

# **Primer on the ROIC Valuation Framework**

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## Section 1

# Introduction

### Four Levers Drive Value

Excess Return	<ul style="list-style-type: none"> <li>Value is created by earning returns (ROIC) in excess of cost of capital (WACC).</li> </ul>
Reinvestment Opportunities	<ul style="list-style-type: none"> <li>Value creation depends upon driving operating profit and investing in NPV-positive opportunities; growth drives value only during periods of competitive advantage.</li> </ul>
Duration of Competitive Advantage	<ul style="list-style-type: none"> <li>Excess returns occur during periods of competitive advantage; without competitive advantage, returns tend to regress to the WACC.</li> </ul>
Risk	<ul style="list-style-type: none"> <li>Lower perceived business risk reduces required returns on capital, increasing excess return (all else equal).</li> </ul>

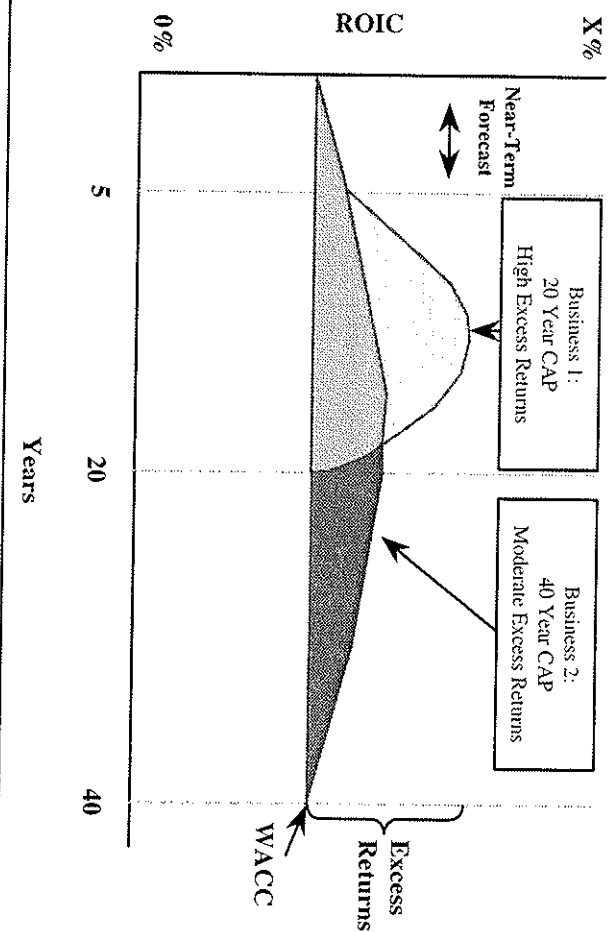
CFP  
Dcf

Trading Multiple is really the shorthand of the DCF

### Interplay of Levers

*Businesses with moderate excess returns but long periods of competitive advantage can generate as much value as businesses with higher excess returns but shorter periods of competitive advantage.*

#### Two Businesses of Equal Value



- Levers interact in a non-linear fashion to create (or destroy) value.
- Interaction is dynamic over time.
- Interaction influenced by industry structure, competitive positioning and management strategies.
- Value may be created by:
  - Growing operating profit and investing in NPV-positive opportunities.
  - Extending competitive advantage period (CAP).
  - Increasing ROIC (by taking capital out of the business or identifying high-return projects).
  - Lowering risk (WACC).

### **Applying the ROIC Valuation Framework**

- ROIC relates directly to two of the four valuation drivers referenced on Page 1.
- The other two levers should also remain part of the thought process.
- The remaining sections of the book illustrate how the ROIC Valuation Framework should be applied to the following key analyses:
  - Analysis and Diligence of Financial Projections.
  - Comparable Companies Analysis.
  - Precedent M&A Transactions Analysis.
  - Discounted Cash Flow Analysis.



## Section 2

# Calculating ROIC

### The Fundamental Building Block of the Framework is the Calculation of ROIC

- ROIC = NOPAT/Total Invested Capital.
- Calculating NOPAT: NOPAT = EBITA <sup>(1)</sup> - Unlevered Cash Taxes. <sup>(2)</sup>
- Converting the Balance Sheet to Total Invested Capital.

