

J.P. Morgan M&A Reference Manual

This “M&A bible” is meant to serve as a training guide for newcomers to M&A, as well as a technical reference manual for experienced (and not so experienced) M&A practitioners. It incorporates what a number of people in M&A believe to be essential or useful basic knowledge to perform the tasks required in the daily routine of the strategic advisory business.

As the financial, legal and tax environment in which the M&A Group operates is forever changing, periodic updates of this publication are intended. As such, any suggestions for improvement would be appreciated. Please direct your comments for improvement, but not your requests for copies of the book, to Eileen Smith at (77)6-8305. An online version of the book is available to Investment Banking professionals on the IB M&A Research database in Lotus Notes or through IB Today.

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Valuation methodologies overview

Advantages and disadvantages

*Comparable
company trading
analysis*

Description

- Compare the current trading level of a Company to its peers
- Specifically determine how the market has valued the earnings, cash flow, net asset value, assets or other characteristics of similar companies. Compare these ratios to the Company's performance and/or use them to impute an aggregate market value of the Company

Advantages

- Market efficiency means that trading values in theory should reflect industry trends, business risk, market growth, etc.
- Values obtained can be a reliable indicator of the value of the Company for a minority investment (i.e., a non-control investment)
- Useful technique for assessing vulnerability: when fundamental vs. market value gap is large, vulnerability may be high

Disadvantages

- Always comparing apples to oranges. Truly comparable companies are rare and differences are hard to account for
- Thinly traded, small capitalization or poorly followed stocks may not reflect fundamental value
- Many people feel that the stock market is "emotional" and that it sometimes fluctuates irrationally (i.e., the market can be wrong)
- Current high level of M&A activity in certain sectors has introduced distortions in relative pricing benchmarks

Comments

- The unaffected trading level does not include a control premium or synergy value associated with strategic acquisitions
- Explaining value gaps between the Company and its comparables can involve extensive use of judgment

*Comparable transactions and premium analysis***Description**

- Determine the value offered in past acquisitions of similar companies
- Specifically, determine the pricing of past deals as compared to the target's financial performance and unaffected (pre-announcement) market value

Advantages

- Recent comparable transactions can reflect supply and demand for salable assets
- Realistic in the sense that past transactions were successfully completed at certain multiples or premiums. Indicates a range of plausibility for premiums offered
- Trends, such as consolidating acquisitions, foreign purchasers, or financial purchasers may become clear

Disadvantages

- Past transactions are rarely directly comparable – always comparing apples to oranges
- Public data on past transactions can be scarce or misleading
- Public data seldom discusses deal protection put in place by acquiror and target
- Values obtained often vary over a wide range and thus can be of limited usefulness
- Prevailing market conditions can lead to significant distortions

Comments

- Interpretation of the data requires familiarity with the industry and the properties involved
- Premiums and appropriate multiples can (and often do) change over time

*Discounted cash flow analysis***Description**

- Discount unleveraged projected free cash flows (or in some cases dividendable income) at Company's cost of capital to obtain an economic present value of assets. Subtract market value of outstanding net debt and preferred capital from the present value of assets to get present value of equity. Free cash flow is after-tax operating earnings plus non-cash charges less increases in working capital less capital expenditures. (On leveraged DCF analysis, free cash flow is reduced by after-tax interest expense)
- Sensitivities on discount rates, terminal value assumptions and operating scenarios are frequently used to estimate the uncertainty in the values obtained

Advantages

- Theoretically, the most sound method of valuation
- Less influenced by temperamental market conditions or non-economic factors
- Can value components of business or synergies separately from the business

Disadvantages

- Present value obtained are sensitive to assumptions and methodology
- Terminal value represents significant portion of value, and is highly sensitive to valuation assumptions

Comments

- DCF value may be adjusted for non-operating items such as environmental liabilities and the value of salable assets, as well as seasonality of key variables
- Need realistic projected financial statements over at least one business cycle (seven to 10 years) or until cash flows are “normalized”
- Sales growth rate, margins, investment in working capital, capital expenditures, terminal value assumptions and discount rates are key to value

*Leveraged buyout or
recapitalization
analysis*

Description

- Model the Company’s financial performance under an initially highly-leveraged capital structure
- Assume transaction occurs in today’s borrowing environment and determine maximum initial debt the Company can realistically repay in a timely manner
- Several operating and business environment scenarios are used to estimate the uncertainty in the values obtained

Advantages

- Will help determine realizable financial value that any strategic bidder will have to exceed
- LBO value is realistic, in the sense that it can be achieved by a well-defined process

Disadvantages

- Stand-alone LBO may underestimate strategic sale value by ignoring synergies with acquiror
- Value obtained is sensitive to projections and aggressiveness of operating assumptions (but less so than DCF methodology)

Specialized approaches:

Asset value of reserves (e.g., paper natural resource companies)

Comments

- LBO value only meaningful for companies which could operate under high financial leverage (i.e., for whom financial buyers are expected to be strong buyers)
- Need realistic projected financial statements over four to five years (i.e., investment horizon of financial buyer)
- Equity can be closely held (private LBO) or publicly traded (recap./public LBO)
- Sales growth rate, margins and discount rates are key to value
- Other value drivers: asset sales, investment in working capital, capital expenditures, exit multiples

Description

- Estimate the value of the Company's reserves (coal, oil, gas, gold, etc.)
- Determine the size and quality of the reserves (Annual Report and 10K)
- Compare how public natural resource companies trade as a multiple of reserve value and how precedent transactions have occurred as a multiple of reserve value
- Effectively an extension of trading and transaction multiples

Advantages

- Many natural resource companies' earnings fluctuate with the prices of the commodities they sell. Highly cyclical earnings make earnings-based analysis problematic

Disadvantages

- Accurate asset values are difficult to determine from public disclosure due to differences in recovery economics and reckoning conventions

Comments

- Reserve value meaningful to acquirors facing a "find or buy" decision

Replacement cost analysis (e.g., paper chemical companies)

Description

- Estimate the cost of replacing the productive assets (plants) of the Company
- Involves using both theoretical values and recently announced construction projects and making estimates of replacement factors for each asset

Advantages

- Determines an alternative value benchmark for an acquiror trading off the time lag and risk of construction versus using old equipment

Disadvantages

- Ignores the value of all non-constructible assets
- Actual cost to construct will vary widely depending on the resources and circumstances of the builder
- Only practical for companies with a known, easy-to-understand facilities

Comments

- Replacement cost meaningful to acquirors facing a “build or buy” decision

Comparable company trading analysis

Definition

Comparison of several companies' operating and trading statistics. Exact ratios and values analyzed vary from company to company, industry to industry

Purpose

- Shows performance relative to similar companies
- Shows market perception of similar companies
- Can be used to analyze break-up value of a conglomerate
- Values business for purchase/sale in private market
- Primary method of valuing company for an IPO

Methodology

- Identify comparable companies
 - SIC code search, research reports, Value Line, proxy, prospectus or 10-K
- Separate "pure plays," or those companies that closely resemble the composition/function of the company/segment under evaluation
 - IB tear sheets, S&P descriptions, industry research reports
- Separate companies with sufficient liquidity (i.e., market value greater than \$50 million, preferably \$100 million)
- Ratios and multiples to be evaluated vary by industry group, but may be categorized generally as follows:
 - Equity value multiples: cash flows to equity holders only (e.g., net income, book value, operating cash flow)
 - Common ratios: P/E, P/BV, P/OCF (after tax)
 - Firm value multiples: cash flows to all investors (e.g., revenues, EBIT, EBITDA)
 - Common ratios: FV/revenues, FV/EBIT, FV/EBITDA
- J.P. Morgan typically uses median values; mean values often skewed from outlying data and therefore more likely to be misleading
- Keep back-up file to trading comparable presentation page in Lotus/Excel spreadsheet for easy updates/corrections
 - Show file location or Lotus/Excel output: = cell ("filename")
 - Linking prices in Excel: = IDD ("ticker," "close," 0)
- Provide summary recent financial data and key operating ratios as backup
- Check all data with source material (10K, 10Q) to explain trading anomalies

Trading comparables**Exhibit: Selected trading statistics**

Company	Closing price ¹	Equity value ²	Firm value ³	Firm value/LTM			Firm value/FY1		Price per share/EPS			LT growth rate	Optional multiples	
				Revenue	EBITDA	EBIT	EBITDA	EBIT	LTM	FY1	FY2		P/BVPS	P/CFPS
	(\$)	(\$MM)	(\$MM)	(x)	(x)	(x)	(x)	(x)				(%)	(x)	(x)
Comp 1														
Comp 2														
Comp 3														
Comp 4														
Comp 5														

Mean

Median

Company financials

Implied firm value

Net debt

Implied equity value

Implied equity value per share

Implied premium/ (discount)

¹ Based on closing stock price as of (date)² Based on (#) shares outstanding from the latest 10K/Q dated (K/Q date)³ Equity value plus total debt less cash

Selected trading statistics explained

Objective

Assess a company's value relative to its peer group by comparing various equity trading multiples

Explanation

- (1) **Closing price:** most recent closing stock price from Bloomberg, ILX or Populator. Prices for all companies as of the same date. Note date of the stock quotes on the exhibit.
[Populator equation: = IDD ("ticker," "close," 0) or replace "ticker" with cell reference without quotations]
- (2) **Equity value:** last closing stock price multiplied by number of shares outstanding. Shares outstanding from front page of latest 10K, 10Q, or other public document adjusted for options or other instruments in existence (if applicable). Note date of shares outstanding on the exhibit.
- (3) **Firm value:** equity value plus LT debt plus ST debt plus preferred stock less cash.
LT debt: from latest 10K/Q under N/C liabilities – LT debt plus redeemable pfd. plus minority interest (if any). (Other types of pfd. stock are not considered LT debt.)
ST debt: from latest 10K/Q under current liabilities – "ST borrowings," "bank notes," "loans," plus "accrued interest" and "current maturities of LT debt" (if any)
Preferred stock: from latest 10K/Q under stockholders' equity. Use market values, if possible, otherwise book values. (Market value can frequently be obtained from Bloomberg.)
Cash: from latest 10K/Q – "cash and cash equivalents" plus "marketable securities" (if any)
- (4) **LTM firm value multiples:** Revenues, EBITDA and EBIT are all before any extraordinary income/loss. If FYE is most recent period, simply divide FV by relevant number; if one or more 10Qs have been filed since FYE, take latest FYE number, add Revenue/EBITDA/EBIT figures from 3, 6, 9 months since end of base year, subtract same figures from 3, 6, 9 months since beginning of base year.

- (5) **Projected firm value multiples:** Adjust projected net income (see below) upwards to calculate forward EBIT and EBITDA:

$$\text{EBT} = (\text{NI} + (\text{Pref. Dividends} + \text{Minority Interest})) \div (1 - \text{marginal tax rate})$$

NB: JPM Comps model only adds back taxes associated with minority interest and does not factor minority interest¹ into firm value calculation. In this case, (NI before preferred dividends + taxes) + ((minority interest * marginal tax rate) ÷ (1 - marginal tax rate))

$$\text{EBIT} = \text{EBT} + \text{net interest expense}$$

$$\text{EBITDA} = \text{EBIT} + \text{Depreciation} + \text{Amortization}$$

All projected adjustments should come from Value Line or a credible brokerage report. Projected sales should come from Value Line or brokerage reports.

- (6) **Equity value multiples:** net income divided by average number of common shares outstanding; this result divided into stock price to calculate P/E

LTM P/E: if FYE is most recent period, simply divide NI by the average number of fully diluted common shares outstanding, then divide the result into the stock price.

If one or more 10Qs have been filed since the end of FYE, compute as follows:

- NI from the most recent FYE (base year)
- Add NI figures from three, six, or nine months since the end of the base year
- Subtract NI values from three, six, or nine months since the beginning of the base year
- Divide the LTM NI by the weighted average number of shares outstanding from the most recent 10Q to calculate LTM EPS. **(Do not use LTM average shares!)**
- Divide stock price by LTM EPS

¹ Under U.S. GAAP, minority interest and equity interest in subsidiaries are always shown net of taxes, regardless of where they are reported in an income statement

Projected P/E: Get median I/B/E/S estimates for the next two years. (Available on Infocenter, Insight, or Populator by inputting = IDD (“ticker,” “FY1MEDIA” or “FY2MEDIA,” 0). These estimates are reported on a fully diluted basis and updated every Thursday.¹ Always use median I/B/E/S (not mean) to avoid skewed data values.

Calendarize earnings estimates as needed [e.g., (June ‘97 plus June ‘98)/2 = December ‘97; (May ‘97 * 5/12) plus (May ‘98 * 7/12) = December ‘97]

Projected net income multiple: Multiply forward I/B/E/S by I/B/E/S projected weighted average shares outstanding (=IDD (“ticker,” “ibesshrs,” 0) to obtain projected net income. **(Note that I/B/E/S shares are not fully diluted and are source from Exlel not “street” analysts. It is thus important to check to see that I/B/E/S projected shares outstanding are consistent with credible brokerage reports; if not, use most recent 10-Q shares outstanding to derive fully diluted shares.)** Divide projected net income into current equity value.

(7) **Long-term EPS growth rate:** Get median I/B/E/S estimate from Infocenter, Insight, or Populator by typing = IDD (“ticker,” “MEDLTG,” 0). These estimates are updated every Thursday.

(8) **Other equity multiples:**

Price/book value per share: Book value equal to sum of common equity accounts on most recent financial stated divided by most recent number of shares outstanding; this result then divided into most recent stock price.

Price/cash flow per share: Cash flow refers to operating cash flow, or NI plus D&A plus deferred taxes plus other non-cash charges, divided by average number of shares outstanding; this result is then divided into most recent stock price.

¹ Only I/B/E/S EPS estimates are updated weekly (every Thursday). All other I/B/E/S data is updated monthly as of the Thursday before the third Friday of the month (options expiration); prices are as of the Wednesday close prior to the third Friday of the month

Exhibit: Selected determinants of EBIT and EBITDA multiples

Determinant	Effect on EBIT and EBITDA multiple	Implications
Tax rate	As tax rate increases, EBIT/EBITDA multiple decreases	- As tax rates increase, EBITDA multiples should go down - Firms with large NOLs should sell for higher EBITDA multiples
Cost of capital	As cost of capital increases, EBIT/EBITDA multiple will decrease	Firms which are riskier and use lower leverage should have lower value/EBITDA multiples
Depreciation ¹	As depreciation increases as a proportion of EBITDA, EBITDA multiples will decrease	For a given level of capital expenditures, firms which report higher depreciation will have lower EBITDA multiples
Capital expenditures/growth rates ¹	For a given growth rate, firms with higher capital expenditures will sell for lower EBITDA multiples	Firms which generate growth more efficiently (i.e., by taking projects with higher returns or from existing investments) will sell for higher EBITDA multiples

¹ Not relevant for EBIT multiple

Trading comparables**Exhibit: Selected operating statistics**

Company	Business description	Projected LT growth rates			LTM EBIT margin	LTM EBITDA margin	LTM leverage		LTM EBIT/interest
		Sales ¹	CF ^{1,2}	Five-year EPS ³			Adjusted book	Adjusted market	
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(x)
Comp 1									
Comp 2									
Comp 3									
Comp 4									
Comp 5									
Mean									
Median									

Company¹ Estimated CAGR over the next five years based on the Value Line report as of (date)² Cash flow as defined by Value Line³ Median estimated CAGR of EPS over the next five years based on the I/B/E/S report as of (date)**Trading comparables****Exhibit: Selected credit and operating statistics**

Company ¹	Growth ²			Margins				Returns		Credit				
	Sales	Earnings		EBIT		Earnings		ROE	ROC	Leverage		Interest coverage ⁵		S&P/Mdy
	L3YA	L3YA	N5YA	L3YA	LTM	L3YA	LTM	LFY	LFY	Book ³	Mkt. ⁴	L3YA	LTM	rating
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(x)	(x)	
Comp 1														
Comp 2														
Comp 3														
Comp 4														
Comp 5														
Mean														
Median														

Company¹ All financial information is before extraordinary items. All LTM figures are for the period ending (latest 10K/Q date). Three-year averages for the fiscal years (date)–(date)² Next 5-years average annual EPS growth rate represents mean estimates from I/B/E/S report of (date)³ Total debt divided by total debt and book value as of (latest 10K/Q)⁴ Total debt divided by total debt and current market value⁵ EBIT divided by gross interest expense

Selected operating statistics explained

Objective

Assist explanation of equity trading multiples by analyzing key operating figures and ratios.

Explanation

- (1) **Projected LT growth rates:** Get Value Line (in the Library) estimates for sales and cash flow; I/B/E/S estimates from Populator for EPS = **IDD** (“ticker,” “MEDLTG,” 0)]
- (2) **LTM EBIT margin:** Exclude any extraordinary items and one-time occurrences (e.g., restructuring charges). Divide LTM EBIT by LTM total revenues. Use most recent financial statements for these figures
- (3) **LTM leverage:**
 - **Book leverage:** divide total debt by sum of equity accounts from latest 10K/Q and total debt
 - **Market leverage:** divide total debt by sum of equity market value, preferred stock (preferably market value) and total debt
- (4) **LTM EBIT/interest:**

Divide EBIT (including interest income) by gross interest expense (not net of interest income)
- (5) **Growth – calculating the CAGR (compound annual growth rate):**

Definition: value that simplifies observed data into one number that is descriptive, accurate and meaningful to others

NB: When growth rates are used in exhibits, they should be clearly identified as “n-year compound annual growth rates.” The method of estimation (i.e., “log linear least squares method”) may be specified in a footnote, since it is normally not necessary to tell the reader how to interpret the statistic.

End point CAGR

- The most commonly used growth rate calculation at JPM
- Pros: Valid for both positive and negative “end point” values
- Pitfalls: Does not make use of all available data (i.e., only uses endpoints)

- Formula:

$$\left(\left(\frac{X_n}{X_1} \right)^{\left(\frac{1}{n-1} \right)} - 1 \right) \times 100\%$$

where $X_1 \dots X_n$ = observations for n values

- Example: J.P. Morgan has produced earnings per share as follows:

Year	Period	Actual EPS
1992	1	\$5.66
1993	2	8.48
1994	3	6.02
1995	4	6.42
1996	5	7.63

J.P. Morgan’s CAGR in percent of growth per year is calculated as follows:

$$\left(\left(\frac{\$7.63}{\$5.66} \right)^{(1/4)} - 1 \right) \times 100\% = 7.75$$

That is, on average, J.P. Morgan’s EPS grows each year by 7.75 percent from that of the previous year

Log linear least squares CAGR

- Regression analysis that calculates the constant percentage growth rate that minimizes the sum of the squared differences between the observed data and those predicted by the constant percentage model. (It is the anti-log of the slope of the regression line where $y = mx + b$ and m is the slope)
- Calculated using Lotus/Excel or a HP-12C calculator program. (See Appendix for further information of HP-12C functions)
- Example (using J.P. Morgan figures):

Period	Actual EPS	Predicted EPS ¹	Difference	(Difference) ⁽²⁾
1	\$5.66	\$5.81	\$0.15	0.02
2	8.48	6.00	(2.48)	6.15
3	6.02	6.20	0.13	0.03
4	6.42	6.40	(0.02)	0.00
5	7.63	6.60	1.03	1.06
			Sum =	7.26

¹ From the estimates provided by the calculator program beginning with actual EPS from period 0 (\$5.63 for J.P. Morgan)

- That is, on average, J.P. Morgan's EPS grows each year by 3.24 percent from that of the previous year

NB: Estimating growth rates using the log-linear least square method is not possible if there exist negative observations (i.e., losses). It may be more appropriate in these cases to calculate the end point compound growth rate or to specify "Not Meaningful" or "NM" on the exhibit involved.

- Though this method is not J.P. Morgan standard, it is useful when arguing for lower growth rates (i.e., lower valuation). It is also the standard CAGR for some of our competitors.

Exhibit: CAGR analysis

	CAGR		Reported EPS number (actual J.P. Morgan figures)									
	End point	Least sqs.	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987
2-yr. CAGR:	18.85%	18.85%	7.63	6.42								
3-yr. CAGR:	12.58%	12.58%	7.63	6.42	6.02							
4-yr. CAGR:	-3.46%	-2.49%	7.63	6.42	6.02	8.48						
5-yr. CAGR:	7.75%	3.24%	7.63	6.42	6.02	8.48	5.66					
6-yr. CAGR:	6.27%	4.54%	7.63	6.42	6.02	8.48	5.66	5.63				
7-yr. CAGR:	11.41%	8.44%	7.63	6.42	6.02	8.48	5.66	5.63	3.99			
8-yr. CAGR:	NM	NM	7.63	6.42	6.02	8.48	5.66	5.63	3.99	(7.04)		
9-yr. CAGR:	4.46%	NM	7.63	6.42	6.02	8.48	5.66	5.63	3.99	(7.04)	5.38	
10-yr. CAGR:	39.15%	NM	7.63	6.42	6.02	8.48	5.66	5.63	3.99	(7.04)	5.38	0.39

How to calculate CAGRs using Excel

	End Point formula	Excel formula – Least squares formula
2-yr. CAGR:	$=((7.63/6.42)-1)$	$=EXP((2*(LN(6.42)*1+LN(7.63)*2)-((1+2)*(LN(6.42)+LN(7.63))))/(2*(1^2+2^2)-(1+2)^2))-1$
3-yr. CAGR:	$=((7.63/6.02)^(1/2)-1)$	$=EXP((3*(LN(6.02)*1+LN(6.42)*2+LN(7.63)*3)-((1+2+3)*(LN(6.02)+LN(6.42)+LN(7.63))))/(3*(1^2+2^2+3^2)-(1+2+3)^2))-1$
4-yr. CAGR:	$=((7.63/8.48)^(1/3)-1)$	$=EXP((4*(LN(8.48)*1+LN(6.02)*2+LN(6.42)*3+LN(7.63)*4)-((1+2+3+4)*(LN(8.48)+LN(6.02)+LN(6.42)+LN(7.63))))/(4*(1^2+2^2+3^2+4^2)-(1+2+3+4)^2))-1$
5-yr. CAGR:	$=((7.63/5.66)^(1/4)-1)$	$=EXP((5*(LN(5.66)*1+LN(8.48)*2+LN(6.02)*3+LN(6.42)*4+LN(7.63)*5)-((1+2+3+4+5)*(LN(5.66)+LN(8.48)+LN(6.02)+LN(6.42)+LN(7.63))))/(5*(1^2+2^2+3^2+4^2+5^2)-(1+2+3+4+5)^2))-1$
10-yr. CAGR:	$=((7.63/0.39)^(1/9)-1)$	$=EXP((10*(LN(0.39)*1+LN(5.38)*2+LN(-7.04)*3+LN(3.99)*4+LN(5.63)*5+LN(5.66)*6+LN(8.48)*7+LN(6.02)*8+LN(6.42)*9+LN(7.63)*10)-((55)*(LN(0.39)+LN(5.38)+LN(-7.04)+LN(3.99)+LN(5.63)+LN(5.66)+LN(8.48)+LN(6.02)+LN(6.42)+LN(7.63))))/(10*(385)-(55)^2))-1$

¹ For illustrative purposes only – the presence of a negative value will cause an error in the calculation

(6) Returns on equity and capital:

- ROE: numerator is sum of NI (excluding extraordinary items) and minority interest; this result divided by average stockholders' equity (including minority interest). Sum beginning and ending period equity accounts (not including preferred stock) and divide by two to get average stockholders equity
- ROC: Numerator is EBIT (excluding extraordinary items); this number divided by average book capitalization. Sum beginning and ending period equity accounts (including preferred stock) and divide by two to get average book capitalization

(7) S&P/Moody's ratings:

Call S&P at **212-208-1527** and Moody's at **212-553-0377**; ask for the current senior secured rating. Alternatively, library has reference books with recent ratings

Typical data problems

- Assume all database numbers are wrong
- Stock splits
- Two publicly traded classes of stock
- Adjusted market capitalization (firm value)
- Fully diluted shares outstanding (dilutive securities)
- Non-recurring items
- Industry specific ratios
- Calendarized EPS
- Include capital leases in long-term debt
- Effective vs. marginal tax rate
- Minority interest
- Pension and other obligations
- Always footnote your assumptions in detail and discuss with project team. A page of footnotes is not a crime, if it is informative

Summary of inputs and outputs

Exhibit: Inputs to the comparables

Item	Explanation and source
Latest indicated annual dividend	Last quarterly dividend paid times 4. Available on Bloomberg or latest 10K/Q
Common shares outstanding	Used for equity and firm valuations. On the front page of the latest 10K/Q near the bottom
Average shares outstanding	Used for EPS calculations. (10K/Q)
LT debt	LT debt plus <u>redeemable</u> pfd. stock plus minority interests (if any). Other types of pfd. stock are not considered LT debt. (10K/Q)
ST debt	Under current liabilities, "short-term borrowings" or "bank notes," plus "current maturities of LT debt," if any (10K/Q)
Book value	Common Shareholders' Equity (10K/Q)
Gross interest expense	Interest expense from income statement (10K/Q)
Net interest expense	Interest expense from income statement less interest income and less capitalized interest which is usually found in the PP&E footnote (10K/Q)
D, D & A	Depreciation, depletion, & amortization are on the cash flow statement (some 10Qs may not disclose)
EBIT	Earnings before gross interest expense and taxes but after minority interest and equity interest in subsidiaries
EBITDA	EBIT plus D, D & A
Operating cash flow	Net income plus D, D & A plus changes in deferred taxes plus other noncash charges. (From cash flow statement, but <u>before</u> working capital changes, which are discretionary)
EPS	Fully diluted, before extraordinary items. Watch for stock splits; if net income/shares outstanding differs from EPS by more than 10 percent, try to find any. Remember that some discrepancy is normal, as total shares outstanding does not usually equal fully diluted weighted average shares outstanding
Projected cash flow	Value Line or brokerage reports
Projected sales	Value Line or brokerage reports
Projected EPS	I/B/E/S or First Call

Exhibit: Outputs to the comparables

Item	Recipe, comments
Equity value	Stock price x common shares outstanding
Equity capitalization	Equity value + LT debt
Firm value	Equity value + LT debt + ST debt – cash (+ minority interest, if added back to EBIT and EBITDA)
Price/earnings	Stock price/EPS or equity value/net income (see EPS)
Price/cash flow	Stock price/operating cash flow per share
Dividend yield	Annual dividend/stock price
Price/book	Stock price/book value per share
percent payout	Annual dividend/EPS
Interest coverage	EBIT/gross interest expense
Firm value/EBIT ¹	
Firm value/EBITDA ¹	
Firm value/sales ¹	

¹ The idea is that since EBIT, EBITDA, and sales are not affected by the Company's choice of capital structure (as cash flow, earnings, EPS, and book value are) the appropriate multiples use total capital and not just equity capital

Comparable transactions analysis

Definition

This exhibit contains information about selected acquisition transactions in the same industry as the target company (or target segment of a company) under evaluation. The purpose is similar to that of the trading comparables statistics except that a sense of the **premium that is paid to gain control** of a target company (control premium) is found by looking at prior acquisitions. This is another way to assess the value of the company from a potential buyer's perspective.

Methodology

Information on comparable transactions can be ordered from the library by requesting an SDC search for a particular industry or SIC code. The standard time frame is five years, although you may request a longer or shorter time horizon depending on M&A activity in the particular industry. **NB: Always check information provided by an SDC run by ordering news articles on the transactions and, if applicable, reading 8Ks or 10K/Qs. In public deals, the acquiror and target may be required to file a proxy to get a shareholder vote.**

Explanation

1. **Date of announcement:** Public announcement date (not rumor date). From SDC output (check against news articles)
2. **Acquiror/target:** Indicate acquiring company and target company or subsidiary of target company with parent of subsidiary in parenthesis. From SDC output
3. **Consideration/transaction terms:** Indicate consideration paid (cash, notes, stock) and terms offered (percent acquired; exchange ratio, offer price per share, debt assumption, competitive or negotiated bidding, etc.). From SDC output and public documents
4. **Status:** Indicate if transaction is pending, closed or terminated (footnote reason for termination of transaction). From SDC output
5. **Equity purchase price:** Equity value paid = Offer price x Target shares (*cash transaction*); **Acquiror** issue price x Exchange ratio x Target shares (*stock transaction*). From 8K or proxy¹
6. **Aggregate purchase price:** Equity value paid + Target debt assumed² – Target cash

¹ Securities Data Company is **not** a reliable source for purchase price/value paid numbers

² In a highly seasonal business, short-term debt will tend to balloon during peak season. As a result, in some instances it may be appropriate to add average, instead of period end, short-term debt to compute the aggregate purchase price

7. **Premium over market:** Premium paid to get control of a target company. Equal to $((\text{offer price per target share (cash transaction)} \text{ or } \text{issue price per acquiror share times exchange ratio (stock transaction)}) \div (\text{the “unaffected” share price} - 1)) \times 100$

N.B.: “Unaffected” share price is target share price one week prior to announcement. In instances where a transaction has been rumored for some time, it may be appropriate to use a longer time frame to calculate the “unaffected” share price

8. **Transaction multiples**

- (a) Calculate LTM Revenue, EBITDA, EBIT, and net income using the latest financial statements prior to the announcement of the Transaction.
– See Trading Comparables if unclear on calculating LTM numbers
- (b) Calculate Book Value by taking Common Equity accounts from the annual report or 10K/Q immediately prior to the date of the transaction.
- (c) Divide Book value and LTM net income into the equity purchase price; divide LTM Revenues, EBITDA and EBIT into Aggregate purchase price. The results are the comparable transactions multiples.

9. **Estimated LTG rate:** Calculate estimated long-term growth rate by taking the latest median I/B/E/S LTG rate prior to announcement of transaction.
(Available on Intracenter, Insight or Populator)

10. **Description of Target’s business:** Summary of target’s business activities; from Bloomberg, S&P Tear Sheets, or Value Line

11. **Other transaction multiples**

(Check with senior team member to ascertain whether inclusion is appropriate)

- (a) P/E - price earnings ratio can be calculated by dividing the offer price per target share (*cash transaction*) or the issue price per acquiror share times the exchange ratio (*stock transaction*) by LTM EPS available prior to transaction date

NB: This is not the same multiple as dividing the Equity purchase price by LTM net income. Transaction P/E value are often compared to the P/E values of a comparable industry or composite group on the transaction date.

