



NACVA's Tenth Annual Business Valuation Conference
"Business Valuation: A Decade of Development—
Foundation for the Future"



Value Enhancement: Back to Basics

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NACVA Conference

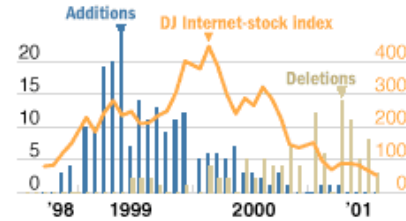
Price Enhancement versus Value Enhancement



NAME THAT STOCK

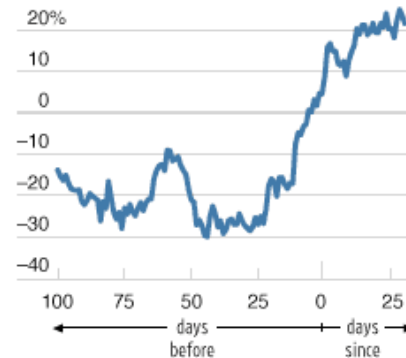
New Markets, New Names

In the bull market, adding dot-com to a company name made a stock soar. Lately those zippy new monikers are disappearing.



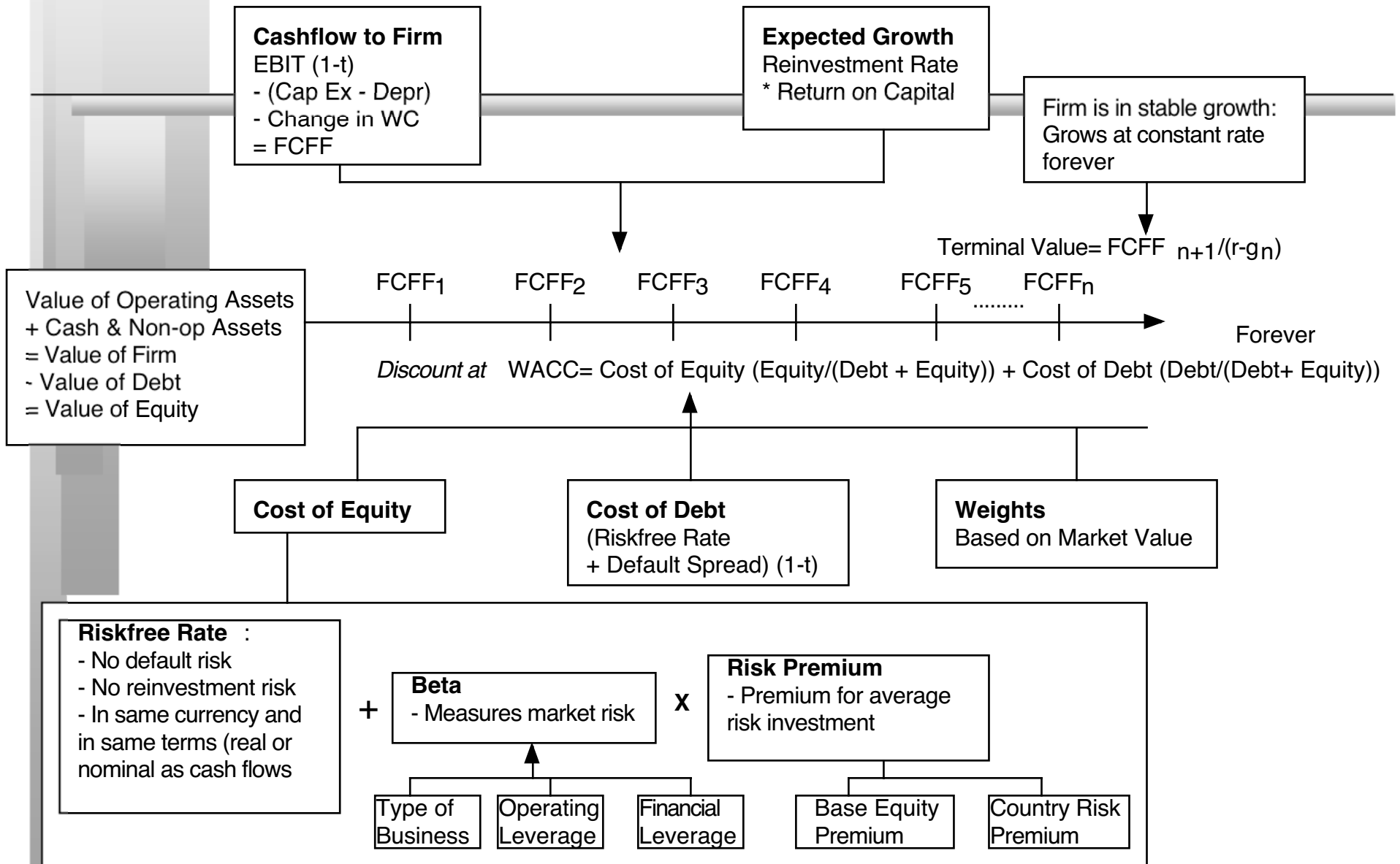
New Name, Higher Price

But the stocks still get a bounce when dot-com goes away. Chart shows returns in the days before and after the name change.



Sources: Thomson Datastream; P. Raghavendra Rau, Michael J. Cooper, Igor Osobov, Purdue Univ.; Ajay Khorana, Virginia Univ.; Ajay Patel, Wake Forest Univ.

