NPV of a capital project.

Estimating annual net cash flows

To estimate each year's net cash flow, add cash inflows from potential revenues to expected savings in materials, labor, and overhead from the new project. Here, include cash savings resulting from incremental costs eliminated by the project. From this sum, subtract any additional costs you'll need to pay because of the new project. Cash inflows should be set as positive amounts, while cash outflows should be set as negative.

Net means that you're offsetting each year's expected cash inflows against its expected cash outflows. If a year's expected cash inflows exceed the outflows, congratulations! You're going to have a net cash inflow. On the other hand, if a year's expected cash inflows fall short of expected outflows, you have an expected net cash outflow.

When estimating annual net cash flows, companies usually account for a *depreciation tax shield,* which results from tax savings on the depreciation of project assets. To compute this figure, multiply the tax depreciation expense for the year by the company's expected tax rate that year. Then, because this amount represents tax savings each year, add the result to your expected cash inflows.

Setting the interest rate

Before you can determine the NPV of the cash flows, you need to set an interest rate. For these purposes, companies usually estimate their *cost of capital* — the average interest rate the company must pay to borrow money from creditors and raise equity from stockholders.

Managers use many different terms to describe the interest rate in a net present value calculation, including the following:

- Cost of capital
- Discount rate
- Hurdle rate
- Required rate of return

Technically, theoretical differences among these terms do exist, but for all intents and purposes in this book, treat these terms as being synonymous with the interest rate, or *i.* As mentioned earlier, this rate is simply the rate you use to calculate a present value or future value.

Computing the net present value of a series of annual net cash flows

To determine the present value of these cash flows, use time value of money computations with the established interest rate (see the preceding section) to convert each year's net cash flow from its future value back to its present value. Then add these present values together. Remember to preserve the sign of each year's net cash flow, such that positive net cash inflows get converted into positive net present values and net cash outflows get converted into negative net present values.

Suppose that Sombrero Corporation expects a new project to yield $500 one year from now, $600 in two years, and then $750 in three years. The company's cost of capital is 12 percent. Figure 3-2 illustrates how to convert each

of these future values to present value so you can determine total net present value. According to this figure, the total present value of these future cash flows equals $1,458.59.

Figure 3-2: Computing the present value of a series of cash flows.

Year	Future Value	Factor	Present Value
	A	B	A/B
1	$500	$(1 + 0.12)$	$446.43
2	600	$(1+ 0.12)^2$	478.32
3	750	$(1 + 0.12)^3$	533.84
			$1,458.59

Evaluating the NPV of a capital project

To evaluate the NPV of a capital project, estimate the expected net present value of the future cash flows from the project, including the project's initial investment as a negative amount (representing a payment that needs to be made right now). If a project's NPV is zero or a positive value, you should accept the project. If the NPV is negative, it represents a loss, and you should reject the project.

Suppose Corporation X is evaluating a project costing $3,000. Managers expect the project to yield $700 one year from now, $800 in two years, $900 in three years, and $1,200 in four years. The company's cost of capital is 11 percent. Figure 3-3 illustrates how to estimate the net present value of X's project.

Figure 3-3: Computing the net present value of Corporation X's project.

Year	Future Value	Factor	Present Value
	A	B	A/B
0			($3,000.00)
1	$700	$(1 + 0.11)$	630.63
2	800	$(1 + 0.11)^2$	649.30
3	900	$(1 + 0.11)^3$	658.07
4	1,200	$(1 + 0.11)^4$	790.48
Net Present Value			**(271.52)**

The net present value of X's project comes to –$271.52, indicating that the company would lose $271.52 on this project. Therefore, managers should reject the project.

Measuring Internal Rate of Return (IRR)

When evaluating a capital project, *internal rate of return* (IRR) measures the estimated percentage return from the project. It uses the initial cost of the project and estimates of the future cash flows to figure out the interest rate.

Keep in mind that this process requires you to find a *rate* instead of a value. When the internal rate of return is applied to the cash flows, the net present value of the project is zero. That's a check figure you can use to determine whether the IRR computed is correct.

In general, companies should accept projects with IRR that exceeds the cost of capital and reject projects that don't meet that guideline.

Using the NPV method (outlined in the earlier section "Calculating NPV with a series of future cash flows"), you can figure out internal rate of return through trial and error — plug different interest rates into your formulas until you figure out which interest rate delivers an NPV closest to zero.

Consider Corporation X's proposed project costing $3,000. Managers project positive net cash inflow of $700 one year from now, $800 in two years, $900 in three years, and $1,200 in four years. An interest rate of 11 percent yields an NPV of –$271.52 (as illustrated in Figure 3-3 earlier in the chapter). Re-compute the NPV, using a lower interest rate such as 10 percent, as shown in Figure 3-4.

Figure 3-4: Estimating the IRR of Corporation X's project with a 10-percent interest rate.

Year	Future Value	Factor	Present Value
	A	B	A/B
0			($3,000.00)
1	$700	$(1 + 0.10)$	636.36
2	800	$(1 + 0.10)^2$	661.16
3	900	$(1 + 0.10)^3$	676.18
4	1,200	$(1 + 0.10)^4$	819.62
Net Present Value			**($206.68)**

This rate results in an NPV of –$206.68. No good. Try a much lower interest rate, such as 7 percent, as shown in Figure 3-5.

Figure 3-5: Estimating the IRR of Corporation X's project with a 7-percent interest rate.