- (b) Price/Operating Cash Flow: Divide offer price per target share (*cash transaction*) or issue price per acquiror share times exchange ratio (*stock transaction*) by LTM OCF available prior to transaction date

Exhibit: Premiums and multiples paid on comparable transactions

Acquiror/ Target	Ann. Date	Consideration/ transaction terms	Status	% Vote acquire. (%)	Control ?	Agg. purch. price (\$MM)	Implied mkt. cap (\$MM)	Implied firm value (\$MM) (1)	Prem. over mkt. (%) (2)	Aggregate purchase price as a multiple of LTM:			Implied firm value as a multiple of LTM			Est. LTG Rate (%) (3)	Target Business Description
										LTM NI (x)	Book value (x)		Sales (x)	EBITDA (x)	EBIT (x)		
Ag-biotechnology – Mycogen transactions																	
Pioneer/Mycogen	9/18/95	Cash; private; 3MM primary shares @ \$10; also, \$21MM for R&D funding	Closed	13.4	No	30.0	257.3	196.9	(13.0)	NM	1.8	1.7	NM	NM	17.5	Biopesticides; crop protection Biopesticides; crop protection NM	
DowElanco/Mycogen	1/15/96	Privately negotiated purchase of secondary 9.5MM shares, from Lubrizol;	Closed	36.6	No	126.0	444.7	358.1	(6.9)	NM	2.3	2.9	NM	NM	18.0		
Mycogen/Lubrizol	1/15/96	Buyback of 19.46% stake in Mycogen Seeds from Lubrizol for 1.5MM primary shares; separately, Lubrizol converts preferred shares, into 1.8MM primary shares @ 17.398 (25% premium over average closing price during prior 60 days)				–	–	–	–	–	–	–	–	–	–		
Mycogen/United Agriseeds	1/15/96	Concurrent sale by (DowElanco to MYCO for 4.5MM shares. (14.8%) and \$26.4MM cash (DowElanco's MYCO stake raised to 46.1%)	Closed	100.0	Yes	98.4	98.4	98.4	–	–	–	–	–	–	–	Hybrid seed – corn soybean	
Implied MYCO valuation @ \$16 per share (last close pre issuance of 4.5MM shares. to DowElanco)																	
DowElanco/Mycogen	12/4/96	Negotiated purchase of 1MM shares. from Co. to thwart Monsanto overtures; DE stake over 50%	Closed	3.3	Yes	16.8	587.9	556.7	0.0	NM	3.4	3.5	NM	NM	20.0	Biopesticides; crop protection	
Ag-biotechnology – Calgene transactions																	
Monsanto/Calgene	6/28/95	30.2MM primary shares (49.9%) in ex. for \$30.0MM cash, oils & produce techn., Gargiolyo (tomato germ plasm); privately negotiated reorg. w/purchase acct.	Closed	49.9	No	144.2	299.8	268.0	(30.5)	NM	6.5	4.8	NM	NM	NA	Food, seed and oleochemical biotech.	
Monsanto/Calgene	7/31/96	Cash; 6.25MM primary shares @ 48.00 privately negotiated; MTC gains Board control with 54.6% voting block	Closed	4.7	Yes	50.0	573.1	620.5	80.3	NM	6.1	6.5	NM	NM	20.0	Food, seed and oleochemical biotech.	
Monsanto/Calgene	1/27/97	Two-step cash offer for last 45% stake; original offer of \$7.25 in Jan., 1997, privately negotiated final offer @ \$8.00	Pending	45.4	No	242.6	573.4	615.3	64.1	NM	7.2	4.0	NM	NM	20.0	Food, seed and oleochemical biotech	
Ag-biotechnology – other transactions																	
Bionova (ELM)/DNA Plant Tech.	1/29/96	Stock swap reverse merger – DNAP is surviving entity s. ELM as 70% owner and Bionova mgmt. \$39MM deal based on last DNAP close of \$7 per share	Closed	70.0	Yes	38.6	63.4	67.9	(25.3)	NM	NM	4.5	NM	NM	50.0	Plant cellular genetics	
AgEvo (Hoechst/Schering) Plant Genetic Systems	8/23/96	Competitive bidding serious interest from Novartis, DuPont, Bayer and Zeneca	Closed	70.0	Yes	550.0	785.7	NA	NA	NA	NA	>100	NA	NA	NA	Plant biotechnology	
								Ag-biotechnology – all transactions									
								Mean:		10.1	NA	4.3	4.1	NA	NA	23.4	
								Median:		(3.5)	NA	3.4	4.3	NA	NA	20.0	

¹ Equal to amount paid per share times the pro forma number of shares outstanding (including options)² Equal to implied market capitalization plus total pro forma net debt³ Unaffected price defined as closing price one week prior to transaction announcement⁴ Median estimated CAGR of EPS over the five years post announcement date, based on the latest I/B/E/S report as of transaction announcement

Discounted Cash Flow (“DCF”)

Definition:

The Discounted Cash Flow (“DCF”) valuation represents the net present value (“NPV”) of projected cash flows to all providers of capital using the weighted average cost of capital (“WACC”) as the discount rate to reflect the time value of money and the riskiness of the cash flows. A DCF analysis yields the value of a business, theoretically regardless of capitalization structure. (Capitalization impacts value only through its impact on the WACC.)

Methodology:

The DCF method entails estimating the annual cash flows, the terminal value and the WACC to arrive at an NPV of operating assets. The NPV is then adjusted to reflect other assets (e.g., cash) and liabilities (e.g., debt) and compared with a proposed initial investment or current market value.

NB: The resulting values should always be expressed as a range as opposed to a single point estimate.

Pros:

- DCF is not tied to historical accounting values (i.e., it is forward-looking)
- Recognizes the time value of money and the riskiness of the projected cash flows
- Allows expected operating strategy to be incorporated into model

Pitfalls:

- DCF results are more sensitive to cash flows (and terminal values) than to small changes in the WACC. Cash flow assumptions and calculations must be reasonable
- Inflation forecasts: discount current dollar cash flows at nominal discount rates, constant dollar cash flows at real discount rates
- DCF valuations are based on assumptions: several scenarios about the future are usually necessary to bound the target’s value

Free Cash Flow (“FCF”)

Definition:

- Cash flow generated by all assets employed in business (tangible and intangible)
- Unlevered (“free from financing considerations”)
- Accrual to all providers of capital

Calculation:

$$\begin{aligned}
 & \text{Net income (excluding extraordinary items and before preferred dividends,} \\
 & \text{equity income and minority interest)} \\
 + & \text{ After-tax interest expense (net interest expense (1- average tax rate))}^{1\ 2} \\
 + & \text{ Depreciation \& amortization \& deferred taxes \& other non-cash charges} \\
 - & \text{ Capital expenditures} \\
 - & \text{ Difference between beginning and ending Net Working Investment (“NWI”)} \\
 = & \text{ Free cash flow (unlevered)}
 \end{aligned}$$

NB: contrasted with cash flow from operations (net income available to common shareholders + depreciation & amortization + deferred taxes + non-cash charges)

Methodology of building a DCF:

Many of the items that drive the value of a DCF can be forecasted in a variety of ways. The following suggestions are offered as helpful hints and reminders when constructing a DCF. Always consult and discuss with other team members. Always use common sense.

- **Start with the income statement**
 - Project growth in sales (always on a nominal basis); base assumptions on:
 - a) historical analysis
 - b) research reports
 - c) client forecasts (if available)
 - d) industry trends
 - e) Percent growth per year (or a detailed build-up by region, business, etc.) is usually the input for modeling purposes
 - **Aggregate sales derived from this input**

¹ It is most technically correct to use the average rate when computing for a company because the taxes relate to the entire firm’s actual operations, not incremental dollars. For simplicity, the marginal rate is often substituted; this rate is then adjusted to reflect NOLs, foreign tax credits, etc.

² Interest expense should be net of interest income (i.e., gross interest expense minus interest income) because interest income is not a function of operations (excluding financial institutions)

- Assess the following by percent of aggregate sales from the same sources as above:
 - f) Cost of Goods Sold (“COGS”)
 - g) Selling, General & Administrative Expenses (“SG&A”)
- Compute interest expense as a percent of average Long-Term Debt (projected on balance sheet)
- Estimate future marginal tax rate, NOT effective or average rate, based on:
 - h) historical rate
 - i) current tax regulations (including state and local)

NB: Projected taxes always based on marginal rate. Watch for foreign taxes, NOLs and other special situations

Exhibit: Calculating free cash flows and the effect of leverage

Differentiating between operating cash flow, cash flow available for debt service and free cash flow

	Levered	Unlevered
<u>Balance sheet</u>		
Debt	\$1,000	\$0
<u>Income statement</u>		
Sales	\$500	\$500
– Expenses	250	250
EBIT	250	250
– Interest expense (@ 10%)	100	–
EBT	150	250
– Taxes (@ 40%)	60	100
Net income	\$90	\$150
<u>Cash flow statement</u>		
Net income	\$90	\$150
+ Non-cash items (e.g., deprec.)	50	50
Operating cash flow	140	200
– Capex, other uses of cash	30	30
Cash flow available for debt service	110	170
+ After-tax interest	60	–
Free cash flow (unlevered)	\$170	\$170

Exhibit: Calculating net working investment

Income statement	1995	1996	
Sales	\$5,000	\$5,500	
Cost of goods sold	2,500	2,700	
Non-cash working capital accounts	End of 1995	End of 1996	Change
<u>Current assets</u>			
Accounts receivable	\$411	\$452	+41
<i>Days receivable</i>	<i>30 days</i>	<i>30 days</i>	
Inventories	21	22	+1
<i>Inventory turnover</i>	<i>3x</i>	<i>3x</i>	
Other current assets	50	55	+5
<i>percent of sales</i>	<i>1%</i>	<i>1%</i>	
Total current assets	\$482	\$529	+47
<u>Current liabilities</u>			
Accounts payable	\$137	\$148	+11
<i>Days payable</i>	<i>20 days</i>	<i>20 days</i>	
Other current liabilities	250	275	+25
<i>% of sales</i>	<i>5%</i>	<i>5%</i>	
Total current liabilities	\$387	\$423	+36
Net working investment (NWI)	\$95	\$106	+11
Change in NWI		+\$11	

Note: Do not use cash flow statement to determine historical changes in net working investment (also known as working capital), as the cash flow statement assumes leverage

- **Project selected balance sheet items**

- NWI: Project only non-interest bearing current assets and liabilities (no STD, cash or marketable securities)
 - j) Estimate as a percent of sales based on historical investments in working capital, or
 - k) If possible to squeeze cash from NWI by operating more efficiently (i.e., drop NWI as a percent of sales), forecast investment in NWI as a percent of change in sales, or
 - l) Estimate by Days Payable, Days Receivable and Turnover
 - Days Payable = $365/(\text{COGS}/\text{Payables})$
 - Days Receivable = $365/(\text{Sales}/\text{Receivables})$
 - Turnover = $\text{COGS}/\text{Inventory}$
 - Capital expenditures

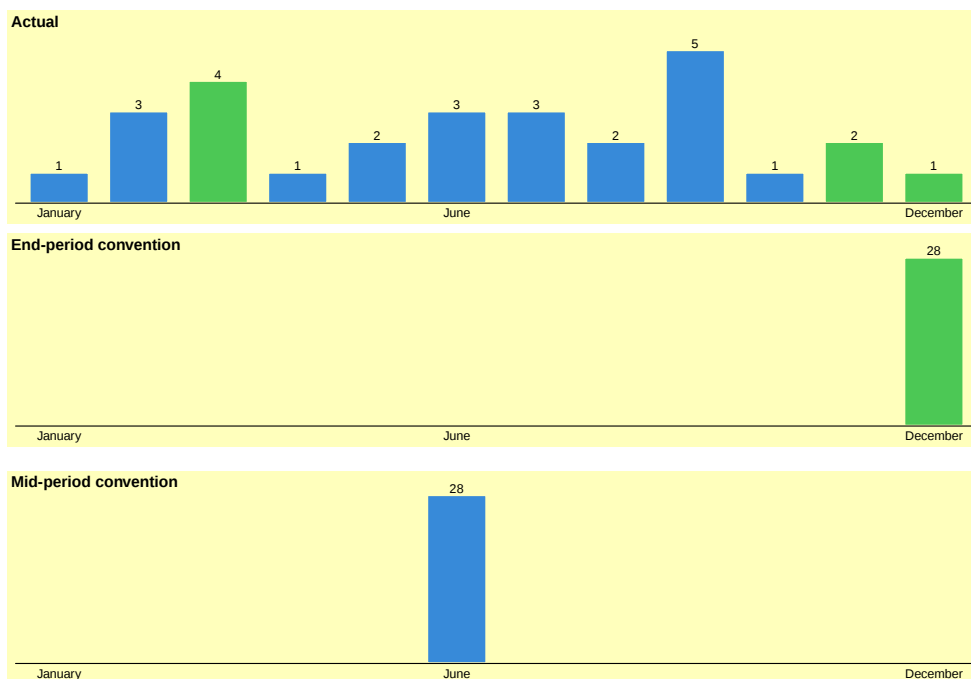
- m) Estimate is a percent of sales based on historical levels of capital expenditures, adjusted for any announced expenditure programs
- n) Forecast depreciation as some percent of Net P&E or by dividing Beginning Net P&E by Average Asset Life where, Average Asset Life equals Net P&E divided by Historical Annual Depreciation. For simplicity, depreciation is sometimes projected as a percent of sales

NB: Exclude property from Net P&E (not depreciable)

- **Discounted cash flow matrices**

- Examine sensitivity of present value yielded from DCF analysis to:
 - o) Discount rate (WACC)
 - p) Terminal multiple or terminal perpetual growth rate
- Break down the PV into the following components to examine sensitivities:
 - q) FCF in period 1
 - r) Present value of FCF periods 2 through 5–10
 - s) Present value of terminal value
 - t) Addition of other assets not accounted for by free cash flows (e.g., cash, options proceeds)
 - u) Subtraction of liabilities not accounted for by free cash flows (e.g., STD, LTD)
- Midyear convention – (see exhibits)
- To obtain per share equity value, divide the PV by the **diluted** number of shares (i.e., include options and convertible securities which would be advantageous to exercise)

Exhibit: Mid-period versus end-period convention illustrated



End-period convention

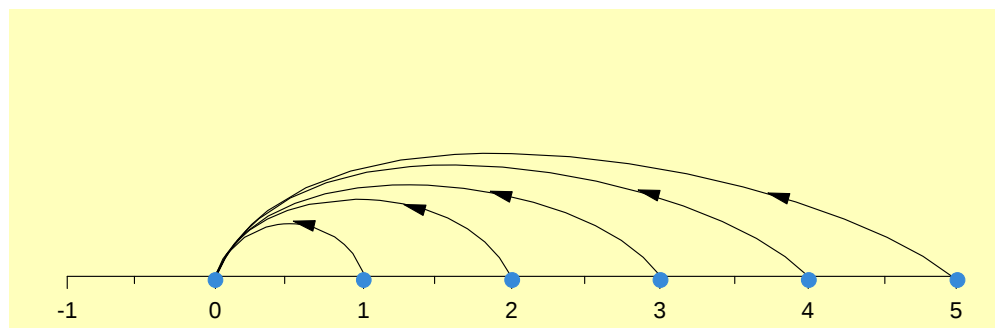
- Assumes that cash flows occur at the end of the period
- The NPV function brings all of the cash flows back to time zero
- Mathematically, the NPV function can be stated as:

$$\left[@ = \text{NPV} (r, CF_1 \dots CF_5) \right] = \left[\frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + \frac{CF_4}{(1+r)^4} + \frac{CF_5}{(1+r)^5} \right]$$

Lotus/Excel

HP-12C

Exhibit: DCF assuming end-period convention



Mid-period convention (J.P. Morgan standard)

- Assumes that cash flows occur at the middle of the period (not necessarily mid-year). This assumption usually better approximates the time the cash is received.
NB: 12/31 fiscal year end, FCFs occur 6/30; 8/31 fiscal year end, FCFs occur 2/28.
- Assuming mid-period cash flows effectively moves each cash flow closer by half a period versus end-period convention. Therefore, without changing the NPV calculation, assuming mid-period cash flows moves the present value back in time by half a period.
- To move the present value up to time zero, grow the NPV by half a period
(In Lotus/Excel: $@/= NPV(r, CF1...CF5) * (1+r)^{(6/12)}$)

Exhibit: DCF assuming mid-period convention

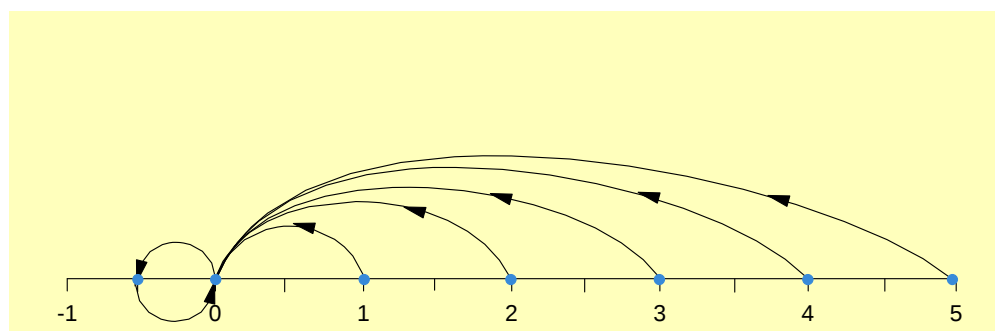
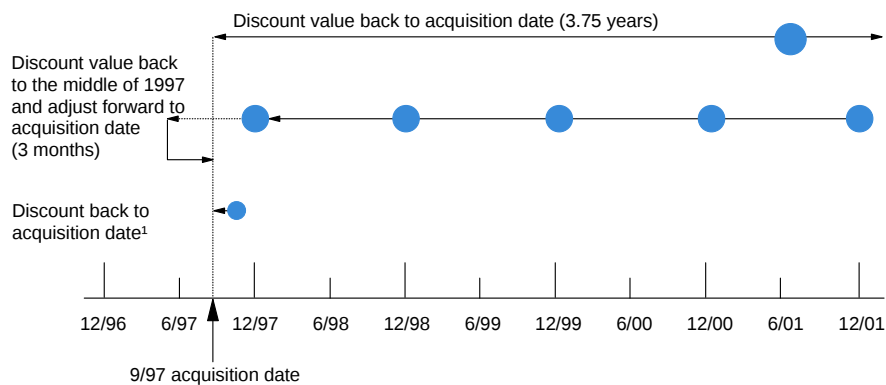


Exhibit: Discounting mid-period cash flows

- Acquisition occurs September 30, 1997
- Assume 12/31 fiscal year end
- Assume all cash flows occur mid-period

- Period 1 cash flow
- Period 2–5 cash flows
- Terminal value
(perpetual growth method)



¹ Assuming uniform cash flow over 1997, the period 1 cash flow would be 25 percent of the 1997 cash flow. Discount that value 1/2 of the three-month period (1.5 months)

Terminal value: two methods of forecasting¹

In a typical discounted cash flow valuation, the terminal value usually accounts for over 50 percent of the total value. For this reason, it's critical that the terminal value be estimated with great care in every discounted cash flow valuation. Important points to consider include:

- Treat the terminal value as a separate valuation.
 - The terminal value is not always a mechanical extrapolation of the last projected year. Make sure that all long-term relationships are evaluated and necessary changes made.
 - Review whether the underlying risk of the entity has changed materially over the course of the forecast. In selected cases, this may necessitate altering the discount rate.
 - Determine whether a cash flow growth in perpetuity valuation formula is the appropriate technique. In some instances a trading multiple approach is more accurate.
- Check key ratios to determine the reasonableness of the terminal value.
 - Estimate the return on investment and reinvestment rate implied by terminal value forecast.
 - If using cash flow or sales growth in perpetuity, check the multiples implied by this terminal value.
 - If using sales/cash flow exit multiples, check the growth in perpetuity implied by this terminal value
 - Review the proportion of the total value represented by the terminal value.
- In evaluating the terminal value, the availability of high-return investments and the amount that can be reinvested drive growth and value.

Perpetual growth in free cash flow

- Implicit assumption: the target will be owned forever, continue its historic business activities and generate unlevered free cash flow which grows at a steady rate

¹ Note: for more detailed discussion on terminal value, please read Rick Escherich's December 1994 memo titled "Terminal Value Guidelines"

- Formula for perpetual growth¹:

$$\text{Terminal value in period } n = \frac{\text{FCF}_n * (1 + g)}{(r - g)}$$

where,

FCF_n = free cash flow in period “n”

g = perpetual growth rate

r = weighted average cost of capital

which means,

- 1) $\text{FCF}_n * (1 + g)$ – means you have converted the period “n” FCF into the period “n+1” FCF, (i.e., $\text{FCF}_n + 1$)
- 2) $/(r - g)$ – means you have taken the present value of a perpetuity of FCFs starting at period “n+1” and growing at “g”
- 3) **FCF_n means FCF during period “n” is received at time “n–0.5” (due to mid-period conversion)**

Terminal exit multiple

- Implicit assumption: the target will be sold at the end of period “n”
- Use a multiple of any relevant figure: book value, earnings, cash flow from operations, EBIT, EBITDA, revenues, etc.

NB: Exit multiples usually based on transaction comparables and historical premiums paid for control, not trading comparables

- Since the firm is sold at the end of the projected FCFs, the terminal multiple value is at time “n,” not “n–0.5”
- As multiple is usually taken of EBIT, EBITDA, etc. in year n, the terminal value multiple should be thought of as a trailing 12 months multiple
- Terminal value = statistic (revenue, EBIT, etc.). Multiple (includes control premium)

NB: terminal value should be an ASSET value; not all multiples produce an asset value. To convert an equity value to an asset value, add value of total net debt and preferred outstanding in year “n.”

¹ This formula (which is **not** that used by SPEED) does hold true if net working capital requirements differs, or if the capital expenditures/depreciation relationship changes, during the terminal period as compared to the forecast period. In these cases, it is correct to forecast a perpetual sales growth rate and derive therefrom a perpetual cash flow which can be appropriately discounted.

Equity value multiples	Asset value multiples
Book value	EBIT ¹
NI	EBITDA ¹
OCF	Revenues

Litmus test: Has interest been subtracted before arriving at this figure?

If yes: the multiple given is an EQUITY value

If no: the multiple is an ASSET value

Imputing a perpetual growth rate or a terminal multiple

- Never use a perpetual growth rate or terminal value multiple without checking its validity against other corresponding terminal multiples and/or growth rates
- **Remember using the mid-point convention will yield a perpetual growth terminal value figure at period “n–0.5” and a terminal multiple figure from period “n”**
- **To equate growth rates and multiples, grow the terminal value generated by the perpetual growth method by half a period (i.e., multiply the terminal value by $(1+r)^{0.5}$); when converting from multiples to growth rates, divide by the same quantity**
- Equity multiple example

$$TV = \frac{FCF_n * (1+g) * (1+r)^{0.5}}{(r-g)} = PE_n * NI_n + D_n$$

where,

TV	=	terminal value
FCF _n	=	free cash flow in period “n”
g	=	perpetual growth of free cash flow
r	=	weighted average cost of capital (“WACC”)
PE _n	=	terminal PE multiple
NI _n	=	net income of period “n”
D _n	=	total debt of period “n” (including preferred stock)

¹ Note: these figures should never include interest income

- Solve for the implied terminal P/E ratio:

$$PE_n = \frac{FCF_n(1+g)^*(1+r)^{0.5} - D_n*(r-g)}{NI_n*(r-g)}$$

- Solve for the implied perpetual growth rate:

$$g = \frac{(PE_n * NI_n + D_n) * r - FCF_n * (1+r)^{0.5}}{(PE_n * NI_n + D_n) + FCF_n + (1+r)^{0.5}}$$

- Asset multiple example – with an asset multiple, the formula is the same as with an equity multiple, but total debt = zero ($D_n = 0$)

$$TV = \frac{FCF_n * (1+g)^*(1+r)^{0.5}}{(r-g)} = A/EBIT_n * EBIT_n$$

where, $A/EBIT_n$ = asset value to EBIT multiple

- Solve for the implied A/EBIT_n ratio:

$$A/EBIT_n = \frac{FCF_n * (1+g)^*(1+r)^{0.5}}{EBIT_n * (r-g)}$$

- Solve for the implied perpetual growth rate:

$$g = \frac{(A/EBIT_n * EBIT_n) * r - FCF_n * (1+r)^{0.5}}{(A/EBIT_n * EBIT_n) + FCF_n + (1+r)^{0.5}}$$

- Comment: Always check key ratios to determine the reasonableness of the terminal value
 - Always check return on investment and the reinvestment rate
 - Always check implied multiples
 - Review the relative importance of the terminal value

Weighted average cost of capital (“WACC”)

- Firms have three major sources of capital:
 - Debt
 - Preferred equity
 - Common equity
- Raising capital from any one source affects the cost of all sources of capital
- Calculate the cost of debt:
 - Consult a debt capital markets person for a 10-year maturity rate, or
 - Debt rating and borrowing spread on a senior unsecured basis from Moody’s (212-553-0377) or S&P (212-208-1527)
- Only if preferred stock is to be part of the target **future** capital structure, calculate the cost of preferred equity:
 - Use current market yields, otherwise coupon
- Calculate the cost of common equity:
 - Use the Capital Asset Pricing Model (“CAPM”)
 - a) Cost of equity = risk-free rate + predicted beta (levered) * equity risk premium
 - b) Approximate the risk-free rate with the current yield on 30-year U.S. Treasury bonds, **less 1.25 percent (see R. Escherich analysis)**
 - c) Determine equity risk premium
 - **J.P. Morgan assumes 5.0 percent (see R. Escherich analysis)**
 - Ibbotson Associates calculates the equity risk premium as 8.57 percent arithmetic mean (6.75 percent geometric mean)¹. These estimates are frequently used by our competitors.
 - d) Obtain the predicted beta from Barra through J.P. Morgan website IB Today (look under Financial Data) or the Barra book (in the library) – this is a “Levered Beta” (i.e., it is calculated assuming current leverage ratios: total debt/market capitalization)

¹ See pages 37 and 72 in Ibbotson Associates, *SBBI 1997 Yearbook* for details
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If a company is permanently changing its capital structure, or if we are estimating the cost of equity based on a group of comparable companies that have different capital structure than our target, the cost of equity needs to reflect this. If not, go to point g.

- e) Unlever the predicted Beta as follows:

$$B_U = B_L * \frac{E}{(E + D * (1 - \tau))}$$

where,

B_L	=	Levered predicted Beta (from Barra)
B_U	=	Unlevered Beta
τ	=	0.26 (combined corporate & investor tax rate)
D	=	market value of total debt
E	=	market value of common equity

- f) Relever the unlevered Beta to reflect the appropriate target capital structure

$$B_L = (B_U) * \frac{(E + D * (1 - \tau))}{E}$$

NB: This formula assumes the beta of a company's debt is 0. It's also important to note that this formula provides only an approximation of the impact leverage has on the cost of equity. While we believe this formula develops the best proxy for the correct shift based on changes in capital structure, results should always be carefully reviewed and judgment applied.

- g) WACC formula:

$$WACC = K_e * (E / (D + E + Pfd)) + K_d * (1 - t) * (D / (D + E + Pfd)) + K_p * (Pfd / (D + E + Pfd))$$

K_e = Risk Free Rate + (Beta (levered) x Equity Risk Premium)

K_d = Estimated after-tax 10-year all-in cost of borrowing for a new issue (debt rating or interest expense/average debt)

t = marginal cash tax rate

K_p = estimated cost of preferred stock (same type as existing)

NB: The debt, equity, and preferred stock values used should represent the "target" capital structure. This is normally based on a target credit rating. Always use MARKET VALUE of common equity and preferred (if possible).

Exhibit: Weighted average cost of capital analysis assuming different target capital structures

Total debt/ market value	Preferred/ market value	Relevered beta	Cost of capital				
			Debt		Preferred equity	Equity	Weighted average (1)
			Pre-tax	After-tax			
0	0	1.00	7.0	4.2	0.0	10.7	10.7
10	0	1.08	7.4	4.4	0.0	11.1	10.4
20	0	1.19	7.8	4.7	0.0	11.6	10.2
30	0	1.32	8.2	4.9	0.0	12.3	10.1
40	0	1.49	8.6	5.2	0.0	13.2	10.0
Assumptions: ²			Other Formulas (not on previous page)				
Risk Free Rate	=	5.7 % on 3/17/97					
Market Risk Premium	=	5.0%					
Marginal Tax Rate (t)	=	40.0 %	Risk Free Rate	=	30-Yr Treasury - 1.25%		
tau	=	0.26	Market value	=	Equity + Debt + Preferred		

Notes:

- ¹ Based on after-tax cost of debt
- ² Current yield on a 30-year government bond (6.95%) as of 03/17/97 less 1.25% risk premium
-
-

Mechanics of discounting cash flows

- First period cash flow
 - Use the portion of the year during which the target will be owned. For instance, if transaction occurs 6/30 and fiscal year end is 12/31, only ½ the first year's cash flow will be received:
 $\frac{1}{2} * FCF_1$
 - Cash flow occurs mid-period. Hence cash flow will be received on 9/30/97. The cash flow will be discounted only one quarter of a period
 $(\frac{1}{2} * FCF_1)/(1+r)^{.25}$
- Cash flows in years 2 through 5-10
 - Use NPV function (Lotus, Excel, HP12C) to take the present value of a stream of cash flows
 - a) **Excel:** = NPV (r, FCF₂ ... FCF_n)
 - b) **Lotus:** @ NPV (r, FCF₂...FCF_n)

where,

r	=	WACC
FCF ₂	=	Second period cash flow
FCF _n	=	"n" period cash flow

c) HP12C

1. Press (f) (clear) FIN
2. Enter initial investment; press CHS and (g)CF₀. If no initial investment, press 0(g)CF₀
3. Key in next cash flow; press (g)CF_j
4. If amount entered in step (3) occurs more than once consecutively, key in the number of times that cash flow amount occurs consecutively, then press (g)N_j
5. Repeat steps (3) and (4) for each CF_j and N_j until all cash flows have been entered
6. Press (RCL)n to verify the number of cash flows that have been entered
7. Enter interest rate; press i
8. Press (f)NPV. The NPV will be displayed

NB: These equations yield the present value of cash flows from period two through period "n" at a point in time exactly one year before the second period cash flow is received. Additional discounting should be made to reflect the correct acquisition valuation date

- Terminal value (or the present value of a single future cash flow)

d) Lotus/Excel formula:

$$\frac{FCF_n}{(1+r)^n}$$

where,

FCF_n = cash flow “n” periods away

r = WACC

n = number of periods in the future until cash flow comes

e) HP12C

1. Press f(clear)FIN
2. Key in the future value; press CHS and FV
3. Key in the interest or compounding rate per period; press i
4. Key in the number of periods; press n
5. Press PV. The PV will be displayed

NB: Remember that any FCF received at time “n” is really being received at time “n–0.5” due to mid-period convention

Investing in, acquiring or merging with another company

The discussion below is intended only as a general summary of certain fundamental accounting tax rules. If you have questions, you should call the Accounting Group (Marie Stewart at 5-0896, Esther Mills at 5-1286 or Julie Roth at 5-1359). You should also call to get access to the Lotus Notes database which provides summaries of J.P. Morgan standard accounting practices and FASB opinions.

