

## A FRAMEWORK FOR EVALUATING FINANCIAL IRREGULARITIES

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*This chapter presents the basics of the accounting system, which creates the checks and balances essential to creating financial statements and detecting irregularities within them. The chapter demonstrates how the primary financial statements fit together and how this information can be used to detect problems and highlight where more questions are warranted. With this framework, you will have the basic tools to spot the warning signs in a company's financials if something is amiss.*

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This chapter examines the framework of relationships between the main financial statements—known to accountants as the articulation of financial statements—and shows the reader how to evaluate the possibility that a company is engaged in accounting games. Due to these interrelationships, a company that overstates its profits on its income statement cannot do so without also overstating its assets or understating its liabilities on the balance sheet. If a company artificially reduces its liabilities to strengthen its perceived financial condition, it will likely need to reduce its assets as well. Should a company artificially inflate its operating cash flow with no corresponding increase in the actual cash balance, it will need to reduce its investing or financing cash flows.

The most common case of fraudulent activity is an overstatement of profits—the first example above. In these cases, an overstatement of assets usually occurs

through accounts receivable from customers, inventory, or some sort of intangible or other unique asset. As a result, a common method of detecting fraudulent activity is to look for unusual increases in asset accounts that have not been adequately explained in the footnotes or by management. This chapter discusses how the inter-relatedness of the financial statements may assist in picking up warning signs of accounting manipulation.

## ARTICULATION OF FINANCIAL STATEMENTS

The three major financial statements of interest to the analyst<sup>1</sup> are the income statement, the statement of cash flows, and the balance sheet.

The income statement shows the revenues from operating the business, the associated expenses, gains and losses, and the net profit over a period of time. It is a primary source for measuring the profitability of the business.

While profits are nice to have, you cannot pay employees, suppliers, creditors, and others with profits—payment requires cash. Another important statement is therefore the statement of cash flows, which presents the cash receipts, cash payments, and net cash flow of the business (typically separated into three activities—operating, investing, and financing). This statement helps assess how well the company is doing at converting profits into cash flow, investing for the future, and the sources of financing or repayment of capital.

The balance sheet, also known as the statement of financial position or statement of financial condition, shows a snapshot of the assets or resources of the business at a point in time and the claims against those resources by creditors (liabilities) and investors (owners' equity). The balance sheet is also the core financial statement, which connects the other financial statements over time. The balance sheet reflects the so-called accounting equation, which has been with us for many hundreds of years and forces the articulation of financial statements. In the simplest terms, the accounting equation is as portrayed in Exhibit 1.1.

The accounting equation is a given and must always balance—hence the term *balance sheet*. The balance sheet depicts the accounting equation at a given point in time and must balance. If you ever come across a company whose balance sheet does not balance (one of the authors has seen this only twice in his 25-year career), your analysis becomes infinitely easier—discard this company's financial statements and find another company to invest in (or sell this one short!).

EXHIBIT 1.1 The Accounting Equation for Financial Statements

$$\text{Assets} = \text{Liabilities} + \text{Owners' Equity}$$

Now let's look at an extended version of the balance sheet in accounting equation format and how the income statement and cash flow statement fit into the balance sheet.