Year	Future Value	Factor	Present Value
	A	B	A/B
0			($3,000.00)
1	$700	(1 + 0.07)	654.21
2	800	$(1 + 0.07)^2$	698.75
3	900	$(1 + 0.07)^3$	734.67
4	1,200	$(1 + 0.07)^4$	915.47
Net Present Value			**$3.10**

The extremely low net present value of $3.10 for this experiment indicates that the internal rate of return for this project is about 7 percent.

Computing internal rate of return may require estimating the NPV for several different interest rates and estimating an interest rate to one-tenth of 1 percent, judging which rate results in the lowest NPV. Microsoft Excel offers powerful functions for computing internal rate of return, as do many financial calculators.

Granted, using trial and error to compute IRR may be frustrating. This process can be all the more daunting because IRR usually leads managers to make the same decision as NPV does. Any project with positive NPV will also have IRR that exceeds the cost of capital. However, NPV values are difficult to compare across different projects. Naturally, a large project (with a large investment) should have a higher NPV than a smaller project (with a smaller investment). The larger investment creates more risk for the business. However, IRR takes into account the size of the investment, allowing you to compare different-sized projects alongside each other.

Considering Qualitative Factors

As much as accountants hate to admit it, some things in life just can't be measured. Projections of future cash flows, for example, inherently ignore certain factors that can't be monetized — qualitative factors, such as the following:

- Better customer loyalty
- Enhanced safety
- Stronger employee morale
- Improved quality
- Environmental protection and preservation

Ignore these kinds of factors at your peril.

For example, say you're evaluating a new factory expansion project and arrive at a negative NPV, causing you to reject the project. But the new expansion would have saved the company from outsourcing jobs overseas, helped employee morale, and improved community relations.

Evaluating such qualitative factors when making decisions requires a measure of personal judgment, which is different for every decision-maker. If employee morale is important to you, you may choose to expand the factory in spite of the negative NPV. When looking over the numbers for any capital project, think beyond the immediate profit-and-loss scenarios and consider other factors that are likely to indirectly impact the success of your business.

Chapter 4

Knowing When to Use Debt to Finance Your Business

In This Chapter

- Checking out how debt works
- Recognizing when debt is a good option
- Exploring your lender options
- Wrangling some cash from the government

When discussing the concept of debt in today's economy, a very serious and unfortunate misconception needs to be clarified. That is, contrary to popular belief, the term *debt* isn't a four-letter word. Although the excesses of the housing debt binge have been well documented since the mortgage meltdown that began in 2007, that crash and the rash of foreclosures that followed highlighted how dangerous debt is — when used inappropriately.

If you remember one concept from this chapter, it should be this: Debt is most appropriately used when an asset is available to support the eventual repayment of the debt. Whether the asset is tangible (such as equipment used in a manufacturing process), paper based (such as a trade accounts receivable where a valid claim is present against a third party), or centered on the ability to reliably predict a positive cash-flow stream, the business must have a clearly identifiable asset that can be validated by an independent third party.

This chapter explores the pros and cons of debt, providing an overview of its key attributes and characteristics.

Understanding the Basics of Debt Capital

Debt-based capital is money contributed to the business in the form of a loan. It represents a liability or obligation to a business because it's generally governed by set repayment terms as provided by the party extending credit. The loan document is likely to include a claim against specific assets.

As an example, suppose a bank lends $2 million to a company to purchase additional production equipment. The bank establishes the terms and conditions of the debt agreement, including the interest rate (for instance, 8 percent), repayment term (say, 60 months), the periodic payment schedule, collateral required, and other elements of the agreement. The company must adhere to these terms and conditions or run the risk of default.

But debt isn't limited to just loans, leases, notes payable, and/or other similar agreements. Countless other sources of debt are used by a company to support daily operations. One example is to use payment terms (for example, due in 30 days) provided by vendors when purchasing products or services. This situation creates an account payable. Businesses also ask customers to provide advances or deposits against future purchases. These payments are a liability for a company. The liability is removed when the business provides the product or service (the purchase is complete).

Debt is best evaluated by understanding its two primary and critical characteristics: maturity and security.

Debt maturity

Debt maturity refers to the length of time the debt instrument has until the maturity date, which is the date the debt becomes due and payable. For example, in the case of trade accounts payable, vendors commonly extend credit terms of 30 days to their customers, which means payment is due within 30 days of receipt of the product or service.

Any debt instrument requiring payment within one year or less is classified as *current (short-term)* in the balance sheet. Logic then dictates that *long-term debt* is any obligation with a payment due beyond one year. For example, mortgage loans provided by banks for real estate purchases are often structured over a 30-year period. Hence, the portion of the debt due past the first year is considered long term in nature. A balance sheet displays the current portion and the long-term portion of a debt separately.

Debt security

Debt security refers to the type of asset the debt is supported by or secured with. If a bank lends $2 million to support the expansion of a manufacturing facility, the bank takes a "secured position" in the assets acquired with the $2 million loan. That is, the bank issues a public notice (generally through the issuance of a Uniform Commercial Code [UCC] document) that it has lent money to the manufacturing company and that it has a first right to the equipment financed in the case of a future default. *Default* occurs when a borrower misses an interest payment, a principal payment, or both.

Understanding secured debt

This security provides the bank with additional comfort that if the company can't cover its debt service obligations, a tangible asset can be retrieved and liquidated to cover some or all of the outstanding obligation. Other forms of security also include intangible assets (such as a patent or rights to intellectual property), inventory, trade accounts receivable, real estate, and future cash-flow streams (for example, a future annuity payment stream that guarantees X dollars to be paid each year).

