Chapter 2
FINANCIAL STATEMENTS AND CASH FLOW

SLIDES

2.1 Key Concepts and Skills
2.2 Chapter Outline
2.3 Sources of Information
2.4 The Balance Sheet
2.5 U.S. Composite Corporation Balance Sheet
2.6 Balance Sheet Analysis
2.7 Liquidity
2.8 Debt versus Equity
2.9 Value versus Cost
2.10 The Income Statement
2.11 U.S.C.C. Income Statement
2.12 U.S.C.C. Income Statement
2.13 U.S.C.C. Income Statement
2.14 U.S.C.C. Income Statement
2.15 Income Statement Analysis
2.16 GAAP
2.17 Non-Cash Items
2.18 Time and Costs
2.19 Taxes
2.20 Marginal versus Average Rates
2.21 Net Working Capital
2.22 U.S.C.C. Balance Sheet
2.23 Financial Cash Flow
2.24 U.S.C.C. Financial Cash Flow
2.25 U.S.C.C. Financial Cash Flow
2.26 U.S.C.C. Financial Cash Flow
2.27 U.S.C.C. Financial Cash Flow
2.28 U.S.C.C. Financial Cash Flow
2.29 U.S.C.C. Financial Cash Flow
2.30 U.S.C.C. Financial Cash Flow
2.31 The Statement of Cash Flows
2.32 U.S.C.C. Cash Flow from Operations
2.33 U.S.C.C. Cash Flow from Investing
2.34 U.S.C.C. Cash Flow from Financing
2.35 U.S.C.C. Statement of Cash Flows
2.36 Cash Flow Management
2.37 Quick Quiz

CHAPTER WEB SITES

Section	*Web Address*
2.1	finance.yahoo.com money.cnn.com www.sec.gov www.fasb.org www.ifrs.org
2.3	www.irs.gov

CHAPTER ORGANIZATION

2.1 The Balance Sheet
- Liquidity
- Debt versus Equity
- Value versus Cost

2.2 The Income Statement
- Generally Accepted Accounting Principles
- Noncash Items
- Time and Costs

2.3 Taxes
- Corporate Tax Rates
- Average versus Marginal Tax Rates

2.4 Net Working Capital

2.5 Financial Cash Flow

2.6 The Accounting Statement of Cash Flows
- Cash Flow from Operating Activities
- Cash Flow from Investing Activities
- Cash Flow from Financing Activities

2.7 Cash Flow Management

ANNOTATED CHAPTER OUTLINE

Slide 2.0 Chapter 2 Title Slide
Slide 2.1 Key Concepts and Skills
Slide 2.2 Chapter Outline

Slide 2.3 Sources of Information *This slide contains hyperlinks to commonly used sources of financial data.*

2.1. The Balance Sheet

Slide 2.4 The Balance Sheet

The balance sheet provides a snapshot of the firm's financial position at a specific point in time. Thus, it is commonly referred to as a "stock" statement, whereas the income statement would be considered a "flow" statement since it covers a period of time.

The balance sheet identity is: Assets ≡ Liabilities + Stockholder's Equity

Slide 2.5 U.S. Composite Corporation Balance Sheet

Assets: The Left-Hand Side
Assets are divided into several categories. Make sure that students recall the difference between current and fixed assets, as well as tangible and intangible assets.

Assets are listed in order of how long it typically takes for the specific asset to be converted to cash, with those taking the shortest time being listed first.

Liabilities and Equity: The Right-Hand Side
This portion of the balance sheet represents the sources of funds used to finance the purchase of assets.

> ***Lecture Tip***: *It may be helpful to review slides 4 through 7 from Chapter 1, which highlight the general composition of a balance sheet.*

Since sources and uses must equal, the balance sheet is an equality:

Assets = Liabilities + Stockholder's Equity

Lecture Tip: *Students sometimes find it difficult to see the relationship between the decisions made by financial managers and the values that subsequently appear on the firm's balance sheet. One way to help them see the "big picture" is to emphasize that all finance decisions are either investment decisions or financing decisions. Investment decisions involve the purchase and sale of any assets (not just financial assets). Investment decisions show up on the left-hand side of the balance sheet. Financing decisions involve the choice of whether to borrow money to buy the assets or to issue new ownership shares. Financing decisions show up on the right-hand side of the balance sheet.*

Slide 2.6 Balance Sheet Analysis

There are three primary concerns that need to be addressed when analyzing a balance sheet: liquidity, debt versus equity, and market value versus historical cost.

