Fundamentals of Corporate Finance, 2/e

ROBERT PARRINO, PH.D.
DAVID S. KIDWELL, PH.D.
THOMAS W. BATES, PH.D.

Chapter 3: Financial Statements, Cash Flows, and Taxes

Learning Objectives

1. DISCUSS GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP) AND THEIR IMPORTANCE TO THE ECONOMY.
2. EXPLAIN THE BALANCE SHEET IDENTITY AND WHY A BALANCE SHEET MUST BALANCE.
3. DESCRIBE HOW MARKET-VALUE BALANCE SHEETS DIFFER FROM BOOK-VALUE BALANCE SHEETS.

Learning Objectives

4. IDENTIFY THE BASIC EQUATION FOR THE INCOME STATEMENT AND THE INFORMATION IT PROVIDES.
5. UNDERSTAND THE CALCULATION OF CASH FLOWS FROM OPERATING, INVESTING, AND FINANCING ACTIVITIES REQUIRED IN THE STATEMENT OF CASH FLOWS.
6. EXPLAIN HOW THE FOUR MAJOR FINANCIAL STATEMENTS DISCUSSED IN THIS CHAPTER ARE RELATED.

Learning Objectives

7. IDENTIFY THE CASH FLOW TO A FIRM'S INVESTORS USING ITS FINANCIAL STATEMENTS.
8. DISCUSS THE DIFFERENCE BETWEEN AVERAGE AND MARGINAL TAX RATES.

Financial Statements

- PURPOSE OF FINANCIAL STATEMENTS
  - **Provide stakeholders a foundation for evaluating the financial health of a firm**
    - creditors
    - employees
    - management
    - stockholders

Financial Statements

- PURPOSE OF FINANCIAL STATEMENTS
  - **Provide stakeholders a foundation for evaluating the financial health of a firm.**

    customers

    general Public

    regulators

    suppliers

Financial Statements

- PURPOSE OF FINANCIAL STATEMENTS
  - **Evaluate a firm's internal environment**

    efficiency

    effectiveness

    risk level

Financial Statements

- PURPOSE OF FINANCIAL STATEMENTS
  - **Evaluate a firm's interaction with the external environment**

    corporate citizenship

    social responsibility

    assessment of the external environment

    response to the external environment

Financial Statements

- PURPOSE OF FINANCIAL STATEMENTS
  - **Provide information about the performance of the firm**

    stakeholders want to compare actual vs. potential performance

Financial Statements and Accounting Principles

- GAAP
  - **Generally Accepted Accounting Principles (GAAP)**

    accounting rules and standards that public companies must adhere to when they prepare financial statements and reports

    established by the Financial Accounting Standards Board (FASB) and authorized by the Securities and Exchange Commission (SEC)

Financial Statements and Accounting Principles

- INTERNATIONAL GAAP
  - **Uniform accounting rules and procedures promoted by the International Accounting Standards Board**
  - **Firms in the European Union are moving toward a "European GAAP"**
  - **Economic and political pressure is building in the United States and Europe to develop a unified accounting system**

Financial Statements and Accounting Principles

- GAAP
  - **Guidelines, not rules**

    Firms have discretion about how their financial information is presented.

    No two firms are required to have identical statements.

Financial Statements and Accounting Principles

- GAAP
  - **Guidelines, not rules.**

    Alternative terms on financial statements

    - *balance sheet, statement of financial condition*
    - *income statement, statement of operations, profit and loss statement*
    - *cost-of-goods-sold, cost-of -sales, cost-of-revenue, cost-of-services-sold*

Financial Statements and Accounting Principles

- FIVE IMPORTANT ACCOUNTING PRINCIPLES

1. **Assumption of Arm's Length Transaction**

   Parties involved in an economic transaction arrive at a decision independently and rationally.

2. **Cost Principle**

   Asset values are recorded at the cost for which they were acquired.

Financial Statements and Accounting Principles

- FIVE IMPORTANT ACCOUNTING PRINCIPLES

3. **Realization Principle**

   Revenue is recognized when a transaction is completed, although cash may be received earlier or later.

