



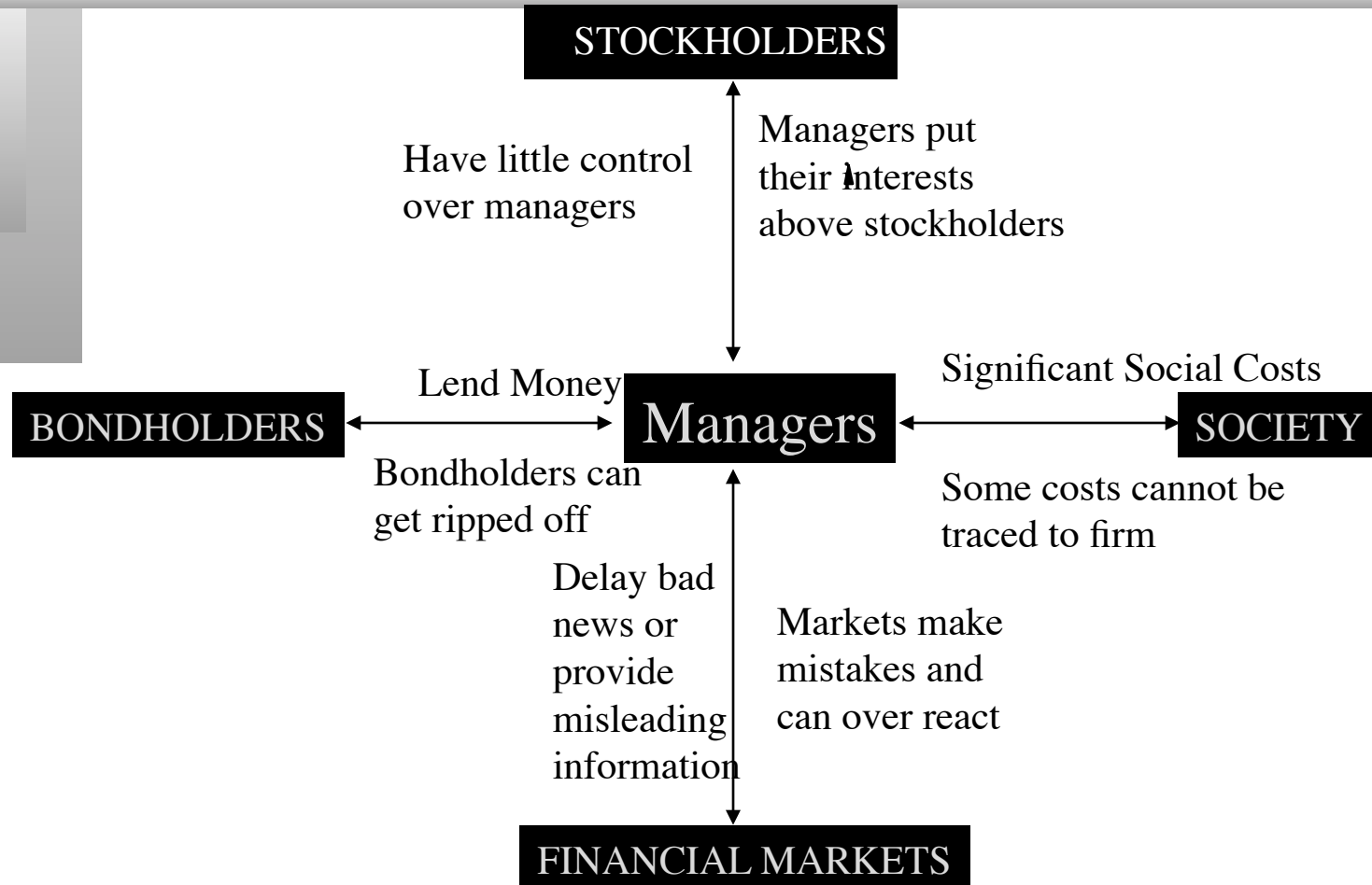
Corporate Finance: Spring 2011

Aswath Damodaran

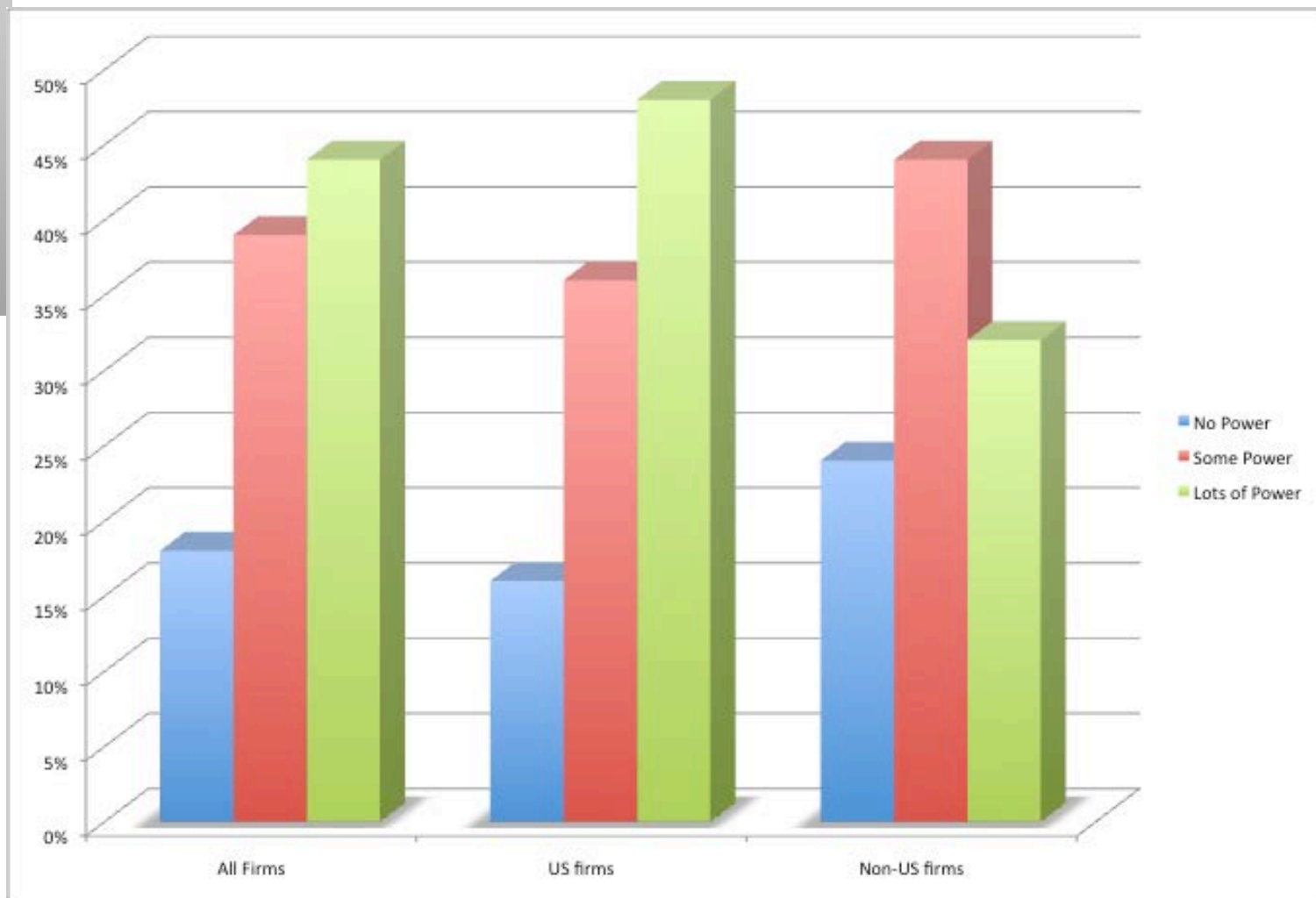
Ponderous Thoughts... (or maybe not)

- There are few facts and lots of opinions...
- The real world is a messy place...
- Models don't compute values and optimals. You do....
- Change is the only constant...

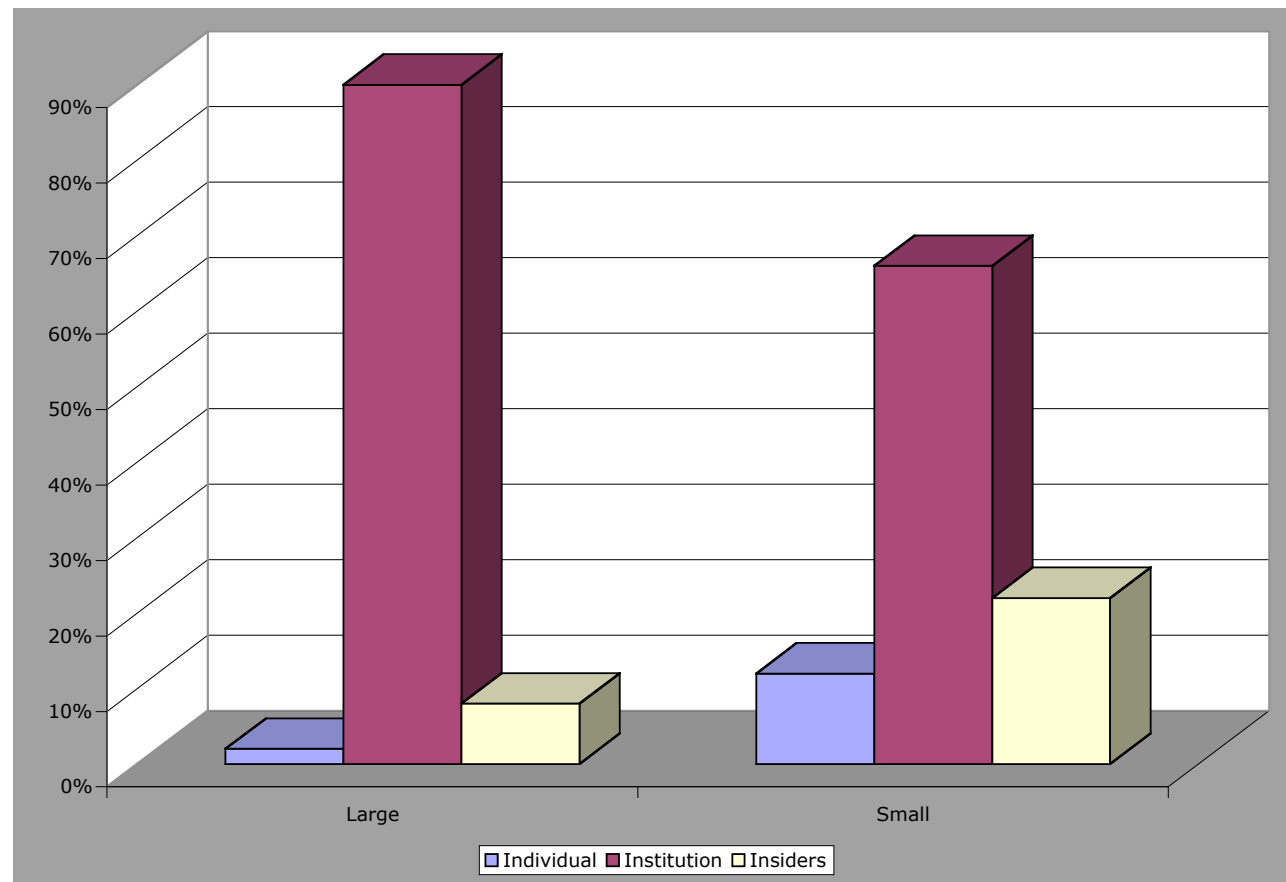
The Breakdown in the Classical Objective Function



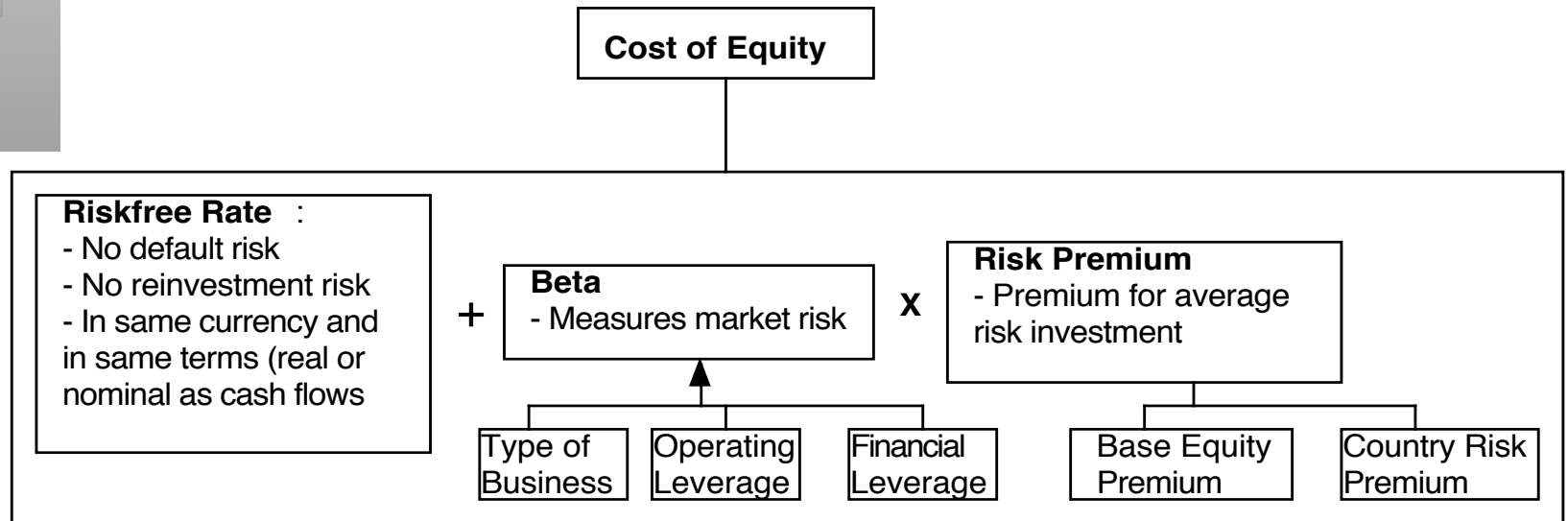
I. Where does the power lie?



