

# Solution Manual for Fundamentals of Corporate Finance Canadian Canadian 8th Edition by Ross ISBN 0071051600 9780071051606

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## CHAPTER 2

### FINANCIAL STATEMENTS, TAXES, AND CASH FLOWS

Learning Objectives

- LO1 The difference between accounting value (or “book” value) and market value.
- LO2 The difference between accounting income and cash flow.
- LO3 How to determine a firm’s cash flow from its financial statements.
- LO4 The difference between average and marginal tax rates.
- LO5 The basics of Capital Cost Allowance (CCA) and Undepreciated Capital Cost (UCC).

Answers to Concepts Review and Critical Thinking Questions

1. (LO1) Liquidity measures how quickly and easily an asset can be converted to cash without significant loss in value. It’s desirable for firms to have high liquidity so that they have a large factor of safety in meeting short-term creditor demands. However, since liquidity also has an opportunity cost associated with it—namely that higher returns can generally be found by investing the cash into productive assets—low liquidity levels are also desirable to the firm. It’s up to the firm’s financial management staff to find a reasonable compromise between these opposing needs.
2. (LO2) The recognition and matching principles in financial accounting call for revenues, and the costs associated with producing those revenues, to be “booked” when the revenue process is essentially complete, not necessarily when the cash is collected or bills are paid. Note that this way is not necessarily correct; it’s the way accountants have chosen to do it.
3. (LO1) Historical costs can be objectively and precisely measured whereas market values can be difficult to estimate, and different analysts would come up with different numbers. Thus, there is a tradeoff between relevance (market values) and objectivity (book values).
4. (LO3) Depreciation is a noncash deduction that reflects adjustments made in asset book values in accordance with the matching principle in financial accounting. Interest expense is a cash outlay, but it’s a financing cost, not an operating cost.
5. (LO1) Market values can never be negative. Imagine a share of stock selling for  $-\$20$ . This would mean that if you placed an order for 100 shares, you would get the stock along with a check for  $\$2,000$ . How many

shares do you want to buy? More generally, because of corporate and individual bankruptcy laws, net worth for a person or a corporation cannot be negative, implying that liabilities cannot exceed assets in market value.

6. **(LO3)** For a successful company that is rapidly expanding, for example, capital outlays will be large, possibly leading to negative cash flow from assets. In general, what matters is whether the money is spent wisely, not whether cash flow from assets is positive or negative.
7. **(LO3)** It's probably not a good sign for an established company, but it would be fairly ordinary for a start-up, so it depends.
8. **(LO3)** For example, if a company were to become more efficient in inventory management, the amount of inventory needed would decline. The same might be true if it becomes better at collecting its receivables. In general, anything that leads to a decline in ending NWC relative to beginning would have this effect. Negative net capital spending would mean more long-lived assets were liquidated than purchased.

9. **(LO3)** If a company raises more money from selling stock than it pays in dividends in a particular period, its cash flow to stockholders will be negative. If a company borrows more than it pays in interest, its cash flow to creditors will be negative.
10. **(LO1)** Enterprise value is the theoretical takeover price. In the event of a takeover, an acquirer would have to take on the company's debt, but would pocket its cash. Enterprise value differs significantly from simple market capitalization in several ways, and it may be a more accurate representation of a firm's value. In a takeover, the value of a firm's debt would need to be paid by the buyer when taking over a company. This enterprise value provides a much more accurate takeover valuation because it includes debt in its value calculation.

### Solutions to Questions and Problems

#### Basic

1. **(LO1)** To find owner's equity, we must construct a balance sheet as follows:

<u>Balance Sheet</u>			
CA	\$5,100	CL	\$4,300
NFA	<u>23,800</u>	LTD	7,400
		OE	<u>??</u>
TA	<u>\$28,900</u>	TL&OE	<u>\$28,900</u>

We know that total liabilities and owner's equity (TL & OE) must equal total assets of \$28,900. We also know that TL & OE is equal to current liabilities plus long-term debt plus owner's equity, so owner's equity is:

$$OE = \$28,900 - 4,300 - 7,400 = \$17,200$$

$$NWC = CA - CL = \$5,100 - 4,300 = \$800$$

2. **(LO1)** The income statement for the company is:

<u>Income Statement</u>	
Sales	\$586,000
Costs	247,000
Depreciation	<u>43,000</u>
EBIT	\$296,000
Interest	<u>32,000</u>
EBT	\$264,000
Taxes (35%)	<u>92,400</u>
Net income	<u>\$171,600</u>

3. **(LO1)** One equations for net income is:

Net income = Dividends + Addition to retained earnings

Rearranging, we get:

$$\text{Addition to retained earnings} = \text{Net income} - \text{Dividends} = \$171,600 - 73,000 = \$98,600$$

4. **(LO1)**

$$\begin{aligned} \text{EPS} &= \text{Net income} / \text{Shares} &= \$171,600 / 85,000 &= \$2.019 \text{ per share} \\ \text{DPS} &= \text{Dividends} / \text{Shares} &= \$73,000 / 85,000 &= \$0.86 \text{ per share} \end{aligned}$$

5. **(LO1)**  
 $NWC = CA - CL$ ;  $CA = \$380K + 1.1M = \$1.48M$   
 Book value CA = \$1.48M                      Market value CA = \$1.6M  
 Book value NFA = \$3.7M                      Market value NFA = \$4.9M  
 Book value assets = \$1.48M + 3.7M = \$5.18M      Market value assets = \$1.6M + 4.9M = \$6.5M

6. **(LO4)**  
 Tax bill =  $0.14 \times \$236,000 = \$33,040$

7. **(LO4)** The average tax rate is the total tax paid divided by net income, so:

$$\text{Average tax rate} = \$33,040 / \$236,000 = 14\%$$

The marginal tax rate is the tax rate on the next \$1 of earnings, so again the marginal tax rate = 14% because corporations in Canada have a single tax bracket (whereas individuals are subject to progressive taxes in several tax brackets).

8. **(LO3)** To calculate OCF, we first need the income statement:

Income Statement	
Sales	\$27,500
Costs	13,280
Depreciation	<u>2,300</u>
EBIT	\$11,920
Interest	<u>1,105</u>
Taxable income	\$10,815
Taxes (35%)	<u>\$3,785.25</u>
Net income	<u>\$7,029.75</u>

$$OCF = EBIT + \text{Depreciation} - \text{Taxes} = \$11,920 + 2,300 - 3,785.25 = \$10,434.75$$

9. **(LO3)**  
 Net capital spending =  $NFA_{\text{end}} - NFA_{\text{beg}} + \text{Depreciation} = \$4.2M - 3.4M + 385K = \$1.185M$

10. **(LO3)**  
 Change in NWC =  $NWC_{\text{end}} - NWC_{\text{beg}}$   
 Change in NWC =  $(CA_{\text{end}} - CL_{\text{end}}) - (CA_{\text{beg}} - CL_{\text{beg}})$   
 Change in NWC =  $(\$2,250 - 1,710) - (\$2,100 - 1,380)$   
 Change in NWC =  $\$540 - 720 = -\$180$

11. **(LO3)**  
 Cash flow to creditors =  $\text{Interest paid} - \text{Net new borrowing} = \$170K - (LTD_{\text{end}} - LTD_{\text{beg}})$   
 Cash flow to creditors =  $\$170K - (\$2.9M - 2.6M) = \$170K - 300K = -\$130K$

12. **(LO3)**  
 Cash flow to shareholders =  $\text{Dividends paid} - \text{Net new equity}$   
 Cash flow to shareholders =  $\$490K - [\text{Common}_{\text{end}} - \text{Common}_{\text{beg}}]$   
 Cash flow to shareholders =  $\$490K - [\$815K - \$740K]$   
 Cash flow to shareholders =  $\$490K - [\$75K] = \$415K$

