



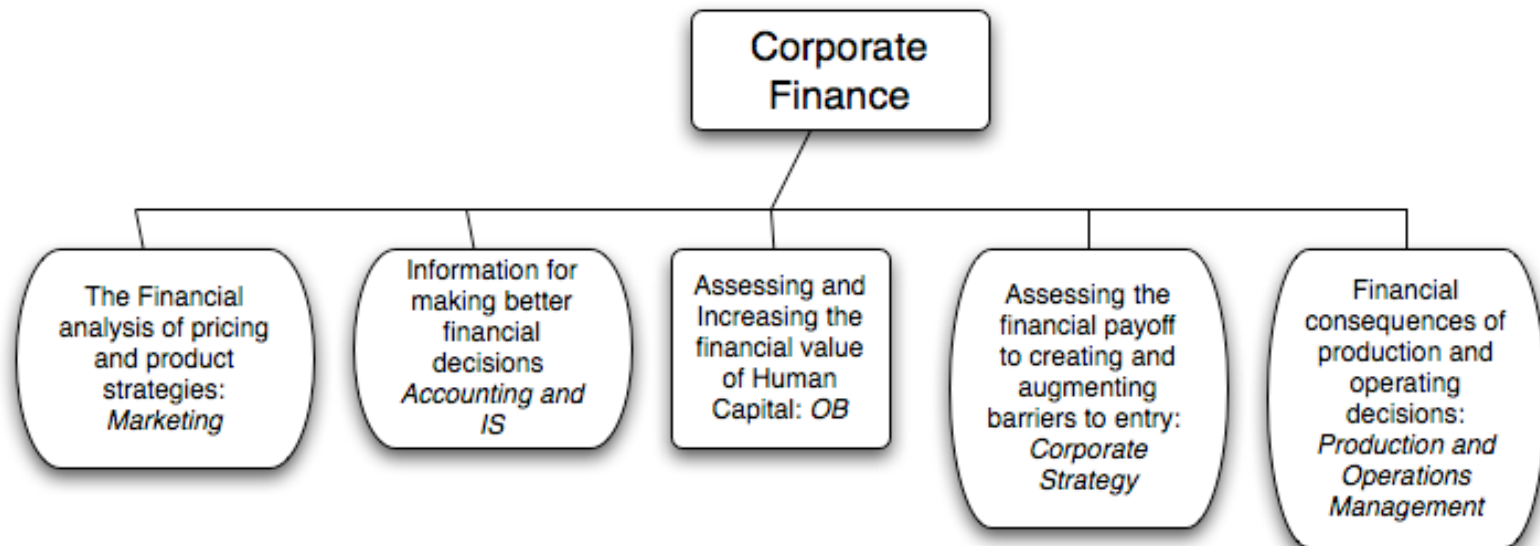
APPLIED CORPORATE FINANCE: A BIG PICTURE VIEW

Aswath Damodaran

www.damodaran.com

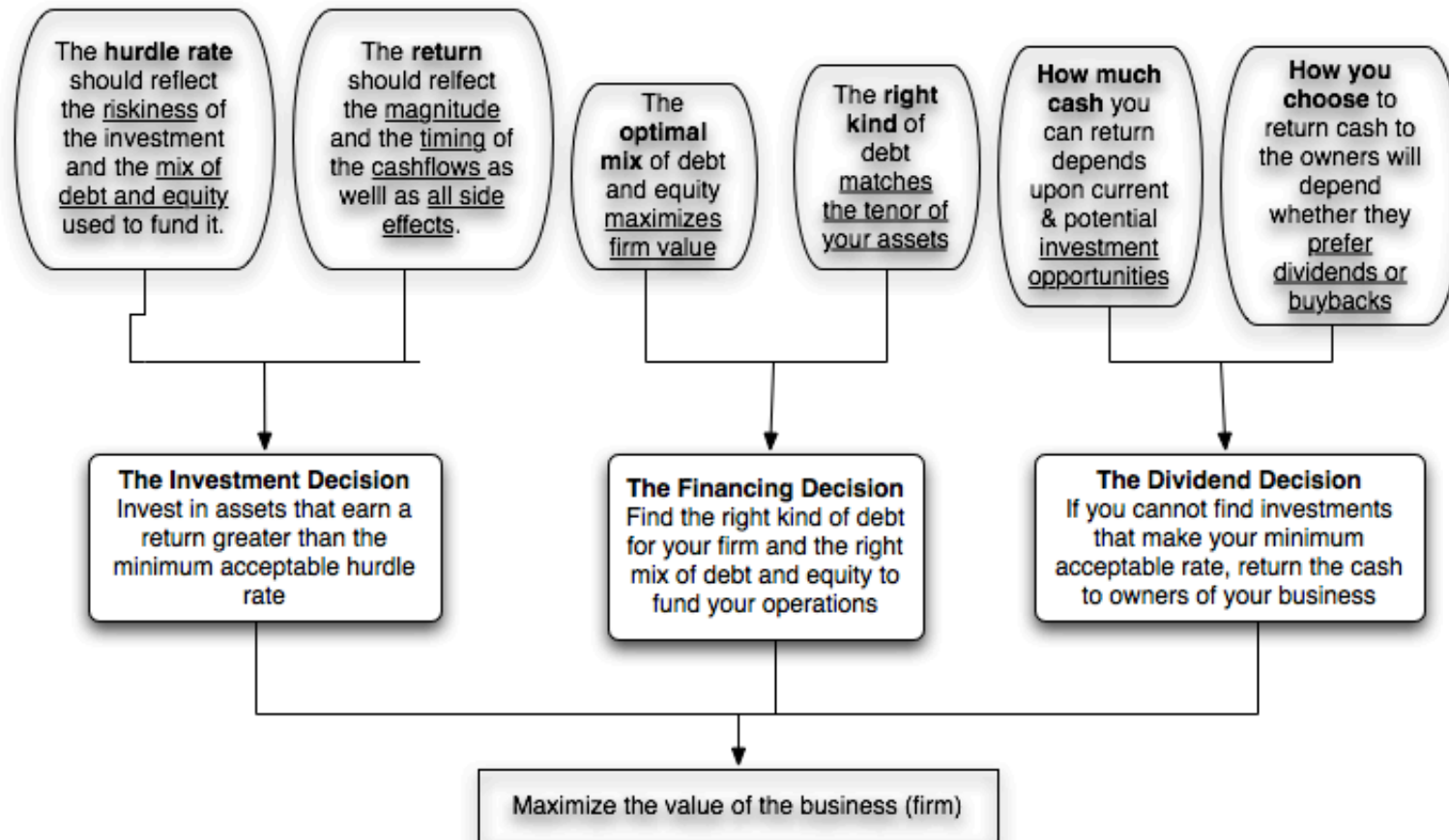
What is corporate finance?

- Every decision that a business makes has financial implications, and any decision which affects the finances of a business is a corporate finance decision.
- Defined broadly, everything that a business does fits under the rubric of corporate finance.

