Solutions Manual

Fundamentals of Corporate Finance 12th edition
Ross, Westerfield, and Jordan

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CHAPTER 1
INTRODUCTION TO CORPORATE FINANCE

Answers to Concepts Review and Critical Thinking Questions

1. Capital budgeting (deciding whether to expand a manufacturing plant), capital structure (deciding whether to issue new equity and use the proceeds to retire outstanding debt), and working capital management (modifying the firm's credit collection policy with its customers).

2. Disadvantages: unlimited liability, limited life, difficulty in transferring ownership, difficulty in raising capital funds. Some advantages: simpler, less regulation, the owners are also the managers, sometimes personal tax rates are better than corporate tax rates.

3. The primary disadvantage of the corporate form is the double taxation to shareholders of distributed earnings and dividends. Some advantages include: limited liability, ease of transferability, ability to raise capital, and unlimited life.

4. In response to Sarbanes-Oxley, small firms have elected to go dark because of the costs of compliance. The costs to comply with Sarbox can be several million dollars, which can be a large percentage of a small firm's profits. A major cost of going dark is less access to capital. Since the firm is no longer publicly traded, it can no longer raise money in the public market. Although the company will still have access to bank loans and the private equity market, the costs associated with raising funds in these markets are usually higher than the costs of raising funds in the public market.

5. The treasurer's office and the controller's office are the two primary organizational groups that report directly to the chief financial officer. The controller's office handles cost and financial accounting, tax management, and management information systems, while the treasurer's office is responsible for cash and credit management, capital budgeting, and financial planning. Therefore, the study of corporate finance is concentrated within the treasury group's functions.

6. To maximize the current market value (share price) of the equity of the firm (whether it's publicly traded or not).

7. In the corporate form of ownership, the shareholders are the owners of the firm. The shareholders elect the directors of the corporation, who in turn appoint the firm's management. This separation of ownership from control in the corporate form of organization is what causes agency problems to exist. Management may act in its own or someone else's best interests, rather than those of the shareholders. If such events occur, they may contradict the goal of maximizing the share price of the equity of the firm.

8. A primary market transaction.

9. In auction markets like the NYSE, brokers and agents meet at a physical location (the exchange) to match buyers and sellers of assets. Dealer markets like NASDAQ consist of dealers operating at dispersed locales who buy and sell assets themselves, communicating with other dealers either electronically or literally over-the-counter.

10. Such organizations frequently pursue social or political missions, so many different goals are conceivable. One goal that is often cited is revenue minimization; that is, provide whatever goods and services are offered at the lowest possible cost to society. A better approach might be to observe that even a not-for-profit business has equity. Thus, one answer is that the appropriate goal is to maximize the value of the equity.

11. Presumably, the current stock value reflects the risk, timing, and magnitude of all future cash flows, both short-term *and* long-term. If this is correct, then the statement is false.

12. An argument can be made either way. At the one extreme, we could argue that in a market economy, all of these things are priced. There is thus an optimal level of, for example, ethical and/or illegal behavior, and the framework of stock valuation explicitly includes these. At the other extreme, we could argue that these are noneconomic phenomena and are best handled through the political process. A classic (and highly relevant) thought question that illustrates this debate goes something like this: "A firm has estimated that the cost of improving the safety of one of its products is $30 million. However, the firm believes that improving the safety of the product will only save $20 million in product liability claims. What should the firm do?"

13. The goal will be the same, but the best course of action toward that goal may be different because of differing social, political, and economic institutions.

14. The goal of management should be to maximize the share price for the current shareholders. If management believes that it can improve the profitability of the firm so that the share price will exceed $35, then they should fight the offer from the outside company. If management believes that this bidder or other unidentified bidders will actually pay more than $35 per share to acquire the company, then they should still fight the offer. However, if the current management cannot increase the value of the firm beyond the bid price, and no other higher bids come in, then management is not acting in the interests of the shareholders by fighting the offer. Since current managers often lose their jobs when the corporation is acquired, poorly monitored managers have an incentive to fight corporate takeovers in situations such as this.

15. We would expect agency problems to be less severe in countries with a relatively small percentage of individual ownership. Fewer individual owners should reduce the number of diverse opinions concerning corporate goals. The high percentage of institutional ownership might lead to a higher degree of agreement between owners and managers on decisions concerning risky projects. In addition, institutions may be better able to implement effective monitoring mechanisms on managers than can individual owners, based on the institutions' deeper resources and experiences with their own management. The increase in institutional ownership of stock in the United States and the growing activism of these large shareholder groups may lead to a reduction in agency problems for U.S. corporations and a more efficient market for corporate control.

