Chapter 2 – Financial Statements, Taxes, and Cash Flows

The Balance Sheet

<table>
<thead>
<tr>
<th>Assets</th>
<th>2007</th>
<th>2008</th>
<th>Liabilities &amp; Equity</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets</td>
<td></td>
<td></td>
<td>Current liabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash</td>
<td>$126</td>
<td>$135</td>
<td>Accounts payable</td>
<td>$143</td>
<td>$151</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>195</td>
<td>210</td>
<td>Notes payable</td>
<td>196</td>
<td>209</td>
</tr>
<tr>
<td>Inventory</td>
<td>227</td>
<td>249</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$548</td>
<td>$594</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed assets</td>
<td></td>
<td></td>
<td>Long-term liabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property, plant &amp; equip.</td>
<td>$1,975</td>
<td>$2,524</td>
<td>Long-term debt</td>
<td>$465</td>
<td>$560</td>
</tr>
<tr>
<td>Less accum depreciation</td>
<td>460</td>
<td>640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$1,515</td>
<td>$1,884</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total assets</td>
<td>$2,063</td>
<td>$2,478</td>
<td>Total liabilities &amp; equity</td>
<td>$2,063</td>
<td>$2,478</td>
</tr>
</tbody>
</table>

Assets - what the firm owns

Liabilities and Equities: what the firm owes

A firm’s Long-Term Debt (LTD) account is a liability that has a maturity of at least 12 months.

Net Working Capital (NWC) = CA – CL

Liquidity

Balance sheet is a particular point in time - states what the firm was at that moment Listed in order of liquidity

Market Value versus Book Value

Accounting Balance sheet vs. Market Value Balance Sheet
Market Value is more important in that it represents assets that cannot be measured such as management talent or products that may bring a lawsuit.

Are market values always greater than book values? No

For Example:

A firm issues a 10-year bond with a coupon rate equal to 10 percent and the yield is also 10 percent. At the time of issue, one bond has a book value of $1,000. This value does not change.

\[ V_B = 100(PVIFA_{10\%, 10\%}) + 1,000(PVIF_{10\%, 10\%}) \]

\[ V_B = $1,000 \]

The market value changes as interest rates change. For example, assume the yield for this bond increases to 14 percent two years after the issuance date. What is the market value?

\[ V_B = 100(PVIFA_{8\%, 14\%}) + 1,000(PVIF_{8\%, 14\%}) \]

\[ V_B = $814.45 \]

The book value is $1,000 and the market value is $814.45.

Book values are used for tax calculations.

Book value is an accounting summary of value and is inferior to market value as a source of current information regarding the true value of the firm.

Market value is used for strategic decisions.

The market value of fixed assets is difficult to determine.

Where does the company make money? Generally from fixed assets

All other categories cost money - even cash (they could invest it)

**Debt vs. Equity**

Debt is a fixed claim on assets of the company and an agreement that certain cash payments will be made
Debt holders do not generally have a say in how the corporation is operated, but can force bankruptcy for nonpayment of debts.

Equity is a residual claim on assets of the firm - (stockholders) have control over how the firm is operated, but have no fixed payment schedule.

In a balance sheet, total equity is a ‘plug’ variable, amount is calculated to make both sides balance.

Net working capital (NWC)  \(=\) Current assets – Current liabilities

\[\text{NWC} = \text{Current assets} - \text{Current liabilities}\]

**Income Statement**

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>$5,730</td>
</tr>
<tr>
<td>Cost of goods sold</td>
<td>2,308</td>
</tr>
<tr>
<td>Expenses</td>
<td>1,847</td>
</tr>
<tr>
<td>Depreciation</td>
<td>180</td>
</tr>
<tr>
<td>EBIT</td>
<td>$1,395</td>
</tr>
<tr>
<td>Interest expense</td>
<td>40</td>
</tr>
<tr>
<td>EBT</td>
<td>$1,355</td>
</tr>
<tr>
<td>Taxes (40%)</td>
<td>542</td>
</tr>
<tr>
<td>Net income</td>
<td>$813</td>
</tr>
<tr>
<td>Add. to retained earnings</td>
<td>$163</td>
</tr>
<tr>
<td>Dividends</td>
<td>$650</td>
</tr>
</tbody>
</table>

Income statement is a measure of performance over a specific time, however, Net Income is not a useful number. We are concerned with cash flows. (A dollar today is worth more than a dollar tomorrow)

Income statements are prepared according to GAAP. Also, the income statement shows revenue when it accrues.

