Solution Manual for Fundamentals of Corporate Finance Canadian 9th Edition by Ross ISBN 1259087581 9781259087585

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 incorrect; 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 for corporations 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 bankruptcy laws, net worth for 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 shareholder's equity, we must construct a Statement of Financial Position as follows:

Statement of Financial Position

CA	$4,900	CL	$4,200
NFA	27,500	LTD	10,500
		SE	??
TA	$32,400	TL&SE	$ 32,400

We know that total liabilities and owner's equity (TL & SE) must equal total assets of $32,400. We also know that TL & SE is equal to current liabilities plus long-term debt plus shareholder's equity, so shareholder's equity is:

SE = $32,400 – 4,200 – 10,500 = $17,700

NWC = CA – CL = $4,900 – 4,200 = $700

2. **(LO1)** The Statement of Comprehensive Income for the company is:

Statement of Comprehensive Income	
Sales	$734,000
Costs	315,000
Depreciation	48,000
EBIT	$371,000
Interest	35,000
EBT	$336,000
Taxes (35%)	117,600
Net income	$218,400

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

Net income = Dividends + Addition to retained earnings
Rearranging, we get:
Addition to retained earnings = Net income – Dividends = $218,400 – 85,000 = $133,400

4. **(LO1)**

EPS = Net income / Shares = $218,400 / 110,000 = $1.985 per share
DPS = Dividends / Shares = $85,000 / 110,000 = $0.773 per share

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 x $255,000 = $35,700

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

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 this corporation has earnings well below $500,000. If the firm had an income of $500,000, its marginal tax rate will rise to 25% for its next dollar of income.

8. **(LO3)** To calculate OCF, we first need the Statement of Comprehensive Income:

Statement of Comprehensive Income	
Sales	$39,500
Costs	18,400
Depreciation	1,900
EBIT	$19,200
Interest	1,400
Taxable income	$17,800
Taxes (35%)	$6,230
Net income	$11,570

OCF = EBIT + Depreciation – Taxes = $19,200+ 1,900 – 6,230 = $14,870

9. **(LO3)**

Net capital spending = NFA_{end} – NFA_{beg} + Depreciation
Net capital spending = $3.6M – 2.8M + 0.345 M
Net capital spending = $1.145M

10. **(LO3)**

Change in NWC = NWC_{end} – NWC_{beg}
Change in NWC = (CA_{end} – CL_{end}) – (CA_{beg} – CL_{beg})
Change in NWC = ($3,460– 1,980) – ($3,120 – 1,570)
Change in NWC = $1,480 – 1,550 = -$70

11. **(LO3)**

Cash flow to creditors = Interest paid – Net new borrowing
Cash flow to creditors = Interest paid – (LTD_{end} – LTD_{beg})
Cash flow to creditors = $190K – ($2.55– 2.3M)
Cash flow to creditors = $190K -
250K Cash flow to creditors = -$60K

12. **(LO3)**

Cash flow to shareholders = Dividends paid – Net new equity
Cash flow to shareholders = $490K – [Common$_{end}$ – Common$_{beg}$]
Cash flow to shareholders = $490K – [$815K – $740K]
Cash flow to shareholders = $490K – [$75K] = $415K

Intermediate

13. **(LO3)**

Cash flow from assets = Cash flow to creditors + Cash flow to shareholders
= $-60K + 415K = $355K
Cash flow from assets = $355K = OCF – Change in NWC – Net capital spending
= $355K = OCF – (–55K) – 1,300K
Operating cash flow = $355K – 55K + 1,300K
Operating cash flow = $1,600K

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

Statement of Comprehensive Income	
Sales	$235,000
Costs	141,000
Depreciation	17,300
Other expenses	7,900
EBIT	$68,800
Interest	12,900
Taxable income	$55,900
Taxes	19,565
Net income	$36,335
Dividends	$12,300
Additions to RE	$24,035

a. OCF = EBIT + Depreciation – Taxes = $68,800 + 17,300 – 19,565 = $66,535

b. CFC = Interest – Net new LTD = $12,900 – (–4,500) = $17,400

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

c. CFS = Dividends – Net new equity = $12,300 – 6,100= $6,200

d. We know that CFA = CFC + CFS, so:

CFA = $17,400 + 6,200 = $23,600

CFA is also equal to OCF – Net capital spending – Change in NWC. We already know OCF. Net capital spending is equal to:

Net capital spending = Increase in NFA + Depreciation = $25,000 + $17,300 = $42,300

Now we can use:

CFA = OCF – Net capital spending – Change in NWC
$23,600 = $66,535 – $42,300 – Change in NWC
Change in NWC = $23,600 - $66,535 + $42,300

Solving for the change in NWC gives $635, meaning the company increased its NWC by $635.

15. **(LO1)** The solution to this question works the Statement of Comprehensive Income backwards. Starting at the bottom:

Net income = Dividends + Addition to ret. earnings = $1,800 + 5,300 = $7,100

Now, looking at the income statement:

EBT – (EBT × Tax rate) = Net income

Recognize that EBT × tax rate is simply the calculation for taxes. Solving this for EBT yields:

EBT = NI / (1– tax rate) = $7,100 / (1 – 0.35) = $10,923.08

Now you can calculate:

EBIT = EBT + Interest = $10,923.08 + 4,900 = $15,823.08

The last step is to use:

EBIT = Sales – Costs – Depreciation
EBIT = $52,000 – 27,300 – Depreciation = $15,823.08

Solving for depreciation, we find that depreciation = $8,876.92

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

Statement of Financial Position

Cash	$127,000	Accounts payable	$210,000
Accounts receivable	105,000	Notes payable	160,000
Inventory	293,000	Current liabilities	$370,000
Current assets	$525,000	Long-term debt	845,000
		Total liabilities	$1,215,000
Tangible net fixed assets	1,620,000		
Intangible net fixed assets	630,000	Common stock	??
		Accumulated ret. earnings	1,278,000
Total assets	$2,775,000	Total liab. & owners' equity	$2,775,000

Total liabilities and owners' equity is:

TL & OE = CL + LTD + Common stock + Retained earnings

Solving for this equation for equity gives us:

Common stock = $2,775,000 – 1,215,000 – 1,278,000 = $282,000

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: Shareholders' equity = Max [(TA – TL), 0]. So, if TA is $7,100, equity is equal to $1,300, and if TA is $5,200, 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)**

Statement of Comprehensive Income	
Sales	$850,000
COGS	610,000
A&S expenses	110,000
Depreciation	140,000
EBIT	–$10,000
Interest	85,000
Taxable income	–$95,000
Taxes (35%)	0
a. Net income(Loss)	–$95,000

b. OCF = EBIT + Depreciation – Taxes = –$10,000 + 140,000 – 0 = $130,000

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 are sufficient cash reserves or 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 = $130K – 0 – 0 = $130K
Cash flow to shareholders = Dividends – Net new equity = $63K – 0 = $63K
Cash flow to creditors = Cash flow from assets – Cash flow to shareholders
Cash flow to creditors = $130K – 63K = $67K
Cash flow to creditors = Interest – Net new LTD
Net new LTD = Interest – Cash flow to creditors = $85K – 67K = $18K

21. (LO2)

a.

