CHAPTER 2

Discussion Questions

2-1. The price-earnings ratio will be influenced by the earnings and sales growth of the firm, the risk or volatility in performance, the debt-equity structure of the firm, the dividend payment policy, the quality of management, and a number of other factors. The ratio tends to be future-oriented, and will be higher the more positive the outlook

2-2. Book value per share is arrived at by taking the cost of the assets and subtracting out liabilities and preferred stock and dividing by the number of common shares outstanding. It is based on the historical costs of the assets. Market value per share is based on current assessed value of the firm in the marketplace and may bear little relationship to original cost. Besides the disparity between book and market value caused by the historical cost approach, other contributing factors are the growth prospects for the firm, the quality of management, and the industry outlook. To the extent these are quite negative, or positive, market value may differ widely from book value.

2-3. The only way amortization generates cash flows for the company is by serving as a tax shield against reported income. Allowable amortization for tax purposes is known as capital cost allowance (CCA). In most instances this will be different than accounting amortization. This non-cash deduction may provide cash flow equal to the tax rate times the amortization charged. This much in taxes will be saved, while no cash payments occur.

2-4. Accumulated amortization is the sum of all past and present amortization charges, while amortization expense is the current year's charge. They are related in that the sum of all prior amortization expense should be equal to accumulated amortization (subject to some differential related to asset write-offs).

2-5. The balance sheet, for private companies, is based on historical costs. When prices are rising rapidly, historical cost data may lose much of their meaning - particularly for plant, equipment and inventory. However, the balance sheet of public companies using IFRS is based on market values and opposite order whereby non-current assets are listed ahead of current assets. The same applies to the liabilities section that lists non-current liabilities first.

2-6. The income statement and balance sheet are based on the accrual method of accounting, which attempts to match revenues and expenses in the period in which they occur. However, accrual accounting does not attempt to properly assess the cash flow position of the firm. The statement of changes in financial position fulfills this need. The values on these statements will differ for public companies using IFRS compared to private firms.

2-7. The sections of the statement of cash flows and sources of information are:

Cash flows from operating activities (Income statement)
Cash flows from investing activities (non-current assets section of balance sheet)
Cash flows from financing activities (non-current liabilities and equity section)

The payment of cash dividends falls into the financing activities category.

2-8. We can examine the various sources that were utilized by the firm as indicated on the statement. Possible sources for the financing of an increase in assets might be profits, increases in liabilities, or decreases in other asset accounts.

2-9. Free cash flow is equal to cash flow from operating activities:

Minus: Capital expenditures required to maintain the productive capacity of the firm.

Minus: Dividends (required to maintain the payout on common stock and to cover any preferred stock obligation).

The analyst or banker normally looks at free cash flow to determine whether there are sufficient excess funds to pay back the loan associated with the leveraged buy-out (a company with limited cash acquiring stocks of another company to acquire control).

2-10. Interest expense is a tax deductible item to the corporation, while dividend payments are not. The net cost to the corporation of interest expense is the amount paid multiplied by the difference of (one minus the applicable tax rate). The firm must bear the full burden of the cash outflow of dividend payments because they are not an expense, but rather a distribution out of retained earnings.

Internet Resources and Questions

1. www.cica.ca
2. www.cma-canada.org
3. www.cga-canada.org
4. www.iasb.org.
5. www.kpmg.ca/taxi
6. www.pwc.com/ca/tax
7. www.cra-arc.gc.ca

Problems
(The following solutions use the 2010 tax rates in the text. The 2012 rates are also shown but subject to change).

2-1. **Hansen Auto Parts**
Income Statement

Sales	$470,000
Cost of goods sold	140,000
Gross Profit	330,000
Selling and administrative expense	60,000
Amortization expense	70,000
Operating profit	200,000
Interest expense	40,000
Earnings before taxes	160,000
Taxes (22%)	35,200
Earnings after taxes	**$124,800**

2-2. Virginia Slim Wear
Income Statement

Sales…………………………………………………	$600,000
Cost of goods sold………………………………..	200,000
Gross profit…………………………………..…..	400,000
Selling and administration expense……………….	40,000
Amortization expense……………………………..	20,000
Operating profit………………………………..	340,000
Interest expense……………………………………	30,000
Earnings before taxes…………………………..	310,000
Taxes ………………………………………………..	100,000
Earnings after taxes…………………………….	210,000
Preferred stock dividends…………………………	80,000
Earnings available to common shareholders……..	$130,000
Shares outstanding………………………………..	100,000
Earnings per share………………………………..	**$1.30**

2-3. Far East Fast Foods

a. **2011**

Earnings after taxes	$230,000
Shares outstanding	200,000
Earnings per share	**$1.15**

b. **2012**

Earnings after taxes ($230,000 × 125%)	$287,500
Shares outstanding	230,000
Earnings per share	**$1.25**

2-4. Sheridan Travel

a. $EPS = \frac{\$600,000}{300,000} = \mathbf{\$2.00\ per\ share}$

b. New Net Income: $600,000 x 125% = $750,000
Shares: 300,000 + 40,000 = 340,000 shares
New EPS = $\frac{750,000}{340,000} = \mathbf{\$2.21\ per\ share}$

2-5. Kevin Bacon and Pork Company

a.	Sales	$240,000
	Cost of goods sold	108,000
	Gross profit	132,000

$$\text{Gross profit (\%)} = \frac{\text{Gross profit}}{\text{Sales}} = \frac{\$132,000}{\$240,000} = .55 = 55\%$$

With a gross profit of 55%, Kevin Bacon and Pork Company is under performing the industry average of 60%.

2-6. Aztec Book Company
Income Statement
For the Year ended December 31, 2012

Sales (1,400 books at $84 each)	$117,600
Cost of goods sold (1,400 books at $63 each)	88,200
Gross Profit	29,400
Selling expense	2,000
Amortization expense	5,000
Operating profit	22,400
Interest expense	5,000
Earnings before taxes	17,400
Taxes @ 20%	3,480
Earnings after taxes	**$13,920**

2-7. Carr Auto Wholesalers
Income Statement

a.

