VALUE ENHANCEMENT AND THE EXPECTED VALUE OF CONTROL: BACK TO BASICS
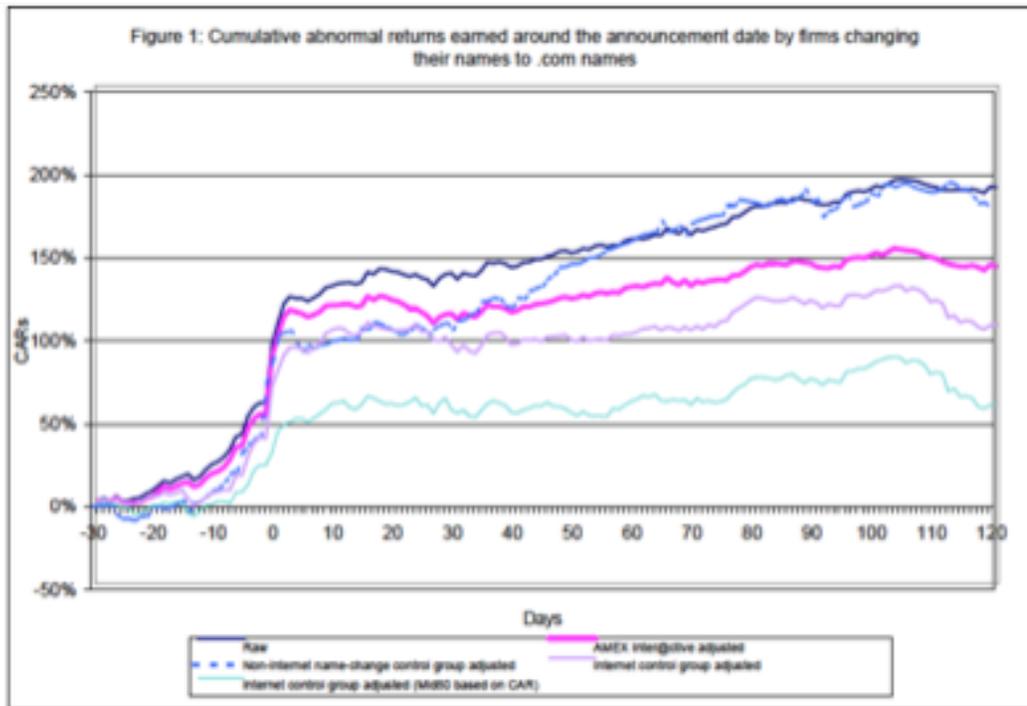
Price Enhancement versus Value Enhancement

The market gives…   *And takes away….*

Figure 1: Cumulative abnormal returns earned around the announcement date by firms changing their names to .com names
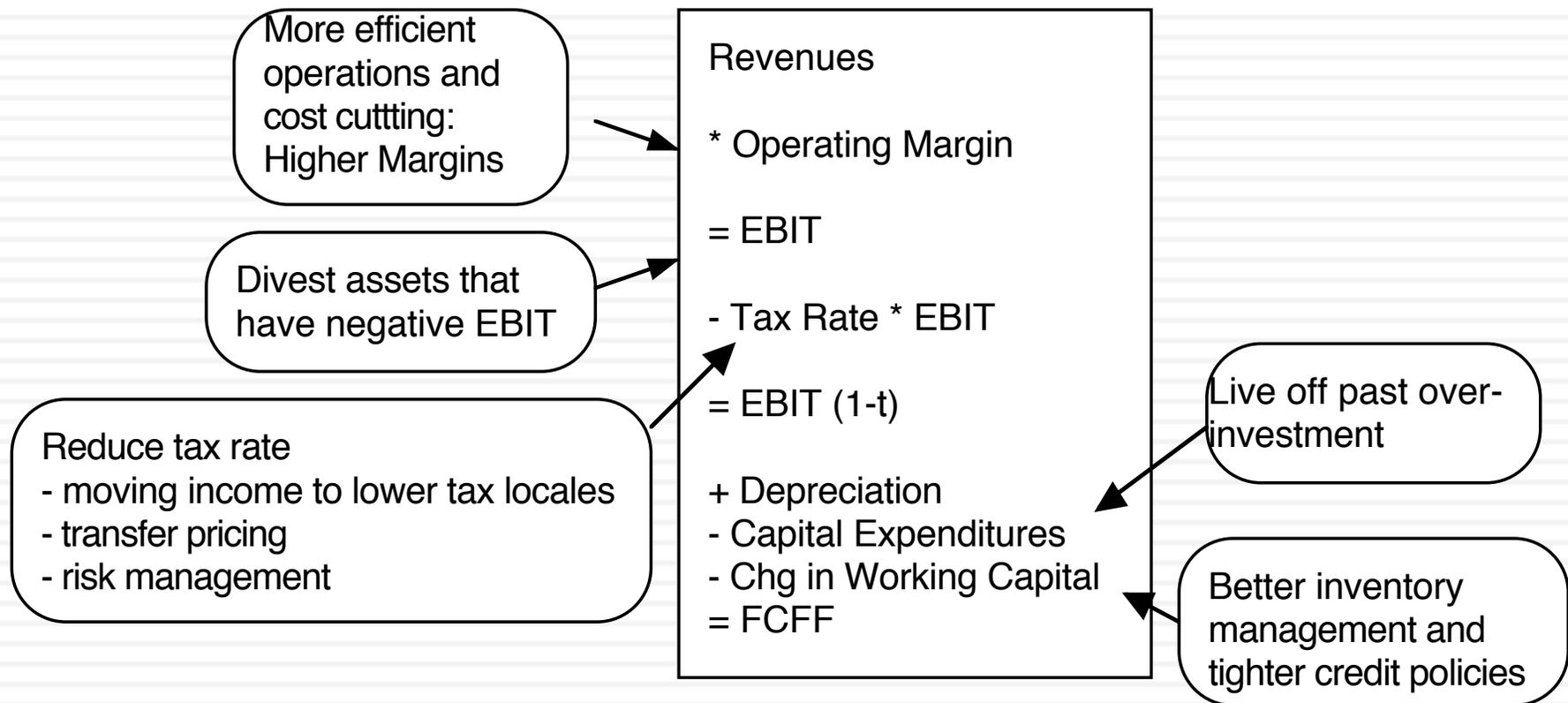