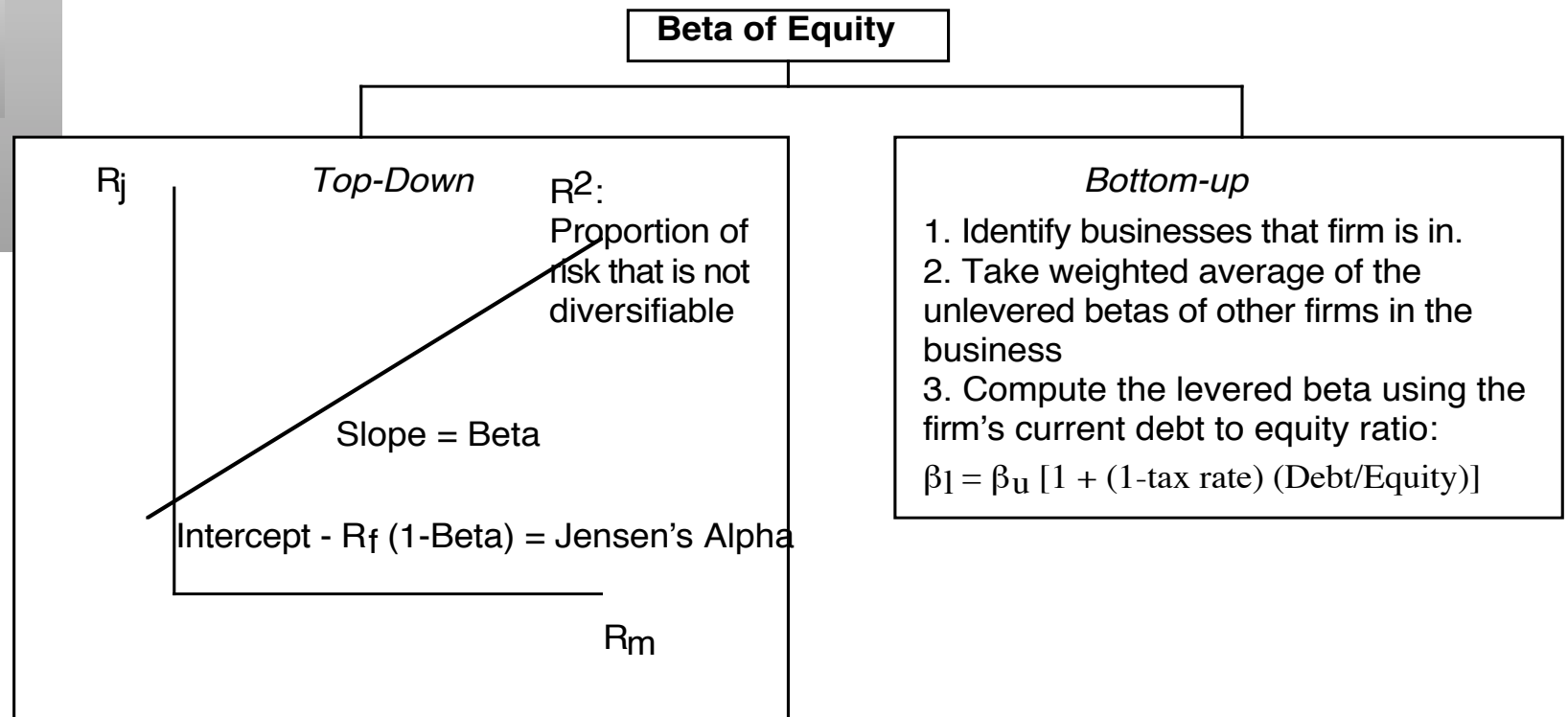
II. Who is your marginal investor? From Spring 2010



III. Risk Profiles and Costs of Equity



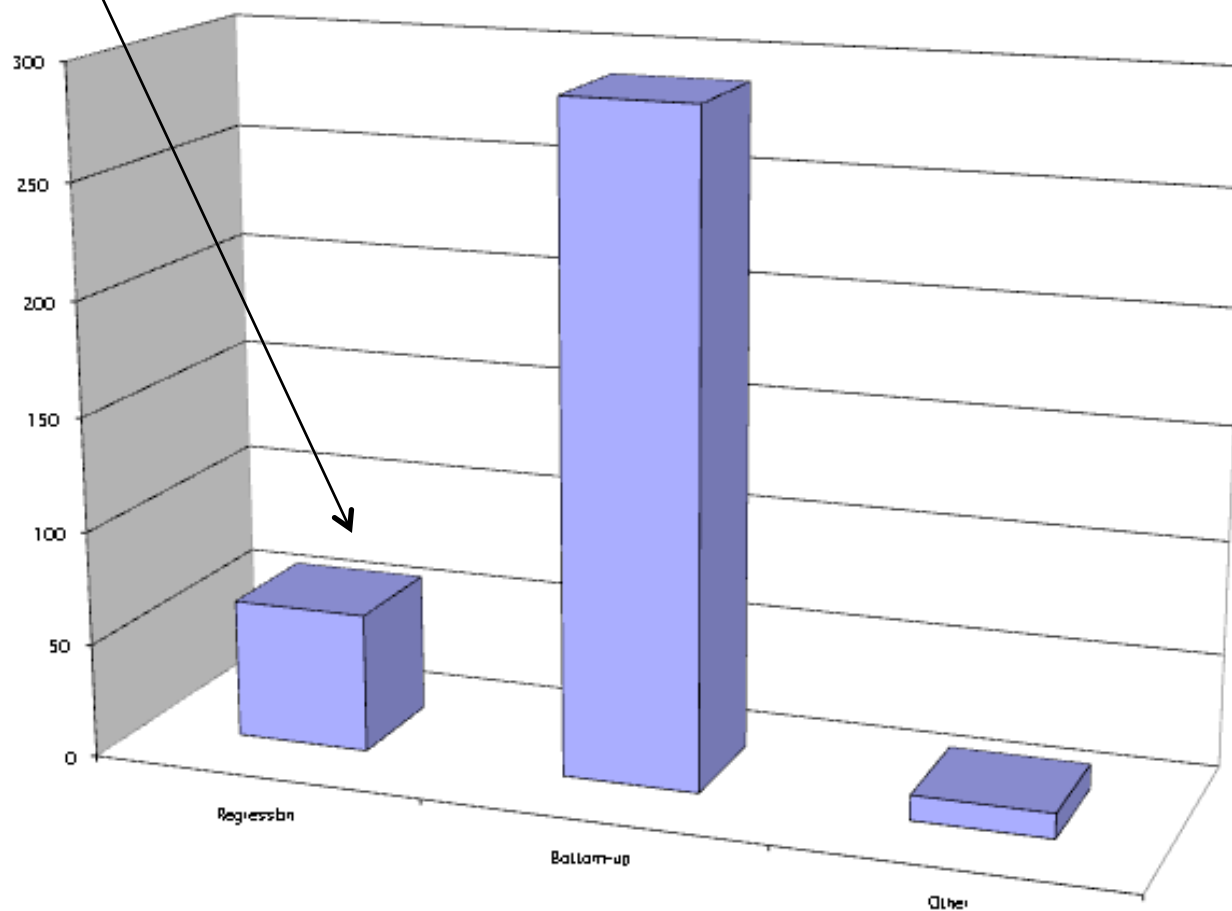
Beta: The Standard Approach



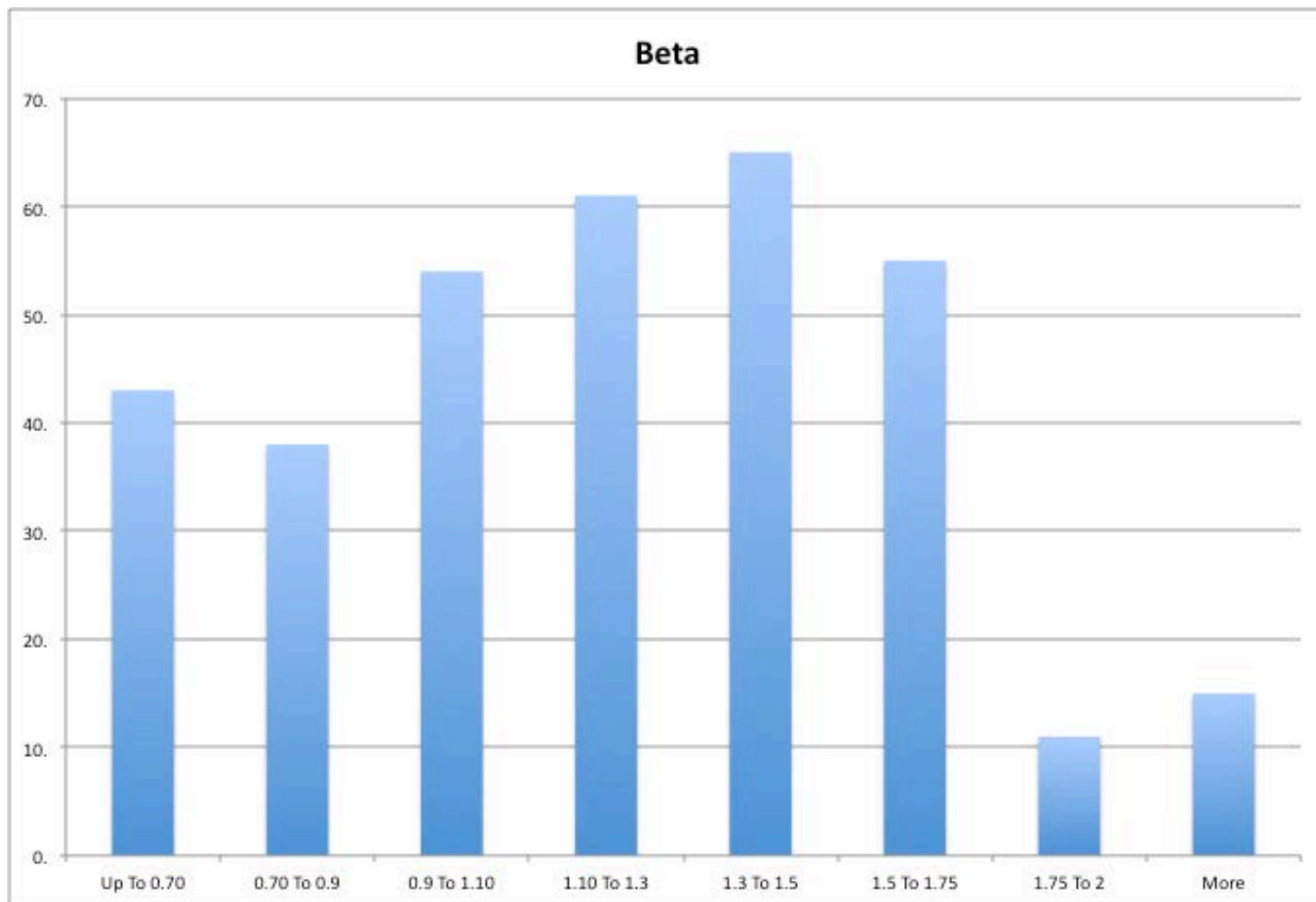
Typical reasons

1. My company is unique
2. My company is in only one line of business
3. My bottom-up beta is too different from my regression beta