16. How much is too much? Who is worth more, Mark Parker or LeBron James? The simplest answer is that there is a market for executives just as there is for all types of labor. Executive compensation is the price that clears the market. The same is true for athletes and performers. Having said that, one aspect of executive compensation deserves comment. A primary reason executive compensation has grown so dramatically is that companies have increasingly moved to stock-based compensation. Such movement is obviously consistent with the attempt to better align stockholder and management interests. In recent years, stock prices have soared, so management has cleaned up. It is sometimes argued that much of this reward is due to rising stock prices in general, not managerial performance. Perhaps in the future, executive compensation will be designed to reward only differential performance, that is, stock price increases in excess of general market increases.

CHAPTER 2
FINANCIAL STATEMENTS, TAXES, AND CASH FLOW

Answers to Concepts Review and Critical Thinking Questions

1. Liquidity measures how quickly and easily an asset can be converted to cash without significant loss in value. It's desirable for firms to have high liquidity so that they have a large factor of safety in meeting short-term creditor demands. However, since liquidity also has an opportunity cost associated with it—namely that higher returns can generally be found by investing the cash into productive assets—low liquidity levels are also desirable to the firm. It's up to the firm's financial management staff to find a reasonable compromise between these opposing needs.

2. The recognition and matching principles in financial accounting call for revenues, and the costs associated with producing those revenues, to be "booked" when the revenue process is essentially complete, not necessarily when the cash is collected or bills are paid. Note that this way is not necessarily correct; it's the way accountants have chosen to do it.

3. Historical costs can be objectively and precisely measured whereas market values can be difficult to estimate, and different analysts would come up with different numbers. Thus, there is a trade-off between relevance (market values) and objectivity (book values).

4. Depreciation is a noncash deduction that reflects adjustments made in asset book values in accordance with the matching principle in financial accounting. Interest expense is a cash outlay, but it's a financing cost, not an operating cost.

5. Market values can never be negative. Imagine a share of stock selling for –$20. This would mean that if you placed an order for 100 shares, you would get the stock along with a check for $2,000. How many shares do you want to buy? More generally, because of corporate and individual bankruptcy laws, net worth for a person or a corporation cannot be negative, implying that liabilities cannot exceed assets in market value.

6. For a successful company that is rapidly expanding, for example, capital outlays will be large, possibly leading to negative cash flow from assets. In general, what matters is whether the money is spent wisely, not whether cash flow from assets is positive or negative.

7. It's probably not a good sign for an established company, but it would be fairly ordinary for a start-up, so it depends.

8. For example, if a company were to become more efficient in inventory management, the amount of inventory needed would decline. The same might be true if it becomes better at collecting its receivables. In general, anything that leads to a decline in ending NWC relative to beginning would have this effect. Negative net capital spending would mean that more long-lived assets were liquidated than purchased.

9. If a company raises more money from selling stock than it pays in dividends in a particular period, its cash flow to stockholders will be negative. If a company borrows more than it pays in interest, its cash flow to creditors will be negative.

10. The adjustments discussed were purely accounting changes; they had no cash flow or market value consequences unless the new accounting information caused stockholders to revalue the derivatives.

11. Enterprise value is the theoretical takeover price. In the event of a takeover, an acquirer would have to take on the company's debt but would pocket its cash. Enterprise value differs significantly from simple market capitalization in several ways, and it may be a more accurate representation of a firm's value. In a takeover, the value of a firm's debt would need to be paid by the buyer. Thus, enterprise value provides a much more accurate takeover valuation because it includes debt in its value calculation.

12. In general, it appears that investors prefer companies that have a steady earnings stream. If true, this encourages companies to manage earnings. Under GAAP, there are numerous choices for the way a company reports its financial statements. Although not the reason for the choices under GAAP, one outcome is the ability of a company to manage earnings, which is not an ethical decision. Even though earnings and cash flow are often related, earnings management should have little effect on cash flow (except for tax implications). If the market is "fooled" and prefers steady earnings, shareholder wealth can be increased, at least temporarily. However, given the questionable ethics of this practice, the company (and shareholders) will lose value if the practice is discovered.

Solutions to Questions and Problems

NOTE: All end of chapter problems were solved using a spreadsheet. Many problems require multiple steps. Due to space and readability constraints, when these intermediate steps are included in this solutions manual, rounding may appear to have occurred. However, the final answer for each problem is found without rounding during any step in the problem.