Statement of Comprehensive Income	
Sales	$22,800
Cost of goods sold	16,050
Depreciation	4,050
EBIT	$ 2,700
Interest	1,830
Taxable income	$ 870
Taxes (34%)	295.80
Net income	$ 574.20

b. OCF = EBIT + Depreciation – Taxes
= $2,700 + 4,050 – 295.80 = $6,454.20

c. Change in NWC = NWC_{end} – NWC_{beg}
= (CA_{end} – CL_{end}) – (CA_{beg} – CL_{beg})
= ($5,930 – 3,150) – ($4,800 – 2,700)
= $2,780 – 2,100 = $680

Net capital spending = NFA_{end} – NFA_{beg} + Depreciation
= $16,800 – 13,650 + 4,050 = $7,200

CFA = OCF – Change in NWC – Net capital spending
= $6,454.20 – 680 – 7,200 = –$1,425.80

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.

d. Cash flow to creditors = Interest – Net new LTD = $1,830 – 0 = $1,830
Cash flow to shareholders = Cash flow from assets – Cash flow to creditors
= -$1,425.80 – 1,830 = –$ 3,255.80

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

Solving for net new equity, we get:
Net new equity = $1,300 – (–3,255.80) = $4,555.8

The firm had positive earnings in an accounting sense (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)**

a. Total assets 2014= $914 + 3,767 = $4,681
Total liabilities 2014 = $365 + 1,991 = $2,356
Owners' equity 2014 = $4,681 – 2,356 = $2,325

Total assets 2015= $990 + 4,536 = $5,526
Total liabilities 2015 = $410 + 2,117 = $2,527
Owners' equity 2015 = $5,526 – 2,527 = $2,999

b. NWC 2014= CA14 – CL14 = $914 – 365 = $549
NWC 2015= CA15 – CL15 = $990– 410 = $580
Change in NWC = NWC15 – NWC14 = $580 – 549 = $31

c. We can calculate net capital spending as:

Net capital spending = Net fixed assets 2015 – Net fixed assets 2014 + Depreciation
Net capital spending = $4,536 – 3,767 + 1,033= $1,802

So, the company had a net capital spending cash flow of $1,802. We also know that net capital spending is:

Net capital spending = Fixed assets bought – Fixed assets sold
$1,802 = $1,890 – Fixed assets sold
Fixed assets sold = $1,890 – 1,802 = $88

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):

EBIT = Sales – Costs – Depreciation = $11,592 – 5,405 – 1,033= $5,154
EBT = EBIT – Interest = $5,154 – 294 = $4,860
Taxes = EBT × 0.35 = $4,860 × 0.35 = $1,701
OCF = EBIT + Depreciation – Taxes = $4,860 + 1,033 – 1,701 = $4,192
Cash flow from assets = OCF – Change in NWC – Net capital spending.
= $4,192 – 31 – 1,802 = $2,359

d. Net new borrowing = LTD15 – LTD14 = $2,117 – 1,991 = $126
Cash flow to creditors = Interest – Net new LTD = $294 – 126 = $168
Net new borrowing = $126 = Debt issued – Debt retired
Debt retired = $378 – 126 = $252

<u>*Challenge*</u>

23. **(LO3)**

Net capital spending $= NFA_{end} – NFA_{beg} + \text{Depreciation}$
$= (NFA_{end} – NFA_{beg}) + (\text{Depreciation} + AD_{beg}) – AD_{beg}$
$= (NFA_{end} – NFA_{beg}) + AD_{end} – AD_{beg}$
$= (NFA_{end} + AD_{end}) – (NFA_{beg} + AD_{beg}) = FA_{end} – FA_{beg}$

24. **(LO1)**

<u>Statement of Financial Position as of Dec. 31, 2014</u>

Cash	$6,067	Accounts payable	$4,384
Accounts receivable	8,034	Notes payable	1,171

Inventory	14,283	Current liabilities	$5,555
Current assets	$28,384		
		Long-term debt	$20,320
Net fixed assets	$50,888	Owners' equity	53,397
Total assets	$79,272	Total liab. & equity	$79,272

Statement of Financial Position as of Dec. 31, 2015

Cash	$6,466	Accounts payable	$4,644
Accounts receivable	9,427	Notes payable	1,147
Inventory	15,288	Current liabilities	$5,791
Current assets	$31,181	Long-term debt	$24,696
Net fixed assets	$54,273	Owners' equity	54,967
Total assets	$85,454	Total liab. & equity	$85,454

2014 Statement of Comprehensive Income

Sales	$11,573.00
COGS	3,979.00
Other expenses	946.00
Depreciation	1,661.00
EBIT	$4,987.00
Interest	776.00
EBT	$4,211.00
Taxes (34%)	1,431.74
Net income	$2,779.26
Dividends	$1,411.00
Additions to RE	1,368.26

2015 Statement of Comprehensive Income

Sales	$12,936.00
COGS	4,707.00
Other expenses	824.00
Depreciation	1,736.00
EBIT	$5,669.00
Interest	926.00
EBT	$4,743.00
Taxes (34%)	1,612.62
Net income	$3,130.38
Dividends	$1,618.00
Additions to RE	1,512.38

25. **(LO3)**

OCF = EBIT + Depreciation – Taxes = $5,669 + 1,736 – 1612.62 = $5,792.38

Change in NWC = NWC_{end} – NWC_{beg} = (CA – CL) $_{end}$ – (CA – CL) $_{beg}$

= ($31,181 – 5,791) – ($28,384 – 5,555)
= $2,561

Net capital spending = NFA_{end} – NFA_{beg} + Depreciation
= $54,273 – 50,888 + 1,736 = $5,121

Cash flow from assets = OCF – Change in NWC – Net capital spending
= $5,792.38 – 2,561 – 5,121 = -$1,889.62

Cash flow to creditors = Interest – Net new LTD
Net new LTD = $LTD_{end} – LTD_{beg}$
Cash flow to creditors = $926 – ($24,696 – 20,320) = –$3,450

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 RE12
∴ Net new equity = $OE_{end} – OE_{beg} + RE_{beg} – (RE_{beg}$ + Additions to RE12)
= $OE_{end} – OE_{beg}$ – Additions to RE
Net new equity = $54,967– 53,397 – 1,512.38 = $57.62