Sales	$900,000
Cost of goods sold @ 65%	585,000
Gross profit	315,000
Selling and administration expense @ 9%	81,000
Amortization expense	10,000
Operating profit	224,000
Interest expense	8,000
Earnings before taxes	216,000
Taxes @ 30%	64,800
Earnings after taxes	**$151,200**

b.

Sales……………………………………………..	$1,000,000
Cost of goods sold @ 60%.................................	600,000
Gross profit…………………………………....	400,000
Selling and administration expense @ 12%.........	120,000
Amortization expense……………………..……..	10,000
Operating profit………………………………	270,000
Interest expense…………………………………	15,000
Earnings before taxes…………………………	255,000
Taxes @ 30% ……………………………………	76,500
Earnings after taxes……………………………	**$ 178,500**

Ms. Hood's idea will increase profitability.

2-8.

Sales
Cost of goods sold
Gross profit
Selling and administrative expense
Amortization expense
Operating profit
Interest expense
Earnings before taxes
Taxes
Earnings after taxes
Preferred stock dividends
Earnings available to common shareholders

Shares outstanding
Earnings per share

2-9. David's Magic Stores

a.

Operating profit (EBIT)........................	$210,000
Interest expense................................	30,000
Earnings before taxes (EBT).................	180,000
Taxes..	59,300
Earnings after taxes (EAT)......................	120,700
Preferred dividends	24,700
Available to common shareholders........	$ 96,000
Common dividends...........................	36,000
Increase in retained earnings.................	$ 60,000

Earnings per Share = $\dfrac{\text{Earnings available to common shareholders}}{\text{Number of shares of common stock outstanding}}$

= $96,000/16,000 shares

= **$6.00 per share**

Dividends per Share = $36,000/16,000 shares = **$2.25 per share**

b. Payout ratio = $2.25/ $6.00 = .375 = **37.5%**

c. Increase in retained earnings = $60,000

d. Price/earnings ratio = $90/ $6.00

= 15.0

2-10. Thermo Dynamics

a.

Retained earnings, December 31, 2011............	$450,000
Less: Retained earnings, December 31, 2012....	400,000
Change in retained earnings..............................	50,000
Add: Common stock dividends.........................	25,000
Earnings available to common shareholders......	$ 75,000

b. Earnings per share = $75,000/ 20,000 shares

= **$3.75 per share**

c. Payout ratio = \$25,000/ \$75,000 = .333 = **33%**
d. Price/earnings ratio = \$30.00/ \$3.75 = 8x

2-11. Brandon Fast Foods Inc.

a. Operating Income \$210,000 – Taxes \$59,300 – Interest \$30,000 = Net income after taxes \$120,700

EPS = \$96,000 / 16,000 shares = **\$6.00 EPS**

Common Dividend Per Share = Div. paid \$36,000/16,000 shares = **\$2.25 Div. Per Share**

b. Increase in RE = Income \$120,700 – Common Dividends \$24,700 = **\$60,000.**

2-12.

Common stock – noncurrent
Accounts payable – current
Preferred stock – noncurrent
Prepaid expenses – current
Bonds payable – noncurrent
Inventory – current
Investments – noncurrent
Marketable securities – current
Accounts receivable – current
Plant and equipment – noncurrent
Accrued wages payable – current
Retained earnings – noncurrent

2-13. **Assets**

Current Assets		
Cash..		$ 10,000
Marketable securities.........................		20,000
Accounts receivable..........................	$48,000	
Less: Allowance for bad debts......	6,000	
		42,000
Inventory...		66,000
Total Current Assets................		138,000
Other Assets:		
Investments.......................................		20,000
Capital Assets:		
Plant and equipment.........................	680,000	
Less: Accumulated amortization..	300,000	
Net plant and equipment..................		380,000
Total Assets..		$538,000

Liabilities and Shareholders' Equity

Current Liabilities:	
Accounts payable.............................	$ 35,000
Notes payable..................................	33,000
Total current Liabilities...............	68,000
Long-Term Liabilities...........................	
Bonds payable..................................	136,000
Total Liabilities............................	204,000
Shareholders' Equity:	
Preferred stock, 1,000 shares outstanding….....	50,000
Common stock, 100,000 shares outstanding....	188,000

Retained earnings..	96,000
Total Shareholders' Equity..........................	334,000
Total Liabilities and Shareholders' Equity…….....	$538,000

2-14.

Bengal Wood Company

Current assets……………………..	$100,000
Capital assets………………………	140,000
Total assets………………………..	240,000
– Current liabilities………………..	60,000
– Long-term liabilities……………..	90,000
Shareholders' equity……………….	90,000
– Preferred stock obligation………..	20,000
Net worth assigned to common……	$ 70,000
Common shares outstanding………	17,500
Book value (net worth) per share…	**$4.00**

2-15. **Monique's Boutique**

a. Total assets....................................	$600,000
– Current liabilities........................	150,000
– Long-term liabilities...................	120,000
Shareholders' equity.......................	330,000
– Preferred stock............................	75,000
Net worth assigned to common.......	$255,000
Common shares outstanding…..........	30,000
Book value (net worth) per share….....	**$8.50**
b. Earnings available to common.........	$33,600
Shares outstanding..........................	30,000
Earnings per share..........................	**$1.12**

P/E ratio × earnings per share	= price
12 × $1.12	= **$13.44**

c. Market value per share (price) to book value per share

$13.44/$8.50	= **1.58**

2-16. **Phelps Labs**

a. Total assets....................................	$1,800,000
– Current liabilities........................	595,000
– Long-term liabilities...................	630,000
Shareholders' equity.......................	575,000
– Preferred stock............................	165,000
Net worth assigned to common.......	$ 410,000
Common shares outstanding…............	20,000
Book value (net worth) per share….....	**$20.50**
b. Earnings available to common.........	$45,000
Shares outstanding..........................	20,000
Earnings per share...........................	**$2.25**

P/E ratio × earnings per share = price

13 × $2.25= **$29.25**

c. Market value per share (price) to book value per share

$29.25/$20.50	= **1.43**

2-17. **Phelps Labs (Continued)**

2 × book value	= price
2 × $20.5	= $41.00
P/E ratio	= $41.00/$2.25

= **18.22**

2-18.

