Corporate Finance Canadian 7th Edition Ross Solutions Manual

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Chapter 2: Accounting Statements and Cash Flow

2.1. To find shareholders' equity, we must construct a balance sheet as follows:

	Balance a	Sheet	
Current assets	\$5,300	Current liabilities	\$3,900
Net fixed assets	26,000	Long-term debt	14,200
		Shareholders' equity	<u>??</u>
Total assets	\$31,300	Total liabilities & equity	<u>\$31,300</u>

We know that total liabilities and shareholders' equity must equal total assets of \$31,300. We also know that total liabilities & shareholders' equity is equal to current liabilities plus long-term debt plus shareholders' equity, so shareholders' equity is:

Shareholders' equity = \$31,300 - \$14,200 - \$3,900 = \$13,200

Net Working Capital = Current Assets – Current Liabilities = \$5,300 – \$3,900 = \$1,400

2.2 The income statement for the company is:

Income Statement		
Sales	\$493,000	
Costs	210,000	
Depreciation	35,000	
EBIT	\$248,000	
Interest	19,000	
EBT	\$229,000	
Taxes	80,150	
Net income	<u>\$148,850</u>	

One equation for net income is:

Net income = Dividends + Addition to retained earnings

Rearranging, we get: Addition to retained earnings = Net income – Dividends Addition to retained earnings = \$148,850 - \$50,000Addition to retained earnings = \$98,850

2.3 To find the book value of current assets, we use: Net Working Capital = Current Assets – Current Liabilities.

Rearranging to solve for current assets, we get: Current Assets = Net Working Capital + Current Liabilities Current Assets = \$800,000 + \$2,100,000 = \$2,900,000 The market value of current assets and net fixed assets is given, so:

Book value Current Assets	= \$2,900,000	Market value Current Assets	= \$2,800,000
Book value Net Fixed Assets	= <u>\$5,000,000</u>	Market value Net Fixed Assets	= <u>\$6,300,000</u>
Book value assets	= \$7,900,000	Market value assets	= \$9,100,000

2.4 To calculate Operating cash flow, we first need the income statement:

Income Statement		
Sales	\$18,700	
Costs	10,300	
Depreciation	1,900	
EBIT	\$6,500	
Interest	1,250	
Taxable income	\$5,250	
Taxes	2,100	
Net income	<u>\$3,150</u>	

Operating cash flow = EBIT + Depreciation – Taxes Operating cash flow = 6,500 + 1,900 - 2,100Operating cash flow = 6,300

2.5 Net capital spending = Net Fixed Assets_{end} – Net Fixed Assets_{beg} + Depreciation Net capital spending = \$1,730,000 - \$1,650,000 + \$284,000Net capital spending = \$364,000

2.6 The long-term debt account will increase by \$35 million, the amount of the new long-term debt issue. Since the company sold 10 million new shares of stock with a \$1 par value, the common stock account will increase by \$10 million. The capital surplus account will increase by \$48 million, the value of the new common shares sold above its par value. Since the company had a net income of \$9 million, and paid \$2 million in dividends, the addition to retained earnings was \$7 million, which will increase the accumulated retained earnings account. So, the new long-term debt and stockholders' equity portion of the balance sheet will be:

Long-term debt	\$ 100,000,000
Total long-term debt	\$100,000,000
Shareholders equity	
Preferred shares	\$ 4,000,000
Common shares (\$1 par value)	25,000,000
Accumulated retained earnings	142,000,000
Capital surplus	93,000,000
Total equity	\$264,000,000
Total Liabilities & Equity	\$ 364,000,000

2.7 Cash flow to creditors = Interest paid – Net new borrowing Cash flow to creditors = \$127,000 – (Long-term debt_{end} – Long-term debt_{beg}) Cash flow to creditors = \$127,000 - (\$1,520,000 - \$1,450,000)Cash flow to creditors = \$127,000 - \$70,000Cash flow to creditors = \$57,000

2.8 Cash flow to stockholders = Dividends paid – Net new equity Cash flow to stockholders = $275,000 - [(Common_{end} + APIS_{end}) - (Common_{beg} + APIS_{beg})]$ Cash flow to stockholders = 275,000 - [(\$25,000 + \$3,700,000) - (\$490,000 + \$3,400,000)]Cash flow to stockholders = 275,000 - [(\$4,225,000 - \$3,890,000)]Cash flow to stockholders = -\$60,000

Note, APIS is the additional paid-in surplus.

- **2.9** Cash flow from assets = Cash flow to creditors + Cash flow to stockholders = \$57,000 - \$60,000= -\$3,000
 - Cash flow from assets = Operating cash flow Change in Net Working Capital – Net capital spending –\$3,000 = Operating cash flow – (-\$87,000) – \$945,000

Operating cash flow	=-\$3,000 $-$ \$87,000 $+$ \$945,000
Operating cash flow	= \$855,000

2.10 *a*. The accounting statement of cash flows explains the change in cash during the year. The accounting statement of cash flows will be:

Statement of cash flows	
Operations	
Net income	\$95
Depreciation	90
Changes in other current assets	(5)
Accounts payable	10
Total cash flow from operations	<u>\$190</u>
Investing activities	
Acquisition of fixed assets	<u>\$(110)</u>
Total cash flow from investing	
activities	<u>\$(110)</u>
Financing activities	
Proceeds of long-term debt	\$5
Dividends	<u>(75)</u>
Total cash flow from financing	
activities	<u>\$(70)</u>
Change in cash (on balance sheet)	<u>\$10</u>

b. Change in NWC= NWC_{end} – NWC_{beg}

$$= (CA_{end} - CL_{end}) - (CA_{beg} - CL_{beg})$$

= [($65 + 170$) - 125] - [($55 + 165$) - 115)
= $10 - 105$
= 5

c. To find the cash flow generated by the firm's assets, we need the operating cash flow, and the capital spending. So, calculating each of these, we find:

Operating cash flow	
Net income	\$95
Depreciation	90
Operating cash flow	\$185

Note that we can calculate operating cash flow in this manner since there are no taxes.

Capital spending	
Ending fixed assets	\$390
Beginning fixed assets	(370)
Depreciation	90
Capital spending	\$110

Now we can calculate the cash flow generated by the firm's assets, which is:

\$185
(110)
(5)
\$70

2.11 With the information provided, the cash flows from the firm are the capital spending and the change in net working capital, so:

Cash flows from the firm	
Capital spending	\$(21,000)
Additions to NWC	(1,900)
Cash flows from the firm	\$(22,900)

And the cash flows to the investors of the firm are:

Cash flows to investors of the firm	
Sale of long-term debt	\$(17,000)
Sale of common shares	(4,000)
Dividends paid	14,500
Cash flows to investors of the firm	\$(6,500)

2.12 *a*. The interest expense for the company is the amount of debt times the interest rate on the debt.