DISCOUNTED CASHFLOW VALUATION



Titan Cements: Status Quo

Avg Reinvestment rate = 64.22%

Current Cashflow to Firm
 EBIT(1-t) : 141
 - Nt CpX 419
 - Chg WC 77
 = FCFF -355
 Reinvestment Rate = 352%

Reinvestment Rate 64.22%

Expected Growth in EBIT (1-t)
 $.6422 \times .1662 = .1068$
10.68%

Return on Capital 16.62%

Stable Growth
 g = 4%; Beta = 1.00;
 Country Premium = 0%
 Cost of capital = 8.08%
 ROC = 8.08%; Tax rate = 30%
 Reinvestment Rate = 49.5%

Terminal Value₅ = $113.79 / (.0808 - .04) = 2,780$

Firm Value: 2,084
 + Cash: 113
 - Debt 382
 = Equity 1,815
 - Options 0
 Value/Share 47.64

Year	1	2	3	4	5
EBIT(1-t)	€ 155.77	€ 172.40	€ 190.81	€ 211.18	€ 233.72
- Reinvestment	€ 100.04	€ 110.72	€ 122.54	€ 135.62	€ 150.10
= FCFF	€ 55.73	€ 61.68	€ 68.27	€ 75.56	€ 83.62

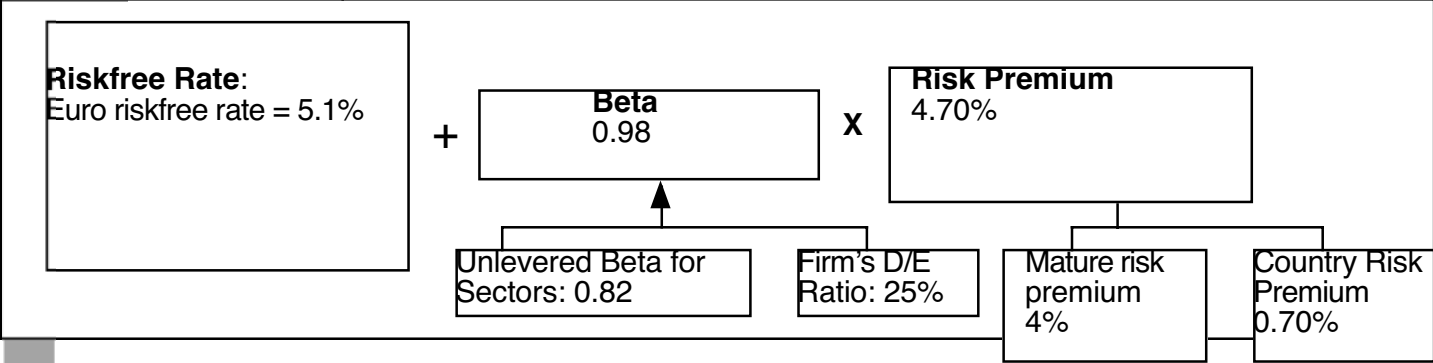
Term Yr
 225.34
 111.55
 113.79

Discount at Cost of Capital (WACC) = $9.71\% (.799) + 5.47\% (0.201) = 8.85\%$

Cost of Equity 9.71%

Cost of Debt
 $(5.1\% + .35\% + 1.8\%)(1 - .2449) = 5.47\%$

Weights
 E = 79.9% D = 20.1%



The Paths to Value Creation

- Using the DCF framework, there are four basic ways in which the value of a firm can be enhanced:
 - The cash flows from existing assets to the firm can be increased, by either
 - increasing after-tax earnings from assets in place or
 - reducing reinvestment needs (net capital expenditures or working capital)
 - The expected growth rate in these cash flows can be increased by either
 - Increasing the rate of reinvestment in the firm
 - Improving the return on capital on those reinvestments
 - The length of the high growth period can be extended to allow for more years of high growth.
 - The cost of capital can be reduced by
 - Reducing the operating risk in investments/assets
 - Changing the financial mix
 - Changing the financing composition