1. Balance Sheet (BS)
2. Income Statement (IS)
3. Current Assets (CA)
4. Capital Assets (Cap A)
5. Current Liabilities (CL)
6. Long-Term Liabilities (LL)
7. Shareholders Equity (SE)

Indicate Whether the Item is on Balance Sheet or Income Statement	***If the Item is on Balance Sheet, Designate Which Category***	***Item***
BS	SE	Retained earnings
IS		Income tax expense
BS	CA	Accounts receivable
BS	SE	Common stock
BS	LL	Bonds payable maturity 2012
BS	CL	Notes payable (6 months)
IS		Net income (EAT)
IS		Selling and adm. expenses
BS	CA	Inventories
BS	CL	Accrued expenses
BS	CA	Cash
BS	Cap A	Plant and equipment
IS		Sales
IS		Operating expenses

Indicate Whether the Item is on Balance Sheet or Income Statement	***If the Item is on Balance Sheet, Designate Which Category***	***Item***
BS	SE	Retained earnings
BS	CA	Marketable securities
BS	CL	Accounts payable
IS		Interest expense
BS	CL	Income tax payable

2-19. Increase in inventory -- decreases cash flow (use)
Decrease in prepaid expenses -- increases cash flow (source)
Decrease in accounts receivable -- increases cash flow (source)
Increase in cash -- decreases cash flow (use)
Decrease in inventory -- increases cash flow (source)
Dividend payment -- decreases cash flow (use)
Increase in short-term notes payable -- increases cash flow (source)
Amortization expense – does not affect cash flow
(However in the cash flow statement it is added to net income to determine cash provided by operations)
Decrease in accounts payable -- decreases cash flow (use)
Increase in long-term investments -- decreases cash flow (use)

2-20. Jupiter Corporation – Saturn Corporation

	Jupiter	Saturn
Gross profit.........................	$700,000	$700,000
Selling and adm. expense...	160,000	160,000
Amortization.......................	240,000	400,000
Operating profit..................	300,000	140,000
Taxes (40%)........................	120,000	56,000
Earnings after taxes.............	180,000	84,000
Plus amortization expense...	240,000	400,000
Cash Flow...........................	**$420,000**	**$484,000**

Saturn had $160,000 more in amortization, which provided $64,000 (0.40 × $160,000) more in cash flow. We observe that Saturn's taxes were less by: $120,000 – $56,000 = $64,000 (0.40 × $160,000).

2-21. **Loofa Corporation**

a. Statement of Cash Flows

For the Year Ended December 31, 2012

Operating activities:		
Net income (earnings after taxes)...............		$ 54,610
Add items not requiring an outlay of cash:		
Amortization.................................	8,190	8.190
Cash flow from operations		62,800
Changes in non-cash working capital:		
Decrease in accounts receivable....	5,460	
Increase in inventory.....................	(16,385)	
Increase in accounts payable.........	19,115	
Decrease in taxes payable...............	(5,455)	
Net change in non-cash working capital....		2,735
Cash provided by operating activities........		65,535
Investing activities:		
Increase in plant and equipment...........	(19,115)	
Cash used in investing activities................		(19,115)
Financing activities:		
Issue of common stock	16,385	
Common stock dividends paid.............	(27,305)	
Cash used in financing activities………...		(10,920)
Net increase in cash (equivalents) during the year..		35,500
Cash, beginning of year……….		21,845
Cash, end of year……………...		$ 57,345

b. Major accounts contributing to positive change in cash position are: net income, payables and common stock issuance. Negative change comes from inventory, plant and equipment and dividends paid.

2-22. **Waif Corporation**

a. Statement of Cash Flows

For the Year Ended December 31, 2012

Operating activities:		
Net income (earnings after taxes)...............		$ 91,000
Add items not requiring an outlay of cash:		
Amortization................................	$ 22,000	22,000
Cash flow from operations		113,000
Changes in non-cash working capital:		
Increase in accounts receivable....	(12,600)	
Decrease in inventory....................	7,100	
Decrease in accounts payable.........	(10,000)	
Net change in non-cash working capital....		(15,500)
Cash provided by operating activities........		97,500
Investing activities:		
Increase in plant and equipment...........	(48,000)	
Sale of land……………………………	27,000	
Cash used in investing activities...............		(21,000)
Financing activities:		
Retirement of bonds payable...............	(40,000)	
Issue of common stock.......................	40,000	
Common stock dividends paid………	(39,400)	

Cash used in financing activities………...	(39,400)
Net increase in cash (equivalents) during the year	37,100
Cash, beginning of year……….	17,400
Cash, end of year……………...	$ 54,500

b. Major accounts contributing to positive change in cash position are: net income, amortization, sale of land and common stock issuance. Negative change from plant and equipment, bond retirement, and dividends paid.

2-23. **Maris Corporation**

Statement of Cash Flows

For the Year Ended December 31, 2012

Operating activities:		
Net income (earnings after taxes)................		$250,000
Add items not requiring an outlay of cash:		
Amortization..............................	$ 230,000	230,000
Cash flow from operations		480,000
Increase in accounts receivable..	(10,000)	
Increase in inventory..................	(30,000)	
Decrease in prepaid expenses....	30,000	
Increase in accounts payable.....	250,000	
Decrease in accrued expenses...	(20,000)	
Net change in non-cash working capital.....		220,000
Cash provided by operating activities.........		700,000
Investing activities:		
Decrease in investments.....................	10,000	
Increase in plant and equipment.........	(600,000)	
Cash used in investing activities................		(590,000)

Financing activities:

Increase in bonds payable	60,000	
Preferred stock dividends paid...........	(10,000)	
Common stock dividends paid...........	(140,000)	
Cash used in financing activities………..		(90,000)
Net increase (decrease) in cash		20,000
Cash, at beginning of year		100,000
Cash, end of year		$120,000

2-24.