#### Illustrative Balance Sheet

Cash	\$100.0
Non-Cash Current Assets	158.5
Unconsolidated Investments	19.1
Net PP&E <sup>(3)</sup>	372.5
Net Goodwill	13.7
Other Net Intangibles	10.0
Other Long-Term Assets	107.0
<b>Total Assets</b>	<b>\$780.8</b>
Current Liabilities <sup>(4)</sup>	\$253.1
Total Debt	300.0
Deferred Taxes	127.7
Other Long-Term Liabilities	0.0
Minority Interest	0.0
Preferred Equity	0.0
Shareholders' Equity <sup>(3)</sup>	100.0
<b>Liabilities &amp; Shareholders' Equity</b>	<b>\$780.8</b>

#### Total Invested Capital

Operating Approach		Financing Approach	
Non-Cash Current Assets	\$158.5	Total Debt	\$300.0
Less: Current Liabilities <sup>(4)</sup>	(253.1)	Deferred Taxes (Net of Tax Benefit)	127.7
Net Working Capital	(\$94.6)	Other Long-term Liabilities	0.0
Net PP&E <sup>(3)</sup>	\$372.5	Minority Interest	0.0
Net Non-Goodwill Intangibles	10.0	Preferred Equity	0.0
Other Long-term Assets	107.0	Shareholders' Equity <sup>(3)</sup>	100.0
<b>Total Invested Capital</b>	<b>\$394.9</b>	Less: Cash	(100.0)
		Unconsolidated Investments	(19.1)
		Goodwill	(13.7)
		<b>Total Invested Capital</b>	<b>\$394.9</b>

Capital

EBITDA

Goodwill

Unlevered Cash Taxes

- (1) EBITA = EBITDA - Depreciation - Non-Goodwill Amortization.
- (2) Cash Taxes = (EBITDA \* Marginal Tax Rate) - Increase in Net Deferred Tax Liabilities (or add an Increase in Net Deferred Tax Assets).
- (3) Adjusted for asset write-down and restructuring change occurring prior to balance sheet date. Net PP&E and Shareholders' Equity adjusted as if write-down never occurred.
- (4) Includes non-interest bearing current liabilities.



### Calculating ROIC

*NOPAT is the appropriate earnings metric for calculating ROIC.*

■ NOPAT is calculated as ~~EBIT~~ <sup>like EBIT</sup> ~~EBIT - Unlevered Cash Taxes~~ <sup>Pre-Tax Earnings</sup>

■ EBITA = Revenue - Operating Costs and Expenses - Depreciation - Amortization of Non Goodwill Intangibles.

- EBITA reflects the unlevered earnings stream which is consistent with total invested capital (i.e., earnings available to all investors: debt, preferred, minority interests and common equity).
- EBITA includes a charge for maintenance expenditures on PP&E and Non-Goodwill Intangibles. This assumption implies that the company continues reinvesting in its fixed and intangible asset base to maintain its current value.

■ Unlevered Cash Taxes is calculated by applying the marginal tax rate to EBITA, and adjusting for changes in Net Deferred Taxes. This adjustment is made to NOPAT since Net Deferred Taxes is included as part of Total Invested Capital.

Sharon  
Full for EBIT & Depreciable DTL in Capital Base

## Calculating ROIC (cont.)

*The guiding principle behind calculating Total Invested Capital is to isolate the assets generating the NOPAT.*

### Financing Approach:

- Include all historical direct sources of financing to the company: Total Debt + Preferred Equity + Minority Interest + Shareholders' Equity. This reflects all capital which has been paid directly into the company by investors or capital reinvested through retained earnings to fund investment in NOPAT generating assets.
- Include all historical indirect sources of financing from long-term non-interest bearing liabilities such as net deferred tax liabilities.
  - The net deferred tax liability includes the accumulated difference between book and cash taxes.
  - As long as the company continues to invest in and replenish the assets giving rise to deferred taxes, the net deferred tax liability will never be repaid (effectively a permanent loan from the government).
  - Accordingly, this reserve should be included as part of invested capital when calculating ROIC.
- Include all historical asset write downs and restructuring charges as capital to the extent possible, after making the appropriate adjustments for taxes. <sup>(1)</sup> Asset write downs for underperforming assets and restructuring charges have the effect of understating Total Invested Capital.
- Subtract Cash and Unconsolidated Investments. This capital does not contribute to NOPAT generation and should therefore be excluded from Total Invested Capital.