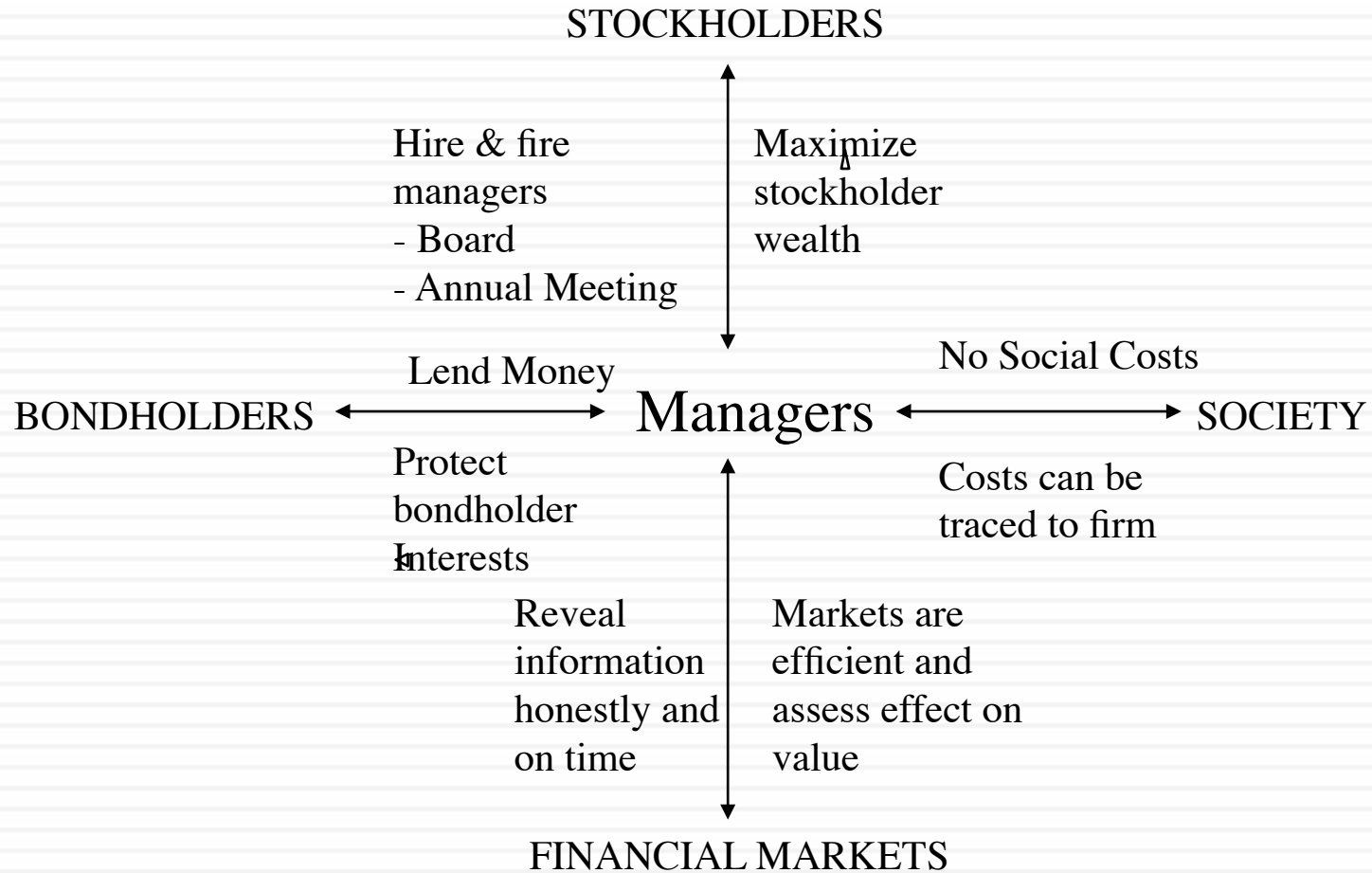


First Principles

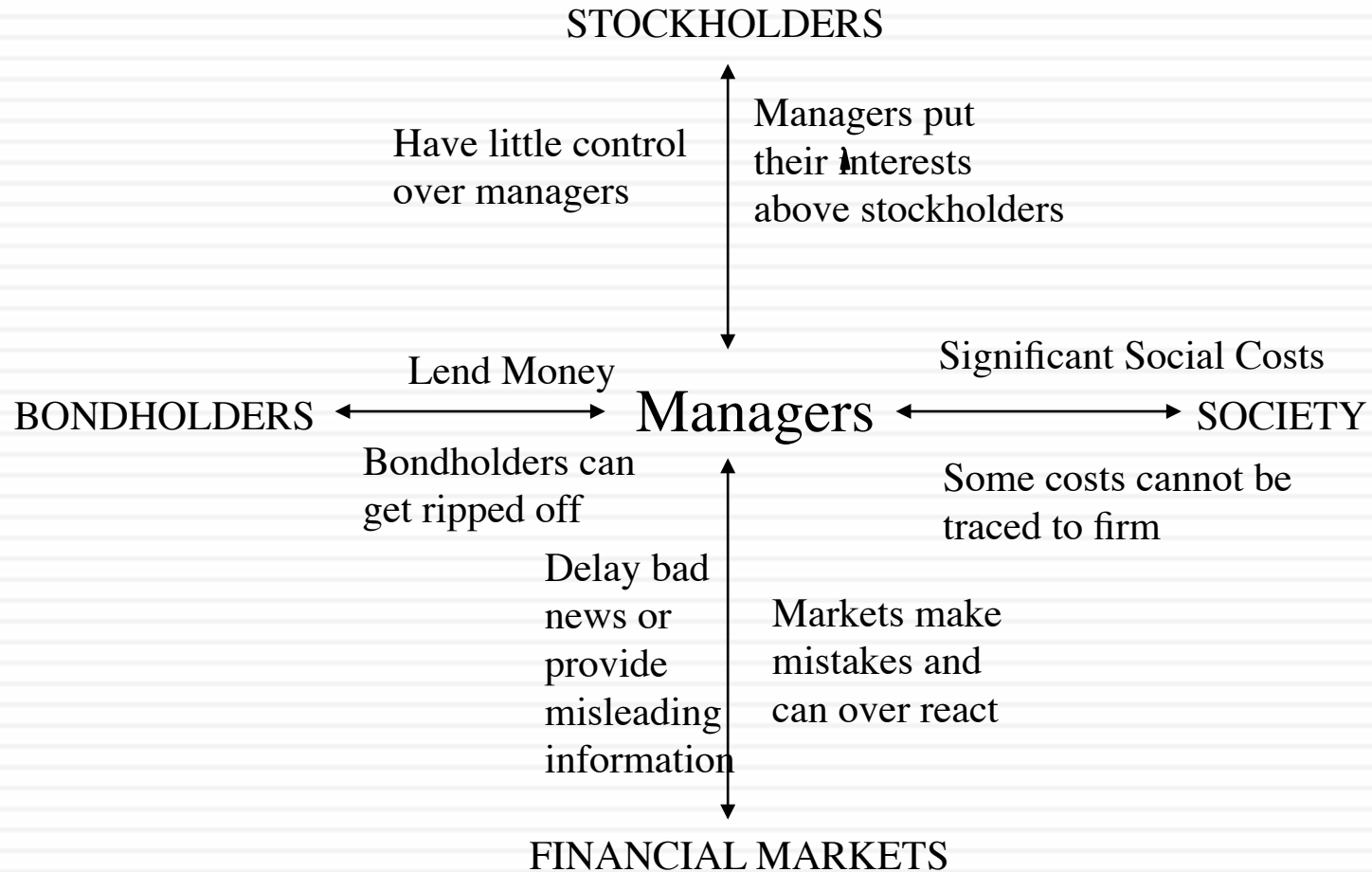
Corporate Finance: The Big Picture



The Classical Objective Function



What can go wrong?



Who's on Board? The Disney Experience - 1997

Reveta F. Bowers 1,5
Head of School
Center for Early Education

Roy E. Disney 3
Vice Chairman
The Walt Disney Company

Michael D. Eisner 3
Chairman and Chief Executive Officer
The Walt Disney Company

Stanley P. Gold 4,5
President and Chief Executive Officer
Shamrock Holdings, Inc.

Sanford M. Litvack
Senior Executive Vice President
and Chief of Corporate Operations
The Walt Disney Company

Ignacio E. Lozano, Jr. 1,2,4
Editor-in-Chief, LA OPINION

George J. Mitchell 5
Special Counsel
Verner, Liipfert, Bernard, McPherson
and Hand

Thomas S. Murphy
Former Chairman
Capital Cities/ABC, Inc.