4. **Matching Principle**

   Revenue is matched with the expense incurred to generate it.

Financial Statements and Accounting Principles

- FIVE IMPORTANT ACCOUNTING PRINCIPLES

5. **Going Concern Assumption**

   Assume a company will continue to operate for the predictable future.

Financial Statements and Accounting Principles

- ANNUAL REPORT
  - **Summarizes the overall performance of a firm for the most recent fiscal year**
  - **Information**

    the company, its products, its activities, and its future

    summary of financial performance for the most recent year

    audited financial statements, five-year summary of financial data

The Balance Sheet

- FIRM ASSETS & FUNDING AT A POINT IN TIME
  - **Left side of a balance shows assets a firm owns and uses to generate revenue**
  - **Right side of the balance sheet shows sources of the funds used to acquire assets**

$$Total\ Assets =$$

$$Total\ Liabilities + Total\ Stockholders'\ Equity \quad (3.1)$$

Diaz Manufacturing Balance Sheets as of December 31

EXHIBIT 3.1 **Diaz Manufacturing Balance Sheets as of December 31 ($ millions)**

The left-hand side of the balance sheet lists the assets that the firm has at a particular point in time, while the right-hand side shows how the firm has financed those assets.

Assets	2011	2010	Liabilities and Stockholders' Equity	2011	2010
Cash[a]	$ 288.5	$ 16.6	Accounts payable and accruals	$ 349.3	$ 325.0
Accounts receivable	306.2	268.8	Notes payable	10.5	4.2
Inventories	423.8	372.7	Accrued taxes	18.0	16.8
Other current assets	21.3	29.9	Total current liabilities	$ 377.8	$ 346.0
Total current assets	$1,039.8	$ 688.0	Long-term debt	574.0	305.6
			Total liabilities	$ 951.8	$ 651.6
Plant and equipment	911.6	823.3	Preferred stock[b]	—	—
Less: Accumulated depreciation	512.2	429.1	Common stock (54,566,054 shares)[c]	50.0	50.0
Net plant and equipment	$ 399.4	$ 394.2	Additional paid-in capital	842.9	842.9
Goodwill and other assets	450.0	411.6	Retained earnings	67.8	(50.7)
			Treasury stock (571,320 shares)	(23.3)	—
			Total stockholders' equity	$ 937.4	$ 842.2
Total assets	$1,889.2	$1,493.8	Total liabilities and equity	$1,889.2	$1,493.8

[a]Cash includes investments in marketable securities.
[b]10,000,000 preferred stock shares authorized.
[c]150,000,000 common stock shares authorized.

The Balance Sheet

- ITEM ORDER
  - **Assets listed in order of liquidity**
  - **Liabilities listed in order in which they are due to be paid**
  - **Stockholders' equity listed last**

    Common stockholders are entitled to assets remaining after all other providers of funds are paid.

The Balance Sheet

- CURRENT ASSETS
  - **Assets likely to be converted to cash within a year (or one operating cycle)**

    marketable securities

    accounts receivable

    inventory

The Balance Sheet

- CURRENT LIABILITIES
  - **Liabilities scheduled to be paid within a year (or one operating cycle)**

    accounts payable

    accrued wages

    debt with less than a year's maturity

    taxes

The Balance Sheet

- NET WORKING CAPITAL

$$\text{Net Working Capital} = \text{Total Current Assets} - \text{Total Current Liabilities} \quad (3.2)$$

The Balance Sheet

- NET WORKING CAPITAL EXAMPLE
  - **Diaz Manufacturing**

    Total current assets = $1,039.8 million

    Total current liabilities = $377.8 million

    Net working capital = Total current assets - Total current liabilities

    = $1,039.8 million - $377.8 million

    = $662.0 million

The Balance Sheet

- INVENTORY ACCOUNTING
  - **Inventory (least liquid current asset) reported using one of two methods**

    FIFO (first-in-first-out) assumes merchandise is sold in the order it was acquired by a firm.

    LIFO (last-in-first-out) assumes merchandise is sold in the reverse of the order it was acquired by a firm.

