

Lecture 2

Accounting Statements and Cash Flow

Accounting Statements and Cash Flow



The Balance Sheet

The Income Statement

Net Working Capital

Financial Cash Flow

The Statement of Cash Flows

Sources of Information

- Annual reports
- *Wall Street Journal*
- Internet
 - NYSE (www.nyse.com)
 - Nasdaq (www.nasdaq.com)
 - Text (www.mhhe.com)
- SEC
 - EDGAR
 - 10K & 10Q reports

The Balance Sheet

- An accountant's snapshot of the firm's accounting value as of a particular date.
- The Balance Sheet Identity is:
$$\text{Assets} \equiv \text{Liabilities} + \text{Stockholder's Equity}$$
- When analyzing a balance sheet, the financial manager should be aware of three concerns: accounting liquidity, debt versus equity, and value versus cost.

The Balance Sheet of the U.S. Composite Corporation

U.S. COMPOSITE CORPORATION

Balance Sheet 20X2 and 20X1 (in \$ millions)

Assets	20X2	20X1
Current assets:		
Cash and equivalents	\$140	\$107
Accounts receivable	294	270
Inventories	269	280
Other	<u>58</u>	<u>50</u>
Total current assets	\$761	\$707
Fixed assets:		
Property, plant, and equipment	\$1,423	\$1,274
Less accumulated depreciation	<u>-550</u>	<u>-460</u>
Net property, plant, and equipment	873	814
Intangible assets and other	<u>245</u>	<u>221</u>
Total fixed assets	<u>\$1,118</u>	<u>\$1,035</u>
 Total assets	 <u><u>\$1,879</u></u>	 <u><u>\$1,742</u></u>

The assets are listed in order by the length of time it normally would take a firm with ongoing operations to convert them into cash.

Clearly, cash is much more liquid than property, plant and equipment.

Balance Sheet Analysis

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

Accounting Liquidity

- Refers to the ease and quickness with which assets can be converted to cash.
- Current assets are the most liquid.
- Some fixed assets are intangible.
- 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

- Generally, when a firm borrows it gives the bondholders first claim on the firm's cash flow.
- Thus shareholder's equity is the residual difference between assets and liabilities.

Value versus Cost

- Under GAAP audited financial statements of firms in the U.S. carry assets at cost.
- Market value is a completely different concept.

The Income Statement

- The income statement measures performance over a specific period of time.
- The accounting definition of income is

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

U.S.C.C. Income Statement

U.S. COMPOSITE CORPORATION
Income Statement
20X2
(in \$ millions)

The operations section of the income statement reports the firm's revenues and expenses from principal operations

Total operating revenues	\$2,262
Cost of goods sold	- 1,655
Selling, general, and administrative expenses	- 327
Depreciation	<u>- 90</u>
Operating income	\$190
Other income	<u>29</u>
Earnings before interest and taxes	\$219
Interest expense	<u>- 49</u>
Pretax income	\$170
Taxes	- 84
Current: \$71	
Deferred: \$13	
Net income	<u><u>\$86</u></u>
Retained earnings:	
Dividends:	\$

U.S.C.C. Income Statement

U.S. COMPOSITE CORPORATION
Income Statement
20X2
(in \$ millions)

The non-operating section of the income statement includes all financing costs, such as interest expense.

Total operating revenues	\$2,262
Cost of goods sold	- 1,655
Selling, general, and administrative expenses	- 327
Depreciation	<u>- 90</u>
Operating income	\$190
Other income	<u>29</u>
Earnings before interest and taxes	\$219
Interest expense	<u>- 49</u>
Pretax income	\$170
Taxes	- 84
Current: \$71	
Deferred: \$13	
Net income	<u><u>\$86</u></u>
Retained earnings:	
Dividends:	\$

U.S.C.C. Income Statement

U.S. COMPOSITE CORPORATION
Income Statement
20X2
(in \$ millions)

Usually a separate section reports as a separate item the amount of taxes levied on income.