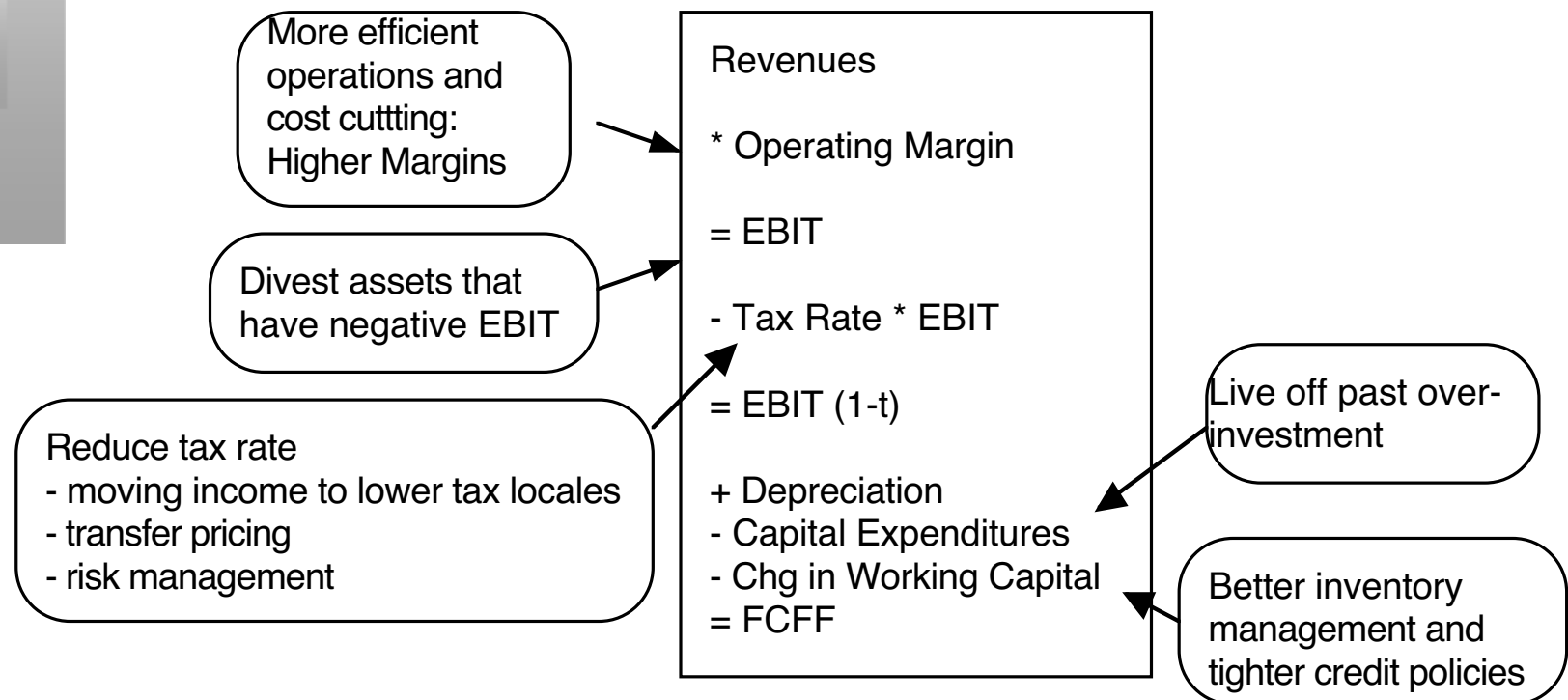
A Basic Proposition

- For an action to affect the value of the firm, it has to
 - Affect current cash flows (or)
 - Affect future growth (or)
 - Affect the length of the high growth period (or)
 - Affect the discount rate (cost of capital)
- **Proposition 1: Actions that do not affect current cash flows, future growth, the length of the high growth period or the discount rate cannot affect value.**

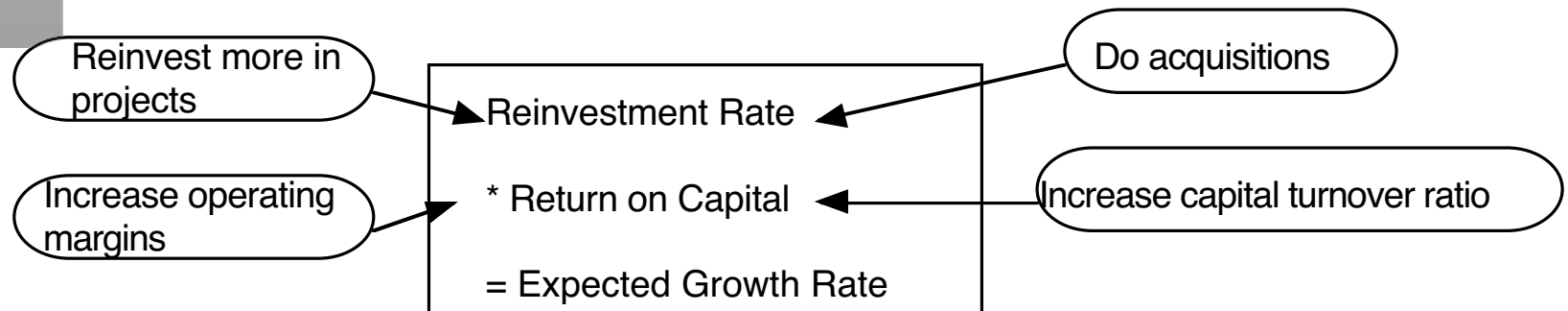
Value-Neutral Actions

- Stock splits and stock dividends change the number of units of equity in a firm, but cannot affect firm value since they do not affect cash flows, growth or risk.
- Accounting decisions that affect reported earnings but not cash flows should have no effect on value.
 - Changing inventory valuation methods from FIFO to LIFO or vice versa in financial reports but not for tax purposes
 - Changing the depreciation method used in financial reports (but not the tax books) from accelerated to straight line depreciation
 - Major non-cash restructuring charges that reduce reported earnings but are not tax deductible
 - Using pooling instead of purchase in acquisitions cannot change the value of a target firm.
- Decisions that create new securities on the existing assets of the firm (without altering the financial mix) such as tracking stock cannot create value, though they might affect perceptions and hence the price.

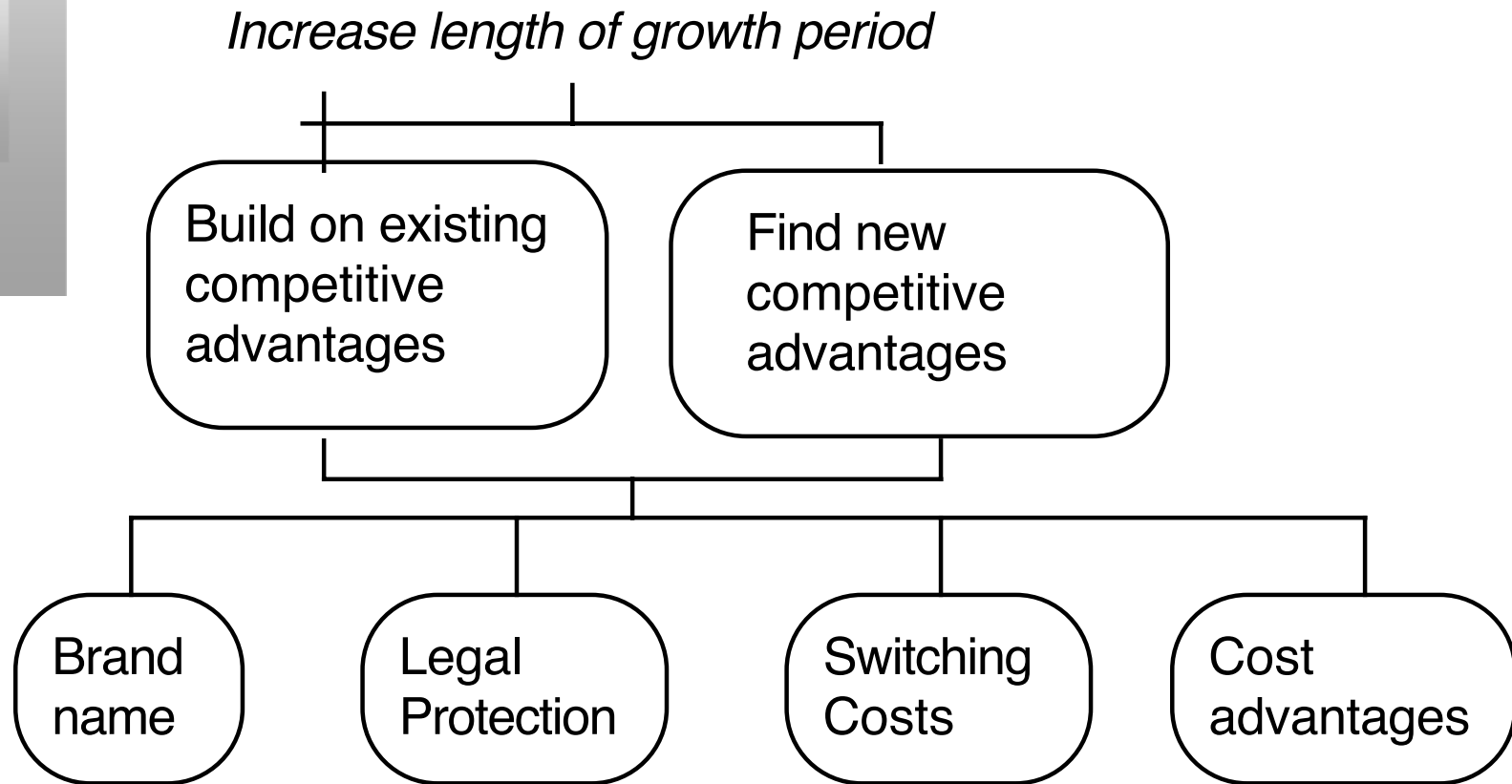
I. Ways of Increasing Cash Flows from Assets in Place



