Accounting Considerations

There is one final decision that, in our view, seems to play a disproportionate role in the way in which acquisitions are structured and in setting their terms, and that is the accounting treatment. In this section, we describe the accounting choices and examine why firms choose one over the other.

Purchase versus Pooling

There are two basic choices in accounting for a merger or acquisition. In **purchase accounting,** the entire value of the acquisition is reflected on the acquiring firm's balance sheet and the difference between the acquisition price and the restated[10] value of the assets of the target firm is shown as goodwill for the acquiring firm. The goodwill is then written off (amortized) over a period of 40 years, reducing reported earnings in each year. The amortization is not tax deductible and thus does not affect cash flows. If an acquisition qualifies for **pooling**, the book values of the target and acquiring firms are aggregated. The premium paid over market value is not shown on the acquiring firm's balance sheet.

For an acquisition to qualify for pooling, the merging firms have to meet the following conditions.

- Each of the combining firms has to be independent; pooling is not allowed when one of the firms is a subsidiary or division of another firm in the two years prior to the merger.
- Only voting common stock can be issued to cover the transaction; the issue of preferred stock or multiple classes of common stock is not allowed.
- Stock buybacks or any other distributions that change the capital structure prior to the merger are prohibited.
- No transactions that benefit only a group of stockholders are allowed.
- The combined firm cannot sell a significant portion of the existing businesses of the combined companies, other than duplicate facilities or excess capacity.

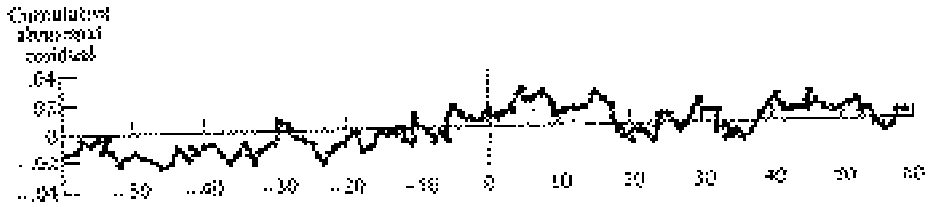
[10] The acquiring firm is allowed to restate the assets that are on the books at fair value. This changes the tax basis for the assets and can affect depreciation in subsequent periods.

The question whether an acquisition will qualify for pooling seems to weigh heavily on the managers of acquiring firms. Some firms will not make acquisitions if they do not qualify for pooling, or they will pay premiums to ensure that they do qualify. Furthermore, as the conditions for pooling make clear, firms are constrained in what they can do after the merger. Firms seem to be willing to accept these constraints, such as restricting stock buybacks and major asset divestitures, just to qualify for pooling.

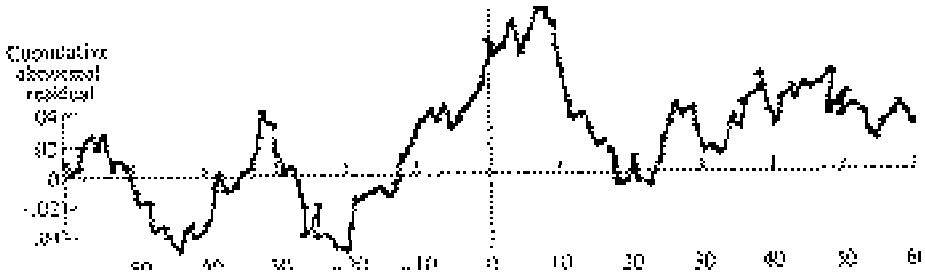
The bias toward pooling may seem surprising, since this choice does not affect cash flows and value, but it is really not surprising, when we consider the source of the bias. Firms are concerned about the effects of the goodwill amortization on their earnings and about stockholder reactions to the lower earnings. Are firms that use purchase accounting punished by markets when they report lower earnings in subsequent periods? Hong, Kaplan and Mandelkar (1978) examined the monthly excess returns of 122 firms that acquired other firms between 1954 and 1964 using the pooling technique for 60 months after the acquisition. They compared these findings to 37 acquisitions that used the purchase approach to see if markets were fooled by the pooling technique. They found no evidence that the pooling raised stock prices or that the purchase technique lowered prices. The results are shown in Figure 25.6.

