Chapter 2

Financial Statements and Cash Flow

Acknowledgement

- This work is reproduced, based on the book [Ross, Westerfield, Jaffe and Jordan “Core Principles and Applications of Corporate Finance”].
- This work can be used in the financial management course with the original text book.
- This work uses the figures and tables from the original text book.

Financial Statements

- The four required financial statements are
  The balance sheet,
  The income statement,
  The statement of cash flows

2.1 The Balance Sheet

- An accountant's snapshot of the firm's accounting value at a specific point in time
- The balance sheet shows the current financial position (*assets, liabilities, and stockholders' equity*) of the firm at a single point in time.

- The Balance Sheet Identity is:

  Assets ≡ Liabilities + Stockholders' Equity

Cited by the text book (p. 55)

TABLE 2.1

The Balance Sheet of the U.S. Composite Corporation

U.S. COMPOSITE CORPORATION
Balance Sheet
2009 and 2010
(in $ millions)

ASSETS	2009	2010	LIABILITIES (DEBT) AND STOCKHOLDERS' EQUITY	2009	2010
Current assets:			Current liabilities:		
Cash and equivalents	$ 107	$ 140	Accounts payable	$ 197	$ 213
Accounts receivable	270	294	Notes payable	53	50
Inventories	280	269	Accrued expenses	205	223
Other	50	58	Total current liabilities	$ 455	$ 486
Total current assets	$ 707	$ 761			
			Long-term liabilities:		
Fixed assets:			Deferred taxes	$ 104	$ 117
Property, plant, and equipment	$ 1,274	$1,423	Long-term debt*	458	471
Less accumulated depreciation	460	550	Total long-term liabilities	$ 562	$ 588
Net property, plant, and equipment	$ 814	$ 873			
Intangible assets and others	221	245	Stockholders' equity:		
Total fixed assets	$ 1,035	$1,118	Preferred stock	$ 39	$ 39
			Common stock ($1 par value)	32	55
			Capital surplus	327	347
			Accumulated retained earnings	347	390
			Less treasury stock†	20	26
			Total equity	$ 725	$ 805
Total assets	$1,742	$1,879	Total liabilities and stockholders' equity‡	$1,742	$1,879

*Long-term debt rose by $471 million − 458 million = $13 million. This is the difference between $86 million new debt and $73 million in retirement of old debt.

†Treasury stock rose by $6 million. This reflects the repurchase of $6 million of U.S. Composite's company stock.

‡U.S. Composite reports $43 million in new equity. The company issued 23 million shares at a price of $1.87. The par value of common stock increased by $23 million, and capital surplus increased by $20 million.

2.1 The Balance Sheet

- Current Assets
  - **Cash** and other **marketable securities**, which are short-term, low-risk investments that can be easily sold and converted to cash within a year
  - **Accounts receivable**, which are amounts owed to the firm by customers who have purchased goods or services on credit;
  - **Inventories**, which are composed of raw materials as well as work-in-progress and finished goods;
  - **Other current assets**, which is a catch-all category that includes items such as prepaid expenses

2.1 The Balance Sheet

- Fixed Assets
  - Assets like real estate or machinery that produce tangible benefits for more than one year: property, plant and equipment
  - Reduced by the value recorded for this equipment through a yearly deduction called **depreciation**
  - Intangible assets: goodwill, patent, trademark

2.1 The Balance Sheet

- Current Liabilities
  - **Accounts payable**, the amounts owed to suppliers for products or services purchased on credit
  - **Notes payable**, loans that must be repaid within a year.
  - **Accrual items**, Accrued expenses

2.1 The Balance Sheet

- Long-Term Liabilities
  - Deferred taxes
  - Long-term debt

- Stockholders' Equity
  - **Preferred stock**
  - **Common stock**
  - **Capital surplus**
  - **Accumulated retained earrings**

Balance Sheet Analysis

- **When analyzing a balance sheet, the Finance Manager should be aware of three concerns:**
  1. Accounting liquidity
  2. Debt versus equity
  3. Value versus cost

Accounting Liquidity (p.55)

- Refers to the ease and quickness with which assets can be converted to cash—without a significant loss in value
  - Current assets are the most liquid: Account receivables
  - Some fixed assets are intangible: trademark, patent
  - The more liquid a firm's assets, the less likely the firm is to experience problems meeting short-term obligations.
  - Liquid assets frequently have lower rates of return than fixed assets.