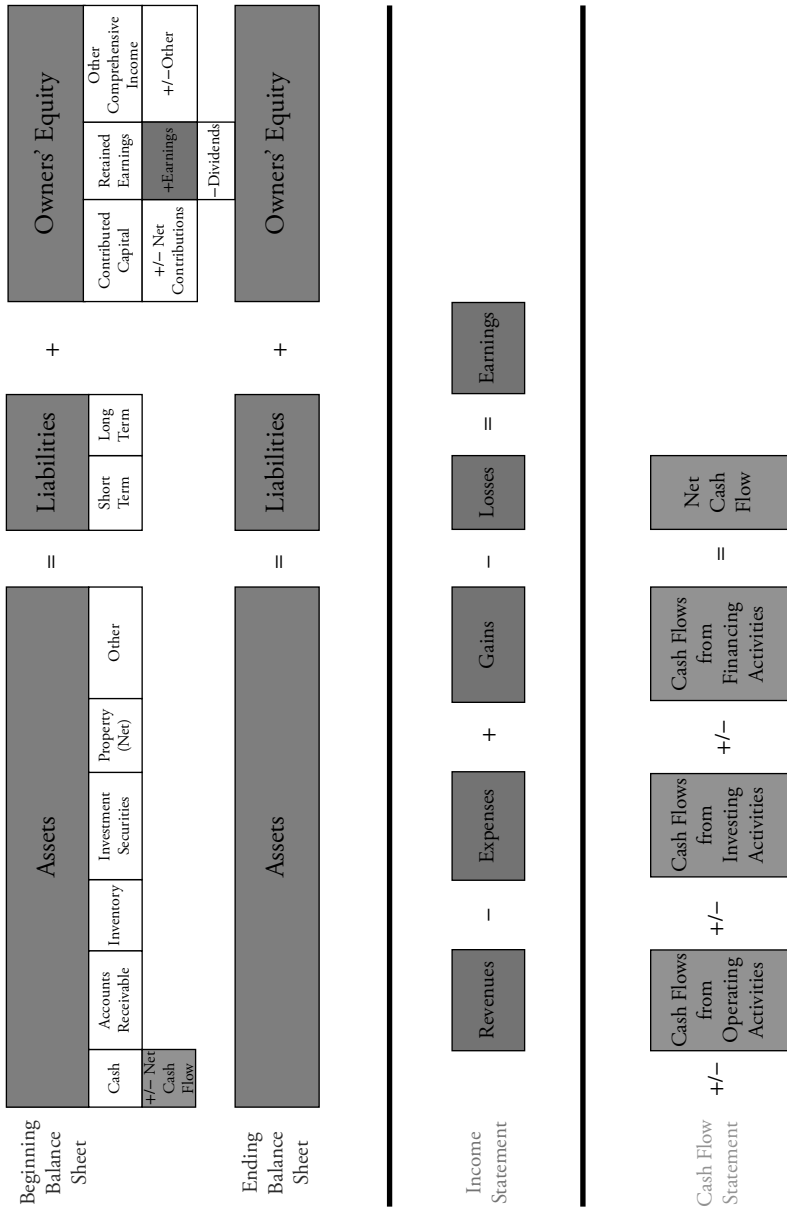
The top panel of Exhibit 1.2 shows the balance sheet at the beginning of the period and the end of the period (usually a year but sometimes quarterly or semi-annually) and some of the common types of assets, liabilities, and owners' equity. For example, common assets include cash, accounts receivables (amounts due from customers), inventory (goods held for sale), investments, property (such as land, buildings, and equipment), and other assets such as intangible assets, prepaid items, and deposits. Liabilities can be due in the short term or long term and can be monies owed to suppliers, banks, employees, and other creditors. Owners' equity includes capital contributed by the owners, profits retained in the business not yet distributed to the owners (retained earnings), and some special items such as other comprehensive income (typically, gains and losses not yet reported on the income statement).

The middle panel presents an abbreviated form of the income statement. Note the distinction between revenues and expenses versus gains and losses. Revenues and expenses are reported on a gross basis and related to the main operating activities of the business. For example, if the business is a restaurant, then meals sold to customers are reported as revenues for the full amount received from customers with a separate expense reported on the income statement for the cost of the meal sold (both the revenue and expense are reported gross). However, if that same restaurant has an extra piece of equipment it is no longer using and sells that equipment to a used equipment dealer, then the sales price and remaining undepreciated cost of the equipment are netted to determine whether there is a gain or loss, and this net gain or loss is reported separately in the non-operating portion of the income statement. We will later see how some companies try to inflate revenues (but not profits) by reporting such sales in the operating section of the income statement.

The bottom panel presents an abbreviated cash flow statement. The net cash flows (cash received less cash paid) for operating, investing, and financing activities are each summarized and then totaled to arrive at the overall net cash flow of the company for the period.