You may assume, logically, that most organizations that provide credit to businesses prefer to be in a secured status to reduce the risks. However, for the majority of a company's transactions related to the periodic purchases of goods and services, this arrangement is logistically almost impossible due to the sheer volume of transactions being executed on a daily basis (for example, filing paperwork with the state on a per-transaction basis to note a secured position is incredibly inefficient and would overwhelm the system).

Secured creditors, often banks, are usually the ones focused on a company's infrequent or nonrecurring transactions. They tend to be associated with formal credit extension agreements (such as a lease or equipment loan), which are both relatively large from a dollars-committed standpoint and cover longer periods of time. Because the dollar amounts committed are large (and thus the risk is higher) and these transactions are less frequent, the secured creditors are more than willing to prepare and file the necessary paperwork to "secure" their position with the asset they've loaned money against.

Considering unsecured debt

In general, the majority of creditors actually turn out to be unsecured. This type of creditor tends to be the mass of vendors that provide basic goods and services to a company for general operating requirements. Examples of these vendors are professional service firms, utility and telecommunication companies, material suppliers, and general office services. Unsecured

creditors obviously take on more risk in that a specific company asset isn't pledged as collateral to support the repayment of the obligation. This risk is mitigated by the fact that unsecured creditors tend to extend credit with shorter repayment terms (for instance, the invoice is due on net 30-day terms) and in lower dollar amounts. In addition, if unsecured creditors are concerned about getting paid, then they may use other strategies including requiring the company to make a deposit or a prepayment.

Other debt attributes

Beyond the maturity and security elements of debt are a number of additional attributes. Debt capital may involve the following distinctions and arrangements:

- **Personal guarantees:** A party outside the company guarantees the repayment of a debt, similar to the way a cosigner on a debt instrument works. In smaller companies, an owner or partner may personally guarantee company debt.
- **Priority creditors:** Certain creditors to a business may maintain a priority status due to the type of obligation present, such as payroll taxes withheld for the IRS, which by law overrides almost all other liabilities.
- **Subordination agreements:** A creditor may specifically take a secondary position to a secured lender. This is similar to what takes place when a homeowner takes out a second mortgage on a home.
- **Default provisions:** In the event of a loan default, set provisions indicate what the remedies of the parties involved are. For example, an acceleration clause may state that in the event of default, the entire balance on the loan immediately becomes due.
- **Lending agreement covenants:** The business must perform at a certain level to avoid triggering a default. A loan document may require the company to meet certain financial ratio numbers, such as a specific debt-to-equity ratio (for more on financial ratios, see Book IV, Chapter 6).

Before you structure and execute any type of loan, lease, note payable, and/or set terms and conditions with a creditor, consult an attorney to make sure that you clearly understand the agreement and the risks present. Consulting with an attorney helps you protect your company's business interests.

Determining When Debt Is Most Appropriate

For almost any debt-based need, some type of lender is usually available in the market. At one end of the spectrum are traditional banks and credit unions, which tend to be the most conservative lenders but also provide some of the best rates. On the other end of the spectrum are investment funds that specialize in providing high-risk loans, but of course loans from these sources tend to carry the highest rates. And in between are a slew of lenders that all have a unique niche in the market, depending on the credit risks, and that carry interest rates appropriately matched to the associated risks.

Businesses often secure capital from more than one source on a periodic basis. For instance, risk-based capital (in the form of equity) may be secured to develop a new product and support the initial launch into the marketplace, whereas debt-based capital may be secured to support an increase in inventory and to carry trade accounts receivable as customers purchase the products.

Not only are both forms of capital appropriate for a company's needs, but also the lenders may be more willing to step forward and provide the necessary capital — knowing that another partner has made a commitment. The "herd" mentality holds true for capital sources because they view the opportunity in a more positive light (by assuming a higher degree of success) if they know that the right amount and types of capital have been secured.

Debt-based lenders, similar to equity sources, tend to look for a common set of characteristics when extending credit. That list of characteristics differs from the factors considered by equity investors. The following sections describe the three primary characteristics.

When you can offer security or collateral

The business seeking a loan must offer primary and secondary sources of security or collateral (for example, a pledged asset or personal guarantee). If the amount of loan required is in excess of the collateral or security being pledged, then securing a loan will be very difficult (unless additional collateral is pledged).

The best scenario for securing a loan is a company that's highly profitable, has sound collateral, and offers a strong secondary repayment source. Of course, you may ask why a company in this situation would need to take on debt. The answer is that a company may want to use debt appropriately to enhance economic returns and results (because when all factors are considered, debt may be cheaper than equity).

When business is stable

Lenders want to get involved in stable business environments. The company must have been in business for an extended period of time, have a proven track record (a history of generating earnings and increasing sales), and have a solid management team at the helm. A proven track record certainly helps expand the number of funding sources available and can help secure lower rates.

If the lending sources in any way, shape, or form become concerned with the credibility of the management team and/or stability of the business operation, then chances are good that the lending source will pass on extending a loan. The last thing any lender wants to do is provide a loan and then, 90 days later, see the loan go into default and require collection actions.

When you have financial strength

Debt-capital sources are generally more conservative in nature than equity sources. Their goal is to ensure that the debt can be repaid, while generating an adequate return. Therefore, the company's ability to maintain solid financial returns and strong ratios is more important than its likelihood of doubling in size. Again, the same concept applies with financial strength as with business stability. The stronger the financial condition, the lower the interest rates. The weaker the financial condition, the higher the interest rates. For more on ratios that measure financial condition, check out Book IV, Chapter 6.