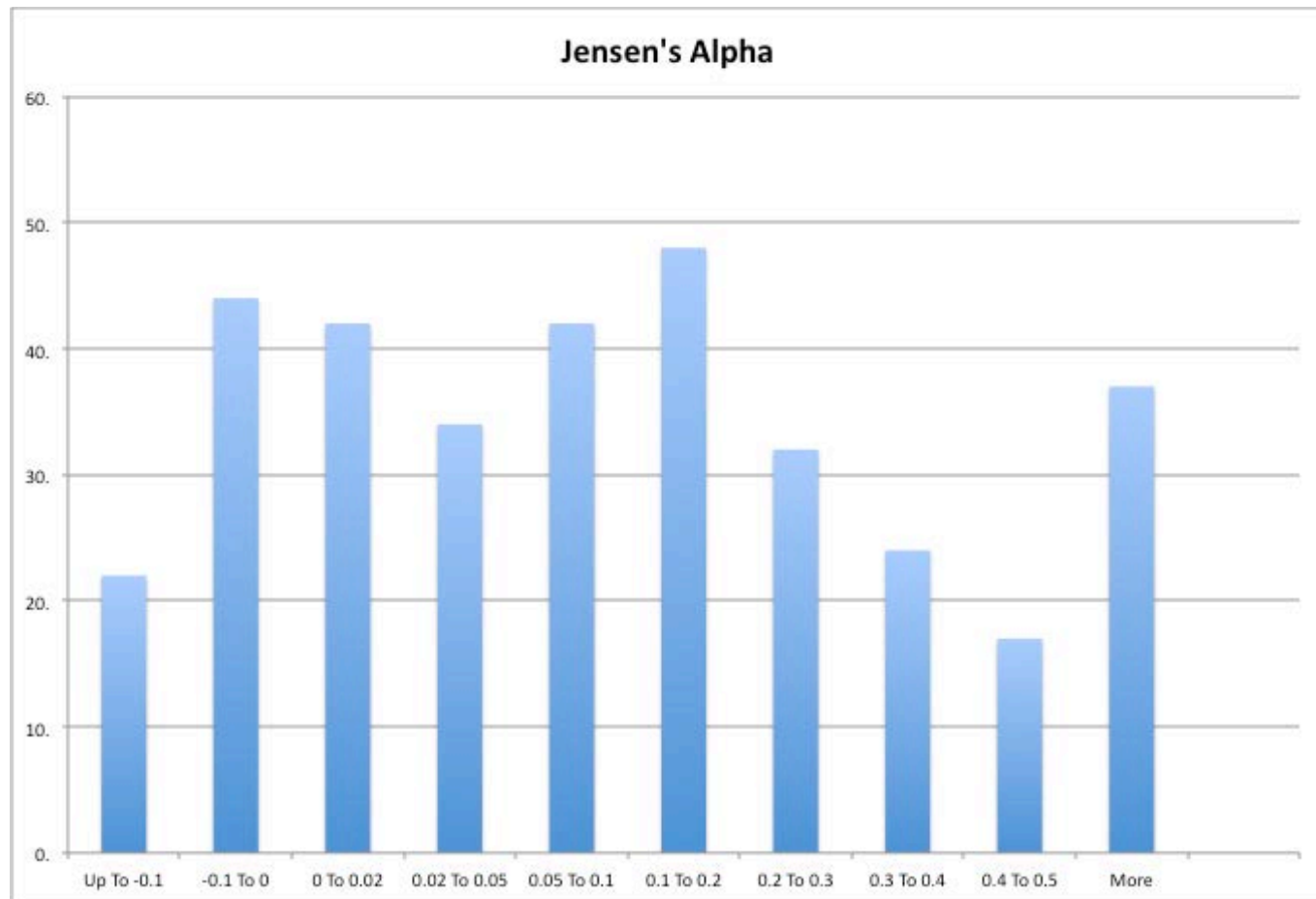
Regression Estimation Approaches



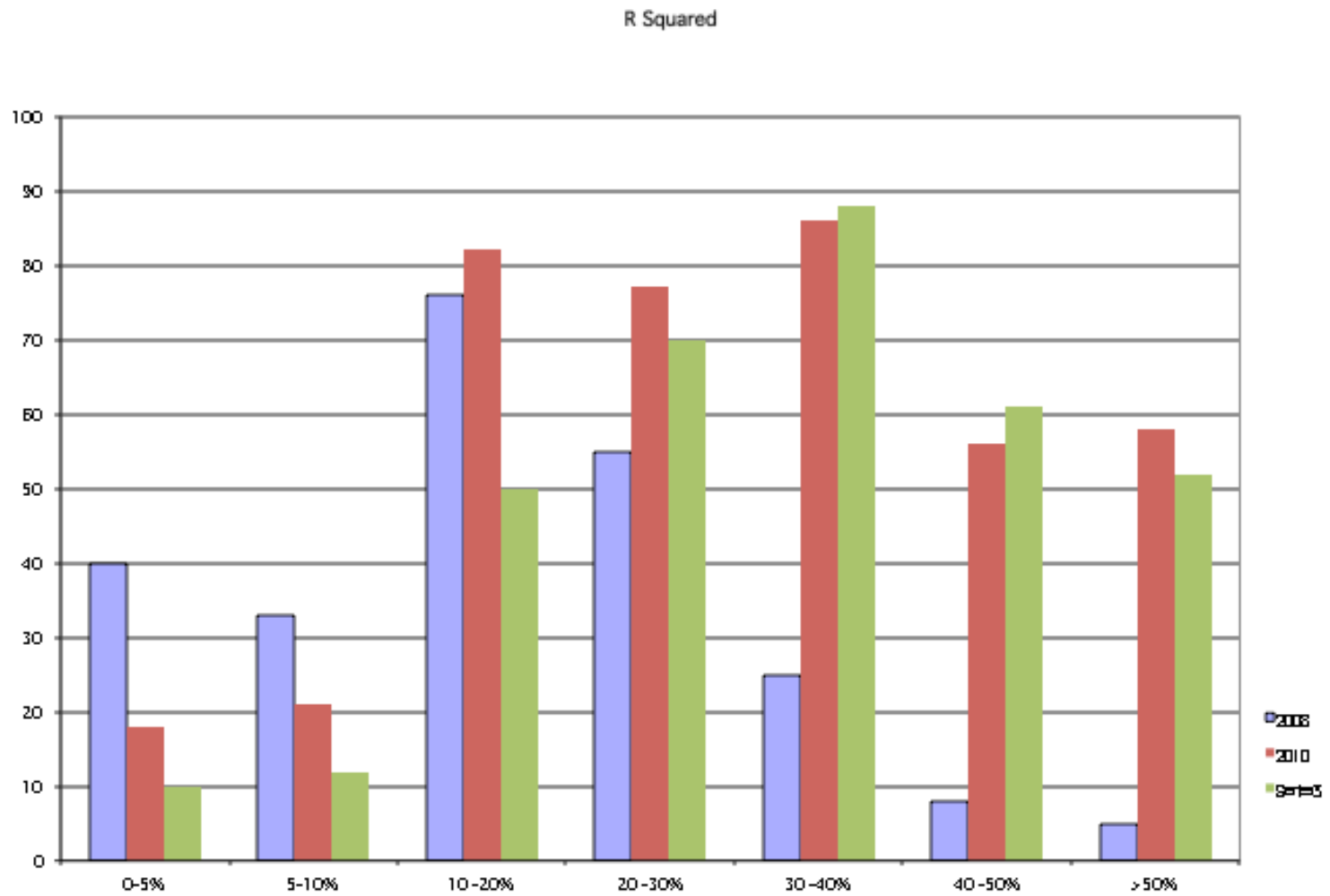
Beta Distribution



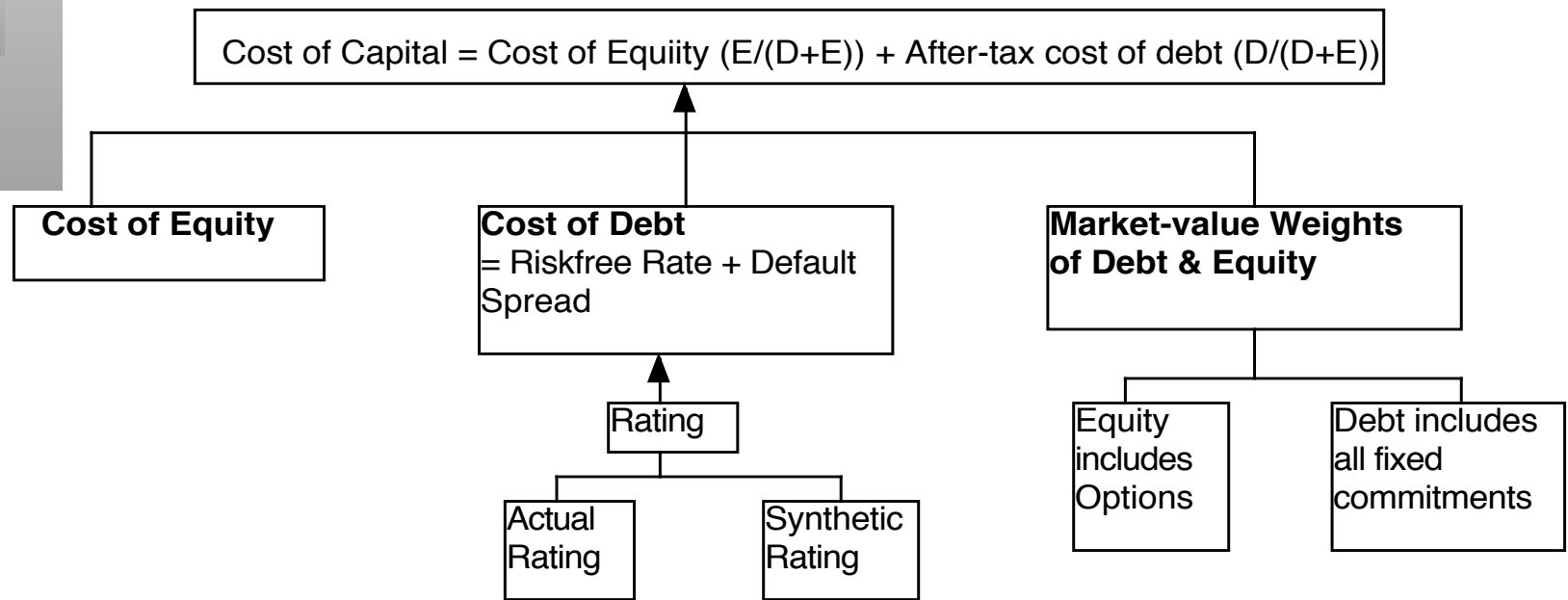
Jensen's Alpha Distribution



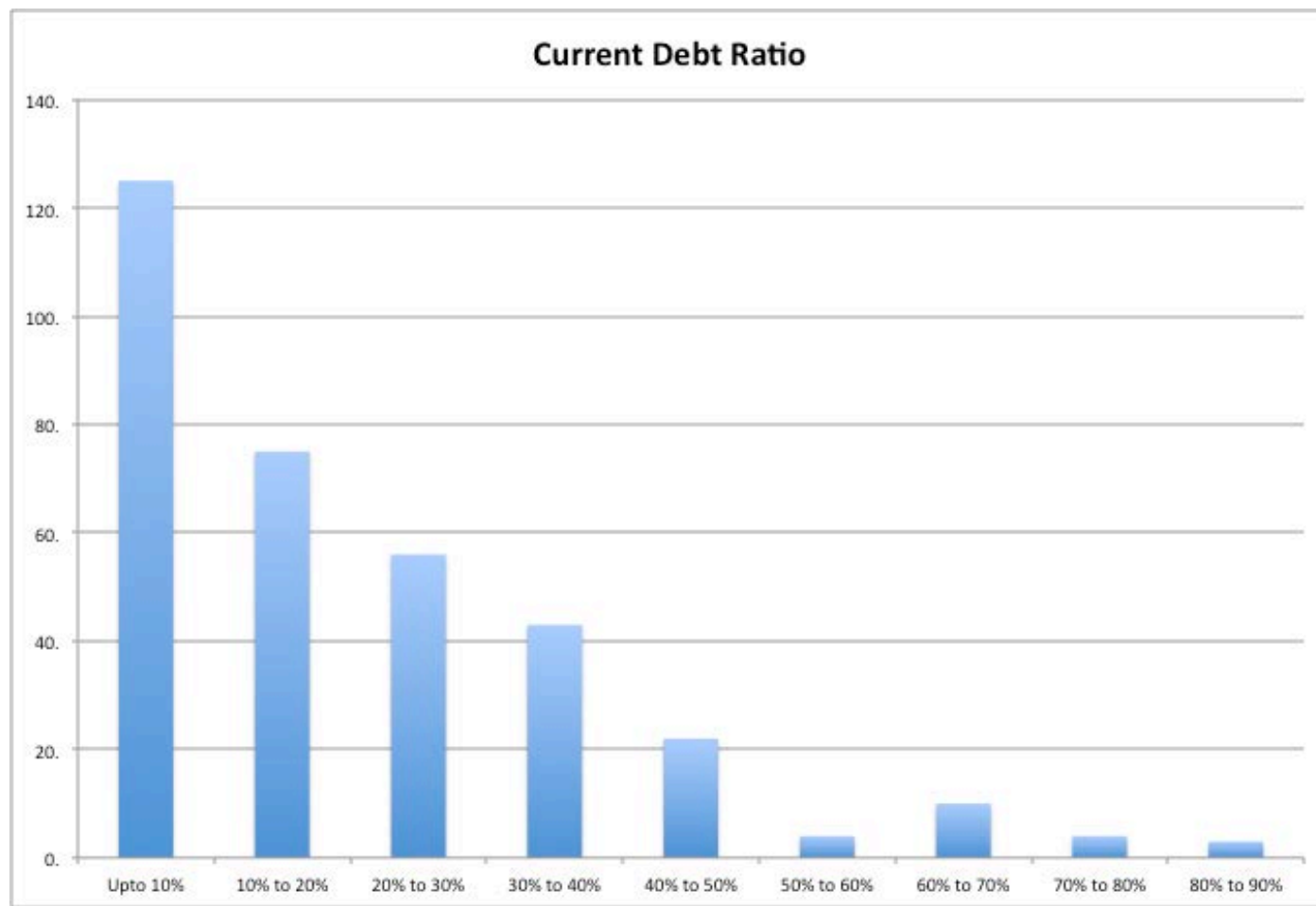