(1) Form 10-K usually contains a summary of all restructuring charges taken by a company over its most recent 3 fiscal years. Although this falls short of providing all restructuring charges taken over the life of a company, it is often a reasonable starting point for adjusting the invested capital base.

## Calculating ROIC (cont.)

### Financing Approach (cont.):

- Subtract Goodwill
  - Most finance practitioners believe that Goodwill should be subtracted from Total Invested Capital because it is an unidentifiable asset, unrelated to any specific NOPAT generating operating asset. Goodwill does not reflect an investment made in the NOPAT generating asset base of the company. Instead, it reflects a premium paid to outside shareholders.
  - Additionally, Goodwill is subtracted for comparability purposes. While some companies have historically made acquisitions accounted for as purchases and others as poolings, and still others have made no acquisitions at all, the elimination of Goodwill is a way to compare the value of operating assets across companies and eliminate most of the financial accounting driven value differences.
  - However, the exclusion of Goodwill from Total Invested Capital is a controversial topic. Some finance practitioners and management consultants believe it is appropriate to include Goodwill in Total Invested Capital, especially since failing to do so treats Goodwill differently than other acquired assets that are recorded at fair market value pursuant to purchase accounting. Finally, failure to include Goodwill as part of Total Invested Capital may not fully reflect the true cash-on-cash returns of an acquired business.


### Operating Approach:

- Total Invested Capital can also be calculated by focusing on the left hand side of the balance sheet, and including all NOPAT generating assets.
- Include Net Working Capital + Net PP&E + Net Non-Goodwill Intangible Assets + Other Long-Term Assets.
- Exclude Cash, Unconsolidated Investments and Goodwill from the Total Invested Capital base for the reasons described above.
- The Operating Approach will generate the same Invested Capital results as the Financing Approach.

## Limiting Issues in Calculating ROIC

*When comparing returns across companies, one must be mindful of the following types of accounting related issues.<sup>(1)</sup>*

### Operating Leases

- 
- Many companies are able to finance the acquisition of buildings, equipment and machines through operating leases.

- Operating lease payments hit the P&L as rent expense, and the asset and liability associated with the lease is not capitalized.

- In contrast, under a capital lease, both the asset and liability are capitalized and the depreciation and interest expense hit the P&L.

### Asset Write-Downs and Restructuring Charges

- Asset write-downs or restructuring charges typically occur when a business is performing poorly.
- The cumulative charges have the effect of decreasing Total Invested Capital and overstating ROIC relative to companies without such charges.

<sup>(1)</sup> While this list is not comprehensive, it highlights the types of issues most commonly confronted in applying the ROIC valuation framework.

## **Limiting Issues in Calculating ROIC (cont.)**

*When comparing returns across companies, one must be mindful of the following types of accounting related issues.<sup>(1)</sup>*

### **Research and Development (R&D)**

- R&D is the life blood for many technology and pharmaceutical companies.
- GAAP requires that companies expense most of its R&D as it is incurred, and therefore large sums of accumulated invested capital are not capitalized.
- This can have an enormous impact on the returns of a pharmaceutical company versus other companies that capitalize future growth investments.

### **New Product Development and Upfront Marketing Costs**

- Expenditures for up-front marketing costs and new product development are also examples of growth capital that some companies fully expense.
- For example, a consumer products company which commits significant capital in developing and rolling out a new brand. The new brand becomes an asset to that company even though the balance sheet does not reflect this reality.

### **Human Capital**

- Consulting firms and other advisory businesses, where the real assets of the business are the employees, tend to have very little invested capital on the balance sheet.
- Therefore the ROIC of these businesses tends to be very high in comparison to other industries.

(1) While this list is not comprehensive, it highlights the types of issues most commonly confronted in applying the ROIC valuation framework.

