



Chapter 2 Financial Statements, Taxes, and Cash Flow

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Key Concepts and Skills

After studying this chapter, you should be able to:

- Differentiate between accounting value (or “book” value) and market value.
- Distinguish accounting income from cash flow.
- Explain the difference between average and marginal tax rates.
- Determine a firm’s cash flow from its financial statements.

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Chapter Outline

- 2.1 The Balance Sheet
- 2.2 The Income Statement
- 2.3 Taxes
- 2.4 Cash Flow

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The Balance Sheet (1 of 2)

- A snapshot of the firm's assets and liabilities at a given point in time ("as of ...")
- Assets
 - Left-hand side (or upper portion)
 - In order of decreasing liquidity
- Liabilities and Owners' Equity
 - Right-hand side (or lower portion)
 - In ascending order of when due to be paid
- Balance Sheet Identity
 - $\text{Assets} = \text{Liabilities} + \text{Stockholders' Equity}$

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The Balance Sheet

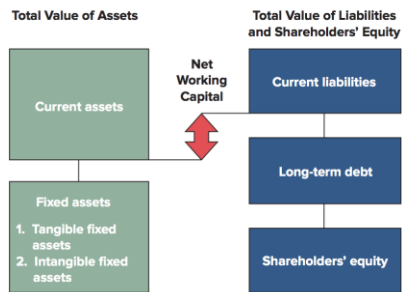


FIGURE 2.1

The balance sheet

Left side: Total value of assets.
Right side: Total value of liabilities and shareholders' equity.

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The Balance Sheet (2 of 2)

- Net working capital
 - Current Assets minus Current Liabilities
 - Usually positive for a healthy firm
- Liquidity
 - Speed and ease of conversion to cash without significant loss of value
 - Valuable in avoiding financial distress
- Debt versus Equity
 - Shareholders' equity = Assets - Liabilities

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U.S. Corporation Balance Sheet

TABLE 2.1
Balance sheets for
U.S. Corporation

U.S. CORPORATION					
Balance Sheets as of December 31, 2018 and 2019					
(\$ in Millions)					
	2018	2019		2018	2019
Assets			Liabilities and Owners' Equity		
Current assets			Current liabilities		
Cash	\$ 104	\$ 160	Accounts payable	\$ 232	\$ 266
Accounts receivable	455	688	Notes payable	196	123
Inventory	553	555	Total	\$ 428	\$ 389
Total	\$1,112	\$1,403			
Fixed assets			Long-term debt	\$ 408	\$ 454
Net fixed assets	\$1,644	\$1,709	Owners' equity		
			Common stock and paid-in surplus	600	640
			Retained earnings	1,320	1,629
			Total	\$1,920	\$2,269
Total assets	\$2,756	\$3,112	Total liabilities and owners' equity	\$2,756	\$3,112

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Market vs. Book Value

- **Book value** = the balance sheet value of the assets, liabilities, and equity
- **Market value** = true value; the price at which the assets, liabilities, or equity can actually be bought or sold
 - Market value and book value are often very different. Why?
 - Which is more important to the decision-making process?



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Klingon Corporation

EXAMPLE 2.2 Market versus Book Values

The Klingon Corporation has fixed assets with a book value of \$700 and an appraised market value of about \$1,000. Current assets are \$400 on the books, but approximately \$600 would be realized if they were liquidated. Klingon has \$500 in long-term debt, both book value and market value, and no current liabilities of any kind. What is the book value of the equity? What is the market value?

We can construct two simplified balance sheets, one in accounting (book value) terms and one in economic (market value) terms:

KLINGON CORPORATION					
Balance Sheets					
Market Value versus Book Value					
	Book	Market		Book	Market
Assets			Liabilities and Shareholders' Equity		
Current assets	\$ 400	\$ 600	Long-term debt	\$ 500	\$ 500
Net fixed assets	700	1,000	Shareholders' equity	600	1,100
	<u>\$1,100</u>	<u>\$1,600</u>		<u>\$1,100</u>	<u>\$1,600</u>

In this example, shareholders' equity is actually worth almost twice as much as what is shown on the books. The distinction between book and market values is important precisely because book values can be so different from true economic values.

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Income Statement

- The income statement measures performance over a specified period of time (period, quarter, year).
- Report revenues first and then deduct any expenses for the period.
- End result = Net Income = “Bottom Line”
 - Dividends paid to shareholders
 - Addition to retained earnings
- Income Statement Equation:
 - Net Income = Revenue - Expenses

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U.S. Corporation Income Statement

U.S. CORPORATION 2019 Income Statement (\$ in Millions)		TABLE 2.2 Income statement for U.S. Corporation
Net sales	\$1,509	
Cost of goods sold	750	
Depreciation	89	
Earnings before interest and taxes	\$ 670	
Interest paid	70	
Taxable income	\$ 600	
Taxes (21%)	126	
Net income	\$ 474	
Dividends	\$ 165	
Addition to retained earnings	309	

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Financial Statements (1 of 2)

- GAAP Matching Principle
 - Recognize revenue when it is fully earned.
 - Match expenses required to generate revenue to the period of recognition.
- Noncash Items
 - Expenses charged against revenue that do not affect cash flow
 - Depreciation = most important

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Financial Statements (2 of 2)

- Time and Costs
 - Fixed or variable costs
 - Not obvious on income statement
- Earnings Management
 - Smoothing earnings
 - GAAP leaves “wobble room”
 - Global standardization of accounting
 - GAAP versus IFRS
 - Information about IFRS can be found [at this link](#).