Cash flow provided by operating activities exceeds net income by $450,000. This occurs primarily because we add back amortization of $230,000 and accounts payable increases by $250,000. Thus, the reader of the cash flow statement gets important insights as to how much cash flow was developed from daily operations.

2-25.

The buildup in plant and equipment of $600,000 (gross) and $370,000 (net) has been financed, in part, by the large increase in accounts payable ($250,000). This is not a very satisfactory situation. Short-term sources of funds can always dry up, while capital asset needs are permanent in nature. The firm may wish to consider more long-term financing, such as a mortgage, to go along with profits, the increase in bonds payable, and the add-back of amortization.

2-26. Book value per share = Shareholders' equity - Preferred stock / Common shares outstanding

$$\text{Book value per share} = \frac{\text{Shareholders' equity} - \text{Preferred stock}}{\text{Common shares outstanding}}$$

$$\text{Book value} = \frac{(\$1{,}390{,}000 - \$90{,}000)}{} = \frac{\$1{,}300{,}000}{} = \mathbf{\$8.67}$$

per share 150,000 150,000
(2011)

Book value = $\frac{(\$1,490,000 - \$90,000)}{150,000} = \frac{\$1,400,000}{150,000}$ = **$9.33**
per share
(2012)

2-27. Market value = 2.8 × $9.33 = **$26.12**
P/E ratio = $26.12/ $1.60
= 16.33 or **16x**

2-28. **Winfield Corporation**
Statement of Cash Flows
December 31, 2012

Operating activities:		
Net income (earnings after taxes)...............		$ 14,000
Add items not requiring an outlay of cash:		
Amortization (buildings).....	$10,500	
Gain on sale of investment……..	(5,250)	
Loss on sale of equipment...........	1,050	
		6,300
Cash flow from operations:		20,300
Changes in non-cash working capital:		
Increase in accounts receivable...	(2,450)	
Increase in inventory..................	(5,250)	
Increase in prepaid expenses.......	(175)	
Decrease in accounts payable.....	(1,750)	
Increase in accrued expenses......	1,925	
Decrease in interest payable........	(175)	
Net change in non-cash working capital.....		(7,875)
Cash provided by operating activities…......		12,425

Investing activities:		
Proceeds from the sale of stock............	8,750	
Proceeds from the sale of equipment....	2,450	
Purchase of equipment..........................	(15,750)	
Purchase of land (see note)...................	(8,750)	
Cash used in investing activities…………..		(13,300)
Financing activities:		
Increase in notes payable......................	2,625	
Increase in bonds payable.....................	5,250	
Common stock dividends paid.............	(6,650)	
Cash provided by financing activities…………..		1,225
Net increase in cash		350
Cash, beginning of year		1,400
Cash, end of year		$ 1,750

Issued note of $8,750 for land purchase (non-cash); due June 30, 2013.

2-29. **Gardner Corporation**

a. Income Statement

For the Year Ending December 31, 2012

Sales……………………………………………..	$220,000
Cost of goods sold @ 60%................................	132,000
Gross profit…………………………………..	88,000
Selling and administration expense…………….....	22,000
Amortization expense…………………………...	20,000
Operating profit………………………………	46.000
Interest expense (1)……………………………..	6,000
Earnings before taxes…………………………	40,000
Taxes @ 18%..	7,200
Earnings after taxes……………………………	$32,800

(1) Interest expense = (10% × $20,000 + 8% × $50,000) = $6,000

b.

Gardner Corporation
Balance Sheet
December 31, 2012

Cash	$ 10,000	Accounts payable	$ 15,000
Accounts receivable	16,500	Notes payable	26,000
Inventory	27,500	Bonds payable	40,000
Prepaid expenses	12,000		
Current assets	66,000	Current liabilities	81,000
Capital assets:		Shareholders' equity:	
Plant and Equipment	285,000	Common stock	75,000
less: acc. amortization	70,000	Retained earnings	125,000
Net plant & equipment	215,000		
Total assets	$281,000	Total liabilities & equity	$281,000

Acc. Amortization = $50,000 + $20,000 = $70,000
Retained Earnings = $105,000 + $20,000 = $125,000

c. **Gardner Corporation**

Statement of Cash Flows

For the Year Ended December 31, 2012

Operating activities:		
Net income (earnings after taxes)................		$32,800
Add items not requiring an outlay of cash:		
Amortization.............................	$ 20,000	20,000
Cash flow from operations		52,800
Increase in accounts receivable..	(1,500)	
Increase in inventory.................	(2,500)	
Increase in accounts payable.....	3,000	
Increase in notes payable*…….	6,000	
Net change in non-cash working capital.....		5,000
Cash provided by operating activities.........		57,800
Investing activities:		
Increase in plant and equipment.........	(35,000)	
Cash used in investing activities................		(35,000)
Financing activities:		
Decrease in bonds payable..................	(10,000)	
Common stock dividends paid...........	(12,800)	
Cash used in financing activities………..		(22,800)
Net increase (decrease) in cash		0
Cash, at beginning of year		10,000
Cash, end of year		$10,000

* **Note**: There is a healthy debate as to whether notes payable (trade related) should be included in operating or financing activities.

d. Major accounts contributing to positive change in cash position are: net income and amortization. Negative change is from plant and equipment, bonds payable and dividends paid.

2-30. Ron's Aerobics Ltd..

a.	2011	Net income	$68,000
		Taxes @ 16.5%	11,220
		Income after taxes	**$56,780**
	2012	Net income	$142,000
		Taxes @ 13% (Text)	18,460
		Income after taxes	**$123,540**

Note: Manitoba 2012 tax rate was actually changed to 15%

b. The average tax rate is **14.75%**.