A. Liquidity

Slide 2.7 Liquidity

Liquidity is a measure of how easily an asset can be converted to cash. Since assets are listed in ascending order of how long it takes to be converted to cash, they are, by definition, listed in descending order of liquidity (i.e., most liquid listed first). Liability order, however, reflects time to maturity.

It is important to point out to students that liquidity has two components: (1) how long it takes to convert to cash and (2) the value that must be relinquished to convert to cash quickly. Any asset can be converted to cash quickly if you are willing to lower the price enough.

It is also important to point out that owning more liquid assets makes it easier to meet short-term obligations; however, they also provide lower returns. Consequently, too much liquidity can be just as detrimental to shareholder wealth maximization as too little liquidity.

Lecture Tip: *Discuss the cash that Apple has on its Balance Sheet. At one point, it was estimated that Apple had more cash on hand than the U.S. Government. Should Apple keep this much cash?*

Lecture Tip: *Some students get a little confused when they try to understand that excessive cash holdings can be undesirable. Occasionally, they leave an accounting principles class with the belief that a large current ratio is, in and of itself, a good thing. Short-term creditors like a company to have a large current ratio, but that doesn't mean that excess cash is good for the firm.*

You may wish to mention that a cash balance is a use of funds and, therefore, has an opportunity cost. Ask what a company could do with cash if it were not sitting idle. It could be paid to stockholders, invested in productive assets, or used to reduce debt. Students need to understand that a change in a firm's cash account is not the same as cash flow, regardless of what the "Statement of Cash Flows" may imply.

B. Debt versus Equity

Slide 2.8 Debt versus Equity

Interest and principal payments on debt have to be paid before cash may be paid to stockholders. The company's gains and losses are magnified as the company increases the amount of debt in the capital structure. This is why we call the use of debt financial leverage.

The balance sheet identity can be rewritten to illustrate that owners' equity is just what is left after all debts are paid.

Owners' Equity = Assets - Liabilities

Therefore, equity holders are referred to as residual claimants.

Lecture Tip: *You may find it useful at this point to spend a few minutes reinforcing the concepts of owners' equity and retained earnings. The students should recall that owners' equity consists of the common stock account, paid-in surplus, retained earnings and treasury stock. It is important to remind students that the firm's net income belongs to the owners. It can either be paid out in dividends or reinvested in the firm. When it is reinvested in the firm, it becomes additional equity investment and shows up in the retained earnings account.*

C. Value versus Cost

Slide 2.9 Value versus Cost

Under current accounting standards, financial statements are reported on an historical cost (i.e., book value) basis. However, book values are generally not all that useful for making decisions about the future because of the historical nature of the numbers.

Also, some of the most important assets and liabilities do not show up on the balance sheet. For example, the people that work for a firm can be very valuable assets, but they are not included on the balance sheet. This is especially true in service industries.

Lecture Tip: *Accounting, or historical, costs are not very important to financial managers, while market values are. Some students have difficulty recognizing that the passage of time and changing circumstances will almost always mean that the price an asset would fetch if sold today is quite different from its book value. Sometimes an example or two of familiar instances are enough to make the point. For example, pointing out the differences between market values and historical costs of used cars and houses may help.*

Some students recognize the difference between book values and market values, but do not understand why market values are the more important numbers for decision-making. The simplest answer is that market value represents the cash price people are willing and able to pay. After all, it is cash that must ultimately be paid or received for investments, interest, principal, dividends and so forth. The key, particularly in later chapters, is to recognize that market values are a better measure of opportunity costs.

2.2. The Income Statement

Slide 2.10 The Income Statement

As mentioned earlier, the income statement measures flows over a period of time. Specifically, it measures revenues collected relative to the costs associated with those revenues (matching principle). The difference between these two is the firm's income. Thus, the income statement takes the following form:

Revenue – Expenses = Income

Slide 2.11 – Slide 2.14 U.S.C.C. Income Statement

This series of slides walks through the various sections of the income statement, pointing out that the general operation of the business is reflected in the top portion, with non-operating impacts (including taxes) being reflected in the lower portion.

The "bottom line" is net income, which provides a measure of the overall earnings of the firm.

> ***Lecture Tip:*** *Previously, it was noted that investment decisions are reflected on the left-hand side of the balance sheet, and financing decisions are reflected on the right-hand side of the balance sheet. You could also point out that the income statement reflects investment decisions in the "top half," from sales to EBIT. Financing decisions are reflected in the "bottom half," from EBIT to net income and earnings per share.*

Slide 2.15 Income Statement Analysis

As with the balance sheet, there are things to remember when trying to interpret the income statement: GAAP, non-cash items, and timing.