Intermediate

**13. (LO3)**

$$\begin{aligned}\text{Cash flow from assets} &= \text{Cash flow to creditors} + \text{Cash flow to shareholders} \\ &= \$-130\text{K} + 415\text{K} = \$285 \text{ K} \\ \text{Cash flow from assets} &= \$285\text{K} = \text{OCF} - \text{Change in NWC} - \text{Net capital spending} \\ &= \$285\text{K} = \text{OCF} - (-85\text{K}) - 940\text{K} \\ \text{Operating cash flow} &= \$285\text{K} - 85\text{K} + 940\text{K} = \$1,140\text{K}\end{aligned}$$

**14. (LO3)** To find the OCF, we first calculate net income.

<u>Income Statement</u>	
Sales	\$196,000
Costs	104,000
Depreciation	9,100
Other expenses	<u>6,800</u>
EBIT	\$76,100
Interest	<u>14,800</u>
Taxable income	\$61,300
Taxes	<u>21,455</u>
Net income	<u>\$39,845</u>
<hr/>	
Dividends	\$10,400
Additions to RE	\$29,445

a.  $\text{OCF} = \text{EBIT} + \text{Depreciation} - \text{Taxes} = \$76,100 + 9,100 - 21,455 = \$63,745$

b.  $\text{CFC} = \text{Interest} - \text{Net new LTD} = \$14,800 - (-7,300) = \$22,100$

Note that the net new long-term debt is negative because the company repaid part of its long-term debt.

c.  $\text{CFS} = \text{Dividends} - \text{Net new equity} = \$10,400 - 5,700 = \$4,700$

d. We know that  $\text{CFA} = \text{CFC} + \text{CFS}$ , so:

$$\text{CFA} = \$22,100 + 4,700 = \$26,800$$

CFA is also equal to  $\text{OCF} - \text{Net capital spending} - \text{Change in NWC}$ . We already know OCF. Net capital spending is equal to:

$$\text{Net capital spending} = \text{Increase in NFA} + \text{Depreciation} = \$27,000 + 9,100 = \$36,100$$

Now we can use:

$$\begin{aligned}\text{CFA} &= \text{OCF} - \text{Net capital spending} - \text{Change in NWC} \\ \$26,800 &= \$63,745 - 36,100 - \text{Change in NWC}\end{aligned}$$

Solving for the change in NWC gives \$845, meaning the company increased its NWC by \$845.

15. (LO1) The solution to this question works the income statement backwards. Starting at the bottom:

$$\text{Net income} = \text{Dividends} + \text{Addition to ret. earnings} = \$1,500 + 5,100 = \$6,600$$

Now, looking at the income statement:

$$\text{EBT} - \text{EBT} \times \text{Tax rate} = \text{Net income}$$

Recognize that  $\text{EBT} \times \text{tax rate}$  is simply the calculation for taxes. Solving this for EBT yields:

$$\text{EBT} = \text{NI} / (1 - \text{tax rate}) = \$6,600 / (1 - 0.35) = \$10,153.85$$

Now you can calculate:

$$\text{EBIT} = \text{EBT} + \text{Interest} = \$10,153.85 + 4,500 = \$14,653.85$$

The last step is to use:

$$\text{EBIT} = \text{Sales} - \text{Costs} - \text{Depreciation}$$

$$\text{EBIT} = \$41,000 - 19,500 - \text{Depreciation} = \$14,653.85$$

Solving for depreciation, we find that depreciation = \$6,846.15

16. (LO1) The balance sheet for the company looks like this:

Balance Sheet			
Cash	\$195,000	Accounts payable	\$405,000
Accounts receivable	137,000	Notes payable	<u>160,000</u>
Inventory	<u>264,000</u>	Current liabilities	\$565,000
Current assets	\$596,000	Long-term debt	<u>1,195,000</u>
		Total liabilities	\$1,760,000
Tangible net fixed assets	2,800,000	Common stock	??
Intangible net fixed assets	<u>780,000</u>	Accumulated ret. earnings	<u>1,934,000</u>
Total assets	<u>\$4,176,000</u>	Total liab. & owners' equity	<u>\$4,176,000</u>

Total liabilities and owners' equity is:

$$\text{TL \& OE} = \text{CL} + \text{LTD} + \text{Common stock} + \text{Retained earnings}$$