2-31. Inland Fisheries Corp.

a.	Cash flow from operating activities	$6.00	million
	- Capital expenditures	2.00	
	- Common share dividends	0.75	
	- Preferred share dividends	0.35	
	Free cash flow	**$2.90**	**million**

b. Free cash flow represents the funds that are available for special financial activities, such as the acquisition of another firm.

2-32. Nix Corporation

Income Statement

Sales	$485,000
Cost of goods sold	205,000
Gross Profit	280,000
Selling and administrative expense	70,000
Amortization expense	60,000
Operating profit	150,000
Interest expense	25,000
Earnings before taxes	125,000
Taxes @ 14.5% (Text)	18,125
Earnings after taxes	**$106,875**

Note: The B.C. 2012 tax rate is changed to 13.5%

2-33. Nix Corporation (Continued)

Tax savings on amortization = $60,000 × 14.5%
= **$8,700**

2-34. R.E. Forms Ltd.

Alberta	Net income	$75,000
	Taxes @ 14%	10,500
	Income after taxes	**$64,500**
Ontario	Net income	$75,000
	Taxes @ 16.5%	12,375
	Income after taxes	**$62,625**

(2012 rate changed to 15.5%)

2-35. J.B. Wands

a. Investment (bonds)	**$14,000**	
Bond interest @ 6.0% x $14,000 =		$840.00
Marginal tax rate (Saskatchewan)	35.00%	
Deduct:Combined taxes payable 35% x $840 =		294.00
After tax bond yield (return)		$546.00

After tax yield = return / investment x 100%

= $546.00/ $14,000 × 100% = **3.90%**

Investment (shares)	**$14,000**	
Share dividend @ 5.0% x $14,000 =		$700.00
Marginal tax rate (Saskatchewan)	17.5%	
Deduct:Combined taxes payable 17.5 x $700=		122.50
After tax bond yield (return)		$577.50

After tax yield = return / investment x 100%

= $577.50/ $14,000 × 100% = **4.125%**

The dividend provides a slightly better after tax yield (return).

b. Bond interest is a fixed payment. Share dividends may not be paid and shares are subject to capital gains and losses. This makes the shares riskier. The result illustrates the “risk – return tradeoff”.

2-36. Billie Fruit

A. Top bracket (Investment of $20,00)

Share dividend @ 7.0% x $20,000 =		$1,400.00
Marginal tax rate (Yukon) $1,400 x	17.23%	
Deduct: Combined taxes payable		241.22
After tax dividend yield (return)		$1,158.78
After tax yield = return / investment x 100%		

= $\boxed{\$1158.78/\ \$20{,}000 \times 100\% = \mathbf{5.79\%}}$

Capital gain @ 7.0% x $20,000 =		$1,400.00
Marginal tax rate (Yukon) $1,400 x	21.20%	
Deduct: Combined taxes payable		296.80
After tax bond yield (return)		$1,103.20
After tax yield = return / investment x 100%		

$\boxed{\text{Better: } \$1{,}103.20/\ \$20{,}000 \times 100\% = \mathbf{5.52\%}}$

B. Middle bracket ($35,000 to $55,280)

Share dividend @ 7.0%		$1,400.00
Marginal tax rate (Yukon)	4.4%	
Combined taxes payable (4.4 x $1,400)		61.60
After tax dividend yield (return)		$1,338.40
After tax yield		

$\boxed{\text{Better: } \$1{,}338.40/\ \$20{,}000 \times 100\% = \mathbf{6.69\%}}$

Capital gain @ 7.0%		$1,400.00
Marginal tax rate (Yukon)	15.84%	
Combined taxes payable		221.76
After tax yield (return)		$1,178.24

After tax yield

$\boxed{\$1{,}178.24/\ \$20{,}000 \times 100\% = \mathbf{5.89\%}}$

2-37. Jasper Corporation

Yield is 7%
On each $100 investment

Interest paid to bondholder..		$7.00
Co.'s Tax savings @ 40%..	2.80	
Combined bondholder tax payable @ 39%......	- 2.73	
Net loss to government ($2.80 - $2.73)	**$0.07**	

Spreadsheet Templates

MAIN MENU -- CHAPTER 2

Problem 2-6	Problem 2-7	Problem 2-13
Problem 2-15	Problem 2-20	Problem 2-21
Problem 2-23	Problem 2-29	

Foundations of Financial Management by Block, Hirt, Short, and Perretta -- Ninth Canadian Edition

Foundations of Financial Management

Block, Hirt, Short, and Perretta: Ninth Canadian Edition

Problem 2-6 LO 2
Determine profitability.

Student Name:	
Course Name:	
Student ID:	
Course Number:	

The Aztec Book Company sold 1,400 finance textbooks to High Tuition College for $84 each in 2011. These books cost $63 to produce. In addition, Aztec Book spent $2,000 (selling expense) to persuade the college to buy its books. Aztec Book borrowed $50,000 on January 1, 2011, on which it paid 10 percent interest. Both interest and principal of the loan were paid on December 31, 2011. Aztec Book's tax rate is 20 percent. Amortization expense for the year was $5,000.

Did Aztec Book Company make a profit in 201? Please verify with an income statement presented in good form.

Solution

Problem 2-6
Instructions
Using the information from the problem and the key data below, complete the income statement.

Key data

Units sold	1,400	
Selling price	$84	per unit
Cost to produce	$63	per unit
Selling expense	$2,000	
Amortization	$5,000	
Tax rate	20%	
Loan	$50,000	
Interest rate	10%	

Aztec Book Company
Income Statement
For the year ended December 31, 2011

Sales	$117,600
Cost of goods sold	88,200
Gross profit	29,400
Selling expense	2,000
Amortization expense	5,000
Operating profit	22,400
Interest expense	5,000
Earnings before taxes	17,400
Taxes	3,480
Earnings after taxes	$13,920

Foundations of Financial Management

Block, Hirt, Short, and Perretta: Ninth Canadian Edition

Problem 2-7 LO 2
Determine profitability.