Richard A. Nunis
Chairman
Walt Disney Attractions

Leo J. O'Donovan, S.J.
President
Georgetown University

Michael S. Ovitz 3
President
The Walt Disney Company

Sidney Poitier 2,4
Chief Executive Officer
Verdon-Cedric Productions

Irwin E. Russell 2,4
Attorney at Law

Robert A.M. Stern
Senior Partner Productions

E. Cardon Walker 1
Former Chairman and Chief Executive Officer
The Walt Disney Company

Raymond L. Watson 1,2,3
Vice Chairman
The Irvine Company

Gary L. Wilson 5
Co-Chairman
Northwest Airlines Corporation

1 Member of Audit Review Committee

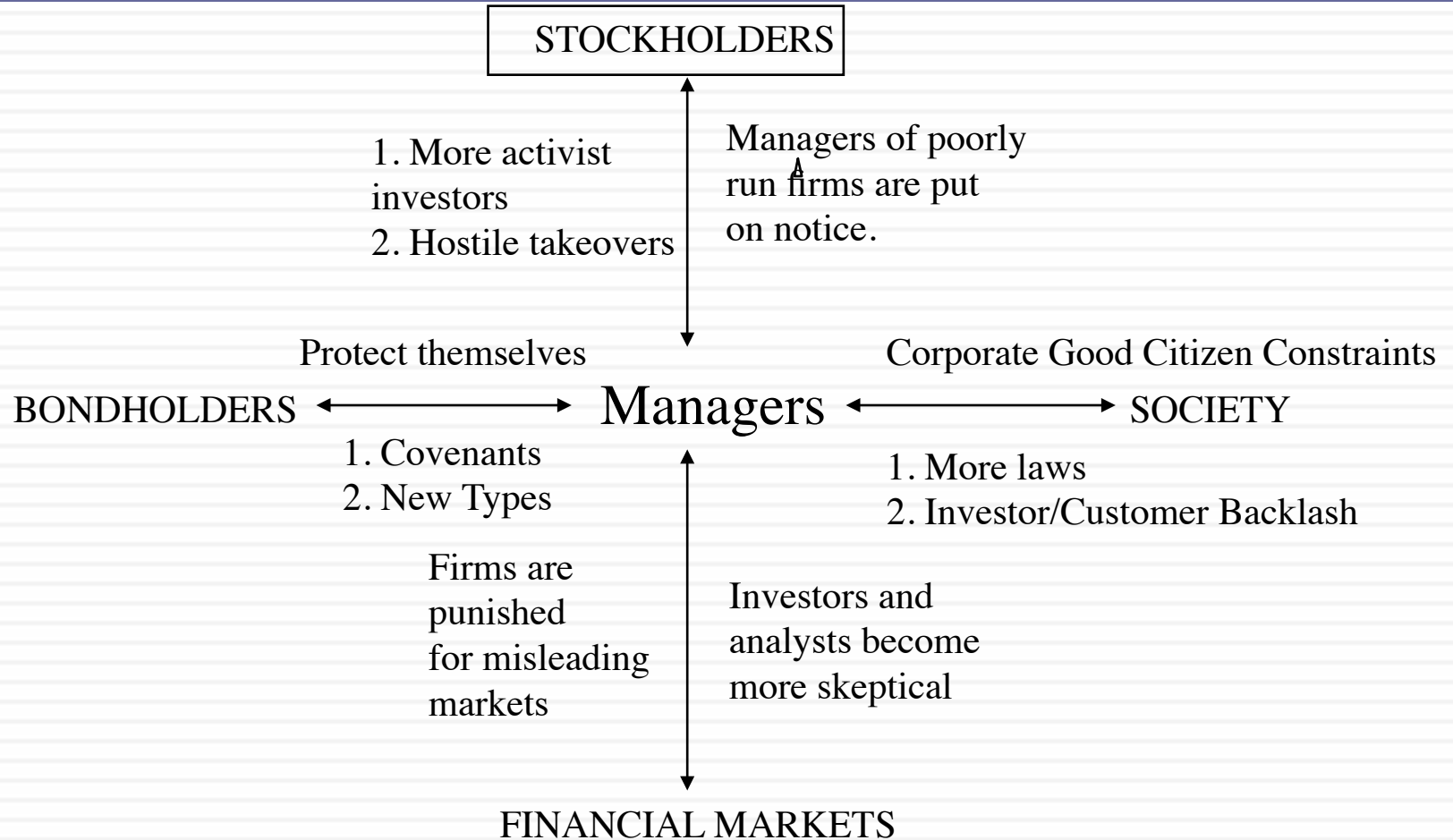
2 Member of Compensation Committee

3 Member of Executive Committee

4 Member of Executive Performance Plan Committee

5 Member of Nominating Committee

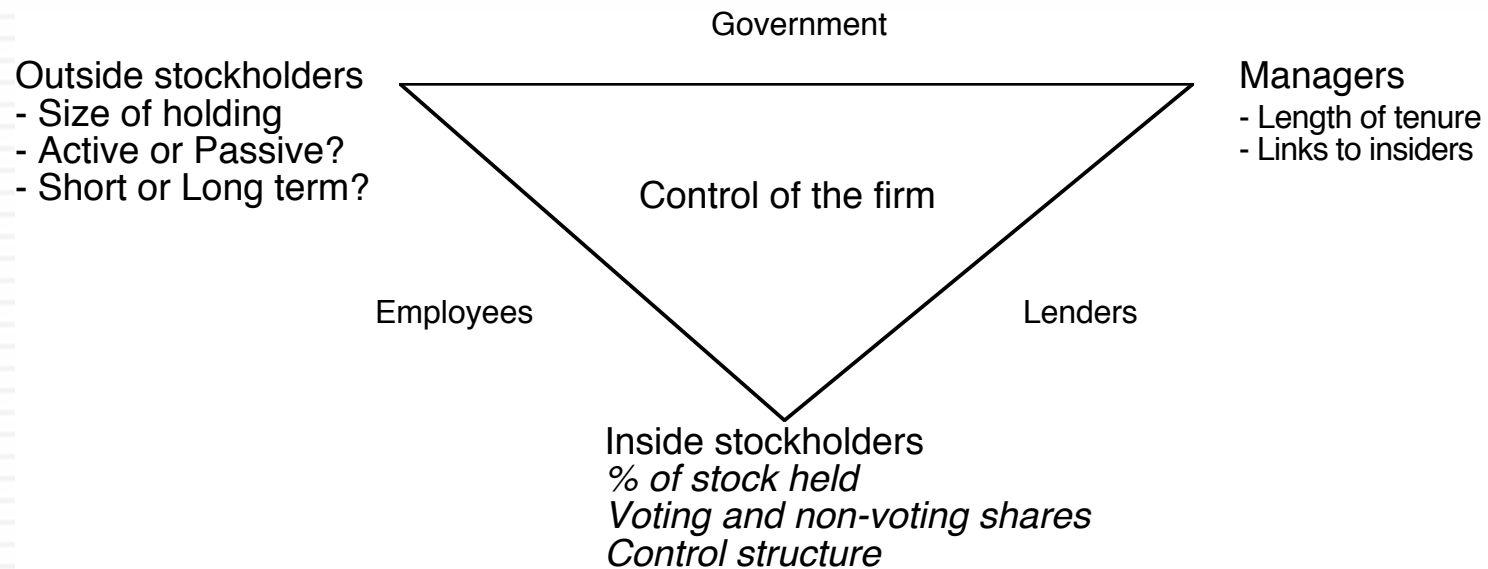
A Market Based Solution



Application Test: Who owns/runs your firm?

- Look at: Bloomberg printout HDS for your firm
- Who are the top stockholders in your firm?
- What are the potential conflicts of interests that you see emerging from this stockholding structure?

B HDS Page
PB Page 3-12



Splintering of Stockholders

Disney's top stockholders in 2003

<HELP> for explanation. dgp Equity HDS
 Enter #<GD> to select aggregate portfolio and see detailed information

001189658224-000		HOLDINGS SEARCH		CUSIP 25468710	
DIS	US	DISNEY (WALT) CO		Page	1 / 100
Holder name	Portfolio Name	Source	Held	Outstd	Percent Latest Filing Change Date
1BARCLAYS GLOBAL	BARCLAYS BANK PLC	13F	83,630M	4.095	1,750M 09/02
2CITIGROUP INC	CITIGROUP INCORPORAT	13F	62,857M	3.078	4,811M 09/02
3FIDELITY MANAGEM	FIDELITY MANAGEMENT	13F	56,125M	2.748	5,992M 09/02
4STATE STREET	STATE STREET CORPORA	13F	54,635M	2.675	2,239M 09/02
5SOUTHEASTERN ASST	SOUTHEASTERN ASSET M	13F	47,333M	2.318	14,604M 09/02
6ST FARM MU AUTO	STATE FARM MUTUAL AU	13F	41,938M	2.054	120,599 09/02
7VANGUARD GROUP	VANGUARD GROUP INC	13F	34,721M	1.700	-83,839 09/02
8MELLON BANK N A	MELLON BANK CORP	13F	32,693M	1.601	957,489 09/02
9PUTNAM INVEST	PUTNAM INVESTMENT MA	13F	28,153M	1.379	-11,468M 09/02
10LORD ABBETT & CO	LORD ABBETT & CO	13F	24,541M	1.202	5,385M 09/02
11MONTAG CALDWELL	MONTAG & CALDWELL IN	13F	24,466M	1.198	-11,373M 09/02
12DEUTSCHE BANK AK	DEUTSCHE BANK AG	13F	23,239M	1.138	-5,002M 09/02
13MORGAN STANLEY	MORGAN STANLEY	13F	19,655M	0.962	3,482M 09/02
14PRICE T ROWE	T ROWE PRICE ASSOCIA	13F	19,133M	0.937	2,925M 09/02
15ROY EDWARD DISNE	n/a	PROXY	17,547M	0.859	-126,710 12/01
16AWA FINANCIAL	ALLIANCE CAPITAL MAN	13F	14,283M	0.699	69,353 09/02
17JP MORGAN CHASE	JP MORGAN CHASE & CO	13F	14,209M	0.696	-462,791 09/02
Sub-totals for current page:			599,159M	29.340	

