CHAPTER 24: MANAGEMENT DECISIONS, CORPORATE STRATEGY, AND FIRM VALUE

24-1
a. Price up

b. Impossible to tell. Some of the value that you pay for growth includes a premium for future positive NPV projects.

c. Price down

d. Price down. This is the equivalent of taking a negative NPV project.

e. No effect. Investing in T. Bonds is a zero NPV decision. They are assumed to be fairly priced.

24-2
a. False. It may increase or it may decrease.

b. False.

c. True. Though it provides other benefits, the tax benefits dominate.

d. True. It is less risky and it provides a tax benefit.

e. False. The value of the firm is maximized.
(The value of equity per share is maximized.)

f. True.

24-3
a. Cost of Equity = 7.25% + 1.85 (5.5%) = 17.425%
Value From Asset in Place = EPS/ Cost of Equity = $1.36/.17425 = $7.80
Total Value = Value From Assets in Place + Value of Future Growth opportunities
= $7.80 + Value of Future Growth Opportunities = $39
Value of Growth Opportunities = $39 - $7.80 = $31.20

To calculate the value of assets in place, assume 100% payout and growth of zero.

b. No. The value of Broderbund owes a great deal to the expected positive NPV of future projects. Hence, when Broderbund takes on a positive NPV project, it may be in line with market expectations and not affect the price.

c. Yes. Here the price will drop.

24-4

a. Value of Novell Prior to Acquisition Announcement = 308 million * $23.75 = $7.315 Billion

b. Value of Novell After the Acquisition Announcement = 308 * 20 = $6.160 Billion
Drop in Value of Novell = $7.315 Billion - $6.160 Billion = $1.155 Billion
If the entire drop is attributed to the decision to buy WordPerfect, the
Value assigned to WordPerfect = $1.4 Billion - $1.155 Billion = $245 million

c. Given the size of the drop in market value, it seems likely that market participants are reacting not only to Novell's acquisition of WordPerfect, but also to the implicit message sent by that action on Novell's own projects, i.e., that it does not have very many. It may also reflect the trepidation that market participants feel about Novell's plans to grow by acquiring other firms.

24-5

a. Expected Growth Rate = b (ROE) = 0.6 * 0.08 = 0.048 or 4.8%
Cost of Equity = 7.25% + 1.15 * 5.5% = 13.575%
P/BV Ratio Based Upon 1993 levels = (ROE -g)/(r-g) = (.08 - .048)/(.13575 - .048) = 0.36

b. If the firm improves its return on equity to 12%:
New Growth Rate = 0.6 * .12 = 0.072
P/BV Ratio = (.12 - .072)/(.13575 - .072) = 0.75

c. Yes. Taking on riskier projects would have pushed up the beta of the firm, reducing the benefit of the higher ROE.

24-6

Cost of Equity = 7% + 1.1 (5.5%) = 13.05%
PBV = (ROE -g)/(r-g)
If g = 5.5%, PBV = 1.1 and r = 13.05%,
ROE = 13.81%

24-7

a.

$$\frac{\text{Price}}{\text{Earnings}} = \frac{1}{0.136} + \left[\frac{0.135 - 0.136}{0.14 * 0.136}\right] * \frac{1000}{540} = 7.26$$

b.

$$\frac{\text{Price}}{\text{Earnings}} = \frac{1}{0.136} + \left[\frac{0.16 - 0.136}{0.14 * 0.136}\right] * \frac{1000}{540} = 9.69$$

24-8

a. Cost of Equity = 7% + 1.5 (5.5%) = 15.25%
PE = 1/.1525 +((.28-.1525)/(.24*.1525))*(1260/315) = 20.49
b. Franchise Factor = 20.49 - 1/.1525 = 13.93

c. The return on equity would have to be approximately 36.8% on future projects.

24-9

a. Cost of Equity = 7% + 0.9 * 5.5% = 11.95%
E/(D + E) = (22.2 * 31)/(22.2 * 31 + 435) = 0.613
After-tax Cost of Debt = 8.25%(0.6) = 4.95%
D/(D + E) = 1 - 0.613 = 0.387
WACC = 0.613 (.1195) + 0.387 (.0495) = 9.24%

b. FCFF this Year = EBIT (1-t) - (Cap Ex - Depreciation) - D Working Capital
= 130 (0.6) - (96 - 76) = $58 million
Value of the Firm = 58 (1.06)/(.0924 - .06) = $1898 million
Value of Equity = $1898 - $435 = $1463 million