Figure 25.6: Pooling versus Purchase Accounting: Effect on Excess Returns

Panel A: Excess Returns for 122 firms that used Pooling



Panel B: Excess Returns for 37 firms that used Purchase Accounting



Note that there are no positive excess returns associated with pooling in the 60 months following the merger, nor are there negative excess returns associated with purchase in the same time period. Lindenberg and Ross (1999) studied 387 pooling and 1055 purchase transactions between 1990 and 1999. They find that the stock price reaction to the acquisition announcement is more positive for purchase transactions than for pooling transactions and that the market value of firms that use purchase accounting is not adversely affected by the reduction in earnings associated with amortization. They conclude that the earnings multiples of firms that use purchase accounting adjust to offset the decrease in earnings caused by amortization. To illustrate, a 10% decrease in earnings because of goodwill amortization is accompanied by a 12.1% increase in the price earnings ratio; the net effect is that stock price does not drop. Thus, markets seem to discount the negative earnings effect of amortizing goodwill.

There is another consideration, as well. When pooling is used, the shareholders of the acquired firm can transfer their cost basis[11] to the shares they receive in the acquiring firm and not pay taxes until they sell these shares. When purchase accounting is used, the stockholders of the acquired firm have to recognize the capital gain at the time of the transaction, even if they receive stock in the acquiring firm. Given the substantial premiums paid on acquisitions, this may be a significant factor in why firms choose to use pooling.

In-process R&D

In the last few years, another accounting choice has entered the mix, especially for acquisitions in the technology sector. Here, firms that qualify can follow up an acquisition by writing off all or a significant proportion of the premium paid on the acquisition as **in-process R&D**. The net effect is that the firm takes a one-time charge at the time of the acquisition that does not affect operating earnings[12], and it eliminates or drastically reduces the goodwill that needs to be amortized in subsequent periods. The one-time

[11] For tax purposes, the cost basis reflects what you originally paid for the shares. When pooling is used, the stockholders in the target firm can transfer the cost basis of the shares they have in the target firm to those that they receive in exchange. This allows them to defer the capital gains tax until they sell the stock.
[12] The write-off of in-process R&D is viewed as a non-recurring charge and is shown separately from operating income.

expense is not tax deductible and has no cash flow consequences. In acquisitions such as Lotus by IBM and MCI by Worldcom, the in-process R&D charge allowed the acquiring firms to write off a significant portion of the acquisition price at the time of the deal.

The potential to reduce the dreaded goodwill amortization with a one-time charge is appealing for many firms and studies find that firms try to take maximum advantage of this option. Lev (1998) documented this tendency and also noted that firms that qualify for this provision tend to pay significantly larger premiums on acquisitions than firms that do not.

In early 1999, as both the accounting standards board and the SEC sought to crack down on the misuse of in-process R&D, the top executives at high technology firms fought back, claiming that many acquisitions that were viable now would not be in the absence of this provision. It is revealing of managers' obsession with reported earnings that a provision that has no effects on cash flows, discount rates and value is making such a difference in whether acquisitions get done.

Final Considerations

The managers of acquiring firms clearly weigh in the accounting effects of acquisitions, even when accounting choices have little or no effect on cash flows. This behavior is rooted in a fear of how much financial markets will punish firms that report lower earnings, largely as a consequence of the write off of goodwill. Given the transparency of this write off (firms report earnings before and after goodwill amortization), we believe that this fear is misplaced and the empirical evidence backs us up.

When accounting choices weigh disproportionately in the outcome, the results can be expensive for stockholders in the acquiring firm. In particular,

- Firms will reject some good acquisitions simply because they fail to meet the pooling test or because in-process R&D cannot be written off.
- Firms will overpay on acquisitions, just to qualify for favorable accounting treatment.
- To meet the requirements for pooling, firms will often acquire entire firms rather than the divisions that they are interested in and defer asset divestitures that make economic sense.

If the signals emerging from both the SEC and FASB have any basis, the rules for both pooling and writing off in-process R&D will be substantially tightened. In fact, it looks likely that firms will not be able to use pooling past 2001 and that they will have to write off goodwill over a much shorter period than the current 40 years[13]. These changes, though bitterly opposed by many top managers, should be welcomed by stockholders.