II. Value Enhancement through Growth



III. Building Competitive Advantages: Increase length of the growth period



3.1: The Brand Name Advantage

- Some firms are able to sustain above-normal returns and growth because they have well-recognized brand names that allow them to charge higher prices than their competitors and/or sell more than their competitors.
- Firms that are able to improve their brand name value over time can increase both their growth rate and the period over which they can expect to grow at rates above the stable growth rate, thus increasing value.

Illustration: Valuing a brand name: Coca Cola

	Coca Cola	Generic Cola Company
AT Operating Margin	18.56%	7.50%
Sales/BV of Capital	1.67	1.67
ROC	31.02%	12.53%
Reinvestment Rate	65.00% (19.35%)	65.00% (47.90%)
Expected Growth	20.16%	8.15%
Length	10 years	10 yea
Cost of Equity	12.33%	12.33%
E/(D+E)	97.65%	97.65%
AT Cost of Debt	4.16%	4.16%
D/(D+E)	2.35%	2.35%
Cost of Capital	12.13%	12.13%
Value	\$115	\$13

3.2: Patents and Legal Protection

- The most complete protection that a firm can have from competitive pressure is to own a patent, copyright or some other kind of legal protection allowing it to be the sole producer for an extended period.
- Note that patents only provide partial protection, since they cannot protect a firm against a competitive product that meets the same need but is not covered by the patent protection.
- Licenses and government-sanctioned monopolies also provide protection against competition. They may, however, come with restrictions on excess returns; utilities in the United States, for instance, are monopolies but are regulated when it comes to price increases and returns.

3.3: Switching Costs

- Another potential barrier to entry is the cost associated with switching from one firm's products to another.
- The greater the switching costs, the more difficult it is for competitors to come in and compete away excess returns.
- Firms that devise ways to increase the cost of switching from their products to competitors' products, while reducing the costs of switching from competitor products to their own will be able to increase their expected length of growth.