Total operating revenues	\$2,262
Cost of goods sold	- 1,655
Selling, general, and administrative expenses-	327
Depreciation	<u>- 90</u>
Operating income	\$190
Other income	<u>29</u>
Earnings before interest and taxes	\$219
Interest expense	<u>- 49</u>
Pretax income	\$170
Taxes	- 84
Current: \$71	
Deferred: \$13	
Net income	<u><u>\$86</u></u>
Retained earnings:	
Dividends:	\$

U.S.C.C. Income Statement

U.S. COMPOSITE CORPORATION
Income Statement
20x2
(in \$ millions)

Net income is the
“bottom line”.

Total operating revenues	\$2,262
Cost of goods sold	- 1,655
Selling, general, and administrative expenses	- 327
Depreciation	<u>- 90</u>
Operating income	\$190
Other income	<u>29</u>
Earnings before interest and taxes	\$219
Interest expense	<u>- 49</u>
Pretax income	\$170
Taxes	- 84
Current: \$71	
Deferred: \$13	
Net income	<u><u>\$86</u></u>
Retained earnings:	
Dividends:	

\$

Income Statement Analysis

- There are three things to keep in mind when analyzing an income statement:
 1. GAAP
 2. Non Cash Items
 3. Time and Costs

Generally Accepted Accounting Principles

1. 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

Income Statement Analysis

2. Non Cash Items

Depreciation is the most apparent. No firm ever writes a check for “depreciation”.

Another noncash item is deferred taxes, which does not represent a cash flow.

Income Statement Analysis

3. 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.

Net Working Capital



Net Working Capital \equiv Current Assets – Current Liabilities

- NWC is usually growing with the firm.

The Balance Sheet of the U.S.C.C.

U.S. COMPOSITE CORPORATION

Balance Sheet 20X2 and 20X1 (in \$ millions)

Assets	20X2		20X1		Liabilities (Debt) and Stockholder's Equity	20X2		20X1	
Current assets:					Current Liabilities:				
Cash and equivalents	\$140	\$107	\$140	\$107	Accounts payable	\$213	\$197	\$213	\$197
Accounts receivable	294	270	294	270	Notes payable	50	53	50	53
Inventories	269	280	269	280	Accrued expenses	223	205	223	205
Other	58	50	58	50	Total current liabilities	\$486	\$455	\$486	\$455
Total current assets	\$761	\$707	\$761	\$707					

$$\$252m = \$707 - \$455$$

$$\$275m = \$761m - \$486m$$

Here we see NWC grow to \$275 million in 20X2 from \$252 million in 20X1.
\$23 million

This increase of \$23 million is an investment of the firm.

2.4 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 from received from the firm's assets must equal the cash flows to the firm's creditors and stockholders.

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

Financial Cash Flow of the U.S.C.C.

U.S. COMPOSITE CORPORATION
Financial Cash Flow
20X2
(in \$ millions)

Cash Flow of the Firm	\$238	<u>Operating Cash Flow:</u>
Operating cash flow (Earnings before interest and taxes plus depreciation minus taxes)	(173)	EBIT \$219
Capital spending (Acquisitions of fixed assets minus sales of fixed assets)	(23)	Depreciation \$90
Additions to net working capital	<u>\$42</u>	Current Taxes <u>(\$71)</u>
Total	<u>\$42</u>	OCF \$238
Cash Flow of 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	<u>\$42</u>	

Financial Cash Flow of the U.S.C.C.

U.S. COMPOSITE CORPORATION

Financial Cash Flow

20X2

(in \$ millions)

Cash Flow of the Firm

Operating cash flow \$238

(Earnings before interest and taxes
plus depreciation minus taxes)

Capital spending

(Acquisitions of fixed assets
minus sales of fixed assets)

Additions to net working capital

Total

(173)

(23)

\$42

Cash Flow of Investors in the Firm

Debt

(Interest plus retirement of debt
minus long-term debt financing)

Equity

(Dividends plus repurchase of
equity minus new equity financing)

Total

\$36

6

\$42

Capital Spending

Purchase of fixed assets \$198

Sales of fixed assets (25)

Capital Spending \$173

Financial Cash Flow of the U.S.C.C.