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The Paths to Value Creation

□ 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

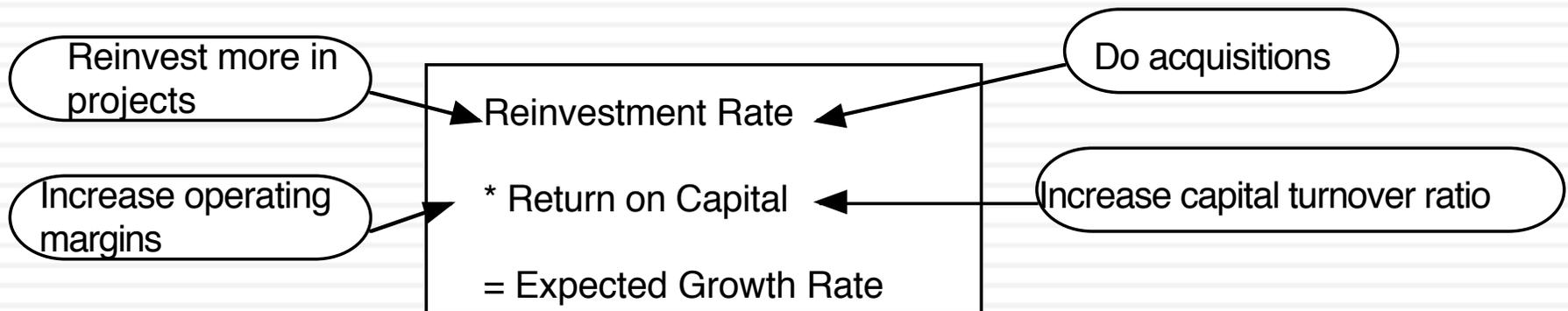# Value Creation 1: Increase Cash Flows from Assets in Place

More efficient operations and cost cuttting: Higher Margins

Divest assets that have negative EBIT

Reduce tax rate
- moving income to lower tax locales
- transfer pricing
- risk management

Revenues

* Operating Margin

= EBIT

- Tax Rate * EBIT

= EBIT (1-t)

+ Depreciation
- Capital Expenditures
- Chg in Working Capital
= FCFF

Live off past over-investment

Better inventory management and tighter credit policies

Value Creation 2: Increase Value from Expected Growth

Pricing Strategies

Price Leader versus Volume Leader Strategies

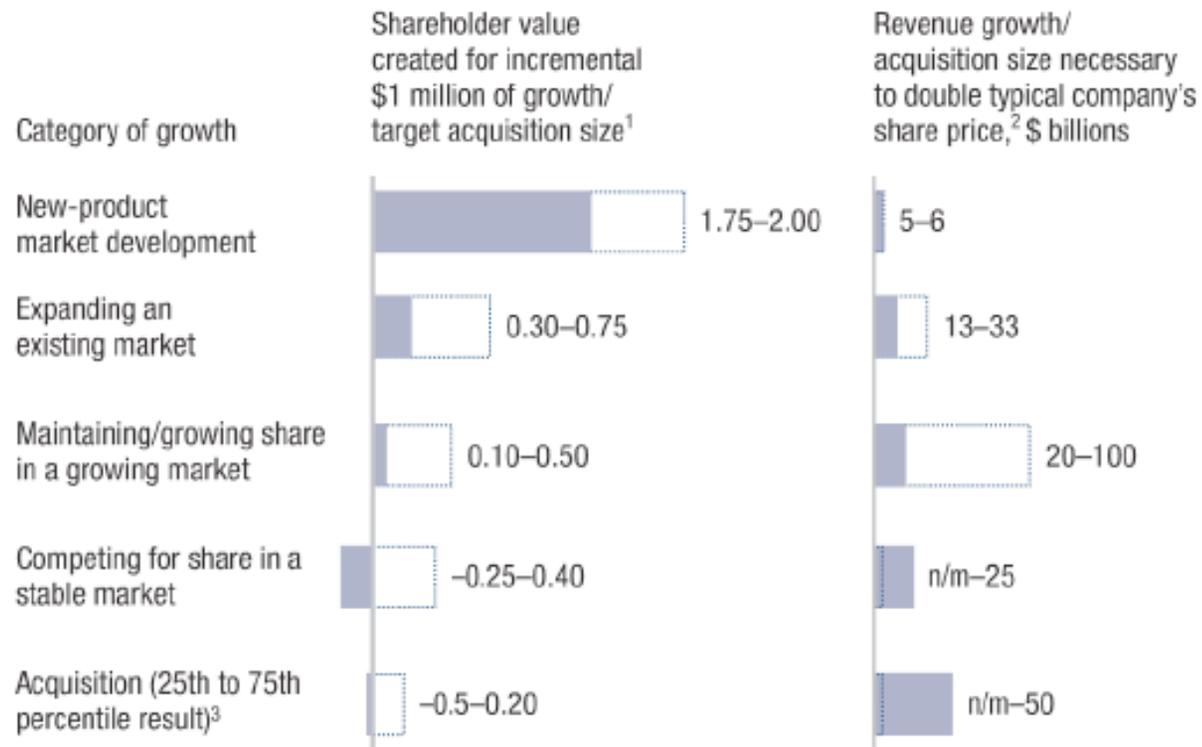*Return on Capital = Operating Margin * Capital Turnover Ratio*

```
Reinvest more in          Do acquisitions
projects
              Reinvestment Rate

Increase operating        Increase capital turnover ratio
margins       * Return on Capital

              = Expected Growth Rate
```

Game theory

How will your competitors react to your moves?