Solving for this equation for equity gives us:

$$\text{Common stock} = \$4,176,000 - 1,934,000 - 1,760,000 = \$482,000$$

17. (LO1) The market value of shareholders' equity cannot be zero. A negative market value in this case would imply that the company would pay you to own the stock. The market value of shareholders' equity can be stated as:  $\text{Shareholders' equity} = \text{Max} [(\text{TA} - \text{TL}), 0]$ . So, if TA is \$8,400, equity is equal to \$1,100, and if TA is \$6,700, equity is equal to \$0. We should note here that the book value of shareholders' equity can be negative.

**18. (LO4)**

a. Taxes Growth =  $0.14(\$88,000) = \$12,320$   
 Taxes Income =  $0.25(\$8,800,000) = \$2,200,000$

b. The firms have different marginal tax rates. Corporation Growth pays an additional \$1,400 of taxes and in general pays 14% of its next dollar of taxable income in taxes. Corporation Income pays \$2,500 of taxes and in general pays 25.0% of its next dollar of taxable income in taxes.

**19. (LO2)**

Income Statement

Sales	\$730,000
COGS	580,000
A&S expenses	105,000
Depreciation	<u>135,000</u>
EBIT	-\$90,000
Interest	<u>75,000</u>
Taxable income	-\$165,000
Taxes (35%)	<u>0</u>
a. Net income	<u><u>-\$165,000</u></u>

b.  $OCF = EBIT + Depreciation - Taxes = -\$90,000 + 135,000 - 0 = \$45,000$

c. Net income was negative because of the tax deductibility of depreciation and interest expense. However, the actual cash flow from operations was positive because depreciation is a non-cash expense and interest is a financing expense, not an operating expense.

**20. (LO3)** A firm can still pay out dividends if net income is negative; it just has to be sure there is sufficient cash flow to make the dividend payments.

Change in NWC = Net capital spending = Net new equity = 0. (Given)  
 Cash flow from assets =  $OCF - Change\ in\ NWC - Net\ capital\ spending$   
 Cash flow from assets =  $\$45K - 0 - 0 = \$45K$   
 Cash flow to shareholders =  $Dividends - Net\ new\ equity = \$25K - 0 = \$25K$   
 Cash flow to creditors =  $Cash\ flow\ from\ assets - Cash\ flow\ to\ shareholders = \$45K - 25K = \$20K$   
 Cash flow to creditors =  $Interest - Net\ new\ LTD$   
 Net new LTD =  $Interest - Cash\ flow\ to\ creditors = \$75K - 20K = \$55K$

**21. (LO2)**

a.

Income Statement

Sales	\$22,800
Cost of goods sold	16,050
Depreciation	<u>4,050</u>
EBIT	\$ 2,700
Interest	<u>1,830</u>
Taxable income	\$ 870
Taxes (34%)	<u>295.80</u>
Net income	<u><u>\$ 574.20</u></u>

b.  $OCF = EBIT + Depreciation - Taxes$   
 $= \$2,700 + 4,050 - 295.80 = \$6454.20$



$$\begin{aligned}
 c. \text{ Change in NWC} &= \text{NWC}_{\text{end}} - \text{NWC}_{\text{beg}} \\
 &= (\text{CA}_{\text{end}} - \text{CL}_{\text{end}}) - (\text{CA}_{\text{beg}} - \text{CL}_{\text{beg}}) \\
 &= (\$5,930 - 3,150) - (\$4,800 - 2,700) \\
 &= \$2,780 - 2,100 = \$680
 \end{aligned}$$

$$\begin{aligned}
 \text{Net capital spending} &= \text{NFA}_{\text{end}} - \text{NFA}_{\text{beg}} + \text{Depreciation} = \\
 &= \$16,800 - 13,650 + 4050 = \$7,200
 \end{aligned}$$

$$\begin{aligned}
 \text{CFA} &= \text{OCF} - \text{Change in NWC} - \text{Net capital spending} \\
 &= \$6454.20 - 680 - 7,200 = -\$1,425.80
 \end{aligned}$$