Improving the odds of success on mergers

The evidence on mergers adding value is murky at best and negative at worst. Considering all the contradictory evidence contained in different studies[14], we conclude that:

- Mergers of equals (firms of equal size) seem to have a lower probability of succeeding than acquisitions of a smaller firm by a much larger firm[15].
- Cost saving mergers, where the cost savings are concrete and immediate, seem to have a better chance of delivering on synergy than mergers based upon growth synergy.
- Acquisition programs that focus on buying small private businesses for consolidations have had more success than acquisition programs that concentrate on acquiring publicly traded firms.
- Hostile acquisitions seem to do better at delivering improved post-acquisition performance than friendly mergers.

Analyzing Management and Leveraged Buyouts

In the first section, when describing the different types of acquisitions, we pointed out two important differences between mergers and buyouts. The first is that, unlike a merger, a buyout does not involve two firms coming together and creating a consolidated entity. Instead, the target firm is acquired by a group of investors that may include the management of the firm. The second is that the target firm in a buyout usually becomes a private business. Some buyouts in the 1980s also used large proportions of

[13] Given the formidable lobbying skills of incumbent managers, we would not be surprised to see this change modified or delayed.
[14] Some of this evidence is anecdotal and is based upon the study of just a few mergers.

debt, leading to their categorization as leveraged buyouts. Each of these differences does have an effect on how we approach the valuation of buyouts.

The Valuation of a Buyout

The fact that buyouts involve only the target firm and that there is no acquiring firm to consider makes valuation much more straightforward. Clearly, there is no potential for synergy and therefore no need to value it. However, the fact that the managers of a firm are also the acquirers of the firm does create two issues. The first is that managers have access to information that investors do not have. This information may allow managers to conclude, with far more certainty than would an external acquirer, that their firm is under valued. This may be one reason for the buyout. The second is that the management of the firm remains the same after the buyout, but the way in which investment, financing and dividend decisions are made may change. This happens because managers, once they become owners, may become much more concerned about maximizing firm value.

The fact that firms that are involved in buyouts become private businesses can also have an effect on value. In Chapter 24, we noted that investments in private businesses are much more difficult to liquidate than investments in publicly traded firms. This can create a significant discount on value. One reason this discount may be smaller in the case of buyouts is that many of them are done with the clear intention, once the affairs of the firm have been put in order, of taking the firm public again.

If going private is expected to increase managers' responsiveness to value maximization in the long term — since they are part owners of the firm — the way to incorporate this in value is to include it in the cash flows. The increased efficiency can be expected to increase cash flows if it increases operating margins. The emphasis on long-term value should be visible in investment choices and should lead to a higher return on capital and higher growth. This advantage has to be weighed against the capital rationing the firm might face because of limited access to financial markets, which might reduce future growth and profits. The net effect will determine the change in value. The empirical

[15] This might well reflect the fact that failures of mergers of equal are much more visible than failures of the small firm/large firm combinations.

evidence on going-private transactions, however, is clear cut. DeAngelo, DeAngelo and Rice (1984) report, for example, an average abnormal return of 30% for 81 firms in their sample that went private. Thus, financial markets, at least, seem to believe that there is value to be gained for some public firms in going private.

Valuing a Leveraged Buyout

We have seen that leveraged buyouts are financed disproportionately with debt. This high leverage is justified in several ways. First, if the target firm initially has too little debt relative to its optimal debt ratio, the increase in debt can be explained partially by the increase in value moving to the optimal ratio provides. The debt level in most leveraged buyouts exceeds the optimal debt ratio, however, which means that some of the debt will have to be paid off quickly in order for the firm to reduce its cost of capital and its default risk. A second explanation is provided by Michael Jensen, who proposes that managers cannot be trusted to invest free cash flows wisely for their stockholders; they need the discipline of debt payments to maximize cash flows on projects and firm value. A third rationale is that the high debt ratio is temporary and will disappear once the firm liquidates assets and pays off a significant portion of the debt.