CFS = Dividends – Net new equity
CFS = $1,618 – (57.62) = $1,560.38

As a check, cash flow from assets is -$1,889.62

CFA = Cash flow from creditors + Cash flow to shareholders
CFA = –$3,450 + $1,560.38= -$1,889.62

26. **(LO4)**

DIVIDENDS		INTEREST		CAPITAL GAINS	
Dividend	$40,000	Interest	$20,000	Capital Gain	$20,000
Combined Marginal Rate (top bracket)Table 2.6	19.29%	Federal Tax (29%)	5,800	Fed. Tax (1/2 x 29%)	2,900
		Prov. Tax (10%)	2,000	Prov. Tax (1/2 x10%)	1,000
Tax Payable	$7,716	Tax Payable	$7,800	Tax Payable	$3,900

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

27. **(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%

28. **(LO5)**

Year	Beginning UCC	30% CCA	Ending UCC
1	$250,000.00*	$75,000.00	$175,000.00
2	$425,000.00	$127,500.00	$297,500.00
3	$297,500.00	$89,250.00	$208,250.00
4	$208,250.00	$62,475.00	$145,775.00
5	$145,775.00	$43,732.50	$102,042.50

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

29. **(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.

30. **(LO5)**

Year	Beginning UCC	30% CCA	Ending UCC
1	$50,000*	$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	$8,746.50	$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 0.20 = $20,000.

31. **(LO5)**

CCA on equipment

Year	Beginning UCC	20% CCA	Ending UCC
2014	$2,100,000*	$420,000	$1,680,000
2015	$3,780,000	$756,000	$3,024,000

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

CCA on building

Year	Beginning UCC	5% CCA	Ending UCC
2014	$2,000,000*	$100,000	$1,900,000
2015	$3,900,000	$195,000	$3,705,000

*50% of $4,000,000

CCA for 2014 = $420,000 + $100,000 = $520,000

CCA for 2015 = $756,000 + $195,000 = $951,000

32. **(LO5)**

Year	Beginning UCC	50% CCA	Ending UCC
2011	$170,000.00	$85,000.00	$85,000.00
2012	$255,000.00	$127,500.00	$127,500.00
2013	$127,500.00	$63,750.00	$63,750.00
2014	$741,250.00	$370,625.00	$370,625.00
2015	$1,048,125.00	$524,062.50	$524,062.50

*50% of $340,000

**UCC_{2014} = 0.5 ($1,500,000 – 145,000) + $63,750 = $741,250

33. **(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 = $25 x 250 = $6,250 x 19.29% = Tax on Dividend Income = 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 After tax income = $7,500 - $1,462.50 = $6,037.50

OR Federal $15(500)(0.5)(0.29) = $1,087.50 + Provincial $15(500)(0.5)(0.1) = $375 = $1,462.50 taxes
After tax income = $7,500 – $1,462.50 = $6,037.50

34. **(LO4)** Carry the ($600) loss in 2012 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 2015. At that time, remaining carry-forward is $56.

35. **(LO5)**

a. UCC_0=99,200(1/2) = 49,600
CCA_1=14,880
UCC_1=84,320
UCC_5=84,320$(1-0.30)^4$ = $20,245.23

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

Mini Case Solutions

CHAPTER 2

CASH FLOWS AND FINANCIAL STATEMENTS AT NEPEAN BOARDS

Below are the financial statements that you are asked to prepare.

1. The income statement for each year will look like this:

Statement of Comprehensive Income

	2014	*2015*
Sales	321,437.00	391,810.00
Cost of goods sold	163.849.00	206.886.00
Selling & administrative	32.223.00	42.058.00
Depreciation	46,255.00	52,282.00
EBIT	79,110.00	90,584.00
Interest	10,056.00	11,526.00
EBT	69,054.00	79,058.00
Taxes (20%)	13,810.80	15,811.60
Net income	55,243.20	63,246.40
Dividends	27,621.60	31,623.20
Addition to retained earnings	27,621.60	31,623.20

2. The balance sheet for each year will be:

Balance Sheet as of December 31, 2014

Cash	$23,643	Accounts payable	$41,786
Accounts receivable	16,753	Notes payable	19,046
Inventory	32,255	Current liabilities	$60,832
Current assets	$72,651		
		Long-term debt	$103,006
Net fixed assets	$204,068	Owners' equity	112,881
Total assets	$276,719	Total liab. & equity	$276,719

In the first year, equity is not given. Therefore, we must calculate equity as a plug variable. Since total liabilities & equity is equal to total assets, equity can be calculated as:

Equity = $276,719 – 60,832 – 103,006
Equity = $112,881

Balance Sheet as of December 31, 2015

Balance sheet as of Dec. 31, 2015

Cash	$35,721	Accounts payable	$47,325
Accounts receivable	21,732	Notes payable	20,796
Inventory	43,381	Current liabilities	$68,121
Current assets	$100,834		
		Long-term debt	$116,334
Net fixed assets	$248,625	Owners' equity	165,004
Total assets	$349,459	Total liab. & equity	$349,459

The owner's equity for 2015 is the beginning of year owner's equity, plus the addition to retained earnings, plus the new equity, so:

Equity = $112,881 + 31,623.20 + 20,500
Equity = $165,004.20

3. Using the OCF equation:

OCF = EBIT + Depreciation –

Taxes The OCF for each year is:

OCF2014 = $79,110 + 46,255 – 13,810.80
OCF2014 = $111,554.20

OCF2015 = $90,584 + 52,282 -15,811.60
OCF2015 = $127,052.40

4. To calculate the cash flow from assets, we need to find the capital spending and change in net working capital. The capital spending and net working capital change for 2015 year were:

Net Capital Spending

Ending net fixed assets	$248,625.00
– Beginning net fixed assets	$204,068.00
+ Depreciation	$52,282.00
Net capital spending	$96,839.00

Change in Net Working Capital

Ending NWC	$32,713.00
– Beginning NWC	$11,819.00
Change in NWC	$20,894.00

These values are then used to calculate the *2015 Cash Flow From Assets.*

Cash flow from assets

Operating cash flow	$127,052.40
– Net capital spending	$96,839.00
– Change in NWC	$20,894.00
Cash flow from assets	$9,319.40

5. The cash flow to creditors was:

Cash flow to creditors

Interest paid	$11,526.00
– Net new borrowing	$13,328.00
Cash flow to creditors	-$1,802.00

6. The cash flow to stockholders was:

Cash flow to stockholders	
Dividends paid	$31,623.20
– Net new equity raised	$20,500.00
Cash flow to stockholders	$11,123.20

Answers to questions

1. The firm had positive earnings in an accounting sense (NI > 0) and had positive cash flow from operations. The firm invested $20,894 in new net working capital and $96,839 in new fixed assets. The firm disbursed $9,321.20 to its bondholders and shareholders. It raised $1,802 from bondholders, and paid $11,123.20 to stockholders.