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 \$1,425.80 in funds from its shareholders and creditors to make these investments.

$$\begin{aligned}
 d. \text{ Cash flow to creditors} &= \text{Interest} - \text{Net new LTD} = \$1,830 - 0 = \$1,830 \\
 \text{Cash flow to shareholders} &= \text{Cash flow from assets} - \text{Cash flow to creditors} \\
 &= -\$1,425.80 - 1,830 = -\$3,255.80
 \end{aligned}$$

We can also calculate the cash flow to shareholders as:  
 Cash flow to shareholders = Dividends - Net new equity

$$\begin{aligned}
 \text{Solving for net new equity, we get:} \\
 \text{Net new equity} &= \$1,300 - (-\$3,255.80) = \$4,555.8
 \end{aligned}$$

The firm had positive earnings in an accounting sense ( $\text{NI} > 0$ ) and had positive cash flow from operations. The firm invested \$680 in new net working capital and \$7,200 in new fixed assets. The firm had to raise \$1,425.80 from its stakeholders to support this new investment. It accomplished this by raising \$4,555.8 in the form of new equity. After paying out \$1,300 of this in the form of dividends to shareholders and \$1,830 in the form of interest to creditors, \$1,425.80 was left to meet the firm's cash flow needs for investment.

**22. (LO3)**

$$\begin{aligned}
 a. \text{ Total assets 2011} &= \$653 + 2,691 = \$3,344 \\
 \text{Total liabilities 2011} &= \$261 + 1,422 = \$1,683 \\
 \text{Owners' equity 2011} &= \$3,344 - 1,683 = \$1,661
 \end{aligned}$$

$$\begin{aligned}
 \text{Total assets 2012} &= \$707 + 3,240 = \$3,947 \\
 \text{Total liabilities 2012} &= \$293 + 1,512 = \$1,805 \\
 \text{Owners' equity 2012} &= \$3,947 - 1,805 = \$2,142
 \end{aligned}$$

$$\begin{aligned}
 b. \text{ NWC 2011} &= \text{CA}_{11} - \text{CL}_{11} = \$653 - 261 = \$392 \\
 \text{NWC 2012} &= \text{CA}_{12} - \text{CL}_{12} = \$707 - 293 = \$414 \\
 \text{Change in NWC} &= \text{NWC}_{12} - \text{NWC}_{11} = \$414 - 392 = \$22
 \end{aligned}$$

c. We can calculate net capital spending as:

$$\begin{aligned} \text{Net capital spending} &= \text{Net fixed assets 2012} - \text{Net fixed assets 2011} + \text{Depreciation} \\ \text{Net capital spending} &= \$3,240 - 2,691 + 738 = \$1,287 \end{aligned}$$

So, the company had a net capital spending cash flow of \$1,287. We also know that net capital spending is:

$$\begin{aligned} \text{Net capital spending} &= \text{Fixed assets bought} - \text{Fixed assets sold} \\ \$1,287 &= \$1,350 - \text{Fixed assets sold} \\ \text{Fixed assets sold} &= \$1,350 - 1,287 = \$63 \end{aligned}$$

To calculate the cash flow from assets, we must first calculate the operating cash flow. The operating cash flow is calculated as follows (you can also prepare a traditional income statement):

$$\begin{aligned} \text{EBIT} &= \text{Sales} - \text{Costs} - \text{Depreciation} = \$8,280 - 3,861 - 738 = \$3,681 \\ \text{EBT} &= \text{EBIT} - \text{Interest} = \$3,681 - 211 = \$3,470 \\ \text{Taxes} &= \text{EBT} \cdot .35 = \$3,470 \cdot .35 = \$1,214.50 \\ \text{OCF} &= \text{EBIT} + \text{Depreciation} - \text{Taxes} = \$3,681 + 738 - 1,214.50 = \$3,204.50 \\ \text{Cash flow from assets} &= \text{OCF} - \text{Change in NWC} - \text{Net capital spending} \\ &= \$3,204.50 - 22 - 1,287 = \$1,895.50 \end{aligned}$$

$$\begin{aligned} d. \text{ Net new borrowing} &= \text{LTD09} - \text{LTD08} = \$1,512 - 1,422 = \$90 \\ \text{Cash flow to creditors} &= \text{Interest} - \text{Net new LTD} = \$211 - 90 = \$121 \\ \text{Net new borrowing} &= \$90 = \text{Debt issued} - \text{Debt retired} \\ \text{Debt retired} &= \$270 - 90 = \$180 \end{aligned}$$