Overview

Relevance of merger accounting to M&A

- Accounting treatment of a transaction plays a major role in evaluating and structuring a deal
- Post-merger reported earnings affect stock price and shareholder value
- Credit impact can affect ability of company to support acquisition debt, pay dividends and finance future expansions

Determinants and methods of M&A accounting

- Acquiror's accounting treatment is a function of:
 - Percent of target purchased
 - Form of consideration
 - Legal structure
 - Financial history
- Consolidation generally required if 50 percent or more of target voting stock is owned

M&A accounting goals

- Maximize EPS
- Minimize EPS dilution
 - Acquirors are frequently willing to accept some dilution in early years
 - Optimize credit rating
- Maximize financial performance ratios

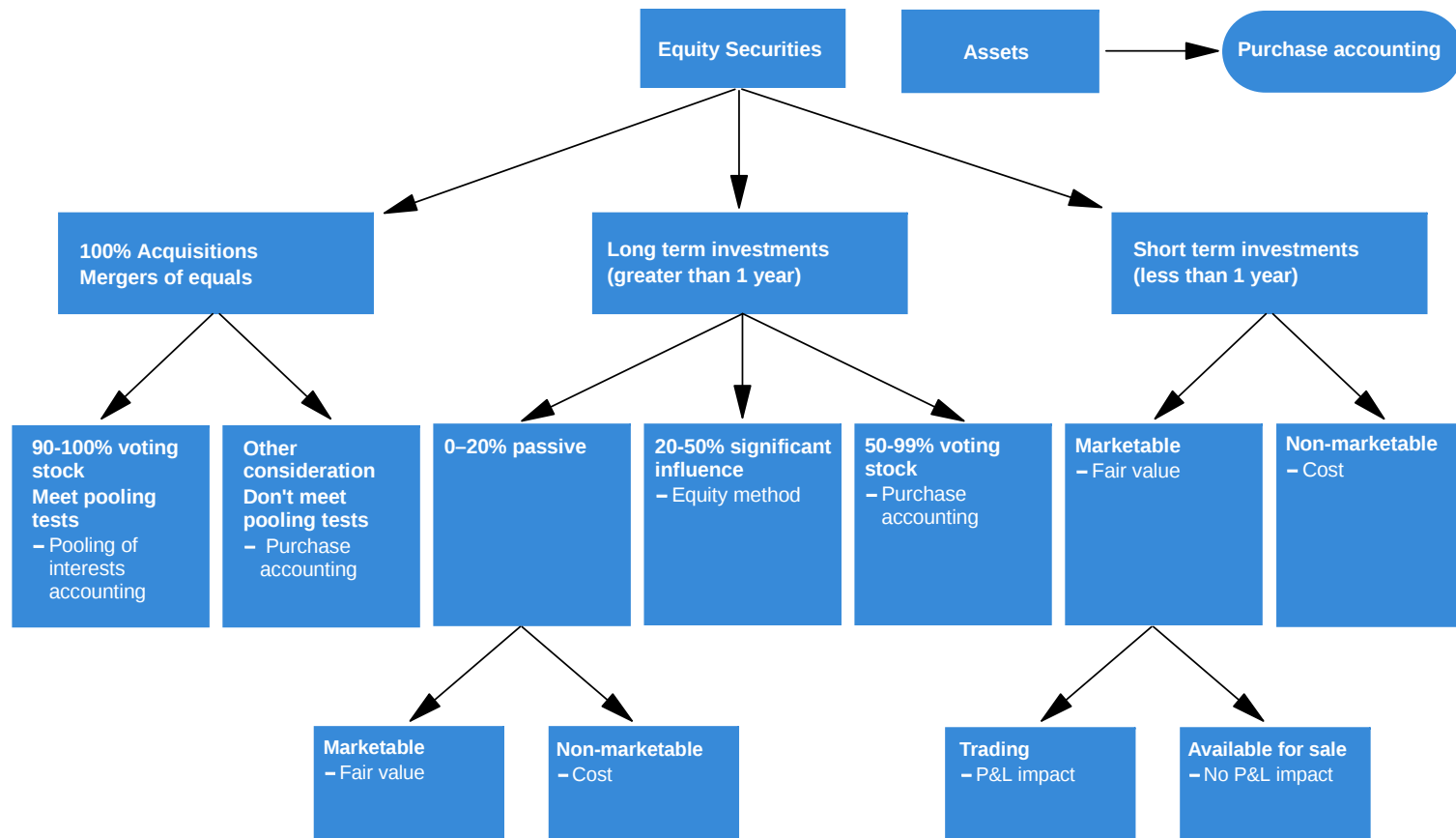
*Accounting for acquisitions***Exhibit: Decision tree for accounting for investments in voting equity securities and assets**

Exhibit: Effects of various methods of accounting for long-term investments in equity securities

Method of accounting	Balance sheet	Income statement	Statement of changes in cash flow
Cost method (generally when ownership is less than 20% in a non-marketable - e.g., restricted - security)	Investment account is shown at acquisition cost. No impact on shareholders' equity from unrealized gains/losses	Dividends received from target are shown as revenue of investor. Changes in value (from original cost) are reported in income only as realized	Revenues from dividends produce cash. Sales of investments generate cash shown in their entirety as a nonoperating source. The related gain (or loss) reported on sale does not produce (or use) funds from operations: a subtraction for gain from (or addition for loss to) net income is required to derive operating cash flow
Fair value (less than 20% ownership in a marketable security) ¹	Investment account is shown at fair value. Changes in fair value are reported as a separate component of shareholders' equity until realized. These amounts are tax-effected (35% corporate capital gains, no DRD) by recording a deferred tax liability (or asset) NB: It is most technically correct to determine fair value based on the bid price, though the closing price is used for simplicity	Dividends received from target are shown as revenue of investor. Gains and losses (from original cost) are reported in income only as realized by sale. Losses are also realized upon recognition of permanent impairment	Revenues from dividends produce cash. Sale of investment generates cash shown in its entirety as a nonoperating source. The related gain (or loss) increases (or decreases) income but does not produce (or use) funds from operations. The amount of gain (loss) is subtracted from (added to) income in deriving cash from operations. Also, when a loss is realized through recognition of permanent impairment, there is an addback to net income in deriving cash from operations
Equity method (generally when voting ownership percentage is at least 20 percent but not more than 50 percent)	Investment account is shown at cost plus share of target's net income less share of target's dividends since acquisition	Equity in target's net income is shown as investment income in period during which target earns income ^{2,3}	Equity in target's undistributed earnings is subtracted from net income to derive cash provided by operations of investor. Cash from operations is thus increased only by the amount of dividends received
Consolidation method (generally when voting ownership percentage is greater than 50 percent)	Investment account is eliminated and replaced with individual assets and liabilities of subsidiary. Minority interest in subsidiary's net assets is shown between liabilities and equity	Individual revenues and expenses of subsidiary are combined with those of parent. Minority interest in subsidiary's net income is shown as a subtraction	Individual sources and uses of cash of subsidiary are combined with those of parent. Minority interest in subsidiary net income is added back to investor's net income to obtain cash provided by operations

¹ See FASB 115 for details and implementation

² If the cost of the investment exceeds the investor's share of the book value of the underlying net assets, then the excess must be amortized over a period not exceeding 40 years. This amortization reduces the investment account and increases amortization expense. This expense does not use cash and must, therefore, be added to net income in deriving cash from operations and free cash flow

³ Recognition of target net income using the equity method will result in a deferred tax liability

Cost method

Theory:

For passive investments in a non-marketable, (e.g. restricted) equity security below 20 percent of voting stock as a long-term investment

Implementation:

- Record investment on balance sheet at cost
 - Maintain on books at cost for entire investment period
- Recognize income only upon receipt of dividends
 - For U.S. owners of U.S. targets, 70 percent of dividend income is excluded from taxable income¹

Fair value method

Theory:

For passive investments in marketable equity securities below 20 percent of voting stock; percentage of voting stock owned generally does not provide significant influence thereby rendering the equity method inappropriate

Implementation:

- Record investment on balance sheet at cost
 - Maintain on books at fair value for active investment period, recognizing changes in value in the shareholders equity account (these changes also generate deferred taxes)
- Recognize income only upon receipt of dividends
 - For U.S. owners of U.S. targets, 70 percent DRD¹
- When fair value declines below cost, it should be determined if the decline in fair value is temporary or permanent. If permanent:
 - Cost basis is written down to fair value as the new cost basis
 - Amount of writedown is included in current earnings (i.e., a realized loss)
 - New cost basis is not changed for subsequent recoveries in fair value; subsequent increases (and decreases) in fair value included in shareholders equity account

¹ Under current tax law, U.S. corporations are entitled to a deduction of 70 percent of dividends received from taxable domestic corporations where ownership is less than 20 percent. The deduction rises to 80 percent where ownership is at least 20 percent, and to 100 percent of dividends received from members of an affiliated group (generally 80 percent or more common ownership)

Exhibit: Purchase accounting – fair value method*For acquisitions of less than 20 percent of marketable voting stock*

Morgan purchases a 15 percent interest in the common stock of NYSE-listed Pierpont for \$10,000. Morgan records this purchase on its books by reducing the cash account by \$10,000 and recognizing a \$10,000 investment in Pierpont.

Pierpont subsequently rises 20% in market value and thereafter declares and pays a \$2,000 dividend on its common stock. Morgan records these actions by: *a*) increasing its investment account by \$2,000 ($\$10,000 * (1+20\%)$), increasing its deferred tax liabilities by \$700 ($\$2,000 * 35\%$) and increasing its common equity by \$1,300 (unrealized gain – deferred taxes); and *b*) increasing its cash balance by \$300 ($15\% * \$2,000$) and recognizing \$300 in investment income, **of which 70% is excluded from income tax.**

Morgan balance sheet	Before purchase	After purchase	After MV increase	After dividend
Cash	\$20,000	\$10,000	\$10,000	\$10,300
Investments (available for sale)	0	<u>\$10,000</u>	<u>\$12,000</u>	<u>\$12,000</u>
Total assets	\$20,000	\$20,000	\$22,000	\$22,300
Liabilities ¹	\$10,000	\$10,000	\$10,700	\$10,732
Common equity	<u>\$10,000</u>	<u>\$10,000</u>	<u>\$11,300</u>	<u>\$11,566</u>
Total liab. and equity	\$20,000	\$20,000	\$22,000	\$22,300

Income statement	
Investment income	\$300
Tax liability ¹	(32)
Net income	\$266

¹ Tax liability assumes corporate capital gains tax and marginal income tax rates of 35%: tax liability = $300 * (1-.70) * 0.35 = 32$

Note: For simplicity, recognize acquiror income upon receipt of dividends

Equity method**Theory:**

1. For acquisitions of more than 20 percent but less than 50 percent of the voting stock as a long-term investment (i.e., significant influence but no voting control of target)
2. The transaction reflects an arm's length negotiated price for the target, and the acquiror's assets should reflect the acquiror's proportionate equity interest in the target
3. Consolidation (book and tax) is not necessary because acquiror does not own greater than 50% of the voting common stock of the target

Implementation:

1. Acquiror's original investment is recorded at cost
2. As the target earns income, the acquiror increases its investment in the target (balance sheet), as well as its own net income (P&L) by the acquiror's proportionate interest in the target's net income
3. "Shadow goodwill": any excess of the purchase price over the acquiror's interest in the target's "net book value" must be amortized over a period not to exceed 40 years. This amortization life should be based on a combination of the remaining life of the target's PP&E and the life of goodwill. This amortization, which may or may not be tax deductible, reduces earnings from the investment. **Purchase accounting adjustments must be "calculated" in order to determine appropriate amount of goodwill. (See #6 and #7 below)** No adjustments are made to target's financial statements
4. **Any cash dividends received by acquiror from the target has no direct effect on income (i.e., impacts income only via taxes), but reduces the value of the acquiror's investment in the target**
5. Acquiror pays cash taxes only on dividends received from target (80 percent DRD)¹; this results in a deferred tax liability calculated as follows:
 - Percentage ownership of target's net income less 20 percent times target dividends received; this amount multiplied by acquiror's marginal tax rateThe net effect is an increase in the acquiror's interest income and tax provision, as well as an increase in deferred tax liabilities.
6. Step-up (i.e., increasing tax basis and creating a deferred tax asset) of target assets only under following scenarios:
 - Large NOLs on target books
 - Target is an S-Corporation
 - Acquiror/target can benefit from certain grandfather provisions
7. Goodwill calculation (purchase accounting):
 - Revalue target balance sheet: realize fair market value of assets/liabilities
 - Eliminate existing goodwill on target's books
 - Eliminate deferred taxes on target's books

¹ Under current tax law, U.S. corporations are entitled to a deduction of 70 percent of dividends received from taxable domestic corporations where ownership is less than 20 percent. The deduction rises to 80 percent where ownership is at least 20 percent, and to 100 percent of dividends received from members of an affiliated group ("tax consolidation," generally 80 percent or more common ownership)

- If acquiror steps up tax basis, then the revalued balance sheet equals FMV
- If no step-up of tax basis, the revalued assets/liabilities equal the FMV **minus** the forgone tax shield
- Net Asset Value = Revalued Assets – Revalued Liabilities
- New Goodwill = Purchase Price for Equity – Net Asset Value

8. Other acquiror income statement adjustments:

- If part of the consideration is cash, adjust for lost opportunity cost of cash, and extra interest charges from net debt issued
- Change in depreciation from revalued NPP&E – the after-tax change will be the same under both step-up and no-step-up scenarios

New goodwill amortization: maximum life is 40 years (see SEC recommendations exhibit below for other appropriate periods) add back any amortization of old goodwill

- Amortize debt discount/premium from revalued LTD over the average debt life
 - Discount decreases income; premium increases income
 - Intuition: amortization of debt discount/premium effectively adjusts interest expense to current market rates
- If part of the consideration is preferred stock, preferred dividends rise.
- Deferred tax liability (as explained above)

Exhibit: SEC recommendations regarding amortization periods

	Period of amortization
Goodwill – Financial institutions (see FAS 72)	25 years
Bank – no core deposit study, goodwill and core deposit combined (accelerated method)	15
Core deposits of financial institutions	5–10
Goodwill – software company	7
Software (in general)	5
Software industry: intangible assets, other than goodwill	10 or less
High technology satellite intangibles and related equipment	7
Mail order catalog customer lists	5 or less
Intangible assets relating to high technology in general	10 or less
Bankruptcy (reorganization value in excess of identifiable assets)	20 or less
Health care	10 – 20

Exhibit: Purchase accounting – equity method

For acquisitions between 20 percent and 50 percent of voting stock

Morgan purchases a 40 percent interest in the common stock of Pierpont for \$100,000. Morgan records this purchase on its books by reducing the cash account by \$100,000 and recognizing a \$100,000 investment in Pierpont.

Pierpont's total shareholders' equity on the acquisition date was \$210,000. Morgan has thus paid $(\$100,000 - 40 \text{ percent} * \$210,000) = \$16,000$ in excess of book value (assuming no write-ups) which must be amortized over a period not to exceed 40 years. This "shadow goodwill" is not recorded on the balance sheet.

Pierpont subsequently earns net income of \$30,000 and pays a \$10,000 dividend on its common stock. Morgan records this action by increasing its investment account by \$8,000 $(40 \text{ percent} * (\$30,000 - \$10,000))$, current liabilities by \$320 $((40 * \$10,000) * 20 \text{ percent DRD} * 40 \text{ percent tax rate})$ and deferred taxes by \$640 $((\$30,000 - \$10,000) * 40 \text{ percent} * .20 \text{ percent DRD} * 40 \text{ percent tax rate})$. Morgan's income statement and cash flow accounts affected by this investment are altered by the same numbers.

Morgan balance sheet	Before purchase	After purchase	After dividend
Cash	\$500,000	\$400,000	\$400,000
Investments	0	<u>\$100,000</u>	<u>\$108,000</u>
Total assets	\$500,000	\$500,000	\$508,000
Current liabilities	\$200,000	\$200,000	\$200,320
Deferred taxes	0	0	640
Common equity	<u>\$300,000</u>	<u>\$300,000</u>	<u>\$307,040</u>
Total liab. & equity	\$500,000	\$500,000	\$508,000
Income statement			
EBIT	\$100,000	\$100,000	\$100,000
Goodwill amortization	0	\$400	\$400
Investment income	0	0	\$7,680
Tax liability ¹	\$40,000	\$40,000	\$40,640
– Income tax expense	–\$40,000	–\$40,000	–\$40,000
– Deferred income taxes ²	–0	–0	–\$640
Net income	\$60,000	\$59,600	\$66,640

¹ Tax liability assumes marginal income tax rate of 40 percent. Goodwill, amortize over 40 years, is not tax-deductible

² Assumes dividend received deduction of 80 percent

Purchase method

Framework for usage:

- For acquisitions of more than 50% of voting stock as a long-term investment (or evidence of influence on target)
- Ownership positions of 50% or more are generally consolidated. Minority interest represents the portion of the target which is not owned by the acquiror
- Transaction value reflects an arm's length negotiated price for the target, and the assets and liabilities should reflect that valuation

Overview of methodology:

- Adjust target balance sheet accounts to Fair Market Value ("FMV")
 - LIFO Reserve
 - Write-up (vs. step-up) of undervalued assets
 - Deferred taxes – calculate new balances
 - Old goodwill eliminated
 - Existing debt adjusted to FMV
 - Underfunded pension liability
- Calculate "Net Asset Value" (FMV of assets less FMV of liabilities)
- Calculate new goodwill (purchase price less "Net Asset Value")
 - Restate target balance sheet, incorporating:
 - All accounts at FMV
 - New goodwill figure
 - Financing necessary to complete the transaction
- Add restated target balance sheet to acquiror's balance sheet to generate pro forma, combined acquiror's balance sheet
- New asset values create new depreciation, amortization, interest and other charges which create adjustments to the income statement. Project combined future earnings by incorporating all necessary adjustments:
 - Goodwill amortization (maximum life is 40 years)
 - Cost of financing
 - Opportunity cost of cash (if applicable)
 - Incremental interest from new borrowings
 - New shares issued
 - Change in after-tax depreciation
 - Other adjustments (e.g., amortization of debt discount or premium)

NB: Always start with the target

Selected exercises and examples

A. Purchase price: Morgan acquires Pierpont in a 100% cash transaction at a 40% premium over market. Pierpont currently trades at \$50.00/share and has 1 million common shares outstanding. Pierpont also has 225,000 options outstanding, 2/3 of which have an exercise price of \$50.00 and 1/3 of which have an exercise price of \$75.00.

- Aggregate purchase price per share: $\$70.00: (\$50.00 * 1.4)$
- Aggregate purchase price: $\$73.0\text{MM}: (\$70.00 * 1\text{MM}) + ((\$70 - \$50) * (2/3 * .225\text{MM}))$

NB: ignore options that are out of the money

Assuming Morgan (which trades at \$100/share) changes the transaction terms to 50% cash/50% common stock

- Aggregate purchase price per share: \$70.00
- Aggregate purchase price: \$73.0MM

NB: transaction amounts do not necessarily change with transaction terms

B. LIFO reserve adjustment: Pierpont, which uses the LIFO valuation method for inventory, has inventory of \$200,000 and a LIFO reserve of \$50,000. Its tax rate is 38%. To adjust inventory to FMV:

- LIFO reserve is the difference between the LIFO and FIFO inventory amounts, or the excess of current cost over the carrying amounts of inventory
- Two alternative inventory valuation methodologies
 - LIFO: Last in, first out
 - FIFO: First in, first out
- Companies using the LIFO method will tend to
 - Overstate COGS
 - Understate inventory
 - Understate net income (which minimizes taxes)
- Purchase accounting adjustments aim to write the assets and liabilities up to FMV; therefore LIFO inventory account must be adjusted to FMV
- **Inventory write-up by after-tax amount of LIFO Reserve for balance sheet (write up gross amount and book a deferred tax liability)**
- Therefore, Pierpont's adjusted inventory equals
 $\$231,000$, because $(\$200,000 + \$50,000 * (1-38\%))$

C. Change in depreciation (before and after tax): Pierpont's original cost of Plant and Equipment is \$200,000; accumulated depreciation of these assets equals \$80,000. The tax basis of the net P&E is \$75,000. Pierpont uses the straight line method over 10 years to account for book depreciation; the assets have six years of life remaining. Pierpont's tax rate is 38%. Morgan estimates that an acquisition of Pierpont necessitates a write-up of NP&E by 50% from current book value.

Regardless of step-up of assets (i.e., tax basis), for book purposes, PP&E is always written up as follows:

	<u>Existing</u>	<u>Pro forma</u>	<u>Change</u>
Pre-tax depreciation	\$20,000	\$30,000	\$10,000
Post-tax depreciation	12,400	18,600	6,200

- Net P&E equals \$120,000 (\$200,000–\$80,000)
- Pre-tax depreciation charge equals \$20,000 (\$200,000/10)
- Post-tax depreciation charge equals \$12,400 (\$20,000 * (1–38%))
- New net P&E equals \$180,000 ((\$200,000 - \$80,000) * 1.5)
- No step-up/or no step-up: pre-tax depreciation equals \$30,000 (\$180,000/6)

D. Deferred taxes: Pierpont's original equipment cost is \$300,000. Net of depreciation on a book basis, it is \$200,000 and net of tax, it is \$100,000. The FMV of the equipment is \$275,000. Pierpont's tax rate is 40%.

- In a no step-up transaction, per FASB 109, revalued assets are recorded at FMV and a deferred tax account is created equal in amount to the tax shield foregone.
- In a step-up transaction, the assets are recorded at FMV for both book and tax purposes and thus no offsetting deferred tax accounts are created. Because the recapture tax was paid on the step-up, the full amount of the assets is depreciated for tax purposes.

	<u>Book basis</u>	<u>Tax basis</u>	<u>FMV</u>	<u>Deferred taxes</u>	<u>Adjusted book basis</u>
Step-up	\$200	\$275	\$275	\$0	\$275
No step-up	200	100	275	70	275

E. Estimating tax basis and depreciable lives: Pierpont's selected balance sheet and income statement items are listed below. Its tax rate is 40%. From this data, it is possible to compute the current BV of depreciable assets and their remaining lives as well as the tax basis of these assets. (Always check income tax footnotes as a source.)

Selected Pierpont balance sheet items

Gross PP&E	\$10,000.0
<i>Accumulated depreciation</i>	<i>(5,000.0)</i>
Deferred taxes	500.0
Original cost of land	1,500.0

Selected Pierpont income statement items

Depreciation	\$350.0
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- Current BV of depreciable assets: subtract original cost of land, as land is not depreciable. $((10,000 - 5,000) - 1,500) = 3,500$
- Remaining life of depreciable assets: divide current BV of depreciable assets by annual depreciation expense. $(3,500/350) = 10$ years
- Accumulated tax depreciation: add to accumulated book depreciation the deferred tax liability divided by the marginal tax rate
 $(5,000 + (500/40\%)) = 6,250$
- Tax basis of depreciable assets: subtract from gross depreciable assets (not land) the accumulated tax depreciation. $((10,000 - 1,500) - 6,250) = 2,250$

Exhibit: Purchase accounting

Balance sheets	Prior to merger		Adjust P. to FMV	Comment	P as adjusted	Purchase price and GW adjustment	Combined M + P
	Morgan	Pierpont					
Assets:							
Current assets	\$1,000	\$500	+500	Revalue inventories; adj. for options proceeds	\$1,000	(100)	\$1,900
Net plant & equipment	2,000	1,000	+1,000	FMV	2,000		4,000
Goodwill	100	500	(500)	Elim. old GW	0	+150	250
Total assets	<u>\$3,100</u>	<u>\$2,000</u>			<u>\$3,000</u>		<u>\$6,150</u>
Liabilities and shareholders' equity							
Current liabilities	\$500	\$250			\$250		\$750
Long-term debt & MI	500	1,000	(100)	Revalue to curr. rate	900	+1,900	3,300
Deferred taxes	100	150	(150)	Elim. D/T	0		100
Total liabilities	<u>\$1,100</u>	<u>\$1,400</u>	(250)		<u>\$1,150</u>		<u>\$4,150</u>
Shareholders' equity	<u>\$2,000</u>	<u>\$600</u>	+1,250	Balancing adj.	<u>\$1,850</u>	(1,850)	<u>\$2,000</u>
Total liabilities and shareholders' equity	<u>\$3,100</u>	<u>\$2,000</u>			<u>\$3,000</u>		<u>\$6,150</u>

Income statements	Prior to merger		Purchase accounting adjustments	Comment	Combine d M + P
	M	P			
Revenues and interest income	\$1,500	\$750	(0.5)	Interest on \$10 cash (5%)	\$2,250
COGs	500	250	25	Depreciation increase	775
SG&A	500	200	(12.5); 3.75	Elim. prior GW amort; New GW amort.(40 yrs.)	691
Interest expense	10	5	3.6; 190	Debt revaluation; Int. on \$1,900 debt (10%)	209
Income before taxes	490	295			575
Income taxes	196	118			230
Net income	<u>294</u>	<u>177</u>			<u>345</u>
E.P.S.	\$2.94	\$1.77		Pro forma E.P.S.	\$3.45
Divs. per share	\$1.18	\$0.28		Pro forma divs. per share	\$1.18
# shares outstanding	100	100		Pro forma # shares outstanding	100
Market assumptions:					
Stock price per share	\$29	\$14		Pro forma stock price per share (constant)	\$29
P/E ratio	10x	8x		Pro forma P/E ratio	9x
Total market value	\$2,940	\$1,416		Pro forma total market value	\$2,940
Dividend yield	4%	2%		Pro forma dividend yield	4%

Transaction assumptions:

- Morgan acquires Pierpont
- Total transaction size is \$2,000, which Morgan raises by issuing \$1,900 in long-term debt and using \$10 in excess cash plus options proceeds of \$90
- Step-up tax basis, no recapture liability, no material effect of option issuances

Pooling method

Theory:

1. Accounts for a fusion of interests and risks of two shareholder groups
2. Each shareholder group plans to retain an ongoing interest in the combined enterprise

Implementation:

1. Add the assets together
2. Add the liabilities together
3. Eliminate intercompany transactions
4. Do not create any write-ups, writedowns, etc.
There are no revaluations in a pooling. As a result, no goodwill created.
5. Add the retained earnings together, as if the companies had always been together
6. Create any minority interest if applicable
7. Create new common stock issued to do the deal at the par value of the stock
8. Plug APIC to make the balance sheet balance
9. Restate financial statements retroactively for the last three prior years
10. Recalculate EPS

Collars in a pooling transaction – example:

Pierpont agrees to acquire Morgan in a pooling of interests. Pierpont was trading at \$30.00/share when the deal was struck with an exchange ratio of 2.0 shares per Morgan share. However, the merger agreement allows for an adjustment in the exchange ratio between the two companies: the exchange ratio slides as the price of Pierpont stock rises to \$35.00 or falls to \$25.00 and the exchange ratio stays constant after either extreme is reached. (Pierpont has 10 million shares outstanding; Morgan has 5 million shares outstanding)

Pierpont stock price	Exchange ratio	Value received per Morgan share
\$20.00	2.400	\$48.00
22.50	2.400	54.00
25.00	2.400	60.00
27.50	2.182	60.00
30.00	2.000	60.00
32.50	1.846	60.00
35.00	1.714	60.00
37.50	1.714	64.29
40.00	1.714	68.56

NB: Within the collar range, the value received is preserved; outside the collar, the exchange ratio is fixed – value received floats with acquiror's stock.

Exhibit: The 12 requirements for a pooling of interest

1. Each of the combining companies must be autonomous and must not have been a subsidiary or division of another corporation during the two-year period prior to the initiation of the combination plan. However, this does not exclude companies that were newly incorporated within the preceding two years, unless they were successors to part or all of a company which was not autonomous.
 2. At the dates the plan of combination is initiated and consummated, none of the combining companies can hold as intercorporate investments more than ten percent of the outstanding voting common stock of any combining company, unless the shares held were exchanged for shares that are issued to effect the combination plan. In other words, each of the combining companies must be independent of the other combining companies.
 3. The combination must be effected by a single transaction, or in accordance with a specific plan within one year after the plan is initiated.
 4. The surviving (or resultant parent) corporation must issue only common stock with rights identical to those of the majority of its outstanding voting common stock, in exchange for “substantially all” of the voting common stock of the other (combining) companies outstanding at the date of the plan of combination is consummated. Opinion No. 16 specifies a detailed set of procedures for determining whether the requirement is satisfied that “substantially all” of the voting common stock of a combining company must be exchanged (between the dates the plan of combination is initiated and consummated) for the voting common stock issued by the surviving or parent (issuing) corporation.
 5. Each of the combining companies must maintain substantially the same voting common stock interest; that is, none of the companies may change those interests by exchanges, retirements, or distributions to stockholders in contemplation of effecting the combination.
 6. The combining companies may reacquire shares of voting common stock only for purposes other than business combinations, and no company may require more than a normal number of shares after the date the plan of combination is initiated.
 7. The ratio of the interest of an individual common stockholder to those of other common stockholders in a combining company must remain the same as a result of the exchange of stock to effect the combination.
 8. The voting rights of the common stock interests in the resultant combined corporation must be exercisable by the stockholders; no mechanisms such as a voting trust can be used to deprive or restrict the common shareholders from exercising their voting rights.
 9. The combination must be resolved at the date the plan is consummated, with no pending provision of the plan relating to the issue of securities or other consideration. As a consequence, the combined corporation cannot agree to contingent issuances of additional shares or other consideration to the former stockholders of a combining company.
 10. The combined corporation must not agree directly or indirectly to retire or reacquire all or part of the common stock issued to effect the combination.
 11. The combined corporation must not enter into other financial arrangements for the benefit of the former stockholder of a combining company, such as a guarantee of loans secured by stock issued in the combination.
 12. The combined corporation must not intend to dispose of a significant part of the assets of the combining companies within two years after the combination, except to eliminate duplicate facilities or excess capacity and those assets that would have been disposed of the ordinary course of business of the separate company.
-

Exhibit: Accretion/dilution analysis – pro forma net income reconciliation

(\$MM, except per share data)

	Projected				
	1997	1998	1999	2000	2001
Stand-alone EPS					
Acquiror EPS	From I/B/E/S, research reports or company				
Target EPS	From I/B/E/S, research reports or company				
Pro forma net income					
Acquiror net income	Acquiror EPS * by <u>basic</u> shares outstanding				
Target net income	Target EPS * by <u>basic</u> shares outstanding				
Cost of capital					
Cost of debt (a/t)	New debt interest expense: purchase accounting, (((target existing long-term debt * write-up factor) / (maximum of 1 or target average debt life)) * (1 - tax rate)) + (debt refinanced times old interest rate) - (new debt * new debt interest rate * (1 - tax rate)); pooling accounting, zero				
Cost if cash (a/t)	Forgone interest: cash used in transaction * opportunity cost of cash (usually T-bill rate) * (1 - tax rate)				
Cost of preferred	New preferred stock * new preferred rate * (1 - tax rate <u>only</u> if TECONS)				
Change in common dividend	(Acquiror DPS - <u>restated</u> target DPS (calculation: current target DPS / exchange ratio)) * new acquiror shares issued net of repurchases due to option proceeds (calculation: option proceeds / acquiror stock price) * cost of debt * (1 - tax rate); (May also be calculated: ((acquiror DPS * net acquiror shares issued) - (target DPS * target fully diluted shares)) * cost of debt * (1 - tax rate)); borrowing to fund dividend increase should accrue each year, thus 1998 equals 1997 * 2, 1999 equals 1997 * 3, etc.				
Accounting impact					
New goodwill amortization	Not pooling accounting: new goodwill (calculation: equity purchase price + option proceeds - net asset value - write-off) / goodwill amortization period * (1 - tax rate <u>only</u> if GW is tax-deductible)				
Old goodwill amortization	Add back old target GW amortization: target old goodwill amortization expense				
Change in depreciation (a/t)	If target depreciation exists and write up occurs: (target net PP&E * write-up factor) / (target net PP&E / target L12M depreciation expense) * (1 - tax rate)				
Synergies (a/t)	Estimated synergies per year * (1 - tax rate)				
Pro forma net income	Sum of acquiror net income , target net income , cost of capital , accounting impact and synergies				
Pro forma EPS	PF net income / PF shares out.: PF shares calculated as follows: (acquiror common equity as percentage of total purchase price * fully diluted target shares * exchange ratio) - (option proceeds / acquiror stock price) + existing outstanding acquiror shares				
% accretion (dilution)	Expressed as a percentage, pro forma EPS compared to acquiror stand-alone EPS				
Other pro forma L12M calculations:					
Sales:	target sales plus acquiror sales				
EBIT:	acquiror EBIT + target EBIT; + zero, if pooling accounting; - ((new target PP&E / (old target PP&E / old target depreciation expense)) + old target depreciation expense) + (old target goodwill expense - new goodwill expense) + estimated pre-tax synergies per year, if purchase accounting				
Depreciation:	acquiror depreciation + target depreciation + pre-tax change in target depreciation due to write-up (calculation: (old target PP&E * write-up factor) / (old target PP&E / old target depreciation expense))				
Goodwill amortization:	new goodwill divided by GW amortization period				
Interest expense:	target interest expense + acquiror interest expense + after-tax cost of debt (above) + change in common dividend (above)				
Interest income:	target interest income + acquiror interest income - after-tax cost of cash (above)				
Long-term debt:	acquiror existing LT debt + target existing LT debt + new debt - debt refinanced				
Common equity:	acquiror existing common equity; if pooling accounting, + target existing common equity - new debt - new preferred; if purchase accounting, + acquiror common equity paid - write-off				

Exhibit: Quantitative assessments of divestiture alternatives

\$ millions

	Sale of assets	100% IPO	Partial IPO with ¹	
			Pro rata spin-off	Split-off
Pretax trading value	\$500	\$500	\$500	\$500
Plus: value for step-up	50	0	0	0
Pretax market value	\$550	\$500	\$500	\$500
Less: taxes ²	126	108	0	0
Additional trading discount to M&A value (0%)	0	0	0	0
IPO discount (10%)	0	50	3	3
Newco creation cost	0	5	5	5
Underwriting spread (5%)	0	25	3	3
Premium required to effect exchange (10%)	0	0	0	50 ³
After-tax value for distribution	\$424	\$312	\$489	\$439

¹ Assumes a partial IPO of 19% of Newco's equity (primary shares)² Assumes tax basis of assets of \$200MM, and a tax rate of 36% for parent³ Assumed an exchange premium which may be necessary to entice Parent's shareholders to exchange a minimum of 80% of Parent shares for Newco shares**Other accounting methods for business combinations**

- Roll-up accounting (before IPOs)
- Push-down accounting
- Leveraged pooling
- Recapitalizations
- Consolidation of entities under common control

NB: These areas of accounting are highly technical. Consult with team members regarding implementation.