How will you react to your competitors' moves?

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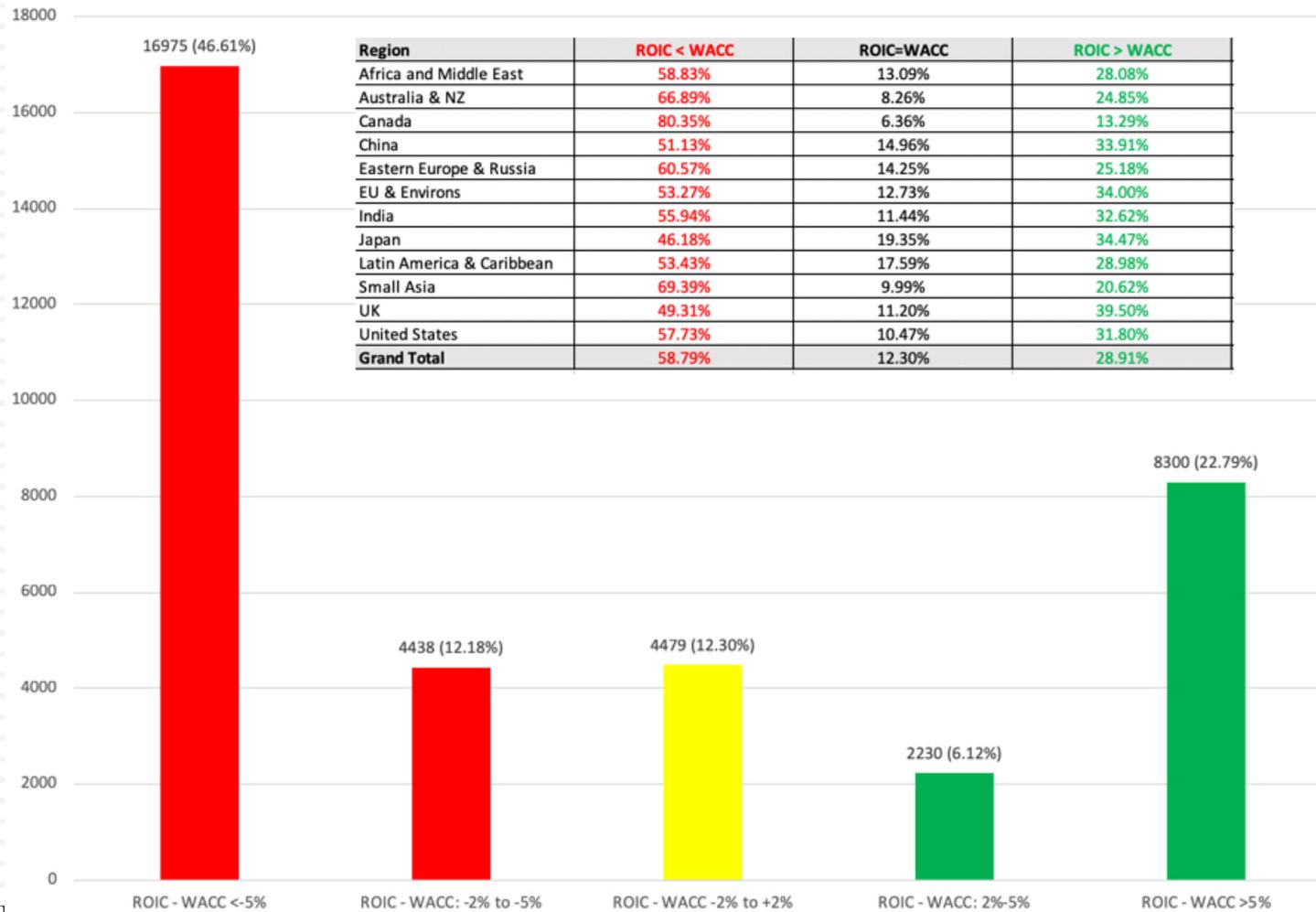
Value Creating Growth... Evaluating the Alternatives..