The income and cash flow statements are directly tied to the change in the balance sheet over the period as shown in the upper panel. Any increase or decrease in net income from the income statement results in an increase or decrease in retained earnings and hence owners' equity on the balance sheet. Similarly, any increase or decrease in cash from the cash flow statement is directly reflected in the change in the cash level on the balance sheet. In this manner the financial statements are all tied together, and those companies that want to artificially make themselves look better cannot manipulate one financial statement without impacting either another financial statement or an offsetting item on the same financial statement.

EXHIBIT 1.2 Balance Sheet (top), Income Statement (middle), and Cash Flow Statement (bottom)



Let's say that a company increases its revenue by making a legitimate cash for services sale to a customer. Revenues and net income increase as depicted in Exhibit 1.3 (to keep it simple we will ignore income tax effects for this example). On the balance sheet shown in Exhibit 1.4, owners' equity increases as a result of net income's increasing, and cash increases as a result of cash collection (this would also be reflected as an operating cash flow on the cash flow statement). A similar result would occur if the sale were made on credit terms. Initially, accounts receivable would increase rather than cash, as the customer has not yet paid. However, when the customer pays, the accounts receivable balance will decline and the cash balance will increase. This should occur in a fairly short window of time depending on the credit terms granted.

However, if a company increases its revenue by making a fictitious sale, no cash is received. They cannot simply increase revenue without recording some adjustment on the balance sheet; otherwise, the balance sheet would not balance. Owners' equity would increase from the increase in net income, while assets and liabilities would remain the same, and the accounting system will not allow this. In order to get the accounting equation and balance sheet to balance, a company recording fictitious revenue must also either overstate assets or understate liabilities. For this type of transaction the most common offset is to overstate assets through an increase in accounts receivable. Because cash is never received, the accounts receivable balance will not go down in the future and in fact will increase rapidly over time—it keeps getting bigger and bigger and bigger. In such frauds there is a limit, and eventually the bubble must burst. Elevated accounts receivable growth relative to revenues can be a sign of inflated revenues.

EXHIBIT 1.3 Increase in Revenue

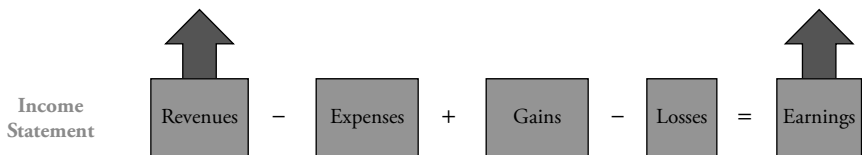
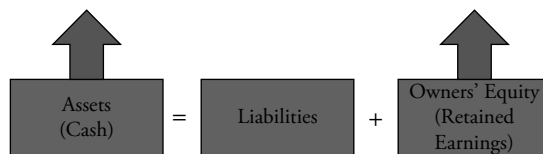


EXHIBIT 1.4 Balance Sheet Impact



### **Application: Sino-Forest Corporation**

Sino-Forest Corporation came up with a creative way to deal with the increase in accounts receivable resulting from fraudulent timber sales (among other fraudulent activities). Sino-Forest created other companies that it effectively controlled and engaged in fraudulent purchase and sales of timber. In this manner, both accounts receivable and accounts payable (a liability for amounts due to alleged suppliers for timber purchases) would have been overstated. Sino-Forest engaged in an additional scheme to offset the receivables and payables between the controlled “customers” and “suppliers.” Of course, the offset was not perfect since the sales prices exceeded the purchase prices. More on Sino-Forest in later chapters!