So, the income statement for the company is:

Income Statement		
Sales	\$1,200,000	
Cost of goods sold	450,000	
Selling costs	225,000	
Depreciation	110,000	
EBIT	\$415,000	
Interest	81,000	
Taxable income	\$334,000	
Taxes	116,900	
Net income	<u>\$217,100</u>	

b. And the operating cash flow is:

Operating cash flow = EBIT + Depreciation – Taxes Operating cash flow = \$415,000 + \$110,000 - \$116,900 Operating cash flow = \$408,100

2.13 To find the operating cash flow, we first calculate net income.

Income Statement		
Sales	\$167,000	
Costs	91,000	
Depreciation	8,000	
Other expenses	5,400	
EBIT	\$62,600	
Interest	11,000	
Taxable income	\$51,600	
Taxes	18,060	
Net income	<u>\$33,540</u>	
Dividends	\$9,500	
Additions to RE	\$24,040	

- *a.* Operating cash flow = EBIT + Depreciation Taxes Operating cash flow = \$62,600 + \$8,000 – \$18,060 Operating cash flow = \$52,540
- *b*. Cash flow to Creditors = Interest Net new long-term debt Cash flow to Creditors = \$11,000 – (-\$7,100) Cash flow to Creditors = \$18,100

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

- *c*. Cash flow to stockholders = Dividends Net new equity Cash flow to stockholders = \$9,500 - \$7,250Cash flow to stockholders = \$2,250
- *d.* We know that Cash flow from assets = Cash flow to creditors + Cash flow to stockholders, so:

Cash flow from assets = \$18,100 + \$2,250 = \$20,350

Cash flow from assets is also equal to Operating cash flow – Net capital spending – Change in NWC.

We already know operating cash flow. Net capital spending is equal to:

Net capital spending = Increase in Net fixed assets + Depreciation Net capital spending = \$22,400 + \$8,000Net capital spending = \$30,400

Now we can use:

Cash flow from assets = Operating cash flow – Net capital spending – Change in NWC \$20,350 = \$52,540 - \$30,400 – Change in NWC.

Solving for the change in NWC gives \$1,790, meaning the company increased its NWC by \$1,790.

2.14 The solution to this question works the income statement backwards. Starting at the bottom:

Net income = Dividends + Addition to retained earnings Net income = \$1,570 + \$4,900 Net income = \$6,470

Now, looking at the income statement:

 $EBT - (EBT \times Tax rate) = Net income$

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

EBT = NI / (1- Tax rate) EBT = \$6,470 / (1 - 0.35) EBT = \$9,953.85

Now we can calculate:

EBIT = EBT + Interest EBIT = \$9,953.85 + \$1,840 EBIT = \$11,793.85 The last step is to use:

$$\begin{split} EBIT = Sales - Costs - Depreciation \\ \$11,793.85 = \$41,000 - \$26,400 - Depreciation \\ Depreciation = \$2,806.15 \end{split}$$

2.15 The balance sheet for the company looks like this:

Balance Sheet			
Cash	\$274,500	Accounts payable	\$697,500
Accounts receivable	207,000	Notes payable	217,500
Inventory	445,500	Current liabilities	\$915,000
Current assets	\$927,000	Long-term debt	2,325,000
		Total liabilities	\$3,240,000
Tangible net fixed assets	4,393,000		
Intangible net fixed assets	8 860,000	Common shares	??
		Accumulated ret. earnings	2,940,000
Total assets	<u>\$6,180,000</u>	Total liabilities. & equity	<u>\$6,180,000</u>

Total liabilities and equity is:

Total liabilities & equity = Total debt + Common shares + Accumulated retained earnings

Solving for this equation for equity gives us:

Common shares = \$6,180,000 - \$3,240,000 - \$2,940,000 Common shares= \$0

- 2.16 a. The market value of shareholders' equity can be stated as: Shareholders' equity
 = Max [(Total assets Total liabilities), 0]. So, if Total assets are \$12,400 and Total liabilities are \$10,900, equity is equal to \$1,500
 - *b*. The market value of shareholders' equity cannot be negative. A negative market value in this case would imply that the company would pay you to own the stock. Therefore, if Total assets are \$9,600, equity is equal to \$0. We should note here that while the market value of equity cannot be negative, the book value of shareholders' equity can be negative.

2.17 <i>a</i> .	Income Statement		
	Sales	\$630,000	
	COGS	470,000	
	A&S expenses	95,000	
	Depreciation	140,000	
	EBIT	\$(75,000)	
	Interest	70,000	
	Taxable income	\$(145,000)	
	Taxes (35%)	0	
	Net income	\$(<u>145,000</u>)	

- b. OCF = EBIT + Depreciation TaxesOCF = \$(75,000) + \$140,000 - 0OCF = \$65,000
- *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.
- **2.18** 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 = \$65,000 - 0 - 0 = \$65,000

Cash flow to stockholders = Dividends – Net new equity Cash flow to stockholders = 34,000 - 0 = 34,000

Cash flow to creditors = Cash flow from assets – Cash flow to stockholders Cash flow to creditors = 65,000 - 34,000Cash flow to creditors = 31,000

Cash flow to creditors is also:

Cash flow to creditors = Interest – Net new LTD

So:

Net new LTD = Interest – Cash flow to creditors Net new LTD = 70,000 - 31,000Net new LTD = 39,000

2.19*a*. The income statement is:

Income Statement		
Sales	\$19,900	
Cost of good sold	14,200	
Depreciation	2,700	
EBIT	\$3,000	
Interest	670	
Taxable income	\$2,330	
Taxes	932	
Net income	\$1,398	

b. OCF = EBIT + Depreciation - Taxes OCF = 3,000 + 2,700 - 932OCF = 4,768 c. Change in NWC = NWC_{end} - NWC_{beg} = $(CA_{end} - CL_{end}) - (CA_{beg} - CL_{beg})$ = (\$5,135 - \$2,535) - (\$4,420 - \$2,470)= \$2,600 - 1,950= \$650

Net capital spending = NFA_{end} - NFA_{beg} + Depreciation = \$16,770 - \$15,340 + \$2,700= \$4,130

CFA = OCF - Change in NWC - Net capital spending = \$4,768 - \$650 - \$4,130 = -\$12

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 \$12 in funds from its stockholders and creditors to make these investments.

d.	Cash flow to creditors	= Interest $-$ Net new LTD	
		= \$670 - 0	
		= \$670	

Cash flow to stockholders = Cash flow from assets – Cash flow to creditors = -\$12 - \$670= -\$682

We can also calculate the cash flow to stockholders as:

Cash flow to stockholders = Dividends – Net new equity

Solving for net new equity, we get:

Net new equity = 650 - (-682)= 1,332

The firm had positive earnings in an accounting sense (NI > 0) and had positive cash flow from operations. The firm invested \$650 in new net working capital and \$4,130 in new fixed assets. The firm had to raise \$12 from its stakeholders to support this new investment. It accomplished this by raising \$1,332 in the form of new equity. After paying out \$650 of this in the form of dividends to shareholders and \$670 in the form of interest to creditors, \$12 was left to meet the firm's cash flow needs for investment.

