



Gatton
COLLEGE OF BUSINESS & ECONOMICS
UNIVERSITY OF KENTUCKY

Chapter 2

Finance 300
David Moore



Chapter 2

Financial Statements and Cash Flow

- This chapter is largely a review of key accounting concepts.

1. Balance sheet

2. Income statement

3. Taxes

4. Cash flow

Balance Sheet

The balance sheet is a snapshot of the firm's assets and liabilities at a given point in time

- **Balance Sheet Identity**
 - **Assets = Liabilities + Stockholders' Equity**

U.S. Corporation Balance Sheet Table 2.1

U.S. CORPORATION 2014 and 2015 Balance Sheets (\$ in millions)					
Assets			Liabilities and Owners' Equity		
	2014	2015		2014	2015
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	<u>\$1,112</u>	<u>\$1,403</u>			
Fixed assets			Owners' equity		
Net plant and equipment	\$1,644	\$1,709	Long-term debt	\$ 408	\$ 454
			Common stock and paid-in surplus	600	640
			Retained earnings	1,320	1,629
			Total	<u>\$1,920</u>	<u>\$2,269</u>
Total assets	<u>\$2,756</u>	<u>\$3,112</u>	Total liabilities and owners' equity	<u>\$2,756</u>	<u>\$3,112</u>

2-4

Liquidity

- Ability to convert to cash quickly *without a significant loss in value*
- Liquid firms are less likely to experience financial distress
- But liquid assets typically earn a lower return
- Trade off between liquid and illiquid assets

Debt vs Equity

- Creditors are paid first ; shareholders get residual
- Other term for debt is
 - Financial leverage
- Cost and benefits of financial leverage (debt) discussed more in later chapters

Market Value vs. Book Value

The balance sheet provides the book value of the assets, liabilities, and equity.

Market value is the price at which the assets, liabilities, or equity can actually be bought or sold.

Market Value vs. Book Value Equity/share

Examples

Takeaway: Large difference between book value and market value per share.

Market Value vs. Book Value

- The market value of equity = stock price times number of shares outstanding)



- Which is *more important* to the decision-making process?

Income Statement

Summarizes a firms performance over a period of time.

Equation:

$$\text{Revenue} - \text{Expenses} = \text{Income}$$

U.S. Corporation Income Statement – Table 2.2

U.S. CORPORATION 2015 Income Statement (\$ in millions)		
Net sales		\$1,509
Cost of goods sold		750
Depreciation		<u>65</u>
Earnings before interest and taxes		\$ 694
Interest paid		<u>70</u>
Taxable income		\$ 624
Taxes (34%)		<u>212</u>
Net income		<u><u>\$ 412</u></u>
Dividends	\$103	
Addition to retained earnings	309	

Taxes

- Tax code is complicated
- This isn't a corporate tax class

What kind of taxes do companies pay?



Marginal and Average 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

Corporate Tax Rates

Each major industry has different tax incentives provided by the U.S. Government and as such, may actually pay a different average tax rate.

Industry	Number of Companies	Average Tax Rate
Electric utilities (Eastern U.S.)	24	33.8%
Trucking	33	32.7
Railroad	15	27.4
Securities brokerage	30	20.5
Banking	481	17.5
Medical supplies	264	11.2
Internet	239	5.9
Pharmaceutical	337	5.6
Biotechnology	121	4.5

Foreign Earnings and Corporate Inversion

- **How are foreign earnings taxed?**



- **What is a corporate inversion?**



- **(not)Fun fact: You owe taxes if you own stock in US company even if you don't sell shares!! (See WSJ article)**

Income Statement and Cash Flows

1. GAAP

- Recognition or Realization principle
- Matching Principle

2. Non-Cash Items

Cash Flow

Difference between number of dollars that came in and number of dollars that came out.

Cash flow Identify:

Cash flow from assets=Cash flow to creditors +Cash flow to stockholders

Cash Flow From Assets

- Cash Flow From Assets (CFFA) = Cash Flow to Creditors
+ Cash Flow to Stockholders
– Also called “**Free Cash Flow**”
- Cash Flow From Assets = Operating Cash Flow
 - Net Capital Spending
 - Changes in NWC

Operating Cash Flow

$$\text{OCF} = \text{EBIT (from income statement)} + \text{Depreciation} - \text{Taxes}$$

U.S. CORPORATION 2015 Income Statement (\$ in millions)		
Net sales		\$1,509
Cost of goods sold		750
Depreciation		65
Earnings before interest and taxes		\$ 694
Interest paid		70
Taxable income		\$ 624
Taxes (34%)		212
Net income		\$ 412
Dividends	\$103	
Addition to retained earnings	309	

Net Capital Spending

$$\text{NCS} = \text{Ending Net Fixed Asset} - \text{Beginning Net Fixed Asset} + \text{Depreciation}$$

U.S. CORPORATION 2014 and 2015 Balance Sheets (\$ in millions)					
Assets			Liabilities and Owners' Equity		
	2014	2015		2014	2015
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		
Net plant and equipment	\$1,644	\$1,709		\$ 408	\$ 454
			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

Changes in Net Working Capital

NWC= Current assets – Current Liabilities

Change in NWC= Ending NWC – Beginning NWC

U.S. CORPORATION 2014 and 2015 Balance Sheets (\$ in millions)					
Assets			Liabilities and Owners' Equity		
	2014	2015		2014	2015
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		
Net plant and equipment	\$1,644	\$1,709		\$ 408	\$ 454
			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

What is the CFFA?