## ACCRUALS AND DEFERRALS

To further our understanding of the interrelationship among the income statement, the cash flow statement, and the balance sheet, let’s take a look at the accrual basis of accounting that is used to generate the income statement. The accrual basis (sometimes referred to by students as the “cruel basis”) of accounting requires that revenue be recognized on the income statement when earned (rather than when cash is received) and that expenses be recognized when incurred or matched with their associated revenue (rather than when the cash is paid). These differences between the accrual-based income statement and the cash flow statement result in accruals and deferrals that are reflected on the balance sheet. Common accruals and deferrals are summarized in Exhibit 1.5. For example, one that we addressed earlier relates to revenue. If revenue is reported on the income statement before cash is received (the normal situation), then the cash flow occurs after the corresponding revenue is reflected on the income statement. As a result, an asset (accounts receivable) is created. Conversely, let’s say that a company is in a business where cash is collected before services are rendered, the classic example being the airline business. You buy your ticket online and pay with your credit card. The airline receives cash from the credit card company right away but has not delivered services to you yet and cannot report the revenue until you fly to your destination. In this case, the cash flow occurs before the revenue is reported on the income statement, and a liability is reported on the balance sheet until services are delivered. This liability is called *unearned revenue* or *deferred revenue*.

Let’s take a look at expenses. If a company pays its employees weekly and the year-end occurs between payroll dates, the company must accrue the wages owed

## EXHIBIT 1.5 Common Accruals and Deferrals

	Revenue	Expense
<b>Cash Flows Occur Later Than Reflected in Earnings</b>	Asset	Liability
	Accounts Receivable	Accrued Expenses
		Deferred Tax Liability
		Contingencies
		Contra Asset
		Allowance for Doubtful Accounts
<b>Cash Flows Occur Before Reflected in Earnings</b>	Liability	Asset
	Unearned Revenue	Property and Equipment
	Deferred Revenue	Prepaid Expense
		Deferred Tax Asset
		Deferred Expenses

to employees for the partial week and report this as an expense on the income statement even though it has not yet been paid. In this case, the cash flow occurs later than reflected in the income statement for an expense and a liability is created (called *accrued wages* or more simply *accrued expenses*). However, if a company purchases equipment for cash in the current year and that equipment will be used to generate revenue for five years, then the total cost of the equipment is not recorded immediately as an expense. Instead, the cost of that equipment is recognized as an expense over time (termed depreciation), and “matched” to the revenues that it helped to generate. In this case, the cash flow for an expense occurs before it is reflected in the income statement and an asset is created—Plant, Property, and Equipment.

Once again, we see how the income statement, cash flow statement, and balance sheet are intertwined. If an analyst focuses his efforts solely on evaluating the income statement, he or she will overlook telltale signs that appear on the balance sheet and/or cash flow statement. We will use this framework in the remainder of this chapter and subsequent chapters, so you will want to come back to this section until the material is second nature.

## TYPICAL ACCOUNTING GAMES

Given the number of transactions a typical company engages in and the complexity of financial statements, there are numerous opportunities for

companies to manipulate their financial statements. There are, however, some common themes that are seen when accounting scandals over time are examined. The most common issues can be classified into five categories, as depicted in Exhibit 1.6.

In this chapter, we will briefly introduce each of these themes, which will be explored in depth with real company examples in subsequent chapters.

### Overstating Earnings

Both investors and creditors are interested in the level of profits of a company. The higher the earnings or profit, the more can be returned to investors and creditors or invested for the future. Consequently, the most common motivation for accounting games comes from a desire to make earnings look better than they actually are. This can be accomplished by overstating revenues or gains (Exhibit 1.7) or understating expenses or losses (Exhibit 1.8). Some companies go to extremes by doing both.

In any of these cases, the company's earnings and hence retained earnings on the balance sheet will be overstated. In order for the balance sheet to balance, the