Debt versus Equity (p.56)

- Creditors generally receive the first claim on the firm's cash flow.
- Shareholders' equity is the residual difference between assets and liabilities.
  - Assets-Liabilities= Stockholders' equity

Value versus Cost (p.56)

- In the United States, the **Financial Accounting Standards Board (FASB)** establishes **Generally Accepted Accounting Principles (GAAP)** to provide a common set of rules and a standard format for public companies to use when they prepare their reports.
- Under Generally Accepted Accounting Principles (GAAP), audited financial statements of firms in the U.S. carry assets at cost.
- Market value is the price at which the assets, liabilities, and equity could actually be bought or sold, which is a completely different concept from historical cost.

Example 2.1
Market Value versus Book Value (p.57)

KBJ CORPORATION

Balance Sheets

Market Value versus Book Value

	Book	Market		Book	Market
	Assets			Liabilities and Shareholders' Equity	
NWC	$ 500	$ 700	LTD	$ 600	$ 600
NFA	800	1,100	SE	700	1,200
	1,300	1,800		1,300	1,800

2.2 The Income Statement

- Measures financial performance over a specific period of time
- The income statement provides very useful information regarding the profitability of a firm's business and how it relates to the value of the firm's shares.
- The accounting definition of income is:

  Revenue – Expenses ≡ Income

TABLE 2.2

The Income Statement of the U.S. Composite Corporation

U.S. COMPOSITE CORPORATION Income Statement 2010 (in $ millions)	
Total operating revenues	$2,262
Cost of goods sold	1,655
Selling, general, and administrative expenses	327
Depreciation	90
Operating income	$ 190
Other income	29
Earnings before interest and taxes (EBIT)	$ 219
Interest expense	49
Pretax income	$ 170
Taxes	84
Current: $71	
Deferred: $13	
Net income	$ 86
Addition to retained earnings:	$ 43
Dividends:	43

Note: There are 29 million shares outstanding. Earnings per share and dividends per share can be calculated as follows:

Cited by the text book (p. 58)

Income Statement Analysis

- **There are three things to keep in mind when analyzing an income statement:**
  1. Generally Accepted Accounting Principles (GAAP)
  2. Noncash Items
  3. Time and Costs

GAAP

- The matching principal of GAAP dictates that revenues be matched with expenses.
- Thus, income is reported when it is earned, even though no cash flow may have occurred.

Noncash Items

- Depreciation is the most apparent. No firm ever writes a check for “depreciation.”
- 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).
- Another noncash item is deferred taxes, which does not represent a cash flow.

- Thus, net income is not cash.

Time and Costs

- In the short run, certain equipment, resources, and commitments of the firm are fixed, but the firm can vary such inputs as labor and raw materials.
- In the long run, all inputs of production (and hence costs) are variable.
- Financial accountants do not distinguish between variable costs and fixed costs. Instead, accounting costs usually fit into a classification that distinguishes product costs from period costs.
- Product costs: raw materials, direct labor, and manufacturing overhead
- Period costs: selling, general and administrative expenses

2.3 Taxes

- The one thing we can rely on with taxes is that they are always changing
- Marginal vs. average tax rates
  - Marginal – the percentage paid on the next dollar earned
  - Average = the tax bill / taxable income
- Other taxes

TABLE 2.3
Corporate Tax Rates

TAXABLE INCOME	TAX RATE
$ 0–50,000	15%
50,001–75,000	25
75,001–100,000	34
100,001–335,000	39
335,001–10,000,000	34
10,000,001–15,000,000	35
15,000,001–18,333,333	38
18,333,334+	35