M&A tax issues and considerations

The discussion below is intended only as a general summary of certain fundamental tax rules. Many important details have been omitted in the interests of brevity and clarity. If you have a question which is not explicitly addressed by this summary, you should call our Tax Advisory Group (Ben Lopata at 5-2310 or Allen Friedman at 6-7806).

Unless otherwise indicated, the discussion assumes that the target and the buyer are US corporations and that the seller is a U.S. corporation, citizen or resident.

I. Terminology

In order to understand the tax issues in M&A, it is necessary to understand three terms:

A. TAX BASIS is the carrying cost that an asset has on the tax balance sheet of a business. Although it is computed using the same general methodology as is used to compute carrying cost for financial statement balance sheet purposes – original acquisition cost less accumulated depreciation or amortization – it will often differ (sometimes dramatically) from the financial statement number.

B. OUTSIDE BASIS is the tax basis that a shareholder has in the stock of the corporation.

C. INSIDE BASIS is the tax basis that a corporation has in its assets. Obviously the lower the tax basis, the more gain a corporation will have (or the lower the loss it will have) on a sale of its assets and the smaller the depreciation or amortization deductions the corporation will have each year if it retains the asset. It is important to note that while a purchaser of a corporation's stock may have an outside basis equal to the price it paid for the shares, the inside basis that the target corporation has in its assets will often not change even if purchase accounting is used for financial statement purposes.

Example. Target, a publicly traded corporation has a tax basis in its assets (inside basis) of \$0. Acquiror buys all the stock of Target for \$100. Acquiror has a tax basis in the stock of Target (outside basis) of \$100 but the inside basis (as described in more detail below) remains \$0. Thus, if Acquiror causes Target to sell 1/3 of its assets for \$33, that sale will generate \$33 of taxable income, even though it will likely generate no book income.

II. The five key tax questions to answer in most M&A transactions

There are five key tax questions to answer in most M&A transactions: (1) Will the buyer inherit the seller's inside basis or will the inside basis be adjusted to reflect the purchase price paid by the buyer? (2) Will the seller recognize taxable gain or be able to defer its gain? (3) If the seller recognizes gain, how is that gain calculated? (4) Is there anything about the target's tax attributes or the nature of the target's business that needs to be taken into account in projecting the target's tax liability going forward? (5) Is there any other tax-efficient way to sell the business?

A. Will the buyer be able to step up the tax basis of the assets to reflect the purchase price?

More precisely, will the buyer inherit the seller's inside basis or, instead, will the inside basis be adjusted to reflect the purchase price paid by the buyer?

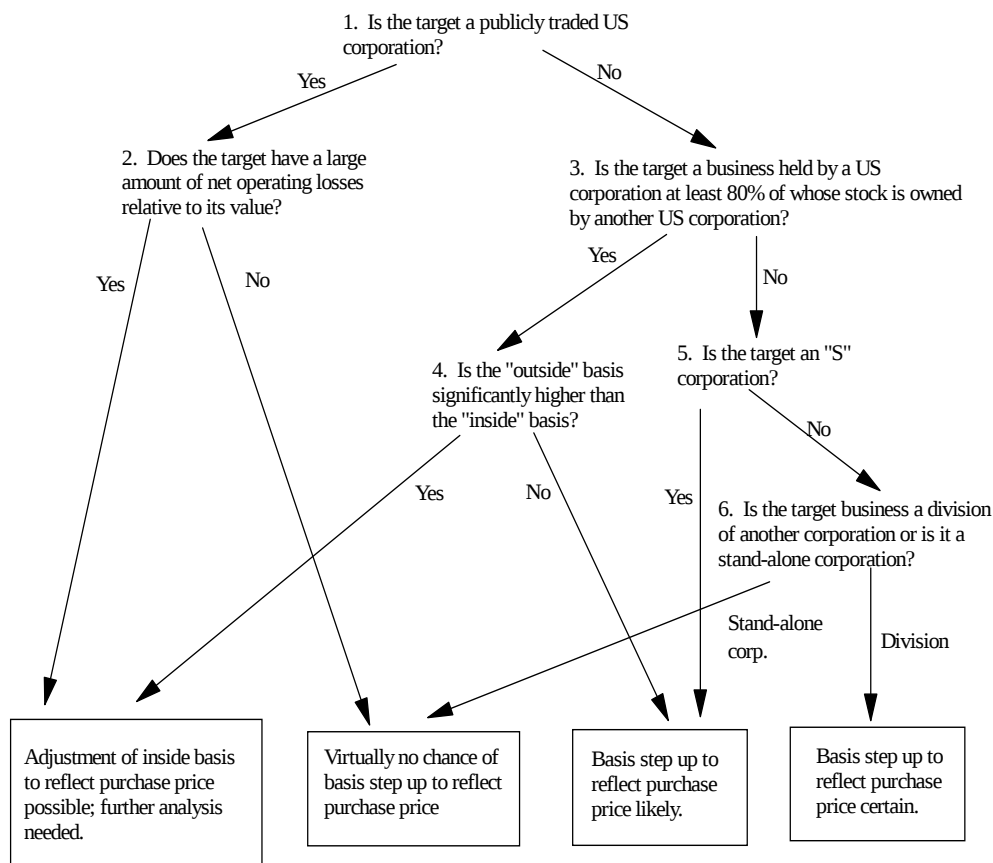
Inside basis will almost never be adjusted to reflect the purchase price paid by the buyer if the transaction is all or partly tax-free – that is, if the sellers defer all or some of their gain (typically because all or a substantial portion of the consideration they receive consists of equity in the buyer (see question B below)). Even if the sellers defer none of their gain or loss (because, for example, the buyer pays all cash), the inside basis will generally not be adjusted to reflect the purchase price if the target is a US corporation and the buyer is acquiring all of the target's business. Principal exceptions: (1) if the seller is a US corporation which owns at least 80% of the stock of the target, in some cases the transaction will be structured so as to allow the buyer a basis step-up (*see the example in question C below for a more detailed discussion*); (2) if the target business is a division (as distinct from a subsidiary) of a larger corporation and the buyer is therefore acquiring assets instead of stock, the tax basis will necessarily be adjusted to reflect the purchase price paid by the buyer. ***See also the flowchart below.***

1. Why is an adjustment of the inside basis important? In the typical case, adjusting the inside basis to reflect the purchase price paid by the buyer will result in a substantial increase in the tax basis of the assets (relative to the tax basis that the assets had in the hands of the seller); this, in turn, will result in a substantial increase in the depreciation or amortization available to the buyer (relative to that available to the seller) and a consequent reduction in the buyer's future tax liability. It will also allow the buyer to resell a portion of the target's assets without incurring a significant tax liability. Conversely, *not* getting a basis step up will typically mean that the buyer's future tax liability will be that much higher. **The lack of basis step-up will typically have the effect of increasing the target corporation's effective tax rate** as a percentage of its financial statement income (relative to what it was prior to the acquisition and relative to what it would be with a basis step-up). That is, in the typical case, (1) the target's assets will have appreciated above their pre-acquisition tax and book basis, (2)

assuming purchase accounting, the assets' basis will therefore be stepped up for financial statement purposes but not for tax purposes, (3) there will therefore be larger depreciation deductions for financial statement purposes than there will be for tax purposes. Furthermore, if the inside tax basis is lower than the financial statement basis, **post-acquisition dispositions of target's assets may generate a large tax liability** even though they generate only a small gain or a loss for financial statement purposes. *See the example in question C below for a more detailed discussion.*

2. *How and over what period of time are assets depreciated or, more precisely, assuming the target's assets are written up to reflect the purchase price, over what period of time are those assets to be depreciated or amortized?* As is the case for financial statement purposes, the target's assets are written off for tax purposes over their useful life. However, the "useful life" for tax purposes often bears little relationship to its "useful life" for financial statement purposes. One such noticeable difference exists in the case of intangibles. Virtually all intangibles – including goodwill, trademarks, patents, covenants not to compete, customer lists, contractual relationships – are deemed for tax purposes to have a useful life of fifteen years and are written off ratably over that period.

3. *Flowchart.* The flowchart below is designed to answer the following question: *Assuming that the seller(s) is willing to sell the target in a fully taxable transaction* (for example, a transaction in which the seller(s) will receive all cash instead of stock or instead of stock plus cash), is it likely that (i) the acquisition of target will or can be structured so as to allow the buyer to adjust the target's inside basis to reflect the purchase price paid by the buyer, thereby resulting in larger depreciation deductions going forward or (ii) on the contrary, will the buyer be forced to inherit the Subsidiary's (typically low) tax basis in its assets, thereby resulting in smaller depreciation deductions and a higher tax bill in the future?



B. Will a seller recognize taxable gain or will it be able to defer some or all of its gain?

1. *General rule.* As long as at least 40% of the consideration paid by the buyer to selling shareholders (considered as a group) consists of equity in the buyer (without regard to whether that equity is common or preferred)¹, it should generally be possible to structure the acquisition as a "tax-free reorganization."² The significance of qualifying as a tax-free reorganization is that (1) a seller who receives only equity is able to defer all of its gain until it sells the buyer's equity it received and (2) a seller who receives cash + equity should have to recognize its economic gain only to the extent of the cash received. If, however, *less than 40%*

¹ When we refer to "equity" (as vs. debt), we mean an instrument that is equity for tax purposes. Thus, "MIPS" or "TECONS" would not qualify as equity (since they are debt for tax purposes) but preferred stock will generally qualify. Note, however, that under the recently enacted 1997 tax bill, a common shareholder will generally not be able to receive preferred tax-free in exchange for common unless the preferred is either (i) fixed rate with a maturity of at least twenty years, or (ii) convertible into common.

² For a fuller discussion of the different types of tax-free reorganizations, see "IV. Diagrams of selected M&A transactions."

of the consideration consists of equity in the buyer, even those selling shareholders who receive only buyer equity will be taxed as if they received cash. It is sometimes possible to structure around this 40% limitation (which you may wish to do if, for example, an insider group owns less than 40% of the target's stock and wishes to defer its gain while the other shareholders want cash), albeit at some cost in friction and complexity. *Note that it is completely irrelevant for tax purposes whether the transaction is accounted for as a "pooling" or a "purchase."*

Example: X, the sole shareholder of Target, has a tax basis in Target stock of \$30 and the stock has a value of \$100. X sells Target to Y for \$55 in cash and \$45 in equity of Y. Result: Of X's economic gain of \$70 (\$100 - \$30), \$55 (the amount of the cash received) is taxed at the time of sale and \$15 (\$70 - \$55) is deferred. If X had received \$65 in cash and \$35 in Y equity, the full \$70 of X's gain would have been taxed (because \$35 is less than 40% of the total consideration of \$100).

2. Dispositions and hedges by seller of the buyer equity. Quite often a shareholder who sells Target stock in exchange for Acquiror stock in a tax-deferred sale will wish to hedge its exposure to the Acquiror stock and/or sell away some of its upside in the Acquiror stock. This is often done by acquiring a put from, entering into a collar¹ with, or selling a call to, a third party in which the shareholder takes a short position on the Acquiror stock. In addition, the shareholder may wish to borrow against its hedged position. Often the call or collar and the borrowing are combined in a single financial instrument referred to as an "exchangeable" (in the case of a call + a borrowing) or a "mandatory exchangeable" (in the case of a collar + a borrowing). The net effect of the hedge plus the borrowing can approximate the economic consequences of a sale of Target stock for cash while – if properly structured – allowing the shareholder to defer its tax liability. That is, it should be possible for a shareholder (or for all the shareholders collectively) to hedge out a substantial portion of its exposure and "monetize" (in the form of a borrowing) a substantial portion of the value of the Acquiror shares received without the shareholder's being deemed to have disposed of its shares for tax purposes.² J.P. Morgan's equity derivatives group can and often does discuss transactions of this sort with shareholders.

¹ A "collar" is a sale by a shareholder of a call (typically at a price somewhat above the current FMV of the Acquiror stock) and the simultaneous purchase by a shareholder of a put (often at a price equal to or slightly below the current FMV of the Acquiror stock).

² The text focuses only on the tax issues. There are any number of non-tax reasons which may limit a shareholder's ability to hedge its exposure or monetize its position. Note also that the text reflects the IRS's relaxation of the rules in this area in early 1998; prior to that time, if

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C. If a seller recognizes gain or loss, how will that gain or loss be calculated?

A seller's gain or loss is equal to the difference between (i) the cash or the value of the property received and (ii) the tax basis of what the seller is selling. If the seller is selling stock in a corporation, the relevant basis is the seller's basis in the stock; if the seller is selling the underlying assets, the relevant basis is the seller's basis in the assets.¹ The difference between stock basis (outside basis) and asset basis (inside basis) is especially important in fact pattern #4 outlined in the flowchart above, namely the case where a corporation owns at least 80% of the stock of the target but the outside basis is significantly higher than inside basis. You may recall that this was a fact pattern where we concluded that "adjustment of inside basis to reflect purchase price possible; further analysis needed." That "further analysis" is outlined below.

Example. Parent Corp. has a tax basis of \$100 in the stock of Subsidiary (that is, *outside basis* = \$100) and Parent owns 100% of Subsidiary; Subsidiary has a tax basis in its assets of \$0 (that is, *inside basis* = \$0). If Parent sells *stock* of Subsidiary for \$1,000, it will have a *tax liability* (assuming a 35% tax rate) of \$315 $((\$1,000 - \$100) \times 35\%)$ and net proceeds of \$685 $(\$1,000 - \$315)$. If Parent causes Subsidiary to sell its assets for \$1,000, it will have a *tax liability* of \$350 $((\$1,000 - \$0) \times 35\%)$ and net proceeds of \$650.² In other words, Parent will net \$35 $(\$685 - \$650)$ more on a stock sale than on an asset sale; not coincidentally, \$35 is 35% of the \$100 by which outside basis exceeds inside basis.

1. Buyer's perspective: Buyer will be able to step up the inside basis if – but only if – it buys Subsidiary's assets. Thus, if Buyer buys *stock* of Subsidiary for \$1,000, it will have an outside basis of \$1,000 but an *inside basis* of \$0 (that is, it will inherit the pre-sale basis Subsidiary had in its assets); if Buyer buys Subsidiary's *assets*, it will have an *inside basis* of \$1,000. It will therefore be able to take depreciation deductions for tax purposes which will reduce its US tax liability. Assume (1) that all of Subsidiary's assets consist of intangibles (which, as noted in question A above, are written off straight-line over fifteen years), (2) a 35% tax rate and (3) a 6% after-tax discount rate. With these assumptions, the after-tax NPV of the \$350 $(\$1,000 \times 35\%)$ of tax savings which Buyer will recognize over fifteen years is \$227. Viewed differently, by buying the stock of

a high percentage of the shareholders who received Acquiror shares hedged away most of their exposure to the shares shortly after the close of the transaction, even those shareholders who did *not* hedge away *any* of their exposure risked being taxed as if they had sold their Target stock for cash.

¹ If the inside basis or outside basis is *higher* than the FMV of the business being sold, see the discussion under "C.4. Loss on sale of the business" below.

² Because Parent owns 80% + of Subsidiary, no tax liability is imposed on a distribution by Subsidiary to Parent of the \$650 of sales proceeds. As noted in detail in the paragraphs below, it is the absence of this second level of tax that makes an asset sale feasible.

Subsidiary instead of Subsidiary's assets, Buyer gives up a \$1,000 basis step up and the \$227 of tax benefits that come with the step up. Since the Buyer's \$227 benefit from the step up is greater than the seller's (Parent's) \$35 cost of giving the step up, it will be worth it to Buyer to (1) buy assets and get the inside basis step-up and (2) increase the purchase price by the amount necessary to cover Parent's additional tax liability that results from a sale of assets.

The generalizable point is that (1) where a buyer is buying an 80% + owned subsidiary of another corporation ("parent"), (2) it will make sense for buyer to buy assets and get the inside basis write-up even if outside basis is greater than inside basis, as long as (3) the NPV benefit of the tax savings buyer will realize by getting the step up exceeds the up-front cost to parent of selling assets instead of stock. If #3 is true, it will be worth it for buyer to compensate parent for the additional cost of selling assets.

2. Why a write-up of inside basis is often available on an acquisition of a subsidiary but is generally not available for an acquisition of a publicly-traded target. It is probably worth pausing for a moment to explain why, as in the example just considered, it will often make sense to structure the acquisition of an 80% + subsidiary in a manner that affords an asset write-up to the buyer, but it will generally not make sense to structure the acquisition of other corporations, for example a parent corporation, in that manner. If Parent owns at least 80% of Subsidiary and Subsidiary sells its assets, the proceeds can be distributed to Parent on a tax-free basis. Accordingly, there is only a single level of tax on an asset sale and the only issue for Parent to consider is whether, taking into account the value of a step-up to the buyer (and the additional consideration that the buyer will presumably therefore pay), it will have more proceeds after tax from a sale of by Subsidiary of its assets or a sale by Parent of Subsidiary's stock.

If, however, the target is a parent corporation – that is, a corporation which is it not at least 80% owned by another corporation – there will be two levels of tax if the target business is acquired by having the corporation sell its assets and distribute the proceeds to its shareholders: a tax at the corporate level on the asset sale and a tax to its shareholders on the liquidating distribution. By contrast, had the shareholders simply sold their shares in the parent, there would have only been one level of tax. The added level of tax created by the asset sale will virtually always outweigh the benefit of a basis step-up to the buyer. This is because the seller will be taxed on the built-in gain in its assets immediately (assuming no unusual facts, such as large NOLs) while the buyer's benefit from getting a basis step-up equal to that built-in gain will only come over time, in the form of additional depreciation or amortization deductions. It is the fact that the tax on an

asset sale is an incremental one in the case of a sale of a parent (unlike the case of an 80% + subsidiary) that makes asset write-ups generally unavailable in this situation.¹

Example. X, an individual, is the sole shareholder of Parent. Parent has a tax basis of in its assets of \$100. Parent's business has a value to Buyer of \$1,000, not taking the benefit of an asset write-up into account. Thus, X can sell the stock of Parent to Buyer for \$1,000. X will presumably agree to structure the sale of Parent's business as an asset sale – and thereby give Buyer the benefit of an asset write-up – only if it will net (pre- any tax imposed on X) at least \$1,000 from such a sale. In order for X to net \$1,000, Buyer would have to pay X \$1,485, that is, \$1,000 plus a premium of \$485 above \$1,000 to ensure X that after taking the corporate level tax paid by Parent into account, it will receive \$1,000.² The maximum benefit Buyer will realize for the extra \$485 in purchase price paid *today*, however, is a tax savings of \$485 *over time*, that is, 35% of the \$1,385 in incremental asset tax basis it receives³. Given this disparity between the cost of the step-up to Buyer and the benefit Buyer gets from it, it will not make economic sense to structure that transaction as an asset sale.

3. *Section 338(h)(10).* It is possible for buyer to buy stock of an 80% + owned subsidiary and for buyer and seller/parent to jointly elect to treat the transaction as a sale by subsidiary of its assets, thereby resulting in a step-up of inside basis. This election is known as a “**section 338(h)(10) election**”. Since stock sales are easier to effect than asset sales, this election is fairly popular.

4. *Loss on sale of the business.* This section discusses the tax consequences of selling a business where the inside or outside basis exceeds the FMV of the business. In general, a shareholder that sells its shares in a “tax-free reorganization” (see B.1. above) is not allowed to recognize any loss (until it sells its shares). The discussion below discusses transactions where the form is *not* a tax-free reorganization (because, to take one obvious example, the seller receives all cash).

a. *Loss on stock.* If (1) the outside basis is higher than the FMV of the business being sold (in other words, if the tax basis in the stock is higher than

¹ There is, it should be noted, effectively also only one level of tax on the sale of the assets of an S Corp. It is for this reason that the sale of an S Corp will often take the form of an asset sale.

² $(\$1,485 - \$100 \text{ tax basis}) \times 35\% = \$485 \text{ of tax liability}$; $\$1,485 - \$485 \text{ of tax liability} = \$1,000$.

³ Note that \$1385 of basis step-up is – not coincidentally – also the amount of gain recognized by Parent on the asset sale.

the FMV of the underlying business), and (2) the sale is structured as a sale of stock then (3) the seller will generally recognize a *capital loss* on the disposition.

i. Capital loss vs. ordinary loss. The significance of the “capital” nature of the loss is that capital losses can only be used to offset capital gains; corporations and individuals typically recognize capital gains on dispositions of a business or on a disposition of stock (that is, not in the ordinary course of their business). Thus, if the seller sells stock at a loss and does not also generate a capital gain of at least equal size from other transactions, then all or a portion of the seller’s loss will not be tax-effected.

ii. Loss disallowance regulations. If the stock sold at a loss is stock of a consolidated subsidiary (which will likely be the case if the seller owned 80% or more of the subsidiary), some or all of the seller’s loss will likely be disallowed – that is, it will not even be considered a capital loss – under the (aptly named) “loss disallowance regulations.” The mechanics of determining the amount of the loss to be disallowed are beyond the scope of this discussion. In general, the information needed to make the determination is uniquely within the control of the seller (and not its financial adviser).

b. Loss on sale of assets. If (1) the *inside* basis is higher than the FMV of the business being sold (in other words, if the tax basis in the assets is higher than the FMV of the underlying business), (2) the sale is structured as a sale of assets then (3) the loss seller recognizes on the disposition will generally be an *ordinary* loss; “ordinary” losses can be used to offset any type of income, that is, both capital gain and income from regular operations.

D. Is there anything about the target’s tax attributes or the nature of the target’s business that needs to be taken into account in projecting the target’s tax liability going forward?

There are many reasons why the tax liability of the target will be materially more (or less) than 35% of the target’s book income. One major reason was discussed in questions A through C above, namely, that the amount of depreciation and amortization taken each year for tax purposes may differ substantially from the depreciation and amortization taken for book purposes. A full discussion of other reasons is beyond the scope of this section. It is, however, worth briefly noting four other reasons:

1. State taxes. In addition to the 35% Federal income tax, almost all sizable US businesses are subject to a state income tax. In general, the rules states use to

determine taxable income for state income tax purposes parallel those used by the Federal tax system. However, (a) tax rates differ from state to state (and can range from about 1% to about 7%), (b) each state has its own rules on how one determines the amount of income to be allocated to (and therefore taxable by) a given state, (c) it is not uncommon for a buyer to get an asset write-up for Federal income tax purposes but not for state tax purposes, and (d) there are a number of large states with rules that differ in material respects from the Federal tax rules. The effective state tax rate for large US corporations tends to average about 4 to 5%.

2. *Net operating losses.* Under US tax rules, net operating losses (NOLs) incurred in a given year can be carried back against income earned in any of the two previous years or any of the twenty subsequent years.¹ If a corporation with NOLs undergoes a “change of control,” the amount of NOLs that the corporation can use in each post-change year to offset its income in that year is subject to a limit.² This annual limit is the sum of (1) gains recognized on assets sold by target in that year (but only to the extent that that gain was there at the time of the change of control and only if the sale occurs within five years of the change of control), and (2) the product of (i) Target’s equity value at the time of the change of control and (ii) the “adjusted federal long-term rate” in effect at the time the change of control occurs. The latter is a rate, published each month by the IRS, roughly equal to the (yield on the thirty year Treasury) x 80%. The rate for changes of control occurring in May 1998 is 5.05%.

Example. On December 31, 1997, Acquiror buys all of Target’s stock for \$100. Target has \$40 of NOLs and the “adjusted federal long-term rate” for the month is 6%. In 1998, Target generates \$10 of taxable income: \$3 from

¹ Prior to 1998, the general rule was that NOLs could be carried back *three* years and carried forward *fifteen* years.

² While the definition of “change of control” is very technical, it includes most cases encompassed by the plain English meaning of the term, *e.g.*, a purchase by Acquiror of more than 50% of Target’s stock, as well as many cases which are not encompassed by that meaning. More precisely, “control” of a corporation is deemed to change when one or more “5% shareholders” increase (either on their own or collectively) their ownership of that corporation by more than 50 percentage points over any given three-year period. A “5% shareholder” is, in general, any individual or pension fund who owns directly or indirectly (for example, through subsidiaries or partnerships) 5% or more of the stock of a corporation except that (1) all shareholders who own less than 5% of the stock are aggregated and counted as one “5% shareholder”, (2) if a non-individual or pension fund shareholder (such as a corporation) owns 5% or more of the stock of the corporation, the individuals or pension funds who own that non-individual shareholder are counted as a separate “5% shareholder”, and 3) new issuances of more than 10% of a corporation’s stock in one year create a separate “5% shareholder” (although some of that new issuance is deemed to be acquired by the “old” public 5% shareholder).

gains recognized on an asset sale and \$7 from its normal operations. Target can use \$9 of its NOLs in 1997; \$9 is the sum of the \$3 recognized on the asset sale and the \$6 (\$100 x 6%) annual limitation. It is therefore taxed in 1998 on \$1 (\$10 - \$9).

Note that if Acquiror acquires Target's business by acquiring Target's assets in a taxable transaction (including an acquisition in which a section 338(h)(10) election is made), Target's NOLs stay with the selling legal entity, are available to absorb any gain recognized on disposition of Target's assets, and are not acquired together with the business.

a. Special rules for (formerly) insolvent corporations. A Target that has gone through a Chapter 11 proceeding would typically have negligible equity value at the time a change of control occurs (generally, when the prior creditors are awarded all or a majority of the equity in the Target). Its post-change of control annual limitation would therefore be close to zero (other than for built-in gains). In such a circumstance, the Target can elect – assuming it is eligible – to take advantage of a special rule under which (i) there is no annual limitation on the amount of NOLs that can be utilized *but* (ii) the aggregate amount of NOLs is reduced by the interest accrued within the three years prior to bankruptcy on any debt exchanged for stock. Eligibility requires, among other things, that more than half the Target's equity be owned by (i) former lenders who held their debt for at least eighteen months prior to the date of the Chapter 11 filing and/or (ii) by trade creditors.

3. Foreign operations; foreign tax credits. If a significant portion of the Target's operations are outside the United States, the effective tax rate of Target going forward may be impacted in a number of ways. First, it is likely that non-US tax considerations, non-US tax rules and the US tax rules governing taxation of foreign source income must be factored into that portion of the acquisition. Second, the non-US portion of the business will be subject to foreign tax rates and rules which are almost certain to be different than US tax rates and rules. The degree to which the differences between the US and foreign tax regimes affects the overall effective tax rate of Target's business will depend on factors which are beyond the scope of this discussion. For a discussion of some of those factors (and for a summary of the rules governing the US taxation of foreign source income and the impact of those rules on the ability of a US parent to effectively deduct interest expense) see the **May 1994 memo on "Foreign Tax Credits."**¹

¹ The memo can be found on the JPM Intranet under IB Analysis Policy Memos, "M&A Tax Issues and Considerations."

4. *Alternative minimum tax (“AMT”).* Some corporations, especially those in capital-intensive and natural resource extraction industries, are subject to the AMT. A US corporation’s Federal income tax liability is the greater of 35% of its “regular taxable income” (RTI) or 20% of its “alternative minimum taxable income” (AMTI). To calculate AMTI, a corporation starts with RTI and adds “preference items.” In general, a “preference item” is (1) a deduction (such as “accelerated depreciation”) which may be taken for regular tax purposes but not for AMT purposes or (2) an item of income (such as income on municipal bonds) which may be excluded for regular tax purposes but not for AMT purposes.