EXHIBIT 1.6 Categories for Accounting Scandals

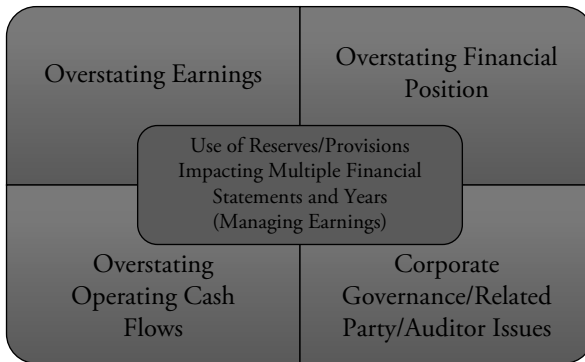


EXHIBIT 1.7 Overstating Revenues or Gains

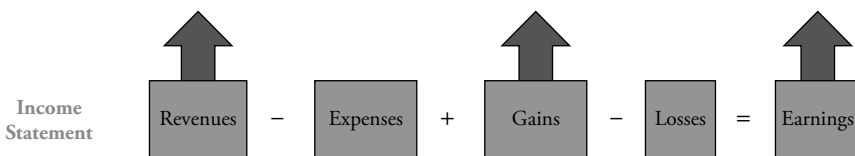




EXHIBIT 1.8 Understating Expenses or Losses

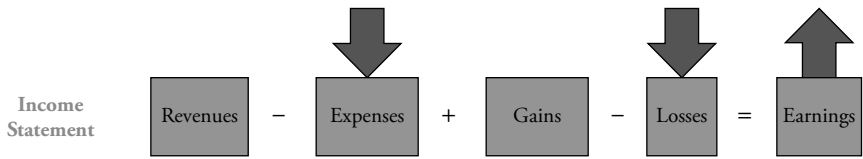
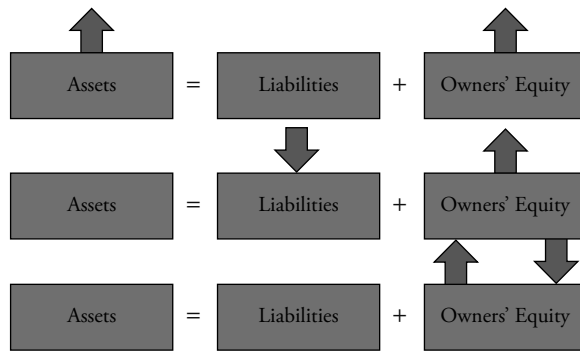


EXHIBIT 1.9 Potential Balance Sheet Impacts



company must do one of the following: overstate assets, understate liabilities, or understate some other equity account (most likely other comprehensive earnings). These possibilities are shown by the arrows in Exhibit 1.9.

The most common result is an overstatement of assets. In the case where revenue is overstated, the most likely asset to be overstated is accounts receivable. In the most extreme case, the company is reporting fictitious revenue for which no cash is ever collected, and the accounts receivable balance grows continuously over time. In other cases, the company may be very aggressive about how it reports revenue and report it before a transaction has taken place or before the revenue is truly earned (e.g., reporting revenue when a contract is signed even though delivery is to occur in the future or the contract relates to the use of the asset over time rather than an immediate sale). In such cases, accounts receivable will increase in the current period at a faster rate than it should but would (hopefully) be collected in a subsequent period. Since fraudulent behavior is repetitive, even in these latter cases, the accounts receivable balance will continue to grow at a faster pace relative to what it should.

## Application: Satyam Computer Services Limited

Satyam was a large technology services company in India that was found to have falsified its revenue, income, and level of interest-bearing deposits (an asset) from 2003 to 2008. Let us take a look at some relevant data from its annual financial statements before the scandal was uncovered:

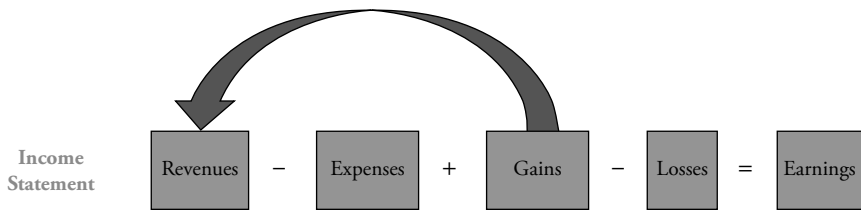
In Millions of US\$	FYE March 2008	FYE March 2007	Change
Revenue	2,138.1	1,461.4	+46%
Trade Receivables—Short Term (Asset)	598.8	396.1	+51%
Trade Receivables—Long Term (Asset)	38.2	21.2	+80%
Unbilled Revenue (Asset)*	81.5	38.6	+111%
Investments in Bank Deposits (Asset)**	894.8	782.7	+14%
Total of these asset accounts (in US\$mn)	1,613.3	1,238.6	+374.70

\*Revenue that has been reported on the income statement as earned—usually from long-term contracts based on the percentage complete.