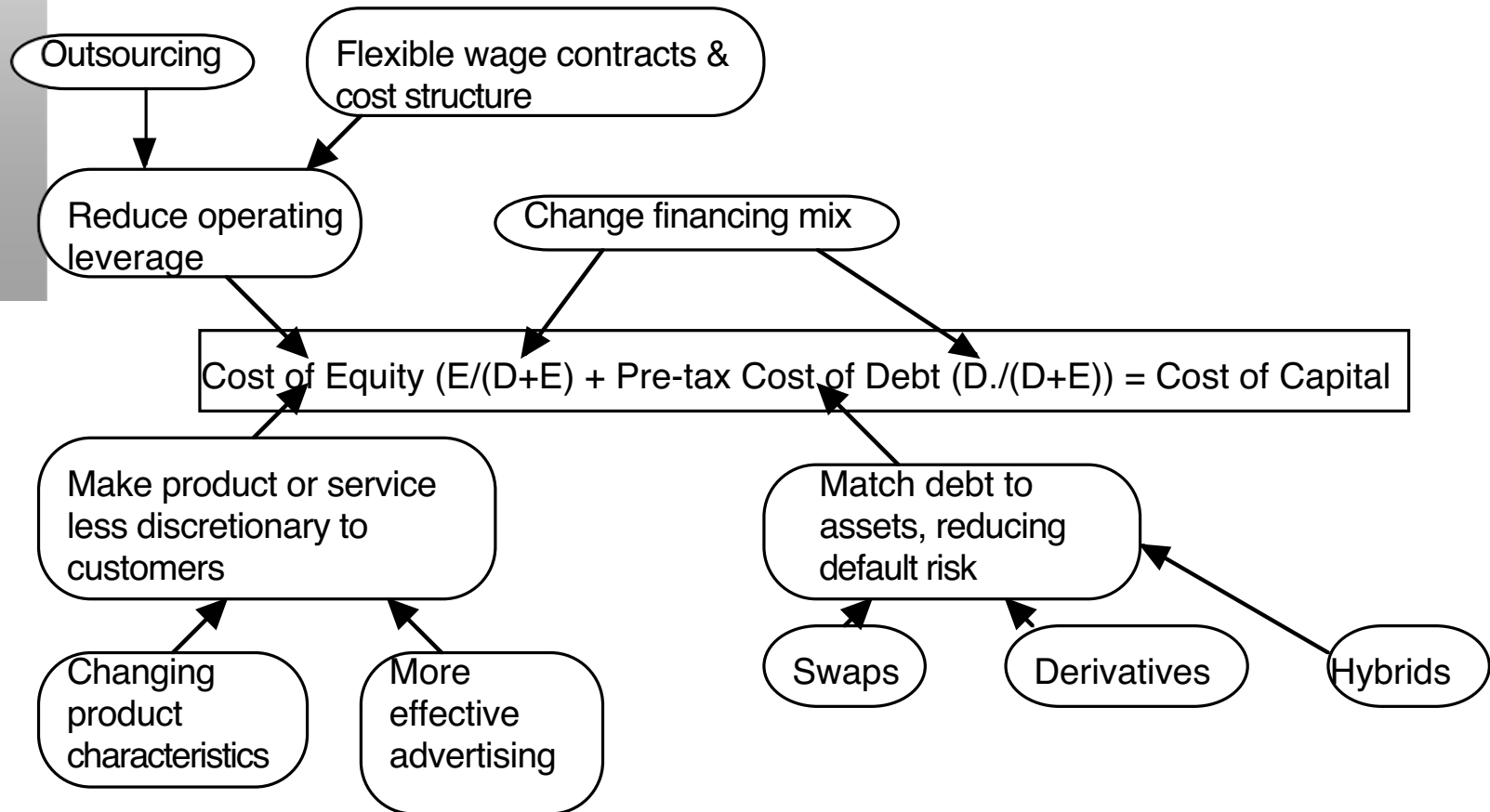
3.4: Cost Advantages

- There are a number of ways in which firms can establish a cost advantage over their competitors, and use this cost advantage as a barrier to entry:
 - In businesses, where scale can be used to reduce costs, economies of scale can give bigger firms advantages over smaller firms
 - Owning or having exclusive rights to a distribution system can provide firms with a cost advantage over its competitors.
 - Owning or having the rights to extract a natural resource which is in restricted supply (The undeveloped reserves of an oil or mining company, for instance)
- These cost advantages will show up in valuation in one of two ways:
 - The firm may charge the same price as its competitors, but have a much higher operating margin.
 - The firm may charge lower prices than its competitors and have a much higher capital turnover ratio.

Gauging Barriers to Entry

- Which of the following barriers to entry are most likely to work for Titan Cement?
 - Brand Name
 - Patents and Legal Protection
 - Switching Costs
 - Cost Advantages
- What about for Amazon.com?
 - Brand Name
 - Patents and Legal Protection
 - Switching Costs
 - Cost Advantages

Reducing Cost of Capital



Titan : Optimal Capital Structure

Debt Ratio	Beta	Cost of Equity	Bond Rating	Interest rate on debt	Tax Rate	Cost of Debt (after-tax)	WACC	Firm Value (G)
0%	0.83	9.02%	AAA	5.85%	30.00%	4.10%	9.02%	\$1,805
10%	0.90	9.32%	AAA	5.85%	30.00%	4.10%	8.80%	\$1,890
20%	0.98	9.70%	A	6.90%	30.00%	4.83%	8.73%	\$1,920
30%	1.08	10.19%	A-	7.10%	30.00%	4.97%	8.62%	\$1,964
40%	1.22	10.84%	B	11.60%	30.00%	8.12%	9.75%	\$1,564
50%	1.42	11.76%	CCC	15.10%	30.00%	10.57%	11.16%	\$1,242
60%	1.71	13.15%	CC	16.60%	29.55%	11.69%	12.28%	\$1,065
70%	2.28	15.84%	CC	16.60%	25.33%	12.40%	13.43%	\$926
80%	3.48	21.44%	C	17.80%	20.67%	14.12%	15.58%	\$740
90%	6.95	37.78%	C	17.80%	18.37%	14.53%	16.85%	\$659

Titan Cements: Restructured

Avg Reinvestment rate = 64.22%

Current Cashflow to Firm
 EBIT(1-t) : 141
 - Nt CpX 419
 - Chg WC 77
 = FCFF -355
 Reinvestment Rate = 352%

Reinvestment Rate 64.22%

Expected Growth in EBIT (1-t)
 $.6422 \cdot 18 = 15.11\%$

Return on Capital 18%

Stable Growth
 $g = 4\%$; Beta = 1.00;
 Country Premium = 0%
 Cost of capital = 8.08%
 ROC = 8.08%; Tax rate = 30%
 Reinvestment Rate = 49.5%

Terminal Value₅ = $166.09 / (.0808 - .04) = 4,053$

Firm Value: 2,394
 + Cash: 113
 - Debt 382
 = Equity 2,127
 - Options 0
 Value/Share 55.85

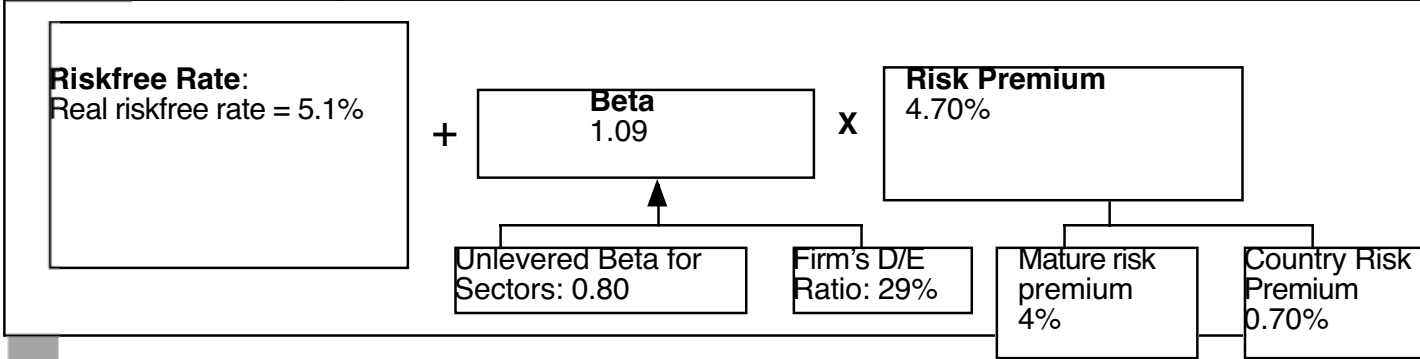
Year	1	2	3	4	5	6	7	8	9	10	Term Yr
EBIT(1-t)	€ 157	€ 175	€ 195	€ 218	€ 243	€ 268	€ 290	€ 311	€ 328	€ 341	328.92
- Reinvestment	€ 101	€ 112	€ 126	€ 140	€ 156	€ 164	€ 169	€ 172	€ 172	€ 169	162.83
= FCFF	€ 56	€ 63	€ 70	€ 78	€ 87	€ 104	€ 121	€ 139	€ 156	€ 172	166.09

Discount at Cost of Capital (WACC) = $10.22\% (.70) + 5.62\% (0.30) = 8.84\%$

Cost of Equity 10.22%

Cost of Debt
 $(5.1\% + .35\% + 2\%)(1 - .2449) = 5.62\%$

Weights
 E = 70% D = 30%



The Value of Control?