**Earnings per share (EPS)** – Suppose the company has 500 shares outstanding. What is the EPS?

\[\text{EPS} = \frac{\text{Net income}}{\text{Number of shares}}\]

**Cash Flows from Assets**

\[\text{CF from assets} = \text{OCF} - \text{Net Capital spending} - \Delta\text{NWC}\]
Or:

CF from assets = CF to creditors + CF to stockholders

Operating cash flow (OCF) = EBIT + Dep – Taxes

\[
\text{OCF} = \]

Net Capital Spending = \( FA_{\text{End}} - FA_{\text{Beg}} + \text{Dep} \)

\[
\text{NCS} =
\]

\( \Delta \text{NWC} = \text{NWC}_{\text{End}} - \text{NWC}_{\text{Beg}} \)

\[
\Delta \text{NWC} =
\]

\( \text{CF}_A = \text{OCF} - \text{Net Capital spending} - \Delta \text{NWC} \)

\[
\text{CF}_A =
\]

CF to creditors = Interest Paid – Net New Borrowing

CF to creditors = Interest Paid – \( (\text{LTD}_{\text{End}} - \text{LTD}_{\text{Beg}}) \)

\[
\text{CF to creditors} =
\]

CF to stockholders = Dividends – Net New Equity

CF to stockholders = Dividends – \( (\text{CS}_{\text{End}} - \text{CS}_{\text{Beg}}) \)

\[
\text{CF to stockholders} =
\]

\( \text{CF}_A = \)

Cash Flow Identity

\( \text{OCF} - \text{Capital spending} - \Delta \text{NWC} = \text{CF to creditors} + \text{CF to stockholders} \)

\( \text{Check} \)
What would cause an increase/decrease in operating cash flows? (Ceteris Paribus)

↑ Interest Expenses  →  
↑ Depreciation  →  
↑ Taxes  →  
↑ Sales  →  
↑ Costs  →  

Which one of the following will increase the cash flow from assets, all else constant?

↑ capital spending  →  
↓ the cash flow to creditors  →  
↑ depreciation  →  
↑ change in net working capital  →  
↓ in dividends paid  →  

Titan Football Manufacturing had the following operating results for 2008:

Sales = $18,450
Costs = $13,610
Depreciation expense = $2,420
Interest expense = $260
Dividends = $450.

At the beginning of the year:
Net fixed assets: $12,100
Current Assets: $3,020
Current Liabilities: $2,260

At the end of the year:
Net fixed assets: $12,700
Current Assets: $4,690
Current Liabilities: $2,720

The tax rate for 2008 was 35 percent

What is the net income for 2008?

What is the operating cash flow for 2008?

What is the cash flow from assets for 2008? Is this possible? Explain.

If no new debt was issued during the year, what is the cash flow to creditors? What is the cash flow to stockholders? Explain and interpret the positive and negative signs of your answers in (A) through (D).

To calculate the OCF, we first need to construct an income statement. The income statement starts with revenues and subtracts costs to arrive at EBIT. We then subtract out interest to get taxable income, and then subtract taxes to arrive at net income. Doing so, we get:

Income Statement

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</tr>
<tr>
<td>Cost of goods sold</td>
<td>13,610</td>
</tr>
<tr>
<td>Depreciation</td>
<td>2,420</td>
</tr>
<tr>
<td>EBIT</td>
<td>$2,420</td>
</tr>
<tr>
<td>Interest</td>
<td>260</td>
</tr>
<tr>
<td>Taxable income</td>
<td>$2,160</td>
</tr>
<tr>
<td>Taxes (35%)</td>
<td>756</td>
</tr>
<tr>
<td>Net income</td>
<td>$1,404</td>
</tr>
</tbody>
</table>
The operating cash flow for the year was:
$OCF = EBIT + \text{Depreciation} - \text{Taxes}$

To calculate the cash flow from assets, we also need the change in net working capital and net capital spending. The change in net working capital was:

$\text{Change in NWC} = \text{NWC}_{\text{end}} - \text{NWC}_{\text{beg}}$

$\text{Change in NWC} = (\text{CA}_{\text{end}} - \text{CL}_{\text{end}}) - (\text{CA}_{\text{beg}} - \text{CL}_{\text{beg}})$

$\text{Change in NWC} = $1,210$

And the net capital spending was:

$\text{Net capital spending} = \text{NFA}_{\text{end}} - \text{NFA}_{\text{beg}} + \text{Depreciation}$

$\text{Net capital spending} = $3,020$

So, the cash flow from assets was:

$\text{Cash flow from assets} = OCF - \text{Change in NWC} - \text{Net capital spending}$

$\text{Cash flow from assets} = -$146$

The cash flow from assets can be positive or negative, since it represents whether the firm raised funds or distributed funds on a net basis. In this problem, even though net income and OCF are positive, the firm invested heavily in both fixed assets and net working capital; it had to raise a net $146 in funds from its stockholders and creditors to make these investments.

The cash flow from creditors was:

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

$\text{Cash flow to creditors} = $260$

Rearranging the cash flow from assets equation, we can calculate the cash flow to stockholders as:

$\text{Cash flow from assets} = \text{Cash flow to stockholders} + \text{Cash flow to creditors}$

$\text{Cash flow to stockholders} = -$406$