## **Section 3**

# **Using the ROIC Valuation Framework to Analyze Financial Projections**

### Using the ROIC Valuation Framework to Analyze Financial Projections

*When analyzing a set of financial projections, ROIC and component parts should be analyzed for each year, as well as projected and historical reinvestment rates.*

$$\text{ROIC} = \frac{\text{NOPAT}}{\text{Total Invested Capital}} = \frac{\text{NOPAT}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Total Invested Capital}}$$

#### NOPAT/Revenue (Operating Margin)

- NOPAT margins must make sense in the context of industry demand and competitive dynamics and structure economics.
- Since the drivers of NOPAT margins also influence revenue and earnings growth rates, top and bottom line growth must also be consistent with the same industry dynamics and margin trends.

#### Revenue/Total Invested Capital (Asset Turnover)

- Revenue/Total Invested Capital should also be carefully analyzed. The relationship should remain relatively constant throughout the projection period unless there is a specific reason for a change. For example, an investment in a new technology or an increase in capacity utilization could explain an increase in capital productivity.
- The key is to make sure that there is sufficient capital investment to support a company's growth plans.
- A second check is to look at CapEx/Total Revenue, and again, make sure that the proportions don't change significantly, unless there is a reason.

#### Reinvestment Rates

- Reinvestment rates reflect the number of investment opportunities available to a company. It is calculated as the excess of total CapEx over maintenance CapEx divided by NOPAT. Depreciation is generally a proxy for maintenance CapEx.
- Value creation is dependent upon NPV-positive investment opportunities.

### Using the ROIC Valuation Framework to Analyze Financial Projections (cont.)

*ROIC can be used to test the reasonableness of the following company's ("Company I") projections.*

	Fiscal Year Ending December 31,						CAGR	
	2001A	2002E	2003E	2004E	2005E	2006E	'01A-'06E	'04E-'06E
(\$ in millions)								
Revenue	\$9,718	\$9,804	\$10,221	\$10,857	\$11,553	\$12,137	4.5%	5.7%
% Growth	5.1%	0.9%	4.2%	6.2%	6.4%	5.1%		
EBITDA	\$4,216	\$4,249	\$4,446	\$4,667	\$4,934	\$5,221	4.4	5.8
% Growth	17.0%	0.8%	4.6%	5.0%	5.7%	5.8%		
NOPAT	\$1,524	\$1,683	\$1,727	\$1,785	\$1,865	\$1,952	5.1	4.6
% Growth	(6.0%)	10.4%	2.7%	3.3%	4.5%	4.7%		
Net Income to Common % Growth	\$1,170 (3.0%)	\$1,212 3.6%	\$1,269 4.7%	\$1,336 5.3%	\$1,416 6.0%	\$1,502 6.1%	5.1	6.0
CapEx	\$2,635	\$2,158	\$2,169	\$2,197	\$2,269	\$2,375	(2.1)	4.0
Common Dividends	\$600	\$600	\$600	\$600	\$600	\$600	0.0	0.0
Total Invested Capital <sup>(1)</sup>	\$11,307	\$12,116	\$12,513	\$12,860	\$13,170	\$13,488	3.6	2.4
Return on Invested Capital <sup>(1)</sup>	14.4%	14.9%	14.3%	14.3%	14.5%	14.8%		
Margins:								
EBITDA NOPAT	43.4% 15.7	43.3% 17.2	43.5% 16.9	43.0% 16.4	42.7% 16.1	43.0% 16.1		
Capital Ratios:								
Revenue/Total Invested Capital	0.92x	0.87x	0.84x	0.87x	0.90x	0.92x		
CapEx/Revenue	27.1%	22.0%	21.2%	20.2%	19.6%	19.6%		
Reinvestment Rate:								
CapEx - Depreciation NOPAT	\$684 1,524	\$230 1,683	\$157 1,727	\$81 1,785	\$41 1,865	\$27 1,952		
Reinvestment Rate	44.9%	13.7%	9.1%	4.6%	2.2%	1.4%		

(1) Invested Capital for 2002E-2006E calculated assuming that all CapEx and working capital investment is financed through internally generated cash flows. ROIC reflects beginning invested capital balances for each year.



## **Returns, Reinvestment Rates and Other Important Financial Characteristics Should Be Analyzed**

### ***Company 1 Financial Projection Horizon.***

- Ideally, projections should be used in which the subject company reaches steady state by the end of the forecast horizon. Steady state is characterized by growth rates, margins and returns reaching a relatively constant and sustainable level, for the long-term.
- Company 1 is fairly mature, therefore a five-year time horizon is appropriate. However, this is not the case for every company; some companies require a ten-year time horizon (or even longer) before reaching steady state.