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Example: Work the Web

- Publicly traded companies must file regular reports with the Securities and Exchange Commission.
- These reports are usually filed electronically and can be searched at the SEC public site called EDGAR.
- [Click on this link](#), pick a company, and see what you can find!

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Taxes

- Marginal vs. Average tax rates
 - Marginal – % tax paid on the next dollar earned
 - Average – total taxes paid / taxable income
 - If considering a project that will increase taxable income by \$1 million, which tax rate should you use in your analysis?

Information about IFRS can be found [at this link](#).



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Corporate Tax Rates

Following the passage of the Tax Cuts and Jobs Act of 2017, the federal corporate tax rate in the United States became a flat 21 percent for corporations.

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Example: Marginal vs. Average Rates

Suppose you are single and your personal taxable income is \$100,000.

What is your tax bill?

What is the average tax rate?

What is the marginal rate?

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Tax on \$100,000

.10(\$9,525)	=	\$ 952.50
.12(\$38,700 - 9,525)	=	3,501.00
.22(\$82,500 - 38,700)	=	9,636.00
.24(\$100,000 - 82,500)	=	<u>4,200.00</u>
		<u>\$18,289.50</u>



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Average & Marginal Tax Rates

The tax bill is \$18,289.50 on \$100,000 of taxable income. The average tax rate is $\$18,289.50/\$100,000 = .1829$, or 18.29%.

If you made one more dollar, you would pay 24 cents in tax, so the marginal tax rate is 24 percent.

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The Concept of Cash Flow

- Cash flow = one of the most important pieces of information that can be derived from financial statements
- The accounting Statement of Cash Flows does **not** provide the same information that we are interested in here.
- Our focus: how cash is generated from utilizing assets and how it is paid to those who finance the asset purchase

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Cash Flow from Assets

- Cash Flow From Assets (CFFA)
 - = Operating Cash Flow (OCF)
 - Net Capital Spending (NCS)
 - Changes in NWC (Δ NWC)

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- Cash Flow From Assets (CFFA)
 - = Cash Flow to Creditors (CF/CR)
 - + Cash Flow to Stockholders (CF/SH)

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Example: U.S. Corporation (1 of 2)

Balance Sheet				U.S. Corporation			
Assets		Liabilities & Owners' Equity		Income Statement			
	2018	2019	2018	2019			
Current Assets			Current Liabilities		Net sales	\$1,509	
Cash	\$104	\$160	Accounts Payable	\$232	Cost of goods sold	750	
Accounts Receivable	455	633	Notes Payable	196	Depreciation	89	
Inventory	553	555	Total	\$428	\$389	Earnings before interest and taxes	\$670
Total	\$1,112	\$1,403			Interest Paid	70	
Fixed Assets			Long-term debt	\$408	\$454	Taxable income	\$600
Net Fixed assets	\$1,644	\$1,709	Owners' equity			Taxes (21%)	126
			Common stock and			Net Income	\$474
			paid-in surplus	600	640	Dividends	\$165
			Retained earnings	1,320	1,629	Addition to retained earnings	\$309
			Total	\$1,920	\$2,269		
Total assets	\$2,756	\$3,112	Total Liabilities & Owners Equity	\$2,756	\$3,112		

- **CFFA = OCF – NCS – Δ NWC**
 - OCF = EBIT + depreciation – taxes
 - = \$670 + 89 – 126 = **\$633**
 - NCS = ending net FA – beginning net FA + depreciation
 - = \$1709 – 1644 + 89 = **\$154**
 - Δ NWC = ending NWC – beginning NWC
 - = (\$1403 – 389) – (\$1112 – 428) = **\$330**
- **CFFA = 633 – 154 – 330 = \$149**

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Example: U.S. Corporation (2 of 2)

Balance Sheet				U.S. Corporation	
Assets		Liabilities & Owners' Equity		Income Statement	
	2018	2019	2018	2019	
Current Assets			Current Liabilities		Net sales
Cash	\$184	\$180	Accounts Payable	\$232	\$1,509
Accounts Receivable	485	658	Notes Payable	196	Cost of goods sold
Inventory	553	555	Total	\$428	750
Total	\$1,112	\$1,403			Depreciation
					89
Fixed Assets			Long-term debt	\$408	Earnings before interest and taxes
Net Fixed assets	\$1,644	\$1,709		\$454	\$670
			Owners' equity		Interest Paid
			Common stock and		70
			paid-in surplus	600	Taxable income
			Retained earnings	1,320	\$600
			Total	\$1,920	Taxes (21%)
				\$2,269	126
			Total Liabilities &		Net Income
			Owners Equity	\$2,756	\$474
Total assets	\$2,756	\$3,112			Dividends
					\$165
					Addition to retained earnings
					\$309