The extremely high leverage associated with leveraged buyouts creates two problems in valuation, however. First, it significantly increases the riskiness of the cash flows to equity investors in the firm by increasing the fixed payments to debt holders in the firm. Thus, the cost of equity has to be adjusted to reflect the higher financial risk the firm will face after the leveraged buyout. Second, the expected decrease in this debt over time, as the firm liquidates assets and pays off debt, implies that the cost of equity will also decrease over time. Since the cost of debt and debt ratio will change over time as well, the cost of capital will also change in each period.

In valuing a leveraged buyout, then, we begin with the estimates of free cash flow to the firm, just as we did in traditional valuation. However, instead of discounting these cash flows back at a fixed cost of capital, we discount them back at a cost of capital that will vary from year to year. Once we value the firm, we then can compare the value to the total amount paid for the firm.

Illustration 25.7: Valuing A Leveraged Buyout: Congoleum Inc.[16]

The managers of Congoleum Inc targeted the firm for a leveraged buyout in 1979. They planned to buy back the stock at $38 per share (it was trading at $24 prior to the takeover) and to finance the acquisition primarily with debt. The breakdown of the cost and financing of the deal.

Cost of Takeover:

Buy back stock: $38 * 12.2 million shares	: $463.60 million
Expenses of takeover:	: $ 7.00 million
Total Cost	: $ 470.60 million

Financing Mix for takeover:

Equity:	: $ 117.30 million
Debt:	: $ 327.10 million
Preferred Stock (@13.5%):	: $ 26.20 million
Total Proceeds	: $ 470.60 million

There were three sources of debt:

1. Bank debt of $125 million, at a 14% interest rate, to be repaid in annual installments of $16.666 million, starting in 1980.
2. Senior notes of $115 million, at 11.25% interest rate, to be repaid in equal annual installments of $7.636 million each year from 1981.
3. Subordinated notes of $92 million, at 12.25% interest, to be repaid in equal annual installments of $7.636 million each year from 1989.

The firm also assumed $12.2 million of existing debt, at the advantageous rate of 7.50%; this debt would be repaid in 1982. The debt value exceeds the transaction amount reflecting transaction costs.

The firm projected operating income (EBIT), capital spending, depreciation and change in working capital from 1980 to 1984 as shown in Table 25.5 (in millions of dollars):

[16] The numbers in this illustration were taken from the Harvard Business School case titled “Congoleum”. The case is reprinted in Fruhan, Kester, Mason, Piper and Ruback (1992).

Table 25.5: EBIT, Net Cap Ex and Changes in Working Capital – Congoleum

Year	EBIT	Capital Spending	Depreciation	ΔWorking Capital
Current	$ 89.80	$ 6.80	$ 7.5	$ 4.0
1980	$ 71.69	$ 15.0	$ 35.51	$ 2.0
1981	$ 90.84	$ 16.2	$ 36.26	$ 14.0
1982	$115.73	$ 17.5	$ 37.07	$ 23.3
1983	$133.15	$ 18.9	$ 37.95	$ 11.2
1984	$137.27	$ 20.4	$ 21.93	$ 12.8

The earnings before interest and taxes were expected to grow 8% after 1984, and the capital spending is expected to be offset by depreciation[17].

Congoleum had a beta of 1.25 in 1979, prior to the leveraged buyout. The treasury bond rate at the time of the leveraged buyout was 9.5%.

We begin the analysis by estimating the expected cash flows to the firm from 1980 to 1985. To obtain these estimates, we subtract the net capital expenditures and changes in working capital from the after-tax operating income.

Table 25.6: Projected Cash Flows to Equity and Firm: Congoleum

	1980	1981	1982	1983	1984	1985
EBIT	$71.69	$90.84	$115.73	$133.15	$137.27	$148.25
- EBIT (t)	$34.41	$43.60	$55.55	$63.91	$65.89	$71.16
= EBIT (1-t)	$37.28	$47.24	$60.18	$69.24	$71.38	$77.09
+ Depreciation	$35.51	$36.26	$37.07	$37.95	$21.93	$21.62
- Capital Exp.	$15.00	$16.20	$17.50	$18.90	$20.40	$21.62
- ΔWC	$2.00	$14.00	$23.30	$11.20	$12.80	$5.00
= FCFF	$55.79	$53.30	$56.45	$77.09	$60.11	$72.09

We follow up by estimating the cost of capital for the firm each year, based upon our estimates of debt and equity each year. The value of debt for future years is estimated based upon the repayment schedule and it decreases over time. The value of equity in

[17] We have used the assumptions provided by the investment banker, in this case. It is troubling, however, that the firm has an expected growth rate of 8% a year forever without reinvesting any money back.

each of the future years is estimated by discounting the expected cash flows in equity beyond that year at the cost of equity.