R Squared



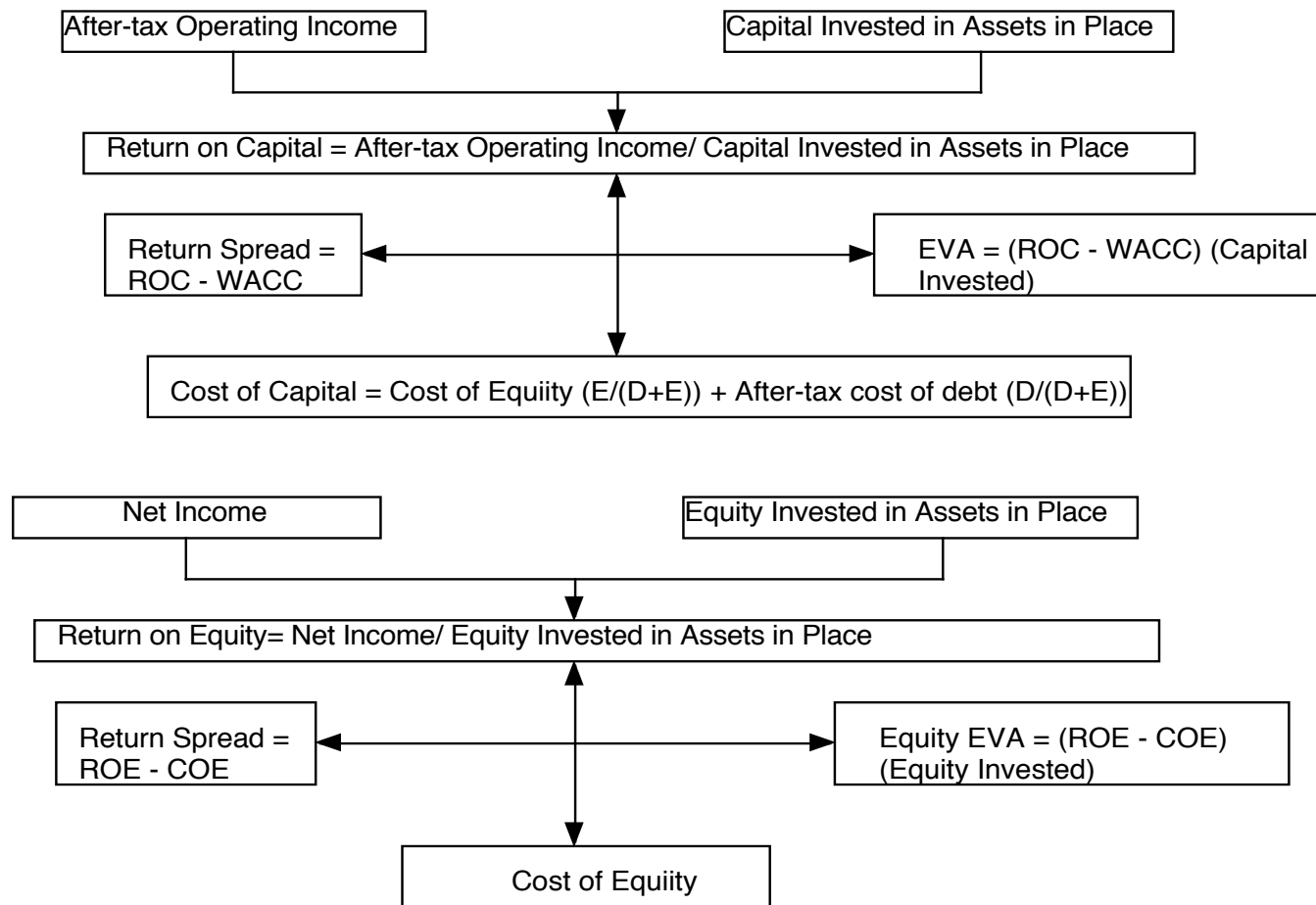
Cost of Capital



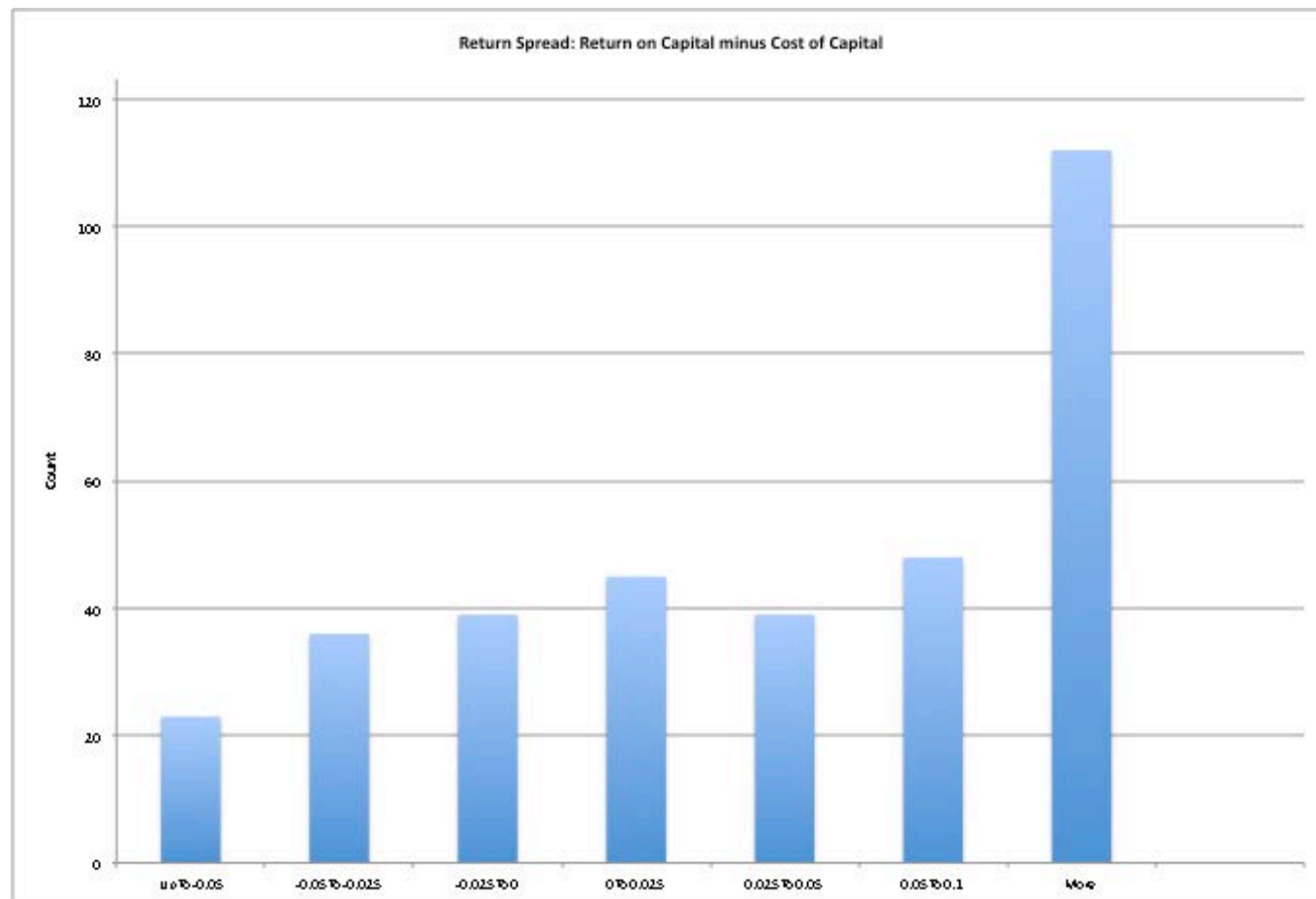
Distribution of Current Market Value Debt Ratios



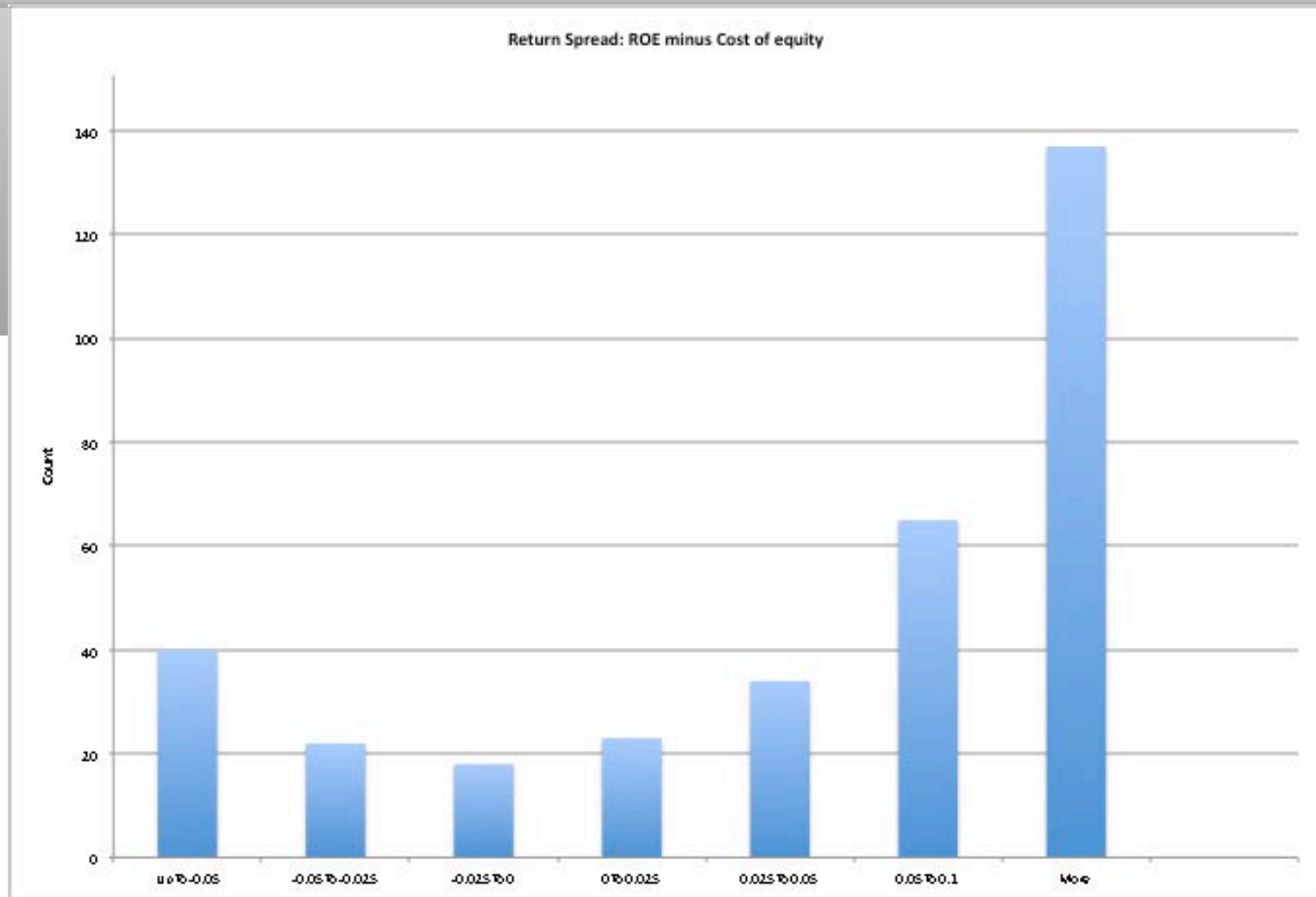
IV. The Quality of Investments: The Firm View