Modes of organic growth vary in value creation intensity—consumer goods industry

Category of growth	Shareholder value created for incremental $1 million of growth/target acquisition size[1]	Revenue growth/acquisition size necessary to double typical company's share price,[2] $ billions
New-product market development	1.75–2.00	5–6
Expanding an existing market	0.30–0.75	13–33
Maintaining/growing share in a growing market	0.10–0.50	20–100
Competing for share in a stable market	−0.25–0.40	n/m–25
Acquisition (25th to 75th percentile result)[3]	−0.5–0.20	n/m–50

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Sometimes, growing less is the answer…

Excess Returns (ROIC - Cost of Capital) Globally - January 2019 update

Region	ROIC < WACC	ROIC=WACC	ROIC > WACC
Africa and Middle East	58.83%	13.09%	28.08%
Australia & NZ	66.89%	8.26%	24.85%
Canada	80.35%	6.36%	13.29%
China	51.13%	14.96%	33.91%
Eastern Europe & Russia	60.57%	14.25%	25.18%
EU & Environs	53.27%	12.73%	34.00%
India	55.94%	11.44%	32.62%
Japan	46.18%	19.35%	34.47%
Latin America & Caribbean	53.43%	17.59%	28.98%
Small Asia	69.39%	9.99%	20.62%
UK	49.31%	11.20%	39.50%
United States	57.73%	10.47%	31.80%
Grand Total	58.79%	12.30%	28.91%

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

Increase length of growth period

```
                    Build on existing          Find new
                    competitive                competitive
                    advantages                 advantages


        Brand              Legal            Switching          Cost
        name               Protection       Costs              advantages
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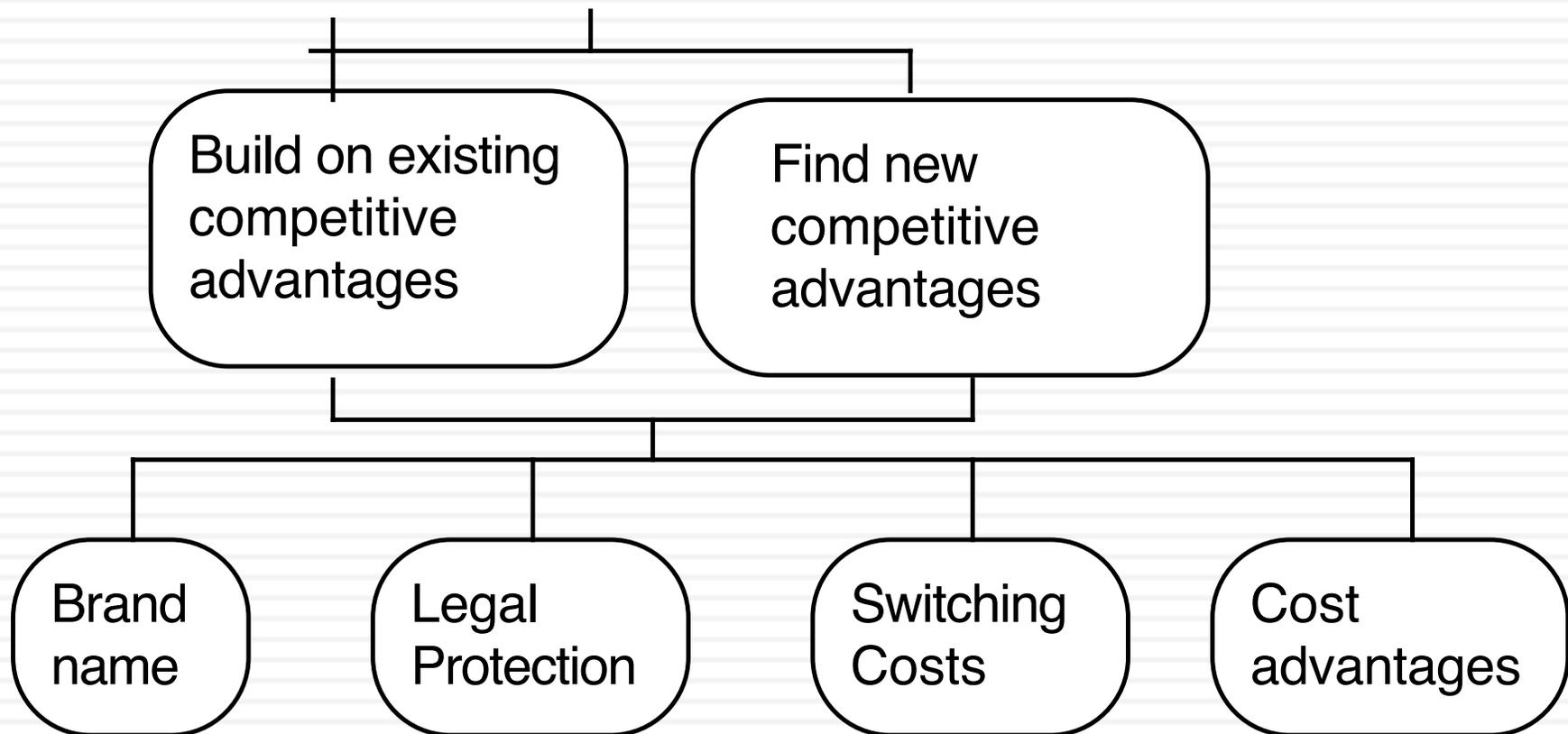
Value Creation 4: Reduce Cost of Capital

```
Outsourcing        Flexible wage contracts &
                   cost structure

Reduce operating        Change financing mix
leverage

Cost of Equity (E/(D+E) + Pre-tax Cost of Debt (D./(D+E)) = Cost of Capital

Make product or service          Match debt to
less discretionary to            assets, reducing
customers                        default risk