c. Unlevered Beta = 0.9/(1 + 0.6 * (435/(22.2 * 31))) = 0.65
New Debt/Equity Ratio = 335/(31 * 22.2 + 100) = 0.43
New Levered Beta = 0.65 * (1 + 0.6 * .425) = 0.82
New Cost of Equity = 7% + 0.82 (5.5%) = 11.51%
New Equity Ratio = 0.70
New After-tax Cost of Debt = 7.75% (0.6) = 4.65%
New Debt Ratio = 0.30
New WACC = (.70) (.1151) + (.30) (.0465) = 9.46%
New Firm Value = 58 (1.06)/(.0946 - .06) = $1,775 million
New Equity Value = $1,775 - $335 = $1,440 million

d. Unlevered Cost of Equity = 7% + 0.65 (5.5%) = 10.575%
Value of Firm at Old Debt Level = 58 * 1.06/(.10575 - .06) + 0.4 (435) = $1,518
Value of Firm at New Debt Level = 58 * 1.06/(.10575 - .06) + 0.4 (335) = $1,478

24-10

E. Firms that exchange one security for another, and increase leverage in the process, increase their stock prices.

24-11

a. *Long's Drug Store*
Cost of Equity = 7% + 0.9 (5.5%) = 11.95%
Return on Equity = $2.45/23.80 = 10.29%
Dividend Payout Ratio = 1.12/2.45 = 45.71%
Expected Growth Rate = b * ROE = (1 - 0.4571) * (.1029) = 5.59%
Value of Long's Based upon Existing Policy = $1.12 (1.0559)/(.1195 - .0559) = $18.59

Walgreen
Cost of Equity = 7% + 1.15 * 5.5% = 13.325%
Return on Equity = $1.98/11.55 = 17.14%
Dividend Payout ratio = 0.60/1.98 = 30.30%
Expected Growth = (1 - .3030) (.1714) = 11.95%
Growth in Stable Growth Phase = (1 - .3030)(.13) = 9.06%
Value of Stock

$$= \left[\frac{\$0.60*(1.1195)\left(1-\frac{(1.1195)^5}{(1.13325)^5}\right)}{(.13325 - .1195)} + \frac{\$1.98*(1.1195)^5*(1.0906)*.3030}{(.13325-.0906)(1.13325)^5}\right]$$

$$= \$17.33$$

b. If Long's increases its payout ratio to 60%:
Expected Growth Rate = (1 - 0.6) (.1029) = 4.12%
Value of Long's Based Upon Higher Payout = (2.45 * 0.6) (1.0411)/(.1195 - .0411) = $19.54
If Walgreen increases its payout ratio to 60%:
Expected Growth Rate in High Growth Period = (1 - 0.6)(.1714) = 6.86%
Expected Growth in Stable Period = (1 - 0.6) (.13) = 5.2%

Value of Stock

$$= \left[\frac{\$1.98*0.6*(1.0686)\left(1-\frac{(1.0686)^5}{(1.13325)^5}\right)}{(.13325 - .0686)} + \frac{\$1.98*(1.0686)^5*(1.052)*0.6}{(.13325-.052)(1.13325)^5}\right]$$

$$= \$16.46$$

c. If Long's lowers its dividend payout ratio to 25%:
Expected Growth Rate = (1 - 0.25) (.1029) = 7.72%
Value Per Share = (0.25 * $2.45)*(1.0772)/(.1195 - .0772) = $15.60

If Walgreen lowers its payout ratio:
Expected Growth Rate in High Growth Period = (1 - 0.25)(.1714) = 12.86%

Value of Stock

$$= \left[\frac{\$1.98*.25*(1.1286)*\left(1-\frac{(1.1286)^5}{(1.13325)^5}\right)}{(.13325 - .1286)} + \frac{\$1.98*(1.1286)^5*(1.0975)*.25}{(.13325-.0975)(1.13325)^5} \right]$$

= $17.33

d. Companies which have good projects (high ROE) will generally gain by cutting back dividends, whereas companies with mediocre projects will gain by increasing them.

24-12
a & b.

	Without Restructuring	***With Restructuring***
ROA	6.91%	10.40%
Debt/Equity	159.41%	102.72%
Interest Rate	10.50%	10.50%
Dividend Payout	42.11%	21.05%
Payout After Year 5	14.85%	57.36%
Growth Rate-First 5 Years	4.08%	11.11%
Growth Rate-After Year 5	6.00%	6.00%
Beta	1.65	1.35
Cost Of Equity	16.08%	14.43%
Value	$2.69	$7.99

ROA Before = (Net Income + Interest (1-t))/(BV of Debt + BV of Equity)
Growth Rate-First 5 Years = (1 - Payout) (ROA + D/E (ROA - i (1-t))
Payout After 5 Years = 1 - g / (ROA + D/E (ROA - i (1-t))

24-13

	Without Restructuring	**With Restructuring**
ROA	5%	12.50%
Debt Ratio	15%	40%
D/E Ratio	17.65%	66.67%
Interest Rate	7.50%	8.25%
Payout Ratio	30%	25%
Beta	0.9	1.14
Cost of Equity	11.95%	13.27%
Expected g	3.56%	13.15%
Value per share	$4.22	$4.98

24-14
a.