The Balance Sheet

- INVENTORY ACCOUNTING
  - **When the cost of inventory is increasing**

    FIFO reporting says a firm sold the less expensive inventory and leads to

    - *higher balance in inventory*
    - *lower cost-of-goods-sold*
    - *higher taxable income*
    - *higher income taxes*
    - *higher net income*

The Balance Sheet

- INVENTORY ACCOUNTING
  - **When the cost of inventory is increasing**

    LIFO reporting says a firm sold the more expensive inventory and leads to

    - *lower balance in inventory*
    - *higher cost-of-goods-sold*
    - *lower taxable income*
    - *lower income taxes*
    - *lower net income*

The Balance Sheet

- INVENTORY ACCOUNTING
  - **When the cost of inventory is decreasing**

    FIFO reporting says a firm sold the more expensive inventory and leads to
    - *lower balance in inventory*
    - *higher cost-of-goods-sold*
    - *lower taxable income*
    - *lower income taxes*
    - *lower net income*

The Balance Sheet

- INVENTORY ACCOUNTING
  - **When the cost of inventory is decreasing**

    LIFO reporting says a firm sold the less expensive inventory and leads to

    - *higher balance in inventory*
    - *lower cost-of-goods-sold*
    - *higher taxable income*
    - *higher income taxes*
    - *higher net income*

The Balance Sheet

- INVENTORY ACCOUNTING
  - **Firms may switch from one inventory accounting method to the other under extraordinary circumstances but not frequently**

The Balance Sheet

- LONG-TERM ASSETS
  - **Real Assets**

    land

    buildings

    equipment
  - **Intangible Assets**

    goodwill

    patents

    copyrights

The Balance Sheet

- LONG-TERM ASSETS
  - **Real assets decline with use and are depreciated**

    Depreciation expense reduces taxable income and income taxes.

    Assets are depreciated using either the straight line or accelerated depreciation method.
  - **Intangible assets lose value over time and are amortized (equivalent to depreciated)**

The Balance Sheet

- LONG-TERM LIABILITIES
  - **Long-term debt**

    bank loans

    mortgages

    bonds with a maturity longer than one year

The Balance Sheet

- EQUITY
  - **Common Stock**

    ownership with control in a firm
  - **Preferred Stock**

    ownership without control in a firm

    features make it an equity security that resembles debt

The Balance Sheet

- OTHER BALANCE SHEET ACCOUNTS
  - **Retained earnings**

    Profit kept and used to acquire assets.
  - **Treasury stock**

    Shares of its own stock a firm holds rather than sell them to the public.

Market Value vs. Book Value

- RECORDING ASSET VALUE
  - **Assets are traditionally reported at historical cost on a balance sheet**
  - **Balance sheet amount does not reflect current market value – only the acquisition cost**

Market Value vs. Book Value

- ASSET VALUATION
  - **Better information is provided to management and investors by marking-to-market — reporting balance sheet items at current market values**
    - difficult to determine market values of assets
  - **The difference between the market values of assets and liabilities is a realistic estimate of the market value of shareholders' equity**

The Income Statement

- INCOME STATEMENT: OVERVIEW
  - **Measures the profitability of a firm for a reporting period**
  - **Revenue is income from selling products and services – for cash or credit**
  - **Expenses include costs of providing products and services, and asset utilization (depreciation and amortization)**

$$\text{Net income} = \text{Revenues} - \text{Expenses} \qquad (3.3)$$

Diaz Manufacturing Income Statements

EXHIBIT 3.2 **Diaz Manufacturing Income Statements for Year Ending December 31 ($ millions)**

The income statement shows the sales, expenses, and profits earned by the firm over a specific period of time.