Student Name:	
Course Name:	
Student ID:	
Course Number:	

a. Carr Auto Wholesalers had sales of $900,000 in 2011, and cost of goods sold represented 65 percent of sales. Selling and administrative expenses were 9 percent of sales. Amortization expense was $10,000, and interest expense for the year was $8,000. The firm's tax rate is 30 percent. Compute the earnings after taxes.
b. Assume the firm hires Ms. Hood, an efficiency expert, as a consultant. She suggests that by increasing selling and administrative expenses to 12 percent of sales, sales can be increased to $1,000,000. The extra sales effort will also reduce cost of goods sold to 60 percent of sales (there will be a larger mark-up in prices as a result of more aggressive selling). Amortization expense will remain at $10,000. However, more automobiles will have to be carried in inventory to satisfy customers, and interest expense will go up to $15,000. The firm's tax rate will remain at 30 percent. Compute revised earnings after taxes based on Ms. Hood's suggestions for Carr Auto Wholesalers. How much will her ideas increase or decrease profitability?

Solution

Problem 2-7
Instructions

Using the information from the problem and the key data below, complete the income statement to determine profitability.

Key data for a.

Sales	$900,000	
Cost of goods sold	65%	of sales
Selling and admn expenses	9%	of sales
Amortization	$10,000	
Interest expense	$8,000	
Tax rate	30%	

Carr Auto Wholesalers
Income Statement
For the year ended December 31, 2011

Sales	$900,000
Cost of goods sold	585,000
Gross profit	315,000
Selling and admn expenses	81,000
Amortization expense	10,000
Operating profit	224,000
Interest expense	8,000
Earnings before taxes	216,000
Taxes	64,800
Earnings after taxes	$151,200

Using the information from the problem and the key data below, complete the income statement to determine profitability.

Key data for b.

Sales	$1,000,000	
Cost of goods sold	60%	of sales
Selling and admn expenses	12%	of sales
Amortization	$10,000	
Interest expense	$15,000	
Tax rate	30%	

Carr Auto Wholesalers
Income Statement
For the year ended December 31, 2011

Sales	$1,000,000
Cost of goods sold	600,000
Gross profit	400,000
Selling and admn expenses	120,000
Amortization expense	10,000
Operating profit	270,000
Interest expense	15,000
Earnings before taxes	255,000
Taxes	76,500
Earnings after taxes	$178,500

The changes would result in an increase in profit of $27,300 .

Foundations of Financial Management

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Problem 2-13 LO 3
Prepare balance sheet

Student Name:	
Course Name:	
Student ID:	
Course Number:	

Arrange the following items in proper balance sheet presentation.

Accumulated amortization	$300,000
Retained earnings	96,000
Cash	10,000
Bonds payable	136,000
Accounts receivable	48,000
Plant and equipment - original cost	680,000
Accounts payable	35,000
Allowance for bad debts	6,000
Common stock, 100,000 shares outstanding	188,000
Inventory	66,000
Preferred stock, 1,000 shares outstanding	50,000
Marketable securities	20,000
Investments	20,000
Notes payable	33,000

Solution

Problem 2-13
Instructions
In the solution area below, arrange the following items in proper balance sheet presentation.

Balance Sheet
Assets

Current Assets		
Cash		$10,000
Marketable securities		20,000
Accounts receivable	$48,000	
Less: Allowance for bad debts	6,000	42,000
Inventory		66,000
Total Current Assets		138,000
Other Assets		
Investments		20,000
Capital Assets		
Plant and equipment	680,000	
Less: Accumulated amortization	300,000	
Net plant and equipment		380,000
Total Assets		$538,000

Liabilities and Shareholders' Equity

Current Liabilities	
Accounts payable	$35,000
Notes payable	33,000
Total Current Liabilities	68,000
Long-term Liabilities	
Bonds payable	136,000
Total Liabilities	204,000
Shareholders' Equity	
Preferred stock, 1,000 shares outstanding	50,000
Common stock, 100,000 shares outstanding	188,000
Retained earnings	96,000
Total Shareholders' Equity	334,000
Total Liabilities and Shareholders' Equity	$538,000

Foundations of Financial Management

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Problem 2-15 LO 4
Calculate Book value and P/E Ratio

Student Name:	
Course Name:	
Student ID:	
Course Number:	

Monique's Boutique has assets of $600,000, current liabilities of $150,000, and long-term liabilities of $120,000. There is $75,000 in preferred stock outstanding. Thirty thousand shares of common stock have been issued.

a. Compute book value (net worth) per share.

b. If there is $33,600 in earnings available to common shareholders and Monique's stock has a P/E ratio of 12 times earnings per share, what is the current price of the stock?

c. What is the ratio of market value per share to book value per share?

Solution

Problem 2-15
Instructions
Use the following facts to solve the problem.

Assets	$600,000
Current liabilities	150,000
Long-term liabilities	120,000
Preferred stock	75,000
Shares of common	30,000

a. Compute book value (net worth) per share.

Total assets	$600,000
- Current liabilities	150,000
- Long-term liabilities	120,000
Shareholders' equity	330,000
- Preferred stock	75,000
Net worth assigned to common	$255,000
Common shares outstanding	30,000
Book value (net worth) per share	$8.50

b. If there is $33,600 in earnings available to common shareholders and Monique's stock has a P/E ratio of 12 times earnings per share, what is the current price of the stock?

Earnings available to common	$33,600
Shares outstanding	30,000
Earnings per share	$1.12

Current Price

P/E Ratio	12	
Earnings per share	$1.12	
Current Price	$13.44	= market value per share

c. What is the ratio of market value per share to book value per share?

Market share per share	$13.44
Book value per share	$8.50
Ratio of market value to book value	1.58

Foundations of Financial Management

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Problem 2-20 LO 4
Amortization and Cash flow

Student Name:	
Course Name:	
Student ID:	
Course Number:	

The Jupiter Corporation has a gross profit $700,000 and $240,000 in amortization expense.
The Saturn Corporation also has $700,000 in gross profit, with $400,000 in amortization expense.
Selling and administrative expense is $160,000 for each company.