Some businesses, even if adequate collateral is available to secure the loan and no business credibility issues are present, may be just too financially "stressed" to extend a loan. In this situation, a lender may evaluate the company's ability to survive financially through turbulent times (lower sales, loss of key employees). If the lender becomes your last chance at survival, then it generally loses interest unless alternative financial resources can be secured to prop up the business.

Using Loans, Leases, and Other Sources of Debt

After you conclude that your business meets the security, stability, and financial strength requirements for appropriately using debt-based capital (discussed in "Determining When Debt Is Most Appropriate"), you can turn your attention to evaluating the different sources of debt and when each is used in a business.

No matter what source you choose, always qualify the capital source. You don't want to waste your time pursuing a loan that has no chance of being funded.

Borrowing from banks

Looking to secure capital from banks in the form of loans is one of the most tried and proven sources of capital. The old (and possibly outdated) image of a business looking to grow and in need of a loan to expand, hire new employees, and increase sales and profitability has always been a mantra of the banks. Sorry to spoil the party, but due to the criteria they use to underwrite the loan, banks aren't ideally suited to handle a good portion of business loan needs in today's economy.

When a bank or any type of lender refers to *underwriting* a loan, it means performing due diligence. It's the same process used by private capital sources when they consider providing additional debt or equity financing for a business. The lender undertakes a detailed review of the loan applicant's financial and business information to ensure that the borrower is creditworthy.

Mulling over lending criteria

Banks provide an important source of debt-based capital to businesses. Here are five key criteria a business must meet before a bank considers providing a loan:

- **Positive earnings:** In most cases, a company must generate positive cash flow or earnings to secure a loan. Banks are cash-flow lenders, which means that for any type of debt they offer, business cash flows must be adequate to repay the debt. So if a company has historical losses or is forecasting losses in the future, strike one.
- **Sound collateral:** Banks lend against assets to protect their loans. So every business looking to secure a bank loan needs to have sound

collateral available (to repay the loan in case the business can't). Generally, banks like to lend against the most liquid assets, such as trade accounts receivable. They tend to be more cautious when asked to accept collateral such as inventory (which can become obsolete quickly) and equipment (which will depreciate in value and is expensive to liquidate if needed). So a bank's preference is to lend primarily against trade receivables and, if needed, then offer reduced loans or lending facilities against higher risk assets such as inventory. If you don't have quality collateral or the right collateral, strike two.

- **Solid financial performance:** The strength of a company's balance sheet is just as important as positive earnings when requesting a loan. When a business has excessive leverage (too much debt compared to too little equity), its business risks increase and a bank's interest decreases. So if your business is too leveraged, strike three.
- **Secondary repayment:** For most smaller- to medium-sized businesses (the vast majority operating in America), banks generally look for a secondary source of repayment to ensure that the debt gets paid. Or in other words, if cash flow isn't adequate and the collateral (if liquidated) doesn't cover the debt obligation, the bank needs to turn to another source of repayment to cover the debt. This secondary source generally falls back on the personal assets of the company's owners, which may range from real estate to personal savings to retirement accounts to other business interests owned. If no secondary repayment sources are available, strike four.

  A *personal guarantee* (or PG) pretty much means what it implies. That is, if your business can't repay a loan, then the lender will pursue the assets of the individual who signed the PG to ensure that full payment is received. Needless to say, PGs should be executed with the utmost caution and understanding, but at the same time, keep this important concept in mind: If you elect not to execute a PG, then the bank views your reluctance as a sign that you, the owner or founder, don't have faith in the business. So why would a bank lend money if the owners aren't willing to stand behind the company (even if all the other criteria are met)?
- **Business plan:** To get a bank loan, your company needs a solid business plan with a highly experienced and credible management team. These requirements reassure the bank that its cash is being turned over to a third party who knows how to run a business and generate profits. Any plan that a bank reviews that's short on these items will certainly lead to strike five.

Realizing how lending policies have changed

Since 2007, nearly every bank has been maligned, fairly or not. The frustration with the banking industry, at both the personal and business levels, has been well documented and has reshaped the banking industry's role in the capital

markets. For example, prior to 2007, a bank may have been able to bend a little when extending credit to a good business that had some flaws (such as a relatively high debt-to-equity ratio). However, businesses are now being treated to a new normal that makes securing loans much more challenging. Banks still play a vital role in the capital markets, but businesses must clearly understand when a bank can provide debt-based capital and when it can't.

If your business meets the five criteria outlined in the previous section, then approaching a bank is appropriate. Banks are always looking for A/A+ deals, and if your business qualifies, then taking advantage of this source of debt capital is advantageous because it usually carries far lower fees and interest rates than other forms of debt-based capital. However, if you fail to meet just one of the five criteria, then banks may lose interest, so it's imperative that businesses understand the alternative forms of debt-based capital available. And if you fail two or more of the criteria, then bank-financing options will likely be very limited, so the next step in securing financing is to explore the wonderful world of asset-based lending.

Making friends with asset-based lenders

Asset-based lending utilizes the same criteria as banks but with one critical difference. Asset-based lenders (ABLs) focus on the quality of the asset (such as trade accounts receivable or inventory) being offered as collateral first and the company's financial performance and strength second. In fact, ABLs often look past one or two years of poor financial performances and are more comfortable with weak balance sheets because they understand that businesses sometimes experience problems (look no further than the 2009 recession and its impact on businesses). However, similar to banks, the need for sound collateral, solid secondary repayment support, and a well-developed business plan are essential to secure a loan.