Table 25.7: Cost of Capital – Congoleum

	1980	1981	1982	1983	1984	1985
Debt	$327.10	$309.96	$285.17	$260.62	$236.04	$211.45
Equity	$275.39	$319.40	$378.81	$441.91	$504.29	$578.48
Preferred Stock	$26.20	$26.20	$26.20	$26.20	$26.20	$26.20
Debt/Capital	52.03%	47.28%	41.32%	35.76%	30.79%	25.91%
Equity/Capital	43.80%	48.72%	54.89%	60.64%	65.79%	70.88%
Preferred Stock/Capital	4.17%	4.00%	3.80%	3.60%	3.42%	3.21%
Beta	2.02547	1.87988	1.73426	1.62501	1.54349	1.4745
Cost of Equity	20.64%	19.84%	19.04%	18.44%	17.99%	17.61%
After-tax cost of debt	6.53%	6.53%	6.53%	6.53%	6.53%	5.00%
Cost of preferred stock	13.51%	13.51%	13.51%	13.51%	13.51%	13.51%
Cost of Capital	13.00%	13.29%	13.66%	14.00%	14.31%	14.21%

An alternative approach to estimating equity, which does not require iterations or circular reasoning, is to use the book value of equity rather than the estimated market value in calculating debt-equity ratios.[18]

The cash flows to the firm and the cost of capital in the terminal year (1985), in conjunction with the expected growth rate of 8%[19], are used to estimate the terminal value of equity (at the end of 1984):

[18] The book value of equity can be obtained as follows:
$BV\ of\ Equity_t = BV\ of\ Equity_{t-1} + Net\ Income_t$
It is assumed that there will be no dividends paid to equity investors in the initial years of a leveraged buyout.

[19] While this may seem to be a high growth rate to sustain forever, it would have been appropriate in 1979. Inflation and interest rates were much higher then than in the 1990s.

$$= \frac{FCFE_{1985}}{(k_{e,1985} - 0.08)}$$

$$\text{Terminal value of firm (end of 1984)} = \frac{\$72.09}{0.1421 - 0.08}$$

$$= \$1161 \text{ million}$$

The expected cash flows to the firm and the terminal value were discounted back to the present at the cost of capital to yield a present value of $820.21 million[20]. Since the acquisition of Congoleum cost only $470.6 million, this acquisition creates value for the acquiring investors.

merglbo.xls: This spreadsheet allows you to evaluate the cash flows and the value of a leveraged buyout.

Summary

Acquisitions take several forms and occur for different reasons. Acquisitions can be categorized, based upon what happens to the target firm after the acquisition. A target firm can be consolidated into the acquiring entity (merger), create a new entity in combination with the acquiring firm or remain independent (buyout).

There are four steps in analyzing acquisitions. First, we specify the reasons for acquisitions and list five: the undervaluation of the target firm, benefit from diversification, the potential for synergy, the value created by changing the way the target firm is run and management self-interest. Second, we choose a target firm whose characteristics make it the best candidate, given the motive chosen in the first step. Third, we value the target firm, assuming it would continue to be run by its current managers and then revalue it assuming better management. We define the difference between these two values as the value of control. We also value each of the different sources of operating and financial synergy and considered the combined value as the value of total synergy. Fourth,

[20] When the cost of capital changes on a year-to-year basis, the discounting has to be based upon a cumulative cost. For instance, the cash flow in year 3 will be discounted back as follows:

$$\text{PV of cash flow in year 3} = \frac{56.45}{(1.13)(1.1329)(1.1366)}$$

we look at the mechanics of the acquisition. We examine how much the acquiring firm should consider paying, given the value estimated in the prior step for the target firm, including control and synergy benefits. We also look at whether the acquisition should be financed with cash or stock and how the choice of the accounting treatment of the acquisition affects this choice.