* Money market directory info available. Select portfolio, then hit IP<GD>.
 Australia 61 2 8777 8600 Brazil 55 11 3048 4506 Europe 44 20 7330 7500 Germany 49 69 305410
 Hong Kong 852 2577 6000 Japan 81 3 3201 0906 Singapore 65 212 1000 U.S. 1 212 318 2000 Copyright 2002 Bloomberg L.P.
 H002-375-0 20-0ec-02 13/41/08



Tata Chemical's top stockholders in 2008

<HELP> for explanation. EquityHDS
 As of Apr29 DELAYED Vol 502,362 Op 165 B Hi 172 S Lo 165 B

ITCH IN Equity 94) Matrix 95) Searches 96) Actions Page 1/11 Holdings Search
 Tata Chemicals Ltd ISIN INE092A01019

21) Sources 22) Types 23) Countries 24) Metro Areas 25) Advanced Filters

Name Filter Sort By Amount Held

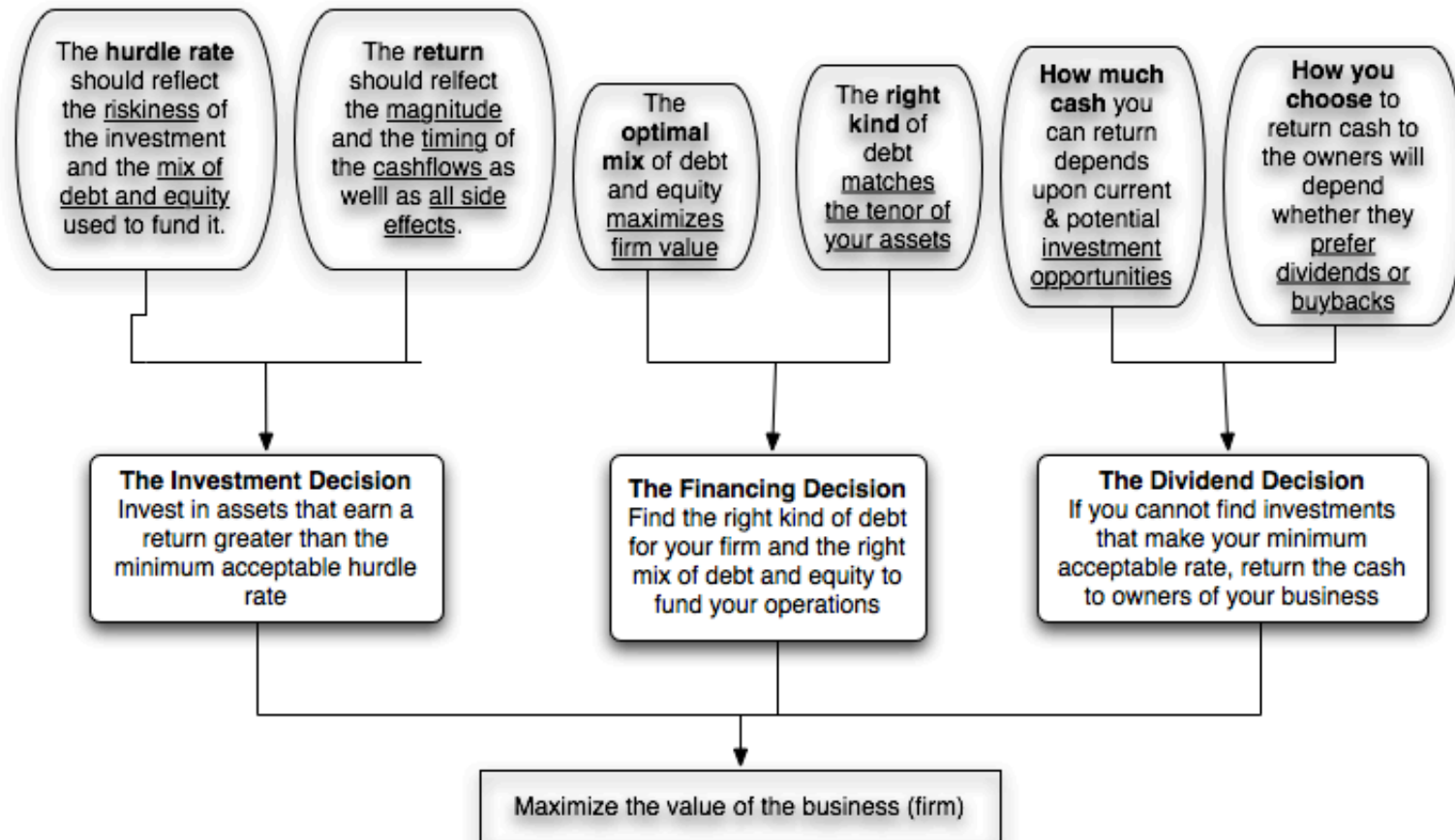
	Holder Name	Portfolio Name	Source	Amt Held	% Out	Latest Chg	File Dt
1)	TATA SONS LTD	n/a	Co File	33,534,323	14.26	0	12/31/08
2)	LIFE INSURANCE CORP O	n/a	Co File	27,537,984	11.71	6,856,922	12/31/08
3)	TATA INVESTMENT CORP	n/a	Co File	16,000,001	6.80	-390,000	12/31/08
4)	TATA TEA LTD	n/a	Co File	15,385,522	6.54	0	12/31/08
5)	NEW INDIA ASSURANCE C	n/a	Co File	6,060,895	2.58	0	12/31/08
6)	HINDUSTAN LEVER LTD	n/a	Co File	5,032,000	2.14	0	12/31/08
7)	GENERAL INSURANCE CO	n/a	Co File	4,996,262	2.12	6,000	12/31/08
8)	UNITED INDIA INSURANC	n/a	Co File	2,668,047	1.13	20,000	12/31/08
9)	NATIONAL INSURANCE C	n/a	Co File	2,373,302	1.01	0	12/31/08
10)	TEMPLETON ASSET MGMT	TEMPLETON INDIA EQ	MF-IND	2,363,937	1.01	163,937	3/31/09
11)	TEMPLETON ASSET MGMT	FRANKLIN INDIA FLEX	MF-IND	1,503,761	0.64	0	3/31/09
12)	SBI FUNDS MANAGEMENT	SBI MAGNUM SECTOR	MF-IND	1,473,989	0.63	156,222	3/31/09
13)	M&G INVESTMENT MANA	M&G INV (1)-SOUTH	UT-UK	1,451,251	0.62	-383,000	12/31/08
14)	EWART INVESTMENTS LT	n/a	Co File	1,369,290	0.58	0	12/31/08
15)	TEMPLETON MANAGEMEN	TEMPLETON EMERGIN	MF-CAN	1,078,000	0.46	539,000	12/31/08
16)	TEMPLETON ASSET MGMT	TEMPLETON INDIA G	MF-IND	1,054,645	0.45	554,645	3/31/09
17)	BIRLA SUN LIFE ASSET M	BIRLA SUN LIFE SPEC	MF-IND	1,050,000	0.45	0	2/28/09

26) Latest Chg 27) Hist Held % Out on Page 53.12

Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000
 Copyright 2009 Bloomberg Finance L.P.
 SN 636136 6653-375-0 01-May-2009 10:48:56

First Principles

Corporate Finance: The Big Picture



What is Risk?