	2011	2010
Net sales[a]	$1,563.7	$1,386.7
Cost of goods sold	1,081.1	974.8
Selling and administrative expenses	231.1	197.4
Earnings before Interest, taxes, depreciation, and amortization (EBITDA)	$ 251.5	$ 214.5
Depreciation and amortization	83.1	75.3
Earnings before interest and taxes (EBIT)	$ 168.4	$ 139.2
Interest expense	5.6	18.0
Earnings before taxes (EBT)	$ 162.8	$ 121.2
Taxes	44.3	16.1
Net income	$ 118.5	$ 105.1
Common stock dividend	—	—
Addition to retained earnings	$ 118.5	$ 105.1
Per-share data:		
Common stock price		
Earnings per share (EPS)	$ 2.17	$ 1.93
Dividends per share (DPS)	—	—
Book value per share (BVPS)	—	—
Cash flow per share (CFPS)	$ 3.69	$ 3.31

[a]Net sales is defined as total sales less all sales discounts and sales returns and allowances.

The Income Statement

- NET INCOME EXAMPLE
  - **Diaz Manufacturing**

    Revenues = $1,563.7 million

    Expenses = $1,445.2 million

    Net Income = Revenues – Expenses

    = $1,563.7 million - $1,445.2 million

    = $ 118.5 million

The Income Statement

- DEPRECIATION
  - **The cost of a physical asset, such as plant or machinery, is written off over its lifetime. This is called depreciation, a non-cash expense**
  - **Firms use one of these depreciation methods**

    straight-line depreciation

    accelerated depreciation

    - *Firms may choose to use one for internal purposes and another for tax purposes or for statements released to the public.*

The Income Statement

- AMORTIZATION
  - **Amortization expense is related to using intangible assets**

    goodwill

    patents

    licenses

    - *Like depreciation, it is a non-cash expense.*

The Income Statement

- EXTRAORDINARY ITEM
  - **Income or expense associated with events that are infrequent and abnormal**

    separated from the results of ordinary income

    shown separately on the income statement

The Income Statement

- EBITDA AND EBIT
  - **Earnings-before-interest-taxes-depreciation-and-amortization (EBITDA)**

    income from selling goods and services minus the cost of providing them
  - **Earnings-before-interest-and-taxes (EBIT)**

    EBITDA minus depreciation and amortization

The Income Statement

- EBT AND NI
  - **Earnings-before-taxes (EBT)**

    EBIT minus interest expense

    taxable income
  - **Net income (NI)**

    EBT minus taxes

Statement of Retained Earnings

- RETAINED EARNINGS
  - **Shows cumulative effect of adjustments to shareholders' equity resulting from profit, losses, and paying dividends**
  - **Shows changes in the account for a period based on profit, loss, or dividend paid**

Diaz Manufacturing Statement of Retained Earnings

EXHIBIT 3.3 **Diaz Manufacturing Statement of Retained Earnings for the Year Ending December 31, 2011 ($ millions)**

The statement of retained earnings accompanies the balance sheet and shows the beginning balance of retained earnings, the adjustments made to retained earnings during the year, and the ending balance.

Balance of retained earnings, December 31, 2010	$ (50.7)
Add: Net income, 2011	118.5
Less: Dividends to common stockholders	—
Balance of retained earnings, December 31, 2011	$ 67.8

Cash Flows

- NET CASH FLOWS VERSUS NET INCOME
  - **Accountants focus on net income and shareholders focus on net cash flows. These are not the same because of delays in inflows and outflows, and non-cash revenues and expenses**

Cash Flows

- CASH FLOWS TO INVESTORS
  - **Cash flows available to investors from operating activities (CFOA)**

$$\text{CFOA} = \text{EBIT} - \text{Current Taxes} + \text{Noncash expenses} \qquad (3.4)$$

Cash Flows

- CFOA EXAMPLE
  - **Diaz Manufacturing**

    EBIT = $168.4 million

    Current Taxes = $44.3 million

    Non-cash expenses = $83.1 million

$$\text{CFOA} = \text{EBIT} - \text{Current Taxes} + \text{Non-Cash Expenses}$$

$$= \$168.4\text{m} - \$44.3\text{m} + \$83.1\text{m}$$

$$= \$207.2 \text{ million}$$

Cash Flows

- CASH FLOWS TO WORKING CAPITAL
  - **To compute the net cash flows into or out of working capital**

$$CFNWC = NWC_{\text{Current Period}} - NWC_{\text{Previous Period}} \qquad (3.5)$$