- CFFA** = $CF/CR + CF/SH$

CF/CR = interest paid – net new borrowing

= $\$70 - (\$454 - 408) = \$24$

CF/SH = dividends paid – net new equity

= $\$165 - (\$640 - 600) = \$125$
- CFFA** = $\$24 + \$125 = \$149$

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Table 2.4

I. The cash flow identity

Cash flow from assets = Cash flow to creditors (bondholders)
+ Cash flow to stockholders (owners)

II. Cash flow from assets

Cash flow from assets = Operating cash flow
– Net capital spending
– Change in net working capital (NWC)

where

Operating cash flow = Earnings before interest and taxes (EBIT)
+ Depreciation – Taxes

Net capital spending = Ending net fixed assets – Beginning net fixed assets
+ Depreciation

Change in NWC = Ending NWC – Beginning NWC

III. Cash flow to creditors (bondholders)

Cash flow to creditors = Interest paid – Net new borrowing

IV. Cash flow to stockholders (owners)

Cash flow to stockholders = Dividends paid – Net new equity raised

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Quick Quiz (1 of 2)

- What is the difference between book value and market value? ([Slide 2.8](#))
 - Which should we use for decision making purposes?
- What is the difference between accounting income and cash flow?
 - Which do we need to use when making decisions? ([Slide 2.12](#))

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Quick Quiz (2 of 2)

- What is the difference between average and marginal tax rates?
 - Which should we use when making financial decisions? ([Slide 2.15](#))
- How do we determine a firm's cash flows?
 - What are the equations and where do we find the information? ([Slide 2.21](#))

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Dole Cola Example

DOLE COLA 2019 Income Statement

Net sales		\$600
Cost of goods sold		300
Depreciation		<u>150</u>
Earnings before interest and taxes		\$150
Interest paid		<u>30</u>
Taxable income		\$120
Taxes		<u>25</u>
Net income		<u>\$ 95</u>
Dividends	\$30	
Addition to retained earnings	65	

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Dole Cola Operating Cash Flow

DOLE COLA 2019 Operating Cash Flow

Earnings before interest and taxes	\$150
+ Depreciation	150
- Taxes	<u>25</u>
Operating cash flow	<u>\$275</u>

DOLE COLA

2019 Operating Cash Flow

Ending Net Fixed Assets	\$750
- Beginning Net Fixed Assets	\$500
+ Depreciation	<u>\$150</u>
	\$400

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Dole Cola Net Capital Spending & Change in Net Working Capital

DOLE COLA	
2019 Net Capital Spending	
Ending Net Fixed Assets	\$ 750
- Beginning Net Fixed Assets	\$ 500
+ Depreciation	<u>\$ 150</u>
	\$ 400

DOLE COLA	
2019 Change in Net Working Capital	
2019 Current Assets	\$ 2,260
2019 Current Liabilities	\$ 1,710
2019 Net Working Capital	\$ 550
2018 Current Assets	\$ 2,130
2018 Current Liabilities	\$ 1,620
2018 Net Working Capital	<u>\$ 510</u>
Change in Net Working Capital	<u>\$ 40</u>

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Dole Cola Cash Flow from Assets – Option 1

DOLE COLA 2019 Cash Flow from Assets

Operating cash flow	\$275
– Net capital spending	400
– Change in NWC	<u>40</u>
Cash flow from assets	<u><u>–\$165</u></u>



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Dole Cola CFFA – Option 2

DOLE COLA	
2019 Change in Net Working Capital	
2019 Current Assets	\$ 2,260
2019 Current Liabilities	\$ 1,710
2019 Net Working Capital	\$ 550
2018 Current Assets	\$ 2,130
2018 Current Liabilities	\$ 1,620
2018 Net Working Capital	<u>\$ 510</u>
Change in Net Working Capital	\$ 40

DOLE COLA 2019 Cash Flow from Assets

Operating cash flow	\$275
– Net capital spending	400
– Change in NWC	<u>40</u>
Cash flow from assets	<u><u>–\$165</u></u>

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Dole Cola Cash Flow to Stockholders & Creditors

DOLE COLA 2019 Income Statement

Net sales	\$600
Cost of goods sold	300
Depreciation	<u>150</u>
Earnings before interest and taxes	\$150
Interest paid	<u>30</u>
Taxable income	\$120
Taxes	<u>25</u>
Net income	\$ 95

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Dole Cola

Cash Flow to Creditors

DOLE COLA 2019 Cash Flow to Creditors

Interest paid	\$ 30
– Net new borrowing	225
Cash flow to creditors	<u>–\$195</u>



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Chapter 2

END

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