But ABLs have a hidden benefit that a business should exploit when appropriate: ABLs may extend higher borrowing levels against certain assets than banks. For example, banks tend to be more conservative and may advance only 75 percent against eligible trade accounts receivable, so if you have $1 million of eligible trade receivables, you can borrow a maximum of $750,000. If the collateral strength of the trade receivables is strong, an ABL may lend 80 or even 85 percent against the eligible trade receivables, which would allow you to borrow $800,000 to $850,000. The additional borrowing availability may not seem like much, but when cash is tight, having extra dollars of liquidity is invaluable.

So, you may ask, why not skip the bank and simply secure financing from an ABL? Well, ABL lending is more expensive. From the interest rates charged on the loans to the fees assessed to manage the relationship, the cost of

ABL-provided financing is much higher than with traditional banks. Keep in mind, however, that an ABL absorbs additional risks with weaker companies and thus requires a higher rate of return.

Another downside of an ABL is that you need to be prepared to implement much tighter management reporting requirements than you would with a bank. Whereas a bank may require monthly reports and information, ABLs often look for weekly or, in some cases, daily reporting procedures to be implemented to properly track and manage the assets they're lending against.

Leasing as a source of capital

Leasing or renting an asset is an effective source of debt-based capital. The most common example is leasing office space. Instead of tying up cash in purchasing a building or investing in leasehold improvements, most companies simply execute a lease with a landlord.

For example, an e-commerce retail company was growing rapidly and needed additional warehouse and distribution space for the company's products. Adjacent space was available but needed a number of improvements to be workable. Instead of making the improvements itself, the retail company negotiated with the landlord to make the improvements and then simply increased the rent proportionately to cover the additional costs. This arrangement allowed the retail company to utilize cash internally and finance the building improvements over the life of the lease (which was at a very reasonable rate).

Leases are most commonly structured with assets that have an extended life, such as buildings and capital equipment (manufacturing equipment, furniture, computers, autos, and so on). Structuring leases for capital equipment are also used extensively in the business community and provided by numerous financing or leasing companies.

Going over leasing concepts

Before diving headfirst into leasing, brush up on the following key concepts and risks:

- **Risk of ownership:** Most equipment leases are structured to transfer the risk of ownership to the lessee, so insurance, property taxes, maintenance, and so on all fall on the shoulders of the party leasing the equipment. But the leasing company has a secured interest in the asset being leased (to protect their interests). In other words, in most cases, the leasing company retains legal title to the assets being leased. If the business (lessee) defaults on terms of the lease, the owner (the lessor) can repossess the asset.

- **Real financing cost:** Understanding the true cost of a lease in terms of the implied interest rate being charged is important. Leasing companies use all types of tricks and tactics to improve their returns, including requiring payments to be made in advance (for example, on the first day of the month rather than the last), having the first and last months' lease payments made in advance, structuring fair-market value buyout options, and so on. Head over to Chapter 3 for a discussion of rates of return.
- **Used versus new equipment:** Leasing is best utilized when the equipment is new rather than used, because the interest rate charged and the amount of lease financing provided will be most favorable to the lessee. That's because the value of used equipment doesn't provide the lessor as much collateral as new equipment. Attempting to secure lease financing on used equipment is difficult and expensive.

The bottom line in equipment leasing is similar to traditional borrowing. The leasing companies generally take on higher levels of risk than a bank and, as such, demand higher returns (so leasing tends to be more expensive than other forms of debt). But leasing companies often extend leases based on 90 to 100 percent of the equipment's new value, so instead of having to place 20 percent down on the asset (with a traditional bank loan), more cash can be conserved inside the business when using leases.

Making a decision about leasing

In every debt-based financing decision, the borrower needs to make a critical decision based on the trade-off between higher financing costs and access to additional capital or cash. In other words, if the excess cash can be invested or used in the business to generate returns greater than the costs of the financing, then using more-expensive and flexible financing programs is appropriate. One mistake commonly made by businesses is that they're so consumed with making sure they get the lowest interest rate available that they don't consider the impact the loan agreement may have on restricting available borrowing levels and access to cash. In a number of cases, paying a little extra for higher loan balances and/or access to cash is well worth the added expense.

Tapping government programs and the SBA

Government lending programs, at both the state and federal levels, are accessible for businesses. The most popular program at the federal level is provided through the Small Business Administration, or SBA, which offers programs geared toward real estate (for owner-occupied buildings) and general business working-capital requirements. Contrary to popular belief, the government isn't handing out free cash (hard to believe, right?) and in fact applies similar underwriting criteria as the banks.

The government relies heavily on the banking industry to market and underwrite SBA loans. As such, the common perception that loans from the SBA are readily available and easy to obtain is a myth. In fact, securing an SBA loan can be more time consuming and challenging than a traditional bank loan.

In addition to the federal government's SBA program, various states also have lending programs to assist small businesses. The availability of these programs has declined over the years as state and local governments struggle with large budget deficits and limited financial resources.

Using other sources of debt-based capital

Numerous other forms of debt-based capital are available, and two common sources are particularly worth highlighting:

- **Factoring receivables:** When trade accounts receivable are *factored,* technically the receivable is sold to a third party who becomes the owner of the receivable (as cash is paid to the seller). Unlike banks and ABLs that lend against an asset (and thus the asset remains the property of the company), in this case, the asset is actually sold to a third party. When the customer pays, the cash goes to the factoring company and the transaction is completed. Factoring financing agreements are used in a wide range of industries, and as with all forms of debt financing, they carry both pros (high advance rates and quick turnarounds) and cons (they're relatively expensive).