23. (LO4) Compare the investor's net receipt if dividends are paid versus what would be received from an income trust distribution:

	<u>Dividends</u>	<u>Income trust distributions</u>
Income	\$500,000	\$500,000
Corporate income tax (35%)	175,000	0
Amount distributed	325,000	500,000
Tax on dividends (23%)	74,750	
Tax on interest income (48%)		240,000
Investors' net receipt	\$250,250	\$260,000

It appears that investors would not benefit from the conversion. For each unit held upon conversion, an investor would lose  $(\$260,000 - \$250,250)/10,000 = \$0.975$ . For an investor holding 2,000 units the loss would be  $= 2,000 (\$0.975) = \$1,950$  in lost value.

Challenge

$$\begin{aligned} 24. \quad (LO3) \\ \text{Net capital spending} &= \text{NFA}_{\text{end}} - \text{NFA}_{\text{beg}} + \text{Depreciation} \\ &= (\text{NFA}_{\text{end}} - \text{NFA}_{\text{beg}}) + (\text{Depreciation} + \text{AD}_{\text{beg}}) - \text{AD}_{\text{beg}} \\ &= (\text{NFA}_{\text{end}} - \text{NFA}_{\text{beg}}) + \text{AD}_{\text{end}} - \text{AD}_{\text{beg}} \\ &= (\text{NFA}_{\text{end}} + \text{AD}_{\text{end}}) - (\text{NFA}_{\text{beg}} + \text{AD}_{\text{beg}}) = \text{FA}_{\text{end}} - \text{FA}_{\text{beg}} \end{aligned}$$

25. (LO1)

<u>Balance sheet as of Dec. 31, 2011</u>			
Cash	\$3,972	Accounts payable	\$3,984

Accounts receivable	5,021	Notes payable	732
Inventory	8,927	Current liabilities	<u>\$4,716</u>
Current assets	<u>\$17,920</u>		
Net fixed assets	<u>\$31,805</u>	Long-term debt	\$12,700
Total assets	<u><u>\$49,725</u></u>	Owners' equity	<u>32,309</u>
		Total liab. & equity	<u><u>\$49,725</u></u>

Balance sheet as of Dec. 31, 2012

Cash	\$4,041	Accounts payable	\$4,025
Accounts receivable	5,892	Notes payable	<u>717</u>
Inventory	<u>9,555</u>	Current liabilities	\$4,742
Current assets	\$19,488		
Net fixed assets	<u>\$33,291</u>	Long-term debt	\$15,435
Total assets	<u><u>\$52,799</u></u>	Owners' equity	<u>32,602</u>
		Total liab. & equity	<u><u>\$52,799</u></u>

2011 Income Statement

Sales	\$7,233.00
COGS	2,487.00
Other expenses	591.00
Depreciation	<u>1,038.00</u>
EBIT	\$3,117.00
Interest	<u>485.00</u>
EBT	\$2,632.00
Taxes (34%)	<u>894.88</u>
Net income	<u><u>\$1,737.12</u></u>

Dividends	\$882.00
Additions to RE	855.12

2012 Income Statement

Sales	\$8,085.00
COGS	2,942.00
Other expenses	515.00
Depreciation	<u>1,085.00</u>
EBIT	\$3,543.00
Interest	<u>579.00</u>
EBT	\$2,964.00
Taxes (34%)	<u>1,007.76</u>
Net income	<u><u>\$1,956.24</u></u>