Example. In year 1, US Corp has \$100 of RTI and \$200 of AMTI. Its regular tax liability is \$35 ($\$100 \times 35\%$) and its AMT liability is \$40 ($\$200 \times 20\%$). Since its AMT liability is greater than its regular tax liability, it is subject to the AMT.

A corporation subject to the AMT gets a credit to the extent that its AMT liability exceeds its regular tax liability. Thus, US Corp in the above example gets a credit of \$5 (the excess of \$40 over \$35). This credit can be used in a future year to offset its regular tax liability, but only to the extent that its regular tax liability in that future year exceeds its AMT liability in that year. The net effect of the credit is that (at least in theory) a US corporation will, in the long run, never have a tax liability greater than 35% of its RTI. Of course, the long run is a very long time; for many corporations it may be years before they flip out of AMT and can use their AMT credits.

Example. In year 2, US Corp (from the previous example) has \$100 of RTI and \$100 of AMTI. Its regular tax liability is \$35 and its AMT liability is \$20. It is therefore not subject to the AMT and it gets a credit of \$5 carried forward from year 1. Its net tax liability for year 2 is therefore \$30. Looking at year 1 and year 2 together, US Corp had RTI of \$200 (\$100 in each of year 1 and 2) and a tax liability of \$70 (\$40 in year 1 and \$30 in year 2). Not coincidentally, \$70 is 35% of \$200. In other words, US Corp’s tax liability – looking at years 1 and 2 together – is 35% of its RTI over that period even though it was subject to the AMT in year 1.

E. Is there any other tax-efficient way to sell the business?

We noted in the answer to question B that a seller may be able to defer recognition of taxable gain on the sale of a business by taking back equity in the buyer. This section describes seven structures a seller can use to dispose of some or all of a business while deferring all or some of its gain; some of the structures are variations on the theme outlined in question B and others are unrelated to that theme. In each structure, a substantial portion of the seller’s consideration may – depending on the particular facts – consist of cash. Each transaction has significant limitations and

drawbacks and may not apply in a given situation. Furthermore, because the seller in each of the structures is deferring its gain, the structures will force the buyer to forego or defer a basis step-up in the underlying assets.

1. Sale for stock with pre-sale dividend. We noted in the answer to question B that if a shareholder sells Target's stock in exchange for equity of Acquiror, that the shareholder's gain is typically deferred until it sells the Acquiror stock received. If the selling shareholder is a corporation (Parent) and Target is a consolidated subsidiary of Parent, Parent can cause Target to pay a pre-sale dividend (perhaps funded to some extent by third-party borrowings) equal to Parent's tax basis in Target's stock. This dividend will reduce Parent's tax basis in Target on a dollar-for-dollar basis but, as long as the dividend does not exceed Parent's outside basis in Target, will not result in any up-front tax liability. Parent can then sell Target's stock to Acquiror for Acquiror equity.

Example. Parent owns Target; Parent has a \$40 basis in Target's stock and Target has a FMV of \$100. Parent can sell Target to Acquiror for \$100 in cash or \$100 in Acquiror equity. As a third alternative, Parent can (1) cause Target to distribute to Parent a dividend of \$40 (perhaps funded with third party borrowings) and (2) then sell Target stock to Acquiror for \$60 of Acquiror equity. The pre-sale dividend of \$40 will have reduced Parent's basis in Target's stock from \$40 to \$0 and, consequently, Parent's tax basis in the \$60 FMV of Acquiror equity received will be \$0. However, the built-in gain of \$60 will not be triggered until Parent sells that equity at some point in the future. Note that had Parent received the \$40 from Acquiror instead of receiving it from Target as a dividend, Parent would have been taxable on the full \$40 received (see the discussion in II.B. above).

2. Spin-off; split-off. As a general rule, a corporation which distributes assets – including stock in another company – to its shareholders will recognize gain on the distribution to the same extent as if it had sold the assets for cash to a third party. Virtually the only exception to this rule is a “tax-free spin-off” or a “tax-free split-off.” A “spin-off” refers to a dividend distribution by Parent to its shareholders of the shares of a subsidiary (“SpinCo”); a “split-off” refers to a repurchase by Parent of Parent shares in which the consideration paid to the selling shareholders is not cash, but stock of SpinCo. Unless the context indicates otherwise, we'll be using the term “spin-off” as a generic term referring to both spin-offs and split-offs.

a. The benefits of a spin-off. The benefits of qualifying as a tax-free spin-off are probably best understood if one focuses on the tax costs of a distribution by Parent of SpinCo that does *not* qualify as tax-free; in that case, Parent will owe tax on the distribution to the same extent as if it had disposed of

SpinCo's business for cash and Parent's shareholders will incur a tax liability of up to 40% of the value of the distribution (that is, they will be taxed as if they had received a cash dividend). Thus, if Parent intends to distribute the proceeds of a sale of a business to its shareholders (through a dividend or a share repurchase), a spin-off of that business can be a tax-efficient alternative. Furthermore, Parent can often (i) push debt on to SpinCo in an amount equal to the lesser of Parent's tax basis in SpinCo or SpinCo's stand-alone debt capacity without incurring any tax liability (and, in some cases, *it is possible – thanks to a J.P. Morgan proprietary structure – to push debt on to SpinCo in excess of Parent's tax basis in SpinCo without incurring a tax liability*) and/or (ii) sell up to 20% of SpinCo's equity to the public without incurring a significant tax liability; Parent can use these techniques to raise, in a tax-efficient manner, at least some cash for use by Parent.

b. Qualifications for a tax-free spin-off. A spin-off will only qualify as tax-free if it meets a host of technical requirements. The most notable of these requirements are: (1) Parent must distribute at least 80% of SpinCo's equity, (2) both Parent and SpinCo must own at least one "active trade or business"¹ which each plans on holding on to after the spin-off, (3) that "active trade or business" has to either (a) have been owned by Parent or SpinCo throughout the five year period immediately preceding the spin or (b) acquired by Parent or SpinCo within that time frame in a transaction in which the only consideration used was equity of Parent or SpinCo, (4) there generally cannot be any plan or intention on the part of shareholders of Parent or SpinCo to sell their Parent or SpinCo shares following the spin-off (but sales by individual public shareholders not pursuant to a tender offer don't count for this purpose)², and (5) the spin-off must further a *corporate*-level business purpose (thus, "increasing shareholder value" is not a good business purpose, but separating two companies in different industries which require different management skills is a good business purpose).

3. "*Morris Trust*" transactions; 50% limitation. We noted above that pre-arranged sales of the shares of either Parent or SpinCo following the spin-off will turn a spin-off into a taxable distribution. An important exception to this rule is that a pre-arranged sale of Parent or SpinCo is permissible as long as (a) the only consideration received on the sale is stock of the Acquiror and (b) Parent's

¹ While the term "active trade or business" is very technical, its general meaning comports with the plain English interpretation of the words. Thus, a portfolio of triple net leases does not constitute an "active trade or business" but a car leasing business performed by a company through its own employees should qualify.

² See, however, the discussion in the paragraphs below for special rules that apply where there is a pre-arranged sale but it is for stock of a third party, rather than for cash.

shareholders own more than half of the combined entity (that is, Acquiror/Parent or Acquiror/SpinCo) by both vote and value after the sale.¹ This is the so-called “*Morris Trust*” transaction (so named not because it involves a trust, but after the name of the court case which established a taxpayer’s ability to engage in the transaction).²

Example. Parent owns Business K, which it wants to keep, and Business S, which it wishes to sell and distribute the proceeds of the sale to Parent’s shareholders. If Parent were to sell Business S to Acquiror for cash, it would incur a substantial tax liability; if it were to distribute the after-tax proceeds of the sale to its shareholders, its shareholders would incur a second level of tax on the distribution. If it were to sell Business S to Acquiror for Acquiror stock, the initial sale could be structured as tax-free (see question B above) but, if Parent distributed the Acquiror stock to its shareholders, it and its shareholders would incur a tax burden equivalent to the one incurred in the first scenario: Parent and its shareholders would incur a tax liability on the distribution equal to the one generated by a sale by Parent of the Acquiror stock for cash and a distribution of the sales proceeds to its shareholders.

Parent therefore chooses a third alternative: it puts Business S into a SpinCo and distributes SpinCo to its shareholders. Parent’s shareholders then sell the stock of SpinCo to Acquiror for Acquiror stock. The net result is exactly the same as in the second scenario outlined in the previous paragraph – that is, it is exactly the same as a sale by Parent of Business S to Acquiror for Acquiror stock and a distribution of that stock by Parent to its shareholders – except that *as long as Parent’s shareholders own more than 50% of Acquiror (post-sale)* no tax liability is incurred on any of the transactions.

a. The 50% limitation and subsequent transactions. A more precise formulation of the “50% test” stated above is that a spin-off by Parent of SpinCo will be taxable if (1) Acquiror and Parent (or Acquiror and SpinCo) combine in a transaction which results in Parent’s shareholders owning less than a majority of the combined entity by either vote or value and (2) *the combination was part of an overall plan of which the spin-off was the first part*; there is a (rebuttable) presumption that combinations that take place within two years of the spin are part of the same overall plan. The IRS has,

¹ For a more precise explication of the “50% test”, see paragraph b. below (“Wiggle room on the 50%; overlapping ownership”).

² The second requirement described in the preceding sentence – essentially, that whichever entity (Parent or SpinCo) is combined with Acquiror be larger than Acquiror – came in as part of the 1997 Tax Act and was intended to limit the availability of tax-free *Morris Trust* transactions.

to date, studiously avoided stating how closely linked to the spin-off the subsequent combination has to be in order to be viewed as part of the same overall plan. To state two obvious extremes, it is clearly part of the same overall plan if there was a binding agreement between Parent, SpinCo and Acquiror at the time of the spin-off, subject only to a shareholder vote. At the other extreme, it is relatively clear – though not certain – that it is *not* part of the same overall plan if there were no direct or indirect communications between Parent (or SpinCo) and Acquiror concerning the combination, even if the combination was part of an ongoing trend of industry consolidation. But, to take a common fact pattern, what if there were preliminary discussions between Parent and Acquiror prior to the spin which never went anywhere? The practical effect of the uncertainty is likely to be that potential Acquirors will – given the stakes if they are wrong – be very wary about going after Parent or SpinCo for at least two years after the spin (assuming that the combination would otherwise violate the 50% test outlined above).

b. Wiggle room on the 50%; overlapping ownership. If Acquiror is only slightly larger than Parent (or SpinCo), it may be possible to shrink the value of Acquiror (such as via a share repurchase or a special dividend) or increase the value of Parent (or SpinCo) (such as via a shifting of leverage from Parent to Spinco, or vice-versa) prior to the spin so as to meet the 50% test. If this is not possible, however, it may nonetheless be possible to take advantage of one of the more technical aspects of the 50% test. In order to understand this aspect of the test, it helps to reformulate the test so that it is stated as follows: a spin-off is only taxable if, by virtue of the Parent/Acquiror (or SpinCo/Acquiror) combination, there has been a *reduction* of at least 50 percentage points in the amount of stock that shareholders of Parent own (indirectly) in Parent (or SpinCo); if a particular shareholder of Parent also happens to own stock in Acquiror then, to the extent of that overlapping ownership, there would be no reduction. More precisely, in determining whether there has been a 50% reduction, the dilution in ownership on the part of any particular shareholder that occurs by reason of the combination with Acquiror is ignored to the extent that the percentage of stock owned in Parent (or, indirectly, in SpinCo) by the shareholder before the spin is at least equal to the percentage of stock owned by the shareholder in the acquiring entity after the combination. This smaller decrease would occur in situations in which there was overlapping ownership in Parent and Acquiror. To take an obvious case, assume X owned 100% of Parent and 100% of Acquiror; in that case, even if Acquiror was twice as large as Parent, the 50% test would not be violated since X's prior ownership of Acquiror means that the 100% ownership of Parent that Parent's shareholders – X in this case – had prior to the combination did not decrease

as a result of the merger, and as a result there was no acquisition of at least 50 percent. The benefits afforded by overlapping ownership also are present in many non-obvious cases, as is illustrated by the following example.

Example. Post-spin, Parent has a market cap of \$100 and Acquiror has a market cap of \$110. It happens that shareholders who own 10% of Parent also own 10% of Acquiror.¹ In a combination of Parent and Acquiror, shares of Parent are exchanged for 100/210, or 47.62%, of the combined entity. However, by virtue of the overlapping ownership, Parent's shareholders are deemed to own 52.86% of the combined entity; put differently, there has been a decrease in (direct or indirect) ownership of Parent of only 47.14% (100% minus 52.86%). That is, the "non-overlapping group" went from owning 90% of Parent to owning 42.86% (90/210) of Parent – a drop of 47.14%; the "overlapping group" started at 10% of Parent and still owns 10% (now indirectly) of Parent. There has thus been a drop of only 47.14% (from 100% to 52.86%), and the 50% threshold has not been crossed.

c. Living with the new Morris Trust legislation. For a discussion of other techniques our clients can use to accomplish some – though not all – of the goals which could be accomplished with the old *Morris Trust* rules without running afoul of the 1997 tax law (as well as a discussion of some of the more technical aspects of the rules governing *Morris Trusts*), see the memo of January 13, 1997, "**Hughes Defense Transaction – an 'Artificial' *Morris Trust*.**"²

d. Leveraged Morris Trusts. It is possible to leverage Business S (the one that will go into SpinCo) prior to the spin and to give Parent the proceeds of the leverage without destroying the tax-free nature of the *Morris Trust*. This could allow Parent to receive at least a portion of the cash it would otherwise have received on a (taxable) sale of Business S for cash. Any leverage would, however, reduce the net value of Business S and, therefore, could make it more difficult to satisfy the requirement that Parent's shareholders own more than half of the combined entity.

4. Carve-outs. In many cases, it is possible for Parent to sell a substantial portion – typically 20% or less, but sometimes somewhat more – of Subsidiary for cash

¹ It is worth noting in this regard that almost any publicly traded Parent and publicly traded Acquiror will have a significant percentage of overlapping ownership, if for no other reason than – assuming both companies are in the same index (S&P 500, Wilshire 5000, etc.) – both are owned, at least to some extent, by the same index funds.

² The memo can be found on the JPM Intranet under IB Analysis Policy Memos, "M&A Tax Issues and Considerations."

while deferring all or a substantial portion of its gain. (The deferred gain will be triggered if and when Parent disposes of the balance of Subsidiary.)

a. Carve-outs of 20% or less. For reasons that will be explained below, it is very common for Parent to cause Subsidiary to issue 20% or less of its stock in the carve-out. In executing the carve-out, Parent will often use a strategy which allows it to avoid an up-front tax liability. The strategy is best explained with an example. Assume (1) Parent owns 100% of Subsidiary, (2) Subsidiary has a value of \$100 and (3) Parent has a tax basis in Subsidiary of \$5. Assume further that Parent wishes to sell 20% of Subsidiary to the public in an IPO for \$20. Parent would have a tax basis in the 20% it is selling of \$1 ($\5 [basis in 100% of Subsidiary] $\times$ 20%) and would therefore have taxable gain of \$19 ($\$20 - \1).

Assume that, instead, Subsidiary (1) borrows \$20 from third parties¹ and distributes that \$20 to Parent as a dividend and (2) issues 20% of its stock (that is, it issues primary shares) to the public for \$20 (and perhaps then uses the \$20 it received to pay down the debt incurred in Step 1). The net effect is the same as the straightforward transaction – a sale by Parent of 20% of Subsidiary directly to the public – outlined in the previous paragraph, but the tax consequences are very different. Because Parent and Subsidiary are members of the same consolidated group, the dividend of \$20 to Parent is tax-free to Parent and it reduces Parent's basis in Subsidiary from \$5 to -\$15. If and when Parent and Subsidiary are no longer part of the same consolidated group – which will occur when Parent's ownership of Subsidiary drops below 80% – Parent will recognize taxable income equal to \$15 in addition to whatever additional gain it recognizes on the transaction that causes the deconsolidation.² The issuance of stock by Subsidiary directly to the public is also tax-free to Subsidiary, as is any issuance by a corporation of stock to a shareholder.

i. Why carve-outs are often kept to 20% or less. There are several advantages to keeping the carve-out at or below the 20% level. The most obvious one was noted above, namely that (a) Parent can keep tax

¹ For reasons noted below, we are assuming that Subsidiary has "stand-alone" debt capacity – that is, debt capacity before taking Parent guarantees or the IPO proceeds into account – of at least \$20.

² Thus, for example, if Parent sells its 80% of subsidiary for \$80, it will have taxable income of $\$80 + \$15 = \$95$. If Parent spins off Subsidiary in an otherwise tax-free transaction, it will have taxable income of \$15. Note, however, that if the carve-out immediately precedes the spin off, it may be possible to avoid creating the negative tax basis (and hence the subsequent gain recognition) through the use of the techniques alluded to in E.2.a. above.

consolidation with Subsidiary and therefore (b) even if the pre-IPO dividend exceeds Parent's tax basis in Subsidiary, Parent will not recognize any immediate taxable gain. Parent's ability to continue filing a consolidated return also means that dividends from Subsidiary are eligible for a 100% exclusion and that losses at Subsidiary can be used to offset taxable income at Parent and vice-versa. Finally, Parent's ownership of 80% + means that Parent retains the ability to subsequently distribute its remaining stock in Subsidiary to its shareholders in a tax-free spin-off (although Parent will recognize gain on that spin-off to the extent of the negative tax basis).

b. Carve-outs of more than 20%. Parent may wish to sell more than 20% of Subsidiary.¹ In that case, it can use the same strategy outlined above for carve-outs of 20% or less to minimize or eliminate any up-front tax cost on the carve-out. By way of example, assume (1) Parent owns 100% of Subsidiary, (2) Subsidiary has a value of \$100 and (3) Parent has a tax basis in Subsidiary of \$30. Assume further that Parent wishes to sell 30% of Subsidiary to the public in an IPO for \$30. Parent would have a tax basis in the 30% it is selling of \$9 (\$30 [basis in 100% of Subsidiary] x 30%) and would therefore have taxable gain of \$21 (\$30 - \$9).

Assume that, instead, Subsidiary (1) borrows \$30 from third parties² and distributes that \$30 to Parent as a dividend and (2) issues 30% of its stock (that is, it issues primary shares) to the public for \$30 (and perhaps then uses the \$30 it received to pay down the debt incurred in Step 1). The net effect is the same as the straightforward transaction – a sale by Parent of 30% of Subsidiary directly to the public – outlined in the previous paragraph, but the tax consequences once again are very different. Because Parent and Subsidiary are members of the same consolidated group, the dividend of \$30 to Parent is tax-free to Parent, although it reduces Parent's basis in Subsidiary from \$30 to \$0 (and therefore increases the gain Parent would recognize on a future disposition of Subsidiary). The issuance of stock by Subsidiary directly to the public is also tax-free to Subsidiary, as is any issuance by a corporation of stock to a shareholder.

¹ While a carve-out of this size will eliminate Parent's ability to keep tax consolidation with Subsidiary, Parent will retain the ability to do a tax-free spin-off of Subsidiary if the stock carved out represents 20% or less of Subsidiary's equity by *vote*, even if it represents more than 20% of Subsidiary by *value*. In other words, tax consolidation requires ownership by Parent of at least 80% of Subsidiary by *vote and value*; the ability to do a tax-free spin-off generally focuses on ownership of at least 80% by *vote*.

² For reasons noted below, we are assuming that Subsidiary has "stand-alone" debt capacity – that is, debt capacity before taking Parent guarantees or the IPO proceeds into account – of at least \$30.

The generalizable point is that if Parent wishes to sell some of Subsidiary, it can often utilize the tax basis it has in 100% of the stock of Subsidiary (\$30 in the above example) to offset its taxable gain on the sale. It accomplishes this not by selling Subsidiary's stock directly to the buyer(s) – in which case it can only utilize its basis in the shares sold – but instead by causing Subsidiary to distribute up a pre-transaction dividend up to the tax basis it has in Subsidiary and then causing Subsidiary to issue stock to the buyer(s) in a primary offering. Of course, if Parent's basis in Subsidiary is extremely low, this strategy won't help since $100\% \times \$0$ is \$0; put differently, to the extent that the pre-IPO dividend exceeds Parent's basis in Subsidiary (and the carve-out is of more than 20%), Parent will recognize taxable gain and is thus no better off than it would have been had it sold Subsidiary stock directly to the buyer(s).

c. Limitations. The strategy described above – whether in the “20% or less” case or the “more than 20%” case – will only work if the IRS cannot recharacterize the pre-IPO dividend and subsequent primary issuance by Subsidiary as, in substance, a sale by Parent of Subsidiary stock directly to the buyer(s). In order to avoid this recharacterization, it is necessary that the pre-IPO dividend not exceed the stand-alone debt capacity – that is, debt capacity before taking Parent guarantees or the IPO proceeds into account – of Subsidiary. Depending on the views of tax counsel in a particular transaction, it may also be necessary to take other steps to separate the dividend from the IPO, such as not having Parent guarantee the debt, not making it an event of default on the debt if the IPO does not take place, having a meaningful separation in time between the dividend and the IPO, and leaving some or all of the debt in place for some period of time after the IPO.

5. Partnerships.

a. Background. Partnerships are used by our clients for two reasons. First because contributions of assets to partnerships are generally not taxable and because a partnership is not itself a taxable entity, it is a very tax-efficient vehicle for forming and holding a joint venture.¹ Second, the tax rules governing partnership formation will often allow Parent to use a partnership as a tax efficient alternative to an outright sale for cash. That is, using the tax rules governing partnership formation, Parent can receive cash from Acquiror equal to a substantial portion of the value of Subsidiary while deferring its tax liability. Use of the partnership rules in this way is especially popular in situations where Parent wishes to retain a continuing interest in target

¹ See discussion below in “III. Joint Ventures.”
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business. The discussion below focuses on the second reason just noted for using partnerships.

Use of the partnership rules to allow tax-deferred receipt of cash is best explained with an example. To establish a “base case,” assume that Parent owns Subsidiary; Parent’s inside and outside basis in Subsidiary is \$20 and Subsidiary’s FMV is \$100. Parent could sell Subsidiary’s stock or assets to Acquiror for \$100 and recognize \$80 of gain; in that case, Parent would be left with \$72 ($100 - (35\% \times 80)$) after tax. Alternatively, Parent could use structure #1 above to – in effect – sell Subsidiary for \$20 in cash and \$80 of Acquiror stock while deferring all its gain. (As you may recall, structure #1 calls for Subsidiary to pay a pre-sale dividend to Parent up to its tax basis and for Parent to then sell Subsidiary stock for Acquiror equity.)

b. Leveraged partnerships. A third possibility is for Parent to cause Subsidiary to put the target business into a partnership which Subsidiary will form with Acquiror; Acquiror will contribute business assets with substantial value and/or cash which will be invested (immediately or in the not-too-distant future) in the partnership’s business (including the business contributed by Subsidiary). The partnership will then borrow from third parties an amount equal to a substantial portion of the value of the assets contributed by Subsidiary and distribute the proceeds of the borrowing to Subsidiary (which can then distribute the proceeds to Parent). Assume on our facts that the partnership borrows \$90 and distributes the entire \$90 to Subsidiary. In recognition of the fact that it has received \$90, Subsidiary agrees to an interest in the partnership equal to \$10 (the net equity that it has invested in the partnership). For reasons explained below, Subsidiary’s tax advisors may require that a substantial portion of this partnership interest (say, \$5) should consist of a common ownership interest in the partnership; the balance can consist of a preferred partnership interest (which can carry a fixed return payable out of the cash flow of the partnership). Assuming that the guidelines outlined below – dealing principally with the nature of the \$90 borrowing used to fund the distribution to Subsidiary – are followed, Subsidiary will not be taxed on its receipt of the \$90; instead it will be taxed as and when the partnership pays down the \$90 debt (other than by refinancing it with new debt) or when it sells its partnership interest, whichever is sooner.¹ Given this deferral of tax liability, it is quite likely that

¹ It is useful to contrast this result with the tax consequences that would have resulted if the parties had used a corporation instead of a partnership. In that case, Subsidiary would have been taxed at least on \$70, that is, the amount by which the \$90 distribution exceeded Subsidiary’s \$20 tax basis in the assets it contributed to the joint venture vehicle. Put differently, the partnership tax rules allow deferral of gain when a taxpayer leverages assets

Subsidiary (and therefore Parent) will net more from an NPV after-tax perspective with the leveraged partnership structure than with a straight sale.

i. Special rules for the partnership debt. Subsidiary will be taxed on its receipt of the proceeds of the partnership's leverage (the \$90 in the above example) unless one of the following is true: (1) the \$90 borrowing is guaranteed¹ by Parent, Subsidiary or some other member of the Parent group² and is not also guaranteed by Acquiror or an affiliate of Acquiror; (2) the debt is guaranteed by Acquiror *and* by a member of the Parent group but Acquiror has the right to go against the Parent group entity that acted as guarantor to the extent that it has to make payments under the guarantee; or (3) the debt is guaranteed neither by a Parent group member nor by Acquiror – that is the lenders can look only to the assets of the partnership – and there is some item of partnership income, gain or loss which is allocated 100% to Subsidiary. Further explanation of the previous sentence is beyond the scope of this discussion; the important thing to remember is that it should often be possible to satisfy this rule without materially affecting the business deal.

ii. The generalizable point. The discussion above can be summarized as follows: a person receiving cash on a contribution of assets to a partnership will not be taxed on the receipt of that cash as long as (1) the cash can be traced to the proceeds of a borrowing by the partnership (and not to cash put in by another partner), (2) the contributing person maintains a sufficiently meaningful stake in the partnership such that it will be viewed as a partner in substance and not merely in name³, and (3) the borrowing incurred by the partnership to fund the distribution is viewed (for tax purposes) as debt of the person receiving the cash, that is, the debt meets one of the three tests laid out in the previous paragraph. Assuming that the guidelines laid out in the previous sentence are followed, the person receiving the cash will only be taxed as and when the debt incurred to fund

above their tax basis and contributes them to a partnership; the corporate tax rules do not permit such deferral.

¹ By "guarantee" we mean that if the partnership's creditors cannot be repaid in full after looking to all the assets of the partnership – *including those contributed by Acquiror* – the creditors can go against Subsidiary or the affiliate.

² We are assuming that whichever member of the Parent group guarantees the debt has assets – aside from an investment in the partnership – equal to a meaningful percentage of \$90. In other words, a guarantee by a "shell" company – an affiliate of Parent with no substantial assets – will generally be disregarded for tax purposes.

³ Hence the need in the above example for Subsidiary to have a meaningful "common" ownership stake in the partnership.

the cash distribution is paid down or (if sooner) when it sells the partnership interest it received.

iii. Drawbacks. There are two significant drawbacks to the leveraged partnership concept. One is its complexity. The second is that, as with all of the ideas discussed in this section, the deferral of gain to the seller means that the buyer will not get a basis step-up in the underlying assets (and will therefore have a larger tax liability going forward).

iv. When to use the leveraged partnership concept: low tax basis; continuing interest. The leveraged partnership concept is ideal for a situation where the seller has a very low tax basis in the business it is selling (and thus would incur a significant tax liability on an outright sale) and the seller wishes to retain an ongoing participation in the business (for example, in a situation where a portion of the consideration consists of contingent payments tied to the performance of the business). This second factor is important for two reasons. First, the ongoing participation desired by the seller will often lend itself to be molded into a partnership and will make seller and buyer more willing to live with the complexity of a partnership. Second, for reasons that are beyond the scope of this discussion, it will often be more tax-efficient for both buyer and seller to route the contingent payments through a partnership than it will be for the buyer to make the payments directly to the seller.

6. Tracking (“letter” stock).

a. What is tracking stock? Tracking stock is stock issued by Parent that represents an interest in a business owned by Parent. It is different than a carve-out or a spin-off in that tracking stock does *not* represent (at least in form) a direct interest in the underlying business. Thus, an owner of tracking stock typically will have a commitment by Parent to pay dividends based on the performance of the referenced business and it may have a right to receive the after-tax proceeds of a disposition of the business. What it typically will *not* have is the right to elect directors of a separate subsidiary which holds the business or a direct claim on the earnings of the referenced business; furthermore, it will not be protected from the risks (including insolvency) of Parent’s other businesses. The earliest and best known examples of tracking stock are GM’s Class H stock (representing an interest in Hughes Electronics) and (the now redeemed) Class E stock (representing an interest in EDS).

b. The tax benefits of tracking stock. Because tracking stock represents stock of Parent, (1) it can be issued by Parent (a) as a dividend to its shareholders

without incurring any shareholder level tax or (b) for cash without incurring any corporate level tax and (2) Parent can retain tax consolidation with the referenced business.

c. The tax drawbacks of tracking stock. The issuance of tracking stock will significantly complicate (and may prevent) a subsequent tax-free spin-off by Parent of the referenced business. This is especially true if the tracking stock is issued for cash.

7. Issuance of “exchangeables” or “mandatory exchangeables.” An increasingly popular technique for disposing of some or most of Parent’s economic interest in an investment is for Parent to acquire a put from, enter into a collar with, or sell a call to, a third party in which Parent takes a short position on the investment. In addition, Parent may wish to borrow against its (partially) hedged position. As was noted earlier,¹ often the call or collar and the borrowing are combined in a single financial instrument referred to as an “exchangeable” (in the case of a call + a borrowing) or a “mandatory exchangeable” (in the case of a collar + a borrowing). The issuance of an exchangeable or a mandatory exchangeable allows Parent to receive cash today equal to the value of the referenced investment and not trigger the gain (for tax purposes)² until the referenced investment is delivered on maturity of the instrument (and, if Parent delivers cash instead of the referenced investment, the taxable gain can be deferred even further).

In the case of a mandatory exchangeable, the technique works best when the referenced investment is not an 80%+ owned business. If Parent owns 80% or more of the referenced investment, it is likely that the issuance of a mandatory exchangeable will cause Parent and Subsidiary to be deconsolidated for tax purposes (and may raise a concern that there has been a deemed disposition of the underlying business for tax purposes).

III. Joint ventures

One question that often comes up in M&A discussions is how best to structure joint ventures. In setting up a joint venture, the parties will typically contribute the respective businesses and/or cash that each is putting into the joint venture into a single vehicle which they will jointly own; in exchange, the parties will receive an ownership interest in the vehicle and perhaps cash (either from the other party or from the joint venture vehicle). That vehicle will either be a corporation or a partnership (the latter including, for purposes of this discussion, a limited liability

¹ See “II.B.2.Dispositions and hedges by seller of the buyer equity.”

² The gain will typically not be triggered for accounting purposes either.

company). The discussion below outlines some of the tax considerations that will determine which of those two vehicles the parties will choose. There are three basic tax considerations: minimizing the tax burden incurred on formation of the joint venture, minimizing the tax burden on the earnings of (and the distribution of earnings from) the joint venture and minimizing the tax burden on any ultimate unwind of (or other exit from) the joint venture. For reasons that will be outlined below, all three considerations often will push the parties toward using a partnership rather than a corporation.