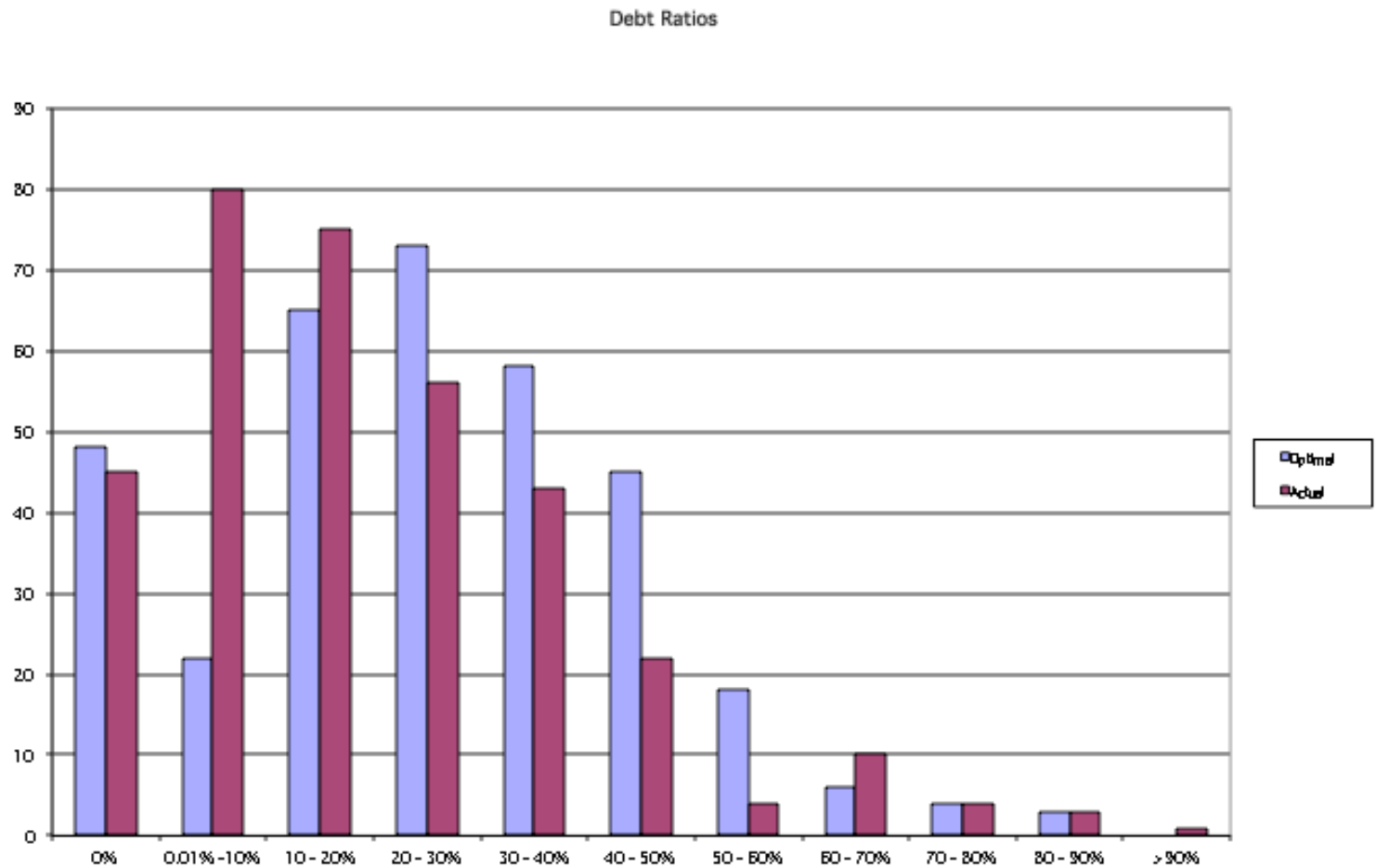
ROC versus Cost of Capital



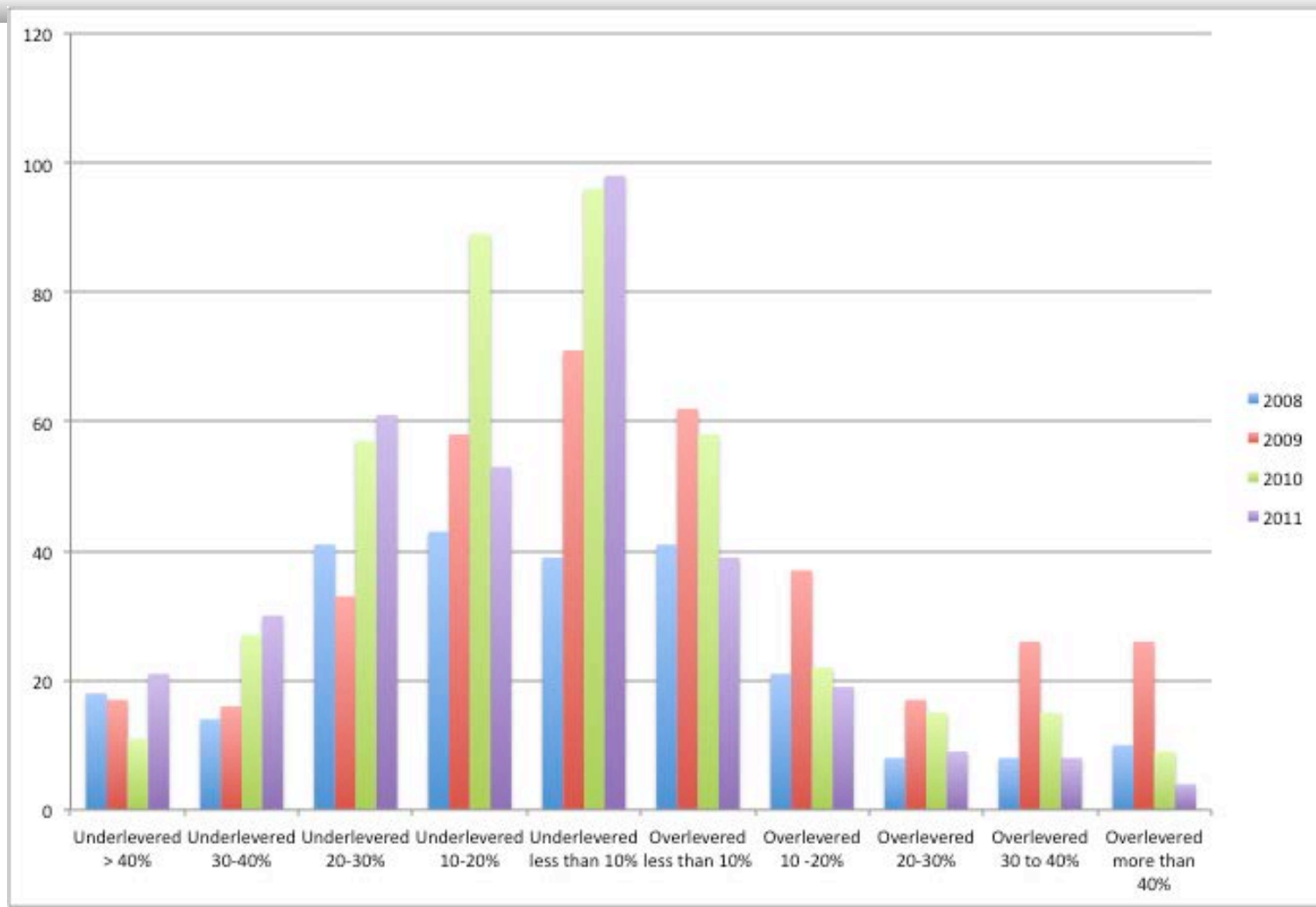
ROE versus Cost of Equity



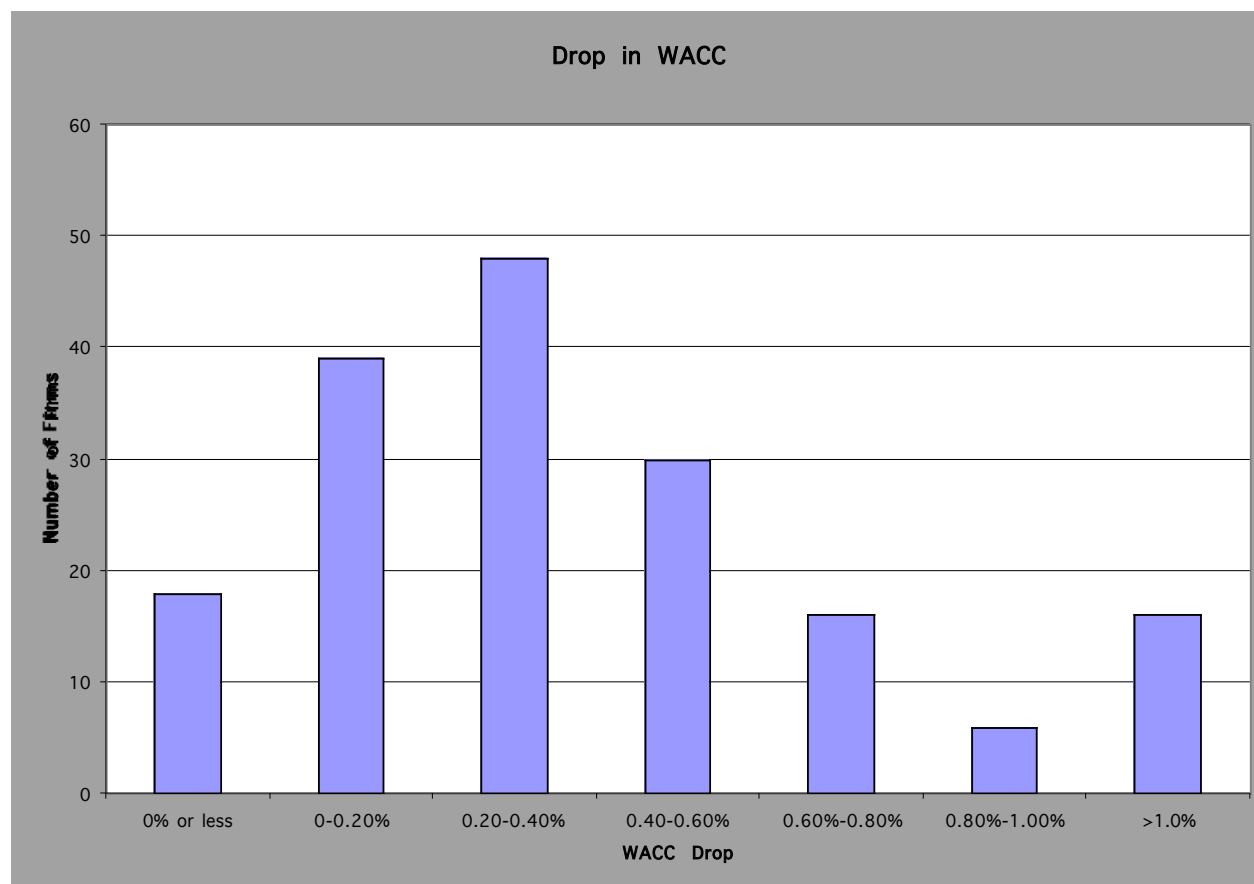
VI. The Optimal Financing Mix



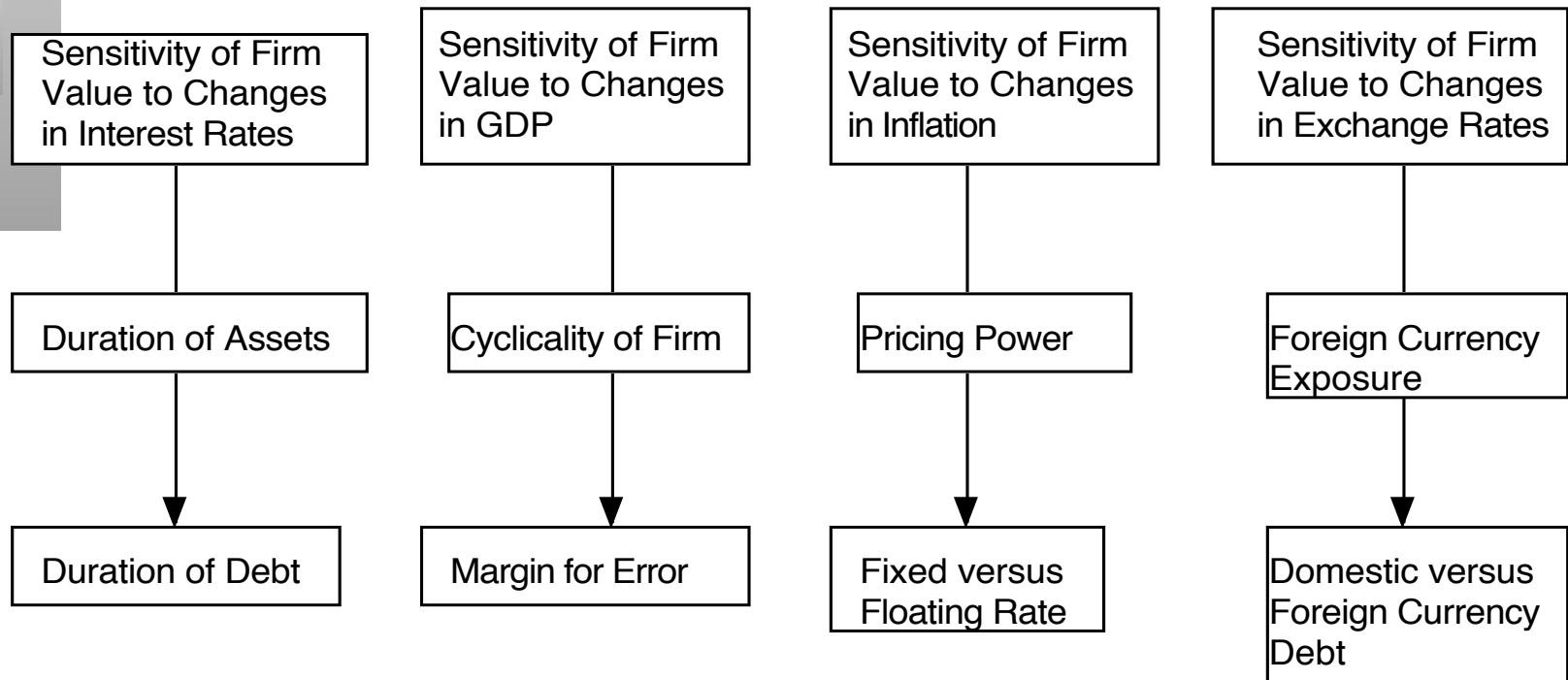
Under versus Over Levered Firms



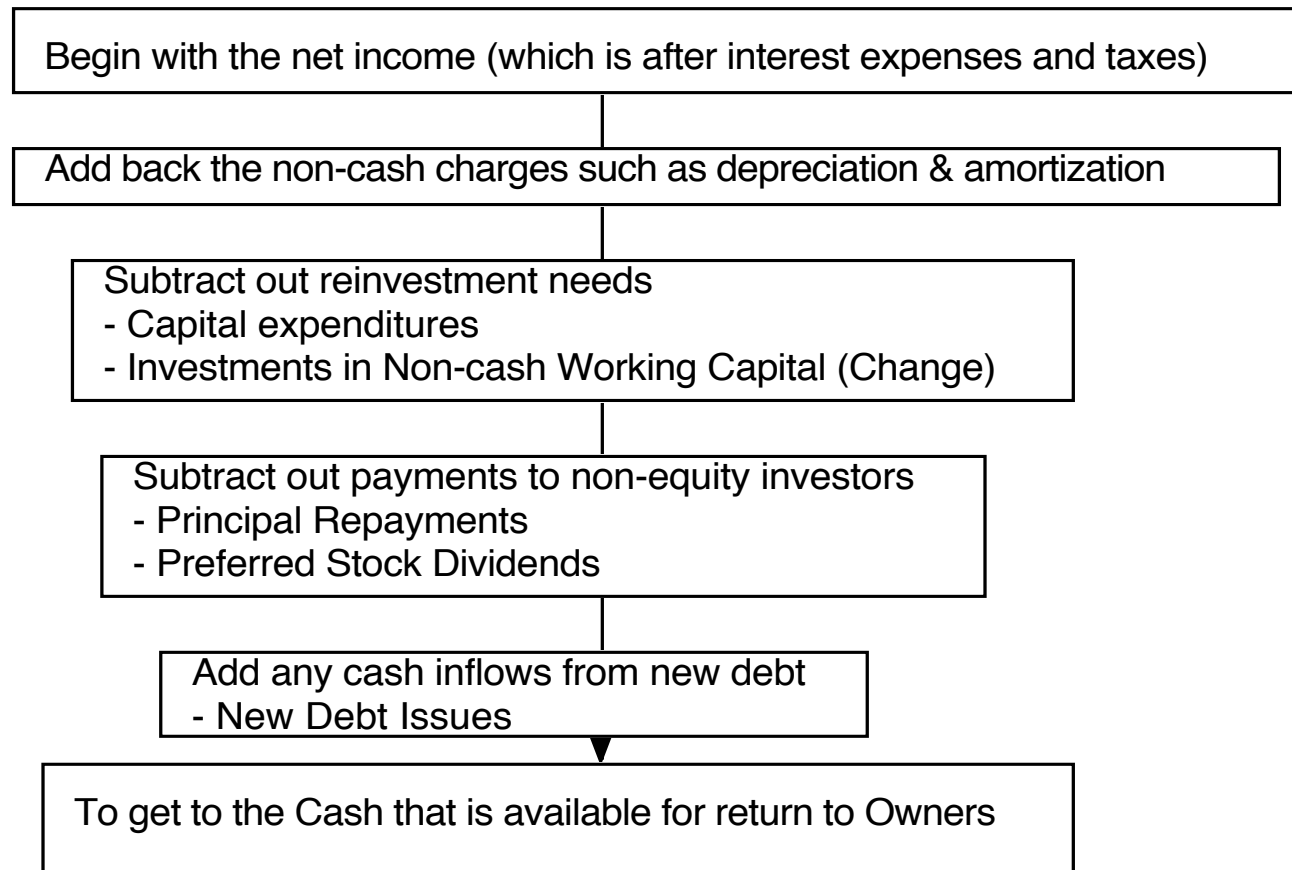
Change in Cost of Capital



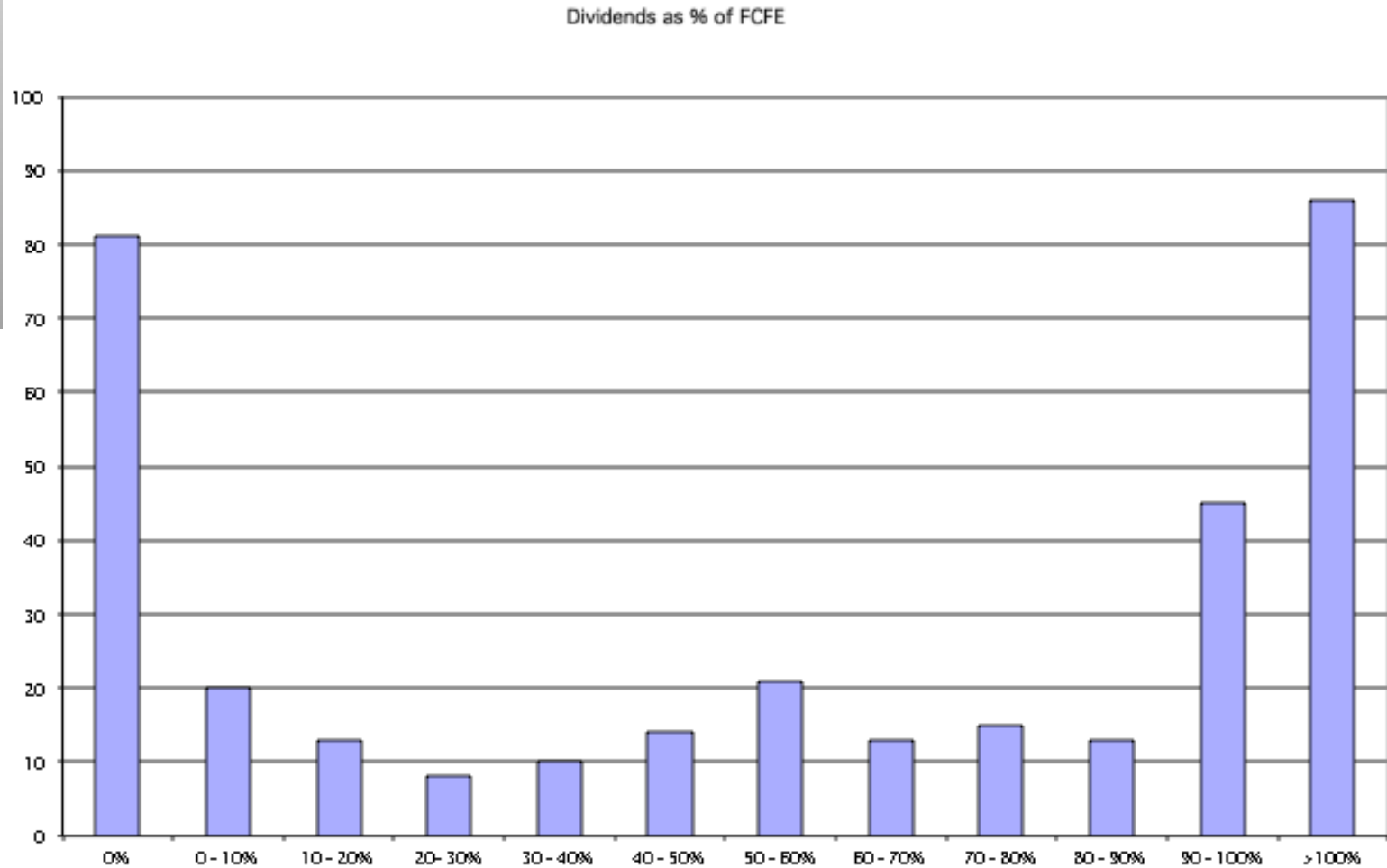
VIII. The Right Kind of Financing



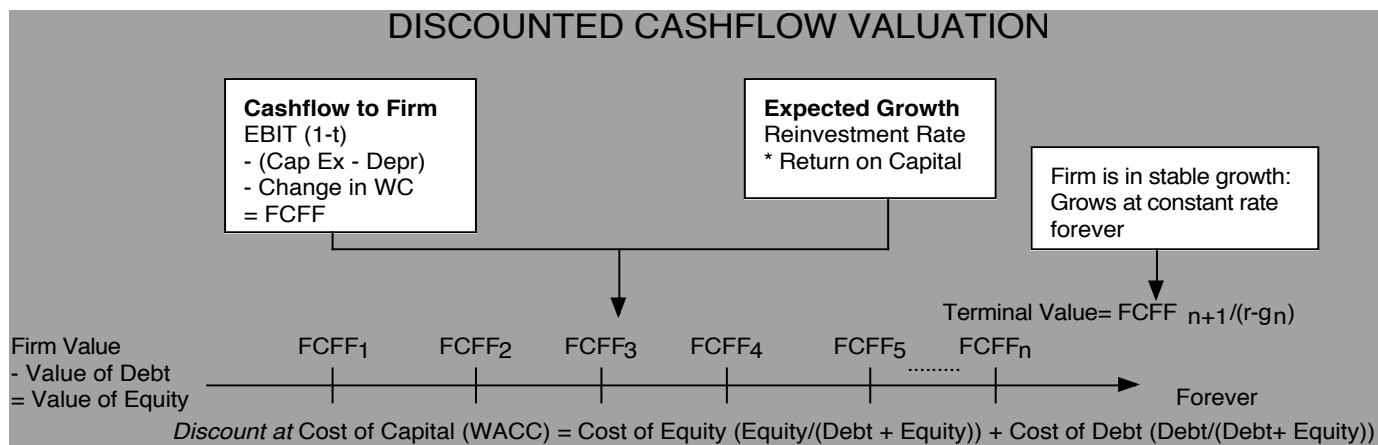
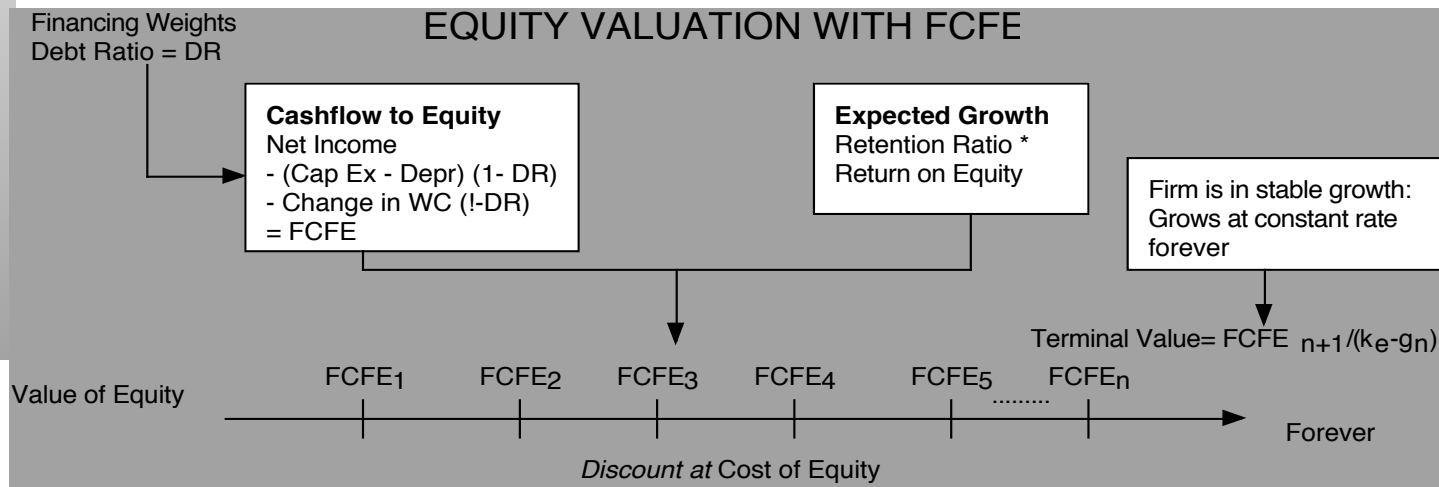
IX. Measuring Potential Dividends



Dividends versus FCFE



X. Valuation: Match up cashflows and discount rates...



Getting to equity value per share

Approach used	To get to equity value per share
Discount dividends per share at the cost of equity	Present value is value of equity per share
Discount aggregate FCFE at the cost of equity	Present value is value of aggregate equity. Subtract the value of equity options given to managers and divide by number of shares.
Discount aggregate FCFF at the cost of capital	$ \begin{aligned} &PV = \text{Value of operating assets} \\ &+ \text{Cash \& Near Cash investments} \\ &+ \text{Value of minority cross holdings} \\ &- \text{Debt outstanding} \\ &= \text{Value of equity} \\ &- \text{Value of equity options} \\ &= \text{Value of equity in common stock} \\ &/ \text{Number of shares} \end{aligned} $

Disney: Inputs to Valuation

	<i>High Growth Phase</i>	<i>Transition Phase</i>	<i>Stable Growth Phase</i>
Length of Period	5 years	5 years	Forever after 10 years
Tax Rate	38%	38%	38%
Return on Capital	9.91%	Declines linearly to 9%	Stable ROC of 9%