U.S. COMPOSITE CORPORATION
Financial Cash Flow
20X2
(in \$ millions)

Cash Flow of the Firm

Operating cash flow \$238

(Earnings before interest and taxes
plus depreciation minus taxes)

Capital spending (173)

(Acquisitions of fixed assets
minus sales of fixed assets)

Additions to net working capital (23)

Total \$42

Cash Flow of Investors in the Firm

Debt \$36

(Interest plus retirement of debt
minus long-term debt financing)

Equity 6

(Dividends plus repurchase of
equity minus new equity financing)

Total \$42

NWC grew from \$275 million in 20X2 from \$252 million in 20X1.

This increase of \$23 million is the addition to NWC.

Financial Cash Flow of the U.S.C.C.

U.S. COMPOSITE CORPORATION
Financial Cash Flow
20X2
(in \$ millions)

Cash Flow of the Firm

Operating cash flow	\$238
(Earnings before interest and taxes plus depreciation minus taxes)	
Capital spending	(173)
(Acquisitions of fixed assets minus sales of fixed assets)	
Additions to net working capital	(23)
Total	<u>\$42</u>

Cash Flow of Investors in the Firm

Debt	\$36
(Interest plus retirement of debt minus long-term debt financing)	
Equity	6
(Dividends plus repurchase of equity minus new equity financing)	
Total	<u>\$42</u>

Financial Cash Flow of the U.S.C.C.

U.S. COMPOSITE CORPORATION
Financial Cash Flow
20X2
(in \$ millions)

Cash Flow of the Firm

Operating cash flow	\$238
(Earnings before interest and taxes plus depreciation minus taxes)	
Capital spending	(173)
(Acquisitions of fixed assets minus sales of fixed assets)	
Additions to net working capital	<u>(23)</u>
Total	<u>\$42</u>

Cash Flow of Investors in the Firm

Debt	\$36
(Interest plus retirement of debt minus long-term debt financing)	
Equity	6
(Dividends plus repurchase of equity minus new equity financing)	
Total	<u>\$42</u>

Cash Flow to Creditors

Interest	\$49
Retirement of debt	<u>73</u>
Debt service	122
Proceeds from new debt sales	<u>(86)</u>
Total	36

Financial Cash Flow of the U.S.C.C.

U.S. COMPOSITE CORPORATION
Financial Cash Flow
20X2
(in \$ millions)

Cash Flow of the Firm

Operating cash flow \$238

(Earnings before interest and taxes
plus depreciation minus taxes)

Capital spending (173)

(Acquisitions of fixed assets
minus sales of fixed assets)

Additions to net working capital (23)

Total \$42

Cash Flow of Investors in the Firm

Debt \$36

(Interest plus retirement of debt
minus long-term debt financing)

Equity 6

(Dividends plus repurchase of
equity minus new equity financing)

Total \$42

Cash Flow to Stockholders

Dividends \$43

Repurchase of stock 6

Cash to Stockholders 49

Proceeds from new stock issue (43)

Total \$6

Financial Cash Flow of the U.S.C.C.