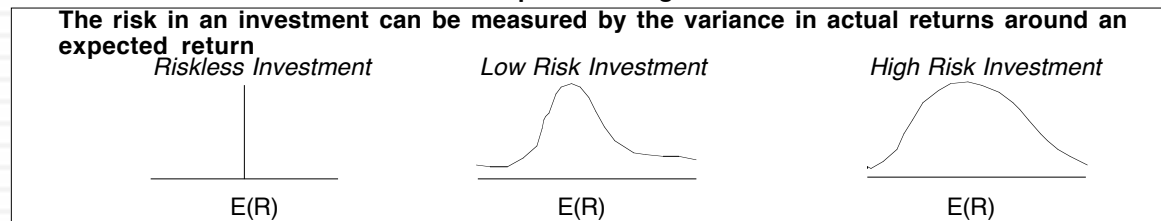
- Risk, in traditional terms, is viewed as a ‘negative’. Webster’s dictionary, for instance, defines risk as “exposing to danger or hazard”. The Chinese symbols for risk, reproduced below, give a much better description of risk:

危險

- The first symbol is the symbol for “danger”, while the second is the symbol for “opportunity”, making risk a mix of danger and opportunity. You cannot have one, without the other.

Alternatives to the CAPM

Step 1: Defining Risk



Step 2: Differentiating between Rewarded and Unrewarded Risk

<p><i>Risk that is specific to investment (Firm Specific)</i> Can be diversified away in a diversified portfolio</p> <ol style="list-style-type: none"> each investment is a small proportion of portfolio risk averages out across investments in portfolio <p>The marginal investor is assumed to hold a “diversified” portfolio. Thus, only market risk will be rewarded and priced.</p>	<p><i>Risk that affects all investments (Market Risk)</i> Cannot be diversified away since most assets are affected by it.</p>
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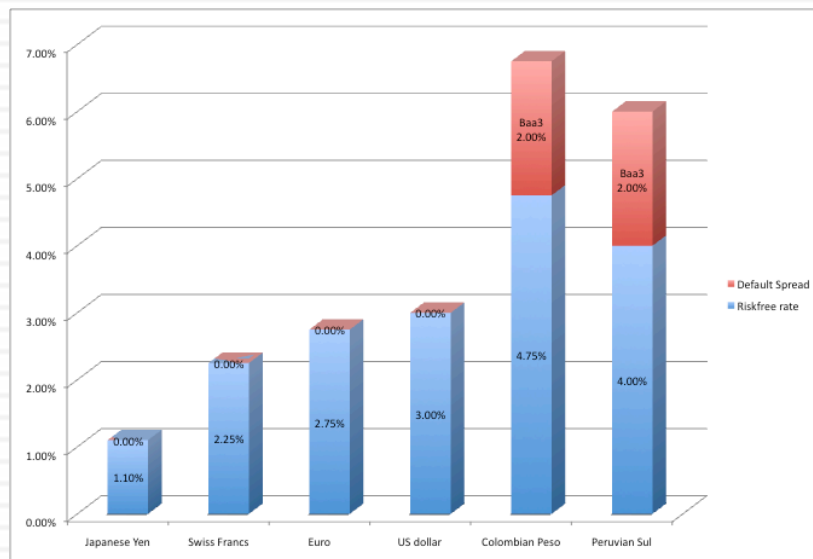
Step 3: Measuring Market Risk

The CAPM	The APM	Multi-Factor Models	Proxy Models
<p>If there is</p> <ol style="list-style-type: none"> no private information no transactions cost <p>the optimal diversified portfolio includes every traded asset. Everyone will hold this <u>market portfolio</u></p> <p>Market Risk = Risk added by any investment to the market portfolio:</p>	<p>If there are no arbitrage opportunities then the market risk of any asset must be captured by betas relative to factors that affect all investments.</p> <p>Market Risk = Risk exposures of any asset to market factors</p>	<p>Since market risk affects most or all investments, it must come from macro economic factors.</p> <p>Market Risk = Risk exposures of any asset to macro economic factors.</p>	<p>In an efficient market, differences in returns across long periods must be due to market risk differences. Looking for variables correlated with returns should then give us proxies for this risk.</p> <p>Market Risk = Captured by the Proxy Variable(s)</p>
<p>Beta of asset relative to Market portfolio (from a regression)</p>	<p>Betas of asset relative to unspecified market factors (from a factor analysis)</p>	<p>Betas of assets relative to specified macro economic factors (from a regression)</p>	<p>Equation relating returns to proxy variables (from a regression)</p>

Inputs required to use the CAPM -

- The capital asset pricing model yields the following expected return:
 - Expected Return = Riskfree Rate + Beta * (Expected Return on the Market Portfolio - Riskfree Rate)
- To use the model we need three inputs:
 - a. The current risk-free rate
 - b. The expected market risk premium (the premium expected for investing in risky assets (market portfolio) over the riskless asset)
 - c. The beta of the asset being analyzed.

What is the riskfree rate?



- The Indian government had 10-year bonds outstanding, with a yield to maturity of about 7% on May 2009. At the time, the Indian government had a local currency sovereign rating of Ba2. The typical default spread for Ba2 rated country bonds in May 2009 was 3%. The riskfree rate in Indian Rupees is
 - a. The yield to maturity on the 10-year bond (7%)
 - b. The yield to maturity on the 10-year bond + Default spread (10%)
 - c. The yield to maturity on the 10-year bond – Default spread (4%)

For Disney in May 2009, we used the US treasury bond rate of 3.50% as the riskfree rate. Is that reasonable? What are we assuming about default risk in the US treasury?

And the equity risk premium..

	Arithmetic Average		Geometric Average	
	Stocks - T. Bills	Stocks - T. Bonds	Stocks - T. Bills	Stocks - T. Bonds
1928-2012	7.65%	5.88%	5.74%	4.20%
	2.20%	2.33%		
1962-2012	5.93%	3.91%	4.60%	2.93%
	2.38%	2.66%		
2002-2012	7.06%	3.08%	5.38%	1.71%
	5.82%	8.11%		

Historical premium

In 2012, the actual cash returned to stockholders was 72.25. Using the average total yield for the last decade yields 69.46

Analysts expect earnings to grow 7.67% in 2013, 7.28% in 2014, scaling down to 1.76% in 2017, resulting in a compounded annual growth rate of 5.27% over the next 5 years. We will assume that dividends & buybacks will grow 5.27% a year for the next 5 years.

After year 5, we will assume that earnings on the index will grow at 1.76%, the same rate as the entire economy (= riskfree rate).

73.12 76.97 81.03 85.30 89.80

$$1426.19 = \frac{73.12}{(1+r)} + \frac{76.97}{(1+r)^2} + \frac{81.03}{(1+r)^3} + \frac{85.30}{(1+r)^4} + \frac{89.80}{(1+r)^5} + \frac{89.80(1.0176)}{(r-.0176)(1+r)^5}$$

January 1, 2013
S&P 500 is at 1426.19
Adjusted Dividends & Buybacks for base year = 69.46

Expected Return on Stocks (1/1/13) = 7.54%
T.Bond rate on 1/1/13 = 1.76%
Equity Risk Premium = 7.54% - 1.76% = 5.78%

Data Sources:
Dividends and Buybacks last year. S&P
Expected growth rate: S&P, Media reports, Factset, Thomson-Reuters

Country Risk: Look at a country's bond rating and default spreads as a start

- Ratings agencies assign ratings to countries that reflect their assessment of the default risk of these countries. These ratings reflect the political and economic stability of these countries and thus provide a useful measure of country risk. In May 2009, the local currency rating, from Moody's, for India was Ba2. There are three ways in which this can be converted into a default spread:
 - If the country has US \$ or Euro denominated bonds, you can compare the interest rate on the bond to the US treasury bond rate (if US \$) or the German Bund rate (if it is Euro).
 - If the country has a CDS spread, you can use the spread as a measure of sovereign risk.
 - You can use the typical spread for the rating, based upon other rated countries, to estimate a spread for the country. In May 2009, this would have yielded 3%.
- Many analysts add this default spread to the US risk premium to come up with a risk premium for a country. This would yield a risk premium of 9% for India, if we use 6% as the US risk premium and the default spread based on the rating.