  Factoring trade accounts receivable involves selling an asset to a third party who then may notify your customer that the receivable has been sold (and where to properly remit payment). Needless to say, this may send a negative message to your customer in terms of the financial strength of your business (they may wonder, are you that desperate for cash?). When factoring agreements are used, you must properly communicate the transaction with customers to prevent misunderstandings or misinterpretations. The last thing you want to do is surprise your customers by introducing an unknown third party into the business relationship.

- **Subordinated debt:** Quite often, parties with a vested interest in a business may provide loans in the form of *subordinated debt.* The loan often comes from an owner or related third party. Subordinated debt has terms and conditions established just like other types of debt but are offered a lower security position in company assets than senior lenders. That is, if a company liquidates, a holder of subordinated debt stands in line behind more senior lenders when making a claim on assets.

Getting Creative with Capital

Banks, leasing companies, and other lenders are all viable and accessible sources of debt-based capital, with specific characteristics that give each source competitive strengths and weaknesses. However, the discussion of sources of capital wouldn't be complete without looking a little deeper into some creative capital sources that are often overlooked.

The number of creative capital sources is endless, so rather than attempt to cover every trick of the trade, the following sections present diverse examples to provide you with a sense of how businesses manufacture capital.

Generating internal cash flow

The ultimate goal of business owners and managers is to understand, generate, and manage internal cash flow. To be quite honest, the best way to get capital is to look internally and manage business operations more efficiently to produce additional capital. Positive internal cash flow is both readily available and logistically much easier to secure. However, you need to keep in mind that positive internal cash flow must be managed and invested appropriately in the best interests of the company and its shareholders.

Leveraging unsecured creditors

Beyond generating additional cash from internal management efforts, a business is often afforded the opportunity to utilize creative forms of unsecured financing from vendors, partners, and customers. Following are three such examples:

- **Require customers to prepay 20 percent of their order as a requirement to start the production and future delivery process.** In addition, terms such as 20 percent down, 30 percent upon half completion, and the remainder due upon delivery can also be utilized. Companies that produce and sell customized products often use this strategy because active alternative markets generally aren't present for "one of a kind" items.
- **Ask key product suppliers to grant extended terms from 30 days to 90 days during certain seasonal periods (for example, to support higher sales during the holiday season).** After the determined period, terms are brought back to 30 days when the cash flow from the increased sales catches up. Retailers often use this strategy during the holiday season

as inventory levels are built up from October through November (with cash receipts realized in December and then used to repay the extended credit granted from its suppliers).

- **Work with a downstream customer to obtain funding to develop a new product or technology that can greatly improve the customer's future performance.** For example, a hardware technology company may need to ensure that software is available for use with its new products. Hence, a capital infusion into the software supplier to develop the technology for which it receives a royalty from future sales may be warranted.

Going after government aid, gifts, and grants

Governments, universities, and nonprofit organizations have resources available in the form of grants, low-interest-rate loans, incentive credits, gifts, and so on intended to be used for special interests or purposes. The general idea is to provide this capital to organizations that will use it in the best interest of the general public. For instance, biotechnology companies often secure research grants for work being completed on disease detection, prevention, and possible cures. Educational organizations may receive grants that help retrain a displaced group of workers or untrained work force.

Partnering up

One way to secure capital is to partner with an individual or business that's in a stronger financial position. For example, a software company was in the process of developing a new fraud-protection system for use in the banking system. Not only did the development of the system need to be capitalized, but the initial marketplace launch also required capital to ensure that the end customers, mainly banks, could review, test, evaluate, and implement the systems. Internally, the software company didn't have enough capital to finance this project, so it acquired a sister company (related through partial common ownership) that was producing strong internal cash flows. The software company issued its equity in exchange for all the assets of the target company (which in effect was the future cash-flow stream). This trade provided the software company with sufficient cash flow to fund system development and market it to the banks.

Chapter 5

Interpreting Your Financial Results as a Manager

In This Chapter

- Determining which information is most relevant
- Judging profit and earnings performance
- Sizing up your business's cash position
- Recognizing signs of trouble in a company's finances

As an owner or manager of a business, you have a bigger stake in its financial success than anyone else does. After all, if the business fails, you're out of a job. Part of your responsibility in overseeing the daily operations of your business is to keep your finger on the pulse of its financial health. The numbers reflect how successful your business is. The financial results may also raise red flags to let you know that you need to attend to a certain aspect of your business more carefully.

This chapter offers practical guidance and tips specifically for managers on how to glean important information and insights from your business's financial reports.

Non-accountants often say they don't read financial reports because they're not "numbers" people. You don't have to be a math wizard or rocket scientist to extract the essential points from a financial report. You're certainly capable of finding the bottom line in the income statement and comparing that profit number with other relevant numbers in the financial statements. You can also note the amount of cash in the balance sheet, and if you see the business has a zero or near-zero cash balance, you know you're looking at a serious and perhaps fatal problem.

Therefore, the first bit of advice is to get in the right frame of mind. Don't let a financial report bamboozle you. Locate the income statement, find bottom-line profit (or loss!), and get going. You can do it.

Gauging the Relative Importance of Information

The annual financial reports of public companies contain lots of information: a letter from the chief executive, a highlights section, trend charts, financial statements, extensive footnotes to the financial statements, historical summaries, and a lot of propaganda. And you get photos of the top brass and directors. In contrast, the financial reports of most private companies are significantly smaller; they contain financial statements with footnotes and not much more.