Dividends	\$1,011.00
Additions to RE	945.24

**26. (LO3)**

$$\text{OCF} = \text{EBIT} + \text{Depreciation} - \text{Taxes} = \$3,543 + 1,085 - 1,007.76 = \$3,620.24$$

$$\begin{aligned} \text{Change in NWC} &= \text{NWC}_{\text{end}} - \text{NWC}_{\text{beg}} = (\text{CA} - \text{CL})_{\text{end}} - (\text{CA} - \text{CL})_{\text{beg}} \\ &= (\$19,488 - 4,742) - (\$17,920 - 4,716) \\ &= \$1,542 \end{aligned}$$

$$\begin{aligned} \text{Net capital spending} &= \text{NFA}_{\text{end}} - \text{NFA}_{\text{beg}} + \text{Depreciation} \\ &= \$33,291 - 31,805 + 1,085 = \$2,571 \end{aligned}$$

$$\begin{aligned} \text{Cash flow from assets} &= \text{OCF} - \text{Change in NWC} - \text{Net capital spending} \\ &= \$3,620.24 - 1,542 - 2,571 = -\$492.76 \end{aligned}$$

Cash flow to creditors = Interest – Net new LTD  
 Net new LTD =  $LTD_{end} - LTD_{beg}$   
 Cash flow to creditors =  $\$579 - (\$15,435 - 12,700) = -\$2,156$

Net new equity =  $Common\ stock_{end} - Common\ stock_{beg}$   
 Common stock + Retained earnings = Total owners' equity  
 Net new equity =  $(OE - RE)_{end} - (OE - RE)_{beg}$   
                   =  $OE_{end} - OE_{beg} + RE_{beg} - RE_{end}$   
 $RE_{end} = RE_{beg} + Additions\ to\ RE_{12}$   
 Net new equity =  $OE_{end} - OE_{beg} + RE_{beg} - (RE_{beg} + Additions\ to\ RE_{12})$   
                   =  $OE_{end} - OE_{beg} - Additions\ to\ RE$   
 Net new equity =  $\$32,602 - 32,309 - 945.24 = -\$652.24$

CFS = Dividends – Net new equity  
 CFS =  $\$1,011 - (-652.24) = \$1,663.24$

As a check, cash flow from assets is  $-\$492.76$

CFA = Cash flow from creditors + Cash flow to shareholders  
 CFA =  $-\$2,156 + 1,663.24 = -\$492.76$

**27. (LO4)**

DIVIDENDS		INTEREST		CAPITAL GAINS	
Dividend	\$40,000	Interest	\$20,000	Capital Gain	\$20,000
Combined Marginal		Federal Tax (29%)	5,800	Fed. Tax (1/2 x	2,900
Rate (top	19.29%	Prov. Tax (10%)	2,000	29%)	<u>1,000</u>
bracket)Table 2.6		Tax Payable	<u>\$7,800</u>	Prov. Tax (1/2	<u>\$3,900</u>
Tax Payable	<u>\$7,716</u>			x	
				Tax Payable	

Cash Flow from Dividends =  $\$40,000 - \$7,716 = \$32,284$   
 Cash Flow from Interest =  $\$20,000 - \$7,800 = \$12,200$   
 Cash Flow from Capital Gains =  $\$20,000 - \$3,900 = \$16,100$

**28. (LO4)**

a. After Tax Rate of Return on Dividends =  $\$32,284/\$75,000 = 43.05\%$   
 b. After Tax Rate of Return on Interest =  $\$12,200/\$75,000 = 16.27\%$   
 c. After Tax Rate of Return on Capital Gains =  $\$16,100/\$75,000 = 21.47\%$

**29. (LO5)**

Year	Beginning UCC	25% CCA	Ending UCC
1	\$250,000*	\$62,500	\$187,500
2	\$437,500	\$109,375	\$328,125
3	\$328,125	\$82,031.25	\$246,093.75
4	\$246,093.75	\$61,523.44	\$184,570.31
5	\$184,570.31	\$46,142.78	\$138,427.53

\*50% of \$500,000 to incorporate the half-year rule.