- If the value of a firm run optimally is significantly higher than the value of the firm with the status quo (or incumbent management), you can write the value that you should be willing to pay as:
- Value of control = Value of firm optimally run - Value of firm with status quo
- Implications:
 - The value of control is greatest at poorly run firms.
 - Voting shares in poorly run firms should trade at a premium on non-voting shares if the votes associated with the shares will give you a chance to have a say in a hostile acquisition.
 - When valuing private firms, your estimate of value will vary depending upon whether you gain control of the firm. For example, 49% of a private firm may be worth less than 51% of the same firm.
 - 49% stake = 49% of status quo value
 - 51% stake = 51% of optimal value

Alternative Approaches to Value Enhancement

- *Maximize a variable that is correlated with the value of the firm. There are several choices for such a variable. It could be*
 - an accounting variable, such as **earnings or return on investment**
 - a marketing variable, such as **market share**
 - a cash flow variable, such as cash flow return on investment (CFROI)
 - a risk-adjusted cash flow variable, such as Economic Value Added (EVA)
- **The advantages of using these variables are that they**
 - Are often simpler and easier to use than DCF value.
- **The disadvantage is that the**
 - Simplicity comes at a cost; these variables are not perfectly correlated with DCF value.

Economic Value Added (EVA) and CFROI

- The Economic Value Added (EVA) is a measure of surplus value created on an investment.
 - Define the return on capital (ROC) to be the “true” cash flow return on capital earned on an investment.
 - Define the cost of capital as the weighted average of the costs of the different financing instruments used to finance the investment.

$$\text{EVA} = (\text{Return on Capital} - \text{Cost of Capital}) (\text{Capital Invested in Project})$$

- The CFROI is a measure of the cash flow return made on capital
$$\text{CFROI} = (\text{Adjusted EBIT} (1-t) + \text{Depreciation \& Other Non-cash Charges}) / \text{Capital Invested}$$

In Practice: Measuring EVA

- *Capital Invested*: Many firms use the book value of capital invested as their measure of capital invested. To the degree that book value reflects accounting choices made over time, this may not be true. In addition, the book capital may not reflect the value of intangible assets such as research and development.
- *Operating Income*: Operating income has to be cleansed of any expenses which are really capital expenses or financing expenses.
- *Cost of capital*: The cost of capital for EVA purposes should be computed based on market values.
- *Bottom line*: If you estimate return on capital and cost of capital correctly in DCF valuation, you can use those numbers to compute EVA.

Estimating Nestle's EVA in 1995

- Return on Capital
 - After-tax Operating Income = 5665 Million Sfr (1 - .3351)
= 3767 Million Sfr
 - Capital in Assets in Place 1994 = BV of Equity + BV of Debt
= 17774 + (4180 + 7546) = 29,500 Million Sfr
 - Return on Capital = $3767 / 29,500 = 12.77\%$
- Cost of Capital
 - Cost of Equity = $4.5\% + 0.99 (5.5\%) = 10\%$
 - Cost of Debt = $4.75\% (1 - .3351) = 3.16\%$
 - Debt to Capital Ratio (market value) = $11726 / 68376$
 - Cost of Capital = $10\% (56650 / 68376) + 3.16\% (11726 / 68376) = 8.85\%$
- Economic Value Added in 1995 = $(.1277 - .0885) (29,500 \text{ Million Sfr})$
= 1154.50 Million Sfr

EVA Valuation of Nestle

	0	1	2	3	4	5	Term. Year
Return on Capital	12.77%	12.77%	12.77%	12.77%	12.77%	12.77%	12.77%
Cost of Capital	8.85%	8.85%	8.85%	8.85%	8.85%	8.85%	8.85%
EBIT(1-t)	3,766.66Fr	4,066.46Fr	4,390.06Fr	4,739.37Fr	5,116.40Fr	5,523.38Fr	5,689.08Fr
WACC(Capital)	2,612.06Fr	2,819.97Fr	3,044.38Fr	3,286.61Fr	3,548.07Fr	3,830.29Fr	3,945.20Fr
EVA	1,154.60Fr	1,246.49Fr	1,345.69Fr	1,452.76Fr	1,568.33Fr	1,693.08Fr	1,743.88Fr
PV of EVA		1,145.10Fr	1,135.67Fr	1,126.30Fr	1,117.00Fr	1,107.76Fr	
						29,787.18Fr	
PV of EVA =	25,121.24Fr						PV of 1693.08 Fr growing at 3% a year
Value of Assets in Place =	29,500.00Fr						
Value of Firm =	54,621.24Fr						
Value of Debt =	11,726.00Fr						
Value of Equity =	42,895.24Fr						
Value Per Share =	1,088.16Fr						

DCF Valuation of Nestle

	0	1	2	3	4	5	Terminal Year
EBIT (1-t)	0.00Fr	4,066.46Fr	4,390.06Fr	4,739.37Fr	5,116.40Fr	5,523.38Fr	5,689.08Fr
+ Deprec'n	2,305.00Fr	2,488.02Fr	2,685.58Fr	2,898.83Fr	3,129.00Fr	1,273.99Fr	1,350.42Fr
- Cap Ex	3,898.00Fr	4,207.51Fr	4,541.60Fr	4,902.22Fr	5,291.48Fr	2,154.45Fr	2,283.71Fr
- Change in WC	755.00Fr	814.95Fr	879.66Fr	949.51Fr	1,024.90Fr	417.29Fr	442.33Fr
FCFF	-2,348.00Fr	1,532.02Fr	1,654.38Fr	1,786.46Fr	1,929.03Fr	4,225.62Fr	4,313.46Fr
Terminal Value						151,113.54Fr	
WACC	8.85%	8.85%	8.85%	8.85%	8.85%	8.85%	8.85%
PV of FCFF	-2,348.00Fr	1,407.40Fr	1,396.19Fr	1,385.02Fr	1,373.90Fr	51,406.74Fr	
Value of Firm=	54,621.24Fr						
Value of Debt =	11,726.00Fr						
Value of Equity =	42,895.24Fr						
Value Per Share =	1,088.16Fr						

In summary ...

