
Greene Co. shows the following information on its 2008 income statement:

Sales = $138,000
Costs = $71,500
Other expenses = $4,100
Depreciation expense = $10,100
Interest expense = $7,900
Taxes = $17,760
Dividends = $5,400.

In addition, you're told that the firm issued $2,500 in new equity during 2008, and redeemed $3,800 in outstanding long-term debt.

a. What is the 2008 operating cash flow?
b. What is the 2008 cash flow to creditors?
c. What is the 2008 cash flow to stockholders?
d. If net fixed assets increased by $17,400 during the year, what was the addition to NWC?

a. 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:

<table>
<thead>
<tr>
<th>Income Statement</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>$138,000</td>
</tr>
<tr>
<td>Costs</td>
<td>71,500</td>
</tr>
<tr>
<td>Other Expenses</td>
<td>4,100</td>
</tr>
<tr>
<td>Depreciation</td>
<td>10,100</td>
</tr>
<tr>
<td>EBIT</td>
<td>$52,300</td>
</tr>
<tr>
<td>Interest</td>
<td>7,900</td>
</tr>
<tr>
<td>Taxable income</td>
<td>$44,400</td>
</tr>
<tr>
<td>Taxes</td>
<td>17,760</td>
</tr>
<tr>
<td>Net income</td>
<td>$26,640</td>
</tr>
<tr>
<td>Dividends</td>
<td>$5,400</td>
</tr>
<tr>
<td>Addition to retained earnings</td>
<td>21,240</td>
</tr>
</tbody>
</table>
Dividends paid plus addition to retained earnings must equal net income, so:
Net income = Dividends + Addition to retained earnings
Addition to retained earnings = $26,640 – 5,400
Addition to retained earnings = $21,240
So, the operating cash flow is:
OCF = EBIT + Depreciation – Taxes
OCF = $52,300 + 10,100 – 17,760
OCF = $44,640

b. The cash flow to creditors is the interest paid, plus any new borrowing. Since the company redeemed long-term debt, the new borrowing is negative. So, the cash flow to creditors is:
Cash flow to creditors = Interest paid – Net new borrowing
Cash flow to creditors = $7,900 – ($3,800)
Cash flow to creditors = $11,700

c. The cash flow to stockholders is the dividends paid minus any new equity. So, the cash flow to stockholders is:
Cash flow to stockholders = Dividends paid – Net new equity
Cash flow to stockholders = $5,400 – 2,500
Cash flow to stockholders = $2,900

d. In this case, to find the addition to NWC, we need to find the cash flow from assets. We can then use the cash flow from assets equation to find the change in NWC. We know that cash flow from assets is equal to cash flow to creditors plus cash flow to stockholders. So, cash flow from assets is:
Cash flow from assets = Cash flow to creditors + Cash flow to stockholders
Cash flow from assets = $11,700 + 2,900
Cash flow from assets = $14,600
Net capital spending is equal to depreciation plus the increase in fixed assets, so:
Net capital spending = Depreciation + Increase in fixed assets
Net capital spending = $10,100 + 17,400
Net capital spending = $27,500
Now we can use the cash flow from assets equation to find the change in NWC. Doing so, we find:
Cash flow from assets = OCF – Change in NWC – Net capital spending
$14,600 = $44,640 – Change in NWC – $27,500
Change in NWC = $2,540

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).

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<tr>
<td>Sales</td>
<td>$18,450</td>
</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 + Depreciation – Taxes
OCF = $2,420 + 2,420 – 756 = $4,084

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:
Change in NWC = NWC_{end} – NWC_{beg}
Change in NWC = (CA_{end} – CL_{end}) – (CA_{beg} – CL_{beg})
Change in NWC = ($4,690 – 2,720) – ($3,020 – 2,260)
Change in NWC = $1,210

And the net capital spending was:
Net capital spending = NFA_{end} – NFA_{beg} + Depreciation
Net capital spending = $12,700 – 12,100 + 2,420
Net capital spending = $3,020

So, the cash flow from assets was:
Cash flow from assets = OCF – Change in NWC – Net capital spending
Cash flow from assets = $4,084 – 1,210 – 3,020
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:
Cash flow to creditors = Interest – Net new LTD
Cash flow to creditors = $260 – 0
Cash flow to creditors = $260

Rearranging the cash flow from assets equation, we can calculate the cash flow to stockholders as:
Cash flow from assets = Cash flow to stockholders + Cash flow to creditors
–$146 = Cash flow to stockholders + $260
Cash flow to stockholders = –$406

Find Your Way Back, Inc., reported the following financial statements for the last two years. Construct the cash flow identity for the company.