\*\*Reported as long term in FYE 2007 and short term in FYE 2008.

First, note that revenue was growing at a very rapid pace, which would be a good thing if it was real. The problem is that the three receivables items on the balance sheet were all growing at a pace much greater than revenue. If the company is doing an adequate job of collecting from customers, then receivables growth should not be materially higher than revenue growth. The rapid growth here indicates a problem (perhaps not fraud, but it is a warning sign that more due diligence is necessary). The most unusual item on the balance sheet is an amount that was reported separate from cash—Investments in Bank Deposits. This is quite unusual and is an indicator that perhaps the auditors were provided with different substantiation for these accounts than what they normally see for cash; there certainly must have been a reason why this amount was treated separately. The increase in the receivables accounts plus the investments in bank deposits was US\$374.7 million. According to the United States Securities and Exchange Commission lawsuit on this matter, Satyam overstated revenue by US\$430.4 million just in FYE March 2008. It turned out that cumulatively over 90 percent of the cash and bank balances reported on the balance sheet (most notably this Investments in Bank Deposits line item) did not exist. You can clearly see how the overstatement of revenue resulted in an overstatement of assets and the warning signs that something was amiss.

EXHIBIT 1.10 Moving Gains “Up” the Income Statement



In the case where expenses are understated, there is typically a corresponding overstatement of assets. One example is where a company sells goods (inventory) and reports the revenue on the income statement but fails to transfer the cost of that inventory (which is an asset on the balance sheet) to cost of goods sold (an expense) on the income statement. Earnings are therefore overstated, as are assets (inventory). Over time, this results in a large increase in the inventory balance on the balance sheet.

Another method of understating expenses is to defer their recognition on the income statement. This could be done by misclassifying an expense as a purchase of plant, property, and equipment resulting in an asset on the balance sheet or by creating another type of deferred asset. Some companies have created special categories on their balance sheet for these deferred expenses such as “deferred customer acquisition costs.” Sometimes this may be legitimate such as in the insurance industry, but other times it is simply a way to avoid reporting marketing expenses on the income statement.

Many analysts focus on subcomponents of earnings rather than the bottom line—net earnings or net profit. For example, it is common to focus on operating earnings to see how the company is doing from its core business. While it is certainly good to understand how much of a company’s profits come from normal recurring operations, we must also understand that companies are aware of this and may try to mislead us. One common ploy of unscrupulous managers is to inappropriately report non-operating gains as part of operating revenues (and to do so on a gross rather than net basis). (See Exhibit 1.10.) This overstates both revenues and operating earnings but has no effect on the bottom-line net earnings.

Another option is to move expenses down the income statement and classify them as a “special” or “extraordinary” loss to make normal operating earnings look larger. (See Exhibit 1.11.)

We will explore examples of overstating earnings in more detail in Chapter 2.

## Overstating Financial Position

Overstating financial position is an accounting ploy used to make a company’s balance sheet look stronger—usually by understating the liabilities of the company. As

EXHIBIT 1.11 Moving Expenses “Down” the Income Statement

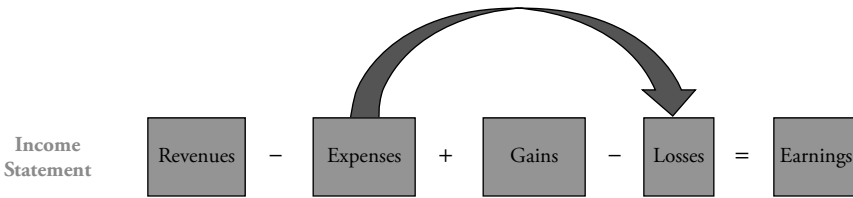
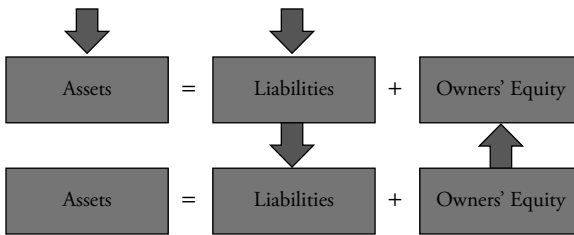