So, how much of the report should you actually read?

Financial statements — the income statement, balance sheet, and statement of cash flows — are the core of a financial report. To make sense of financial statements, you need at least a rudimentary understanding of financial statement accounting. You don't have to be a CPA, but the accountants who prepare financial statements presume that you're familiar with some accounting terminology and financial reporting practices. After all, accounting is the language of business.

The solution? Read this book, especially the chapters in Books IV and V. And when you're done, consider reading another book or two about reading financial reports and analyzing financial statements. Check out *Reading Financial Reports For Dummies* by Lita Epstein (Wiley).

Reviewing Profit and Earnings

Earning a profit is the main goal for most businesses. However, in order for a company to thrive over the long term, a manager should perform some analysis on profit. This section discusses that type of analysis. You consider profit trends, mull over some ratios, and examine earnings per share.

Judging profit performance

A business earns profit by making sales and by keeping expenses less than sales revenue, so the best place to start in analyzing profit performance is

not the bottom line but the top line: *sales revenue* or *earnings.* Here are some questions to focus on:

- **Trends:** How does sales revenue in the most recent year compare with the previous year? Higher sales should lead to higher profit, unless a company's expenses increase at a higher rate than its sales revenue. If sales revenue is relatively flat from year to year, the business must focus on expense control to help profit, but a business can cut expenses only so far. The real key for improving profit is improving sales. Therefore, stock analysts put first importance on tracking sales revenue year to year.
- **Gross margin ratio and contribution margin:** What is the business's *gross margin ratio* (which equals gross profit divided by sales revenue)? Even a small slip in its gross margin ratio can have disastrous consequences on the company's bottom line. Stock analysts want to know the business's *contribution margin,* which equals sales revenue minus all variable costs of sales (product cost and other variable costs of making sales). See Book VII, Chapter 3 for contribution margin details. But external income statements don't always reveal contribution margin; financial statement readers may need to perform the calculation for themselves.

- **Other ratios:** Based on information from a company's most recent income statement, how do gross margin and the company's bottom line (net income, or net earnings) compare with its top line (sales revenue)? It's a good idea to calculate the gross margin ratio and the profit ratio (net income divided by sales revenue) for the most recent period and compare these two ratios with last period's ratios. If you take the time to compare these two ratios for a variety of businesses, you may be surprised at the variation from industry to industry.

One last point: Put a company's profit performance in the context of general economic conditions. A down economy is likely to put downward pressure on a company's profit performance, and you should allow for this in your analysis. In a growing economy, most companies should do better, of course, because "a rising tide lifts all boats."

Testing earnings per share (EPS) against change in bottom line

Managers should keep in mind that company shareholders expect to profit from stock ownership. The more earnings per share (EPS) your company can generate, the more likely investors are to receive dividends. Also, a growing EPS number may lead new investors to buy your company's stock. The increase in the stock's price allows existing shareholders to sell their stock for a gain. Earnings per share is a key number to attract and keep investors.

Going over EPS

Companies report net income along with their income statements. Below this total profit number for the period, public companies also report *earnings per share* (EPS), which is defined as net income divided by shares of common stock outstanding. Private companies don't always report EPS; however, the EPS for a private business is fairly easy to calculate — divide its net income by the number of shares held by the equity investors in the company.

The market value of stock shares of a public company depends mainly on its EPS. Individual investors obviously focus on EPS, which they know is the primary driver of the market value of their investment in the business. The book value per share of a private company is the closest proxy you have for the market value of its ownership shares (see Book V, Chapter 1 for more on book value).

Mulling over changes in EPS

Generally, the higher the EPS, the higher the market value for a public company. And, the higher the EPS, the higher the book value per share for a private company. Now, you'd naturally think that if net income increases, say, 10 percent over last year, then EPS would increase 10 percent. Not so fast. EPS — one driver of market value and book value per share — may change less than 10 percent, or perhaps more than 10 percent. (See Book VI, Chapter 1 for more about EPS.)

When considering changes in earnings per share, keep the EPS formula in mind:

Earnings per share = Net income ÷ Stock shares outstanding

Note that the numerator is net income and that shares of stock are in the denominator.

Suppose, for example, that net income increases 10 percent over last year. EPS may not increase the full 10 percent. The business may have issued additional stock shares during the year, or it may have issued additional management stock options that get counted in the number of shares used to calculate diluted EPS. Both situations increase the denominator of EPS. If net income stays the same, EPS declines.

In doing this analysis, you may find just the reverse. EPS may increase more than the 10 percent increase in net income. The business may have bought back some of its own shares, which decreases the number of shares used in calculating EPS. If net income is unchanged, EPS rises. This could be a deliberate strategy for increasing EPS by a higher percentage than the percent increase in net income.

EPS doesn't necessarily move in sync with the net income of a business. A change in earnings per share can change the market price of the firm's stock.

Judging the Company's Cash Position

The objective of a business is not simply to earn a profit, but to generate cash inflows as quickly as possible. (Book V, Chapter 2 covers cash flow.) The faster a company collects cash, the less cash it needs to raise from investors or creditors for business operations.

Cash flow from operations is the most important source of cash inflow to a business. By operations, accountants mean day-to-day business activities — making and selling product, paying workers, and so on. A business can sell off some assets to generate cash, and it can borrow money or get shareholders to invest more funds, but cash flow from operations is essential in keeping the business afloat. A business needs this cash flow to pay dividends to shareholders, purchase inventory, and make payroll.