Given that the tax rate is 40 percent, compute the cash flow for both companies. Explain the difference in cash flow between the two firms.

Solution

Problem 2-20
Instructions

Complete the template below by entering data and formulas to calculate the cash flow.

	Jupiter	Saturn
Gross profit	$700,000	$700,000
Selling and adm. Expense	160,000	160,000
Amortization	240,000	400,000
Operating profit	$300,000	$140,000
Taxes (40%)	120,000	56,000
Earnings after taxes	$180,000	$84,000
Plus amortization expense	240,000	400,000
Cash flow	$420,000	$484,000

Explain the difference in cash flow between the two firms.
Saturn had $160,000 more in amortization, which provided $64,000 (0.40 × $160,000) more in cash flow.
We observe that Saturn's taxes were less by: $120,000 - 56,000 = $64,000 ($160,000 * 0.40).

Foundations of Financial Management

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Problem 2-21 LO 4
Prepare a statement of cash flows.

Student Name:	
Course Name:	
Student ID:	
Course Number:	

The following information is provided for Loofa Corporation.

Loofa Corporation
Balance Sheets

		December 31, 2011		December 31, 2010
Assets				
Cash		$57,345		$21,845
Accounts Receivable		43,690		49,150
Inventory		114,685		98,300
Equipment	101,035		81,920	
Less: accumulated amortization	24,575		16,385	
Net equipment		76,460		65,535
Total Assets		$292,180		$234,830
Liabilities and Equity				
Accounts payable		$46,420		$27,305
Taxes payable		5,465		10,920
Common stock		180,220		163,835
Retained earnings		60,075		32,770
Total liabilities and equity		$292,180		$234,830

During 2011, the following occurred:
1. Net income was $54,610.
2. Equipment was purchased for cash, and no equipment was sold.
3. Shares were sold for cash.
4. Dividends were declared and paid.

a. Prepare a statement of cash flows for the Loofa Corporation.
b. Identify the major accounts contributing to the change in cash position, from the three different components of the cash flow statement.

Solution

Problem 2-21
Instructions

Use the template below to meet the requirements of the problem.
a. Prepare the statement of cash flows for 2011.

Loofa Corporation
Statement of Cash Flows
For the Year Ended December 31, 2011

Operating Activities:		
Net Income (earnings after taxes)		$54,610
Add items not requiring an outlay of cash:		
Amortization	$ 8,190	8,190
Cash flow from operations		62,800
Changes in non-cash working capital:		
Decrease in accounts receivable	5,460	
Increase in inventory	(16,385)	
Increase in accounts payable	19,115	
Decrease in taxes payable	(5,455)	
Net change in non-cash working capital		2,735
Cash provided by operating activities		65,535
Investing Activities:		
Increase in plant and equipment	(19,115)	
Cash used in investing activities		(19,115)
Financing Activities:		
Issue of common stock	16,385	
Common stock dividends paid	(27,305)	
Cash used in financing activities		(10,920)
Net increase in cash (equivalents) during the year		35,500
Cash, beginning of year		21,845
Cash, end of year		$57,345

b. Identify the major accounts contributing to the change in cash position, from the three different components of the cash flow statement.

Major accounts contributing to positive change in cash position are: net income, payables and common stock issuance.
Negative change comes from inventory, plant and equipment and dividends paid.

Foundations of Financial Management

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Problem 2-23 LO 4
Prepare a statement of cash flows.

Student Name:
Course Name:
Student ID:
Course Number:

Prepare a statement of cash flows for the Maris Corporation.

MARIS CORPORATION
Income Statement
Year ended December 21, 2011

Sales	$3,300,000
Cost of goods sold	1,950,000
Gross profit	1,350,000
Selling and administrative expense	650,000
Amortization expense	230,000
Operating income	470,000
Interest expense	80,000
Earnings before taxes	390,000
Taxes	140,000
Earnings after taxes	$250,000
Preferred stock dividends	10,000
Earnings available to common shareholders	$240,000
Shares outstanding	150,000
Earnings per share	$1.60

Statement of Retained Earnings
For the Year Ended December 31, 2011

Retained earnings, balance, January 1, 2011	$800,000
Add: Earnings available to common shareholders, 2011	240,000
Deduct: Cash dividends declared and paid in 2011	140,000
Retained earnings, balance, December 31, 2011	$900,000

Comparative Balance Sheets

		Dec. 31, 2011		Dec. 31, 2010
Assets				
Current assets				
Cash		$120,000		$100,000
Accounts receivable (net)		510,000		500,000
Inventory		640,000		610,000
Prepaid expenses		30,000		60,000
Total current assets		1,300,000		1,270,000
Investments (long-term securities)		80,000		90,000
Plant and equipment	$2,600,000		$2,000,000	
Less: Accumulated amortization	1,230,000		1,000,000	
Net plant and equipment		1,370,000		1,000,000
Total assets		$2,750,000		$2,360,000
Liabilities and Shareholders' Equity				
Current liabilities				
Accounts payable		$550,000		$300,000
Notes payable		500,000		500,000
Accrued expenses		50,000		70,000
Total current liabilities		1,100,000		870,000
Long-term liabilities				
Bonds payable, 2020		160,000		100,000
Total liabilities		1,260,000		970,000
Shareholders' equity				
Preferred stock		90,000		90,000
Common stock		500,000		500,000
Retained earnings		900,000		800,000
Total shareholders' equity		1,490,000		1,390,000
Total liabilties and shareholders' equity		$2,750,000		$2,360,000

Solution

Problem 2-23

Instructions

Use the template below to meet the requirements of the problem.

Prepare a statement of cash flows for the year ended December 31, 2011.