### ***Changes in Company 1 Financial Performance During Projection Horizon.***

- During the '02E-'06E projection horizon, margins are down slightly as a result of competitive pressures in the industry and growth in the business is supported by a slightly declining level of CapEx as a percentage of revenue.
- Additionally, during the '02E-'06E period, asset turnover improves as Company 1's net reinvestment rate drops.
- ROIC remains about flat between 2002E and 2006E as a result of the off-setting trends in margins and asset turnover.
- During the projection horizon, reinvestment rates drop dramatically, reflecting the declining number of expected investment opportunities.



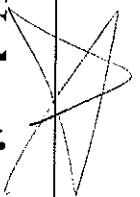
## **Section 4**

# **Using the ROIC Valuation Framework to Perform Valuation Analysis**



**Section 4-A**

**Comparable Company Analysis**



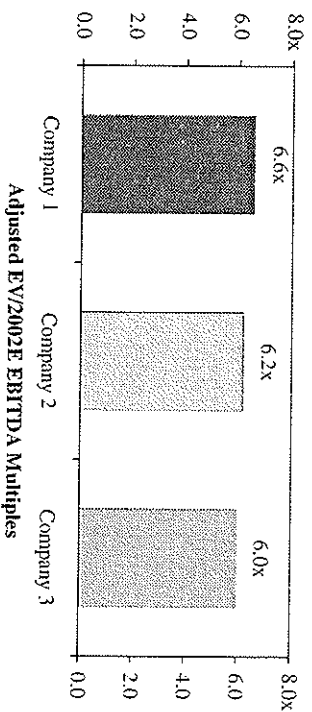
## **ROIC Valuation Framework and Comparable Company Analysis**

- We are often asked in Investment Banking why Company X trades at a higher multiple than Company Y? Or what is the appropriate trading multiple for a business which is privately held? ROIC and the four value levers help answer these questions.
- A subject company's intrinsic value is based on the present value of its long-term free cash flows. Valuation multiples are simply shorthand for the real math.
- Therefore, companies do not really trade based on multiples; instead, valuation multiples are implied and derived and reflect how the market values the cash flows produced by one company or sector relative to another. Valuation multiples alone do not tell us why a given company is valued the way that it is in the market.
- The same thought process is also helpful in understanding the difference between multiples paid in M&A transactions. However, in the M&A context, part of the difference between multiples paid may also be due to expected synergies and differences in business maturity of target companies.

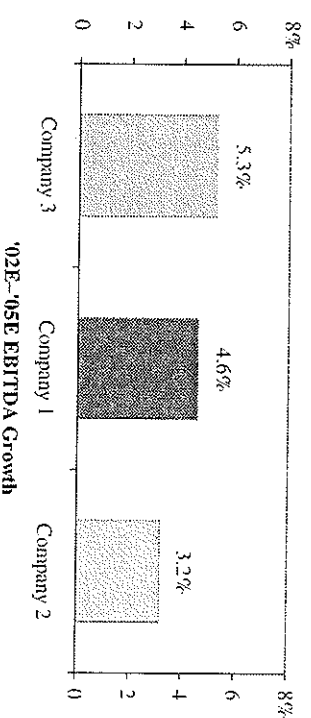
### Company 1 Example Revisited<sup>(1)</sup>

*Often, Wall Street attempts to explain relative trading multiples by reviewing projected growth rates. This is a step in the right direction, but alone may lack the required explanatory power. For example:*

#### Company 3 trades at the lowest multiple...



#### ...in spite of having the highest growth rate.

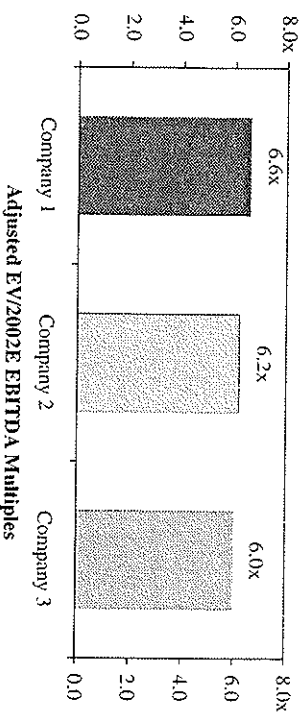


(1) Source: Bloomberg, BARRA Associates, public filings and Bear Stearns equity research.