TABLE 2.4
Corporate Taxes and Tax Rates

(1) TAXABLE INCOME	(2) MARGINAL TAX RATE	(3) TOTAL TAX	(3)/(1) AVERAGE TAX RATE
$ 45,000	15%	$ 6,750	15.00%
70,000	25	12,500	17.86
95,000	34	20,550	21.63
250,000	39	80,750	32.30
1,000,000	34	340,000	34.00
17,500,000	38	6,100,000	34.86
50,000,000	35	17,500,000	35.00
100,000,000	35	35,000,000	35.00

Cited by the text book (pp. 60-61)

2.4 Net Working Capital

- The difference between current assets and current liabilities is the firm's **net working capital**, the capital available in the short term to run the business.

- Net Working Capital ≡

  Current Assets – Current Liabilities

- Positive when the cash that will be received over the next 12 months exceeds the cash that will be paid out
- Usually positive in a healthy firm

2.5 Financial Cash Flow

- In finance, the most important item that can be extracted from financial statements is the actual cash flow of the firm.
- Since there is no magic in finance, it must be the case that the cash flow received from the firm's assets must equal the cash flows to the firm's creditors and stockholders.

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

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

U.S. COMPOSITE CORPORATION Financial Cash Flow 2010 (in $ millions)	
Cash Flow of the Firm	
Operating cash flow (Earnings before interest and taxes plus depreciation minus taxes)	$238
Capital spending (Acquisitions of fixed assets minus sales of fixed assets)	−173
Additions to net working capital	− 23
Total	$ 42
Cash Flow to Investors in the Firm	
Debt (Interest plus retirement of debt minus long-term debt financing)	$ 36
Equity (Dividends plus repurchase of equity minus new equity financing)	6
Total	$ 42

TABLE 2.5

Financial Cash Flow of the U.S. Composite Corporation

Cited by the text book (p. 63)

2.5 Financial Cash Flow

- CF(A) = operating cash flow – net capital spending – changes in net working capital

- Operating cash flow (OCF) = EBIT + depreciation – taxes
  - Net capital spending = purchases of fixed assets – sales of fixed assets
  - Net capital spending = ending net fixed assets – beginning net fixed assets + depreciation
  - Changes in NWC = ending NWC – beginning NWC

2.5 Financial Cash Flow

- Cash Flow to Creditors and Stockholders
  - Cash flow to creditors = interest paid + retirement of debt – proceeds from new debt
  - 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

- Cash flow to stockholders = dividends paid – net new equity raised = dividends paid – (ending common stock– beginning common stock)

2.5 The Statement of Cash Flows

- There is an official accounting statement called the statement of cash flows.
- The three components of the statement of cash flows are:
  - Cash flow from operating activities
  - Cash flow from investing activities
  - Cash flow from financing activities

Sources and Uses

- Activities that bring cash in 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

TABLE 2.6

Statement of Consolidated Cash Flows of the U.S. Composite Corporation

U.S. COMPOSITE CORPORATION Statement of Cash Flows 2010 (in $ millions)	
Operations	
Net income	$ 86
Depreciation	90
Deferred taxes	13
Changes in assets and liabilities	
Accounts receivable	− 24
Inventories	11
Accounts payable	16
Accrued expenses	18
Other	− 8
Total cash flow from operations	$202
Investing activities	
Acquisition of fixed assets	−$198
Sales of fixed assets	25
Total cash flow from investing activities	−$173
Financing activities	
Retirement of long-term debt	−$ 73
Proceeds from long-term debt sales	86
Change in notes payable	− 3
Dividends	− 43
Repurchase of stock	− 6
Proceeds from new stock issue	43
Total cash flow from financing activities	$ 4
Change in cash (on the balance sheet)	$ 33

Cited by the text book (p. 67)

References

- Ross, Westerfield, Jaffe and Jordan, Core Principles and Application of Corporate Finance, 3ed, McGraw Hill.
- Jordan, Miller, and Dolvin, Fundamentals of Investments, 6ed, MacGraw Hill.
- Berk, DeMarzo and Harford, Fundamentals of Corporate Fiance, 2nd ed, Pearson.