Beyond the default spread

- While default risk spreads and equity risk premiums are highly correlated, one would expect equity spreads to be higher than debt spreads. In fact, if we can estimate how risky the equity market is, relative to the government bond, we can scale up the spread.
- Country Risk Premium for India in May 2009
 - Standard Deviation in Sensex = 30%
 - Standard Deviation in Indian government Bond = 20%
 - Default spread on Bond = 3%
 - Country Risk Premium (CRP) for India = $3\% (30\%/20\%) = 4.50\%$
 - Total Risk Premium for India = US risk premium (in '12) + CRP
 $= 6\% + 4.50\% = 10.50\%$

Country Risk Premium January 2013

Canada	0.00%	5.80%
USA	0.00%	5.80%
N. America	0.00%	5.80%

Argentina	9.00%	14.80%
Belize	15.00%	20.80%
Bolivia	4.88%	10.68%
Brazil	2.63%	8.43%
Chile	1.05%	6.85%
Colombia	3.00%	8.80%
Costa Rica	3.00%	8.80%
Ecuador	10.50%	16.30%
El Salvador	4.88%	10.68%
Guatemala	3.60%	9.40%
Honduras	7.50%	13.30%
Mexico	2.25%	8.05%
Nicaragua	9.00%	14.80%
Panama	2.63%	8.43%
Paraguay	6.00%	11.80%
Peru	2.63%	8.43%
Uruguay	3.00%	8.80%
Venezuela	6.00%	11.80%
Latin America	3.38%	9.18%

Belgium	1.05%	6.85%
Germany	0.00%	5.80%
Portugal	4.88%	10.68%
Italy	2.63%	8.43%
Luxembourg	0.00%	5.80%
Austria	0.00%	5.80%
Denmark	0.00%	5.80%
France	0.38%	6.18%
Finland	0.00%	5.80%
Greece	10.50%	16.30%
Iceland	3.00%	8.80%
Ireland	3.60%	9.40%
Netherlands	0.00%	5.80%
Norway	0.00%	5.80%
Slovenia	2.63%	8.43%
Spain	3.00%	8.80%
Sweden	0.00%	5.80%
Switzerland	0.00%	5.80%
Turkey	3.60%	9.40%
UK	0.00%	5.80%

W. Europe **1.05%** **6.85%**

Angola	4.88%	10.68%
Botswana	1.50%	7.30%
Egypt	7.50%	13.30%
Kenya	6.00%	11.80%
Mauritius	2.25%	8.05%
Morocco	3.60%	9.40%
Namibia	3.00%	8.80%
Nigeria	4.88%	10.68%
Senegal	6.00%	11.80%
South Africa	2.25%	8.05%
Tunisia	3.00%	8.80%
Zambia	6.00%	11.80%
Africa	4.29%	10.09%

Albania	6.00%	11.80%
Armenia	4.13%	9.93%
Azerbaijan	3.00%	8.80%
Belarus	9.00%	14.80%
Bosnia & Herzegovina	9.00%	14.80%
Bulgaria	2.63%	8.43%
Croatia	3.00%	8.80%
Czech Republic	1.28%	7.08%
Estonia	1.28%	7.08%
Georgia	4.88%	10.68%
Hungary	3.60%	9.40%
Kazakhstan	2.63%	8.43%
Latvia	3.00%	8.80%
Lithuania	2.25%	8.05%
Moldova	9.00%	14.80%
Montenegro	4.88%	10.68%
Poland	1.50%	7.30%
Romania	3.00%	8.80%
Russia	2.25%	8.05%
Slovakia	1.50%	7.30%
Ukraine	9.00%	14.80%
E. Europe & Russia	2.68%	8.48%

Bahrain	2.25%	8.05%
Israel	1.28%	7.08%
Jordan	4.13%	9.93%
Kuwait	0.75%	6.55%
Lebanon	6.00%	11.80%
Oman	1.28%	7.08%
Qatar	0.75%	6.55%
Saudi Arabia	1.05%	6.85%
United Arab Emirates	0.75%	6.55%
Middle East	1.16%	6.96%

Bangladesh	4.88%	10.68%
Cambodia	7.50%	13.30%
China	1.05%	6.85%
Fiji Islands	6.00%	11.80%
Hong Kong	0.38%	6.18%
India	3.00%	8.80%
Indonesia	3.00%	8.80%
Japan	1.05%	6.85%
Korea	1.05%	6.85%
Macao	1.05%	6.85%
Malaysia	1.73%	7.53%
Mongolia	6.00%	11.80%
Pakistan	10.50%	16.30%
Papua New Guinea	6.00%	11.80%
Philippines	3.60%	9.40%
Singapore	0.00%	5.80%
Sri Lanka	6.00%	11.80%
Taiwan	1.05%	6.85%
Thailand	2.25%	8.05%
Vietnam	7.50%	13.30%
Asia	1.55%	7.35%

Australia	0.00%	5.80%
New Zealand	0.00%	5.80%
Australia & NZ	0.00%	5.80%

Black #: Total ERP
Red #: Country risk premium
AVG: GDP weighted average

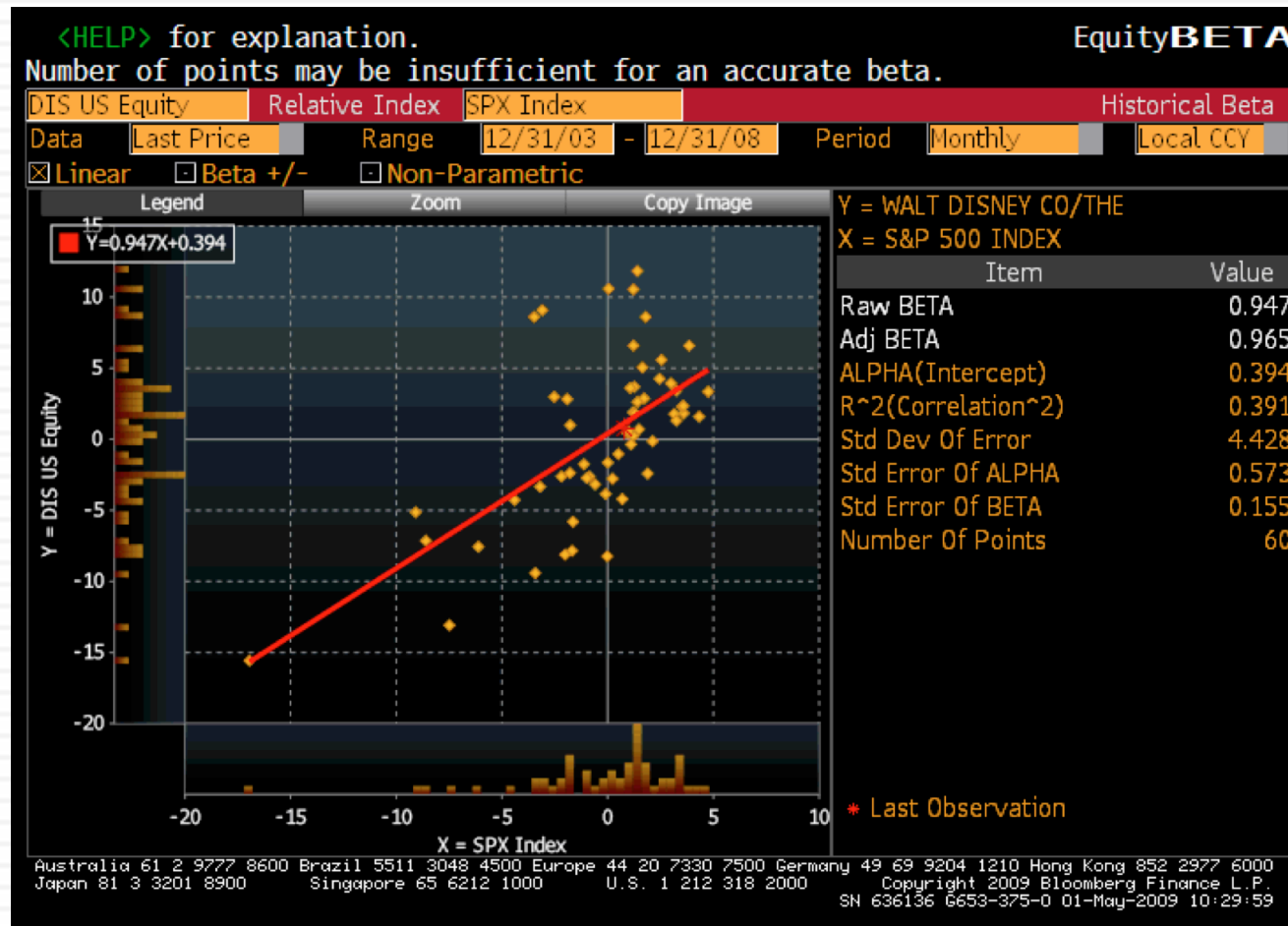
Extending to a multinational: Regional breakdown Coca Cola's revenue breakdown and ERP in 2012