Basic

1. To find owners' equity, we must construct a balance sheet as follows:

Balance Sheet

CA	$ 4,900	CL	$ 4,100
NFA	27,300	LTD	10,200
		OE	??
TA	$32,200	TL & OE	$32,200

We know that total liabilities and owners' equity (TL & OE) must equal total assets of $32,200. We also know that TL & OE is equal to current liabilities plus long-term debt plus owners' equity, so owners' equity is:

Owners' equity = $32,200 – 10,200 – 4,100 = $17,900

NWC = CA – CL = $4,900 – 4,100 = $800

2. The income statement for the company is:

Income Statement	
Sales	$796,000
Costs	327,000
Depreciation	42,000
EBIT	$427,000
Interest	34,000
EBT	$393,000
Taxes (21%)	82,530
Net income	$310,470

3. One equation for net income is:

Net income = Dividends + Addition to retained earnings

Rearranging, we get:

Addition to retained earnings = Net income – Dividends = $310,470 – 95,000 = $215,470

4. EPS = Net income/Shares = $310,470/80,000 = $3.88 per share

DPS = Dividends/Shares = $95,000/80,000 = $1.19 per share

5. To calculate OCF, we first need the income statement:

Income Statement	
Sales	$46,200
Costs	23,100
Depreciation	2,200
EBIT	$20,900
Interest	1,700
Taxable income	$19,200
Taxes (22%)	4,224
Net income	$14,976

OCF = EBIT + Depreciation – Taxes = $20,900 + 2,200 – 4,224 = $18,876

6. Net capital spending = $NFA_{end} – NFA_{beg}$ + Depreciation
Net capital spending = $3,300,000 – 2,400,000 + 319,000
Net capital spending = $1,219,000

7. Change in NWC = $NWC_{end} – NWC_{beg}$
Change in NWC = $(CA_{end} – CL_{end}) – (CA_{beg} – CL_{beg})$
Change in NWC = ($5,360 – 2,970) – ($4,810 – 2,230)
Change in NWC = $2,390 – 2,580 = –$190

8. Cash flow to creditors = Interest paid – Net new borrowing
Cash flow to creditors = Interest paid – $(LTD_{end} – LTD_{beg})$
Cash flow to creditors = $255,000 – ($2,210,000 – 1,870,000)
Cash flow to creditors = –$85,000

9. Cash flow to stockholders = Dividends paid – Net new equity
Cash flow to stockholders = Dividends paid – [(Common$_{end}$ + APIS$_{end}$) – (Common$_{beg}$ + APIS$_{beg}$)]
Cash flow to stockholders = $545,000 – [($805,000 + 4,200,000) – ($650,000 + 3,980,000)]
Cash flow to stockholders = $170,000

Note, APIS is the additional paid-in surplus.

10. Cash flow from assets = Cash flow to creditors + Cash flow to stockholders
= –$85,000 + 170,000 = $85,000

Cash flow from assets = $85,000 = OCF – Change in NWC – Net capital spending
= $85,000 = OCF – (–$45,000) – 1,250,000

Operating cash flow = $85,000 – 45,000 + 1,250,000
Operating cash flow = $1,290,000

Intermediate

11. To find the book value of current assets, we use: NWC = CA – CL. Rearranging to solve for current assets, we get:

CA = NWC + CL = $235,000 + 895,000 = $1,130,000

The market value of current assets and fixed assets is given, so:

Book value CA	= $1,130,000	Market value CA	= $1,150,000
Book value NFA	= 3,400,000	Market value NFA	= 5,100,000
Book value assets	= $4,530,000	Total	= $6,250,000

12. To find the OCF, we first calculate net income.

Income Statement	
Sales	$305,000
Costs	176,000
Other expenses	8,900
Depreciation	18,700
EBIT	$101,400
Interest	12,900
Taxable income	$88,500
Taxes	23,345
Net income	$ 65,155
Dividends	$19,500
Additions to RE	$45,655

a. OCF = EBIT + Depreciation – Taxes = $101,400 + 18,700 – 23,345 = $96,755 *b.* CFC = Interest – Net new LTD = $12,900 – (–4,900) = $17,800

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

c. CFS = Dividends – Net new equity = $19,500 – 6,400 = $13,100

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

CFA = $17,800 + 13,100 = $30,900

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

Net capital spending = Increase in NFA + Depreciation = $46,000 + 18,700 = $64,700

Now we can use:

CFA = OCF – Net capital spending – Change in NWC
$30,900 = $96,755 – 64,700 – Change in NWC
Change in NWC = $1,155

This means that the company increased its NWC by $1,155.

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

Net income = Dividends + Addition to retained earnings = $1,980 + 5,700 = $7,680

Now, looking at the income statement:

EBT – EBT × Tax rate = Net income

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

EBT = NI/(1 – Tax rate) = $7,680/(1 – .22) = $9,846

Now you can calculate:

EBIT = EBT + Interest = $9,846 + 4,400 = $14,246

The last step is to use:

EBIT = Sales – Costs – Depreciation
$14,246 = $64,000 – 30,700 – Depreciation
Depreciation = $19,054

14. The balance sheet for the company looks like this:

Balance Sheet

Cash	$ 127,000	Accounts payable	$ 210,000
Accounts receivable	115,000	Notes payable	155,000
Inventory	286,000	Current liabilities	$ 365,000
Current assets	$ 528,000	Long-term debt	830,000
		Total liabilities	$1,195,000
Tangible net fixed assets	$1,610,000		
Intangible net fixed assets	660,000	Common stock	??
		Accumulated ret. earnings	1,368,000
Total assets	$2,798,000	Total liab. & owners' equity	$2,798,000

Total liabilities and owners' equity is:

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

Solving this equation for common stock gives us:

Common stock = $2,798,000 – 1,195,000 – 1,368,000 = $235,000

15. 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. The market value of shareholders' equity can be stated as: Shareholders' equity = Max[(TA – TL), 0]. So, if TA are $9,400, equity is equal to $1,600, and if TA are $6,700, equity is equal to $0. We should note here that the book value of shareholders' equity can be negative.