Reinvestment Rate (Net Cap Ex + Working Capital Investments/EBIT)	53.72% (based on normalized acquisition costs)	Declines to 33.33% as ROC and growth rates drop: Reinvestment Rate = g/ROC	33.33% of after-tax operating income, estimated from stable growth rate of 3% and return on capital of 9%. Reinvestment rate = $3/9=33.33\%$
Expected Growth Rate in EBIT	$ROC * Reinvestment Rate =$ $12\% * 0.5318 = 6.38\%$	Linear decline to Stable Growth Rate of 4%	3%
Debt/Capital Ratio	26.7%	Stays unchanged	Stays unchanged
Risk Parameters	Beta = 0.9033, $k_c = 8.91\%$ Pre-tax Cost of Debt = 6% Cost of capital = 7.52%	Beta increases linearly to 1.00; Cost of debt stays at 6% Cost of capital goes to 7.95%	Beta = 1.00; $k_c = 9.5\%$ Cost of debt stays at 6% Cost of capital = 7.95%

Disney - Status Quo in 2009

Current Cashflow to Firm
 EBIT(1-t) = 7030(1-.38) = 4,359
 - Nt CpX = 2,101
 - Chg WC = 241
 = FCFF = 2,017
 Reinvestment Rate = 2342/4359 = 53.72%
 Return on capital = 9.91%

Reinvestment Rate
53.72%

Expected Growth in EBIT (1-t)
 $.5372 \times .0991 = .0532$
5.32%

Return on Capital
9.91%

Stable Growth
 g = 3%; Beta = 1.00;
 Cost of capital = 7.95%
 ROC = 9%;
 Reinvestment Rate = 3/9 = 33.33%

Terminal Value₁₀ = 4704 / (.0795 - .03) = 94,928

First 5 years

Growth decreases gradually to 3%

Op. Assets 65,284
 + Cash: 3,795
 + Non op inv 1,763
 - Debt 16,682
 - Minority int 1,344
 = Equity 73,574
 - Options 528
 Value/Share \$ 28.16

Year	1	2	3	4	5	6	7	8	9	10	Term Yr
EBIT (1-t)	\$4,591	\$4,835	\$5,093	\$5,364	\$5,650	\$5,924	\$6,185	\$6,428	\$6,650	\$6,850	7055
- Reinvestment	\$2,466	\$2,598	\$2,736	\$2,882	\$3,035	\$2,941	\$2,818	\$2,667	\$2,488	\$2,283	2351
FCFF	\$2,125	\$2,238	\$2,357	\$2,482	\$2,615	\$2,983	\$3,366	\$3,761	\$4,162	\$4,567	4704

Cost of Capital (WACC) = 8.91% (0.73) + 3.72% (0.27) = 7.52%

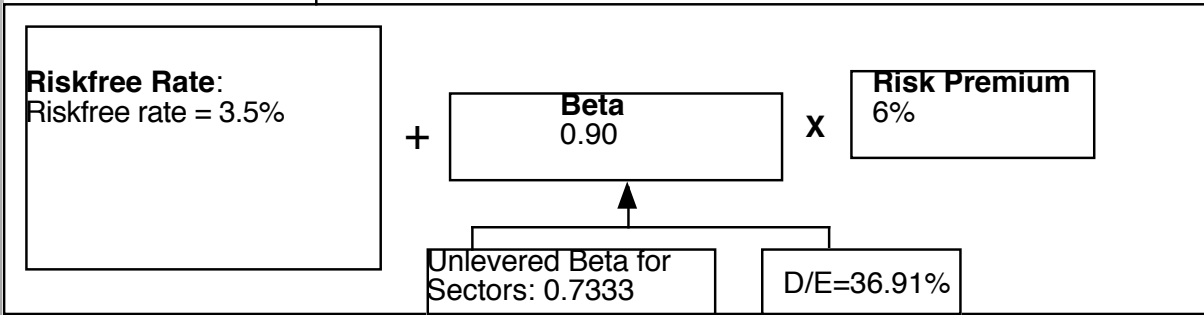
Cost of capital gradually increases to 7.95%