<i>Region</i>	<i>Revenues</i>	<i>Total ERP</i>	<i>CRP</i>
Western Europe	19%	6.67%	0.67%
Eastern Europe & Russia	5%	8.60%	2.60%
Asia	15%	7.63%	1.63%
Latin America	15%	9.42%	3.42%
Australia	4%	6.00%	0.00%
Africa	4%	9.82%	3.82%
North America	40%	6.00%	0.00%
Coca Cola	100%	7.14%	1.14%

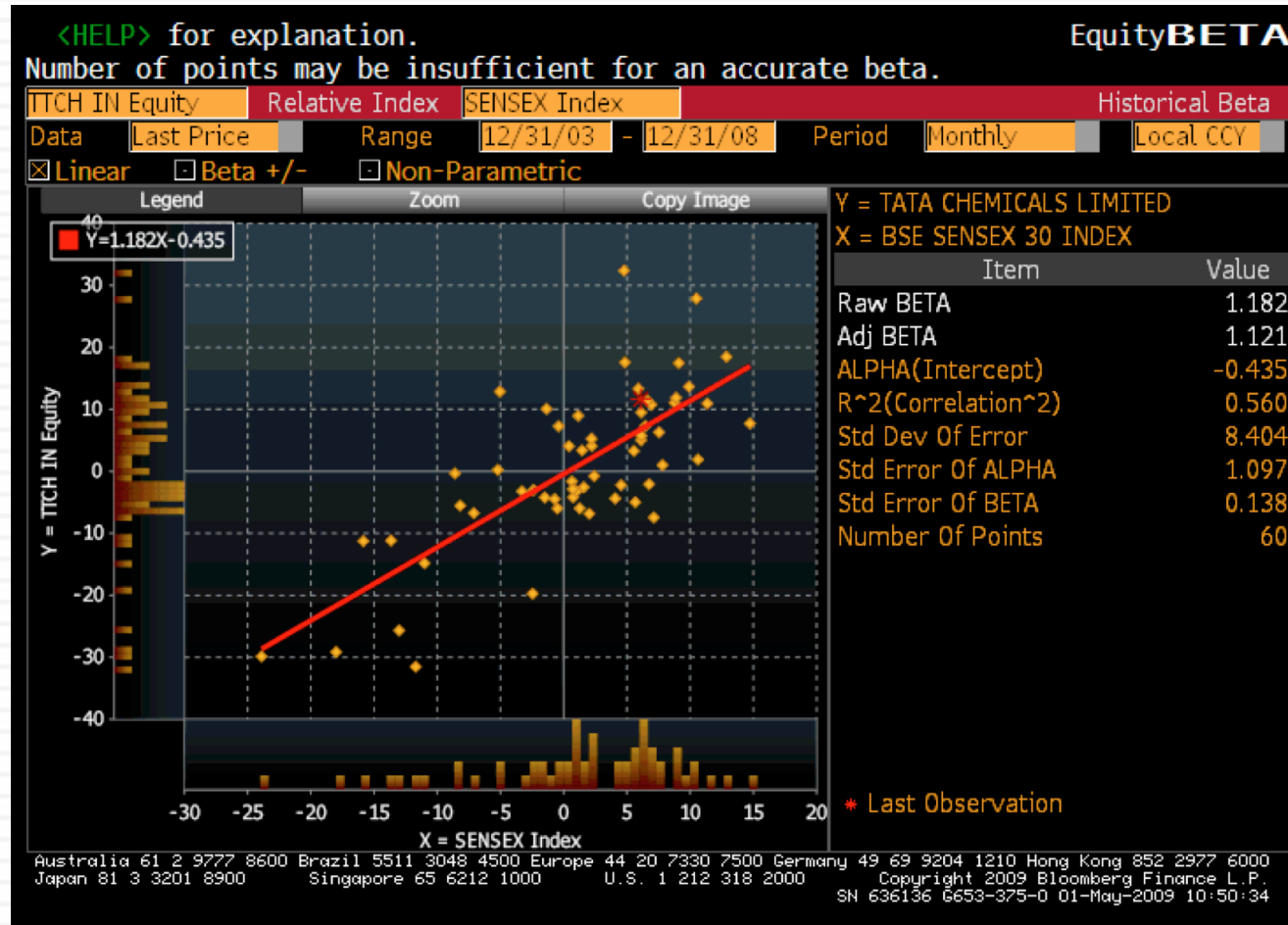
Things to watch out for

1. Aggregation across regions. For instance, the Pacific region often includes Australia & NZ with Asia
2. Obscure aggregations including Eurasia and Oceania

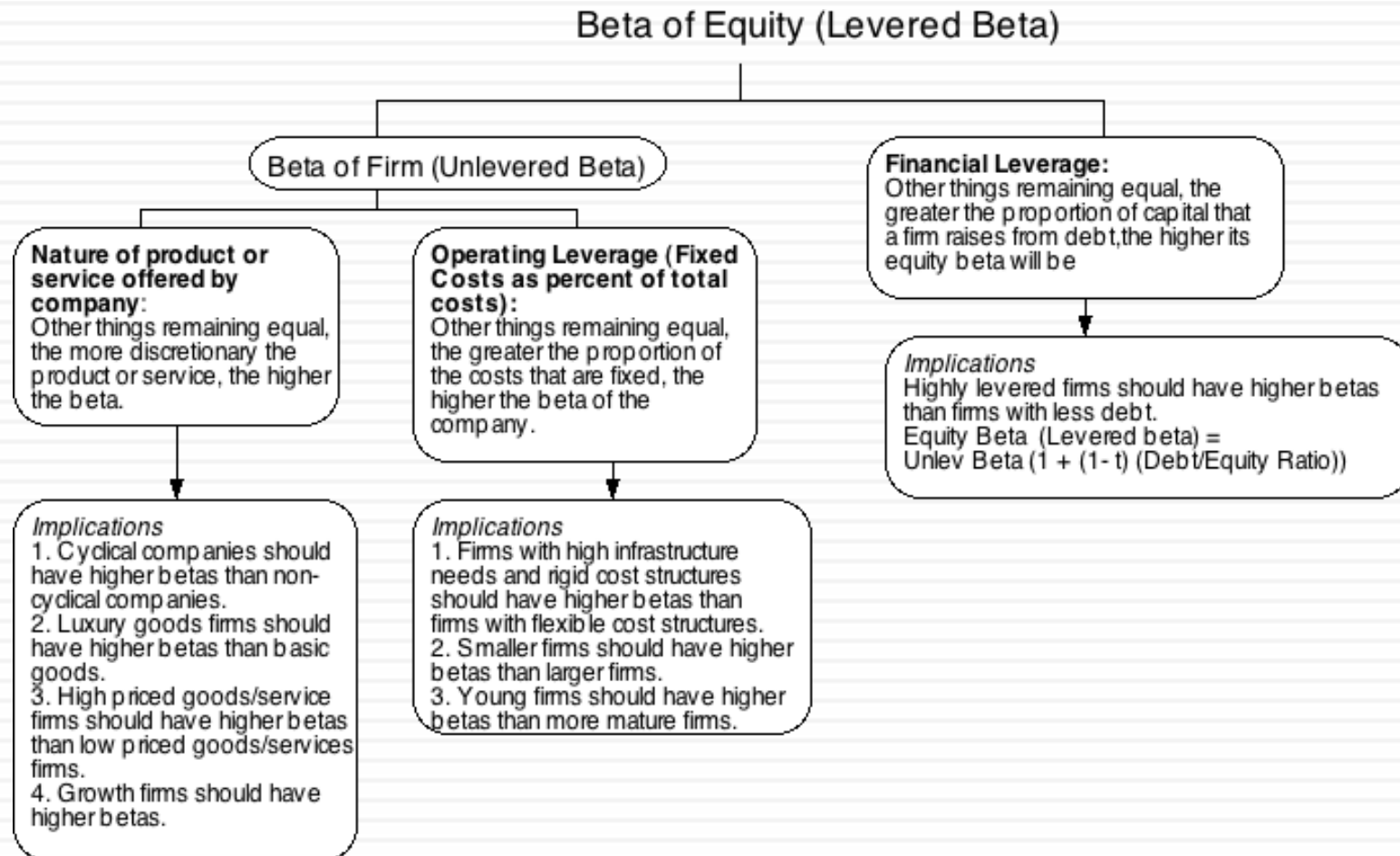
Estimating Beta: The Regression Approach



And another regression...