Changing        More              Swaps    Derivatives    Hybrids
product         effective
characteristics advertising
```
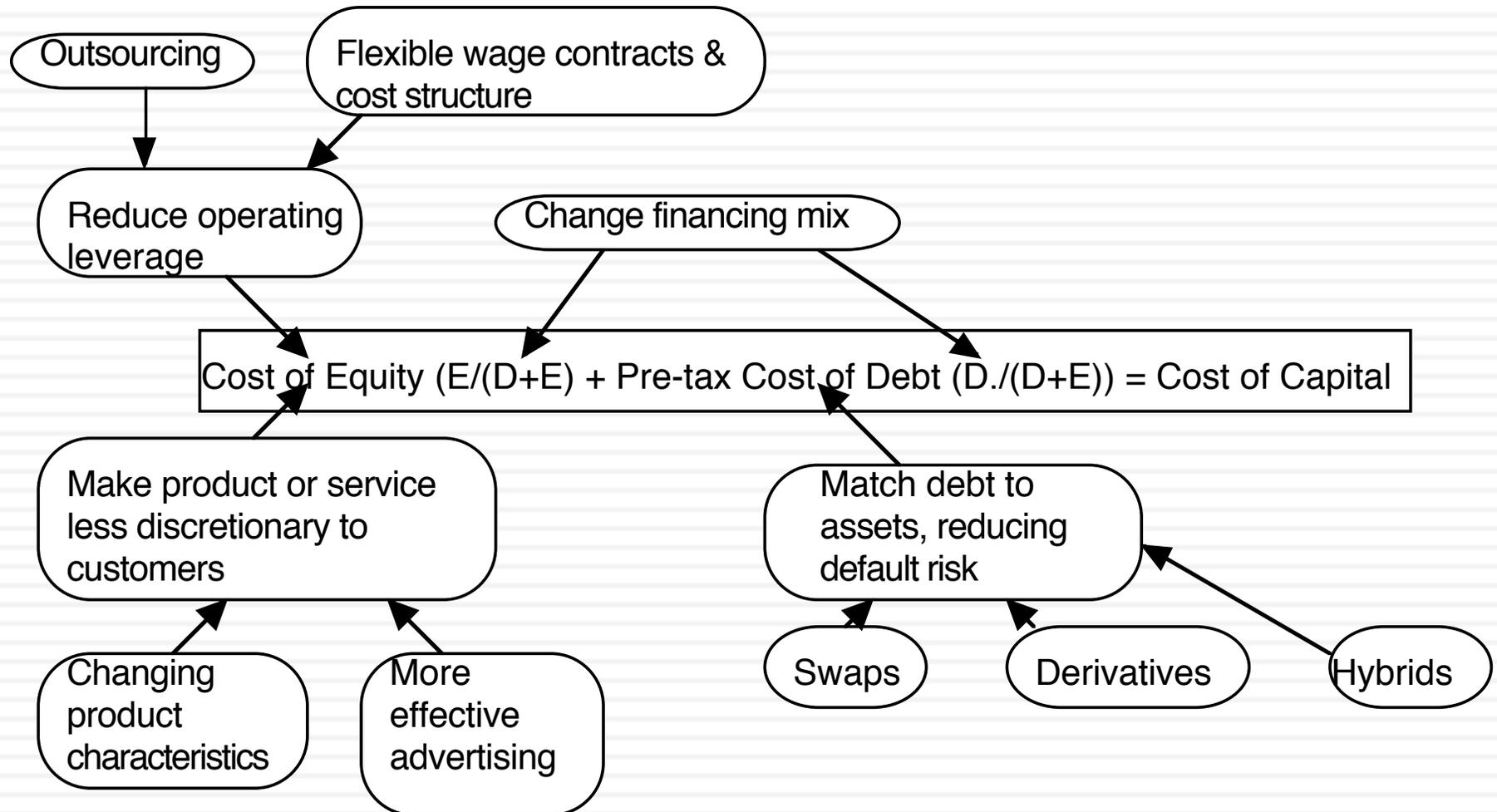
SAP: Status Quo

Avg Reinvestment rate = 36.94%

Reinvestment Rate 57.42%

Return on Capital 19.93%

Current Cashflow to Firm
EBIT(1-t) :   1414
- Nt CpX   831
- Chg WC   - 19
= FCFF   602
Reinvestment Rate = 812/1414
=57.42%

Expected Growth in EBIT (1-t)
.5742*.1993=.1144
11.44%

Stable Growth
g = 3.41%; Beta = 1.00;
Debt Ratio= 20%
Cost of capital = 6.62%
ROC= 6.62%; Tax rate=35%
Reinvestment Rate=51.54%

First 5 years

Growth decreases gradually to 3.41%

Terminal Value$_{10}$= 1717/(.0662-.0341) = 53546

Op. Assets   31,615
+ Cash: 3,018
- Debt   558
- Pension Lian   305
- Minor. Int.   55
=Equity   34,656
-Options   180
Value/Share106.12

Year	1	2	3	4	5	6	7	8	9	10	Term Yr
EBIT	2,483	2,767	3,083	3,436	3,829	4,206	4,552	4,854	5,097	5,271	5451
EBIT(1-t)	1,576	1,756	1,957	2,181	2,430	2,669	2,889	3,080	3,235	3,345	3543
- Reinvestm	905	1,008	1,124	1,252	1,395	1,501	1,591	1,660	1,705	1,724	1826
= FCFF	671	748	833	929	1,035	1,168	1,298	1,420	1,530	1,621	1717

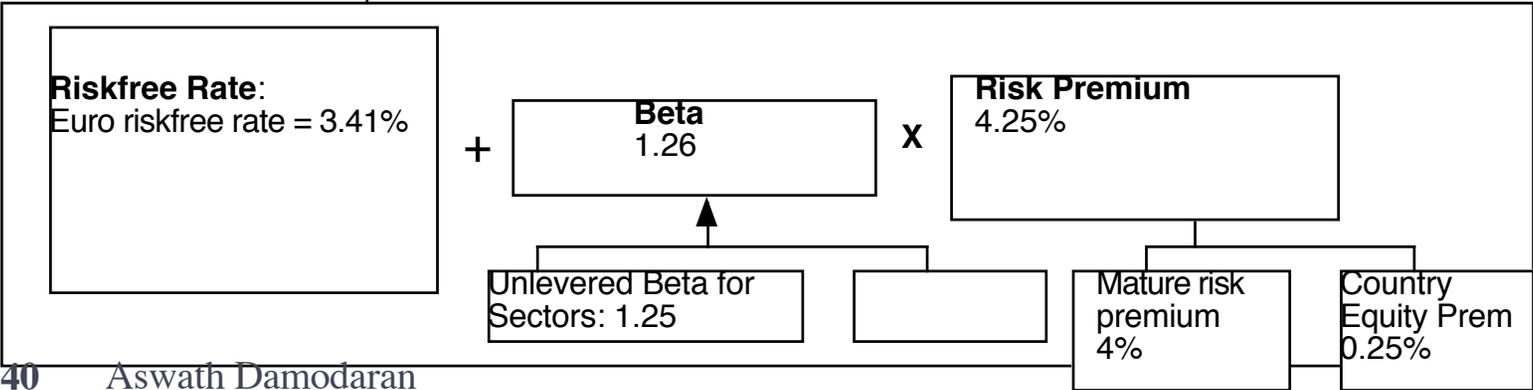Cost of Capital (WACC) = 8.77% (0.986) + 2.39% (0.014) = 8.68%

Debt ratio increases to 20%
Beta decreases to 1.00

On May 5, 2005, SAP was trading at 122 Euros/share

Cost of Equity
8.77%

Cost of Debt
(3.41%+..35%)(1-.3654)
= 2.39%

Weights
E = 98.6% D = 1.4%

Riskfree Rate:
Euro riskfree rate = 3.41%

+

Beta
1.26

X

Risk Premium
4.25%

Unlevered Beta for Sectors: 1.25

Mature risk premium 4%

Country Equity Prem 0.25%

SAP : 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%	1.25	8.72%	AAA	3.76%	36.54%	2.39%	8.72%	$39,088
10%	1.34	9.09%	AAA	3.76%	36.54%	2.39%	8.42%	$41,480
20%	1.45	9.56%	A	4.26%	36.54%	2.70%	8.19%	$43,567
30%	1.59	10.16%	A-	4.41%	36.54%	2.80%	7.95%	$45,900
40%	1.78	10.96%	CCC	11.41%	36.54%	7.24%	9.47%	$34,043
50%	2.22	12.85%	C	15.41%	22.08%	12.01%	12.43%	$22,444
60%	2.78	15.21%	C	15.41%	18.40%	12.58%	13.63%	$19,650
70%	3.70	19.15%	C	15.41%	15.77%	12.98%	14.83%	$17,444
80%	5.55	27.01%	C	15.41%	13.80%	13.28%	16.03%	$15,658
90%	11.11	50.62%	C	15.41%	12.26%	13.52%	17.23%	$14,181

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SAP: Restructured

Avg Reinvestment rate = 36.94%

Reinvest more in emerging markets

Return on Capital 19.93%

Reinvestment Rate 70%

Current Cashflow to Firm
EBIT(1-t) :   1414
- Nt CpX   831
- Chg WC   - 19
= FCFF   602
Reinvestment Rate = 812/1414
=57.42%

Expected Growth in EBIT (1-t)
.70*.1993=.1144