2.20 *a*. Total assets 2014 = \$936 + \$4,176 = \$5,112Total liabilities 2014 = \$382 + \$2,160 = \$2,542 Owners' equity 2014 = \$5,112 - \$2,542 = \$2,570

Total assets 2015= \$1,015 + \$4,896 = \$5,911Total liabilities 2015= \$416 + \$2,477 = \$2,893Owners' equity 2015= \$5,911 - \$2,893 = \$3,018

- b. NWC 2014 = CA14 CL14 = \$936 \$382 = \$554NWC 2015 = CA15 - CL15 = \$1,015 - \$416 = \$599Change in NWC = NWC15 - NWC14 = \$599 - \$554 = \$45
- *c*. We can calculate net capital spending as:

Net capital spending = Net fixed assets 2015 - Net fixed assets 2014 + DepreciationNet capital spending = \$4,896 - \$4,176 + \$1,150Net capital spending = \$1,870

So, the company had a net capital spending cash flow of \$1,870. We also know that net capital spending is:

Net capital spending= Fixed assets bought – Fixed assets sold \$1,870 = \$2,160 – Fixed assets sold Fixed assets sold = \$2,160 – \$1,870 Fixed assets sold = \$290

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 EBIT = \$12,380 - \$5,776 - \$1,150EBIT = \$5,454EBT = EBIT - Interest EBT = \$5,454 - \$314EBT = \$5,454 - \$314EBT = \$5,140Taxes = EBT × 0.40 Taxes = $\$5,140 \times 0.40$ Taxes = \$2,056OCF = EBIT + Depreciation - Taxes OCF = \$5,454 + \$1,150 - \$2,056OCF = \$4,548Cash flow from assets = OCF - Change in NWC - Net capital spending. Cash flow from assets = \$4,548 - \$45 - \$1,870Cash flow from assets = \$2,633

Ċ	d. Net new borrow Net new borrow Net new borrow	ving = LTD15 – LT ving = \$2,477 – \$2, ving = \$317	D14 160		
	Cash flow to cre Cash flow to cre Cash flow to cre	editors = Interest – editors = \$314 – \$3 editors = -\$3	Net new LTD 17		
2.21	Net new borrow Debt retired = \$ Debt retired = \$	ving = \$317 = Debt 432 - \$317 115	issued – Debt retired		
	Stater	nent of Financial P	osition as of Dec. 31, 2014		
	Cash	\$4,109	Accounts payable	\$4,316	
	Accounts receivable	5,439	Notes payable	794	_
	Inventory	9,670	Current liabilities	\$5,110	
	Current assets	\$19,218			
			Long-term debt	\$13,460	
	Net fixed assets	\$34,455	Owners' equity	35,103	
			Total liab. &		_
	Total assets	\$53,673	equity	\$53,673	-
	Stater	nent of Financial P	osition as of Dec. 31, 2015		
	Cash	\$5,203	Accounts payable	\$4,185	
	Accounts	< 105	NT	-	
	receivable	6,127	Notes payable	746	-
	Inventory	9,938	Current liabilities	\$4,931	
	Current assets	\$21,268			
			Long-term debt	\$16,050	
	Net fixed assets	\$35,277	Owners' equity	35,564	_
			Total liab. &		
	Total assets	\$56,545	equity	\$56,545	-
	2014 Income S	Statement	2014	5 Income Sta	atement
	Sales	\$7.835.00	Sales		\$8.409.00
	COGS	2,696.00	COGS		3.060.00
	Other expenses	639.00	Other ex	xpenses	534.00
	Depreciation	1,125.00	Depreci	ation	1,126.00
	EBIT	\$3,375.00	EBIT	-	\$3,689.00
	Interest	525.00	Interest	_	603.00
	EBT	\$2,850.00	EBT	_	\$3,086.00
	Taxes	969.00	Taxes	_	1,049.24
	Net income	\$1,881.00	Net inco	ome	\$2,036.76
		#0550 0	D ¹ · · · ·	1	ф1 <u>о</u> г1 оо
	Dividends	3930.00 \$025.00	Dividen	as na to DE	\$1,051.00
	Additions to RE	みヲ∠ン.00	Auditio	IIS IO KE	JYDJ./D

2.22 OCF = EBIT + Depreciation - TaxesOCF = \$3,689 + \$1,126 - \$1,049.24OCF = \$3,765.76Change in NWC = NWC_{end} – NWC_{beg} = $(CA - CL)_{end} - (CA - CL)_{beg}$ Change in NWC = (\$21,268 - \$4,931) - (\$19,218 - \$5,110)Change in NWC = \$2,229Net capital spending = $NFA_{end} - NFA_{beg} + Depreciation$ Net capital spending = 35,277 - 34,455 + 1,126Net capital spending = \$1,948 Cash flow from assets = OCF - Change in NWC - Net capital spending Cash flow from assets = 3,765.76 - 2,229 - 1,948Cash flow from assets = -\$411.24Cash flow to creditors = Interest – Net new LTD Net new $LTD = LTD_{end} - LTD_{beg}$ Cash flow to creditors = 603 - (16,050 - 13,460)Cash flow to creditors = -\$1,987Net new equity = Common shares_{end} – Common shares_{beg} Common shares + Retained earnings = Total owners' equity Net new equity = $(OE - RE)_{end} - (OE - RE)_{beg}$ Net new equity = $OE_{end} - OE_{beg} + RE_{beg} - RE_{end}$ $RE_{end} = RE_{beg} + Additions to RE$ \therefore Net new equity = OE_{end} - OE_{beg} + RE_{beg} - (RE_{beg} + Additions to RE) $= OE_{end} - OE_{beg} - Additions to RE$ Net new equity = 35,564 - 35,103 - 985.76 = -524.76Cash flow to stockholders = Dividends – Net new equity Cash flow to stockholders = 1,051 - (-\$524.76)Cash flow to stockholders = \$1,575.76As a check, cash flow from assets is -\$411.24 Cash flow from assets = Cash flow from creditors + Cash flow to stockholders Cash flow from assets = -\$1,987 + \$1,575.76Cash flow from assets = -\$411.24

Challenge

2.23 We will begin by calculating the operating cash flow. First, we need the EBIT, which can be calculated as:

EBIT = Net income + Current taxes + Deferred taxes + Interest EBIT = \$173 + \$98 + \$19 + \$48 EBIT = \$338 Now we can calculate the operating cash flow as:

Operating cash flow	
Earnings before interest and taxes	\$338
Depreciation	94
Current taxes	<u>(98)</u>
Operating cash flow	\$334

The cash flow from assets is found in the investing activities portion of the accounting statement of cash flows, so:

Cash flow from assets	
Acquisition of fixed assets	\$215
Sale of fixed assets	(23)
Capital spending	\$192

The net working capital cash flows are all found in the operations cash flow section of the accounting statement of cash flows. However, instead of calculating the net working capital cash flows as the change in net working capital, we must calculate each item individually. Doing so, we find:

Net working capital cash flow

Cash	\$14
Accounts receivable	18
Inventories	(22)
Accounts payable	(17)
Accrued expenses	9
Notes payable	(6)
Other	(3)
NWC cash flow	\$(7)

Except for the interest expense and notes payable, the cash flow to creditors is found in the financing activities of the accounting statement of cash flows. The interest expense from the income statement is given, so:

Cash flow to creditors	
Interest	\$48
Retirement of debt	162
Debt service	\$210
Proceeds from sale of long-term debt	(116)
Total	\$94

And we can find the cash flow to stockholders in the financing section of the accounting statement of cash flows. The cash flow to stockholders was:

Cash flow to stockholders	
Dividends	\$ 86
Repurchase of shares	13
Cash to stockholders	\$ 99
Proceeds from new shares issue	(44)
Total	\$ 55

2.24 Net capital spending = $NFA_{end} - NFA_{beg} + Depreciation$

$$=$$
 (NFA_{end} - NFA_{beg}) + (Depreciation + AD_{beg}) - AD_{beg}

 $= (NFA_{end} - NFA_{beg}) + AD_{end} - AD_{beg}$

 $= (NFA_{end} + AD_{end}) - (NFA_{beg} + AD_{beg}) = FA_{end} - FA_{beg}$

MINI CASE Cash Flows at Warf Computers

The operating cash flow for the company is: (NOTE: All numbers are in thousands of dollars)

OCF = EBIT + Depreciation - Current taxesOCF = \$1,598 + \$191 - \$467OCF = \$1,322

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

Capital spending

Ending net fixed assets	\$2,770	
- Beginning net fixed assets	2,151	
+ Depreciation	191	
Net capital spending	\$ 810	

And the change in net working capital was:

Change in net working capital	
Ending NWC	\$874
– Beginning NWC	_704
Change in NWC	\$170

So, the cash flow from assets was:

Cash flow from assets	
Operating cash flow	\$1,322
– Net capital spending	810
– Change in NWC	170
Cash flow from assets	\$342

The cash flow to creditors was:

Cash flow to creditors	
Interest paid	\$105
- Net New Borrowing	24
Cash flow to Creditors	\$81

The cash flow to stockholders was:

Cash flow to stockholders	
Dividends paid	\$671
- Net new equity raised	
Cash flow to Stockholders	\$635

The accounting cash flow statement of cash flows for the year was:

Statement of Cash Flows

Operations	
Net income	\$896
Depreciation	191
Deferred taxes	130
Changes in assets and liabilities	
Accounts receivable	(37)
Inventories	17
Accounts payable	20
Accrued expenses	(118)
Other	(11)
Total cash flow from operations	\$1,088
Investing activities	
Acquisition of fixed assets	\$(1,140)
Sale of fixed assets	330
Total cash flow from investing activities	\$(810)
Financing activities	
Retirement of debt	\$(151)
Proceeds of long-term debt	175
Notes payable	6
Dividends	(671)
Repurchase of shares	(48)
Proceeds from new shares issues	12
Total cash flow from financing activities	\$(677)
Change in cash (on balance sheet)	\$47

Answers to questions

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- 1. The firm had positive earnings in an accounting sense (NI > 0) and had positive cash flow from operations and a positive cash flow from assets. The firm invested \$170 in new net working capital and \$810 in new fixed assets. The firm was able to return \$635 to its stockholders and \$81 to creditors.
- 2. The financial cash flows present a more accurate picture of the company since it accurately reflects interest cash flows as a financing decision rather than an operating decision.
- **3.** The expansion plans look like they are probably a good idea. The company was able to return a significant amount of cash to its shareholders during the year, but a better use of these cash flows may have been to retain them for the expansion. This decision will be discussed in more detail later in the book.

Appendix

2.A1	a.	No change		Both inventory and cash are current assets.
	b.	Increase		Both current assets (cash) and current liabilities (account payable) would be reduced by the same amount but the current ratio increases.
	С.	Increase or Dec	rease	If the bank loan is a current liability then both the current assets and current liabilities will be reduced by the same amount but the current ratio increases . However, if the bank loan is long-term debt then the current ratio would decrease because of the reduction in current assets.
	d.	Decrease		Current assets are reduced to pay the long-term debt.
	e.	No change		Accounts receivable and cash are current assets.
	f.	No change		Inventory, cash and accounts receivable are current assets.
2.A2	2 ROA = Profit margin x Asset turnover. = $0.07x \ 1.8$ = $0.126 \text{ or } 12.6\%$			
	Total E	Debt ratio (TDR)	= Total	Debt / Total Assets = TD / TA = 0.72
	Equity	multiplier	= Total = TA / = 1 / (1 = 1 /(1-	Assets / Total Equity = TA / TE $(TA-TD) = TA / (TA - TA \times TD \text{ Ratio})$ -TD Ratio) -0.72) = 3.57
	ROE	= Profit margin x = 0.07 x 1.8 x 3 = 0.4498 or 44.9	x Asset .57 08%	turnover x Equity multiplier
2.A3	Receiv Averag Payab Averag	ables turnover ge Collection Peri les turnover ge payment perioo	iod 1	= 17,465/3,210 = 5.44 times = 365/5.44 = 67.08 days = 12,216/2,230 = 5.48 times = 365/5.47 = 66.63 days
	It takes pay its	S PVI an average creditors.	of 67.08	8 days to collect on credit sales and an average of 66.63 days to
2.A4	Short-1	term Solvency Rat	<u>tios</u>	
	Curren Curren Quick	t ratio for 2014 t ratio for 2015 ratio for 2014 ratio for 2015	= (800) = (1800) = (800) = (180)	+1,950+3,135) / (1,550+1,629+746) = 1.50 +2,040+2,300) / (1,630+1,380+625) = 1.69 +1,950) / (1550+1,629+746) = 0.70 +2040) / (1,630+1,380+625) =

= 800 / (1,550 + 1,629 + 746) = 0.20

= 1800/(1,630 + 1,380 + 625) = 0.50

Cash ratio for 2014

Cash ratio for 2015

Asset Management Ratios 2015

Total asset turnover	= 4,500/ 11,270 = 0.40
Inventory turnover(using ending figure)	= 2,400/ 2,300 = 1.04
Inventory turnover (using average)	= 2,400 / 2,717.5= 0.88
Receivables turnover (using ending figure)	= 4,500 / 2,040 = 2.21
Receivables turnover (using average)	= 4,500 / 1,995= 2.26

Long-term Solvency Ratios

=(10,505-570-2,523)/10,505=0.71
=(11,270-1,146-2,709)/11,270=0.66
= 7,412/3,093 = 2.40
= 7,415/3,855 = 1.92
= 2.40 + 1 = 3.40
= 1.92 + 1 = 2.92
= 1,600/480= 3.33
= (1,600 + 500)/480= 4.38

Profitability Ratios 2015

Profit margin	= 740/4,500= 0.1644
ROA (net)	= 740/11,270 = 0.0656
Average equity	=(3,093+3,855)/2=\$3,474
ROE	= 740/ 3,474 = 0.213

2.A5

Stowe Enterprises	
Statement of Cash Flows	
For Period Ending December 31, 20	15
Cash, beginning of the year	\$800.00
Operating activities	
Net Income	740
Plus:	
Depreciation	500
Increase in accounts payable	80
Decrease in inventory	835.00
Less:	
Increase in accounts receivable	(90.00)
Decrease in other current liabilities	(121)
Net cash from operating activities	<u>\$1,944.00</u>
Investment activities	
Fixed asset acquisition	(1,010.00)
Net cash from investment activities	<u>\$(1,010.00)</u>

Financing activities

Decrease in notes payable	(249)
Dividends paid	(554)
Increase in long-term debt	293
Increase in common stock	<u>576</u>
Net cash from financing activities	<u>66</u>
Net increase in cash	<u>\$1,000.00</u>
Cash, end of year	\$1,800.00

2.A6 Average daily operating costs = \$2400/365 = \$6.58

Interval measure = current assets / average daily operating costs = \$6140/6.58 = 933.79 days

Stowe could operate for 933.79 days or approximately 2.56 years

2.A7 EPS = \$740/80= \$9.25 P/E = \$45/9.25 = 4.86 times

Book value per share = \$3,855/80 = \$48.1875

Market-to-book ratio = \$45/48.1875 = 0.9338 times

2.A8 Each student answer will be different depending on the industry and firm selected. Suggest preparing a current example for demonstration.

The student should look at the financial position of the firm in relation to the industry as well as the trend, over time, in each of the five main categories of ratios. An overall statement on the financial position and recommendations should be encouraged.

CHAPTER 2 ACCOUNTING STATEMENTS AND CASH FLOW

Chapter Outline [PowerPoint slide 2–1]

- 2.1 The Balance Sheet
- 2.2 The Statement of Comprehensive Income
- 2.3 Net Working Capital
- 2.4 Financial Cash Flow
- 2.5 Summary and Conclusions
- Appendix 2A: Financial Statement Analysis
- Appendix 2B: Statement of Cash Flows

This chapter contains material that most students have already seen in a required financial accounting course. Consequently, many professors do not have a separate lecture on Chapter 2. To the extent that this is a finance course, go over topics that may not have been emphasized in the required accounting course, including financial cash flows and financial statement analysis. A handout listing the financial ratios discussed in Appendix 2A is provided at the end of the lecture notes. It is more convenient to have the ratios in a handout during class discussions.