Comparing net income to cash flow

Net income and cash flow are reported in two different financial statements. The income statement's bottom line is net income. The net change in cash is reported in the statement of cash flows. The net change in cash may be higher or lower than the net income number in the income statement.

Growth may penalize cash flow — or, more accurately, growth may suck up cash from sales because the business has to expand its assets to support the higher level of sales. The key is to increase cash collections at a faster rate than the growth in spending.

Considering solvency

A company's primary source of cash should be generated from operating activities. Operating activities represent the day-to-day business events (making a product, collecting on sales, paying workers) that occur continually. If the majority of cash is generated from investing or financing activities, managers should question the company's *solvency.* Solvency means the ability of a firm to generate positive cash flow and profits over the long term. A business thrives over the long term by making and selling a product or service. As a result, those activities should generate most of the cash flow. Generating cash through other means — by selling assets or issuing more stock — isn't sustainable over the long term.

Here are some other considerations for solvency:

- **Paying vendors:** A company must pay vendors on time to maintain good relationships. This is particularly true of suppliers of raw materials or inventory. Pay too slowly, and a vendor is likely to consider ending the business relationship. Then you have to find another supplier, which may increase costs. Word gets around — a company that doesn't pay its bills may have trouble finding *any* vendors willing to do business with it.
- **Short-term versus long-term:** *Solvency* differs from *liquidity.* Solvency refers to the ability to generate sufficient cash flows over the long term (generally more than a year). Liquidity, on the other hand, addresses the ability to meet cash needs over the short term (usually less than a year). A company may have liquidity problems that are resolved over the long term. In that instance, the firm is still solvent.
- **Debt load and cash flow:** A company that generates reliable earnings and cash flow may be able to carry a large debt load. By debt load, accountants mean the ability to raise a large portion of capital by issuing debt rather than stock. A good example is a utility company. Because everyone uses electricity, the company has fairly stable earnings and cash flow. As a result, a utility is in a better position to make principal and interest payments on debt.

Tackling Extraordinary Gains and Losses

Beneath continuing operations, discussed in the previous section, companies report other activity, including extraordinary gains and losses. *Extraordinary gains and losses* are non-recurring gains and losses that aren't part of normal business operations. Book IV, Chapter 2 covers this topic in detail. Here are some examples of extraordinary gains and losses:

- A business may shut down and abandon one of its manufacturing plants and record a loss. The loss may be due to asset write-downs and severance compensation for laid-off employees.
- A company may suffer a large loss from a flood. The loss is over and above the compensation from a flood insurance policy. Many events considered "acts of God" (an insurance term) are labeled as extraordinary losses from an accounting perspective.
- A business may lose a major lawsuit and have to pay millions in damages.

As a manager, you need to consider both your income from operations — and any extraordinary financial events. By definition, extraordinary financial events are infrequent. In many cases, the manager couldn't possibly foresee

or control the extraordinary event. Here are some important points for a manager to consider:

- The first priority is to make changes to the business to generate income from operations each year. Many of those decisions are within the manager's control, such as marketing (to increase sales) and working with vendors (to manage costs).
- Take whatever steps you can to limit extraordinary losses. For example, work with your insurance company to get reasonable levels of insurance on company assets. Insurance coverage helps offset losses due to unforeseeable events, such as tornados, hurricanes, floods, and fires.
- Realize that extraordinary gains won't reoccur. Don't expect this type of unusual gain to offset lower earnings from operations in future years. In other words, extraordinary gains aren't a source of reliable income. Investors and creditors expect a manager to generate earnings from operations. If unable to reliably generate earnings from its operations, the company may not be viable (solvent) over the long term. Investors and creditors may raise this issue as a concern.

Recognizing the Risks of Restatement

Investors and creditors provide the capital for a manager to run a business. It's critical that these stakeholders (as well as all other financial statement readers) are provided timely and accurate financial information. This section discusses several events that can damage a company's relationship with users of financial statements. If the relationship is damaged, investors and creditors may pull capital out of the business or stop providing new capital.

Restatement is the process of revising and distributing one or more of a company's previously issued financial statements. Financial statements should be restated if the statement contains an amount that's materially incorrect. By *material,* accountants mean an amount large enough to possibly change the reader's assessment of the company's financial condition. Here are some situations that may lead to restatement:

- **An error:** An amount in the financials was posted in error.
- **Noncompliance with GAAP:** Book IV, Chapter 1 explains generally accepted accounting principles (GAAP). If something in the financials doesn't conform to GAAP, the amount may need to be restated.
- **Fraud or misrepresentation:** If you took a business law class, you may have seen the term *fraud.* Generally, this term refers to willful intent to deceive. The same is true of misrepresentation. If fraud or misrepresentation is uncovered, it's almost certain that the financials will be restated. (For more about fraud, see Book IX.)

The bottom line with restatement is that it can impact the confidence that stakeholders have in your firm. An investor or lender may question whether the company is being properly managed. Those statement readers may have doubts about financial controls over the firm's accounting records. The risk is that stakeholders take capital out of your company.

Remembering the Limits of Financial Reports

Making savvy business and investment decisions is much more involved than merely reading financial reports. Financial reports are an important source of information, but business managers and investors also should stay informed about general economic trends and developments, political events, business takeovers, executive changes, technological changes, and much more.

When you read financial statements, keep in mind that these accounting reports are somewhat conditional. Accountants make many estimates and judgments in recording sales revenue and income, and expenses and losses. In short, financial statements are "iffy" to some extent. There's no getting around this limitation of accounting.