Cost of Equity
8.91%

Cost of Debt
 $(3.5\% + 2.5\%)(1 - .38)$
 = 3.72%
 Based on actual A rating

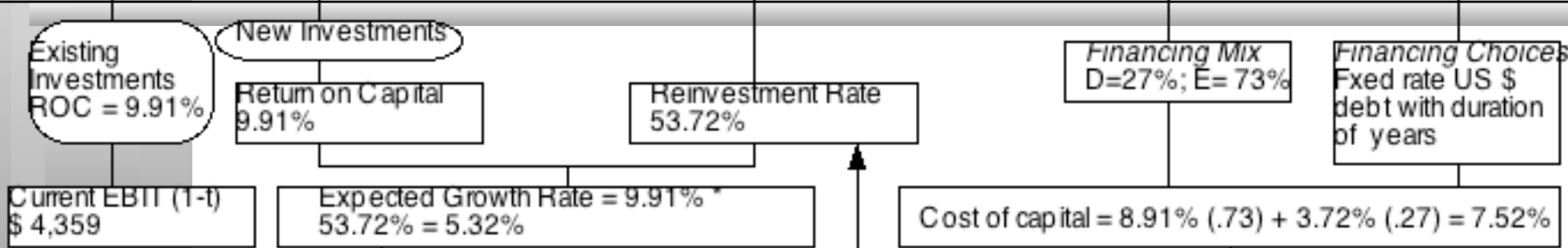
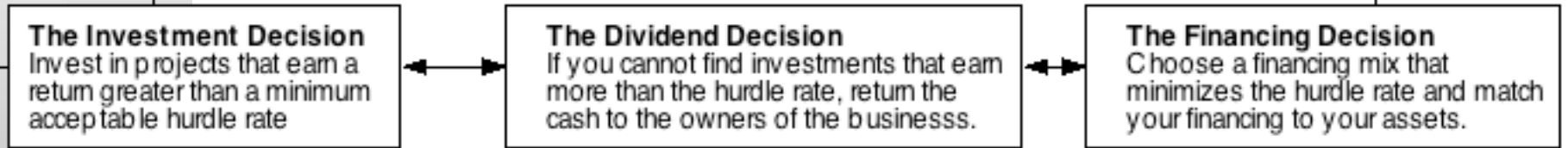
Weights
 E = 73% D = 27%

On June 1, 2009, Disney was trading at \$24.34 /share



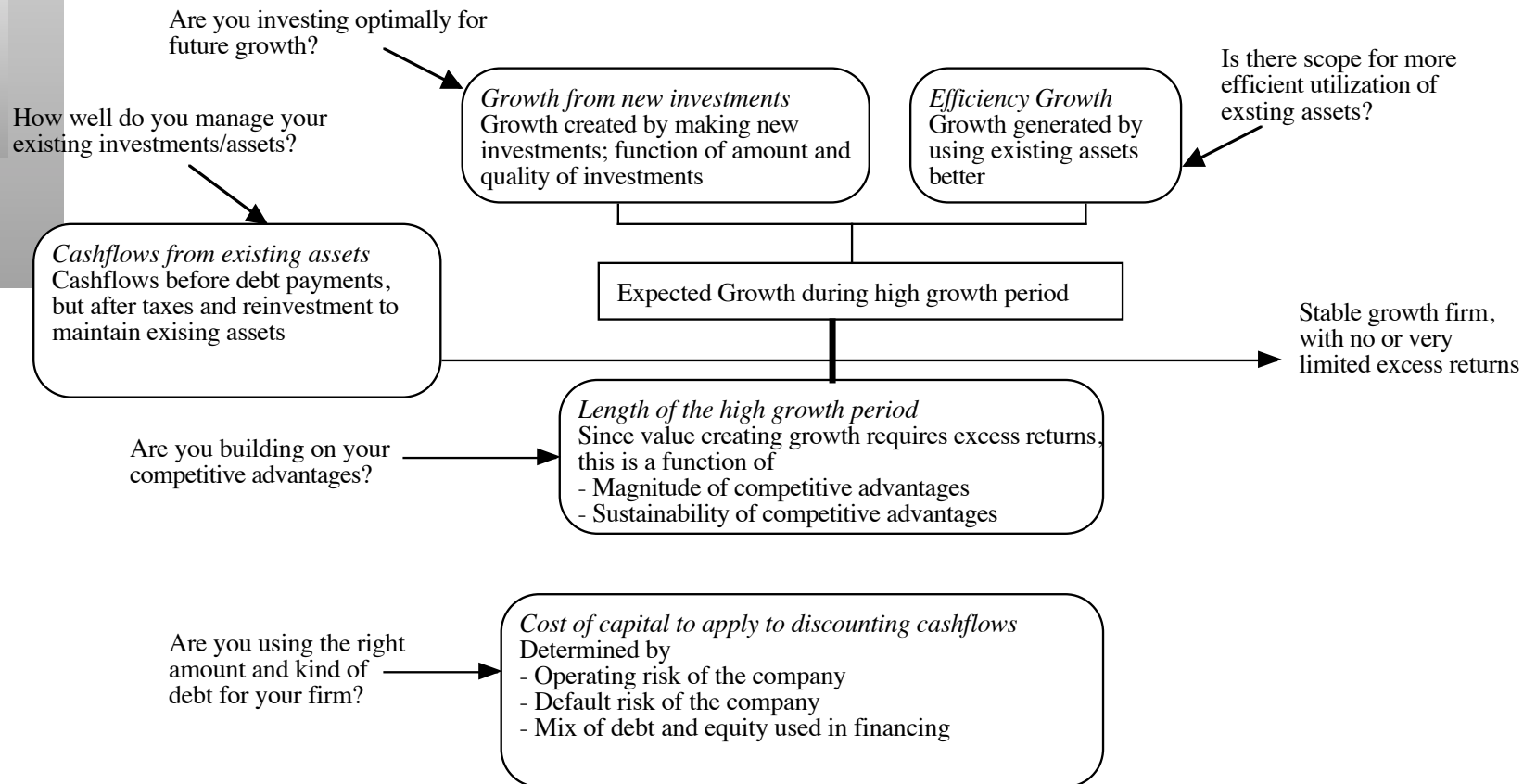
Investment decision affects risk of assets being finance and financing decision affects hur

Strategic investments determine length of growth period



Year	Expected grow	EBIT (1-t)	Reinvestment	Reinvestment	FCFF	Terminal Value	Cost of capital	PV
2009	5.32%	\$4,591	53.72%	\$2,466	\$2,125		7.52%	\$1,976
2010	5.32%	\$4,835	53.72%	\$2,598	\$2,238		7.52%	\$1,936
2011	5.32%	\$5,093	53.72%	\$2,736	\$2,357		7.52%	\$1,896
2012	5.32%	\$5,364	53.72%	\$2,882	\$2,482		7.52%	\$1,857
2013	5.32%	\$5,650	53.72%	\$3,035	\$2,615		7.52%	\$1,819
2014	4.86%	\$5,924	49.64%	\$2,941	\$2,983		7.61%	\$1,929
2015	4.39%	\$6,185	45.57%	\$2,818	\$3,366		7.69%	\$2,022
2016	3.93%	\$6,428	41.49%	\$2,667	\$3,761		7.78%	\$2,095
2017	3.46%	\$6,650	37.41%	\$2,488	\$4,162		7.87%	\$2,150
2018	3.00%	\$6,850	33.33%	\$2,283	\$4,567	\$94,928	7.95%	\$47,604
						Value of operating assets =		\$65,284
						+ Cash		\$3,795.00
						+ Cross holdings		\$1,763.00
						- Debt		\$16,682.15
						- Minority interests		\$1,344.00
						- Equity Options		\$527.90
						Value of equity in stock =		\$52,288.17
						Value per share =		\$28.16

Ways of changing value...



Disney - Restructured

Current Cashflow to Firm
 EBIT(1-t) = 7030(1-.38) = 4,359
 - Nt CpX = 2,101
 - Chg WC = 241
 = FCFF = 2,017
 Reinvestment Rate = 2342/4359 = 53.72%
 Return on capital = 9.91%

Reinvestment Rate
53.72%

Expected Growth in EBIT (1-t)
 $.5372 \times .12 = .0645$
6.45%

Return on Capital
12%

Stable Growth
 g = 3%; Beta = 1.00;
 Cost of capital = 7.19%
 ROC = 9%;
 Reinvestment Rate = 3/9 = 33.33%

Terminal Value₁₀ = 5067 / (.0719 - .03) = 120,982

First 5 years

Growth decreases gradually to 3%

Op. Assets 81,089
 + Cash: 3,795
 + Non op inv 1,763
 - Debt 16,682
 - Minority int 1,344
 = Equity 68,621
 - Options 528
 Value/Share \$ 36.67

Year	1	2	3	4	5	6	7	8	9	10
EBIT (1-t)	\$4,640	\$4,939	\$5,257	\$5,596	\$5,957	\$6,300	\$6,619	\$6,909	\$7,164	\$7,379
- Reinvestment	\$2,492	\$2,653	\$2,824	\$3,006	\$3,200	\$3,127	\$3,016	\$2,866	\$2,680	\$2,460
FCFF	\$2,147	\$2,286	\$2,433	\$2,590	\$2,757	\$3,172	\$3,603	\$4,043	\$4,484	\$4,919

Term Yr
7600
2533
5067

Cost of Capital (WACC) = 9.74% (0.60) + 3.72% (0.40) = 7.33%

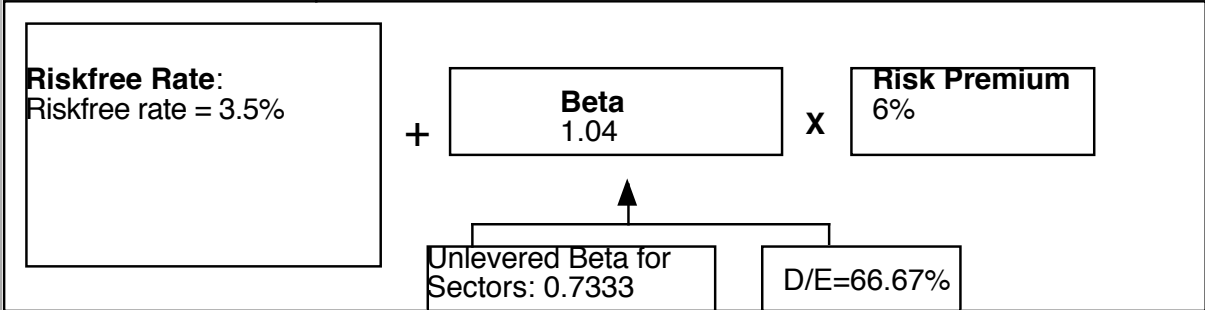
Cost of capital gradually decreases to 7.19%

Cost of Equity
9.74%

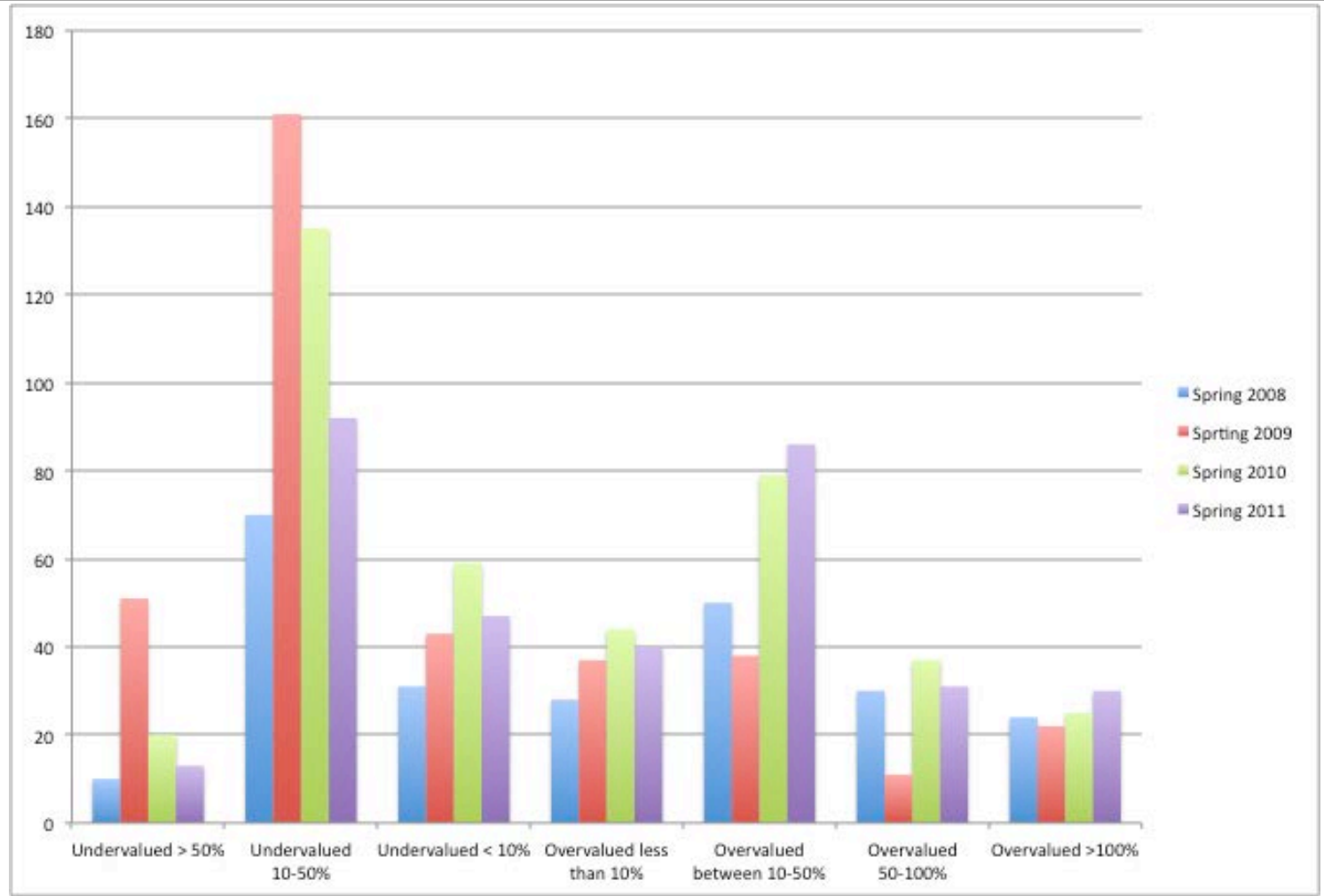
Cost of Debt
 $(3.5\% + 2.5\%)(1 - .38) = 3.72\%$
 Based on synthetic A rating

Weights
 E = 60% D = 40%

On June 1, 2009, Disney was trading at \$24.34 /share



Value versus Price



So, how do you explain the price? Its all relative..