16. Income Statement

	Sales	$705,000
	COGS	445,000
	A&S expenses	95,000
	Depreciation	140,000
	EBIT	$25,000
	Interest	70,000
	Taxable income	–$45,000
	Taxes (25%)	0
a.	Net income	–$45,000

b. OCF = EBIT + Depreciation – Taxes = $25,000 + 140,000 – 0 = $165,000

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.

17. 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 = $165,000 – 0 – 0 = $165,000
Cash flow to stockholders = Dividends – Net new equity = $102,000 – 0 = $102,000

Cash flow to creditors = Cash flow from assets – Cash flow to stockholders
Cash flow to creditors = $165,000 – 102,000 = $63,000
Cash flow to creditors = Interest – Net new LTD
Net new LTD = Interest – Cash flow to creditors = $70,000 – 63,000 = $7,000

18. *a.*

Income Statement

Sales	$33,106
Cost of goods sold	23,624
Depreciation	5,877
EBIT	$ 3,605
Interest	2,650
Taxable income	$ 955
Taxes (22%)	210
Net income	$ 745

b. OCF = EBIT + Depreciation – Taxes
= $3,605 + 5,877 – 210 = $9,272

c. Change in NWC $= NWC_{end} – NWC_{beg}$
$= (CA_{end} – CL_{end}) – (CA_{beg} – CL_{beg})$
= ($8,612 – 4,575) – ($6,970 – 3,920)
= $4,037 – 3,050 = $987

Net capital spending $= NFA_{end} – NFA_{beg}$ + Depreciation
= $24,394 – 19,820 + 5,877 = $10,451

CFA = OCF – Change in NWC – Net capital spending
= $9,272 – 987 – 10,451 = –$2,166

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 $2,166 in funds from its stockholders and creditors to make these investments.

d. Cash flow to creditors = Interest – Net new LTD = $2,650 – 0 = $2,650

Cash flow to stockholders = Cash flow from assets – Cash flow to creditors
= –$2,166 – 2,650 = –$4,816

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 = $1,888 – (–4,816) = $6,704

The firm had positive earnings in an accounting sense (NI > 0) and had positive cash flow from operations. The firm invested \$987 in new net working capital and \$10,451 in new fixed assets. The firm had to raise \$2,166 from its stakeholders to support this new investment. It accomplished this by raising \$6,704 in the form of new equity. After paying out \$1,888 of this in the form of dividends to shareholders and \$2,650 in the form of interest to creditors, \$2,166 was left to meet the firm's cash flow needs for investment.

19. *a.* Total assets_{2017} = \$1,206 + 4,973 = \$6,179
Total $\text{liabilities}_{2017}$ = \$482 + 2,628 = \$3,110
Owners' equity_{2017} = \$6,179 – 3,110 = \$3,069

Total assets_{2018} = \$1,307 + 5,988 = \$7,295
Total $\text{liabilities}_{2018}$ = \$541 + 2,795 = \$3,336
Owners' equity_{2018} = \$7,295 – 3,336 = \$3,959

b. $\text{NWC}_{2017} = \text{CA}_{2017} - \text{CL}_{2017} = \$1,206 - 482 = \$724$
$\text{NWC}_{2018} = \text{CA}_{2018} - \text{CL}_{2018} = \$1,307 - 541 = \$766$
Change in NWC $= \text{NWC}_{2018} - \text{NWC}_{2017} = \$766 - 724 = \$42$

c. We can calculate net capital spending as:

Net capital spending = Net fixed assets_{2018} – Net fixed assets_{2017} + Depreciation
Net capital spending = \$5,988 – 4,973 + 1,363 = \$2,378

So, the company had a net capital spending cash flow of \$2,378. We also know that net capital spending is:

Net capital spending = Fixed assets bought – Fixed assets sold
\$2,378 = \$2,496 – Fixed assets sold
Fixed assets sold = \$2,496 – 2,378 = \$118

To calculate the cash flow from assets, we must first calculate the operating cash flow. The income statement is:

Income Statement

Sales	\$15,301
Costs	7,135
Depreciation expense	1,363
EBIT	\$ 6,803
Interest expense	388
EBT	\$ 6,415
Taxes (21%)	1,347
Net income	\$ 5,068

So, the operating cash flow is:

OCF = EBIT + Depreciation – Taxes = \$6,803 + 1,363 – 1,347 = \$6,819

And the cash flow from assets is:

Cash flow from assets = OCF – Change in NWC – Net capital spending.
= $6,819 – 42 – 2,378 = $4,399

d. Net new borrowing = LTD18 – LTD17 = $2,795 – 2,628 = $167
Cash flow to creditors = Interest – Net new LTD = $388 – 167 = $221
Net new borrowing = $167 = Debt issued – Debt retired
Debt retired = $504 – 167 = $337

Challenge

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

21.