Maris Corporation
Statement of Cash Flows
For the Year Ended December 31, 2011

Operating Activities:		
Net Income (earnings after taxes)		$250,000
Add items not requiring an outlay of cash:		
Amortization	$ 230,000	230,000
Cash flow from operations		480,000
Changes in non-cash working capital:		
Increase in accounts receivable	(10,000)	
Increase in inventory	(30,000)	
Decrease in prepaid expenses	30,000	
Increase in accounts payable	250,000	
Decrease in accrued expenses	(20,000)	
Net change in non-cash working capital		220,000
Cash provided by operating activities		700,000
Investing Activities:		
Decrease in investments	10,000	
Increase in plant and equipment	(600,000)	
Cash used in investing activities		(590,000)
Financing Activities:		
Increase in bonds payable	60,000	
Preferred stock dividends paid	(10,000)	
Common stock dividends paid	(140,000)	
Cash used in financing activities		(90,000)
Net increase (decrease) in cash during the year		20,000
Cash, beginning of year		100,000
Cash, end of year		$120,000

Foundations of Financial Management

Block, Hirt, Short, and Perretta: Ninth Canadian Edition

Problem 2-29 LO 1
Prepare income statement and balance sheet.

Student Name:
Course Name:
Student ID:
Course Number:

For December 31, 2010, the balance sheet of the Gardner Corporation is as follows:

Current Assets		Liabilities	
Cash	$10,000	Accounts payable	$12,000
Accounts receivable	15,000	Notes payable	20,000
Inventory	25,000	Bonds payable	50,000
Prepaid expenses	12,000	Total liabilities	82,000
Total current assets	62,000		
Capital Assets		**Shareholders' Equity**	
Plant and equipment	250,000	Common stock	75,000
Less: Accum. amortization	50,000	Retained earnings	105,000
Net plant and equipment	200,000	Total shareholders' equity	180,000
		Total liabilities and	
Total assets	$262,000	shareholders' equity	$262,000

Sales for the year 2011 were $220,000, with cost of goods sold being 60 percent of sales. Amortization expense was 10 percent of pant and equipment (net) at the beginning of the year. Interest expense for the bonds payable was 8 percent, while interest on the notes payable was 10 percent. These are based on December 31, 2010, balances. Selling and administrative expenses were $22,000, and the tax rate averaged 18 percent.

During the year 2011, the cash balance and prepaid expenses balance were unchanged. Accounts receivable and inventory each increased by 10 percent, and accounts payable increased by 25 percent. A new machine was purchased on December 31, 2011, at a cost of $35,000. A cash dividend of $12,800 was paid to common shareholders at the end of 2011. Also, notes payable increased by $6,000 and bonds payable decreased by $10,000. The common stock account did not change.

a. Prepare an income statement for the year 2011.
b. Prepare a balance sheet as of December 31, 2011.
c. Prepare a statement of cash flows for the year ended December 31, 2011.
d. Identify the major accounts contributing to the change in cash position, from the three different components of the cash flow statement.

Solution

Problem 2-29

Instructions

Use the templates below to meet the requirements of the problem.

a. Prepare an income statement for the year 2011.

Key Facts:

Sales	$220,000	
Cost of goods sold	60%	of sales
Amortization expense	10%	of plant and equipment (net)
Note payable interest	10%	
Bond payable interest	8%	
Selling and administrative expense	$22,000	
Tax rate	18%	
Cash dividend paid	$12,800	
Change in cash balance	-	
Change in prepaid expense balance	-	
Increase in accounts receivable	10%	
Increase in inventory	10%	
Increase in accounts payable	25%	
Cost of additional machine	$35,000	
Increase in notes payable	$6,000	
Decrease in bonds payable	$10,000	

Gardner Corporation
Income Statement
for the year ended December 31, 2011

Sales		$220,000
Cost of goods sold		132,000
Gross profit		88,000
Selling and administrative expense		22,000
Amortization expense		20,000
Operating profit (EBIT)		46,000
Interest expense on bonds	$4,000	
Interest expense on notes	2,000	6,000
Earnings before taxes		40,000
Taxes		7,200
Earnings after taxes (EAT)		32,800
Common stock dividends		12,800
Change in Retained Earnings		$20,000

b. Prepare a balance sheet as of December 31, 2011.

Gardner Corporation
Balance Sheet
December 31, 2011

Current Assets		**Liabilities**	
Cash	$10,000	Accounts payable	$15,000
Accounts receivable	16,500	Notes payable	26,000
Inventory	27,500	Bonds payable	40,000
Prepaid expenses	12,000		
Total Current Assets	66,000	Total Liabilities	81,000
Capital Assets		**Shareholders' Equity**	
Gross plant and equipment	285,000	Common stock	75,000
Less: Accumulated amortization	70,000	Retained earnings	125,000
Net plant and equipment	215,000	Total Shareholders' Equity	200,000
Total Assets	$281,000	Total Liabilities and Equity	$281,000

c. Prepare a statement of cash flows for the year ended December 31, 2011.

Gardner Corporation
Statement of Cash Flows
For the Year Ended December 31, 2011

Operating Activities:		
Net Income (earnings after taxes)		$32,800
Add items not requiring an outlay of cash:		
Amortization	$ 20,000	20,000
Cash flow from operations		52,800
Changes in non-cash working capital:		
Increase in accounts receivable	(1,500)	
Increase in inventory	(2,500)	
Increase in accounts payable	3,000	
Increase in notes payable	6,000	
Net change in non-cash working capital		5,000
Cash provided by operating activities		57,800
Investing Activities:		
Increase in plant and equipment	(35,000)	
Cash used in investing activities		(35,000)
Financing Activities:		
Decrease in bonds payable	(10,000)	
Common stock dividends paid	(12,800)	
Cash used in financing activities		(22,800)
Net increase in cash during the year		-
Cash, beginning of year		10,000
Cash, end of year		$10,000

d. Identify the major accounts contributing to the change in cash position, from the three different components of the cash flow statement.

Major accounts are net income ($32,800) and amortization ($20,000) contributing positive cash flow. This positive cash flow is offset by an increase in plant and equipment ($35,000), payments on bonds ($10,000) and dividends paid ($12,800)