2008 Income Statement
Sales 706,500
Cost of goods sold 342,531
Selling & administrative 155,916
Depreciation 68,220
EBIT 139,833
Interest 24,120
EBT 115,713
Taxes 40,499
Net income 75,214
Dividends 12,000
Addition to retained earnings 63,214

FIND YOUR WAY BACK, INC.
Balance Sheet as of December 31, 2007
Cash 16,650 Accounts payable 11,880
Accounts receivable 23,742 Notes payable 18,135
Inventory 17,242 Current liabilities 30,015
Current assets 57,634 Long-term debt 171,000
Net fixed assets 430,533 Owners’ equity 287,152
Total assets 488,167 Total liabilities and owners’ equity 488,167

FIND YOUR WAY BACK, INC.
Balance Sheet as of December 31, 2008
Cash 17,883 Accounts payable 13,140
Accounts receivable 26,374 Notes payable 20,583
Inventory 28,443 Current liabilities 33,723
Current assets 72,700 Long-term debt 190,000
Net fixed assets 507,888 Owners’ equity 356,865
Total assets 580,588 Total liabilities and owners’ equity 580,588
To construct the cash flow identity, we will begin cash flow from assets. Cash flow from assets is:

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

So, the operating cash flow is:

\[ \text{OCF} = \text{EBIT} + \text{Depreciation} - \text{Taxes} \]

\[ \text{OCF} = 139,833 + 68,220 - 40,499 \]

\[ \text{OCF} = 167,554 \]

Next, we will calculate the change in net working capital which is:

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

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

\[ \text{Change in NWC} = ($72,700 - 33,723) - ($57,634 - 30,015) \]

\[ \text{Change in NWC} = 11,358 \]

Now, we can calculate the net capital spending. The net capital spending is:

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

\[ \text{Net capital spending} = 507,888 - 430,533 + 68,220 \]

\[ \text{Net capital spending} = 145,575 \]

Now, we have the cash flow from assets, which is:

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

\[ \text{Cash flow from assets} = 167,554 - 11,358 - 145,575 \]

\[ \text{Cash flow from assets} = 10,621 \]

The company generated $10,621 in cash from its assets. The cash flow from operations was $167,554, and the company spent $11,358 on net working capital and $145,575 in fixed assets.

The cash flow to creditors is:

\[ \text{Cash flow to creditors} = \text{Interest paid} - \text{New long-term debt} \]

\[ \text{Cash flow to creditors} = \text{Interest paid} - (\text{Long-term debt}_{\text{end}} - \text{Long-term debt}_{\text{beg}}) \]

\[ \text{Cash flow to creditors} = 24,120 - (190,000 - 171,000) \]

\[ \text{Cash flow to creditors} = 5,120 \]

The cash flow to stockholders is a little trickier in this problem. First, we need to calculate the new equity sold. The equity balance increased during the year. The only way to increase the equity balance is to add addition to retained earnings or sell equity. To calculate the new equity sold, we can use the following equation:
New equity = Ending equity – Beginning equity – Addition to retained earnings
New equity = $356,865 – 287,152 – 63,214
New equity = $6,499

What happened was the equity account increased by $69,713. $63,214 of this came from addition to retained earnings, so the remainder must have been the sale of new equity. Now we can calculate the cash flow to stockholders as:

Cash flow to stockholders = Dividends paid – Net new equity
Cash flow to stockholders = $12,000 – 6,499
Cash flow to stockholders = $5,501

The company paid $5,120 to creditors and $5,501 to stockholders.

Finally, the cash flow identity is:

Cash flow from assets = Cash flow to creditors + Cash flow to stockholders
$10,621 = $5,120 + $5,501

The cash flow identity balances, which is what we expect.