A. Tax burden on formation: corporation vs. partnership.

The difference in the tax consequences of a corporation vs. a partnership are best illustrated with an example. Assume that Parent owns Subsidiary, Subsidiary owns Target Business, the inside and outside basis of Subsidiary is \$20, and the FMV of Target Business is \$100. Assume further that Parent wishes to combine Target Business with a business held by Third Party, and that Parent will retain a meaningful stake in the combined business.

1. Receipt only of equity in JV vehicle (or receipt of equity plus debt assumption up to tax basis). Assume that Parent contributes the stock of Subsidiary (or that Parent causes Subsidiary to contribute the assets of Target Business) to JV Vehicle at the same time that Third Party contributes its business to JV Vehicle; Parent (or Subsidiary, in the case of a contribution of the assets of Target Business) and Third Party take back an equity stake in JV Vehicle. Neither Parent, Subsidiary nor Third Party will recognize gain if Parent and Third Party receive from JV Vehicle only equity of JV Vehicle; this is true regardless of whether JV Vehicle is a partnership or a corporation. If, in addition to contributing the stock of Subsidiary (or having Subsidiary contribute the assets of Target Business), Parent also causes JV Vehicle to assume debt of \$20 – that is, an amount of debt not in excess of the “gross” tax basis of the contribution into JV Vehicle – it should often be possible to ensure that neither Parent nor to whether JV Vehicle is a corporation or a partnership).¹

¹ The text deliberately speaks of “assumption of debt of \$20” rather than “distribution of cash of \$20” since, even though the two are economically identical, in the latter case Parent (or Subsidiary) will recognize gain (at least where JV Vehicle is a corporation). See II.B. 1 above.
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2. Receipt of equity in JV vehicle plus debt assumption in excess of tax basis.

Assume the same facts as in the previous paragraph except that Parent (or Subsidiary) has JV Vehicle assume \$30 – an amount in excess of the inside and outside basis of Subsidiary. If JV Vehicle is a *corporation*, Parent (or Subsidiary) will recognize gain of \$10 (the amount by which \$30 exceeds the \$20 tax basis). If JV Vehicle is a *partnership*, on the other hand, it is often possible to structure the transaction to ensure that that gain is deferred.¹ It is this feature that makes partnerships a more attractive vehicle than a corporation in terms of the tax consequences of setting up the joint venture vehicle.

B. Tax burden on ongoing operations of the JV: corporation vs. partnership.

If JV Vehicle is a corporation, distributions to Parent (or Subsidiary) will typically be taxed as dividends. The effective Federal income tax rate on intercorporate dividends is 0% (if Parent or Subsidiary owns 80% or more of JV Vehicle by vote and value), 7% (if Parent or Subsidiary owns 20% or more – but less than 80% – of JV Vehicle by vote and value) or 10.5% (if Parent or Subsidiary owns less than 20% of JV Vehicle by vote or value). Furthermore, any losses at JV Vehicle cannot be used to offset taxable income of Parent and vice versa (unless Parent owns 80% or more of JV Vehicle's equity by both vote and value). By contrast, if JV Vehicle is a partnership (and assuming that JV Vehicle itself owns assets (as distinct from the stock of Subsidiary)) the partners will typically not be taxed on distributions from JV Vehicle and losses of JV Vehicle *can* be used to offset the taxable income of Parent and vice versa.

C. Tax burden on ultimate unwind of JV.

If Parent wishes to sell its stake in JV Vehicle and JV Vehicle is a corporation, it will typically be tax-inefficient for the JV Vehicle to sell its assets to the buyer; instead, the buyer will typically be forced to buy stock in JV Vehicle from Parent (or Subsidiary).² This means that buyer will not be getting a basis step-up in the underlying assets for tax purposes and this will presumably be reflected in a lower purchase price. By contrast, if JV Vehicle is a partnership, a buyer will typically get a write-up in the tax basis of the underlying assets, regardless of whether it buys the equity in JV Vehicle or buys the underlying assets from JV Vehicle.

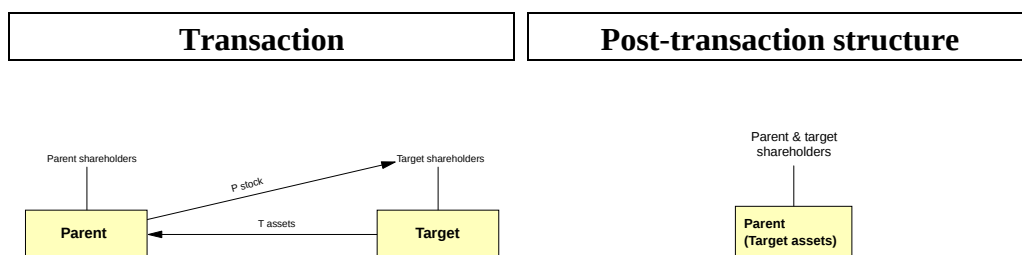
¹ For a fuller discussion of what is necessary to ensure deferral and of until when the gain is deferred, see "II.E.5.b. Leveraged Partnerships" above.

² For a fuller discussion of this issue see II.A.3.Flowchart, II.C.1 and II.C.2.
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IV. Diagrams of selected M&A transaction structures

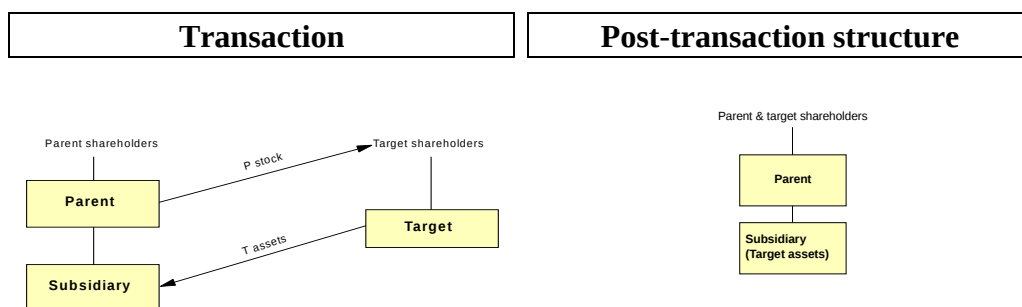
A. Tax-free reorganization (Section 368)

1. Statutory Merger (“A” reorganization)



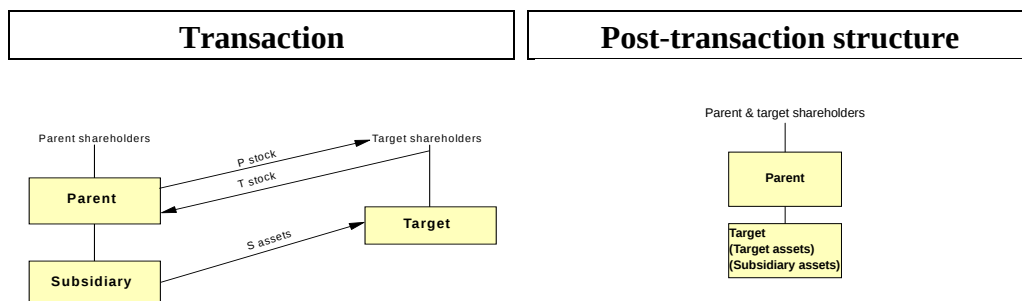
- **Classic uses:** Parent wants to acquire target assets; no reason to keep target in existence; parent flexibility regarding form of consideration (up to 60% of consideration may consist of cash)
- **Highlights:** Target eliminated at no tax cost; parent assumes target’s basis in target’s assets (no step up in tax basis of assets); limited transfer of target NOLs; no gain or loss on parent stock received by target shareholders
- **Example:** Burlington Northern/Santa Fe Pacific

2. Forward triangular merger (“(a)(2)(D)”)



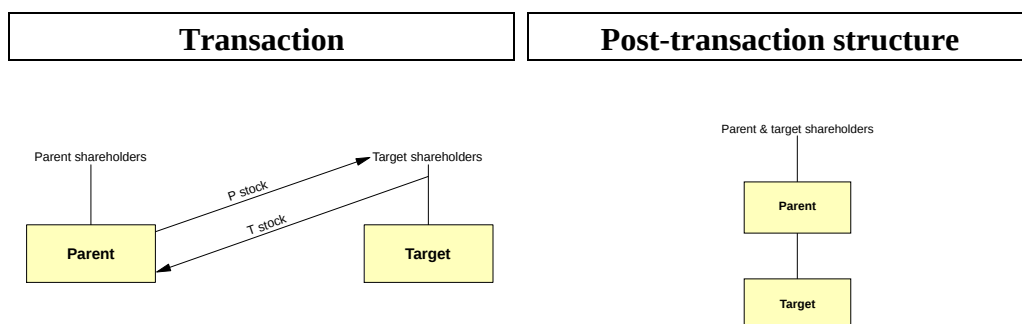
- **Classic uses:** Parent is a holding company; parent does not want to own any assets; no reason to keep target in existence; parent flexibility regarding form of consideration (up to 60% of consideration may consist of cash)
- **Highlights:** Target eliminated at no tax cost; subsidiary assumes target’s basis in assets (no step up in tax basis of assets); no gain or loss on parent stock received by target shareholders; limited NOL transfers
- **Example:** Merck/Medco

3. Reverse triangular merger (“(a)(2)(E)”)



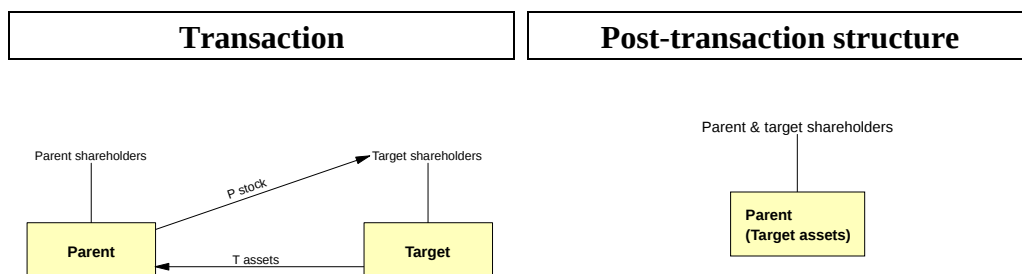
- **Classic uses:** Target must continue existence
- **Highlights:** No gain or loss for target; no step up in basis of target assets; no gain or loss on parent stock received by target shareholders; limited NOL transfer; 20% (or, in some cases, less than 20%) of the consideration may consist of cash
- **Example:** AT&T/McCaw, Lockheed/Martin Marietta, Sprint/Centel

4. Stock-for-stock (“B” reorganization)



- **Classic uses:** Parent makes friendly or hostile tender offer for target shares; parent owns minority interest in target; transaction fails to qualify as reverse triangular merger
- **Highlights:** No effect on target; no gain or loss for target shareholders; limited NOL transfer; no step up in tax basis of assets; no portion of the consideration may consist of cash

5. Assets-for-stock (“C” reorganization)

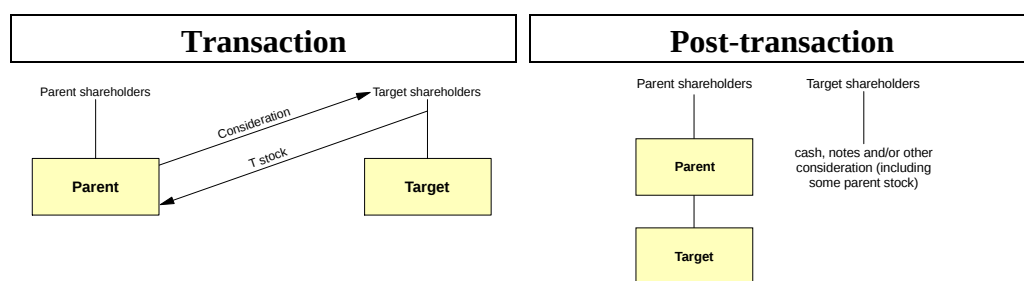


- **Classic uses:** Parent does not want some or all target liabilities
- **Highlights:** Tax-free elimination of target; parent assumes target basis in target assets (no step-up in tax basis of assets); no gain or loss on parent stock received by target shareholders; very limited ability to use cash as part of consideration
- **Example:** Jones Intercable/Jones Spacelink

B. Taxable mergers and acquisitions

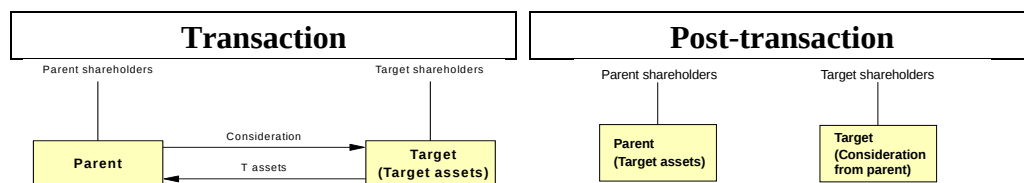
- **NB: few general limitations on transaction or post-transaction structuring**
 - Stock acquisition: gain or loss recognized by target shareholders, not target corp
 - Asset acquisition: gain or loss recognized by target corp (but generally not by target shareholders unless target is parent corporation and sales proceeds are distributed to them)
 - Stock acquisition of a subsidiary may be treated as asset acquisition if parties so choose (“338(h)(10) election”)

1. Parent acquisition of target stock



- **Classic uses:** Tax-free requirements unsatisfied; target shareholders want to recognize a loss; parent wants FMV (stepped-up) basis in target's stock; cash tender offer for target shares
- **Highlights:** Parent basis in target stock equals price paid; taxable to target shareholders; no gain or loss to target corporation; limited NOL transfers

2. Parent acquisition of target assets



- **Classic uses:** Parent does not want all or unknown target liabilities; parent not acquiring all target assets

Highlights: No transfer of NOLs; parent amortizes all intangibles; parent basis in assets equal to price paid (FMV); taxable gain for target; generally non-taxable for target shareholders unless target is parent corporation and sales proceeds are distributed to them

Legal Aspects of Mergers and Acquisitions in the United States

This outline summarizes certain important aspects of mergers and acquisitions law in the United States, but is not intended to be comprehensive. If you have any questions or issues not addressed by this outline, please contact Steve Chaiken at 6-3390.

I. Basic forms of acquisitions

The three basic forms for structuring an acquisition are: (i) a merger; (ii) an acquisition of assets and an assumption of liabilities; and (iii) an acquisition of stock.

A. *Merger.* Mergers are governed by state statutes. In a merger, two or more corporations combine into one entity (the surviving corporation) following the approval of the requisite majority of shareholders of each corporation. The stock of the non-surviving corporation is exchanged generally into either cash, the stock of the surviving corporation, or a combination of the two. The common merger forms are (i) a direct statutory merger, where the target is merged directly into the acquiror, (ii) a forward triangular merger, where the target is merged into an acquisition subsidiary of the acquiror, and (iii) a reverse triangular merger, where an acquisition subsidiary of the acquiror is merged into the target. Advantages of a merger structure include: the purchaser obtains total acquisition, with no minority shareholders remaining post-closing; relatively standard documentation; and may qualify for pooling of interests accounting. Disadvantages of this structure include: the acquiror must assume all liabilities of the target; representations and warranties of the parties in the merger agreement generally do not survive closing; and shareholders of the target may have dissenters' appraisal rights.

B. *Acquisition of assets and assumption of liabilities.* An acquiror may elect to purchase a portion or substantially all of the assets of a target, and assume a portion or substantially all of the related liabilities, in exchange for stock, cash or other consideration. Advantages of this structure include: a selective acquisition of assets and an identification of assumed liabilities are possible, reducing the risk of inheriting unexpected liabilities; the representations and warranties of the parties in the asset purchase agreement may survive closing; and the target's shareholders are generally not required to approve transaction (unless it is a sale of substantially all assets). Disadvantages of this structure include: complex documentation; corporate identity of target may not be acquired; numerous consents to assignment may be required; and the mechanics of an asset transfer may be cumbersome.

C. *Acquisition of stock.* An acquiror may elect to purchase stock from the target's shareholders, either by negotiating with the shareholders individually or as a group, or by making a tender offer. Advantages of this structure include: the target's corporate identity is preserved, enabling the target's contractual or financing arrangements to be continued; relatively simple documentation (no need to transfer individual assets or liabilities); fewer consents required than in an acquisition of assets; and if the target is closely held, may be able to provide for payments through an earn-out mechanism. Disadvantages of this structure include: the buyer may not acquire 100% of the target, and may result in having fiduciary obligations to the minority shareholders; may obtain undisclosed liabilities that erode value of the target; and availability of indemnities from the sellers is not certain.

II. The Acquisition Agreement

A. *The asset purchase agreement or stock purchase agreement.* The asset purchase agreement or stock purchase agreement is the basic contract providing for an acquisition of assets or stock. A buyer will utilize the agreement in part to obtain from the seller detailed information regarding the assets, business relationships, personnel, contingent liabilities and other aspects of the business to be acquired. As a result, the most comprehensive section of the agreement is typically the seller's representations and warranties regarding the business to be sold. A buyer may also seek to retain a portion of the purchase price against any indemnification from the seller that may become due in the event the seller has breached any of its representations or warranties. The seller, on the other hand, will seek an acquisition agreement with as few material representations regarding the business as possible, with the entire purchase price being paid in full at closing.

A typical acquisition agreement will contain the following provisions:

- (i) a description of the assets or stock to be sold (and, in an asset purchase agreement, the liabilities to be assumed);
- (ii) the purchase price, including any adjustment mechanism;
- (iii) representations, warranties and covenants from the seller and buyer;
- (iv) agreements concerning the seller's conduct of the business between execution of the acquisition agreement and closing of the transaction;

(v) conditions that must be satisfied before the seller and buyer are obligated to close the transaction, including the accuracy of representations and warranties at closing;

(vi) indemnification between the seller and buyer relating to breaches of representations and warranties and, possibly, certain covenants; the indemnity will often include threshold amounts and ceilings on liability;

(vii) agreements regarding the ability or inability of the seller to engage in a competing business for a period of time post-closing; and

(viii) conventional provisions covering choice of law, notices and other related matters.

B. *The merger agreement.* The merger agreement is the principal agreement used in a merger of two or more corporations. The contents and structure of a merger agreement are comparable to those in an asset or stock purchase agreement, with the following exceptions:

(i) A merger agreement will contain the provisions necessary, together with required state filings, to execute a merger;

(ii) In a stock-for-stock merger agreement, the representations and warranties of the parties will be much more balanced and parallel than, for example, those in an asset purchase agreement where the buyer is paying cash;

(iii) Merger agreements typically do not contain indemnification provisions; and

(iv) Merger agreements generally do not contain non-competition clauses.

III. Timing

A. *Friendly Transactions.* The form of the acquisition and the type of consideration paid will affect the timing required to consummate a transaction. Cash transactions typically take less time to close than transactions involving the buyer's stock. Particular considerations include the following:

(i) A merger or an acquisition of substantially all of the target's assets will require approval by the target's shareholders, which usually involves at least 20 days' notice either because of applicable state law or the target's by-laws;

(ii) If the target is a public corporation, a proxy statement must be prepared and approved by the Securities and Exchange Commission (the “SEC”) before the shareholder vote may be scheduled occur; the review and clearance process generally takes at least 5-6 weeks, not including the notice period for the shareholder vote;

(iii) If the acquiror needs to register its securities as consideration, it will file a registration statement with the proxy statement for review and approval by the SEC;

(iv) Filings under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 are generally required; and

(v) Approvals or consents by regulatory commissions or agencies may be necessary.

B. *Unfriendly Transactions.* The target’s board of directors may use its poison pill or other anti-takeover devices contained in its charter or by-laws, as well as relevant state anti-takeover laws, to delay an unsolicited acquisition attempt. The high likelihood of litigation, coupled with the potential for protracted hearings before regulatory commissions or agencies, often result in extended contests for corporate control.

IV. Acquisition of Stock Through Open Market or Negotiated Purchases

A. *Effects.* In general, open market or negotiated purchases of a target’s stock may result in pre-empting other potential bidders and establishing credibility with the target, and may provide an opportunity to realize a profit or recover a portion of the buyer’s expenses if its bid is topped by another purchaser. In addition, a buyer may obtain 4.9% of the target’s stock before public disclosure is required.

B. *Section 13 of the Williams Act.* In general, any person or group who beneficially owns 5% or more of any equity security registered under the Securities Exchange Act of 1934 must file a Schedule 13D with the SEC, and provide copies to the target and each national securities exchange (or the NASD) on which the target’s stock trades, within 10 days of reaching or exceeding the 5% threshold. Additionally, acquirors must promptly amend the Schedule 13D for any acquisitions or dispositions of 1% or more. Disclosure required by Schedule 13D includes:

(i) identity and background of acquiror;

- (ii) source and amount of funds used or to be used;
- (iii) purpose of the acquisition, including any plans or proposals to acquire or dispose of additional securities of the target, merge with the target, or change the board of directors or management of the target;
- (iv) interest in securities of the target; and
- (v) contracts or other arrangements regarding the securities of the target (e.g., voting, options, puts, etc.)

V. Acquisition of Stock Through Tender Offers

A. Disclosure Requirements. Upon commencement of a tender offer, the bidder must file with the SEC a tender offer statement on Schedule 14D-1, and provide copies to the target and each national securities exchange (or the NASD) on which the target's stock trades. Disclosure required by Schedule 14D-1 includes:

- (i) identity and background of the bidder;
- (ii) past contacts, transactions or negotiations with the target;
- (iii) source and amount of funds to be used in making the tender offer;
- (iv) purpose of the tender offer and plans or proposals of the bidder, including any plans to materially change the target's corporate structure;
- (v) any contracts or arrangements between the bidder and any other person regarding the target's securities;
- (vi) the bidder's beneficial ownership stake in the target at the commencement of the tender offer;
- (vii) information about persons employed by the bidder to make solicitations or recommendations in connection with the tender offer;
- (viii) financial statements of the bidder, if material to a decision by the target's shareholders; and
- (ix) regulatory and other legal considerations relating to the tender offer, including antitrust and antitakeover provisions

B. Procedural Requirements.

1. Required terms and conditions include:

- (a) tender offer must remain open for 20 business days;
- (b) tendering shareholders may withdraw their shares during the offer period;
- (c) if the tender offer is for a portion of the target's shares, and a greater number of shares are tendered, the bidder must purchase on a pro rata basis;
- (d) tender offer must be open to all security holders of the class tendered for;
- (e) if the consideration offered is increased during the tender offer, the higher price must be paid for all securities purchased;
- (f) consideration offered must be paid, or the securities tendered must be returned, promptly after termination or withdrawal of the tender offer; and
- (g) purchases of the target's shares other than through the tender offer are prohibited.

2. Commencement of a tender offer:

- (a) generally occurs upon publication of a newspaper advertisement
- (b) exchange offers for stock of the acquiror must be registered, with a registration statement for the shares declared effective by the SEC and a prospectus/offer to purchase mailed to target shareholders, before they may be commenced
- (c) if an acquiror publicly announces its intention to commence a tender offer, it has five business days to formally commence the offer, or else withdraw it

3. Amendments to a tender offer:

(a) an increase or decrease in the tender offer price or in the percentage of securities sought requires a 10-day extension of the offering period

(b) other material changes (e.g., waiving the minimum tender condition or changes in the acquiror's proposed financing for the purchase of shares) generally require a 5-day extension of the offering period

4. Target's response to a tender offer:

(a) target must inform its shareholders of its position on a tender offer within 10 business days of commencement of the offer

(b) target must file a Schedule 14D-9 with the SEC, and provide copies to the offeror and each national securities exchange (or the NASD) on which the target's stock trades

VI. Takeover Defenses

A. *Structural Defenses.* Many corporations have charter and bylaw provisions that are designed to defend against unsolicited takeovers, including:

1. Classified boards - the target's board is divided into three classes, with the directors of only one class being elected each year; this is typically combined with a provision that directors may be removed only for cause (or by supermajority shareholder vote)

2. Board size and vacancies - the board size is limited, and vacancies may be filled only by the board of directors

3. "Blank check" preferred stock - the board is authorized to issue preferred stock from time to time without shareholder action

4. Limiting action by written consent - prohibits the taking of shareholder action without an annual or special shareholder meeting, or limits such action to action by unanimous (or supermajority) written consent of shareholders

5. Supermajority provision - increases the percentage of shares required to approve a merger, consolidation or sale of substantially all assets from a simple majority to greater thresholds (e.g., 2/3, 75%, etc.); some apply only

to such transactions between the target and an “interested” shareholder (i.e., one who already owns a specified percentage of shares), and may be waived by a majority of continuing directors

6. Fair price provision - eliminates supermajority requirements for transactions with an interested shareholder if minority shareholders are paid at least as much for their shares as the highest price previously paid by the interested shareholder

7. Conduct of shareholder meetings - provisions may require prior notice regarding proposed shareholder actions; limit the calling of special meetings; govern the timing of meetings; and regulate action by written consent

8. Anti-greenmail provisions - may either require approval by a specified percentage of disinterested shareholders (i.e., less than 5%) for any purchase by the company of securities from a shareholder that owns 5% or more of the company’s stock and has held it for less than a specified period (e.g., 2 years), or may require a company to make available to all shareholders any offer to purchase shares at above-market prices

B. Poison Pills. One of the most effective defenses that a board of directors can adopt is the shareholder rights plan, or poison pill. The key feature of a poison pill is that it permits, upon the occurrence of certain hostile takeover events, all holders of the target’s common stock - except the hostile acquiror - to acquire the target’s common stock or, in certain cases, the acquiror’s common stock, at a substantial discount (usually 50%) to the market price. The result would be to cause substantial dilution of the hostile acquiror’s holdings and greatly increase the cost of the acquisition. A common form of poison pill is the preferred share purchase rights plan, pursuant to which holders of common stock are granted the right to purchase a fraction of a share of junior preferred stock at an exercise price far above the current price of the target’s common stock.

1. Triggering the rights - generally occurs on the earlier of (a) the date on which an acquiror obtains a threshold level of the target’s common stock (typically 10%-20%) and (b) the date that is 10 business days after an acquiror commences a tender or exchange offer to acquire the specified threshold of the target’s common stock

2. Flip-in provisions - in the event an acquiror obtains the specified threshold amount of the target’s common stock, all rights (other than those

held by the acquiror) become exercisable for a number of shares of the target's common stock having a total market value equal to twice the exercise price for the rights

3. Flip-over provisions - in the event an acquiror consummates certain business combinations with the target, all rights (other than those held by the acquiror) become exercisable for a number of shares of the acquiror's common stock having a total market value equal to twice the exercise price for the rights

4. Exchange provisions - once an acquiror obtains a specified threshold of the target's common stock, the target's board of directors may exchange each right (other than those held by the acquiror) for one share of the target's common stock, which causes the desired dilution without requiring shareholders to exercise the rights

VII. State Antitakeover Statutes

Most states have adopted one or more antitakeover statutes as part of their state corporation laws. The statutes, which need to be considered when examining the defensive profile of a company, may vary significantly from state to state, but may be generally categorized as follows:

A. Business Combination Statutes. These prohibit business combinations (mergers, consolidations and transfers of substantial assets) between a company and an “interested” shareholder (typically 10% or more) for a specified period of time (e.g., 3-5 years) unless the company’s board approved the transaction before the shareholder became “interested”. They may also restrict business combinations after the specified period has lapsed unless a threshold percentage of the target’s shareholders (excluding the interested shareholder) consents to the transaction or certain fair price requirements are met.

B. Control Share Acquisition Statutes. These generally require that shareholder approval be obtained before an acquiror reaches certain threshold levels of ownership in a target company (e.g., 20%, 33-1/3% and 50%); without such approval, either the acquisition may not be consummated or the acquiror’s shares will be stripped of their right to vote.

C. Fair Price Statutes. The specified fair price formula for transactions with acquirors is waived if 80% of all outstanding shares and/or 2/3 of all shares not held by the interested shareholder approves the underlying transaction.

D. Other Statutes. A few states have cash-out statutes (requiring acquirors to cash-out, on equivalent terms, all shareholders once a certain stake in the target is obtained); non-monetary factors statutes (permitting or requiring a board of directors to take into account the interests of constituencies other than shareholders when determining what is in the best interests of the company); and disgorgement statutes (requiring acquirors to disgorge profits if they sell their shares within a specified time after obtaining control of a company).

Other analyses and selected J.P. Morgan M&A standard exhibits

Company “one pager”

Definition:

The “one pager” or summary of historical financial statistics is a summary review of those aspects of a company which are most relevant to the understanding of its historical and current performance. This exhibit should distill the public information book into one concise exhibit that serves as a quick reference.

NB: Always read the company’s footnotes in its public documents before putting pen to paper

Methodology:

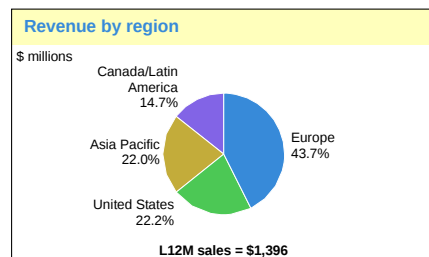
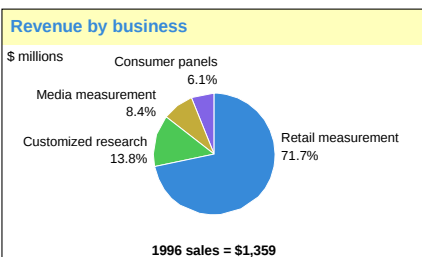
The exhibit is broken into the following parts.