Buyouts share some characteristics with acquisitions, but they also vary on a couple of important ones. The absence of an acquiring firm, the fact that the managers of the firm are its acquirers and the conversion of the acquired firm into a private business all have implications for value. If the buyout is financed predominantly with debt, making it a leveraged buyout, the debt ratio will change in future years, leading to changes in the costs of equity, debt and capital in those years.

Problems

1. The following are the details of two potential merger candidates, Northrop and Grumman, in 1993.

	Northrop	*Grumman*
Revenues	$4,400.00	$3,125.00
Cost of Goods Sold (w/o Depreciation)	87.50%	89.00%
Depreciation	$200.00	$74.00
Tax Rate	35.00%	35.00%
Working Capital	10% of Revenue	10% of Revenue
Market Value of Equity	$2,000.00	$1,300.00
Outstanding Debt	$160.00	$250.00

Both firms are expected to grow 5% a year in perpetuity. Capital spending is expected to be offset by depreciation. The beta for both firms is 1 and both firms are rated BBB, with an interest rate on their debt of 8.5% (the treasury bond rate is 7%).

As a result of the merger, the combined firm is expected to have a cost of goods sold of only 86% of total revenues. The combined firm does not plan to borrow additional debt.

a. Estimate the value of Grumman, operating independently.
b. Estimate the value of Northrop, operating independently.
c. Estimate the value of the combined firm, with no synergy.
d. Estimate the value of the combined firm, with synergy.
e. How much is the operating synergy worth?

2. In the Grumman-Northrop example described in the previous question, the combined firm did not take on additional debt after the acquisition. Assume that, as a result of the merger, the firm's optimal debt ratio increases to 20% of total capital from current levels. (At that level of debt, the combined firm will have an A rating, with an interest rate on its debt of 8%.) If it does not increase debt, the combined firm's rating will be A+ (with an interest rate of 7.75%.)

a. Estimate the value of the combined firm if it stays at its existing debt ratio.

b. Estimate the value of the combined firm if it moves to its optimal debt ratio.

c. Who gains this additional value if the firm moves to the optimal debt ratio?

3. In April 1994, Novell, Inc. announced its plan to acquire WordPerfect Corporation for $1.4 billion. At the time of the acquisition, the relevant information about the two companies was as follows:

	Novell	*WordPerfect*
Revenues	$1,200.00	$600.00
Cost of Goods Sold (w/o Depreciation)	57.00%	75.00%
Depreciation	$42.00	$25.00
Tax Rate	35.00%	35.00%
Capital Spending	$75.00	$40.00
Working Capital (as % of Revenue)	40.00%	30.00%
Beta	1.45	1.25
Expected Growth Rate in Revenues/EBIT	25.00%	15.00%
Expected Period of High Growth	10 years	10 years
Growth rate After High-Growth Period	6.00%	6.00%
Beta After High-Growth period	1.10	1.10

Capital spending will be offset by depreciation after the high-growth period. Neither firm has any debt outstanding. The treasury bond rate is 7%.

a. Estimate the value of Novell, operating independently.

b. Estimate the value of WordPerfect, operating independently.

c. Estimate the value of the combined firm, with no synergy.

d. As a result of the merger, the combined firm is expected to grow 24% a year for the high-growth period. Estimate the value of the combined firm with the higher growth.

e. What is the synergy worth? What is the maximum price Novell can pay for WordPerfect?

4. Assume, in the Novell-WordPerfect merger described above, that it will take five years for the firms to work through their differences and start realizing their synergy benefits. What is the synergy worth, under this circumstance?

5. In 1996, Aetna, a leading player in health insurance, announced its intentions to acquire U.S. Healthcare, the nation's largest HMO, and provided synergy as a rationale. On the announcement of the merger, Aetna's stock price which was $57 dropped to $52.50, while U.S. Healthcare's stock price surged from $31 to $37.50. Aetna had 400 million shares and U.S. Healthcare had 50 million shares outstanding at the time of the announcement.

a. Estimate the value, if any, that financial markets are attaching to synergy in this merger.

b. How would you reconcile the market reaction to the rationale presented by management for the acquisition?