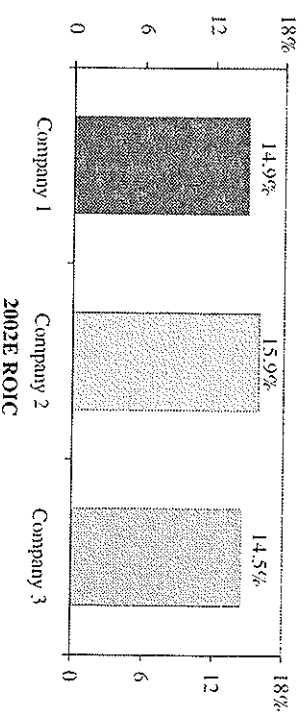
### Comparison of Comps<sup>(1)</sup>

*In the aforementioned case, the relative trading multiples are better explained when taking into account ROIC together with the other key value drivers such as excess returns on capital and risk:*

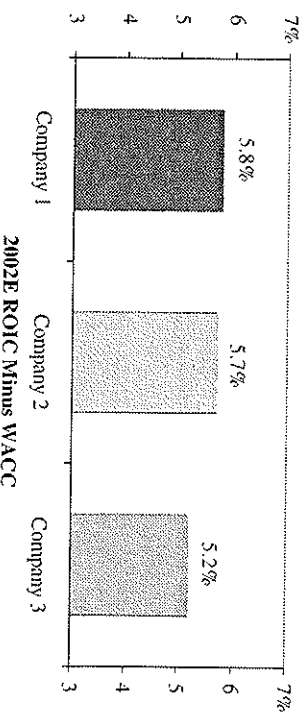
#### Company 3 trades at the lowest multiple...



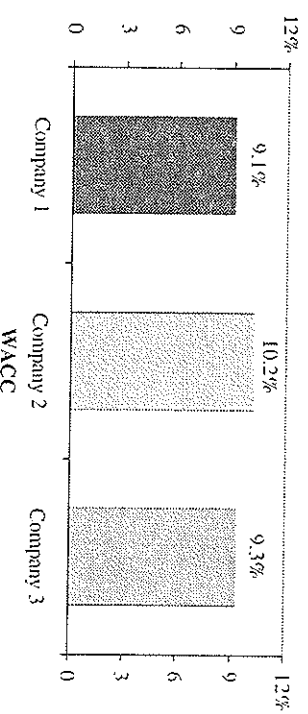
#### ...because it has the lowest ROIC...



#### ...and generates the lowest return over its WACC...



#### ...even with a relatively low risk profile.



(1) Source: Bloomberg, BARRA Associates, public filings and Bear Stearns equity research.



**Section 4-B**

**Discounted Cash Flow Analysis**

### ROIC Valuation Framework and Discounted Cash Flow Analysis

- DCF analysis breaks value into two parts: (i) value from free cash flows during the projection horizon and (ii) the terminal value. The terminal value usually represents 50%–75% of total firm value (and can approach 100% with earlier stage companies).
- When performing DCF analysis, most practitioners calculate terminal value using a multiple-based methodology (*i.e.*, EBITDA multiple, P/E multiple, etc.) because this approach is more in their comfort zone and it can be related to market trading multiples. However, the validity of such an approach must be tested against the implied perpetual growth rate (“G”) in free cash flow.<sup>(1)</sup>
- At face value, G tells you the rate at which terminal year Normalized Free Cash Flow<sup>(2)</sup> must grow in order to equal the terminal value, given the assumed WACC.
- While this interpretation is not incorrect, the ROIC Valuation Framework provides an even more insightful explanation of G and a thought process for assessing whether the terminal value is reasonable. G reflects the complex interplay of the four value drivers described herein.
- As the value drivers change, so does G and the terminal value. Therefore, Deal Teams must approach each DCF exercise with a defensible range for these variables. Consideration should be given to current and projected returns for the subject company and its competitors; investment opportunities available to the company; the duration of the competitive advantage period; and risk profile of the company.

(1)  $G = ((\text{Terminal Value} \times \text{WACC}) - \text{Normalized Free Cash Flow}) / (\text{Terminal Value} + \text{Normalized Free Cash Flow})$ .