Balance sheet as of Dec. 31, 2017

Cash	$8,676	Accounts payable	$6,269
Accounts receivable	11,488	Notes payable	1,674
Inventory	20,424	Current liabilities	$7,943
Current assets	$40,588		
		Long-term debt	$29,060
Net fixed assets	$72,770	Owners' equity	$76,355
Total assets	$113,358	Total liab. & equity	$113,358

Balance sheet as of Dec. 31, 2018

Cash	$9,247	Accounts payable	$6,640
Accounts receivable	13,482	Notes payable	1,641
Inventory	21,862	Current liabilities	$8,281
Current assets	$44,591		
		Long-term debt	$35,229
Net fixed assets	$77,610	Owners' equity	$78,691
Total assets	$122,201	Total liab. & equity	$122,201

2017 Income Statement	
Sales	$16,549.00
COGS	5,690.00
Other expenses	1,353.00
Depreciation	2,376.00
EBIT	$7,130.00
Interest	1,110.00
EBT	$6,020.00
Taxes (21%)	1,264.20
Net income	$4,755.80
Dividends	$1,979.00
Additions to RE	2,776.80

2018 Income Statement	
Sales	$18,498.00
COGS	6,731.00
Other expenses	1,178.00
Depreciation	2,484.00
EBIT	$8,105.00
Interest	1,325.00
EBT	$6,780.00
Taxes (21%)	1,423.80
Net income	$5,356.20
Dividends	$2,314.00
Additions to RE	3,042.20

22. OCF = EBIT + Depreciation – Taxes = $8,105 + 2,484 – 1,424 = $9,165

Change in NWC $= \text{NWC}_{end} - \text{NWC}_{beg} = (\text{CA} - \text{CL})_{end} - (\text{CA} - \text{CL})_{beg}$
= ($44,591 – 8,281) – ($40,588 – 7,943)
= $3,665

Net capital spending $= \text{NFA}_{end} - \text{NFA}_{beg} + \text{Depreciation}$
= $77,610 – 72,770 + 2,484 = $7,324

Cash flow from assets = OCF – Change in NWC – Net capital spending
= $9,165 – 3,665 – 7,324 = –$1,824

Cash flow to creditors = Interest – Net new LTD
Net new LTD $= \text{LTD}_{end} - \text{LTD}_{beg}$
Cash flow to creditors = $1,325 – ($35,229 – 29,060) = –$4,844

Net new equity $= \text{Common stock}_{end} - \text{Common stock}_{beg}$
Common stock + Retained earnings = Total owners' equity
Net new equity $= (\text{OE} - \text{RE})_{end} - (\text{OE} - \text{RE})_{beg}$
$= \text{OE}_{end} - \text{OE}_{beg} + \text{RE}_{beg} - \text{RE}_{end}$
$\text{RE}_{end} = \text{RE}_{beg} + \text{Additions to RE18}$
$\therefore$ Net new equity $= \text{OE}_{end} - \text{OE}_{beg} + \text{RE}_{beg} - (\text{RE}_{beg} + \text{Additions to RE18})$
$= \text{OE}_{end} - \text{OE}_{beg} - \text{Additions to RE}$
Net new equity = $78,691 – 76,355 – 3,042 = –$706

CFS = Dividends – Net new equity
CFS = $2,314 – (–706) = $3,020

As a check, cash flow from assets is –$1,824.

CFA = Cash to from creditors + Cash flow to stockholders
CFA = –$4,844 + 3,020 = –$1,824

Case Solutions

Fundamentals of Corporate Finance

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CHAPTER 1
THE McGEE CAKE COMPANY

1. The advantages to an LLC are: (*a*) Reduction of personal liability. A sole proprietor has unlimited liability, which can include the potential loss of all personal assets. (*b*) Taxes. Forming an LLC may mean that more expenses can be considered business expenses and be deducted from the company's income. (*c*) Improved credibility. The business may have increased credibility in the business world compared to a sole proprietorship. (*d*) Ability to attract investment. Corporations, even LLCs, can raise capital through the sale of equity. (*e*) Continuous life. Sole proprietorships have a limited life, while corporations have a potentially perpetual life. (*f*) Transfer of ownership. It is easier to transfer ownership in a corporation through the sale of stock.