13.99%

Stable Growth
g = 3.41%; Beta = 1.00;
Debt Ratio= 30%
Cost of capital = 6.27%
ROC= 6.27%; Tax rate=35%
Reinvestment Rate=54.38%

Growth decreases gradually to 3.41%

First 5 years

Terminal Value$_{10}$= 1898/(.0627-.0341) = 66367

Year	1	2	3	4	5	6	7	8	9	10	Term Yr
EBIT	2,543	2,898	3,304	3,766	4,293	4,802	5,271	5,673	5,987	6,191	6402
EBIT(1-t)	1,614	1,839	2,097	2,390	2,724	3,047	3,345	3,600	3,799	3,929	4161
- Reinvest	1,130	1,288	1,468	1,673	1,907	2,011	2,074	2,089	2,052	1,965	2263
= FCFF	484	552	629	717	817	1,036	1,271	1,512	1,747	1,963	1898

Op. Assets   38045
+ Cash: 3,018
- Debt   558
- Pension Lian   305
- Minor. Int.   55
=Equity   40157
-Options   180
Value/Share 126.51

Cost of Capital (WACC) = 10.57% (0.70) + 2.80% (0.30) = 8.24%

On May 5, 2005, SAP was trading at 122 Euros/share

Cost of Equity
10.57%

Cost of Debt
(3.41%+1.00%)(1-.3654)
= 2.80%

Weights
E = 70% D = 30%

Use more debt financing.

Riskfree Rate:
Euro riskfree rate = 3.41%

+

Beta
1.59

X

Risk Premium
4.50%

Unlevered Beta for Sectors: 1.25

Mature risk premium 4%

Country Equity Prem 0.5%

Blockbuster: Status Quo

	Return on Capital 4.06%

Current Cashflow to Firm		Reinvestment Rate 26.46%

Current Cashflow to Firm
EBIT(1-t) :   163
- Nt CpX   39
- Chg WC   4
= FCFF   120
Reinvestment Rate = 43/163
                =26.46%

Expected Growth in EBIT (1-t)
.2645*.0406=.0107
1.07%

Stable Growth
g = 3%; Beta = 1.00;
Cost of capital = 6.76%
ROC= 6.76%; Tax rate=35%
Reinvestment Rate=44.37%

Terminal Value$_5$= 104/(.0676-.03) = 2714

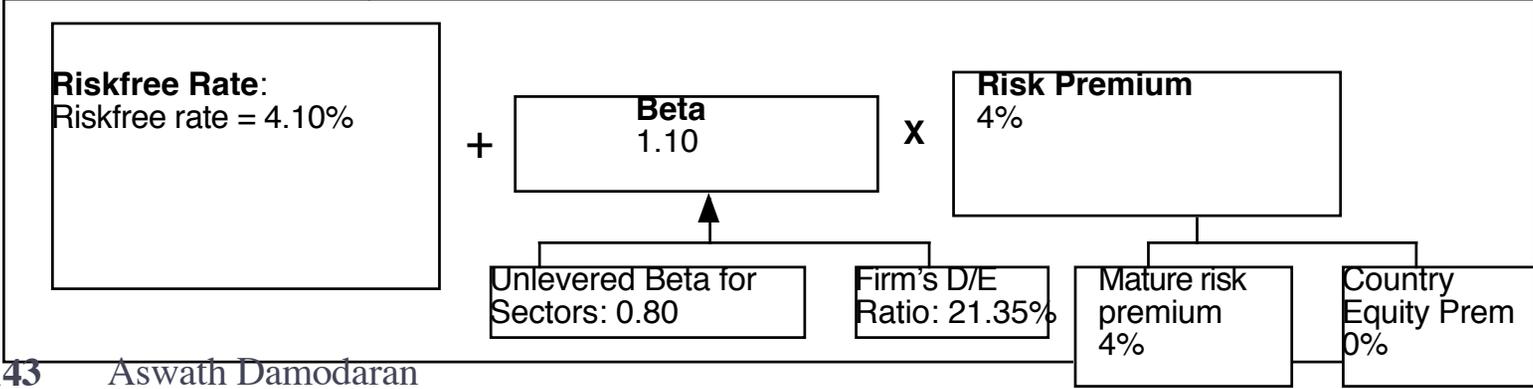|		1	2	3	4	5	Term Yr
Op. Assets	2,472						184
+ Cash:	330						82
- Debt	1847	EBIT (1-t) $165	$167	$169	$173	$178	102
=Equity	955	- Reinvestment $44	$44	$51	$64	$79	
-Options	0	FCFF $121	$123	$118	$109	$99	
Value/Share	$ 5.13						

Discount at Cost of Capital (WACC) = 8.50% (.486) + 3.97% (0.514) = 6.17%

Cost of Equity 8.50%	**Cost of Debt** (4.10%+2%)(1-.35) = 3.97%	**Weights** E = 48.6% D = 51.4%

Riskfree Rate:
Riskfree rate = 4.10%

+

Beta 1.10

X

Risk Premium 4%

Unlevered Beta for Sectors: 0.80	Firm's D/E Ratio: 21.35%	Mature risk premium 4%	Country Equity Prem 0%

Blockbuster: Restructured

Current Cashflow to Firm		Reinvestment Rate 17.32%	Return on Capital 6.20%

Current Cashflow to Firm
EBIT(1-t) :   249
- Nt CpX   39
- Chg WC   4
= FCFF   206
Reinvestment Rate = 43/249
                    =17.32%

Reinvestment Rate
17.32%

Return on Capital
6.20%

Expected Growth in EBIT (1-t)
.1732*.0620=.0107
1.07%

Stable Growth
g = 3%; Beta = 1.00;
Cost of capital = 6.76%
