FIN 300

Financial Statements and Cash Flow

Lecture 2

FINANCIAL STATEMENTS

- Record of financial activities and positions
- Mandatory filings for public corporations
- SEC EDGAR
- Very important source of information

TOPICS COVERED

CHAPTER 2

- Balance Sheet
- Income Statement
- Taxes
- Cash Flow

BALANCE SHEET

- Snapshot of the firm's assets and liabilities
- Assets are any valuable resource
- Liabilities are any obligation (debts, etc.)

ASSETS = LIABILITIES + SHAREHOLDER'S EQUITY

Assets		Liabilities	
Current Assets		Current Liabilities	
Cash	1,500	Accounts Payable	600
Accounts Receivable	500	Notes Payable	300
Inventory	750		
Total	2,750	Total	900
Fixed Assets			
Property Plant and Equipment	5,000	Long-term Debt	3,500
		Shareholders' Equity	
		Common stock and paid-in surplus	1,000
		Retained Earnings	2,350
		Total	3,350
Total Assets	7,750	Total Liabilities + Shareholders' Equity	7,750

LIQUIDITY

- Convert asset to cash without much cost
- Liquidity management is important
- Opportunity Cost
- Tradeoff decisions required

NET WORKING CAPITAL

- NWC = Current Assets - Current Liabilities
- From our example:

  - Current Assets = 2,750
  - Current Liabilities = 900
  - Net Working Capital = 2,750 - 900 = 1,850

DEBT VS. EQUITY

- Debt is paid before Equity
- Equity holders are residual claimants
- Tradeoff decisions required
- Leverage increases risk and expected return

MARKET VS. BOOK VALUE

- Shareholders' Equity = Assets - Liabilities
- Market Value is whatever people will pay
- Managers often compensated according to market value

SUMMARY

- The Balance Sheet is a snapshot of the firm's assets and liabilities
- Total Assets = Total Liabilities + Shareholers' Equity
- Net Working Capital
  - = Current Assets - Current Liabilities

TAXES

- Corporations pay taxes on income
- The tax code is complicated
- See IRS document for excessive details

  FYI only (Don't study this!)
- Understand marginal vs average tax rate:

  Tax rate increases as income increases

Over-	But not over-	Tax is:	Of the amount over --
0	50,000	15%	0
50,000	75,000	7,500 + 25%	50,000
75,000	100,000	13,750 + 34%	75,000
100,000	335,000	22,250 + 39%	100,000
335,000	10,000,000	113,900 + 34%	335,000
10,000,000	15,000,000	3,400,000 + 35%	10,000,000
15,000,000	18,333,333	5,150,000 + 38%	15,000,000
18,333,333	...	35%	0

See WSJ article on Apple, Cash, and Taxes.

INCOME STATEMENT

- A summary of revenues and expenses
- Calculation of Net Income
- Net Income $\neq$ Cash Flows
  - Accounting Standards
  - Recognition and matching
- Provides information about business activities
  - Over a specific time period
  - Yearly or quarterly

Hypothetical Firm
Year 2016

Revenue	
Net Sales	+
Expenses	
Cost of Goods Sold	-
Depreciation	-
Earnings Before Interest and Taxes (EBIT)	Revenue - Operating Expenses
Interest Paid	-
Taxable Income	EBIT - Interest Paid
Taxes	Taxable Income $\times$ Tax Rate
Net Income (NI)	Taxable Income - Taxes

Hypothetical Firm Example
Year 2016

Revenue	
Net Sales	10,000
Expenses	
Cost of Goods Sold	5,000
Depreciation	500
Earnings Before Interest and Taxes (EBIT)	4,500
Interest Paid	100
Taxable Income	4,400
Taxes (34%)	1,496
Net Income (NI)	2,904

Dividends: 1,150

Addition to Retained Earnings: 1,754

INCOME STATEMENT

- A summary of revenues and expenses
- Calculation of Net Income
  - EBIT = Revenue - Operating Expenses
  - Taxable Income = EBIT - Interest Paid
  - Taxes = Taxable Income $\times$ Tax Rate
  - Net Income = Earnings Before Taxes - Taxes

CASH FLOW

TOPICS COVERED

- Cash Flow Identity
  - - Cash Flow From Assets
  - - Cash Flow to Creditors
  - - Cash Flow to Stockholders

CASH FLOW IDENTITY

Cash Flow From Assets = Cash Flow to Creditors
+ Cash Flow to Sockholders

Dollars that go in/out of the firm equal the total dollars to/from the creditors and stockholders.