- **Description of business (short and concise)**
 - Paraphrased summary of the company and its business segments
 - Source: Bloomberg, Value Line, S&P Tear sheets, Annual Report, 10-K
- **LTM operations**
 - Revenues should be net revenues
 - Net income, EBIT and EBITDA are before extraordinary gains or losses to show “normalized” earnings. Extraordinary items should be footnoted
 - See **Selected trading statistics explained** if unclear on LTM calculations
- **LTM cash flow**
 - Computed on an LTM basis using the cash flow statement
 - OCF calculated by taking net income (before extraordinary items, preferred dividends, equity income and minority interest) and adding depreciation, depletion, amortization, deferred taxes and other non-cash charges. **(Net working investment is not included as working capital investments are assumed to be discretionary)**
 - FCF calculated as OCF less capex, less net working investment (see **Discounted cash flow** if unclear on NWI derivation)
 - FCF (unlevered) calculated by taking FCF and adding the after-tax interest expense (see **Discounted cash flow** if unclear on calculation; remember the average tax rate is most technically correct but for simplicity the marginal tax rate is most often used)

Exhibit: Company “one pager”

Overview of A.C. Nielsen

General description	
Business description:	€ Largest worldwide provider of market research, information and analysis to consumer products and service industries
Business segments:	€ Retail measurement, consumer panels, customized research, media measurement
Recent news/ Important issues:	€ May 7, 1997: Federal Court throws out claim of attempted monopolization of U.S. market raised against A.C. Nielsen by IRI € May 1, 1997: A.C. Nielsen buys the 75.0% of A.C. Nielsen South Africa it did not already own from Integrated Business Information Services for \$7MM € March 10, 1997: A.C. Nielsen announces Asia Pacific reorganization € December 4, 1996: European Commission forces A.C. Nielsen to modify structural practices € October 17, 1996: D&B broken up into three companies. A.C. Nielsen listed on NYSE

Summary statistical sheet of A.C. Nielsen
\$MM, except per share data

Financial performance ¹					
L12M operations			EPS ²		
Sales	\$1,396	L12M	\$0.69		
EBIT	46	1997E	0.56		
EBITDA	139	1998E	0.78		
Net income	39	NY CAGR	8.00%		
L12M cash flow			Indicated DPS		
OCF	\$143	Dividend	\$0.00		
Capex	60	Pay-out ratio	0.00%		
FCF	86	Yield	0.00		
Unlev. FCF	83				
			Margins		
			L12M	L3YA	
			9.94%	8.11%	
			3.31	(0.29)	
			2.82	(2.93)	
Market trading performance ⁵					
Shares outstanding (MM)			Common shareholders		
Common	57.0	Institutions	74.0%		
Options	8.5	Retail	25.6		
Ex. price	\$15.71	Insiders	0.3		
Total	65.5	Others	0.0		
Last 6 mos.avg.		Total	100.0%		
Daily volume	0.223				
Share price					
Current	\$20.500	Current prem/(disc.):			
L12M range:					
Low	14.000	Low	46.429%		
High	22.688	High	(9.642)		
L12M equity multiples			L12M FV multiples		
EPS:			Sales	0.8x	
L12M	29.7x		EBITDA	7.6	
Low	20.3		EBIT	22.9	
High	32.9				
CFPS	8.2		Proj. equity multiples		
BVPS	2.6		1997EE	36.6x	
			1998EE	26.3	
Additional information					
State of incorporation			DE		
Headquarters			CT		
Listing			N		
Last reported fiscal year end			12/31/96		
Effective tax rate			48%		
Credit ratings		Cost of capital		1996 returns	
S&P	NR	Debt (p/t)	7.0%	ROE	4%
Moody's	NR	Preferred	0.0	ROC	6
		Equity	11.8		
		WACC (a/t)	11.6		

¹ L12M figures are for the period ending 06/30/97. Three-year averages are for the fiscal years 1994-1996² Calendarized median estimates based on 07/16/97 IBES Report³ Computed using the compound average growth rate (CAGR)⁴ As of 06/30/97⁵ Based on a market price of \$20.500 on 07/22/97 and common shares outstanding on 04/30/97 from the 06/30/97 10-Q

- **Per share data, payout ratio and yield**

- Earnings per share (EPS) shows profitability divided by the shares outstanding. EPS should be reported before extraordinary gains or losses **on a basic basis**. If diluted EPS is used, it should be footnoted
- LTM EPS calculated from latest financials; projected EPS and EPS growth rate based on median I/B/E/S estimates
- Dividends Per Share (DPS) is the dividend received for each share of stock owned. **Indicated DPS should be a forward-looking number calculated by taking the latest quarterly dividend announced times four.** In contrast, actual DPS would be the sum of the last four quarterly dividends paid. DPS should be shown using the same method as EPS (primary of fully diluted shares outstanding).
- Payout ratio is the percent of a company's EPS paid out to shareholders. It is calculated by dividing actual DPS (sum of last four quarterly dividends paid) by the LTM EPS. **NB: the more cash given to shareholders, the less there is available for internal use. Payout tends to be higher among more mature stable businesses such as utilities and lower among small, emerging growth companies**
- Yield is the indicated DPS dividend by the latest closing stock price, expressed as a percentage

- **Growth and margins**

- Shows performance during most recent period and over the last three years
- Growth calculated as the compound annual growth rate ("CAGR"). Do not use LTM numbers to compute. See **Selected trading statistics explained** if unclear on computation
- Margins calculated as a percentage of sales using LTM figures. Average margins calculated by taking the margins in each of the last three fiscal years and averaging the three numbers

- **Market trading performance:** market price and volume history, market multiples and shareholdings are of great importance to an investor. The information and its historical trends should be compared to the industry to provide perspective

- a) **Shares outstanding**

- Common shares outstanding as of latest 10K/Q (10K/Q cover page; footnote date)

- Options: list the number of outstanding options at a given date and note the average exercise price. (Use the most recent financial statement to determine number of outstanding options; footnote date)

NB: Compute options proceeds by multiplying number of options by average exercise price; if not quoted in financials, average exercise price can be simply estimated as (highest exercise price + lowest exercise price) divided by two

- L6M Average Daily Volume: calculated as average of actual volume traded daily during the last six months. Use Populator to take latest volume (“JPM,” “volume,” 0) and daily volume going back to (“JPM,” “volume,” -126) and average these numbers. **NB: There are 252 trading days in a year, so -126 instructs Populator to get volume traded on date six months ago.** Bloomberg can also be used: JPM <Equity> HP <GO>; input correct date range and “D” for daily then press<GO>. Note average daily volume in top right corner of screen

b) Common shareholders analysis

- Shows basic categories of ownership (insiders, institutions and retail) and notes any large institutional or insider blocks
- Source: Spectrum run from Library or Bloomberg (page 4 of Description or “ticker” <Equity> HDS <GO> for institutional holdings; latest proxy for insiders). **NB: Do not use Bloomberg for insider holdings**
- See **Analysis of shareholdings** for more information

c) Share price

- Current stock price: use most recent closing price (footnote date)
- LTM high/low: Bloomberg or Populator = IDD (“ticker,” “high” or “low,” 0)
- Compute current premium discount to LTM low/high (current price/LTM low price or LTM high price) -1 expressed as a percentage

d) LTM equity multiples, LTM firm value multiples, projected equity multiples

- Divide current stock price by LTM EPS, CFPS and BVPS. Operating cash flow per share equals LTM OCF divided by latest weighted average shares outstanding; Book value per share equals shareholders equity line item from most recent balance sheet (no preferred stock) divided by shares outstanding from cover page of latest 10K/Q
- Divide LTM high and LTM low share prices by LTM EPS

- Divide current firm value by LTM sales, EBITDA, EBIT (**see Selected trading statistics explained** if unclear of firm value calculation)
- Divide current stock price by projected median I/B/E/S EPS estimates

- **Capital structure**

- Capitalization figures provide data on the amount of “leverage” or debt. It is shown on a book basis as per the latest 10K/Q and a market basis as per the most recent stock price. As a practical matter, the only difference between the Book and Market Capitalization numbers arises from the value of the equity account
- Book Capitalization values are found in the latest 10K/Q or annual. It is the shareholders equity line item plus preferred plus total net debt. This figure represents the accounting value of the company. Note the date of these financials
- Market Capitalization differs from Book Cap only in that the market values of the preferred stock (if available) and common stock replace the book values. Multiply the number of shares outstanding (cover page of latest 10K/Q) by the current stock price. Check Bloomberg or call Debt Capital Markets for market value of preferred stock; if unavailable, use book value. This is the value that the stock market ascribes to the company
- Cash and cash equivalents: Use the latest 10K/Q or annual to find this value
- LTM credit: Divide latest total net debt figure by latest book cap. and by latest market cap. to calculate respective leverage ratios (expressed as a percentage); divide LTM gross interest expense by LTM EBIT (excluding extraordinary items, but including interest income) to compute EBIT/interest multiple; divided latest total net debt figure by latest OCF number to compute debt/OCF multiple
- Credit ratings: Call S&P at **212-208-1527** or at Moody’s at **212-553-0377**; check with Debt Capital Markets for J.P. Morgan estimate. **NB: Check with senior team member before showing clients J.P. Morgan’s internal rating**
- Cost of capital: Check with Debt Capital Markets to estimate pre-tax cost of debt (see **weighted average cost of capital** if unclear on calculation)
- Returns: Divide last fiscal year net income (excluding extraordinary items and before preferred dividends, equity income and minority interest) by Average Shareholders Equity to calculate return on equity (“ROE”); divide last fiscal year EBIT (excluding extraordinary items) by average book capitalization to compute return on assets (“ROA”). Average shareholders equity equal to sum of shareholders equity line item from latest 10K/Q (excluding any preferred stock) in each of last two fiscal years divided by two; average book

capitalization equal to sum of book capitalizations in each of last two fiscal years (shareholders equity plus total net debt) divided by two

- **Footnotes**

- The footnotes shown should be standard on all “one-pagers.” In addition, any items requiring further explanation should be footnoted (i.e., mergers, significant changes in accounting policies, stock splits, extraordinary gains or losses, etc.)

- **Pension Fund Status (*optional*)**

- Indicate whether the company’s pension plan is under- or over-funded and by what amount (PBO less plan assets)
- Note the expected long-term rate of return on pension assets. (Noted in the pension plan footnotes)

Additional information

- State of incorporation and headquarters (front page of 10K/Q)
- Stock symbol (Moody’s Stock Guide, S&P Tearsheet, Bloomberg, etc.)
- Listing: the stock exchange(s) on which the company’s shares are listed (in Moody’s Stock Guide, S&P Tearsheet, Bloomberg, etc.)
- Anti-takeover provisions are not always included in a “one pager.” If they are included, then the information can be found in the company’s by-laws, charter and proxy, which must be ordered from the library. **NB: Do not ask Davis Polk to summarize this information, except in extraordinary circumstances, as it is costly**

Data sources:

All data for the company “one-pager” may be found in latest 10-K, annual report, 10Q and proxy and on Bloomberg. **Check latest news on Bloomberg, Newsedge or Lexis/Nexis to catch any reported figures not yet available on EDGAR or Disclosure**

General comments:

- This is the time to get to know the company. Read all the financial data and in particular the footnotes to the annual
- In general, when there is doubt about the need for a footnote, put it in or ask another member of your team
- **Understand the “one pager” and what each statistic says about the company and its performance**

Break-up valuation

Definition:

A break-up valuation reflects the value of a company's equity by summing the value of its individual segments on a standalone basis to arrive at the total asset value, and then making corporate adjustments to determine the net asset (or equity) value. In essence, the break-up analysis looks at a company from the perspective of a raider who would finance an acquisition by "breaking-up" the company (i.e., selling off each operating segment)

Methodology:

- One page exhibit with both values and comments on a single page
- Summary sheet of values; back-up sheet of footnotes and computations

The exhibit typically consists of the following items:

- **Segments**
 - Each company segment valued independently; valuation method used depends largely on the type of company and the available information. Discounted cash flow valuation and analysis of multiples are *de rigueur*. Confer with a team member to choose the most appropriate valuation technique. Be sure to footnote the chosen method(s)
- **Cash and cash equivalents**
 - Include any excess cash (cash deemed unnecessary to operate the business) plus marketable securities
- **Pension surplus**
 - There are two types of pension plans:
 - **Defined contribution plan**
 - Fixed amount of contribution (i.e., employer sets aside a specific percentage of each employees – can't discriminate in favor of certain employees – annual salary); risk shifted to employees, as money must be invested. Accounting impact: company records pension expense each year as pension is funded.
 - **Defined benefit plan**
 - Company sets aside money based on actuarial estimates to ensure that employees will receive a specified pension for life upon retirement; investment risk rests with company as portfolio performance determines future contributions. Actuarial analysis typically includes worker life expectancy, retirement ages, future salaries, rates of return. Accounting impact: complexities arise due to under- or over-funded status.

- Defined benefit plans (not defined contribution plans) require surplus/deficit analysis
 - **Underfunded pension**
 - As of 1989, underfunded pension liabilities are recorded on the balance sheet (prior to 1989, reported as contingent liability in footnotes); no reduction in book equity to offset the pension liability, rather a corresponding asset.
 - **Overfunded pension**
 - Only shown in footnotes, never as an asset; excess cash creates “opportunity” for company or potential raider to disband pension plan to free up excess cash; (access as a legal matter is more complex)

NB: excise tax rate is currently 10% for pension terminations.

- The after-tax pension surplus is calculated as follows:

$$\begin{aligned} \text{Pre-tax Pension surplus} &= \text{Total pension Assets} - \text{Accumulated Benefit Obligation ("ABO")} \\ \text{After-tax Pension surplus} &= \text{Pre-tax Pension surplus} \times \left\{ 1 - \frac{\text{Excise Tax Rate} + \text{Marginal Tax Rate}}{\text{}} \right\} \end{aligned}$$

NB: The ABO represents the amount actually owed to employees for past services whereas the PBO (Projected Benefit Obligation) is an estimate of past and future benefits owed to employees. In a break-up scenario, the ABO is used because the selling company should not be responsible for future liabilities

- In the event that the calculation yields a negative number, the exhibit entry would be called “Pension Deficit” and the value would be subtracted from the total assets
- List the date of the financial statement used in calculating the pension surplus

- **Other assets**

- i.e., corporate real estate (as opposed to PP&E used by operating divisions), advances to affiliates and equity investments in unconsolidated subsidiaries. If

the market value of these assets is known, then use that number, otherwise use the book value from the most recent balance sheet (footnote the date)

- **Short-term debt:** from most recent balance sheet
- **Long-term debt:** from most recent balance sheet
- **Preferred stock:** from most recent balance sheet
- **Minority interest:** from most recent balance sheet

- **Equity value (or net asset value)**
Total of segment valuations, cash, option proceeds, pension surplus, other assets, STD, LTD, Pfd. stock, minority interest. The result is the break-up value of the company

- **Market value**
 - Add the number of shares outstanding from the most recent financials and the number of options assumed to have been exercised to determine total shares outstanding. Footnote the date of this value
 - Multiply this by a recent closing stock price. Note this date also

- **Footnotes**
 - List the number of shares used to calculate the per share numbers. Make sure this number includes the options which are assumed to have been exercised (i.e., the number of shares used to calculate option proceeds should be added to the number of shares outstanding to maintain consistency)

EPS calculations

Definition:

Earnings available to common stock shareholders for each share owned.

Companies with simple capital structures typically presented just one calculation of EPS; companies with complex capital structure typically showed a dual EPS presentation (primary and fully diluted EPS); for financial reports for periods ending after 12/15/97, a new methodology is used, consisting of only two measurements – Basic and Diluted EPS¹

Contact Mary-Kathleen Delicaet (5-1320) or Vaishali Bhatt (5-2716) for further information on calculating EPS. (They work in the internal J.P. Morgan Accounting Group.)

Old methodology – the two ways of calculating EPS:

- 1) Primary EPS = Net income (after preferred dividends) ÷ (weighted average shares outstanding + common stock equivalent shares)
 - Represents income earned by each outstanding share and, if applicable, each security that is equivalent to a common share (a “common stock equivalent” or “CSE”)
 - Net income is before extraordinary items
 - Common stock equivalent shares arise if the company has warrants or options outstanding and also if the company has convertible debt or equity outstanding that has certain characteristics as described below
- 2) Fully diluted EPS = Net Income (after preferred dividends) ÷ (weighted average shares outstanding + common stock equivalents + other dilutive securities)

NB: Only needed to show in financial statements if fully diluted is at least 3 percent lower than Primary EPS

- Dilutive securities are securities that are not in common stock form but that would enable holders to obtain common stock upon exercise or conversion
- Shows “worst case” EPS if all securities that could be converted into common stock are so converted

¹ See FASB Statement No. 128 which supersedes (APB Opinion No. 15, *Earnings per Share*) for details

New methodology – the two ways of calculating EPS (12/15/97 effective date):

- 1) Basic EPS = Net income (after preferred dividends) ÷ (weighted average shares outstanding)
 - Includes no other dilutive securities
 - Common stock equivalents not included
 - Represents income earned by each outstanding share
 - Net income is before extraordinary items
 - Many firms expected to report higher basic EPS relative to primary EPS

- 2) Diluted EPS = Net income (after preferred dividends) ÷ (weighted average shares outstanding + “potential common shares”¹+ other dilutive securities)
 - Reflects potential dilution that could occur if securities or other contracts to issue common stock were exercised or converted into common stock or resulted in the issuance of common stock. This calculation method is similar to fully-diluted EPS
 - Effective for periods ending after 12/15/97, including interim periods (i.e., fourth quarter of 1997 for calendar-year entities).
 - Restatement of all prior period EPS data is required (i.e., restate back 1/1/97 for calendar-year entities)
 - New measurement system effectively eliminates primary EPS and therefore the distinction between CSEs and non-CSEs
 - **Companies will be expected to use the average market price for their stock during the quarter to determine the cost of options exercised instead of the closing price for their stock on the last day of the quarter. Therefore, there will potentially be less dilution and higher reported diluted EPS resulting in lower price earnings ratios**

Warrants and options

Warrants, options and similar securities are considered common stock equivalents at all times unless conversion of these securities proves *antidilutive* (i.e., EPS would be increased after accounting for these securities. The antidilution occurs if the market price of the stock is lower than the exercise price of the option). Both primary **and**

¹ Under FAS 128, shares that will be issued with only the “passage of time” needed (e.g., vested options, contingent shares)

fully diluted EPS should reflect the dilution that would result from exercise or conversion of these securities.

Warrants and options are either “out of the money,” “at the money” or “in the money” at any point in time.

“Out of the money”

A holder of an option or warrant has the right to buy shares at \$50 per share. This \$50 amount is known as the “strike price” or “exercise price.” If the stock is selling for \$42, no one would exercise the option. It is out of the money by \$8. It doesn’t have a dilutive effect at this point.

“At the money”

A holder of an option or warrant has a strike price of \$50. If the stock is selling for \$50, it is at the money. It **does not** have a dilutive effect at this point.

“In the money”

A holder of an option or warrant has a strike price of \$50. If the stock is selling for \$62, then the warrant or option is “in the money” by \$12 and would have a dilutive effect on the existing shareholders if it were exercised.

Warrants and Options which **are in the money on the last day of the period under review** and have been in the money for substantially the last quarter, are considered to be **CSEs** and are used in the calculation of **diluted EPS**.

Otherwise, if the warrants and options are not in the money for substantially the last quarter of the year (as described above), then they are considered to be “A Nothing” and are simply ignored in the calculation of diluted EPS, in that they do not have a dilutive effect.

The amount of dilution to be reflected in earnings per share data should be computed by application of the “**treasury stock**” method. Under this method, EPS is calculated as if the warrants and options were exercised at the beginning of the reporting period (or at the time of issuance, if later) and as if the funds obtained by the exercise were used to purchase common stock at an appropriate market price

shares for EPS purposes = shares outstanding + incremental shares

Incremental shares = # of warrants - ((# of warrants * exercise price) ÷ market price)

- For primary shares outstanding. “old methodology”: use the average market price during the period in question as the denominator,
- For fully diluted shares outstanding: the old measurement system required that the **closing market price** of the stock for the period in question be substituted for the average price **if that closing price was higher**. (If the closing market price was higher, the number of shares repurchased would have been smaller and therefore more shares would have been outstanding, thus resulting in a more diluted EPS). **Under new methodology, the average price over the period in question is used**
- As a practical matter, the current stock prices is used for both calculations unless the stock price has changed dramatically over the period in question

Treasury stock method example

Net Income =	\$1,000,000
Shares outstanding =	500,000
Warrants and Options (to purchase equivalent shares of stock) =	100,000
Exercise Price per share =	\$10
Average Market Price Per Share =	\$15
Closing Market Price Per Share =	\$20

Primary EPS:

$$100,000 - \frac{100,000 \times \$10}{\$15} = 33,333 \text{ incremental shares}$$

$$\text{Primary EPS} = \frac{\$1,000,000}{500,000 + 33,333} = \$1.88$$

Fully Diluted EPS:

$$100,000 - \frac{100,000 \times \$10}{\$20} = 50,000 \text{ incremental shares}$$

$$\text{Fully Diluted EPS} = \frac{\$1,000,000}{500,000 + 50,000} = \$1.82$$

NB: If the company receives no cash upon the exercise of warrants/options (i.e., warrants attached to bonds) the treasury stock method is not applicable. Instead, the assumption is that the bond is retired and savings occur on after-tax interest costs.

NB: Under the old measurement system, the number of shares assumed to be repurchased using option proceeds could not exceed 20% of outstanding stock (100,000 limit in our example, versus 66,667 shares assumed to be repurchased for Primary calculation). Any additional option proceeds would have been assumed to retire short-term debt first, then long-term debt, and finally, to be invested in government securities. This restriction is now moot because the 20% limit has been eliminated. **Under the new measurement system, assume the company buys back as many shares as possible using the average price for the year.**

Convertible debt

Convertible debt is accounted for on the “**as-if-converted**” method as they are considered dilutive securities.

If, **at the time of issuance**, the cash yield (cash interest paid each year/cash received at date of issuance) of the convertible security is significantly below Moody’s Aa rate (i.e., less than 66 2/3% of the Aa rate), it is assumed that the security is valued for the underlying stock and should be considered a common stock equivalent. In this case, under the old measurement system, the number of shares underlying the convertible security would have been added to **both primary and fully diluted shares outstanding**. Under the new methodology, the underlying shares are added back to diluted EPS only. Since the conversion represents a reduction of debt, the after-tax interest should be added back to income in the EPS calculation.

If, **at the time of issuance**, the cash yield is greater than 66 2/3% of the Aa rate, it is assumed that the bond is valued for the current yield and not necessarily for the underlying equity. In this case, under the old measurement system, convertibles were included **only in the fully diluted EPS calculations**. Under the new methodology, it is still included in diluted EPS. The calculation is the same as above: add the number of shares underlying the convertible security to the number of shares outstanding to derive the denominator. Add the after-tax interest associated with the convertible security back to net income to arrive at the proper numerator.

NB: To calculate common shares underlying convertible debt, divide the book value of the convertible debt by the conversion price. Alternatively, the footnotes may indicate common shares underlying convertible debt.

Convertible preferred

Convertible perpetual preferred securities are accounted for on the “as if converted” method, as they are considered dilutive securities. (See above for calculations).

Mandatory conversion preferred securities are also accounted for on the “as if converted” method. To calculate the number of shares underlying the securities:

PERCS-type economics

Future stock price < Capped price

1 Share

Future stock price > Capped price
(Capped price/Market price) shares

PRIDES-type economics

Future stock price < Issue price

1 Share

Issue price < Future stock price <
Strike price
(Issue price/Market price) shares

Future stock price > Strike price
(Issue price/Strike price) shares

NB: The saved dividend from these securities added back to the numerator is not tax-effected, as these dividends are not expensed and not tax-deductible. (Except convertible MIPS or TOPRS).

Projected EPS

When projecting EPS, use current shares outstanding unless company intends to repurchase or issue a large quantity of shares.

LTM EPS

To calculate the LTM earnings, add the EPS numbers; (do not use LTM net income and divide by the number of shares currently outstanding).

Old methodology example: Simple capital structure (single presentation of EPS)

- Compute income available to common stock (net income minus pfd. dividends)
- Compute weighted average number of common shares outstanding (beginning period + end period) ÷ 2

Primary EPS = Income available to common stock ÷ weighted average number of common shares.

Old methodology example: Complex capital structure (dual presentation of EPS)

- | | |
|---|---|
| <ul style="list-style-type: none"> • Primary EPS
(Include dilutive CSE) • Convertible securities (Include as CSE if effective yield less than 66 2/3% of the average Aa corporate bond yield) • Options and warrants
(Always CSE; include if dilutive) • Contingent issuance agreements
(include as CSE if based on passage of time or on earnings or market price level currently attained) • Formula
Income available to common stock adjusted for interest (net of tax) and preferred dividends on CSEs ÷ weighted average number of common and common equivalent shares • Subject to 3% test | <ul style="list-style-type: none"> • Fully diluted EPS
(Include dilutive CSEs and all other potentially dilutive securities) • Convertible securities
(Always include if dilutive) • Options and warrants
(Always include if dilutive) • Contingent issuance agreements
(Always include if dilutive) • Formula
Income available to common stock adjusted for interest (net of tax) and preferred dividends on all dilutive securities ÷ weighted average number of common shares assuming maximum dilution from all dilutive securities • Subject to 3% test |
|---|---|

If dilution from primary EPS is less than 3% for fully diluted EPS, only primary EPS is reported. Otherwise report both primary and fully diluted EPS as computed above.

New methodology: summary of differences between new rules (effective 12/97) and previous rules

- 1) The simple, primary, and fully diluted measurements will be replaced with only two measurements (a) basic, (b) diluted
- 2) Basic EPS will include in the denominator contingent and vested shares where the conditions for their issuance has been met
- 3) The 3% materiality test will be abandoned – basic and diluted always presented
- 4) The **term** Common Stock Equivalent is no longer used but the **concept** is used in diluted EPS. New methodology uses “potential common shares”

-
- 5) When looking at options and warrants, the restriction of buying back 20% of the stock will be lifted when applying the treasury stock method
 - 6) Average price for the year will be the assumed price of any stock buyback. The year-end price will no longer be used in the calculation
 - 7) EPS amounts will be shown for continuing operations and all other items as well (e.g., discontinued operations, extraordinaries)
 - 8) A reconciliation will be shown showing why the numerator and denominator are different between the “basic” measurement and the “diluted” measurement – usually in a footnote
 - 9) Potentially dilutive securities are considered in sequence from most to least dilutive to reflect maximum dilution
 - 10) Any antidilutive securities which did not enter into the EPS calculation will be disclosed. Also disclosed would be any deferred dividends in arrears
 - 11) Transaction after period being presented but before statements are issued that would materially change the number of common or potential common shares must be disclosed – usually in a footnote
 - 12) These new FAS rules are in agreement with IASC rules which should lead to more uniformity with other countries EPS reporting. Although international EPS rules will be very similar to U.S. rules after these changes, the earnings numbers themselves are based on different GAAP measurements. As always, special care should be used in attempting to compare international data
-

Exhibit: Comparison of APB Opinion No. 15 (old methodology) and FASB 128 (new methodology)*Earnings per share*

APB Opinion No. 15	Provisions of FASB 128, <i>earnings per share</i>
Scope:	Scope:
Public companies only	- Entities having issued common stock or potential common stock (securities such as options, warrants, convertibles, or contingent stock agreements), if trade on public or OTC market - Not applicable to investment companies or statements of wholly-owned subsidiaries - Entities presenting EPS, even if not required to do so, must comply with these provisions
Primary EPS:	Basic EPS:
Calculated by dividing earnings after preferred dividends by the weighted average number of common shares outstanding <i>and common stock equivalents (securities which, because of their issuance terms, are in substance equivalent to common stock)</i>	Calculated by dividing income available to common stockholders (income from continuing operations or net income less dividends declared on preferred stock and dividends accumulated on cumulative preferred stock) by the weighted average number of common shares outstanding during the period. Common stock equivalents are <i>not</i> included
Fully Diluted EPS:	Diluted EPS:
Treasury stock method for options assumes repurchase of shares at the <i>higher</i> of the average price for the period or ending price per share	The treasury stock method for options and warrants assumes repurchase of shares at the <i>average price</i> for the period per common share
The modified treasury stock method limits repurchases of shares to 20%, then assumes debt retirement, then investments in government securities	The modified treasury stock method would be eliminated
Options or warrants that expire or are canceled during the period should be included in the diluted computation for the period they are outstanding	No change to existing standard
The if-converted method should be used for convertible securities	No change to existing standard
Potential shares are omitted if the conversion or exercise date is more than 5 years for primary EPS and 10 years for fully diluted EPS	There is no time limit on the conversion or exercise date for options, warrants and convertible securities
	Potentially dilutive securities should be considered in sequence from most to least dilutive
	Contracts that require the entity to repurchase its stock (i.e., written put options and forward purchase contracts) shall be reflected in the computation of diluted EPS if the effect is dilutive. If those contracts are “in the money” (the exercise price is above the average market price), the dilutive effect shall be computed using the reverse treasury stock method

Exhibit: Comparison of aspects of APB opinion no. 15 and FASB statement no. 128*Earnings per share*

APB Opinion No. 15	Provisions of FAS 128, <i>Earnings Per Share</i>
Both computations:	Both computations:
Common shares issued and reacquired during the period should be included in both computations for the period that they were outstanding in computing the weighted average number of shares	No change to existing standard
	A rights issue with a bonus element which is available to all shareholders and is only contingent on the passage of time shall adjust basic and diluted EPS retroactively using the theoretical ex-rights method
Presentation:	Presentation:
Fully diluted EPS need not be disclosed if dilution is less than 3%	Both basic and diluted EPS should always be presented for income from continuing operations and for net income on the face of the income statement with equal prominence
EPS data required for cumulative effect of a change in accounting principle, but optional for discontinued operations and extraordinary items	Both basic and diluted EPS data required for <i>all</i> items below income from continuing operations, i.e., discontinued operations, extraordinary items and cumulative effects of accounting changes. Data may be disclosed on either the face of the income statement or in the notes
Disclosure:	Disclosure:
The basis of the EPS calculation, current preferred dividends, and cumulative preferred dividends in arrears must be disclosed	A reconciliation of basic EPS to diluted EPS (both numerator and denominator) and the amounts of preferred dividends for the period must be disclosed
	Antidilutive securities not included in diluted EPS must be disclosed in the notes
Supplementary EPS if a conversion occurs after the end of the period but before issuance of the financial statements must be disclosed	A description of any transaction that occurs after the end of the period but before issuance of the financial statements that would have changed materially the number of common shares or potential common shares must be disclosed. Examples of those transactions include the issuance or acquisition of common shares; the issuance of warrants, options, or convertible securities; the resolution of a contingency pursuant to a contingent stock agreement; and the conversion or exercise of potential common shares outstanding at the end of the period into common shares

Analysis of shareholdings

Definition:

The analysis of shareholders exhibit provides insight into shareholder composition by identifying large blocks of stock and insider holdings.