The Financial Statements [PowerPoint slides 2–3 to 2–29]

Review the balance sheet and income statement of the Canadian Composite Company from the text. During class you may wish to discuss the firm's performance by going over the Financial Cash Flows in Table 2.3 [PowerPoint slides 2–20 to 2–29] and financial ratios from the appendix of the text (see the HANDOUT at the end of the Chapter 2 Lecture Notes).

Financial Cash Flows [PowerPoint slides 2–20 to 2–29]

The primary objective of this chapter is to encourage students to focus on cash flow rather than accounting profit. The Financial Cash Flows in Table 2.3 [PowerPoint slides 2–20 to 2–29] illustrate cash flow accounting. The basic balance sheet equality is:

CF(ASSETS) = CF(BONDS) + CF(STOCK) That is: "what goes in must come out."

CF(ASSETS) are net cash flows to the firm's assets. It consists of net changes in net working capital, net changes in fixed assets, and cash flows from operations. For the Canadian Composite Corporation:

Cash flow of the firm	(in \$ millions)
Operating cash flow	
(Earnings before interest and taxes plus depreciation minus taxes)	\$238
Capital spending	
(Acquisitions of fixed assets minus sales of fixed assets)	(\$173)
Additions to net working capital	<u>(23)</u>
Total	<u>\$42</u>
Cash flow to investors in the firm	
Debt	
(Interest plus retirement of debt minus long-term debt financing)	\$36
Equity	
(Dividends plus repurchase of equity minus new equity financing)	6
Total	<u>\$42</u>

For rapidly growing firms, total cash flow to assets is often negative because of heavy capital expenditures. Additional borrowing (debt) and/or new equity offerings are needed to finance such expenditures. Sources and uses of cash are discussed in more depth in Chapters 3 and 27.

Financial Statement Analysis – Appendix 2A [PowerPoint slides 2–30 to 2–53]

The remaining powerpoint slides go though the calculations of the ratios with examples of what the results might mean. In reviewing the slides with the class, it is a good idea to walk through the calculations for Canadian Composite at the same time and discuss what the results for this company mean.

Cash Flow versus Accounting Profit

As an illustration of why cash flow is more important than accounting income, we sometimes present the Canadian Composite Income Statement on an accrual accounting basis and then on a cash flow basis. Cash items are identified and net cash flow defined as NCF = NI + noncash charges.

	Accrual Accounting Basis	Cash Flow Basis
Total operating revenues	\$2,262	\$2,262
Cost of goods sold	(1,655)	(1,655)
Selling, G & A expense	(327)	(327)
Depreciation	(90)	0
Operating income	\$190	
Other income	29	29
Earnings before interest and tax	219	309
Interest expenses	(49)	(49)
Pretax income	170	
Taxes	(84)	
Current: 71		(71)
Deferred: 13		
Net income	86	
Net cash flow (NCF)		189

Alternatively,

NCF = Net income + depreciation + deferred taxes = 86 +90+13=189

Supplemental Bibliography

Lindenberg, E.B. and S.A. Ross, 1981, Tobin's Q ratio and industrial organization, Journal of Business 54, 1-32.

Supplemental Problems

Problem 2.1

Use the following information from Ricko Corporation to answer the next two questions.

- Dividends = \$24,000
- Year–end stock price = \$12 per share
- Quick ratio = 1.2
- Net working capital = \$200,000
- Inventory turnover ratio = 5.5
- Receivables turnover= 10
- Total liabilities to stockholders' equity ratio = 1.75
- Monthly levels of accounts receivable, inventory, and accounts payable have not changed.
- a. Complete the balance sheet and income statement below.

Balance Sheet as of December 31, 20XX

Assets

Cash	?
Marketable securities	\$ 70,000
Accounts receivable	?
Inventory	?
Total current assets	?
Plant and equipment (net)	?
Total assets	?
Liabilities and Owners' Equity Accounts payable	?
Notes payable – bank (12%)	\$ 100,000
Accrued expenses	\$ 20,000
Total current liabilities	?
Common stock (80,000 shares at \$1 par)	\$ 360,000
Long-term debt (10%)	\$ 80,000
Retained earnings	\$ 240,000
Total liabilities and owners' equity	?

Income Statement for Year Ended December 31, 20XX

Sales (all credit sales)	\$1,200,000
Cost of goods sold	?
Gross profit	?
Selling and administrative expense	\$ 200,000
Operating income	?
Interest expense	\$ 48,000
Income before taxes	?
Income tax (34% tax rate)	?
Net income	?

- b. Compute the following ratios:
- Current ratio
- Earnings per share
- Return on common equity (%)
- Total assets turnover
- Interest coverage ratio
- Net profit margin (%) also called "net operating margin"

Solution 2.1

Part a:

Stockholders' equity = Common stock + Retained earnings = \$320,000Since total liabilities to stockholders' equity ratio is 1.75, then Total liabilities = $\$320,000 \times 1.75 = \$560,000$. Total current liabilities = Total liabilities - Long-term debt = \$560,000 - \$360,000 = \$200,000. Accounts payable = \$200,000 - \$100,000 - \$20,000 = \$80,000. Total assets = \$200,000 + \$360,000 + \$320,000 = \$880,000. Since Net working capital = Current assets - Current liabilities = \$200,000, then Current assets = Current liabilities + \$200,000 = \$400,000. Plant and equipment = Total assets - Total current assets = \$880,000 - \$200,000 = \$680,000. Since Receivables turnover = Sales / Average receivables = 10, then Average receivables = \$1,200,000 / 10 = \$120,000. Since Quick ratio = 1.2, then Average inventory = Current assets - 1.2 x Current liabilities = \$400,000 - (1.2) (\$200,000) = \$160,000.

Since Inventory turnover = 5.5, then Cost of goods sold = Average inventory x 5.5 = \$880,0.00. Gross profits = \$320,000. Operating income = \$120,000. Income before taxes = \$72,000. Income tax = \$24,480. Net income = \$47,520

Part b:

Current ratio = \$400,000 / \$200,000 = 2 EPS = \$47,520 / 80,000 shares = \$0.594 ROE = \$47,520 / (\$80,000 + \$240,000) = 14.9% Total assets turnover = \$1,200,000 / \$880,000 = 1.36 Interest coverage ratio = \$120,000 / \$48,000 = 2.5 Net profit margin = \$47,520 / \$1,200,000 = 3.96%

Problem 2.2

Construct Financial Cash Flows from the following information:

Balance Sheet (in thousands)	December 31, 20x4	December 31, 20x5
Assets		
Cash	\$150	\$100
Marketable securities	90	75
Accounts receivable	200	220
Inventory	350	380
Current assets	790	775
Gross plant and equipment	600	700
less Accumulated depreciation	<u>(120)</u>	(150)
Net fixed assets	480	550
Total assets	\$1,270	\$1,325
Liabilities and Owners' Equity		

Accounts payable	\$70	\$65
Notes payable	175	115
Accrued expenses	5	7
Accrued taxes	5	8
Current liabilities	255	195
Long-term debt	405	430
Common stock	210	285
Retained earnings	400	415
Total liabilities and owners' equity	\$1,270	\$1,325