(2) For the purpose of the analyses contained herein, Normalized Free Cash Flow = NOPAT - Working Capital Investment. This formula implies the following two assumptions: (i) depreciation equals maintenance CapEx and (ii) working capital investment is a systematic part of the business (*i.e.*, disconnected from growth and always exists). To the extent depreciation does not reflect an appropriate level of maintenance CapEx, it should be adjusted to represent a more realistic level necessary for the terminal period. In this case taxes should also be adjusted accordingly. Additionally, if the working capital assumption is not appropriate, (*i.e.*, working capital investment is not systematic and only exists to the extent the Company grows) then it should not be subtracted from NOPAT.



# BEAR STEARNS

## Primer on the ROIC Valuation Framework

In Performing the DCF, a Terminal Multiple Range From 4.5x to 6.5x  
Might Seem Justifiable Based on Current Trading Multiples<sup>(1)</sup>

### Company 1 Projected Cash Flows<sup>(2)</sup>

(\$ in millions)

	Years Ending December 31,						
	2002E	2003E	2004E	2005E	2006E	CAGR ('02-'06)	
Revenue	\$9,804	\$10,221	\$10,857	\$11,553	\$12,137	5.5%	
Annual Growth	0.9%	4.2%	6.2%	6.4%	5.1%	5.5%	
EBITDA	\$4,249	\$4,446	\$4,667	\$4,934	\$5,221	5.3%	
Annual Growth	0.8%	4.6%	5.0%	5.7%	5.8%	5.3%	
Margin	43.3	43.5	43.0	42.7	43.0		
EBIT	\$2,321	\$2,434	\$2,552	\$2,707	\$2,873	5.5%	
Annual Growth	2.5%	4.8%	4.9%	6.1%	6.1%		
Margin	23.7	23.8	23.5	23.4	23.7		
Unlevered Cash Taxes <sup>(3)</sup>	(639)	(706)	(767)	(841)	(920)		
NOPAT	\$1,683	\$1,727	\$1,785	\$1,865	\$1,952	3.8%	
Annual Growth	10.4%	2.7%	3.3%	4.5%	4.7%		
Margin	17.2	16.9	16.4	16.1	16.1		
Plus: Depreciation and Amortization Expense	1,928	2,012	2,116	2,227	2,348		
Less: Capital Expenditures	(2,158)	(2,169)	(2,197)	(2,269)	(2,375)		
Change in Working Capital	(36)	(43)	(57)	(50)	(46)		
Free Cash Flow to the Unlevered Firm (FCFF)	\$1,417	\$1,528	\$1,647	\$1,774	\$1,879	7.3%	
Annual Growth	NA	7.8%	7.8%	7.7%	5.9%		

### Equity Value Per Share

WACC	EBITDA Terminal Multiple			
	4.5x	5.0x	5.5x	6.0x
8.0%	\$29,68	\$34,23	\$38,74	\$43,24
8.5%	28,51	32,96	37,38	41,78
9.0%	27,38	31,73	36,06	40,36
9.5%	26,27	30,52	34,77	38,97
10.0%	25,20	29,35	33,51	37,63

### Implied Perpetual Growth Rate of Normalized FCF

WACC	Trailing EBITDA Terminal Multiple				
	4.5x	5.0x	5.5x	6.0x	6.5x
8.0%	(0.1%)	0.7%	1.3%	1.8%	2.3%
8.5%	0.4	1.1	1.7	2.3	2.7
9.0%	0.8	1.6	2.2	2.7	3.2
9.5%	1.3	2.0	2.7	3.2	3.7
10.0%	1.7	2.5	3.2	3.7	4.2

(1) Current Adjusted EV/EBITDA Multiples: Company 1: 6.6x; Company 2: 6.2x; Company 3: 6.0x.

(2) Based on Wall Street consensus equity research.

(3) Calculated as EBITA \* Marginal Tax Rate - Increase in Net Deferred Tax Liabilities.