A. Generally Accepted Accounting Principles

Slide 2.16 GAAP

Remember that GAAP require that we recognize revenue when it is earned, not when the cash is received, and we match costs to revenues (i.e., the matching principle). Thus, income is reported when it is earned, not when cash is actually generated from the transaction. Consequently, net income is NOT cash flow.

A recent development is the integration of International Financial Reporting Standards (IFRS) with GAAP policies (see section below).

B. Non-Cash Items

Slide 2.17 Non-Cash Items

The matching principle also creates the recognition of non-cash items. For example, when we purchase a machine, the cash flow occurs immediately, but we recognize the expense of the machine over time as it is used in the production process (i.e., depreciation).

The largest non-cash deduction for most firms is depreciation; however, other non-cash items include amortization and deferred taxes. Non-cash expenses reduce taxes and net income, but do not actually represent a cash outflow. Non-cash deductions are part of the reason that net income is not equivalent to cash flow.

Lecture Tip: *In March 2004, Global Crossing reported record quarterly earnings of $24.88* ***billion*** *on revenues of $719* ***million****. These earnings came about because GAAP regarding non-cash items related to the firm's emergence from bankruptcy. According to The Wall Street Journal Online (Global Crossing Scores A Bankruptcy Bonanza, March 11, 2004), $8 billion of the profit was from the ability to eliminate the liabilities associated with contracts with equipment vendors that were renegotiated during bankruptcy. Another $16 billion came from eliminating the common and preferred shares that previously existed. Most of the remainder of the "profit" came from the liabilities associated with contracts between Global Crossing and other phone companies that were eliminated during the bankruptcy proceedings. If these non-cash "revenues" were eliminated from the calculations, then the firm would have had a net loss of approximately $3 million. Clearly, GAAP don't always provide a clear view of earnings.*

Ethics Note: *Publicly traded firms have to file audited annual reports, but that does not mean that "accounting irregularities" never slip by the auditors. Companies that deliberately manipulate financial statements may benefit in the short run, but it eventually comes back to haunt them. Cendant Corporation is a good example. Cendant was created when CUC International and HFS, Inc. merged in late 1997. The combined company owns businesses in the real estate and travel industries. In April 1998, the combined company announced that accounting irregularities had been found in the CUC financial statements and earnings would need to be restated for 1997 and possibly 1995 and 1996 as well. Cendant's stock price dropped 47 percent the day after the announcement was made (it was announced after the market closed). The problems haunted Cendant throughout 1998. In July, it was announced that the problem was much worse than originally expected, and the stock price plummeted again. By the end of July, the stock price had dropped more than 60 percent below the price before the original announcement. The company also had to take a $76.4 million charge in the third quarter of 1998 for the costs of investigating the accounting irregularities. Criminal charges have been filed against several former executives of CUC International, and several class action lawsuits have been filed against Cendant. The stock was trading around $41 per share prior to the announcement and dropped to as low as $7.50 per share in October 1998. The price started to rebound, but as of June 2005 ($21.85) was still only about half of what it had been prior. Further, the company was split into four segments in October 2005, possibly a result of the prior actions discussed above.*

Other companies, such as Enron, WorldCom, etc. have fared much worse. There were a string of accounting problems at the start of this century, and these, along with the terrorist attacks, have led to much of the market decline during the early 2000s.

Lecture Tip: *Students sometimes fail to grasp the distinction between the economic life of an asset, the useful life of an asset for accounting purposes, and the useful life of an asset for tax purposes. "Economic life" refers to the period of time that the asset is expected to generate cash flows and must be considered when capital budgeting decisions are made. "Useful life" for accounting purposes is largely determined by the firm's accountants, with guidance from GAAP, and it affects the depreciation expense on the balance sheets and income statements that are used for business purposes. "Useful life" for tax purposes is determined by the Internal Revenue Service and is based on different asset categories. This is also important for capital budgeting because it determines the tax consequences of depreciation, which affects cash flow.*

C. Time and Costs

Slide 2.18 Time and Costs

We need to plan for both short-run cash flows and long-run cash flows. In the short run, some costs are fixed regardless of output, and other costs are variable. For example, fixed assets are generally fixed in the short run, while inputs such as labor and raw materials are variable. In the long run, all costs are variable. It is important to identify these costs when doing a capital budgeting analysis.