ROC= 6.76%; Tax rate=35%
Reinvestment Rate=44.37%

Terminal Value$_5$= 156/(.0676-.03) = 4145

Op. Assets   3,840
+ Cash: 330
- Debt   1847
=Equity   2323
-Options   0
Value/Share $ 12.47

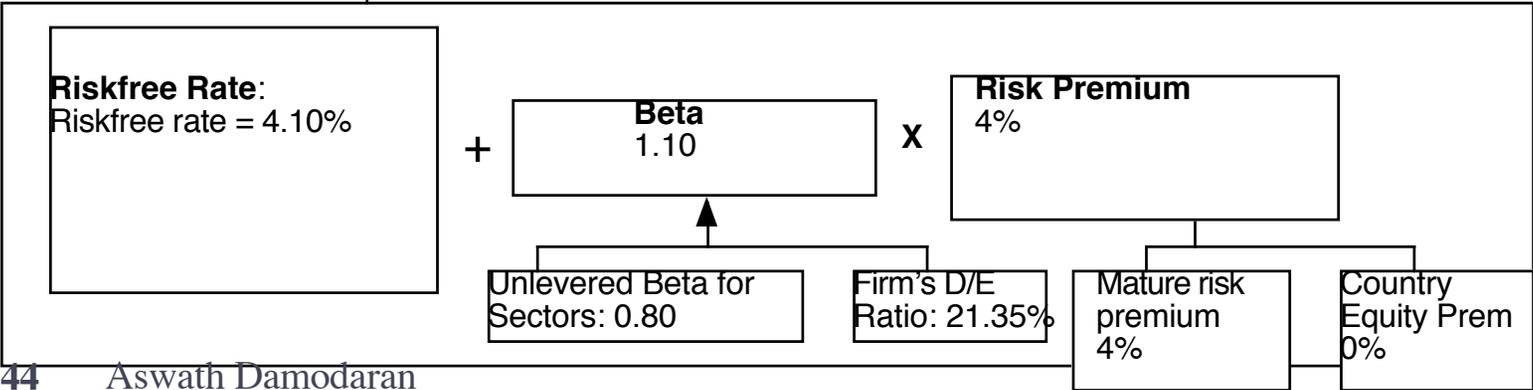|	1	2	3	4	5	Term Yr
EBIT (1-t)	$252	$255	$258	$264	$272	280
- Reinvestment	$44	$44	$59	$89	$121	124
FCFF	$208	$211	$200	$176	$151	156

Discount at Cost of Capital (WACC) = 8.50% (.486) + 3.97% (0.514) = 6.17%

Cost of Equity
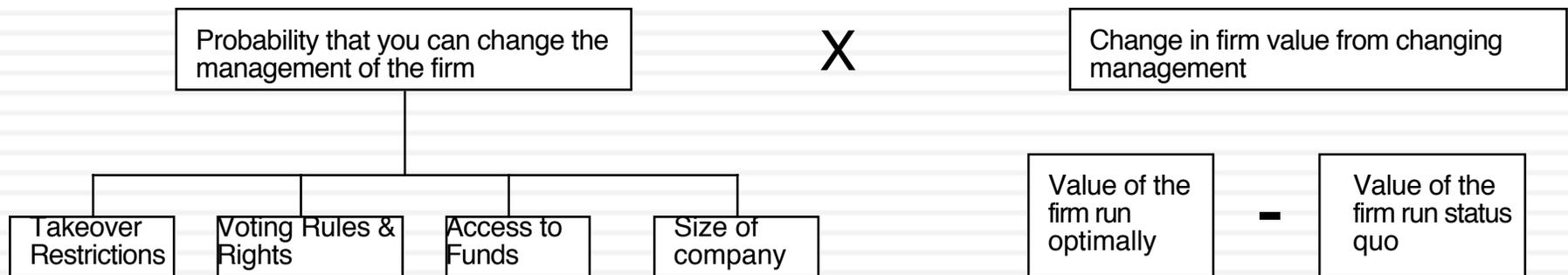**8.50%**

Cost of Debt
(4.10%+2%)(1-.35)
= 3.97%

Weights
E = 48.6% D = 51.4%

Riskfree Rate:
Riskfree rate = 4.10%

+

Beta
1.10

X

Risk Premium
4%

Unlevered Beta for
Sectors: 0.80

Firm's D/E
Ratio: 21.35%

Mature risk
premium
4%

Country
Equity Prem
0%

The Expected Value of Control

The Value of Control

Probability that you can change the management of the firm	X	Change in firm value from changing management

Takeover Restrictions	Voting Rules & Rights	Access to Funds	Size of company

Value of the firm run optimally	−	Value of the firm run status quo

Why the probability of management changing shifts over time....

☐ Corporate governance rules can change over time, as new laws are passed. If the change gives stockholders more power, the likelihood of management changing will increase.

☐ Activist investing ebbs and flows with market movements (activist investors are more visible in down markets) and often in response to scandals.

☐ Events such as hostile acquisitions can make investors reassess the likelihood of change by reminding them of the power that they do possess.

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Estimating the Probability of Change

- You can estimate the probability of management changes by using historical data (on companies where change has occurred) and statistical techniques such as probits or logits.

- Empirically, the following seem to be related to the probability of management change:

  - Stock price and earnings performance, with forced turnover more likely in firms that have performed poorly relative to their peer group and to expectations.

  - Structure of the board, with forced CEO changes more likely to occur when the board is small, is composed of outsiders and when the CEO is not also the chairman of the board of directors.

  - Ownership structure, since forced CEO changes are more common in companies with high institutional and low insider holdings. They also seem to occur more frequently in firms that are more dependent upon equity markets for new capital.