2. The expansion plans may be a little risky. The company does have a positive cash flow, but a large portion of the operating cash flow is already going to capital spending. The company has had to raise capital from creditors and stockholders for its current operations. So, the expansion plans may be too aggressive at this time. On the other hand, companies do need capital to grow. Before investing or loaning the company money, you would want to know where the current capital spending is going, and why the company is spending so much in this area already.

CHAPTER 2

FINANCIAL STATEMENTS, TAXES, AND CASH FLOW

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).

SLIDES

S2.1	**Key Concepts and Skills**
S2.2	**Chapter Outline**
S2.3	**Statement of Financial Position**
S2.4	**Statement of Financial Position – Figure 2.1**
S2.5	**Canadian Enterprises Statement of Financial Position**
S2.6	**Market vs. Book Value**
S2.7	**International Financial Reporting Standards (IFRS)**
S2.8	**Example: Quebec Corporation**
S2.9	**Statement of Comprehensive Income**
S2.10	**Canadian Enterprises Statement of Comprehensive Income**
S2.11	**Work the Web Example**
S2.14	**Statement of Cash Flows**
S2.15	**Cash Flow From Assets**
S2.16	**Example: Canadian Enterprises**
S2.18	**Cash Flow Summary**
S2.19	**Example: Calculating Cash Flows**
S2.20	**Example: Cash Flows**
S2.21	**Taxes**
S2.22	**Taxes on Investments**
S2.23	**Capital Cost Allowance**
S2.24	**Some CCA Classes**
S2.25	**Example: CCA Calculation**
S2.26	**CCA Example - Solution**
S2.27	**CCA – Additional Concepts**
S2.28	**Closing an Asset Class**
S2.29	**Another CCA Example**
S2.30	**Another CCA Example – Solution**
S2.31	**Another CCA Example – Solution Continued**
S2.32	**Quick Quiz**
S2.33	**Summary**

CHAPTER WEB SITES

Section	*Web Address*
2.1	www.sedar.com
2.4	www.kpmg.ca
	www.taxes.about.com/od/capitalgains/a/CapitalGainsTax_4.htm
	www.fin.gc.ca/budget06/bp/bp3be.htm#dividends
Internet Application	www.cra-arc.gc.ca/E/pub/tp/it128r/it128r-e.html
	www.cra-arc.gc.ca/tax/nonresidents/film/ftc/ftccsum -e.html
	www.aircanada.ca
	ca.finance.yahoo.com

CHAPTER ORGANIZATION

2.1 THE BALANCE SHEET

Assets: The Left-Hand Side
Liabilities and Owners' Equity: The Right-Hand Side
Net Working Capital
Liquidity
Debt versus Equity
Value versus Cost

2.2 THE STATEMENT of COMPREHENSIVE INCOME

International Financial Reporting Standards (IFRS)
Non-cash Items
Time and Costs

2.3 CASH FLOW

Cash Flow from Assets
Cash Flow to Creditors and Stockholders
Net Capital Spending
Changes in NWC and Cash Flow from Assets

2.4 TAXES

Individual Tax Rates
Average Marginal Tax Rates
Taxes on Investment Income
Corporate Taxes
Taxable Income
Capital Gains and Carry-forward and Carry-back

2.5 CAPITAL COST ALLOWANCE

Asset Purchases and Sales

2.6 SUMMARY AND CONCLUSIONS

ANNOTATED CHAPTER OUTLINE

[redacted]

- Book value and market value
- Income versus cash flow
- Determining cash flows
- Average and marginal tax rates
- Capital Cost Allowance (CCA) and Undepreciated Capital Cost (UCC)

[redacted]

- Statement of Financial Position
- Statement of Comprehensive Income
- Cash Flows
- Taxes
- Capital Cost Allowance
- Summary

[redacted]

The Statemetn of Financial Posiition (aka balance sheet) is a snapshot of the firm's assets and liabilities at a point in time.

Balance sheet identity: Assets = Liabilities + Shareholder's Equity

[redacted]

A. Assets: The Left-Hand Side

These are either current or fixed.

B. Liabilities and Owners' Equity: The Right-Hand Side

Liabilities are classified as either current or long-term.

Shareholders' equity is the difference between total assets and total liabilities.

The left-hand side must be equal to the right-hand side according to the identity:

Assets = Liabilities + Shareholders' equity

C. Net Working Capital

This is defined as the difference between current assets and current liabilities.

D. Liquidity

The order of assets on the balance sheet reflects their liquidity. Liability order reflects time to maturity.

Liquidity as a continuum reflects an ability to convert an asset to cash with little or no loss of value.

Liquidity has an opportunity cost - the more liquid an asset is, the less profitable it usually is.

Perspectives

It may help students to better understand the ease of conversion to cash versus loss of value dimensions of liquidity by giving examples of inventories with varying degrees of liquidity. For example, groceries on a supermarket's shelves are typically more liquid than the cars on the lot of an automobile dealer, which are in turn more liquid than houses under construction by a builder.

For the supermarket, auto dealer, and builder to receive their goods' "usual" market value, groceries may stay in inventory a day or two, new cars a few to several weeks, and new houses a few to several months. When asked how each business might reduce this "usual" time on the market, students begin to see the point.

[redacted]

E. Debt vs Equity

Precedence of debt over equity to firm's cash flows.

Gains or losses of the business may be magnified for stockholders by financial leverage.

Perspectives

Although much will be said about debt versus equity later, Chapter 2 discusses the precedence of claims to cash flows that distinguish debt and equity claims and how this is reflected in the order of liabilities on accounting statements.

The concept of financial leverage, the magnifying of gains or losses through the use of debt, is also mentioned, although details are left for later.

[redacted]

F. Market Value vs Book Value

- The statement of financial position shows the book value of assets, liabilities, and equity.
- Market value is actual price for buying or selling.
- Why are market value and book value often different?
- Which is more important for decision making?

[redacted]

- IFRS allows companies to use the historical cost method
- Also allows use of the revaluation (fair value) method
    - All items in an asset class should be revalued simultaneously
    - Revaluation should be performed with enough regularity to ensure that the carrying amount is not materially different from the fair value

[redacted]

Irrelevance of book (historical cost) value and importance of market (exchange) value for decision making.

Some assets and liabilities do not appear on the balance sheet, e.g., talented managers and products that bring lawsuits.