EXHIBIT 1.12 Overstating Financial Position on the Balance Sheet



we saw earlier, the company cannot simply remove liabilities from the balance sheet or fail to record them without impacting some other aspect of the balance sheet (and perhaps the income statement and cash flow statement). If liabilities are understated, then either assets must be understated or owners’ equity must be overstated, as shown in Exhibit 1.12.

In the first case, where assets or liabilities are understated, the company can take an equal amount of assets and liabilities off of the balance sheet—for example, by transferring them to some type of special-purpose entity or other entity whereby they might be able to avoid consolidating those assets and liabilities with the main company’s assets and liabilities. How does this improve the financial position? Are assets not a good thing? Well, yes and no. Let us look at a simple example:

Assets	HKD 10,000,000
Liabilities	HKD 8,000,000
Owners’ equity	HKD 2,000,000
Net earnings	HKD 500,000

Common ratios used by analysts are Liabilities to Assets and Return on Assets (Net Earnings / Total Assets). For this company, liabilities to assets are 0.80, or

80 percent, and return on assets is 0.05, or 5 percent. If this company were able to remove HKD 5 million of assets and liabilities from its balance sheet by accounting magic, they would achieve liabilities to assets of 0.60, or 60 percent, and return on assets of 0.10, or 10 percent. They now look less risky (lower level of debt) and more profitable (higher return on assets).

A common example of the second case is for a company to fail to record a liability that would also result in an expense (also overstating earnings). For example, the company may know that it has a liability related to an environmental loss and fail to record either the liability or the loss, overstating earnings and the company's financial position.

### **Application: Olympus Corporation**

Olympus Corporation is a Japan-based manufacturer of precision machinery and instruments founded in 1919. In 2011, it was discovered that Olympus had engaged in a series of complex maneuvers to keep a significant loss, and hence a liability, off of its financial statements since the 1990s, making its financial position look better than it was for many years. It is estimated that the loss was slightly less than ¥100 billion in 1990. For many years Olympus kept the loss off of its own books by transferring financial assets that have declined in value to a series of companies that were not consolidated into Olympus's balance sheet. The loss was transferred by having these other entities purchase the financial assets for their accounting book cost rather than the fair market value. The funds used by these other entities came from bank borrowings arranged by Olympus. Olympus therefore did not report any gain or loss on the sale.

Many years later, when the accounting rules changed such that Olympus would need to consolidate these outside entities, Olympus engineered a plan to purchase these entities at a price much greater than their value (due to the embedded loss in those entities). Olympus recorded the excess of the purchase price over the fair value as goodwill. At the same time, Olympus overpaid for other acquisitions, apparently paying high "fees" that could be used to further obscure the losses. So, effectively, Olympus kept a liability and loss off of its books for many years (understating liabilities and overstating owners' equity) and when they repurchased the entity and were forced to record the liability, they overstated assets (goodwill) to compensate. As with most accounting games, it came to an end when Olympus finally had to recognize the loss, which they initially did by calling it an impairment loss related to the numerous acquisitions.

We will explore examples of overstating financial position in more detail in Chapter 3.

## Managing Earnings

The accounting games discussed till this point involve making the current period or periods look better than they should be. Companies can also manipulate income and expenses between years, making one year look better than it should and the other worse. For example, let's say that a company has a terrific year and expects profits to be much higher than normal, but foresees that this anomaly will not persist. The company may want to smooth out its profits—purposefully lowering this year's profits so they can report higher profits the following year. Perhaps they might do this to make the volatility of earnings look smoother or because this might maximize their bonuses over multiple years. Companies can do this either by setting up reserves or provisions for the future using the accruals and deferrals mentioned earlier.