The biggest disadvantage is the potential cost, although the cost of forming an LLC can be relatively small. There are also other potential costs, including more expansive record-keeping.

2. Forming a corporation has the same advantages as forming an LLC, but the costs are likely to be higher.

3. As a small company, changing to a LLC is probably the most advantageous decision at the current time. If the company grows, and Doc and Lyn are willing to sell more equity ownership, the company can reorganize as a corporation at a later date. Additionally, forming an LLC is likely to be less expensive than forming a corporation.

CHAPTER 2
CASH FLOWS AND FINANCIAL STATEMENTS AT SUNSET BOARDS

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

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

Income Statement

	2017	*2018*
Sales	$501,441	$611,224
Cost of goods sold	255,605	322,742
Selling and administrative	50,268	65,610
Depreciation	72,158	81,559
EBIT	$123,410	$141,313
Interest	15,687	17,980
EBT	$107,723	$123,333
Taxes	22,622	25,900
Net income	$85,101	$97,433
Dividends	$34,040	$38,973
Addition to retained earnings	$51,061	$58,460

2. The balance sheet for each year will be:

Balance Sheet as of Dec. 31, 2017

Cash	$36,884	Accounts payable	$26,186
Accounts receivable	26,136	Notes payable	29,712
Inventory	50,318	Current liabilities	$55,898
Current assets	$113,338		
		Long-term debt	$160,689
Net fixed assets	$318,345	Owners' equity	$215,096
Total assets	$431,683	Total liab. and equity	$431,683

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

Equity = $431,683 – 55,898 – 160,689
Equity = $215,096

Balance Sheet as of Dec. 31, 2018

Cash	$55,725	Accounts payable	$44,318
Accounts receivable	33,901	Notes payable	32,441
Inventory	67,674	Current liabilities	$76,759
Current assets	$157,300		
		Long-term debt	$175,340
Net fixed assets	$387,855	Owners' equity	$293,056
Total assets	$545,155	Total liab. and equity	$545,155

The owner's equity for 2018 is the beginning of year owners' equity, plus the addition to retained earnings, plus the new equity, so:

Equity = $215,096 + 58,460 + 19,500
Equity = $293,056

3. Using the OCF equation:

OCF = EBIT + Depreciation – Taxes

The OCF for each year is:

OCF2017 = $123,410 + 72,158 – 22,622
OCF2017 = $172,946

OCF2018 = $141,313 + 81,559 – 25,900
OCF2018 = $196,972

4. 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	$387,855
– Beginning net fixed assets	318,345
+ Depreciation	81,559
Net capital spending	$151,069

And the change in net working capital was:

Change in net working capital	
Ending NWC	$80,541
– Beginning NWC	57,440
Change in NWC	$23,101

So, the cash flow from assets was:

Cash flow from assets	
Operating cash flow	$196,972
– Net capital spending	151,069
– Change in NWC	23,101
Cash flow from assets	$22,802

5. The cash flow to creditors was:

Cash flow to creditors	
Interest paid	$17,980
– Net new borrowing	14,651
Cash flow to creditors	$3,329

6. The cash flow to stockholders was:

Cash flow to stockholders	
Dividends paid	$38,973
– Net new equity raised	19,500
Cash flow to stockholders	$19,473

<u>*Answers to questions*</u>

1. The firm had positive earnings in an accounting sense (NI > 0) and had positive cash flow from operations. The firm invested $23,101 in new net working capital and $151,069 in new fixed assets. The firm gave $22,802 to its stakeholders. It paid $3,329 to bondholders and paid $19,473 to stockholders.

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

CHAPTER 3
RATIO ANALYSIS AT S&S AIR

1. The calculations for the ratios listed are:

Current ratio = $2,603,218/$3,507,909
Current ratio = .74 times

Quick ratio = ($2,603,218 – 1,235,161)/$3,507,909
Quick ratio = .39 times

Cash ratio = $524,963/$3,507,909
Cash ratio = .15 times

Total asset turnover = $46,298,115/$22,985,163
Total asset turnover = 2.01 times

Inventory turnover = $34,536,913/$1,235,161
Inventory turnover = 27.96 times

Receivables turnover = $46,298,115/$843,094
Receivables turnover = 54.91 times

Total debt ratio = ($22,985,163 – 13,177,254)/$22,985,163
Total debt ratio = .43 times

Debt-equity ratio = ($3,507,909 + 6,300,000)/$13,177,254
Debt-equity ratio = .74 times

Equity multiplier = $22,985,163/$13,177,254
Equity multiplier = 1.74 times

Times interest earned = $3,815,484/$725,098
Times interest earned = 5.26 times

Cash coverage = ($3,815,484 + 2,074,853)/$725,098
Cash coverage = 8.12 times

Profit margin = $2,317,789/$46,298,115
Profit margin = .0501, or 5.01%

Return on assets = $2,317,789/$22,985,163
Return on assets = .1008, or 10.08%

Return on equity = $2,317,789/$13,177,254
Return on equity = .1759, or 17.59%

2. Boeing is probably not a good aspirant company. Even though both companies manufacture airplanes, S&S Air manufactures small airplanes, while Boeing manufactures large, commercial aircraft. These are two different markets. Additionally, Boeing is heavily involved in the defense industry, as well as Boeing Capital, which finances airplanes.