Perspectives

It is asserted in Chapter 2 that accounting, or historical, costs are not especially important to financial managers while market values are. Some students may have difficulty recognizing that the passage of time and changing circumstances will almost always mean the price an asset would fetch if sold today is quite different from the book, or historical, value. Sometimes an example or two of familiar instances is enough to make the point. For instance, the market values versus historical costs less depreciation of used cars (both ordinary and collectable) and houses (in, say, Toronto versus Newfoundland) may help.

It may be some students, while acknowledging the difference between historical cost and market value, ask why market value is considered the more important of the two. The simplest answer is market value represents the cash prices people are willing and able to pay. After all, it is cash that must ultimately be paid or received for investments, interest, principal, dividends, and so forth.

2.2 THE STATEMENT of COMPREHENSIVE INCOME

A. IFRS and the Statement of Comprehensive Income

[redacted]

Income statement is like a video of operations over a period of time.

You generally report revenues first and then deduct any expenses for the period

Accounting's "realization" principle for revenue, the "matching" principle for costs, and their incongruence with cash flows.

[redacted]

B. Non-cash Items

For many firms the most important non-cash item is depreciation.

Perspectives

Students frequently confuse dollar-denominated amounts with cash. This confusion is particularly evident when discussing retained earnings and non-cash items, such as depreciation. They need to be reminded not every dollar-denominated amount is a pile of money or a cheque written.

[redacted]

C. Reporting with the securities commission

Publicly traded companies must file reports with a securities commission.

Information for Canadian companies is on the SEDAR site.

2.3 CASH FLOW

[redacted]

- Cash flow is the most important information obtained from financial statements.
- How is cash generated, and how is it paid to finance the purchase of assets?

A. Cash Flow From Assets

[redacted]

Based upon the balance sheet identity

Assets = Liabilities + Equity

The equivalent cash flow is

Cash Flow from Assets = Cash Flow to Bondholders + Cash Flow to Stockholders
=Operating cash flow – Net capital spending – changes in NWC
= CF(A)

[redacted]

CF(A) = Operating Cash Flow – Net Capital Spending –
Additions to Net Working Capital

Operating cash flow is:

Earnings before interest and taxes (EBIT) –
Depreciation –
Current Taxes

(Net) Capital Spending is: Ending
fixed assets – Beginning
fixed assets +
Depreciation

Additions to Net Working Capital (NWC) is:

Ending NWC – Beginning NWC

Negative Cash Flow From Assets is not unusual for growing firms.

B. Cash Flow to Creditors and Stockholders

Cash Flow to Creditors is:

Interest paid +
Principal paid –
New borrowing

Cash Flow to Stockholders (equity) is:

Dividends paid +
Stock repurchased –
New stock issued

Perspectives

The introduction to cash flows proposes the cash flow identity.

Cash flow from assets = Cash flow to bondholders + Cash flow to stockholders

The immediate tie-in is with the accounting identity assets = liabilities + equity. The purpose here is to have students understand changes in the left- and right-hand side of the balance sheet as cash flows into and out of the firm.
The cash flow identity calls attention to cash flows between the firm (as assets) and the providers of capital (creditors and stockholders), reflecting the authors' emphasis on financial decisions and their consequences. Moreover, the cash flows to and from the providers of capital have implications for the growth of the firm, as seen in later chapters.

[redacted]

A tabular summary of cash flow identities is given.

[redacted]

Financial statement numbers given for the worked example in the next slide.

[redacted]

C. Operating Cash Flow and Net Capital Spending

D. Change in NWC and Cash Flow from Assets

2.4 TAXES

[redacted]

A. Individual Tax Rates

Canadian Federal Tax on personal income, income from unincorporated businesses and interest income are all taxed at the same rate. The rate which applies to a given person depends on total income.

Provincial Taxes are calculated as a percentage of a person's federal tax expense. For example, in New Brunswick, a person is required to pay 60-70% of federal tax expense to the Provincial Government.

Progressive taxes - a tax system that charges a higher tax rate to those that have higher incomes. Canadian taxes on personal income are obviously progressive.

B. Average versus Marginal Tax Rates

The average tax rate is taxes payable as a percentage of taxable income. The marginal tax rate is the tax payable on the next dollar of income.

[redacted]

C. Taxes on Investment Income

Dividend tax credit - tax incentive which reduces the effective tax rate on dividend income.

Capital gains - an increase in the value of an investment over its purchase price.

Realized capital gains - the capital gains increase when converted to cash.

In effect, only realized capital gains are taxed. There is no tax charged on capital gains which have not been converted to cash.

The tax paid on capital gains is equal to the individual's marginal tax rate multiplied by 50% of the value of the capital gain.

Example: Suppose an investment broker from Cornerbrook, Newfoundland had only one source of income last year, a $75,750 capital gain on Buster Brewery Stock. What would she pay in taxes?

Taxable Portion of Capital Gain = (.50)($75,750)
= $37,875

Federal Tax: 15% or $5,681.25 on $37,875 earned

Provincial Tax = (.0505)($37,774) +(.0915 x (37,875-37,774)
= $1,916.83

Total tax bill = $5,681.25+ $1,916.83
= $7,598.08

Average tax rate = $7,598.08/$75,750
= 10.03%

C. Corporate Taxes

Much like personal tax, both the Federal and provincial governments levy taxes on corporations. However, they are collected differently, both the provincial and Federal level directly tax the income of the corporation.

D. Taxable Income

There is a tax advantage to firms which offer interest instead of dividends on common stock as interest is tax deductible. However, these tables are turned when the firm *earns* interest and dividends - there is a tax advantage to dividends.

E. Capital Gains and Carry-forward and Carry-back

When an asset is sold at a price that exceeds its capital cost, a capital gain is generated. Currently, 50% of capital gains are taxable. Net capital losses occur when capital losses exceed capital gains. Net capital losses can be carried back for up to three years or carried forward for up to seven years to reduce prior or future capital gains.

A similar carry-forward, carry-back provision exists for operating losses.

Income trusts grew dramatically starting in 2001 due to preferential tax treatment. However, in October, 2006 the federal government decided to tax income trusts as corporations. As a result of the change, there is no incentive for a company to convert all or part of its operations to a trust.

2.5 CAPITAL COST ALLOWANCE (CCA)

[redacted]

CCA is the depreciation accepted for tax purposes by Revenue Canada. It has a very meticulous and precise calculation method. Note that the CCA has no connection with a company's balance sheet or income statement depreciation. The CCA is only used to calculate a company’s taxable income.

Half-year rule - a rule imposed by Revenue Canada which requires that CCA be calculated on only one-half of the installed value of the asset in the first year.

A. Asset Purchases and Sales

Adjusted cost of disposal - When an asset is sold, the Undepreciated Capital Cost of the asset class is lowered by the realized price of the asset or its original price, whichever is lower.