**30. (LO5)**

Year	Beginning UCC	20% CCA	Ending UCC
1	\$500,000*	\$100,000	\$400,000
2	\$900,000	\$180,000	\$720,000
3	\$720,000	\$144,000	\$576,000

4	\$576,000	\$115,200	\$460,800
5	\$460,800	\$92,160	\$368,640

\*50% of \$1,000,000 to incorporate the half-year rule.

**31. (LO5)**

<u>Year</u>	<u>Beginning UCC</u>	<u>30% CCA</u>	<u>Ending UCC</u>
1	\$50000*	\$ 15,000	\$ 35,000
2	\$85,000	\$ 25,500	\$ 59,500
3	\$59,500	\$ 17,850	\$ 41,650
4	\$41,650	\$ 12,495	\$ 29,155
5	\$29,155	\$ 8,746.5	\$ 408.50**

\*50% of \$100,000 to incorporate the half-year rule

\*\*(\$29,155)(0.7) – (0.2) (\$100,000) = \$408.50

If the asset class is continued, there will be no tax consequences - the after-tax proceeds from the sale will be \$100,000 x .20 = \$20,000.

**32. (LO5)**

<u>CCA on equipment</u>			
<u>Year</u>	<u>Beginning UCC</u>	<u>20% CCA</u>	<u>Ending UCC</u>
2011	\$2,100,000*	\$420,000	\$1,680,000
2012	\$3,780,000	\$756,000	\$3,024,000

\*50% of \$4,200,000 (includes the installation cost) to incorporate the half-year rule

<u>CCA on building</u>			
<u>Year</u>	<u>Beginning UCC</u>	<u>5% CCA</u>	<u>Ending UCC</u>
2011	\$2,000,000*	\$100,000	\$1,900,000
2012	\$3,900,000	\$195,000	\$3,705,000

\*50% of \$4,000,000

CCA for 2011 = \$420,000 + \$100,000 = \$520,000

CCA for 2012 = \$756,000 + \$195,000 = \$951,000

**33. (LO5)**

<u>Year</u>	<u>Beginning UCC</u>	<u>30% CCA</u>	<u>Ending UCC</u>
2008	\$ 170,000*	\$ 51,000	\$ 119,000
2009	\$ 289,000	\$ 86,700	\$ 202,300
2010	\$ 202,300	\$ 60,690	\$ 141,610
2011	\$ 746,610**	\$ 224,483	\$ 522,627
2012	\$ 1,272,627	\$ 381,788.10	\$890,838.90

\*50% of \$340,000

\*\*UCC<sub>2011</sub> = 0.5 (\$1,500,000) – 145,000 + \$141,610 = \$746,610

**34. (LO4) Using Table 2.6 in text**

a. Combined Federal & Provincial tax = 0.39(\$57,000)(0.05) = \$1,111.50

After tax income = \$2,850 – \$1,111.50 = \$1,738.50

b. Dividend Income = \$25x250, \$6,250 x 19.29%=Tax on Dividend Income \$6,250 x 19.29% = 1,205.63

After tax income = \$25(250) – \$1,205.63 = \$5,044.37

c. Combined Federal & Provincial tax on capital gain =  $\$15(500)(0.195) = \$1,462.50$

**OR** Federal  $\$15(500)(.5)(.29) = \$1087.5$  + Provincial  $\$15(500)(.5)(.1) = \$375 = \$1,462.50$   
taxes After tax income =  $\$7,500 - \$1,462.50 = \$6,037.50$

**35. (LO4)** Carry the (\$600) loss in 2009 back 3 years and the remaining loss is carried forward 7 years: (in 1,000's) total carry backs =  $\$116 + \$140 + \$168 = \$424$  leaving \$176 ( $\$600 - \$424$ ) to carry forward which effectively reduces taxable income to zero for all years through 2012. At that time, remaining carry-forward is \$56.

**36. (LO5)**

a.  $UCC_0 = 99,200(1/2) = 49,600$

$CCA_1 = 14,880$

$UCC_1 = 84,320$

$UCC_5 = 84,320(1 - .30)^4 = \$20,245.23$

b. Since the asset has no value and the asset pool remains open, there are no tax consequences.