Methodology:

- Institutions
 - Use the first two sections of CDA/Spectrum to identify the major institutional shareholders. This should include funds and 13-F filers. **Avoid double counting of institutional and investment companies by including only those fund holdings that do not have a plus mark in front of them**
 - List the top 10 institutional holdings or as many more companies that hold 1% or more of the outstanding stock
 - Calculate the rest of the institutional holdings and note the number of holders this represents; calculate as follows:
$$\begin{array}{lcl} + & \text{13-F Filings} & \\ + & \text{Fund Holdings (no + mark)} & \\ = & \text{Total Institutional Holdings} & \\ - & \text{Top 10 Institutions} & \\ = & \text{Other institutions} & \end{array}$$
- Insiders (Directors, Officers, Management)
 - Use the latest proxy statement to identify the insider shareholdings and any options
 - Check for recent 13-Ds or 13-Gs
- Total Retail or “Other” Holdings
 - Calculate the difference between sum of institution and insider holdings and total shares outstanding
- Footnotes
 - The dates of the latest proxy and the latest CDA/Spectrum run
 - The holdings of each director or officer should be footnoted as per the proxy

Exhibit: Analysis of shareholdings

	Primary shares ¹	% of primary	Options, etc. (000)	Fully diluted shares ² (000)	Market value (\$MM)	% of Fully diluted
Institutional holders						
Fidelity	10,000.0	5.0	0.0	10,000.0	500.0	4.3
Putnam	9,500.0	4.8	0.0	9,500.0	475.0	4.0
Capital Research	9,000.0	4.5	0.0	9,000.0	450.0	3.8
State Street (Index)	8,500.0	4.3	0.0	8,500.0	425.0	3.6
Bankers Trust	8,000.0	4.0	0.0	8,000.0	400.0	3.4
Scudder Stevens	7,500.0	3.8	0.0	7,500.0	375.0	3.2
Chase	7,000.0	3.5	0.0	7,000.0	350.0	3.0
CREF	6,500.0	3.3	0.0	6,500.0	325.0	2.8
Travelers	6,000.0	3.0	0.0	6,000.0	300.0	2.6
Other institutions	<u>53,000.0</u>	<u>26.5</u>	<u>0.0</u>	<u>53,000.0</u>	<u>2,650.0</u>	<u>22.6</u>
Total institutions	125,000.0	62.5	0.0	125,000.0	6,250.0	53.2
Management & insiders						
President	50.0	0.0	1,000.0	1,050.0	52.5	0.4
CFO	40.0	0.0	1,000.0	1,040.0	52.0	0.4
CHM	30.0	0.0	1,000.0	1,030.0	51.5	0.4
Board Member	5.0	0.0	500.0	505.0	25.3	0.2
Board Member	5.0	0.0	500.0	505.0	25.3	0.2
Board Member	5.0	0.0	500.0	505.0	25.3	0.2
Board Member	1.0	0.0	100.0	101.0	5.1	0.0
Board Member	1.0	0.0	100.0	101.0	5.1	0.0
Board Member	1.0	0.0	100.0	101.0	5.1	0.0
Board Member	<u>1.0</u>	<u>0.0</u>	<u>100.0</u>	<u>101.0</u>	<u>5.1</u>	<u>0.0</u>
	139.0	0.1	4,900.0	5,039.0	252.0	2.1
Retail and other holdings	74,861.0	37.4	0.0	104,961.0	5,248.1	44.7
Total shares outstanding³	200,000.0	100.0	35,000.0	235,000.0	11,750.0	100.0

¹ Based on 20.0MM share out as of latest proxy dated 3/24/97² Based on 35.0MM options, restricted and bonus stock awards as of latest proxy, dated 3/24/97³ Includes options, restricted stock awards, stock bonus awards, stock unit awards and deferred stock payable in stock

Analyst coverage analysis

Purpose

The purpose of analyzing the analyst coverage of a company is to determine whether a company is:

1. Receiving sufficient coverage from analysts
2. Being covered by the top analysts in an industry
3. Being covered by analysts in the proper industry

NB: This analysis is often used in presentations where JPM is recommending strategic alternatives concerning a specific subsidiary or division of a client. The analysis can be used to demonstrate that the sub is not receiving appropriate attention from the analyst community and the sub could be valued better through a spin-off or carve-out.

Methodology

- Using Bloomberg, access the Nelson database of analyst coverage (e.g., “JPM” <Equity> ANC <GO>)
- Select all analysts that have written reports in last twelve months
- Check *Institutional Investor*’s annual ranking of analysts to determine if top ranking analysts cover company published
- Order most recent reports from key analysts as well as selected historical reports from Library
- Determine the industry focus of analysts covering the company
- Determine analysts recommendations (projected EPS, projected growth rate, target price) by searching IBES or First Call database on Populator, Insight or Infocenter

Exhibit: Research analysts’ commentary

Date	Firm (analyst)	Recomm.	Price at report	1997E	1998E	Five-year proj. CAGR (%)	Target price
08/18/94	I/B/E/S		\$70.00	\$4.79	\$5.39	9%	
08/18/94	Salomon Brothers (M. Haggart)	Hold	70.00	4.80	5.50	10	\$70.00
07/28/94	Morgan Stanley (P.A. Brooke)	Hold	63.00	4.86	5.40	11	\$72.00
07/26/94	Merrill Lynch (R.R. Vietor, et al.)	Buy	63.50	4.80	5.35	12	\$75.00
04/20/94	Goldman Sachs (A.S. Lachman, et al.)	Neutral	65.00	4.80	5.40	9.5	\$70.00

- “Excellent company. Historically, has generated strong financial performance with the highest earnings per share growth in the industry over the last five years”
- “Represents an attractive acquisition target in the context of industry consolidation given its broad line of products and strong in-house R&D”

Company management profiles

Purpose

Analyzing the profile of a company's management and directors provides critical insights into the company's ownership, governance, and ongoing strategy. A company which is family-owned and that has a tight board is much less likely to entertain an approach than one that is widely-held and that has a board composed of directors that are known for their emphasis on shareholder value creation

Methodology

- The first step in analyzing a company's management and board is to read the relevant section in the company's latest proxy
- Check director's affiliations on Bloomberg by accessing the management profile section

Exhibit: Profile of insiders, directors, and officers

Name (age)	Appointed (class)	Executive office or committee	Other positions and affiliations	Shares ¹ and other company interests
Inside directors				

Outside directors

Other officers

¹ Common shares and options, including those held beneficially, disclosed in the 10-K and the proxy statement

Exhibit: Defensive profile – provides essential information regarding a company’s vulnerability to hostile approach

Board of Directors	Shareholders								
• Potential acquirors are encouraged to negotiate with board – Board may redeem share purchase rights plan (20% threshold) – Board approval is exception to New Jersey five-year freeze-out statute – Board approval also precludes need for supermajority shareholder vote (80%) or fair price requirements • Merger resolution requires affirmative majority vote of continuing directors – May take into account the interests of employees, community, etc. • Potential acquiror needs considerable time to take control of Board – 12 Board members (21 authorized) – Classified Board; three classes, one year – Advance notice provisions – No cumulative voting – Removal only for cause or 80% shareholder vote – Vacancy filled by majority of continuing directors • Relevant by-law amendments require 80% affirmative vote of shareholders	• Shareholder profile <table> <tr> <td>Institutions</td><td>64%</td></tr> <tr> <td>Beneficial</td><td>0</td></tr> <tr> <td>Insiders</td><td>1</td></tr> <tr> <td>Other</td><td>35</td></tr> </table> However, significant institutional shareholder overlap (47%) • Merger requires affirmative shareholder vote as follows: – If Board approves, 50% of all shares – If board does not approve, then • If acquiror owns < 10%, 80% of all shares or fair price • If acquiror owns $\geq$ 10%, only after five years, and only if (i) 67% of disinterested shares or (ii) fair price • Potential acquiror has limited ability to bypass company's normal shareholder voting process – Special meetings called only by Chairman, President or Board – Advance notice provisions – Action by written consent only if unanimous • Relevant by-law amendments require 80% affirmative vote of shares	Institutions	64%	Beneficial	0	Insiders	1	Other	35
Institutions	64%								
Beneficial	0								
Insiders	1								
Other	35								
Defensive Capital	Other Change of Control Provisions								
• Company has sufficient authorized capital (including “blank check” preferred securities) to facilitate white squire or alternative defensive investment • Company has insufficient debt capacity to propose a recap as a meaningful alternative • Anti-greenmail provision ($\geq$ 5% shareholder requires majority affirmative vote of all shares)	• Payments to key managers if terminated within one year • All outstanding options become exercisable • Debtholders may exercise right to refinancing of debt								

Exhibit: Trade-weighted volume analysis – provides insight into current shareholder's basis in target stock

	1992		1993		1994		1995		1996		19941-1996			
	Shares	% of total	Shares	% of total	Shares	% of total	Shares	% of total	Shares	% of total	Shares	% of total volume traded at or below this price range		
	traded	at or	traded	at or	traded	at or	traded	at or	traded	at or	traded	Prev. 5	Prev. 3	Prev. 2
	(000)	below	(000)	below	(000)	below	(000)	below	(000)	below	(000)	years	years	years
\$50.00														
\$49.00														
\$48.00														
\$43.00														
\$42.00														
\$41.00														
% of total shares ¹														

¹ Shares traded as % of total shares outstanding on 5/20/96

Appendix A: Proofreading marks

Exhibit Appendix A: I: Proofreading marks

Appendix B: Using the HP-12C

- **Calculating the time value of money**

- Turn on calculator
- Clear by pressing:
f (clear) fin, f (clear) reg

- Enter data as follows:

Keystrokes	Comments
n	Enters number of periods
i	Enters interest rate, expressed as whole number, not a percentage
PMT	Enters the amount of an equal payment over time (i.e., an annuity)
PV	Enters present value
FV	Solves for future value
(g) END	Puts calculator in annuity due mode; the first payment is today (no interest), the last payment is one period from expiration (interest on last payment and all funds)
(g) BEG	Puts calculator in ordinary annuity mode; first payment is one period from today, the last payment goes in and comes right back out
# (f) Amort	Amortizes # of periods; amount on screen is portion of payment that is interest
x<>y	Shows portion of payment that is principal
(RCL) PV	Remaining principal balance

- **Discounting cash flows**

- *Please refer to pages 45-46 for detailed mechanics*

Keystrokes	Comments
(g) CFo	Cash flow at time period zero (if initial investment, enter as negative number)
(g) CFj	Cash flow at all other time periods
(g) Nj	Number of times a cash flow repeats itself
RCL	Verifies number of cash flows
i	Discount rate to discount cash flows
(f) NPV	Solves for net present value
(f) IRR	Solves for internal rate of return

- **Programming the calculator to calculate the CAGR with the log linear least squares methodology**

- Turn on calculator
- Put calculator in programming mode and clear any old program from the memory by pressing:

f P/R f (CLEAR) PRGM

- Enter the program as follows:

Instruction	Keystrokes	English translation of keystroke instructions
01	f (CLEAR) Σ	Clear the statistics registers, stack and display
02	RCL 1	Get the number of data points that have been entered
03	1	Place a 1 in the HP-12C display
04	+	Add one to the number of data points that have been entered, and
05	R/S	Stop, while displaying the number
06	g x=0	Did the user enter a zero?
07	g GTO 12	Yes: Go to instruction 12 and calculate the growth rate
08	g LN	No: Take the natural log of the value the user entered at instruction 05 above
09	x $\begin{smallmatrix} \geq \\ < \end{smallmatrix}$ y	Switch the new value with its period number
10	Σ +	Enter the x, y pair into the regression package
11	g GTO 02	Go to instruction 02 to set up entry of the next data point
12	g $\hat{y}$, r	Project the X_0 datapoint (zero was just entered by the user at instruction 05) onto the fitted line
13	g e^x	Take the anti-natural log
14	1	Prepares the HP-12C to project the X_1 datapoint
15	g $\hat{y}$, r	Project S_1 onto the fitted line, and
16	g e^x	Take the anti-natural log
17	x $\begin{smallmatrix} \geq \\ < \end{smallmatrix}$ y	Switch the positions of the X_1 projection and the period number in the stack, and
18	R $\downarrow$	Roll the stack downward so that e^x1 is in register X and e^x0 is in register y
19	$\Delta\%$	Take the slope (percentage change) of the dependent variable Y over a change of 1 in the independent variable X, (i.e., the period of time)
20	R/S	Stop, display the growth rate, and accept further input from the user
21	g x=0	Did the user enter a zero?
22	g GTO 01	Yes: This indicates that user wishes to clear old data and start entering a new series. Go to instruction 01
23	g GTO 02	No: This indicates that user wishes to continue adding data to the end of the series just entered (and for which the growth rate was just calculated). Go to instruction 02

- Take calculator out of programming mode by pressing: **f P/R**

Visual programming aid:

Instruction	Keystrokes	HP-12C display		
0	f P/R f (CLEAR) PRGM	00-		
1	f (CLEAR) Σ	01-	42	32
2	RCL 1	02-	45	1
3	1	03-		1
4	+	04-		40
5	R/S	05-		31
6	g x=0	06-	43	35
7	g GTO 12	07-	43, 33	12
8	g LN	08-	43	23
9	x $\geq$ y	09-		34
10	Σ +	10-		49
11	g GTO 02	11-	43, 33	02
12	g $\hat{y}$, r	12-	43	2
13	g e ^x	13-	43	22
14	1	14-		1
15	g $\hat{y}$, r	15-	43	2
16	g e ^x	16-	43	22
17	x $\leq$ y	17-		34
18	R↓	18-		33
19	$\Delta\%$	19-		24
20	R/S	20-		31
21	g x=0	21-	43	35
22	g GTO 01	22-	43, 33	01
23	g GTO 02	23-	43, 33	02
24	f P/R			

- Testing the program:

Keystrokes	Display
R/S	1.00
10.00 R/S	2.00
11.00 R/S	3.00
12.10 R/S	4.00
13.31 R/S	5.00
0.00 R/S	5.00

- The calculator should display 10.00.
- The program will remain in the memory of your calculator until either (i) you press **f P/R f (CLEAR) PRGM** or (ii) its batteries are removed or go dead. Turning the calculator off will **not** destroy the program

- Operating the program:

Instruction	Keystrokes	English translation of keystroke instructions
1	0 R/S	1.00 clears calculator and prompts for the first data value
2	(Observation #1) R/S (Observation #n) R/S	2.00 prompts for second data value n + 1 prompts for next data value, but user wants to calculate growth rate
3	0 R/S	Growth rate (in % per year). To display r (the correlation coefficient) at this point press R↓ twice. This value squared is an often-used measure of goodness of fit
– To continue entering observations in the same data series, enter any non-zero value and press R/S. The calculator will prompt you for the n + 1st data value at this point. Continue with step 2 until you wish to calculate the growth rate again – To enter a new series of observations, enter zero and press R/S. The calculator will clear itself and prompt you for the first data value. Continue with step 2		

- Calculating the “end point” CAGR:

Instruction	Keystrokes
–	F(clear) REG
# ₁	CHS PV
# _n	FV
n-1	n
–	i

By pressing “i,” the constant percentage growth rate as estimated by the end-point method will appear (in percent/year) in the display.

Appendix C: Referring to J.P. Morgan

1. In first reference to the firm as a whole, use *J.P. Morgan* which is the marketing version of the name of the holding company *J.P. Morgan & Co. Incorporated* and its various subsidiaries. In subsequent reference, use *Morgan*. **Do not use JPM for external audiences. Note that the initials J.P. are followed by periods and are not separated by a space**
2. When using the full name of the **holding company**, write it exactly as follows, using the ampersand symbol, the abbreviation “Co.” and “Incorporated” spelled in full:

J.P. Morgan & Co. Incorporated

3. To refer to a **specific subsidiary** when legal entities are important, use its full legal name on first reference, as follows:

Morgan Guaranty Trust Company or *Morgan Guaranty Trust Company of New York* (subsequent reference can be shortened to *Morgan Guaranty*)

J.P. Morgan Securities Inc. (can be abbreviated on second reference to *JPMSI*, without periods)

J.P. Morgan Investment Management Inc. (can be abbreviated on second reference to *J.P. Morgan Investment*)

Do not use variations such as *Morgan Guaranty Trust*, *MGT*, or *JPM Securities*, especially for external audiences. A list of major offices and subsidiaries is in the firm’s annual report.

4. When referring to branches or representative offices, use the following examples as guides:

the London office of J.P. Morgan
Morgan’s London office
the Tokyo branch of Morgan Guaranty

5. Use the generic term *firm* to refer to Morgan as a whole. Do not use the term *bank* unless the distinction is relevant

6. When referring to the founder of the firm (b. 1837–d. 1913), use *J. Pierpont Morgan*. Subsequent references can be *Morgan*, or, to avoid ambiguity with the firm name, *Pierpont Morgan*. When referring to his son (b. 1867–d. 1943), use *J.P. Morgan Jr.* If referring to him again, use *J.P. (Jack) Morgan Jr.* on first reference. *Jack Morgan* on subsequent references. Do not use a comma as part of the name, J.P. Morgan, Jr.
7. Using the corporate mark

The most important unifying element of J.P. Morgan's corporate identity system is the corporate mark. The mark should be used to identify all Morgan subsidiaries, locations, division, and products. **Uniform application of the mark creates greater awareness in the marketplace and reinforces Morgan's position as a well-organized, well-integrated, global financial services company.**

Except for the J.P. Morgan Investment Management Inc. subsidiary, the J.P. Morgan mark is the only mark of logo for the firm, and is appropriate for any division or service the company offers. **Special or custom-made logos for Morgan groups, products, or services should never be developed or used. Separate logos should not be created for either external marketing or internal promotion, or for subsidiaries that are separate legal entities.**

The mark is available in three standard sizes. For reports and proposals, size C appears on the upper left corner of each text page.

JPMorgan (Size B)
└──────────────────┘
1⁹/₁₆ in. / 39 mm

JPMorgan (Size A)
└──────────┘
1³/₁₆ in. / 29 mm

JPMorgan (Size C)
└────────┘
1⁵/₁₆ in. / 24 mm

The J.P. Morgan mark is based on the typeface Bauer Bodoni bold, but has been specially altered and cannot be faithfully reproduced through typesetting. The official J.P. Morgan logo should always be used; “homemade” versions of the logo should be avoided. The mark should never be added to or altered in any way. Also, it should never be stretched or compressed. The mark can be produced electronically as part of the page layout from a digitized master. Electronic or reproduction art copies of the corporate mark are available from Corporate Communication (ext. 6-9558).

NB: it is equally important to recognize the integrity of clients’ corporate marks when used in a report or proposal. These marks have also been specially prepared and cannot be re-created through typesetting or quick redrawing.

8. J.P. Morgan subsidiary identification

Subsidiary legal names and group names should be used in conjunction with the J.P. Morgan corporate mark. The full legal subsidiary name should always be printed on the front cover or title page. The department name may or may not be included.

Exhibit Appendix C: I: J.P. Morgan subsidiary identification

Subsidiary legal name	Group or department name	Corporate mark
J.P. Morgan & Co. Incorporated	Corporate Finance	JPMorgan
Morgan Guaranty Trust Company of New York	Private Banking	JPMorgan
J.P. Morgan Securities Inc.	Emerging Markets Sales and Trading	JPMorgan
J.P. Morgan Securities Asia Ltd.	Swaps Derivatives Risk Management	JPMorgan
J.P. Morgan Delaware	Global Technology and Operations	JPMorgan

Appendix D: Basic typesetting, formatting and color guidelines

1. Formatting and design:

In general, J.P. Morgan communications are characterized by simplicity and functional design. To achieve these qualities, follow these guidelines:

- No more than one or two typefaces should be used in the same publication
- Type should always appear in upper and lowercase, even for headlines and subheads. (In headings and subheadings, Morgan style is to capitalize the first word, proper nouns, and the first word after a colon)
- Use italics, not underlining, for emphasis or to indicate a title or publication
- Indicate paragraph breaks with indentations or double spacing, but not both
- Format for type should be flush left with a ragged right margin, never justified

2. Recommended typefaces (fonts):

Times Roman is recommended for letters, memos, reports, proposals, and research documents.

Helvetica is recommended for slide presentations, overheads, video titling, and other media involving projected text.

3. Use of color

Color is used in graphs and charts to distinguish one chart component from another. The application of color should always have a communication purpose and should not be used in an arbitrary or decorative way. The standard hierarchy of color should always be followed except in documents created on behalf of the client.

The use of color in reports and proposals is restricted to client-oriented documents. Internal reports and proposals should be created in black and white.

Color palette

The hierarchy of colors and the corresponding Pantone® matching system colors are as follows:

Color palette

- a) Blue – Pantone 660
- b) Green – Pantone 348
- c) Gold – Pantone 1245
- d) Purple – Pantone 2587
- e) Orange – Pantone 159
- f) Taupe – Pantone 4645
- g) Red – Pantone 221
- h) Gray – Pantone cool gray 6

Bright color palette

This color palette is used for thin lines on graphs. The hierarchy is as follows:

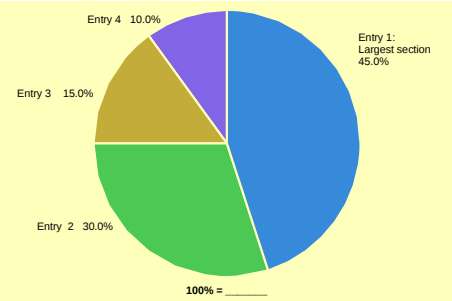
- a) Red – Pantone 214
- b) Blue – Pantone 2727
- c) Green – Pantone 334
- d) Yellow-orange – Pantone 129
- e) Light gray – Pantone Cool gray 4

Yellow tint area

Yellow – Custom color: 3%M; 20%Y

Exhibit Appendix D: I: Use of color

Pie chart titles: color palette



Bar chart title: color palette

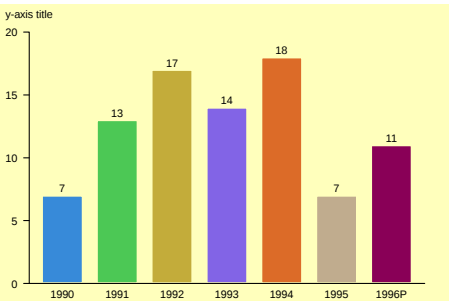
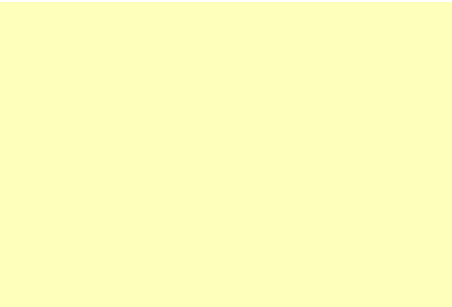
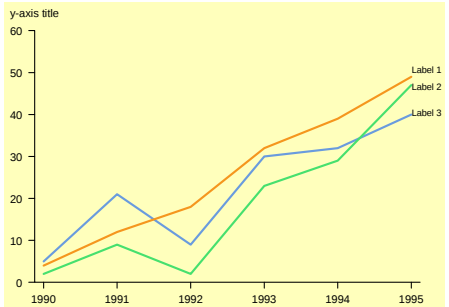


Exhibit title: yellow tint area



Line chart title: bright color palette

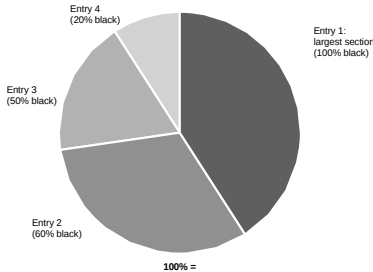


4. Use of black and white tints

A black-and-white palette is substituted for a color palette when the report or proposal must be transmitted by fax. Also, internal reports and proposals should be created in black and white.

Exhibit Appendix D: II: Use of black and white tints

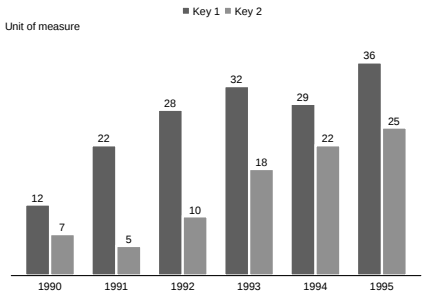
Pie chart title



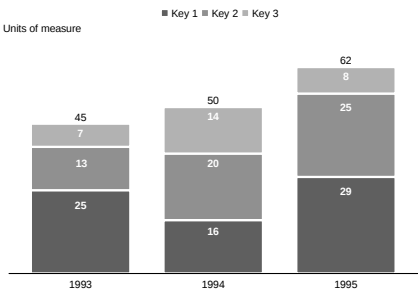
Line chart title



Bar chart title



Column chart title



5. For more information:

Copies of Corporate Identity guidelines for a variety of communications are available (ext. 6-9558), including the following topics:

- Stationery
- Typing formats
- Reports and proposals
- Presentations
- Invitations and programs
- Forms and checks
- Financial advertisements or “tombstones”
- Classified advertisements
- Prospectus covers
- Binders
- Signs
- Web publishing

In case of additional questions on typesetting, design, or corporate identity, please contact Thomas Craft, Corporate Communication, New York (ext. 6-9582).

Appendix E: Bond ratings

1. The two most widely followed companies that judge the investment risk of bonds are Moody's Investors Service Inc. and the Standard & Poor's Corporation

Moody's uses nine ratings: Aaa, Aa, A, Baa, Ba, B, Caa, Ca, and C

Standard & Poor's has seven main grades: AAA, AA, A, BBB, BB, B, and D. It also sometimes uses a plus or minus sign on grades from AA through BB

2. Comparative debt ratings:

Moody's	S&P
Aaa	AAA
Aa1	AA+
Aa2	AA
Aa3	AA-
A1	A+
A2	A
A3	A-
Baa1	BBB+
Baa2	BBB
Baa3	BBB-
Ba1	BB+
Ba2	BB
Ba3	BB-
B1	B+
B2	B
B3	B-
Caa1	CCC+
Caa2	CCC
Caa3	CCC-
NR	NR

3. In quoted matter, an expression like triple a is permissible. If an adjective, triple-A should be hyphenated. **(NB: When referring to J.P. Morgan or Morgan Guaranty in marketing publications or advertisements, ratings should not be given. Instead, use the term "credit worthy" or "highly rated.")**

Appendix F: J.P. Morgan M&A financial definitions

Exhibit: J.P. Morgan M&A financial definitions

Financial terms	Definition
Net income	Net income available to common shareholders before extraordinary items, before discontinued operations, and before equity in earnings of unconsolidated subsidiaries and affiliates (net of dividends received) less minority interest
Minority interest (income account)	Portion of consolidated subsidiary income and rates attributable to common stock not owned by the company
Earnings per share ("EPS")	
– Basic	Net income available to common shareholders divided by the weighted average common shares outstanding
– Diluted	Net income available to common shareholders divided by the weighted average common shares outstanding plus all potentially dilutive shares
Interest expense	
– Gross	Interest incurred before subtracting capitalized interest and before subtracting interest income
– Net	Gross interest expense less interest income and less capitalized interest
Gross rents	Gross operating rents paid before sublease income
Fixed charges	Gross interest expense plus gross rents
Earnings before interest and income taxes ("EBIT")	Sum of net income, minority interest, net interest expense and income taxes (Note: the JPM Comps model only adds back the taxes associated with minority interest)
Earnings before interest, taxes, depreciation and amortization ("EBITDA")	EBIT plus depreciation, depletion and amortization
Operating cash flow ("OCF")	Sum of net income available to common shareholders, depreciation, depletion and amortization, deferred taxes and other non-cash items (such as non-cash restructuring charges)
Cash flow per share ("CFPS")	Operating cash flow divided by the weighted average common shares outstanding
Free operating cash flow (levered)	Operating cash flow less capital expenditures less net working investment
Free cash flow (unlevered)	Free operating cash flow plus after-tax interest expense
Short-term debt	Notes payable, current portion of long-term debt and bank borrowings
Long-term debt	All senior, subordinated, convertible and mortgage long-term debt plus minority interest (leases capitalized under FASB #13 <u>are</u> included in long-term debt)
Total debt	Sum of short-term and long-term debt
Net debt	Total debt less cash and cash equivalents
Capitalized leases	Present value of capital or finance leases on the balance sheet under FASB #13
Operating leases	Gross rent expenses multiplied by eight (rule of thumb)
Unfunded pension liabilities	The difference between the pension benefit obligation (PBO) and the current value of the pension assets
Book value	Common shareholders' equity, or common stock, capital surplus, and retained earnings less Treasury stock
Book value per share ("BVPS")	Book value divided by common shares outstanding

Exhibit: J.P. Morgan M&A financial definitions (cont'd)

Financial terms	Definition
Shareholders' equity	Sum of preferred stock, common stock, capital surplus, retained earnings and other shareholders equity accounts less Treasury stock
Book capitalization	Sum of total debt and shareholders' equity
Adjusted book capitalization (including off balance sheet liabilities)	Sum of book capitalization, capitalized leases, operating leases, unfunded pension liabilities, unfunded post retirement benefits other than pensions and other off-balance sheet assets/liabilities less the difference between capitalized leases and the value of leased property under capital leases
Price per share	Last closing market share price
Unaffected price per share	Most recent closing price prior to transaction announcement unaffected by takeover speculation, normally assumed to be 30 days prior to the initial transaction announcement
Market (or equity) value	Price per share multiplied by common shares outstanding. For the purposes of M&A valuation, options should be accounted for using the treasury method
Market capitalization	Market value plus preferred stock plus total debt
Firm value	Market capitalization less cash and cash equivalents

Exhibit: J.P. Morgan M&A financial ratios

Financial ratio	Definition
Capitalization and financial leverage ratios	
Long-term debt/book capitalization (debt to equity)	Long-term debt divided by book capitalization
Total debt/adjusted book capitalization (including off balance sheet liabilities)	Total debt, capitalized leases, operating leases, unfunded pension liabilities and unfunded post retirement benefits other than pensions divided by adjusted book capitalization (including off balance sheet liabilities)
Long-term debt/total asset (debt to assets)	Long-term debt divided by total assets
Total liabilities/total assets (liabilities to assets)	Total liabilities divided by total assets
Coverage and debt service ratios	
Operating cash flow/long-term debt	Operating cash flow divided by long-term debt
Operating cash flow/total debt	Operating cash flow divided by total debt
Free operating cash flow/total debt	Free operating cash flow divided by total debt
Total debt/EBITDA	Total debt divided by EBITDA
Total debt/EBITDA (including rents)	Total debt divided by EBITDA and gross rents
Interest coverage ratios	
Pre-tax interest coverage (EBIT)	EBIT divided by gross interest expense
Pre-tax interest coverage (EBITDA)	EBITDA divided by gross interest expense
Pre-tax fixed charge coverage	EBIT and gross rents divided by fixed charges
Pre-tax return on capital	EBIT divided by average total capital
Pre-tax return on capital (including capitalized leases)	EBIT and gross rents divided by average total capital and 8x gross rents
After-tax return on capital	Net income divided by average total capital
After-tax return on capital (including capitalized leases)	Net income divided by average total capital and 8x gross rents
Return on equity	Net income divided by average shareholders' equity
Pre-tax return on total assets	EBIT divided by average total assets
Pre-tax return on total assets (including rents)	EBIT and gross rents divided by average total assets
Gross margin	Gross profit net sales less cost of goods sold, divided by net sales
Working capital ratios	
Receivable days outstanding	365 days multiplied by average accounts receivable divided by sales
Inventory turnover	Cost of goods sold divided by average inventories
Payable days outstanding	365 days multiplied by average accounts payable divided by cost of goods sold
Asset turnover	Total revenues divided by average total assets
Fixed asset coverage	Net PP&E divided by sale
Valuation multiples	
Price/earnings	Price per share divided by earnings per share
Price/operating cash flow	Price per share divided by operating cash flow per share
Price/book value	Price per share divided by book value per share
Firm value/sales	Aggregate value divided by sales
Firm value/EBITDA	Aggregate value divided by EBITDA
Firm value/EBIT	Aggregate value divided by EBIT

Appendix G: JPM credit ratio guidelines and definitions

Please visit the *Corporate Risk Management* website for most recent version of JPM credit ratio guidelines and definitions.

http://crmg.ny.jpmorgan.com/Ratio_Guidelines2.html