  - Industry structure, with CEOs more likely to be replaced in competitive industries.

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Manifestations of the Value of Control

- Hostile acquisitions: In hostile acquisitions which are motivated by control, the control premium should reflect the change in value that will come from changing management.

- Valuing publicly traded firms: The market price for every publicly traded firm should incorporate an expected value of control, as a function of the value of control and the probability of control changing.
  - Market value = Status quo value + (Optimal value – Status quo value)* Probability of management changing

- Voting and non-voting shares: The premium (if any) that you would pay for a voting share should increase with the expected value of control.

- Minority Discounts in private companies: The minority discount (attached to buying less than a controlling stake) in a private business should be increase with the expected value of control.

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1. Hostile Acquisition: Example

- In a hostile acquisition, you can ensure management change after you take over the firm. Consequently, you would be willing to pay up to the optimal value.

- As an example, Blockbuster was trading at $9.50 per share in July 2005. The optimal value per share that we estimated as $ 12.47 per share. Assuming that this is a reasonable estimate, you would be willing to pay up to $2.97 as a premium in acquiring the shares.

- Issues to ponder:
  - Would you automatically pay $2.97 as a premium per share? Why or why not?
  - What would your premium per share be if change will take three years to implement?

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2. Market prices of Publicly Traded Companies: An example

- The market price per share at the time of the valuation (May 2005) was roughly $9.50.
  - Expected value per share = Status Quo Value + Probability of control changing * (Optimal Value – Status Quo Value)
  - $ 9.50 = $ 5.13 + Probability of control changing ($12.47 - $5.13)
- The market is attaching a probability of 59.5% that management policies can be changed. This was after Icahn's successful challenge of management. Prior to his arriving, the market price per share was $8.20, yielding a probability of only 41.8% of management changing.

	Value of Equity	Value per share
Status Quo	$ 955 million	$ 5.13 per share
Optimally mana ged	$2,323 million	$12.47 per share

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