Bombardier is a Canadian company that builds business jets, short-range airliners and fire-fighting amphibious aircraft and also provides defense-related services. It is the third largest commercial aircraft manufacturer in the world. Embraer is a Brazilian manufacturer that manufactures commercial, military, and corporate airplanes. Additionally, the Brazilian government is a part owner of the company. Bombardier and Embraer are probably not good aspirant companies because of the diverse range of products and manufacture of larger aircraft.

Cirrus is the world's second largest manufacturer of single-engine, piston-powered aircraft. Its SR22 is the world's best-selling plane in its class. The company is noted for its innovative small aircraft and is a good aspirant company.

Cessna is a well-known manufacturer of small airplanes. The company produces business jets, freight- and passenger-hauling utility Caravans, personal and small-business single engine pistons. It may be a good aspirant company, however, its products could be considered too broad and diversified since S&S Air produces only small personal airplanes.

3. S&S is below the median industry ratios for the current and cash ratios. This implies the company has less liquidity than the industry in general. However, both ratios are above the lower quartile, so there are companies in the industry with lower liquidity ratios than S&S Air. The company may have more predictable cash flows, or more access to short-term borrowing. If you created an inventory to current liabilities ratio, S&S Air would have a ratio that is lower than the industry median. The current ratio is below the industry median, while the quick ratio is above the industry median. This implies that S&S Air has less inventory to current liabilities than the industry median. S&S Air has less inventory than the industry median, but more accounts receivable than the industry since the cash ratio is lower than the industry median.

The turnover ratios are all higher than the industry median; in fact, all three turnover ratios are above the upper quartile. This may mean that S&S Air is more efficient than the industry. The deposit on orders may be the reason that the receivables turnover is much larger than the upper quartile.

The financial leverage ratios are generally below the industry median, but above the lower quartile. S&S Air generally has less debt than comparable companies, but still within the normal range.

The profit margin is below the industry median, however, not dramatically lower. The ROE is higher than the industry median, due in large part to the company’s high total asset turnover.

Overall, S&S Air’s performance seems good, although the liquidity ratios indicate that a closer look may be needed in this area.

Below is a list of possible reasons it may be good or bad that each ratio is higher or lower than the industry. Note that the list is not exhaustive, but merely one possible explanation for each ratio.

Ratio	Good	Bad
Current ratio	Better at managing current accounts.	May be having liquidity problems.
Quick ratio	Better at managing current accounts.	May be having liquidity problems.
Cash ratio	Better at managing current accounts.	May be having liquidity problems.
Total asset turnover	Better at utilizing assets.	Assets may be older and depreciated, requiring extensive investment soon.
Inventory turnover	Better at inventory management, possibly due to better procedures.	Could be experiencing inventory shortages.
Receivables turnover	Better at collecting receivables.	May have credit terms that are too strict. Decreasing receivables turnover may increase sales.
Total debt ratio	Less debt than industry median means the company is less likely to experience credit problems.	Increasing the amount of debt can increase shareholder returns. Especially notice that it will increase ROE.
Debt-equity ratio	Less debt than industry median means the company is less likely to experience credit problems.	Increasing the amount of debt can increase shareholder returns. Especially notice that it will increase ROE.
Equity multiplier	Less debt than industry median means the company is less likely to experience credit problems.	Increasing the amount of debt can increase shareholder returns. Especially notice that it will increase ROE.
TIE	Higher quality materials could be increasing costs.	The company may have more difficulty meeting interest payments in a downturn.
Cash coverage	Less debt than industry median means the company is less likely to experience credit problems.	Increasing the amount of debt can increase shareholder returns. Especially notice that it will increase ROE.
Profit margin	The PM is slightly below the industry median. It could be a result of higher quality materials or better manufacturing.	Company may be having trouble controlling costs.
ROA	Company may have newer assets than the industry.	Company may have newer assets than the industry.
ROE	Lower profit margin may be a result of higher quality.	Profit margin and EM are lower than industry, which results in the lower ROE.

Case Solutions

Input boxes in tan
Output boxes in yellow
Given data in blue
Calculations in red
Answers in green

NOTE: Some functions used in these spreadsheets may require that the "Analysis ToolPak" or "Solver Add-In" be installed in Excel.
To install these, click on the File tab

FILE

then "Options," "Add-Ins" and select "Go." Check "Analyis ToolPak" and "Solver Add-In," then click "OK."