Income Statement for Year Ended December 31. 20X5

Revenues	\$2000
Cost of goods sold	1750
Selling and administrative expense	50
Operating income	200
Depreciation	30
Operating Income	170
Interest expense	60
Income Before Tax	110
<u>Taxes (at 50%)</u>	55
Net income	55
Dividends	40
Retained earnings	15

Solution 2.2

Operating CF	= EBIT + depreciation - current taxes
	= $170 + 30 - 55 = 145$
Capital spendin	g = \$700 - \$600 = \$100
Additions to ne	t working capital (NWC) = $$580 - $535 = 45

$\begin{array}{ll} CF(ASSETS) &= Operating \ CF - Capital \ spending - Additions \ to \ NWC \\ &= \$145 - \$100 - \$45 = \$0 \end{array}$

 $\begin{array}{ll} CF(BONDS) &= Interest + debt \ retirement - proceeds \ from \ debt \ sales \\ &= \$60 + \$0 + (-\$25) = \$35 \\ CF(STOCK) &= Dividends - new \ stock \ issues \\ &= \$40 + (-\$75) = -\$35 \end{array}$

CF(ASSETS) = CF(BONDS) + CF(STOCK) = \$35 - \$35 = \$0

HANDOUT: Useful Financial Ratios

SHORT-TERM SOLVENCY RATIOS

Current ratio = Current assets ÷ Current liabilities Quick ratio = (Current assets – Inventory) ÷ Current liabilities

ACTIVITY RATIOS

Total asset turnover = Total operating revenues \div Average total assets Receivables turnover = Total operating revenues \div Average receivables Average collection period = Days in period \div Receivables turnover Inventory turnover = Cost of goods sold \div Average inventory Days in inventory = Days in period \div Inventory turnover

FINANCIAL LEVERAGE RATIOS

Debt ratio = Total debt ÷ Total assets Debt–equity ratio = Total debt ÷ Total equity Equity multiplier = Total assets ÷ Total equity Interest coverage = Earnings before interest and taxes ÷ Interest

PROFITABILITY RATIOS

Net profit margin = Net income \div Total operating revenue Gross profit margin = Earnings before interest and taxes \div Total operating revenues Net return on assets = Net Income \div Average Total Assets Gross return on assets = Earnings before interest and taxes \div Average total assets Net[Gross] Return on assets (ROA) = Net[Gross] Profit margin x Asset Turnover Return on equity (ROE) = Net income \div Average stockholders' equity Payout ratio = Cash dividends \div Net Income Retention ratio = Retained earnings \div Net Income = 1 – Payout ratio

MARKET VALUE RATIOS

Price-to-earnings (P/E) ratio = Market price per share ÷ Earnings per share Dividend yield = Dividend per share ÷ Market price per share Market-to-book (M/V) ratio = Market price per share ÷ Book value per share Tobin's Q ratio = (Market value of debt + equity) ÷ Replacement value of total assets

Chapter Two

Accounting Statements and Cash Flow

2



Prepared by

Ingrid McLeod-Dick Schulich School of Business

- 2.1 Statement of Financial Position
- 2.2 Statement of Comprehensive Income
- 2.3 Net Working Capital
- 2.4 Financial Cash Flow
- 2.5 Summary and Conclusions
- Appendix 2A Financial Statement Analysis
- Appendix 2B Statement of Cash Flows

Sources of Information

- Statistics Canada and SEDAR:
 - financial statements, selected ratios
- Dun and Bradstreet Canada:
 - key business ratios
- Infomart and InfoGlobe:
 - financial databases
- Internet
 - TSX (www.tsx.com)
- OSC

Statement of Financial Position (SFP)

- An accountant's snapshot of the firm's accounting position as at a particular date.
- The accounting definition:

Assets = Liabilities + Shareholders' Equity

Canadian Composite Corporation (Table 2.1) The Statement of Financial Position

2013 and 2014

CANADIAN COMPOSITE CORPORATION

Statement of Financial Position

Assets are listed in order of how long it takes to convert them into cash. Cash is the most liquid and comes first.

Assets	2014	2013
Current assets:		
Cash and equivalents	\$140	\$107
Accounts receivable	294	270
Inventories	269	280
Other	58	50
Total current assets	\$761	\$707
Long-Term assets:		
Property, plant, and equipment	\$1,423	\$1,274
Less accumulated depreciation	-550	-460
Net property, plant, and equipment	873	814
Intangible assets and other	245	221
Total long-term assets	\$1,118	\$1,035

(in \$ 1	millions)		
	Liabilities		
13	and Shareholder's Equity	2014	2013
	Current Liabilities:		
107	Accounts payable	\$213	\$197
270	Notes payable	50	53
280	Accrued expenses	223	205
50	Total current liabilities	\$486	\$455
707			
	Long-term liabilities:		
	Deferred taxes	117	104
274	Long-term debt	471	458
460	Total long-term liabilities	\$588	\$562
814			
221	Shareholder's equity:		
035	Preferred shares	39	39
	Common shares	376	339
	Accumulated retained earnings	390	347
	Total equity	\$805	\$725

Total assets

\$1,879 \$1,742

Total liabilities and shareholder's equity <u>\$1,879</u> <u>\$1,742</u> © 2015 McGraw-Hill Ryerson Limited

LO 2.1

Statement of Financial Position Analysis

- When analyzing a SFP, the financial manager should be aware of three concerns:
- 1. Liquidity

- 2. Debt versus equity
- 3. Value versus cost

Accounting Liquidity

- Refers to the ease and speed with which assets can be converted to cash.
- Current assets are more liquid than long-term assets
- The more liquid a firm's assets, the less likely it will experience problems meeting short-term obligations.
- Liquid assets frequently have lower rates of return than long-term assets.

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

- In 2011, publicly traded firms in Canada adopted International Financial Reporting Standards (IFRS).
- The accounting value of a firm's assets is frequently referred to as the *carrying value* or *book value*.
- Market value is a completely different concept. It is the price at which willing buyers and sellers trade the assets.

LO 2.1

The Statement of Comprehensive Income (SCI)

- The statement of comprehensive income (SCI) measures performance over a specific period of time.
- The accounting definition of "income" is REVENUE – EXPENSES = INCOME
2-10 Statement of Comprehensive Income (Table 2.2)

CANADIAN COMPOSITE CORPORATION Statement of Comprehensive Income

2014

(in \$ millions)

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

Total operating revenues	\$2,262
Cost of goods sold	- 1,655
Selling, general, and administrative expenses	- 327
Depreciation	- 90
Operating income	\$190
Other income	29
Earnings before interest and taxes	\$219
Interest expense	- 49
Pretax income	\$170
Taxes	- 84
Current: \$71	
Deferred: \$13	
Net income	\$86
Retained earnings:	\$43
Dividends:	\$43

2-11

Statement of Comprehensive Income

CANADIAN COMPOSITE CORPORATION

Statement of Comprehensive Income

2014

(in \$ millions)

The non-
operating section
of the statement
includes other
income and all
financing costs,
including interest
expense.