Cash Flow to Creditors

Cash flow to creditors
= Interest paid – Net new borrowing

U.S. CORPORATION 2015 Balance Sheets (in millions)		
Liabilities and Owners' Equity		
	2014	2015
Current liabilities		
Accounts payable	\$ 232	\$ 266
Notes payable	196	123
Total	<u>\$ 428</u>	<u>\$ 389</u>
Long-term debt		
	<u>\$ 408</u>	<u>\$ 454</u>
Owners' equity		
Common stock and paid-in surplus		
	600	640
Retained earnings	1,320	1,629
Total	<u>\$1,920</u>	<u>\$2,269</u>
Total liabilities and owners' equity	<u>\$2,756</u>	<u>\$3,112</u>

U.S. CORPORATION 2015 Income Statement (in millions)		
Net sales		\$1,509
Cost of goods sold		750
Depreciation		<u>65</u>
Earnings before interest and taxes		\$ 694
Interest paid		<u>70</u>
Taxable income		\$ 624
Taxes (34%)		<u>212</u>
Net income		<u>\$ 412</u>
Dividends	\$103	
Addition to retained earnings	309	

Cash Flow to Shareholder

Cash Flow to stockholders

$$= \text{Dividends paid} - \text{Net new equity issued}$$

U.S. CORPORATION 2015 Income Statement (\$ in millions)		
Net sales		\$1,509
Cost of goods sold		750
Depreciation		<u>65</u>
Earnings before interest and taxes		\$ 694
Interest paid		<u>70</u>
Taxable income		\$ 624
Taxes (34%)		<u>212</u>
Net income		<u>\$ 412</u>
Dividends	\$103	
Addition to retained earnings	309	

CORPORATION 5 Balance Sheets (millions)		
Liabilities and Owners' Equity		
	2014	2015
Current liabilities		
Accounts payable	\$ 232	\$ 266
Notes payable	<u>196</u>	<u>123</u>
Total	\$ 428	\$ 389
Long-term debt		
	\$ 408	\$ 454
Owners' equity		
Common stock and paid-in surplus	600	640
Retained earnings	<u>1,320</u>	<u>1,629</u>
Total	<u>\$1,920</u>	<u>\$2,269</u>
Total liabilities and owners' equity	<u>\$2,756</u>	<u>\$3,112</u>

Does it “balance”?

Summary

I. The cash flow identity

$$\begin{aligned}\text{Cash flow from assets} &= \text{Cash flow to creditors (bondholders)} \\ &+ \text{Cash flow to stockholders (owners)}\end{aligned}$$

II. Cash flow from assets

$$\begin{aligned}\text{Cash flow from assets} &= \text{Operating cash flow} \\ &- \text{Net capital spending} \\ &- \text{Change in net working capital (NWC)}\end{aligned}$$

where:

$$\begin{aligned}\text{Operating cash flow} &= \text{Earnings before interest and taxes (EBIT)} \\ &+ \text{Depreciation} - \text{Taxes}\end{aligned}$$

$$\begin{aligned}\text{Net capital spending} &= \text{Ending net fixed assets} - \text{Beginning net fixed assets} \\ &+ \text{Depreciation}\end{aligned}$$

$$\text{Change in NWC} = \text{Ending NWC} - \text{Beginning NWC}$$

III. Cash flow to creditors (bondholders)

$$\text{Cash flow to creditors} = \text{Interest paid} - \text{Net new borrowing}$$

IV. Cash flow to stockholders (owners)

$$\text{Cash flow to stockholders} = \text{Dividends paid} - \text{Net new equity raised}$$

Example

Sales=600

CGS=300

Depreciation=150

Interest=30

Taxes=35% (round up)

Dividends=30

Beg NFA=500 End NFA=750

Beg CA=2130 End CA=2260 Beg CL=1620 End CL=1710

No new equity

What is CF to creditor and net new borrowing?

Sources of Financial Information

- Financial information is abundant and readily accessible.
- The following are some common sources:
 - Annual reports (often on company websites)
 - SEC
 - EDGAR: <http://www.sec.gov/edgar.shtml>
 - 10K & 10Q reports
 - Internet
 - NYSE (www.nyse.com)
 - NASDAQ (www.nasdaq.com)
 - Yahoo! Finance (<http://finance.yahoo.com>)
 - Wall Street Journal: *news, analysis*

Key Learning Objectives:

- Be able to read and interpret basic balance sheet and income statement
- Differentiate
 1. book values vs. market values
 2. accounting income vs. cash flow
 3. accounting cash flows vs. financial cash flows
 4. average vs. marginal tax rates
- Calculate
 1. the average and marginal tax rates using a corporate tax table
 2. cash flow from assets
 3. cash flows to creditors
 4. cash flow to stockholders