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Chapter 2
Cash Flows and Financial Statements at Sunset Boards

Input area:

	2017	2018
Cost of goods sold	$ 255,605	$ 322,742
Cash	$ 36,884	$ 55,725
Depreciation	$ 72,158	$ 81,559
Interest expense	$ 15,687	$ 17,980
Selling & Administrative	$ 50,268	$ 65,610
Accounts payable	$ 26,186	$ 44,318
Net fixed assets	$ 318,345	$ 387,855
Sales	$ 501,441	$ 611,224
Accounts receivable	$ 26,136	$ 33,901
Notes payable	$ 29,712	$ 32,441
Long-term debt	$ 160,689	$ 175,340
Inventory	$ 50,318	$ 67,674
New equity	$ -	$ 19,500
Tax rate	21%	
Dividend percentage	40%	

Output area:

2017 Income Statement		
Sales	$	501,441
Cost of goods sold		255,605
Selling & Administrative		50,268
Depreciation		72,158
EBIT	$	123,410
Interest		15,687
EBT	$	107,723
Taxes		22,622
Net income	$	85,101
Dividends	$	34,040
Addition to retained earnings	$	51,061

2018 Income Statement		
Sales	$	611,224
Cost of goods sold		322,742
Selling & Administrative		65,610
Depreciation		81,559
EBIT	$	141,313
Interest		17,980
EBT	$	123,333
Taxes		25,900
Net income	$	97,433
Dividends	$	38,973
Addition to retained earnings	$	58,460

Balance sheet as of Dec. 31, 2017					
Cash	$	36,884	Accounts payable	$	26,186
Accounts receivable		26,136	Notes payable		29,712
Inventory		50,318	Current liabilities	$	55,898
Current assets	$	113,338			
			Long-term debt	$	160,689
Net fixed assets	$	318,345	Owners' equity	$	215,096
Total assets	$	431,683	Total liab. & equity	$	431,683

Balance sheet as of Dec. 31, 2018					
Cash	$	55,725	Accounts payable	$	44,318
Accounts receivable		33,901	Notes payable		32,441
Inventory		67,674	Current liabilities	$	76,759
Current assets	$	157,300			
			Long-term debt	$	175,340
Net fixed assets	$	387,855	Owners' equity	$	293,056
Total assets	$	545,155	Total liab. & equity	$	545,155

		2017		2018
Operating cash flow	$	172,946	$	196,972

Capital Spending		
Ending net fixed assets	$	387,855
- Beginning net fixed assets		318,345
+ Depreciation		81,559
Net capital spending	$	151,069

Change in Net Working Capital		
Ending NWC	$	80,541
-Beginning NWC		57,440
Change in NWC	$	23,101

Cash Flow from Assets		
Operating cash flow	$	196,972
- Net capital spending		151,069
-Change in NWC		23,101
Cash flow from assets	$	22,802

Cash Flow to Creditors		
Interest paid	$	17,980
-Net New Borrowing		14,651
Cash flow to Creditors	$	3,329

Cash Flow to Stockholders		
Dividends paid	$	38,973
-Net new equity raised		19,500
Cash flow to Stockholders	$	19,473

Chapter 3
Ratios and Financial Planning at S&S Air

Input area:

Tax rate	25%
Sales	$ 46,298,115
COGS	34,536,913
Other expenses	5,870,865
Depreciation	2,074,853
EBIT	$ 3,815,484
Interest	725,098
Taxable income	$ 3,090,386
Taxes (25%)	772,597
Net income	$ 2,317,789
Dividends	$ 705,000
Add to RE	$ 1,612,789

Assets		Liabilities & Equity	
Current Assets		Current Liabilities	
Cash	$ 524,963	Accounts Payable	$ 1,068,356
Accounts rec.	843,094	Notes Payable	2,439,553
Inventory	1,235,161	Total CL	$ 3,507,909
Total CA	$ 2,603,218		
		Long-term debt	$ 6,300,000
		Shareholder Equity	
Fixed assets		Common stock	$ 460,000
Net PP&E	$ 20,381,945	Retained earnings	12,717,254
		Total Equity	$ 13,177,254
Total Assets	$ 22,985,163	Total L&E	$ 22,985,163

Output area:

Current ratio	0.74
Quick ratio	0.39
Cash ratio	0.15
Total asset turnover	2.01
Inventory turnover	27.96
Receivables turnover	54.91
Total debt ratio	0.43
Debt-equity ratio	0.74
Equity multiplier	1.74
Times interest earned	5.26
Cash coverage ratio	8.12
Profit margin	5.01%
Return on assets	10.08%
Return on equity	17.59%