Net acquisitions rule - the total installed cost of capital acquisitions less the adjusted cost of any disposals in a given asset pool.

When an Asset Pool is Terminated, there are two possible outcomes due to depreciation taken during the life of the pool:

Terminal loss - positive UCC remains after pool is closed. This loss is deductible from the year's income.

Recaptured depreciation - when a negative UCC remains after the pool is closed. A firm must make up this difference to the Canada Revenue Agency and it is treated as fully taxable income.

[redacted]

Class	Rate	Assets
1	4%	Buildings
8	20	Furniture, office equipment
10	30	Vehicles and equipment
13	Straight-line	Leasehold improvements
22	50	Pollution control equipment
43	30	Manufacturing equipment

[redacted]

ABC Corporation purchased $100,000 worth of photocopiers, CCA rate of 20%.

[redacted]

CCA Example:

Year	Beginning UCC	CCA	Ending UCC
2004	$50,000	$10,000	$40,000
2005	$90,000	$18,000	$72,000

[redacted]

- Assets are pooled by asset class.
- When asset is sold, the asset class pool is reduced by the lesser of realized value or original cost.

[redacted]

- Closing an asset class can result in a terminal loss or recaptured CCA.
- Terminal loss = UCC – Adjusted Cost: when UCC is greater than adjusted cost.
- Recaptured CCA = Adjusted Cost - UCC: when UCC is less than adjusted cost.

[redacted]

Kook Drinks Corporation purchases $300,000 of machinery in 2007, with CCA rate of 30%, and sells in 2009 for $150,000. What if it was sold for only $120,000?

[redacted]

CCA Example:

Year	Beginning UCC	CCA	Ending UCC
2007	$150,000	$45,000	$105,000
2008	$255,000	$76,500	$178,500
2009	$178,500	$53,550	$124,950

[redacted]

- No capital gain because machinery was sold for less than its original $300,000 cost.
- At $150,000, there is a CCA recapture of $25,050.
- At $120,000 there is a terminal loss of $4,950.

[redacted]

- What is the difference between book value and market value? Which should we use for decision making purposes?
- What is the difference between accounting income and cash flow? Which do we need to use when making decisions?
- What is the difference between average and marginal tax rates? Which should we use when

making financial decisions?

- How do we determine a firm's cash flows? What are the equations and where do we find the information?
- What is CCA? How is it calculated?

2.6 SUMMARY AND CONCLUSIONS

[redacted]

- The statement of financial position shows the firm's accounting value on a particular date.
- The statement of comprehensive income summarizes a firm's performance over a period of time.
- Cash flow is the difference between the dollars coming into the firm and the dollars that go out.
- Cash flows are measured after-tax.
- CCA is depreciation for tax purposes in Canada. Remember the half-year rule.

Internet Exercises (By Chapter)

Chapter 2

1. The distinction between capital investment and current expenditure is somewhat arbitrary. Nevertheless, from the tax viewpoint, a distinction must be made to calculate depreciation and its associated tax shield. The following link at CRA provides a set of pointers to distinguish whether an expenditure is considered capital in nature, or whether it is a current expense. cra-arc.gc.ca/E/pub/tp/it128r/it128r-e.html

   Use the guidelines in the link above to classify the following expenses as capital or current:
   a. Your company buys a fleet of trucks for material delivery
   b. The local barbershop buys a new chair
   c. The local barbershop buys a new pair of scissors

   What assumptions did you need to make to answer the above questions?

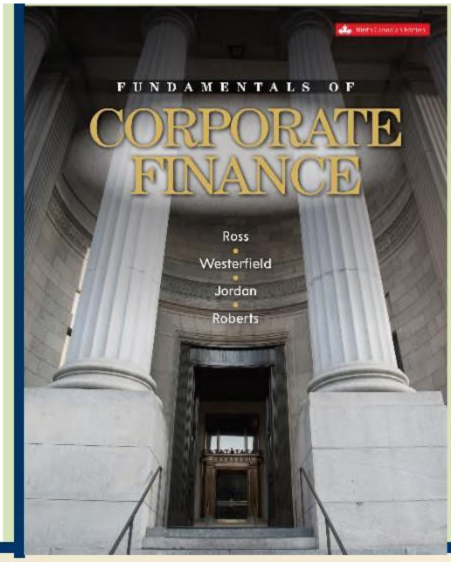
2. CCA is not the only tax shelter available to Canadian firms. In some cases, notably cultural industries, there are both federal and provincial tax credits to offset a portion of the production costs involved in content development. The following website at CRA describes the Film or Video Production Tax Credit (FTC), which is available to qualified producers. cra-arc.gc.ca/tx/nnrsdnts/flm/ftc-cip/menu-eng.html

   For a company with $1 million in production costs, what is the size of the federal FTC?

3. The Canadian Institute of Chartered Accountants (cica.ca/index.aspx) provides standards and guidance for new issues, and solicits comments for new policies. Click on What's New and pick one item from Guidance and one item from Comments. Summarize the new guidelines and critique the comments article. Note that items on this site change from time to time.

4. The home page for Air Canada can be found at aircanada.ca. Locate the most recent annual report, which contains a statement of financial position for the company. What is the book value of equity for Air Canada? The market value of a company is the number of shares of stock outstanding times the price per share. This information can be found at ca.finance.yahoo.com using the ticker symbol for Air Canada (AC). What is the market value of equity? Which number is more relevant for shareholders?

Chapter 2



Financial Statements, Taxes and Cash Flow

Prepared by Anne Inglis, CFA

Key Concepts and Skills

- Understand the difference between accounting value (or book value) and market value.
- Know the difference between accounting income and cash flow.
- Know how to determine a firm's cash flow from its financial statements.
- Understand the difference between average and marginal tax rates.
- Understand the basics of Capital Cost Allowance (CCA) and Undepreciated Capital Cost (UCC).