Total operating revenues	\$2,262
Cost of goods sold	- 1,655
Selling, general, and administrative expenses	- 327
Depreciation	- 90
Operating income	\$190
Other income	29
Earnings before interest and taxes	\$219
Interest expense	- 49
- Pretax income	\$170
Taxes	- 84
Current: \$71	
Deferred: \$13	
Net income	\$86
Retained earnings:	\$43
Dividends:	\$43

Statement of Comprehensive Income

CANA St	ADIAN COMPOSITE CORPORATION catement of Comprehensive Income 2014 (in \$ millions)	
	Total operating revenues Cost of goods sold Selling, general, and administrative expenses Depreciation Operating income	\$2,262 - 1,655 - 327 - 90 \$190
Usually a separate section reports the	Other income Earnings before interest and taxes Interest expense Pretax income	29 \$219 - 49 \$170
amount of taxes estimated on income.	Current: \$71 Deferred: \$13 Net income Retained earnings:	- 84 \$86 \$43
	Dividends:	\$43

LO 2.2

2-12

Income Statement

CANADIAN COMPOSITE CORPORATION

Statement of Comprehensive Income

2014

(in \$ millions)

	Total operating revenues	\$2,262
	Cost of goods sold	- 1,655
	Selling, general, and administrative expenses	- 327
	Depreciation	- 90
	Operating income	\$190
	Other income	29
	Earnings before interest and taxes	\$219
	Interest expense	- 49
Net income is the	Pretax income	\$170
"bottom line".	Taxes	- 84
L. C.	Current: \$71	
	Deferred: \$13	
	Net income	\$86
	Retained earnings:	\$43
	Dividends:	\$43

LO 2.2

Statement of Comprehensive Analysis

- There are three things to keep in mind when analyzing the statement of comprehensive income:
 - The accounting standards used i.e. International Financial Reporting Standards (IFRS)
 - 2. Non-Cash Items
 - 3. Time and Costs

2-14

1. IFRS

The accrual basis of accounting is used-

- Revenues are recognized when earned and the earnings process is complete even though cash flows may not have been received.
- Expenses incurred to earn the revenue are recognized at the same time the related revenue is reported even though no cash may have been paid.

Income Statement Analysis

2. Non Cash Items

- These are expenses that <u>*do not*</u> affect cash flow directly.
- Depreciation is the most common. No firm ever writes a cheque for "depreciation."
- Another noncash item is deferred taxes, which does not represent a cash flow.

2-16

LO2.2

Income Statement Analysis

3. Time and Costs

- In the short term:
 - certain costs related to equipment, resources, and commitments of the firm are *fixed*;
 - other costs are *variable* based on production levels such as inputs for labour and raw materials.
- In the long run, all costs are *variable*.
- Financial accountants do not distinguish between variable costs and fixed costs.
 - Instead, accounting distinguishes product costs (production costs) from period costs (time period costs).

2-17

Net Working Capital = Current Assets – Current Liabilities

- NWC is **positive** when current assets are greater than current liabilities.
- A firm can *invest* in NWC. This is represented by the *change* in NWC and is equal to the:

NWC (2014) – NWC (2013) = Change in NWC

• The *change* in NWC is usually **positive** in a growing firm.

2-19 The Statement of Financial Position of the C.C.



- In finance, the most important item that can be extracted from financial statements is the actual cash flow of the firm.
- Since there is no magic in finance, it must be the case that the cash received from the firm's assets must equal the cash flows to the firm's bondholders (creditors) and shareholders.

CF(A) = CF(B) + CF(S)

CANADIAN COMPOSITE CORPORATION Financial Cash Flow 2014 (in \$ millions)			
Cash Flow of the Firm	\bigcirc	Operating Cas	sh Flow:
Operating cash flow (Earnings before interest and taxes plus depreciation minus taxes)	\$238	EBIT	\$219
Capital spending (Acquisitions of long-term assets minus sales of long-term assets)	-173	Depreciation	\$90
Additions to net working capital Total	<u>-23</u> \$42	Current Taxes	<u>(\$71)</u>
Cash Flow of Investors in the Firm		OCF	\$238
Debt (Interest plus retirement of debt minus new long-term debt financing)	\$36		
Equity	6		
(Dividends plus repurchase of			
equity minus new equity financing) Total	\$42		
LO 2.4		© 2015 McGra	w–Hill Ryerson Limited

CANADIAN COMPOSITE CORPORATION
Financial Cash Flow

2014

(in \$ millions)

Cash Flow of the Firm

- Operating cash flow
- (Earnings before interest and taxes plus depreciation minus taxes)
- Capital spending
- (Acquisitions of long-term assets minus sales of long-term assets) Additions to net working capital **Total**

Cash Flow of Investors in the Firm

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

\$238



Capital Spending

Purchase of long-term assets	\$198
Sales of long-term assets	<u>(25)</u>
Capital spending	\$ <u>173</u>

LO 2.4

CANADIAN COMPOSITE CORPORATION

Financial Cash Flow

2014

(in \$ millions)

Cash Flow of the Firm

Operating cash flow

(Earnings before interest and taxes plus depreciation minus taxes)

Capital spending (Acquisitions of long-term assets minus sales of long-term assets) Additions to net working capital

Total

Cash Flow of Investors in the Firm Debt

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

(Dividends plus repurchase of equity minus new equity financing) Total

\$238

NWC grew to \$275

- -173 million in 2014 from \$252 million in 2013.
 - This increase of \$23 million is the addition to NWC.

\$36

6

-23

CANADIAN COMPOSITE CORPORATION Financial Cash Flow 2014 (in \$ millions)		
Cash Flow of the Firm		
Operating cash flow	\$238	
plus depreciation minus taxes)	170	
(Acquisitions of long-term assets minus sales of long-term assets)	-173	
Additions to net working capital Total	\$42	
Cash Flow of Investors in the Firm		
Debt	\$36	
(Interest plus retirement of debt minus new long-term debt financing)		
Equity	6	
(Dividends plus repurchase of		
equity minus new equity financing)		
Total	\$42_	

CANADIAN COMPOSITE CORPORATION

Financial Cash Flow

2014

(in \$ millions)

Cash Flow of the Firm

Operating cash flow

(Earnings before interest and taxes plus depreciation minus taxes)

Capital spending

(Acquisitions of long-term assets minus sales of long-term assets) Additions to net working capital

Total

Cash Flow of Investors in the Firm Debt

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

(Dividends plus repurchase of equity minus new equity financing) Total

\$238

Cash Flow to Creditors

173	Interest	\$49
-23	Retirement of debt	<u>73</u>
42	Debt service	122



6

\$42

Proceeds from issue

of new debt (86) Total 36

CANADIAN COMPOSITE CORPORATION

Financial Cash Flow

2014

(in \$ millions)

Cash Flow of the Firm

Operating cash flow (Earnings before interest and taxes plus depreciation minus taxes)

Capital spending (Acquisitions of long-term assets minus sales of long-term assets) Additions to net working capital Total

Cash Flow of Investors in the Firm Debt

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

(Dividends plus repurchase of equity minus new equity financing) Total

\$238

\$42

	Cash Flow to Shareholders	
-173	Dividends	\$43
	Repurchase of shares	<u>6</u>
<u>-23</u> \$42	Cash to Shareholders	49
	Proceeds from new share issue	e
\$36		<u>(43)</u>
\frown	Total	\$6
6		

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LO 2.4

CANADIAN COMPOSITE CORPORATION

Financial Cash Flow 2014 (in \$ millions)

Cash Flow of the Firm

Operating cash flow (Earnings before interest and taxes plus depreciation minus taxes)

Capital spending (Acquisitions of long-term assets minus sales of long-term assets)

Additions to net working capital Total

Cash Flow of Investors in the Firm Debt

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

(Dividends plus repurchase of equity minus new equity financing) Total

- \$238 The cash received from the firm's assets must
- -173 equal the cash flows to the firm's bondholders and

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

Financial Cash Flow

Important observations:

- Cash flow from operations measures cash generated before investment in capital requirements and net working capital.
- Net income is based on accruals and deferrals and is not cash flow.
- Free cash flows represents cash flow from assets. It is calculated as cash flow from operations less investments in capital expenditures and NWC.