6. IH Corporation, a farm equipment manufacturer, has accumulated almost $2 billion in losses over the last seven years of operations and is in danger of not being able to carry forward these losses. EG Corporation, an extremely profitable financial service firm, which had $3 billion in taxable income in its most recent year, is considering acquiring IH Corporation. The tax authorities will allow EG Corporation to offset its taxable income with the carried-forward losses. The tax rate for EG Corporation is 40% and the cost of capital is 12%.

a. Estimate the value of the tax savings that will occur as a consequence of the merger.

b. What is the value of the tax savings, if the tax authorities allow EG Corporation to spread the carried-forward losses over four years, i.e., allow $200 million of the carried forward losses to offset income each year for the next four years.

7. You are considering a takeover of PMT Corporation, a firm that has significantly underperformed its peer group over the last five years and you wish to estimate the value of control. The data on PMT Corporation, the peer group, and the best managed firm in the group are given below.

	PMT Corp.	*Peer Group*	*Best Managed*
Return on Assets (After-tax)	8.00%	12.00%	18.00%
Dividend Payout Ratio	50.00%	30.00%	20.00%
Debt Equity Ratio	10.00%	50.00%	50.00%
Interest Rate on Debt	7.50%	8.00%	8.00%

Beta	Not Available	1.30	1.30

PMT Corporation reported earnings per share of $2.50 in the most recent time period and is expected to reach stable growth in five years, after which the growth rate is expected to be 6% for all firms in this group. The beta during the stable growth period is expected to be 1 for all firms. There are 100 million shares outstanding and the treasury bond rate is 7% (the tax rate is 40% for all firms).

a. Value the equity in PMT Corporation, assuming that the current management continues in place.

b. Value the equity in PMT Corporation, assuming that it improves its performance to peer group levels.

c. Value the equity in PMT Corporation, assuming that it improves its performance to the level of the best managed firm in the group.

7. You are attempting to do a leveraged buyout of Boston Turkey but have run into some roadblocks. You have some partially completed projected cash flow statements and need help to complete them.

Year	*1*	*2*	*3*
Revenues	$1,100,000	$1,210,000	$1,331,000
(Less) Expenses	$440,000	$484,000	$532,400
(Less) Deprec'n	$100,000	$110,000	$121,000
= EBIT	$560,000	$616,000	$677,600
(Less) Interest	$360,000	$324,000	$288,000
Taxable Income	$200,000	$292,000	$389,600
(Less) Tax	$80,000	$116,800	$155,840
= Net Income	$120,000	$175,200	$233,760

Year	*4*	*5*	*Term. Year*
Revenues	$1,464,100	$1,610,510	$1,707,141
(Less) Expenses	$585,640	$644,204	$682,856
(Less) Deprec'n	$133,100	$146,410	$155,195

= EBIT	$745,360	$819,896	$869,090
(Less) Interest	$252,000	$216,000	$180,000
Taxable Income	$493,360	$603,896	$689,090
(Less) Tax	$197,344	$241,558	$275,636
= Net Income	$296,016	$362,338	$413,454

The capital expenditures are expected to be $120,000 next year and to grow at the same rate as revenues for the rest of the period. Working capital will be kept at 20% of revenues (Revenues this year were $1,000,000).

The leveraged buyout will be financed with a mix of $1,000,000 of equity and $3,000,000 of debt (at an interest rate of 12%). Part of the debt will be repaid by the end of year 5 and the debt remaining at the end of year 5 will remain on the books permanently.

a. Estimate the cash flows to equity and the firm for the next five years.

b. The cost of equity in year 1 has been computed. Compute the cost of equity each year for the rest of the period (use book value of equity for the calculation).

Item	*1*
Equity	1,000,000
Debt	3,000,000
Debt/Equity Ratio	3
Beta	2.58
Cost of Equity	24.90%

c. Compute the terminal value of the firm.

d. Evaluate whether the leveraged buyout will create value.

13. J & L Chemical is a profitable chemical manufacturing firm. The business, however, is highly cyclical and the profits of the firm have been volatile. The management of the firm is considering acquiring a food processing firm to reduce the earnings volatility and their exposure to economic cycles.

a. Would such an action be in the best interests of their stockholders? Explain.

b. Would your analysis be any different if they were a private firm? Explain.

c. Is there any condition under which you would argue for such an acquisition for a publicly traded firm?