Chapter Outline

- Statement of Financial Position
- Statement of Comprehensive Income
- Cash Flow
- Taxes
- Capital Cost Allowance
- Summary and Conclusions

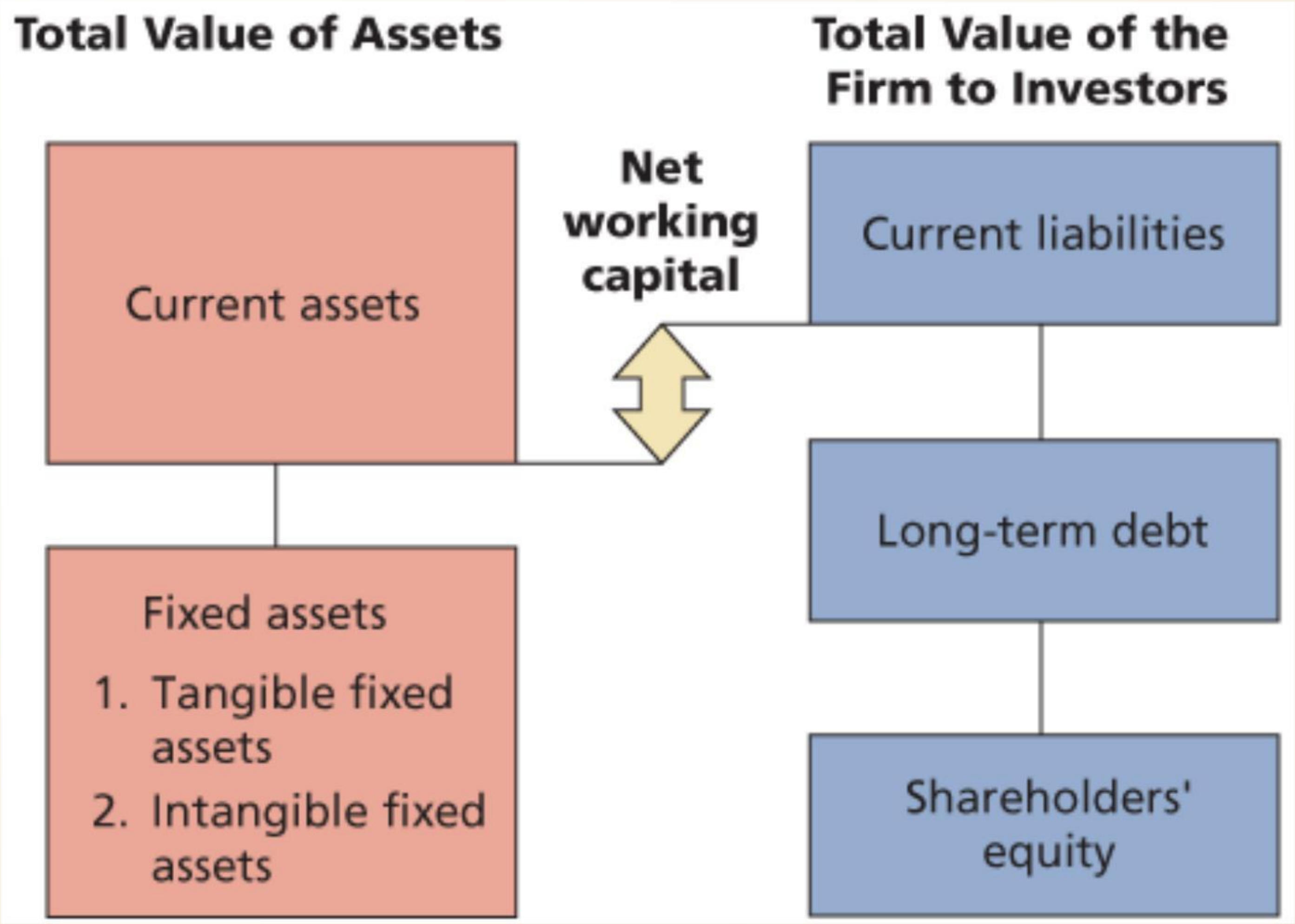
LO1

Statement of Financial Position - 2.1

- The statement of financial position is a snapshot of the firm’s assets and liabilities at a given point in time
- Assets are listed in order of liquidity
  - Ease of conversion to cash
  - Without significant loss of value
- Statement of Financial Position Identity
  - Assets = Liabilities + Stockholders’ Equity

LO1

Statement of Financial Position - Figure 2.1



Net Working Capital

- Net Working Capital
  - Current Assets – Current Liabilities
  - Positive when the cash that will be received over the next 12 months exceeds the cash that will be paid out
  - Usually positive in a healthy firm

LO1

Liquidity

- Liquidity
  - Ability to convert to cash quickly without a significant loss in value
  - Liquid firms are less likely to experience financial distress
  - However, liquid assets earn a lower return
  - Tradeoff between liquid and illiquid assets

LO1

Table 2.1 – Canadian Enterprises Statement of Financial Position

	2014	2015		2014	2015
Assets			***Liabilities and Owners' Equity***		
Current assets			Current liabilities		
Cash	$ 114	$ 160	Accounts payable	$ 232	$ 266
Accounts receivable	445	688	Notes payable	196	123
Inventory	553	555	Total	$ 428	$ 389
Total	$1,112	$ 1,403			
			Long-term debt	$ 408	$ 454
Fixed assets			Owners' equity		
Net, plant and equipment	$1,644	$ 1,709	Common shares	600	640
			Retained earnings	1,320	1,629
			Total	$ 1,920	$ 2,269
Total assets	$2,756	3,112	Total liabilities and owners' equity	$ 2,756	$ 3,112

Value versus Cost

- The statement of financial position provides the book value of the assets, liabilities and equity.
- Market value is the price at which the assets, liabilities or equity can actually be bought or sold.
- Market value and book value are often very different. Why?
- Which is more important to the decision-making process?

LO1

International Financial Reporting Standards (IFRS)

- IFRS allows companies to use the historical cost method
- Also allows use of the revaluation (fair value) method
  - All items in an asset class should be revalued simultaneously
  - Revaluation should be performed with enough regularity to ensure that the carrying amount is not materially different from the fair value

LO1

Example 2.2 - Quebec Corporation

QUEBEC CORPORATION Statement of Financial Position Market Value versus Book Value					
	Book	Market		Book	Market
Assets			Liabilities and Shareholders’ Equity		
NWC	$ 400	$ 600	LTD	$ 500	$ 500
NFA	700	1,000	SE	600	1,100
	1,100	1,600		1,100	1,600

LO1

Statement of Comprehensive Income - 2.2

- The statement of comprehensive income is more like a video of the firm's operations for a specified period of time.
- You generally report revenues first and then deduct any expenses for the period
- Matching principle – IFRS say to show revenue when it accrues and match the expenses required to generate the revenue

LO1

Canadian Enterprises Statement of Comprehensive Income – Table 2.2

CANADIAN ENTERPRISES

2015 Income Statement ($ millions)

Net sales		$ 1,509
Cost of goods sold		750
Depreciation		65
Earnings before interest and taxes		$ 694
Interest paid		70
Income before taxes		$ 624
Taxes		250
Net income		$ 374
Addition to retained earnings	$309	
Dividends	65	

Work the Web Example

- Publicly traded companies must file regular reports with the Ontario Securities Commission
- These reports are usually filed electronically and can be searched at the SEDAR site
- Click on the web surfer, pick a company and see what you can find!