Summary and Conclusions

- A financial manager should be able to determine **cash flow** from a firm's financial statements.
- Net income is not cash flows.
- Cash flow generated by a firm is used to pay bondholders and shareholders.
- You should keep in mind:
 - Measures of profitability do not take risk or timing of cash flows into account.

Appendix 2A Financial Statement Analysis

- Financial ratios provide information about five areas of financial performance:
 - 1. Short-term solvency
 - 2. Activity

2-30

- 3. Financial leverage
- 4. Profitability
- 5. Market value

Short-term solvency ratios

2-31

• Measure the firm's ability to meet recurring financial obligations

Current ratio = $\frac{\text{Total current assets}}{\text{Total current liabilities}}$

• A higher current ratio indicates greater liquidity

Short-term solvency ratios (continued)

$$Quick ratio = \frac{Quick assets}{Total current liabilities}$$

- Quick assets = Current assets inventories
- Quick ratio determines firm's ability to pay current liabilities without relying on the sale of inventories.

Cash ratio = <u>Cash</u> Current liabilities

2-33

• Cash ratio examines the firm's ability to pay current liabilities in the short term (i.e. from cash only).

Activity ratios

• Measure how effectively the firm's assets are being managed

Total asset turnover = $\frac{\text{Total operating revenues}}{\text{Average total assets}}$

• Example: retail and wholesale trade firms tend to have *high* asset turnover ratios compared to manufacturing firms.

2-35

Receivables turnover = $\frac{\text{Total operating revenues}}{\text{Average receivables}}$

Average collection period = $\frac{\text{Days in period (i.e.365)}}{\text{Receivables turnover}}$

• These ratios provide information on the success of the firm in managing its investment in accounts receivable.



Inventory turnover = $\frac{\text{Cost of goods sold}}{\text{Average inventory}}$

Days in inventory = $\frac{\text{Days in period (i.e.365)}}{\text{Inventory turnover}}$

• Measure how quickly inventory is produced and sold.

Important to consider method used to value the inventory

Financial leverage ratios

2-37

• Measure the extent to which a firm relies on debt financing .

Debt ratio = $\frac{\text{Total debt}}{\text{Total assets}}$

Debt - equity ratio =
$$\frac{\text{Total debt}}{\text{Total equity}}$$

Equity multiplier
$$= \frac{\text{Total assets}}{\text{Total equity}}$$



- Interest coverage ratio is directly connected to the firm's ability to pay interest.
 - Drawback is that EBIT is not really a measure of cash



operations

2 - 39

 adding back non-cash items to EBIT approximates the cash flow from operations. Financial leverage ratios (continued)

2-40

PayableTurnover =
$$\frac{COGS}{\text{Averge Accounts Payable}}$$

Average Payment Period = $\frac{\text{Days in Period (365)}}{\text{Payable Turnover}}$

• Payable turnover ratio and average payment period ratio examine how long it takes a company to pay its suppliers



Net profit margin = $\frac{\text{Net income}}{\text{Total operating revenue}}$

• Retail firms and service firms tend to have *low* and *high* profit ratios respectively.

Profitability ratios

EBITDA margin = $\frac{\text{EBITDA}}{\text{Total operating revenue}}$

- This ratio looks more to "cash flows" than net income
- A higher margin is desirable.



Net return on assets = $\frac{\text{Net income}}{\text{Average total assets}}$

Gross return on assets = $\frac{\text{EBIT}}{\text{Average total assets}}$

• Net (or gross) return on assets measures managerial performance and how effectively assets are being used to generate income

Profitability (continued)

DuPont system of financial control

Return on assets = Profit margin x Asset turnover



• Firms tend to face a trade-off between turnover and margin

Profitability (continued)

2-45

Return on equity = $\frac{\text{Net income}}{\text{Average shareholders equity}}$

ROE = Profit margin x Asset turnover X Equity multiplier



• The difference between ROA and ROE is due to financial leverage.
Profitability (continued)

Payout ratio and Retention ratio

Payout ratio= $\frac{\text{Cashdividends}}{\text{Netincome}}$

Retention ratio = $\frac{\text{Annual retained earnings}}{\text{Net income}}$

 Payout ratio measures the amount paid as dividends; and retention ratio is the remainder – how much is retained by the company for reinvestment.



Sustainble Growth Rate = $\frac{\text{ROE}}{\text{Retention ratio}}$

• Measures the maximum growth rate that the company can sustain with no external financing, while maintaining a constant debt to equity ratio

Market value ratios

Enterprise Value (EV) = Market capitalization + MV of interest bearing debt - Cash

Enterprise Value Multiple = $\frac{\text{Enterprise Value}}{\text{EBITDA}}$

- Enterprise value is the value of the total firm
- EV multiple is used to compare with other companies and is not affected by capital structure, taxes or capital spending

Market value ratios (continued)

2-49

Price - Earnings ratio = $\frac{\text{Market price/share}}{\text{current annual earnings /share}}$

- P/E ratio shows how much investors are willing to pay for \$1 of earnings per share.
- It also reflects investors' views of the growth potential of different sectors.

2-50

Dividend yield =
$$\frac{\text{Dividend/share}}{\text{Market price/share}}$$

• Like P/E ratios, dividend yields are related to the market's perception of future growth prospects for firms.

2-51

Market - to - Book ratio = $\frac{\text{Market price/share}}{\text{Book value/share}}$

- The M/B ratio compares the market value of the firm's investments to their cost.
- a M/B value < 1 might indicate that the firm has not been successful in creating value for its shareholders.

Remarks on ratios

- Financial ratios are useful within a firm for performance evaluation.
- Financial ratios are used outside the firm by creditors and shareholders.
- Need to choose an appropriate benchmark.
- Judgment and experience are important in interpreting ratios.
- Comparisons with other companies may be difficult due to different year ends and one-time events.

2-53 Summary and Conclusions – Financial ratios

- Measures of profitability do not consider risk and timing of cash flows.
- Financial ratios are linked together.
- Financial ratios cannot be looked at in isolation.
- Require judgment and experience to interpret results.

Appendix 2B Statement of Cash Flows

2-54

- This statement helps explain the change in accounting cash.
 - 1. Cash flow from operating activities
 - 2. Cash flow from investing activities
 - 3. Cash flow from financing activities

Cash flow from operating activities

CANADIAN COMPOSITE CORPORATION

Cash Flow from Operating Activities

2014			
(in	\$	millions)	

Net income	\$86
Depreciation	90
Deferred taxes	13
Change in assets and liabilities	
Accounts receivable	-24
Inventories	11
Accounts payable	16
Accrued expense	18
Notes payable	(3)
Other	(8)
Cash flow from operating activities	\$199

Cash flow from investing activities

CANADIAN COMPOSITE CORPORATION Cash Flow from Investing Activities

2014

(In	Þ	mII	110	ns

Acquisition of long-term assets	\$(198)
Sale of long-term assets	25
Cash flow from investing activities	\$(173)

Cash flow from financing activities

CANADIAN COMPOSITE CORPORATION

Cash Flow from Financing Activities

(in	\$ mi	llic	ons
N			

Retirement of debt (includes notes)	\$(73)
Proceeds from long-term debt issues	86
Dividends	(43)
Repurchase of shares	(6)
Proceeds from new share issue	43
Cash flow from financing activities	\$7

Cash flow from financing activities

Quick Quiz

2-58

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



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Quick Quiz

- What are the major categories of financial ratios?
- How do you compute the ratios within each category?
- What are some of the problems associated with financial statement analysis?