A simple example of this would be for a company to overestimate the level of doubtful accounts (the amount of accounts receivable that are expected to be uncollectible). In doing so, the company overstates bad debt expense in the current period, reducing net income. In a subsequent period, if earnings are below expectations, they can reverse this accrual (provision) to increase earnings in that period. Of course, the company can also do the opposite—if the earlier period is below expectations, they can underaccrue bad debts to increase earnings and plan on reducing this by accruing more in later years. Sometimes, the problem compounds itself: a small accounting game one year, hoping for a reversal in the future, is exacerbated by the next year's similarly dismal performance, forcing an even bigger accounting game to keep the charade going.

We will explore examples of managing earnings in more detail in Chapter 4.

## Overstating Operating Cash Flows

This section focuses on the misclassification of cash flows and the fabrication of current-period cash flows, which may be detrimental to future periods. For example, the company can have a real impact on the current-period cash flow by significantly slowing down payments to suppliers. This gives a boost to current cash flows but will have a negative impact on next period's cash flow. A company can also get a short-term boost to cash flow by selling its accounts receivable at a discount and receiving cash earlier than normal. While neither of these situations is improper, the short-term boost to cash flow should be viewed skeptically since the company is effectively borrowing from the future.

However, the company may try to make cash flow look stronger than it really is by misclassifying cash flows. The cash flow statement is composed of three

sections; operating, investing and financing. Analysts would like to see the company generating positive operating cash flow and use this cash flow either to invest for the future (investing) or return this capital to investors or creditors (financing). A company can try to make itself look better by trying to classify cash receipts as operating activities (rather than say financing) or classifying cash payments as investing activities (rather than operating). For example, a company might borrow money from a creditor using accounts receivable as collateral and report this as a sale of the receivables (operating) rather than a borrowing transaction. The difference between an outright sale and a loan is real. In the case of a sale, the buyer should not have recourse against the seller if all of the receivables are not collected. However, in the borrowing transaction, the company is still obligated for any noncollectible accounts.

Another method is to classify a normal operating expenditure as a capital expenditure as described earlier in the Overstating Earnings section. In this manner, operating cash flow is overstated and investing cash flow is understated (larger cash outflows for capital expenditures).

We will explore examples of overstating operating cash flows in more detail in Chapter 5.

## Corporate Governance and Related Issues

The themes discussed so far relate to accounting games played to manipulate the financial statements of the company. Another category of problems associated with investing in companies run by others relates to their ability to exert undue influence to benefit or enrich themselves (and sometimes their friends and family) at the expense of other shareholders. We will also include in this category other issues that are not strictly accounting related but should result in a heightened degree of skepticism about the company.

Good corporate governance provides a system in which controls are in place to make sure that the potential for conflicts of interests between insiders (principally management) and external shareholders is appropriately managed. An example of good corporate governance would be a strong slate (majority) of external, independent board members who act in the best interest of shareholders in overseeing the work of management. Good corporate governance also includes a sufficient level of transparency and disclosure such that external investors can best evaluate the financial position of the company and the performance of management. If corporate governance is weak, investors have to raise the level of due diligence they perform when they consider making or continuing an investment in the company. Given the number of investment alternatives that exist, sometimes it is best to avoid companies with poor corporate governance altogether, as the risks can be too high.

We will explore examples of corporate governance and related issues in more detail in Chapter 6.

## PARTING COMMENTS

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No method to detect fraud is foolproof. Unfortunately, if a company wants to intentionally perpetrate fraud, it can be very hard to detect until it is too late, even for experienced auditors and analysts. With the framework we have established, we hope to provide the basic tools for our readers to spot the warning signs in a company's financials if there is something amiss.

## NOTE

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1. The primary users of financial statement information are investors and creditors, but many others are also interested in analyzing these financial statements, such as journalists, regulators, attorneys, and students. For simplicity, we will refer to anyone analyzing the financial statements, whatever their capacity, as analysts even though that may not be their profession.

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