CASH FLOW FROM ASSETS

- This is the net amount of cash that is coming out of (or into) the business
- Not necessarily positive

$$\mathrm{CF}_{\mathrm{Assets}} = \mathrm{OCF} - \mathrm{NCS} - \Delta\mathrm{NWC}$$

OCF: Operating Cash Flow
NCS: Net Capital Spending
ΔNWC: Change in Net Working Capital

OPERATING CASH FLOW

- Related to Net Income
  - (with some adjustments for interest, depreciation, etc.)
- Cash from the firm's day-to-day operations

Operating Cash Flow = EBIT + Depreciation - Taxes

We can get all this information from the income statement.

$$\mathrm{CF}_{\mathrm{Assets}} = \mathrm{OCF} - \mathrm{NCS} - \Delta\mathrm{NWC}$$

OCF: Operating Cash Flow
NCS: Net Capital Spending
ΔNWC: Change in Net Working Capital

NET CAPITAL SPENDING

$$\text{Net Capital Spending} = \text{Fixed Assets}_2 - \text{Fixed Assets}_1 + \text{Depreciation}$$

- Tells us how much was invested in fixed capital
- Fixed Assets on the Balance Sheet
- Depreciation on the Income Statement

2-Period Balance Sheet Example

Assets (Year 1)		**Assets (Year 2)**	
Current Assets	(...)	Current Assets	(...)
Fixed Assets	1,500	Fixed Assets	1,800
Total	(...)	Total	(...)

$$\text{Fixed Assets}_1 = \$1,500$$
$$\text{Fixed Assets}_2 = \$1,800$$

FINISHING THE EXAMPLE

$$\text{Net Capital Spending} = \text{Fixed Assets}_2 - \text{Fixed Assets}_1 + \text{Depreciation}$$

Assume Depreciation is $\$500$.

$$\text{Net Capital Spending} = \$1,800 - \$1,500 + \$500 = \$800$$

We add back depreciation because it was not an actual cash outflow.

$$\mathrm{CF}_{\mathrm{Assets}} = \mathrm{OCF} - \mathrm{NCS} - \Delta\mathrm{NWC}$$

OCF: Operating Cash Flow
NCS: Net Capital Spending
ΔNWC: Change in Net Working Capital

CHANGE IN NET WORKING CAPITAL

- Net Working Capital = Current Assets - Current Liabilities
- ΔNet Working Capital
  - Look at balance sheet over two periods
- $\Delta NWC = NWC_2 - NWC_1$
  - $(CA_2 - CL_2) - (CA_1 - CL_1)$

SUMMARY

$$\mathrm{CF}_{\mathrm{Assets}} = \mathrm{OCF} - \mathrm{NCS} - \Delta\mathrm{NWC}$$

OCF = EBIT + Depreciation - Taxes

NCS = ΔFixed Assets + Depreciation

$$\Delta NWC = NWC_2 - NWC_1$$

CASH FLOW IDENTITY

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

CASH FLOW TO CREDITORS

- Represents the cash going to/from the debt holders

$$\text{Cash Flow to Creditors} = \text{Interest Paid} - \text{Net New Borrowing}$$

$$\text{Net New Borrowing} = \text{Longterm Debt}_2 - \text{Longterm Debt}_1$$

EXAMPLE

- Interest Paid = 100
- Longterm Debt_1 = 3,000
- Longterm Debt_2 = 2,900
- Cash Flow to Creditors = ?
- CF to Creditors = Interest Paid - Net New Borrowing
- Net New Borrowing = Longterm Debt_2 - Longterm Debt_1

Solution:

Net New Borrowing = 2,900 - 3,000 = -100

Cash Flow to Creditors = 100 - (-100) = 200

CASH FLOW IDENTITY

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

CASH FLOW TO STOCKHOLDERS

- Cash going to/from stockholders

EXAMPLE

- Dividends Paid = 200
- $CSPS_1$ = 3,000
- $CSPS_2$ = 3,200
- Cash Flow to Stockholders = ?
- CF to Stockholders = Dividends Paid - Net New Equity Raised
- Net New Equity Raised = $CSPS_2$ - $CSPS_1$

Solution:

Net New Equity Raised = 3,200 - 3,000 = 200

Cash Flow to Stockholders = 200 - 200 = 0

SUMMARY

- $\text{CF}_{Assets} = \text{CF}_{Creditors} + \text{CF}_{Stockholders}$
- $\text{CF}_{Assets} = \text{OCF} - \text{NCS} - \Delta\text{NWC}$
- $\text{CF}_{Creditors}$ = Interest Paid - Net New Borrowing
- $\text{CF}_{Stockholders}$ = Dividends Paid - Net New Equity Raised