Cash Flows

- CFNWC EXAMPLE
  - **Diaz Manufacturing**

    NWC 2011 = $662.0 million

    NWC 2010 = $342.0 million

$$\begin{aligned} CFNWC_{2011} &= NWC_{2011} - NWC_{2010} \\ &= \$662.0m - \$342.0 \\ &= \$320.0 \text{ million} \end{aligned}$$

Cash Flows

- STATEMENT OF CASH FLOWS
  - **Summarizes cash outflows and cash inflows during a period**
  - **Cash flows result from operating activities, investing activities, and financing activities**
  - **Net cash flows equals cash inflows minus cash outflows**

Diaz Manufacturing Statement of Cash Flows

EXHIBIT 3.4 **Diaz Manufacturing Statement of Cash Flows for the Year Ending December 31, 2011 ($ millions)**

The statement of cash flows shows the sources of the cash that has come into the firm during a period of time and the ways in which this cash has been used.

Operating Activities	
Net income	$ 118.5
Additions (sources of cash)	
Depreciation and amortization	83.1
Increase in accounts payable	24.3
Decrease in other current assets	8.6
Increase in accrued income taxes	1.2
Subtractions (uses of cash)	
Increase in accounts receivable	(37.4)
Increase in inventories	(51.1)
Net cash provided by operating activities	$ 147.2
Long-Term Investing Activities	
Property, equipment, and other assets	$ (88.3)
Increase in goodwill and other assets	(38.4)
Net cash used in investing activities	$(126.7)
Financing Activities	
Increase in long-term debt	$ 268.4
Purchase of treasury stock	(23.3)
Increase in notes payable	6.3
Net cash provided by financing activities	$ 251.4
Cash Reconciliation[a]	
Net increase in cash and marketable securities	$ 271.9
Cash and securities at beginning of year	16.6
Cash and securities at end of year	$ 288.5

[a]Cash includes investments in marketable securities.

Cash Flows

- STATEMENT OF CASH FLOWS ORGANIZATION
  - **Operating Activities**

    cash inflows

    - *sell goods and services*

    cash outflows

    - *raw materials*
    - *inventory*
    - *salaries and wages*
    - *utilities*
    - *rent*

Cash Flows

- STATEMENT OF CASH FLOWS ORGANIZATION
  - **Investing Activities**

    cash outflows and inflows due to

    - *buying and selling long-term assets such as plant and equipment*
    - *buying and selling bonds and stocks issued by other firms*

Cash Flows

- STATEMENT OF CASH FLOWS ORGANIZATION
  - **Financing Activities**

    cash inflow

    - *issue debt*
    - *issue equity*
    - *borrow money*

    cash outflow

    - *pay interest or dividends*
    - *repay loan principal*
    - *purchase treasury stock*