### However, the Reasonableness of the Implied Perpetual Growth Rates Must Be Tested Within the Context of the ROIC Valuation Framework

- The implied perpetual growth rates on Page 17, particularly at the mid-point of the matrix, probably do not seem unreasonable to industry observers.
- However, when the analysis is viewed in the context of the ROIC Valuation Framework, the most defensible values clearly lie toward the left hand side of the sensitivity matrix.
- We have stated throughout this primer that the ROIC Valuation framework takes into account the key drivers of free cash flow growth and value generation: (i) excess returns on capital; (ii) reinvestment opportunities; (iii) duration of competitive advantage period; and (iv) risk profile.
- We developed a multivariable model to facilitate an analysis of Company 1's G in the context of its projected risk, return and reinvestment profile. The tables set forth below summarize the results:

#### Company 1: 2001A-2006E Projections

	2001A	2002E	2003E	2004E	2005E	2006E	Average '01A-'06E
WACC	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
ROIC	14.4	14.9	14.3	14.3	14.5	14.8	14.5
Reinvestment Rate <sup>(1)</sup>	44.9	13.7	9.1	4.6	2.2	1.4	2.7

#### 0.5% Perpetual Growth Rate/4.3x Terminal Multiple

	20	30	40	50
WACC	9.0%	9.0%	9.0%	9.0%
ROIC	31.4	17.6	14.5	13.5
Reinvestment Rate <sup>(1)</sup>	12.5	12.5	12.5	12.5
Perpetual Growth Rate	0.5	0.5	0.5	0.5

#### 2.5% Perpetual Growth Rate/5.8x Terminal Multiple

	20	30	40	50
WACC	9.0%	9.0%	9.0%	9.0%
ROIC	62.4	41.0	33.8	30.8
Reinvestment Rate <sup>(1)</sup>	12.5	12.5	12.5	12.5
Perpetual Growth Rate	2.5	2.5	2.5	2.5

(1) Reinvestment rate reflects the excess of Total CapEx over Maintenance CapEx divided by NOPAT. Depreciation is generally used as a proxy for Maintenance CapEx.

### **However, the Reasonableness of the Implied Perpetual Growth Rates Must Be Tested Within the Context of the ROIC Valuation Framework (cont.)**

- To support the 0.5% perpetual growth case, Company 1 must (i) earn a 14.5% ROIC for 40 years, and its WACC of 9.0% thereafter and (ii) reinvest 12.5% of its NOPAT for each of those 40 years.<sup>(1)</sup>
- These assumptions appear achievable given that Company 1 is projected to generate about 14.8% ROIC in 2006, the last year of the projection horizon, with returns trending upwards.
- The key is to believe in a long period of competitive advantage—reasonable in this case given the strong competitive position of Company 1.
- Additionally, the analysis assumes an average net reinvestment rate of 12.5% into perpetuity. This is above projected rates for 2006E, but a reasonable average given the cyclical nature of investment in this industry.
- However, as we move towards the middle of the sensitivity matrix, the required financial performance of Company 1 becomes hard to defend. For example, to justify 2.5% perpetual growth, the multivariable model requires a 30.8% ROIC for 50 years, with an average reinvestment rate of 12.5%. Company 1's projections illustrate that these assumptions are probably unrealistic.

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<sup>(1)</sup> Reinvestment rate reflects the excess of Total CapEx over Maintenance CapEx divided by NOPAT. Depreciation is generally used as a proxy for Maintenance CapEx.



## **Section 5**

# **Strategic Implications of the ROIC Valuation Framework**

## **So What are the Strategic Implications of the ROIC Valuation Framework?**

*Management should focus on optimizing the value drivers which can be influenced and/or controlled. For example, in the media and entertainment arena:*

- In mature sectors such as publishing, management should seek competitive advantage through sustained relevance (branding) and scale (consolidation). In these sectors, risk and growth are largely driven by larger forces and are difficult to influence.
- In sectors under threat such as music, management should increase returns by reducing capital investment (sell down, outsource) and attempt to generate cost savings (consolidate); in addition, management should attempt to extend the period of competitive advantage and reduce risk by limiting exposure to competitive threats (e.g., secure digital formats to fight piracy).
- In capital intensive sectors such as cable, management should increase returns by leveraging existing infrastructure, seek competitive advantage through compelling new offerings and reduce risk by encouraging consumer acceptance of new services.
- In sectors facing the loss of regulatory protection such as broadcasting, management should extend competitive advantage through scale (consolidation), clustering (swaps) and relevance (compelling news).