- Both EVA and Discounted Cash Flow Valuation should provide us with the same estimate for the value of a firm.
- In their full forms, the information that is required for both approaches is exactly the same - expected cash flows over time and costs of capital over time.
- A policy of maximizing the present value of economic value added over time should be the equivalent of a policy of maximizing firm value.

Year-by-year EVA Changes

- Firms are often evaluated based upon year-to-year changes in EVA rather than the present value of EVA over time.
- The advantage of this comparison is that it is simple and does not require the making of forecasts about future earnings potential.
- Another advantage is that it can be broken down by any unit - person, division etc., as long as one is willing to assign capital and allocate earnings across these same units.
- While it is simpler than DCF valuation, using year-by-year EVA changes comes at a cost. In particular, it is entirely possible that a firm which focuses on increasing EVA on a year-to-year basis may end up being less valuable.

Year-to-Year EVA Changes: Nestle

	0	1	2	3	4	5	Term. Year
Return on Capital	12.77%	12.77%	12.77%	12.77%	12.77%	12.77%	12.77%
Cost of Capital	8.85%	8.85%	8.85%	8.85%	8.85%	8.85%	8.85%
EBIT(1-t)	3,766.66Fr	4,066.46Fr	4,390.06Fr	4,739.37Fr	5,116.40Fr	5,523.38Fr	5,689.08Fr
WACC(Capital)	2,612.06Fr	2,819.97Fr	3,044.38Fr	3,286.61Fr	3,548.07Fr	3,830.29Fr	3,945.20Fr
EVA	1,154.60Fr	1,246.49Fr	1,345.69Fr	1,452.76Fr	1,568.33Fr	1,693.08Fr	1,743.88Fr
PV of EVA		1,145.10Fr	1,135.67Fr	1,126.30Fr	1,117.00Fr	1,107.76Fr	
						29,787.18Fr	
PV of EVA =	25,121.24Fr						PV of 590.67 Fr growing at 3% a year
Value of Assets in Place =	29,500.00Fr						
Value of Firm =	54,621.24Fr						
Value of Debt =	11,726.00Fr						
Value of Equity	42,895.24Fr						
Value per Share =	1088.16Fr						

Discussion Issues

- In the above example, Nestle is expected to increase its EVA from 1154.50 Million Sfr in 1995 to 1246 Million Sfr in 1996.
- Assume that you are the CEO of Nestle and that you are offered a deal. If you deliver an EVA greater than 1246 million Sfr, you will receive a very substantial bonus. Can you think of ways in which you can deliver a higher EVA than expected while making the firm less valuable?

When Increasing EVA on year-to-year basis may result in lower Firm Value

If the increase in EVA on a year-to-year basis has been accomplished at the expense of the EVA of future projects. In this case, the gain from the EVA in the current year may be more than offset by the present value of the loss of EVA from the future periods.

- For example, in the Nestle example above assume that the return on capital on year 1 projects increases to 13.27% (from the existing 12.77%), while the cost of capital on these projects stays at 8.85%. If this increase in value does not affect the EVA on future projects, the value of the firm will increase.
- If, however, this increase in EVA in year 1 is accomplished by reducing the return on capital on future projects to 12.27%, the firm value will actually decrease.

Firm Value and EVA tradeoffs over time

	0	1	2	3	4	5	Term. Year	
Return on Capital	12.77%	13.27%	12.27%	12.27%	12.27%	12.27%	12.27%	
Cost of Capital	8.85%	8.85%	8.85%	8.85%	8.85%	8.85%	8.85%	
EBIT(1-t)	3,766.66Fr	4,078.24Fr	4,389.21Fr	4,724.88Fr	5,087.20Fr	5,478.29Fr	5,642.64Fr	
WACC(Capital)	2,612.06Fr	2,819.97Fr	3,044.38Fr	3,286.61Fr	3,548.07Fr	3,830.29Fr	3,948.89Fr	
EVA	1,154.60Fr	1,258.27Fr	1,344.84Fr	1,438.28Fr	1,539.13Fr	1,648.00Fr	1,693.75Fr	
PV of EVA		1,155.92Fr	1,134.95Fr	1,115.07Fr	1,096.20Fr	1,078.27Fr		
						28,930.98Fr		
PV of EVA =	24,509.62Fr						PV of 590.67 Fr growing at 3% a year	
Value of Assets in Place =	29,500.00Fr							
Value of Firm =	54,009.62Fr							
Value of Debt =	11,726.00Fr							
Value of Equity =	42,283.62Fr							
Value Per Share =	1,072.64Fr							