Additionally, accountants typically classify costs as product costs and period costs, rather than fixed and variable.

Lecture Tip: *Distinguishing between fixed and variable costs can have important implications for estimating cash flows. It is sometimes helpful to remind students that variable costs are cash outflows that vary with the level of output, while fixed costs do not. Another important thing to point out is that the definition of short run and long run varies for different types of businesses.*

2.3. Taxes

*Slide 2.19 **Taxes** Click on the web surfer icon to go to the IRS web site. You can show the students how to search for the most up-to-date tax information.*

The tax code is constantly changing with the decisions of Congress. Since corporations pay taxes, we need to be aware of these changes.

Lecture Tip: *The text notes the ever-changing nature of the tax code. This can be illustrated by the changes in the Investment Tax Credit (ITC) between 1962 and 1986.*
1962 – Seven percent ITC created to stimulate capital investment
1966 – ITC suspended
1967 – Seven percent ITC reinstated
1969 – ITC eliminated
1971 – Seven percent ITC reinstated
1975 – Credit increased to 10 percent
1986 – ITC eliminated

Tax rates affect the firm's cash flow and, therefore, the firm's value. Since we want to maximize firm value, we need to include taxes in our decisions.

Marginal tax rate – rate paid on next dollar of income
Average tax rate = tax bill / taxable income

Since decisions create incremental income, we want to use the marginal rate in our decisions.

A. Corporate Tax Rates

It's important to point out to students that corporations (and individuals) do not pay a flat rate on their income, but corporate rates are not strictly increasing either. Rates are progressive to a point, then decline to a point, such that the largest firms end up paying a rate (marginal = average) of 35 percent.

The average rate rises to the marginal rate at $50 million of taxable income. The "surcharges" at 39% and 38% offset the initial lower marginal rates.

B. Average versus Marginal Tax Rates

Slide 2.20 Marginal versus Average Rates

This slide provides an in-class example for calculating taxes and rates, with the answers given in the notes to the slide.

Note that the tax code presented is generally simplified. To see a more accurate reflection of the average rate by industry, check out Table 2.5.

Lecture Tip: *It is useful to stress the situations in which marginal tax rates are relevant and those in which average tax rates are relevant. For purposes of computing a company's total tax liability, the average tax rate is the correct rate to apply to before tax profits. However, in evaluating the cash flows that would be generated from a new investment, the marginal tax rate is the appropriate rate to use. This is because the new investment will generate cash flows that will be taxed above the company's existing profit.*

Lecture Tip: *The op-ed page of the March 11, 1998, issue of The Wall Street Journal contains an article guaranteed to generate class discussion. Entitled "Abolish the Corporate Income Tax," the author provides a quick overview of the situation that brought the current income tax into being in the early 1900s, and contends that the corporate and personal income tax systems began life as "two separate and completely uncoordinated tax systems." With the passage of time, the tax code has, of course, become extremely complex, and the author illustrates this by noting that, "Chrysler Corporation's tax returns comprise stacks of paper six feet high, prepared by more than 50 accountants who do nothing else." And, he points out, "the Internal Revenue Service, meanwhile, has a team of auditors who do nothing but monitor Chrysler's returns." Given the complexity and wasted effort, the author suggests that the rational thing to do is to abolish the corporate income tax. Do you agree?*

2.4. Net Working Capital

Slide 2.21 Net Working Capital

The difference between a firm's current assets and its current liabilities.

Slide 2.22 U.S.C.C. Balance Sheet

Since a firm needs current assets (e.g., inventory) to generate sales, as the firm grows, so generally does its net working capital.

2.5. Financial Cash Flow

Slide 2.23 Financial Cash Flow

Cash is the lifeblood of a business and is, therefore, the most important item that can be extracted from financial statements.

We generate cash flow from assets, then use this cash flow to reward creditors and stockholders. In conjunction with the balance sheet identity, we know that the cash flow from assets must, therefore, equal the cash flows to creditors and stockholders:

$$CF(A) \equiv CF(B) + CF(S)$$

Stated explicitly, the cash flow identity is

Cash Flow from Assets = Cash Flow to Creditors + Cash Flow to Stockholders

Slide 2.24 – Slide 2.30 U.S.C.C. Financial Cash Flow

These slides provide a walkthrough of the calculation of the components of cash flow.
CFFA = operating cash flow – net capital spending – changes in net working capital