Interrelations Among the Financial Statements

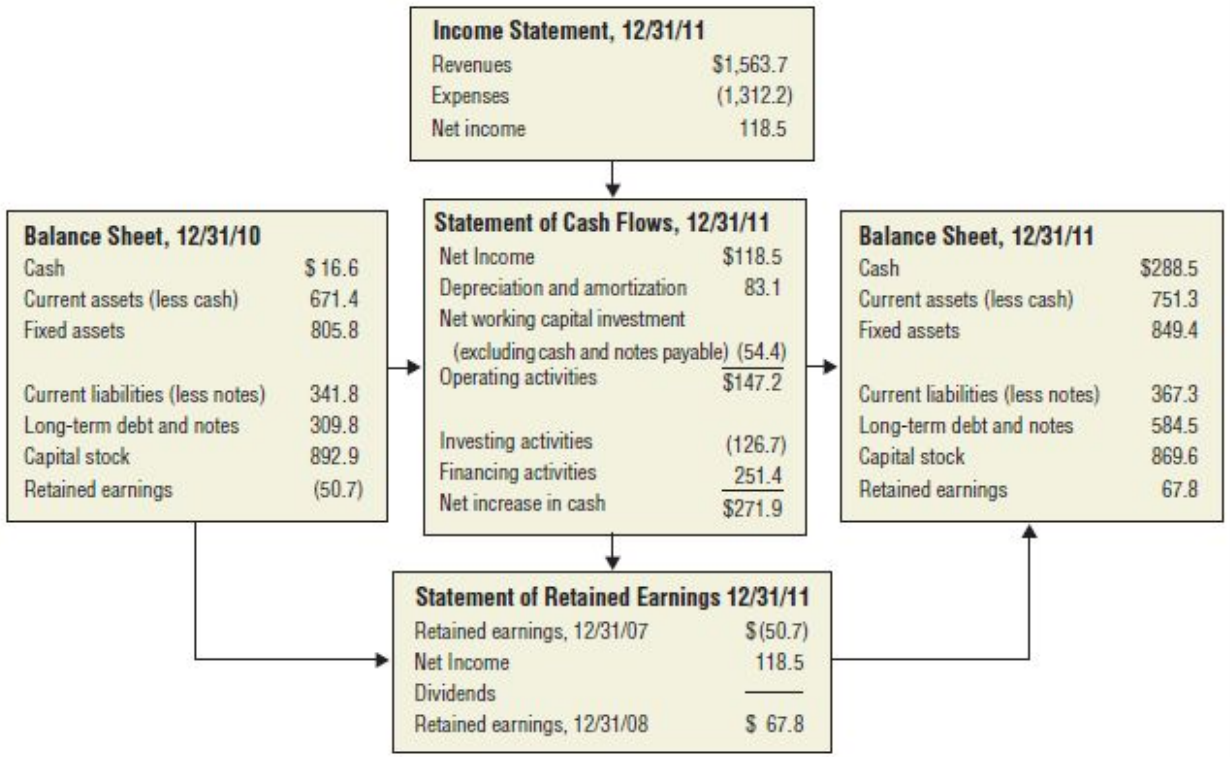

EXHIBIT 3.5

The Interrelations among the Financial Statements: Illustrated Using Diaz Manufacturing Financial Results

The statement of cash flows ties together the income statement with the balance sheets from the beginning and the end of the period. The statement of retained earnings shows how the retained earnings account has changed from the beginning to the end of the period.

[6]From the 2011 balance sheet: (1) current assets − cash = $1,039.8 − $288.5 = $751.3, and (2) current liabilities − notes payable = $377.8 − $10.5 = $367.3. The calculations are similar for the 2010 balance sheet.

Federal Income Tax

- CORPORATE INCOME TAX
  - **U.S. has a progressive tax with rates ranging from 15 percent to 39 percent**

    higher taxable income = higher the tax liability

Corporate Tax Rates for 2010

EXHIBIT 3.6 **Corporate Tax Rates for 2010**

The federal corporate marginal tax rate varies from 15 to 39 percent. Generally speaking, smaller companies with lower taxable income have lower tax rates than larger companies with higher taxable incomes. Smaller businesses are given preferential treatment to encourage new business formation.

(1) Corporations' Taxable Income	(2) Pay This Amount on the Base of the Bracket	(3) Marginal Tax Rate: Tax Rate on the Excess Over the Base	(4) Average Tax Rate at Top of Bracket
$0–$50,000	$ 0	15%	15.0%
50,001–75,000	7,500	25	18.3
75,001–100,000	13,750	34	22.3
100,001–335,000	22,250	39	34.0
335,001–10,000,000	113,900	34	34.0
10,000,001–15,000,000	3,400,000	35	34.3
15,000,001–18,333,333	5,150,000	38	35.0
More than 18,333,333	6,416,667	35	35.0

Federal Income Tax

- AVERAGE VERSUS MARGINAL TAX RATE
  - **Average tax rate**

    total taxes paid divided by taxable income for the period
  - **Marginal tax rate**

    rate paid on the last dollar earned or the next dollar that will be earned

Federal Income Tax

- DIVIDENDS AND INTEREST ARE NOT EQUAL
  - **U.S. tax code**

    allows interest payments on debt to reduce firms' taxable income

    does not allow dividend payments to equity to reduce firms' taxable income

    – *debt financing has a lower cost relative to equity financing*