	Current	*1*	*2*	*3*	*4*	*5*	*Term Year*
Revenues	$450.00	$477.00	$505.62	$535.96	$568.11	$602.20	$632.31
- COGS	$423.00	$443.61	$465.17	$487.72	$511.30	$535.96	$562.76
- Deprec	$26.00	$27.56	$29.21	$30.97	$32.82	$34.79	$36.53
= EBIT	$1.00	$5.83	$11.24	$17.27	$23.99	$31.45	$33.02
- t (EBIT)	$0.40	$2.33	$4.49	$6.91	$9.59	$12.58	$13.21
= EBIT(1-t)	$0.60	$3.50	$6.74	$10.36	$14.39	$18.87	$19.81
- Cap Ex	$38.00	$40.28	$42.70	$45.26	$47.97	$50.85	$36.53
+ Deprecn	$26.00	$27.56	$29.21	$30.97	$32.82	$34.79	$36.53
- _ WC		$2.03	$2.15	$2.28	$2.41	$2.56	$2.26
= FCFF		($11.25)	($8.89)	($6.21)	($3.17)	$0.25	$17.55
Term. Value						$300.95	

WACC =11.02%
Present Value (@ 11.02%) = $154.61
Value Per Share = $6.18

b.

	Current	*1*	*2*	*3*	*4*	*5*	*Term Year*
Revenues	$450.00	$477.00	$505.62	$535.96	$568.11	$602.20	$632.31
- COGS	$423.00	$443.61	$469.22	$494.15	$520.39	$548.00	$575.40
- Depreciation	$26.00	$27.56	$29.21	$30.97	$32.82	$34.79	$36.53
= EBIT	$1.00	$5.83	$7.19	$10.84	$14.90	$19.40	$20.37
- t (EBIT)	$0.40	$2.33	$2.88	$4.34	$5.96	$7.76	$8.15
= EBIT(1-t)	$0.60	$3.50	$4.31	$6.50	$8.94	$11.64	$12.22
- Cap Ex	$38	$40.28	$42.70	$45.26	$47.97	$50.85	$36.53
+ Depreciation	$26.00	$27.56	$29.21	$30.97	$32.82	$34.79	$36.53
- £GWC		$2.03	$2.15	$2.28	$2.41	$2.56	$2.26
= FCFF		($11.25)	($11.32)	($10.06)	($8.62)	($6.97)	$9.97
Terminal Value						$170.87	

WACC = 11.02%
Present Value (@ 11.02%) = $64.83
Value Per Share = $2.59

24-15

	$Return on Capital	**$Cost of Capital**	**EVA**
AMR	$1,080	$1,313	$(233)
Alaska Air	$60	$56	$4
UAL	$550	$615	$(65)

b. The firms with positive EVA would be considered healthy. To the extent that EVA is negative for AMR and UAL, they are not creating value for their stockholders. Alaska Air, on the other hand, created value for their stockholders.

c. The EVA provides a measure of the efficiency of use of existing assets. To the extent that Alaska Air has more growth expected, I would need to consider the quality of these projects as well.

24-16
This is not necessarily true, since EVA measures the quality of investments in assets in place. To the extent that the value of future growth might go down, while the EVA goes up, the firm value might actually go down while EVA goes up.

24-17
The implied growth rate on EPS = (1.70 - 0.72)/0.72 = 136.11%
However, the growth rate based on the fundamentals = 1.0 [1.4% + 615% (1.4% - 55*4/2788 (1 - 0))] = -38.52%

24-18
Solving the following equation for ROA:
136.11% = 1.0 [ROA + 400% (ROA - 7% (1 - 0))]
We get the answer: ROA = 32.82%.

24-19
Walter's current management probably has a lot of experience in their core business and relatively little experience running a coal-mining company. To the extent that other parties will be better suited to manage the coal company once it's been spun off, shareholders will probably see their wealth increase.

24-20
a. EVA is increased because the amount of capital tied up in existing asset is reduced.

b. This is not a real addition to value.

24-21
When the differential between the capital gains tax rate and that for ordinary income is increased, there is more advantage associated with debt financing. Consequently, the optimal debt ratios would increase and the firm value would increase as well.