<i>Company Name</i>	<i>Ticker Symbol</i>	<i>PE</i>	<i>Expected Growth Rate</i>	<i>PEG</i>
Point 360	PTSX	10.62	5.00%	2.12
Fox Entmt Group Inc	FOX	22.03	14.46%	1.52
Belo Corp. 'A'	BLC	25.65	16.00%	1.60
Hearst-Argyle Television Inc	HTV	26.72	12.90%	2.07
Journal Communications Inc.	JRN	27.94	10.00%	2.79
Saga Communic. 'A'	SGA	28.42	19.00%	1.50
Viacom Inc. 'B'	VIA/B	29.38	13.50%	2.18
Pixar	PIXR	29.80	16.50%	1.81
Disney (Walt)	DIS	29.87	12.00%	2.49
Westwood One	WON	32.59	19.50%	1.67
World Wrestling Ent.	WWE	33.52	20.00%	1.68
Cox Radio 'A' Inc	CXR	33.76	18.70%	1.81
Beasley Broadcast Group Inc	BBGI	34.06	15.23%	2.24
Entercom Comm. Corp	ETM	36.11	15.43%	2.34
Liberty Corp.	LC	37.54	19.50%	1.92
Ballantyne of Omaha Inc	BTNE	55.17	17.10%	3.23
Regent Communications Inc	RGCI	57.84	22.67%	2.55
Emmis Communications	EMMS	74.89	16.50%	4.54
Cumulus Media Inc	CMLS	94.35	23.30%	4.05
Univision Communic.	UVN	122.76	24.50%	5.01
Salem Communications Corp	SALM	145.67	28.75%	5.07
Average for sector		47.08	17.17%	2.74

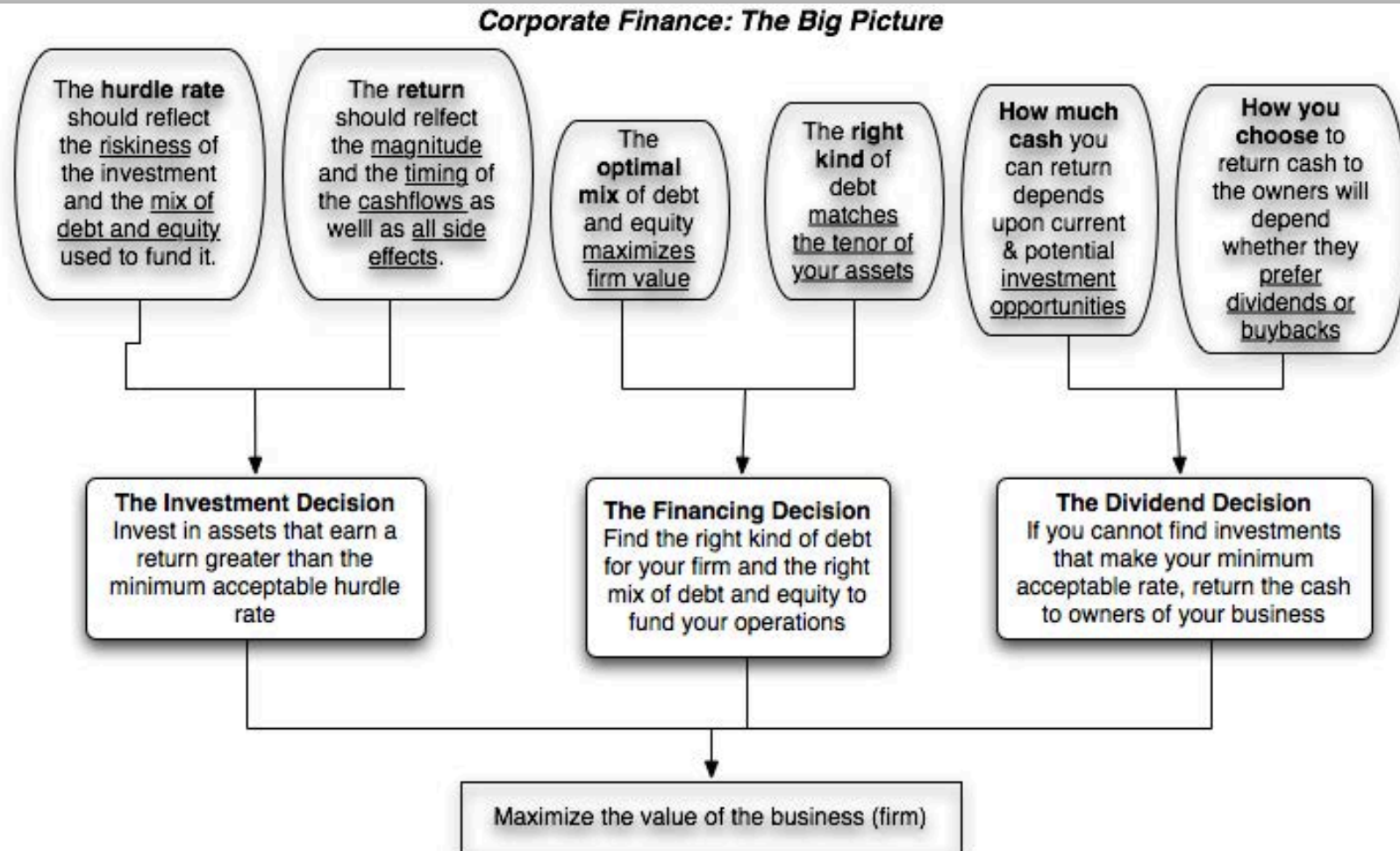
Most undervalued stocks!!

Company	Value/share	Price/Share
First Solar	\$ 750.55	\$ 129.96
Air Arabia	\$ 2.72	\$ 0.72
Mullen Group	\$ 74.33	\$ 21.04
Seven & I Holding	\$ 73.28	\$ 25.54
First Solar	\$ 372.56	\$ 129.96
Best Buy	\$ 86.39	\$ 31.00
Chiquita	\$ 37.94	\$ 15.34
Eagle	\$ 7.72	\$ 3.14
Quest Diagnostics	\$ 124.91	\$ 56.49
Conoco Phillips	\$ 144.04	\$ 72.94
Freeport-McMoRan Copper & Gold Inc	\$98.14	\$49.85
Gap	\$ 44.29	\$ 22.60
Best Buy	\$ 60.13	\$ 31.00

The Triple Whammy: Underlevered, Cash Build-up and Under valued?

Company	Power	Beta	Jensen's Alpha	ROE - COE	ROC - WACC	Current Debt ratio	Optimal Debt Ratio	Dividends	FCFE	Value/share	Price/Share
BP	1	1.06	-17.04%	8.84%	2.83%	26.59%	40.00%	6,838,000,000	8,081,000,000		\$ 45.30
First Solar	1	1.02	83%	10%	9%	1%	20%	\$ -	\$ 34.47	\$ 750.55	\$ 129.96
Seven & I Holding	1	0.298	323.95%	0.43%	2.10%	38.50%	70.00%	1134.6	9343.4	\$ 73.28	\$ 25.54
Quest Diagnostics	2	0.58	0.99%	9.12%	7.04%	30.14%	60.00%	\$470.88	\$686.34	\$ 124.91	\$ 56.49
Nintendo (Japan)	0	1.2	21.62%	9.89%	9.61%	0.20%	50.00%	¥114,050.80	¥204,241	¥38,404	¥19,950
Nintendo	0	1.2	21.62%	9.89%	9.61%	0.20%	50.00%	¥114,050.80	¥204,241	¥38,404	¥19,950
Hansen Natural	0	0.86	28.37%	28.72%	48.51%	0.53%	40.00%	\$ 85.00	\$ 120.20	\$ 121.02	\$ 64.74
Handsome	0	0.636	36.09%	4.64%	3.05%	0.00%	20.00%	4.39	48.51	\$37,778.00	\$21,650.00
Halliburton	0	1.42	2.59%	16.57%	8.49%	12.11%	40.00%	271.8	737.4	\$ 78.01	\$ 46.67
Archer Daniels Midland	1	0.97	0.03%	5.45%	2.52%	39.31%	60.00%	472	1713.19	\$53.08	\$33.97
Cisco	0	1.02	5.63%	9.71%	7.88%	14.42%	30.00%	7578	7720	\$ 27.09	\$ 17.56
Coach	1	1.37	22.84%	-7.79%	-7.35%	5.46%	30%	756.99	802.3	88.15	59.61
Gilead Sciences	2	0.68	7.84%	37.27%	32.79%	10.30%	50.00%	\$1,604.63	\$1,966.99	\$ 60.64	\$ 41.35
Sysco Corporation	2	0.81	-0.14%	28.46%	14.76%	14.97%	60.00%	\$579.76	\$1,326.79	\$41.47	\$28.51
Exelon	2	0.64	-23.11%	15.80%	11.74%	35.18%	90.00%	1638	2148.4	\$ 58.05	\$ 42.17
First Solar	2	1.659770568	-27.75%	7.30%	22.44%	1.92%	40.00%	0	\$ 1,082.94	\$ 176.50	\$ 129.96
Adobe	2	1.1167	5.00%	5.85%	1.05%	9.09%	20.00%	1038.5	1261	\$ 44.86	\$ 33.40
Kraft Foods	2	0.63	10.36%	6.03%	1.86%	33.89%	50.00%	\$2,897.80	\$6,015.60	\$ 41.44	\$ 31.26
Whole Foods (WFM)	2	0.66	0.20%	5.04%	0.72%	8.01%	30.00%	62.8	82.24	\$80.01	\$61.57
Hasbro	2	0.901	20.10%	17.13%	10.04%	24.80%	50.00%	\$ 104.20	\$ 455,850,000	\$ 60.46	\$ 46.84
The Gap	1	2.06	17.19%	15.59%	10.75%	24.38%	70.00%	10152	10501	\$ 28.63	\$ 22.60
Comcast	0	1.32	6.81%	-2.87%	-1.69%	37.00%	50.00%	1631	2021	\$ 31.82	\$ 25.44
Nike	0	0.85	15.12%	11.13%	16.34%	4.73%	30.00%	\$877.28	\$1,762.35	\$102.03	\$82.02
Ralph Lauren	1	1.34	39.80%	8.27%	2.55%	12.77%	30.00%	\$255.70	\$466.70	\$ 159.59	\$ 129.61
Colgate-Palmolive	2	0.43	7.76%	72.83%	39.61%	9.98%	60.00%	\$843.42	\$1,607.58	\$ 104.36	\$ 84.88
Chevron	1	1.01	5.14%	9.72%	8.23%	5.60%	40.00%	4,107,000,000	7,370,300,000	\$ 127.31	\$ 103.77
Apple	1	1.24	35.38%	35.26%	32.53%	0.50%	60.00%	0	33898	\$ 429.22	\$ 350.70
Medtronic	1	0.911	41.39%	12.51%	8.07%	13.65%	30.00%	1537	3177	\$ 52.23	\$ 42.69
Smucker	3	0.87	0.43%	46.73%	2.37%	14.59%	50.00%	260.36	483.71	\$ 88.64	\$ 74.04
Time Warner, Inc.	1	1.59	9.40%	-16.31%	-0.42%	36.13%	60.00%	506.00	3334.00	\$ 43.20	\$ 36.20
HTC	1	1.37	46.15%	33.28%	33.28%	0.00%	20.00%	\$613.0	\$1,023.0	\$49.0	\$42.5
Bombardier	1	1.26	-10.70%	3.80%	0.80%	29.20%	50.00%	159.2	172.6	\$ 7.31	\$ 6.42
Apple	0	1.075	45.31%	102.82%	35.25%	0.54%	30%	194.00	5536.20	\$ 390.56	\$ 346.66
DirecTV	1	1.1	1.61%	31.17%	8.19%	21.95%	50.00%	0	2028	\$ 54.58	\$ 48.57

First Principles



Objectives of this class

- If you get the big picture, the details will come (sooner or later)
- Tools are useful but only in the larger context of answering bigger questions.
- Corporate finance is not so bad !!!

And don't forget your CFEs...

1. This course was mentally challenging/intellectually stimulating.
 1 2 3 4 5 6 7
No-brainer! *Brilliant insights!*
2. This course was demanding of my time.
 1 2 3 4 5 6 7
What work? *Haven't slept all semester.*
3. This course provided me with tools and information that I will find useful in the future.
 1 2 3 4 5 6 7
Only in prison *Completely relevant*
4. **Overall evaluation of the course**
 1 2 3 4 5 6 7
Horrible! (I want my money back) ***Stupendous!***
5. The instructor was organized and well prepared for class.
 1 2 3 4 5 6 7
Had trouble finding classroom *Scarily efficient!*
6. The instructor communicated his/her ideas and material well.
 1 2 3 4 5 6 7
Garbled gobbledygook! *Should have own TV show*
7. The instructor was enthusiastic about his/her subject matter.
 1 2 3 4 5 6 7
Dead man talking! *I am a convert*
8. **Overall evaluation of the instructor**
 1 2 3 4 5 6 7
Dog! ***Star!***