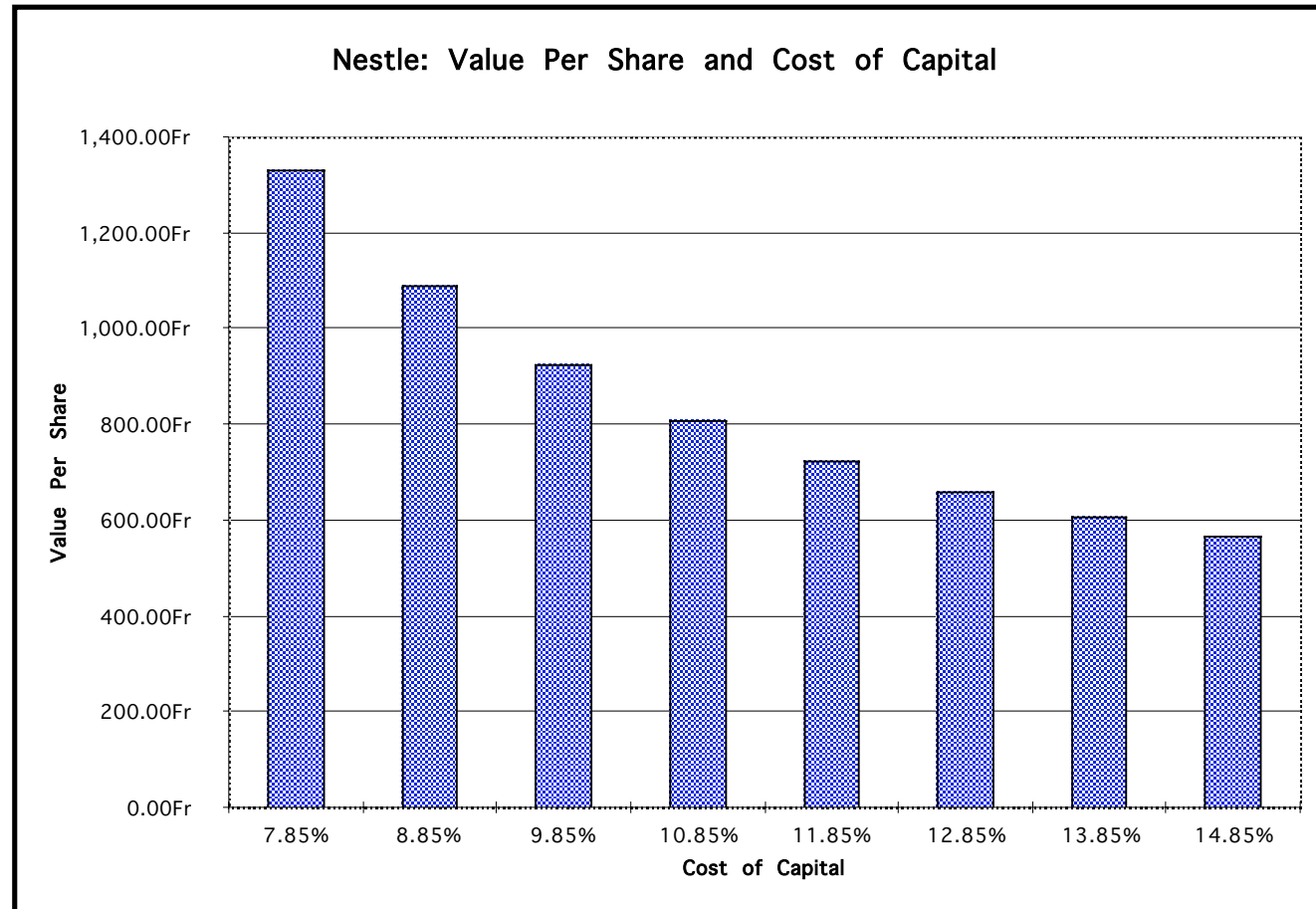
EVA and Risk

- When the increase in EVA is accompanied by an increase in the cost of capital, either because of higher operational risk or changes in financial leverage, the firm value may decrease even as EVA increases.
 - For instance, in the example above, assume that the spread stays at 3.91% on all future projects but the cost of capital increases to 9.85% for these projects (from 8.85%). The value of the firm will drop.

Nestle's Value at a 9.95 % Cost of Capital

	0	1	2	3	4	5	Term. Year	
Return on Capital	12.77%	13.77%	13.77%	13.77%	13.77%	13.77%	13.77%	
Cost of Capital	8.85%	9.85%	9.85%	9.85%	9.85%	9.85%	9.85%	
EBIT(1-t)	3,766.66Fr	4,089.94Fr	4,438.89Fr	4,815.55Fr	5,222.11Fr	5,660.96Fr	5,830.79Fr	
WACC(Capital)	2,612.06Fr	2,843.45Fr	3,093.20Fr	3,362.79Fr	3,653.78Fr	3,967.88Fr	4,384.43Fr	
EVA	1,154.60Fr	1,246.49Fr	1,345.69Fr	1,452.76Fr	1,568.33Fr	1,693.08Fr	1,446.36Fr	
PV of EVA		1,134.68Fr	1,115.09Fr	1,095.82Fr	1,076.88Fr	1,058.25Fr		
						21,101.04Fr		
PV of EVA =	18,669.84Fr						PV of 590.67 Fr growing at 3% a year	
Value of Assets in Place =	29,500.00Fr							
Value of Firm =	48,169.84Fr							
Value of Debt =	11,726.00Fr							
Value of Equity =	36,443.84Fr							
Value Per Share =	924.50Fr							

EVA: The Risk Effect



Advantages of EVA

1. EVA is closely related to NPV. It is closest in spirit to corporate finance theory that argues that the value of the firm will increase if you take positive NPV projects.
2. It avoids the problems associated with approaches that focus on percentage spreads - between ROE and Cost of Equity and ROC and Cost of Capital. These approaches may lead firms with high ROE to turn away good projects to avoid lowering their percentage spreads.
3. It makes top managers responsible for a measure that they have more control over - the return on capital and the cost of capital are affected by their decisions - rather than one that they feel they cannot control as well - the market price per share.
4. It is influenced by all of the decisions that managers have to make within a firm - the investment decisions and dividend decisions affect the return on capital and the financing decision affects the WACC.

When focusing on year-to-year EVA changes has least side effects

1. Most or all of the assets of the firm are already in place; i.e., very little or none of the value of the firm is expected to come from future growth.
 - [This minimizes the risk that increases in current EVA come at the expense of future EVA]
2. The leverage is stable and the cost of capital cannot be altered easily by the investment decisions made by the firm.
 - [This minimizes the risk that the higher EVA is accompanied by an increase in the cost of capital]
3. The firm is in a sector where investors anticipate little or not surplus returns; i.e., firms in this sector are expected to earn their cost of capital.
 - [This minimizes the risk that the increase in EVA is less than what the market expected it to be, leading to a drop in the market price.]

When focusing on year-to-year EVA changes can be dangerous

1. High growth firms, where the bulk of the value can be attributed to future growth.
2. Firms where neither the leverage nor the risk profile of the firm is stable, and can be changed by actions taken by the firm.
3. Firms where the current market value has imputed in it expectations of significant surplus value or excess return projects in the future.

Note that all of these problems can be avoided if we restate the objective as maximizing the present value of EVA over time. If we do so, however, some of the perceived advantages of EVA - its simplicity and observability - disappear.