Operating cash flow (OCF) = EBIT + depreciation – taxes

Net capital spending (NCS) = purchases of fixed assets – sales of fixed assets

or

NCS = ending net fixed assets – beginning net fixed assets + depreciation

Changes in NWC = ending NWC – beginning NWC

Cash Flow to Creditors and Stockholders

Cash flow to creditors = interest paid + retirement of debt – proceeds from new debt

or

Cash flow to creditors = interest paid – net new borrowing
= interest paid – (ending long-term debt – beginning long-term debt)

Cash flow to stockholders = dividends paid + stock repurchases – proceeds from new stock issues

or

Cash flow to stockholders = dividends paid – net new equity raised
= dividends paid – (ending common stock, APIC & Treasury stock – beginning common stock, APIC & Treasury stock)

It is important to point out that changes in retained earnings are not included in "net new equity raised."

Lecture Tip: *Textbooks make financial statement analysis seem reasonably straightforward. However, it is not always as easy to classify the numbers that appear on the consolidated financial statements of an actual corporation.*

Consider the 2011McGraw-Hill Annual Report.You can go to the McGraw-Hill web site (http://www.mcgraw-hill.com) and look under investor relations to get the full annual report for 2011 (or the most recent one available).

The following questions may arise from looking at the financial statements:
1. How do you account for "prepublication costs," "investments and other assets," and "goodwill and other intangible assets"? Are they included in net capital spending, or are they accounting numbers with no real impact on cash flows?
2. How should the "other liabilities" be accounted for? Again, which accounts truly provide changes in cash flows, and which accounts are just used for accounting purposes without an actual change in cash flows?
3. How do "accumulated other comprehensive income" and "unearned compensation on restricted stock" affect cash flows?

The cash flow identity does not appear to hold when applied in a reasonable fashion based on the information provided. It is important to point out that financial managers have a lot more information available to them than what is provided in the consolidated statements of an annual report. The manager will have the information available to compute cash flow from assets, and if it is done carefully, the cash flow identity will hold.

2.6. The Accounting Statement of Cash Flows

Slide 2.31 The Statement of Cash Flows

There is an official accounting statement called the Statement of Cash Flows, which explains the change in the cash account on the firm's balance sheets between two periods. The statement typically has three components: cash flows from operating activities, cash flows from investing activities, and cash flows from financing activities.

It is helpful to think of cash inflows and outflows:
Sources and Uses of cash

Activities that bring in cash are *sources*. Firms raise cash by selling assets, borrowing money, or selling securities.

Activities that involve cash outflows are *uses*. Firms use cash to buy assets, pay off debt, repurchase stock, or pay dividends.

There are some mechanical Rules for determining Sources and Uses:

Sources:
- Decrease in asset account
- Increase in liabilities or equity account

Uses:
- Increase in asset account
- Decrease in liabilities or equity account

A. Cash Flow from Operating Activities

Slide 2.32 U.S.C.C. Cash Flow from Operations

Operating Activities
- + Net Income
- + Depreciation
- ± Deferred Taxes
- + Decrease in current asset accounts (except cash)
- + Increase in current liability accounts (except notes payable)
- - Increase in current asset accounts (except cash)
- - Decrease in current liability accounts (except notes payable)

It may be good to note that cash flow from operations effectively accounts for interest expense since it is subtracted prior to net income; however, this flow is more generally related to financing activities.

B. Cash Flow from Investing Activities

Slide 2.33 U.S.C.C. Cash Flow from Investing

Investment Activities
- + Ending net fixed assets
- - Beginning net fixed assets
- + Depreciation

C. Cash Flow from Financing Activities

Slide 2.34 U.S.C.C. Cash Flow from Financing

Financing Activities
± Change in notes payable
± Change in long-term debt
± Change in common stock
- Dividends

Slide 2.35 U.S.C.C. Statement of Cash Flows

Putting it all together:

± Net cash flow from operating activities
± Net cash flow from investing activities
± Net cash flow from financing activities
= Net increase (decrease) in cash over the period

2.7. Cash Flow Management

Slide 2.36 Cash Flow Management

The common assumption is that cash flow is a better metric to evaluate, as opposed to earnings, which can be more easily manipulated by subjective decisions allowed by GAAP (generally accepted accounting principles).

While this may be true, firms can still "manage" cash flows, particularly by, for example, classifying items as operating rather than investing cash flows. This will not change the total cash flow, but it may make the firm's operations seem stronger than they actually are. Nonetheless, since total cash flow is unchanged by this "management," it is thus a better measure than earnings.

Slide 2.37 Quick Quiz