LO2

Statement of Cash Flows - 2.3

- Cash flow is one of the most important pieces of information that a financial manager can derive from financial statements
- We will look at how cash is generated from utilizing assets and how it is paid to those that finance the purchase of the assets

Cash Flow From Assets

- Cash Flow From Assets (CFFA) = Cash Flow to Bondholders + Cash Flow to Shareholders
- Cash Flow From Assets = Operating Cash Flow – Net Capital Spending – Changes in NWC

LO3

Example: Canadian Enterprises

- Operating Cash Flow (I/S) = EBIT + depreciation – taxes = $509
- Net Capital Spending (B/S and I/S) = ending net fixed assets – beginning net fixed assets + depreciation = $130
- Changes in NWC (B/S) = ending NWC – beginning NWC = $330

Example continued

- Cash Flow From Assets (CFFA) = 509 – 130 – 330 = $49
- CF to Creditors (B/S and I/S) = interest paid – net new borrowing = $24
- CF to Stockholders (B/S and I/S) = dividends paid – net new equity raised = $25
- CFFA = 24 + 25 = $49
- Notice – the cash flow identity holds.

LO3

Cash Flow Summary Table 2.4

The cash flow identity	
Cash flow from assets	= Cash flow to creditors (or bondholders)
	+ Cash flow to shareholders (or owners)
Cash flow from assets	
Cash flow from assets	= Operating cash flow
	− Net capital spending
	− Additions to net working capital (NWC)
where:	
a. Operating cash flow	= Earnings before interest and taxes (EBIT)
	+ Depreciation
	− Taxes
b. Net capital spending	= Ending net fixed assets
	− Beginning net fixed assets
	+ Depreciation
c. Additions to NWC	= Ending NWC
	− Beginning NWC

Cash flow to creditors (bondholders)

Cash flow to creditors = Interest paid − Net new borrowing

Cash flow to shareholders (owners)

Cash flow to shareholders = Dividends paid − Net new equity raised

LO3

Example: Calculating Cash Flows

- Current Accounts
  - 2011: CA = 1500; CL = 1300
  - 2012: CA = 2000; CL = 1700
- Fixed Assets and Depreciation
  - 2011: NFA = 3000; 2009: NFA = 4000
  - Depreciation expense = 300
- LT Liabilities and Equity
  - 2011: LTD = 2200; Common Equity = 500; RE = 500
  - 2012: LTD = 2800; Common Equity = 750; RE = 750
- Statement of Comprehensive Income Information
  - EBIT = 2700; Interest Expense = 200; Taxes = 1000; Dividends = 1250

Example: Cash Flows

- OCF = 2700 + 300 – 1000 = 2000
- NCS = 4000 – 3000 + 300 = 1300
- Changes in NWC = (2000 – 1700) – (1500 – 1300) = 100
- CF From Assets = 2000 – 1300 – 100 = 600
- CF to Bondholders = 200 – (2800 – 2200) = -400
- CF to Shareholders = 1250 – (750 – 500) = 1000
- CF From Assets = -400 + 1000 = 600
- Notice – the cash flow identity holds.

LO4

Taxes - 2.4

- Individual vs. corporate taxes

- Marginal vs. average tax rates
  - Marginal – the percentage paid on the next dollar earned
  - Average – the percentage of your income that goes to pay taxes (tax bill / taxable income)

Taxes on Investments

- When an investor holds stocks, they are subject to two types of taxes:
  - Dividend tax credit – A tax formula that reduces the effective tax rate on dividends
  - Capital gains tax – Tax is paid on the investment's increase in value over its purchase price

LO5

Capital Cost Allowance (CCA) - 2.5

- CCA is depreciation for tax purposes
- CCA is deducted before taxes and acts as a tax shield
- Every capital asset is assigned to a specific asset class by the government
- Every asset class is given a depreciation method and rate
- Half-year Rule – In the first year, only half of the asset's cost can be used for CCA purposes

LO5

Some CCA Classes – Table 2.8

Class	Rate	Assets
1	4%	Buildings acquired after 1987
8	20	Furniture, photocopiers
10	30	Vans, trucks, tractors, and equipment
13	Straight-line	Leasehold improvements
16	40	Taxicabs and rental cars
43	30	Manufacturing equipment

Example: CCA Calculation

- ABC Corporation purchased $100,000 worth of photocopiers in 2015. Photocopiers fall under asset class 8 with a CCA rate of 20%. How much CCA will be claimed in 2015 and 2016?

CCA Example – Solution

Year	Beginning Fixed Assets	CCA	Ending Fixed Assets
2015	50000 (100,000 x 50%)	10,000 (50,000 x 20%)	40000 (50,000 - 10,000)
2016	90,000 (40,000 + 50,000)	18,000 (90,000 x 20%)	72,000 (90,000 - 18,000)

CCA – Additional Concepts

- Usually firms have multiple machines (i.e. more than one photocopier) in an asset class.
- When an asset is sold, the asset class is reduced by the realized value of the asset, or by its original cost, whichever is less.

Closing an Asset Class

- When the last asset in an asset class is sold, the asset class is terminated. This can result in a terminal loss or recaptured CCA.
- Terminal Loss – The difference between the UCC and the adjusted cost when the UCC is greater.
- Recaptured CCA – The taxable difference between the adjusted cost and the UCC when the UCC is smaller.

Another CCA Example

- Kool Drinks Corporation purchased $300,000 worth of bottling machinery in 2013. Machinery falls under asset class 43 with a CCA rate of 30%. In 2015, Kool Drinks sold their machinery for $150,000 and moved their production to Mexico. Was there a capital gain, a CCA recapture or a terminal loss? What if the machinery was sold for $120,000?

LO5

Another CCA Example - Solution

Year	Beginning UCC	CCA	Ending UCC
2013	150,000	45,000	105,000
2014	255,000	76,500	178,500
2015	178,500	53,550	124,950

LO5

Another CCA Example Solution continued

- There is no capital gain because the machinery was sold for less than its original cost of $300,000.
- At $150,000, there is a CCA recapture of $25,050
- At $120,000 there is a terminal loss of $4,950

Quick Quiz

- What is the difference between book value and market value? Which should we use for decision making purposes?
- What is the difference between accounting income and cash flow? Which do we need to use when making decisions?
- What is the difference between average and marginal tax rates? Which should we use when making financial decisions?
- How do we determine a firm's cash flows? What are the equations and where do we find the information?
- What is CCA? How is it calculated?

Summary 2.6

- The statement of financial position shows the firm's accounting value on a particular date.
- The statement of comprehensive income summarizes a firm's performance over a period of time.
- Cash flow is the difference between the dollars coming into the firm and the dollars that go out.
- Cash flows are measured after-tax.
- CCA is depreciation for tax purposes in Canada. Remember the half-year rule.