U.S. COMPOSITE CORPORATION
Financial Cash Flow
20X2
(in \$ millions)

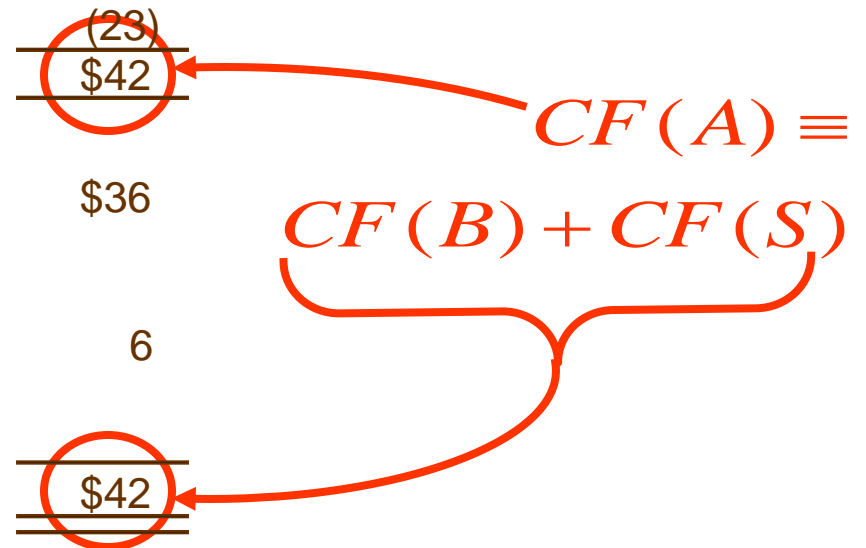
Cash Flow of the Firm

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

The cash from received from the firm's assets must equal the cash flows to the firm's creditors and stockholders:

Cash Flow of 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



The Statement of Cash Flows

- There is an official accounting statement called the statement of cash flows.
- This helps explain the change in accounting cash, which for U.S. Composite is \$33 million in 20X2.
- 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

U.S.C.C. Cash Flow from Operating Activities

U.S. COMPOSITE CORPORATION
Cash Flow from Operating Activities
20X2
(in \$ millions)

To calculate cash flow from operations, start with net income, add back noncash items like depreciation and adjust for changes in current assets and liabilities (other than cash).

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
Notes Payable	(3)
Other	(8)
Total Cash Flow from Operations	<u><u>\$199</u></u>

U.S.C.C. Cash Flow from Investing Activities

U.S. COMPOSITE CORPORATION
Cash Flow from Investing Activities
20X2
(in \$ millions)

Cash flow from investing activities involves changes in capital assets: acquisition of fixed assets and sales of fixed assets (*i.e.* net capital expenditures).

Acquisition of fixed assets	\$(198)
Sales of fixed assets	<u>25</u>
Total Cash Flow from Investing Activities	<u><u>\$(173)</u></u>

U.S.C.C. Cash Flow from Financing Activities

U.S. COMPOSITE CORPORATION
Cash Flow from Financing Activities
20X2
(in \$ millions)

Cash flows to and from creditors and owners include changes in equity and debt.

Retirement of debt (includes notes)	\$(73)
Proceeds from long-term debt sales	86
Dividends	(43)
Repurchase of stock	(6)
Proceeds from new stock issue	43
Total Cash Flow from Financing	<u><u>\$7</u></u>

U.S.C.C. Statement of Cash Flows

The statement of cash flows is the addition of cash flows from operations, cash flows from investing activities, and cash flows from financing activities.

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
Notes Payable	(3)
Other	(8)
Total Cash Flow from Operations	<u><u>\$199</u></u>
Investing Activities	
Acquisition of fixed assets	\$(198)
Sales of fixed assets	25
Total Cash Flow from Investing Activities	<u><u>\$(173)</u></u>
Financing Activities	
Retirement of debt (includes notes)	\$(73)
Proceeds from long-term debt sales	86
Dividends	(43)
Repurchase of stock	(6)
Proceeds from new stock issue	43
Total Cash Flow from Financing	<u><u>\$7</u></u>
Change in Cash (on the balance sheet)	<u><u>\$33</u></u>

Statement of Cash Flows versus Cash Flow from the Firm

- Since interest paid is deducted as an expense when net income is calculated (and not deducted under financing activities) there is a difference between cash flow from operations and total cash flow to the firm—the difference is interest expense.