Determinants of Betas



Bottom up beta for Disney

- Disney is in four businesses, and we estimate the beta of each

Business	Revenues in 2008	EV/Sales	Estimated Value	Firm Value Proportion	Unlevered beta
Media Networks	\$16,116	2.13	\$34,327.78	58.92%	0.7056
Parks and Resorts	\$11,504	1.51	\$17,408.14	29.88%	0.5849
Studio Entertainment	\$7,348	0.78	\$5,754.86	9.88%	1.3027
Consumer Products	\$2,875	0.27	\$768.20	1.32%	1.0690
Disney	\$37,843		\$58,258.99	100.00%	0.7333

- Step 1: Start with Disney's revenues by business.
- Step 2: Estimate the value as a multiple of revenues by looking at what the market value of publicly traded firms in each business is, relative to revenues.

$$\frac{\text{Mkt Equity} + \text{Debt} - \text{Cash}}{\text{Revenues}}$$

$$\text{EV/Sales} =$$

- Step 3: Multiply the revenues in step 1 by the industry average multiple in step 2 to get the estimated value, by business.

Disney's Cost of Equity

□ Step 1: Allocate debt across businesses

Business	Start with this(1) Estimated Value	From comparable firms(2) D/E Ratio of comps	Estimated debt	As % (3) Proportions	Adjust to Disney's debt (3)*16,682 Allocated Debt	EV - Allocated Debt Estimated Equity	Allocated Debt/ Estimated Equity D/E Ratio
Media Networks	\$34,328	38.71%	\$9,581	51.44%	\$8,582	\$25,746	33.33%
Parks and Resorts	\$17,408	65.10%	\$6,864	36.86%	\$6,148	\$11,260	54.61%
Studio Entertainment	\$5,755	53.89%	\$2,015	10.82%	\$1,805	\$3,950	45.70%
Consumer Products	\$768	27.21%	\$164	0.88%	\$147	\$621	23.70%
For example.			\$18,624	100.00%	\$16,682		
Media Networks	\$34,328	38.71%	$34,328 * (.3871/1.3871)$	$9581/18624$	$.5144 * 16,682$	$34328 - 8582$	$8582/25746$

□ Step 2: Compute levered betas and costs of equity for Disney's operating businesses.

Business	Unlevered Beta	D/E Ratio	Levered Beta	Cost of Equity
Media Networks	0.7056	33.33%	0.8514	8.61%
Parks and Resorts	0.5849	54.61%	0.7829	8.20%
Studio Entertainment	1.3027	45.70%	1.6718	13.53%
Consumer Products	1.0690	23.70%	1.2261	10.86%
Disney	0.7333	36.91%	0.9011	8.91%

□ Step 2a: Compute the cost of equity for all of Disney's assets:

- Equity Beta_{Disney as company} = $0.6885 (1 + (1 - 0.38)(0.3691)) = 0.8460$

Riskfree Rate = 3.5%

Risk Premium = 6%

Discussion Issue

- Assume now that you are the CFO of Disney. The head of the movie business has come to you with a new big budget movie that he would like you to fund. He claims that his analysis of the movie indicates that it will generate a return on equity of 12%. Would you fund it?
 - a. Yes. It is higher than the cost of equity for Disney as a company
 - b. No. It is lower than the cost of equity for the movie business.
 - c. What are the broader implications of your choice?

The bottom up beta for Tata Chemicals

Business(# of comparables)	Revenues (millions)	EV/Sales (from comparable firms)	Estimated Value (millions)	Weights	Unlevered Beta	D/E Ratio	Levered Beta
Fertilizers (105)	INR 2,506	1.28	INR 3,208	62.18%	0.72	51.56%	0.965
Chemicals (31)	INR 1,586	1.23	INR 1,951	37.82%	0.68	51.56%	0.911
Tata Chemicals			INR 5,158		0.70		0.945

- Rupee Riskfree rate =4%; Indian ERP = 6% + 4.51%

Business	Beta	Cost of equity
Fertilizers	0.965	4%+ 0.965 (10.51%) = 14.14%
Chemicals	0.911	4%+ 0.911(10.51%) = 13.58%
Tata Chemicals	0.945	4%+ 0.945 (10.51%) = 13.93%

Estimating the Cost of Debt

- If the firm has bonds outstanding, and the bonds are traded, the yield to maturity on a long-term, straight (no special features) bond can be used as the interest rate.
- If the firm is rated, use the rating and a typical default spread on bonds with that rating to estimate the cost of debt.
- If the firm is not rated,
 - and it has recently borrowed long term from a bank, use the interest rate on the borrowing or
 - estimate a synthetic rating for the company, and use the synthetic rating to arrive at a default spread and a cost of debt
- The cost of debt has to be estimated in the same currency as the cost of equity and the cash flows in the valuation.

Estimating Synthetic Ratings

- The rating for a firm can be estimated using the financial characteristics of the firm. In its simplest form, we can use just the interest coverage ratio:
- Interest Coverage Ratio = $\text{EBIT} / \text{Interest Expenses}$
- For Disney and Tata Chemicals, we obtain the following:
 - Disney = $\text{Operating Income} / \text{Interest Expense} = 6819 / 821 = 8.3$
 - Tata Chemicals = $\text{Operating Income} / \text{Interest expense} = 6,263 / 1215 = 5.15$

Interest Coverage Ratios, Ratings and Default Spreads- Early 2009

<i>Interest Coverage Ratio: Small market cap (<\$5 billion)</i>	<i>Interest Coverage Ratio: Large market cap (>US \$ 5 billion)</i>	<i>Rating</i>	<i>Typical Default</i>
> 12.5	>8.5	AAA	1.25%
9.50–12.50	6.5-8.5	AA	1.75%
7.50–9.50	5.5-6.5	A+	2.25%
6.00–7.50	4.25- 5.5	A	2.50%
4.50–6.00	3- 4.25	A–	3.00%
4.00-4.50	2.5-3.0	BBB	3.50%
3.50–4.00	2.25-2.5	BB+	4.25%
3.00–3.50	2.0-2.25	BB	5.00%
2.50–3.00	1.75-2.0	B+	6.00%
2.00–2.50	1.5-1.75	B	7.25%
1.50–2.00	1.25-1.5	B–	8.50%
1.25–1.50	0.8-1.25	CCC	10.00%
0.80–1.25	0.65-0.8	CC	12.00%
0.50–0.80	0.2-0.65	C	15.00%
< 0.65	<0.2	D	20.00%

Disney's actual rating is A and the default spread is 2.5%.

Disney, Market Cap > \$ 5 billion: 8.31 → AA
 Tata: Market Cap < \$ 5 billion: 5.15 → A-

Current Cost of Capital: Disney

□ Equity

- Cost of Equity = Riskfree rate + Beta * Risk Premium
= 3.5% + 0.9011 (6%) = 8.91%

- Market Value of Equity = \$45.193 Billion

- Equity/(Debt+Equity) = 73.04%

□ Debt

- After-tax Cost of debt = (Risk free rate + Default Spread) (1-t)


- = (3.5%+2.5%) (1-.38) = 3.72%

- Market Value of Debt = \$ 16.682 Billion

- Debt/(Debt +Equity) = 26.96%

- Cost of Capital = 8.91%(.7304)+3.72%(.2696) = 7.51%

45.193/ (45.193+16.682)



Divisional Costs of Capital: Disney and Tata Chemicals

□ Disney

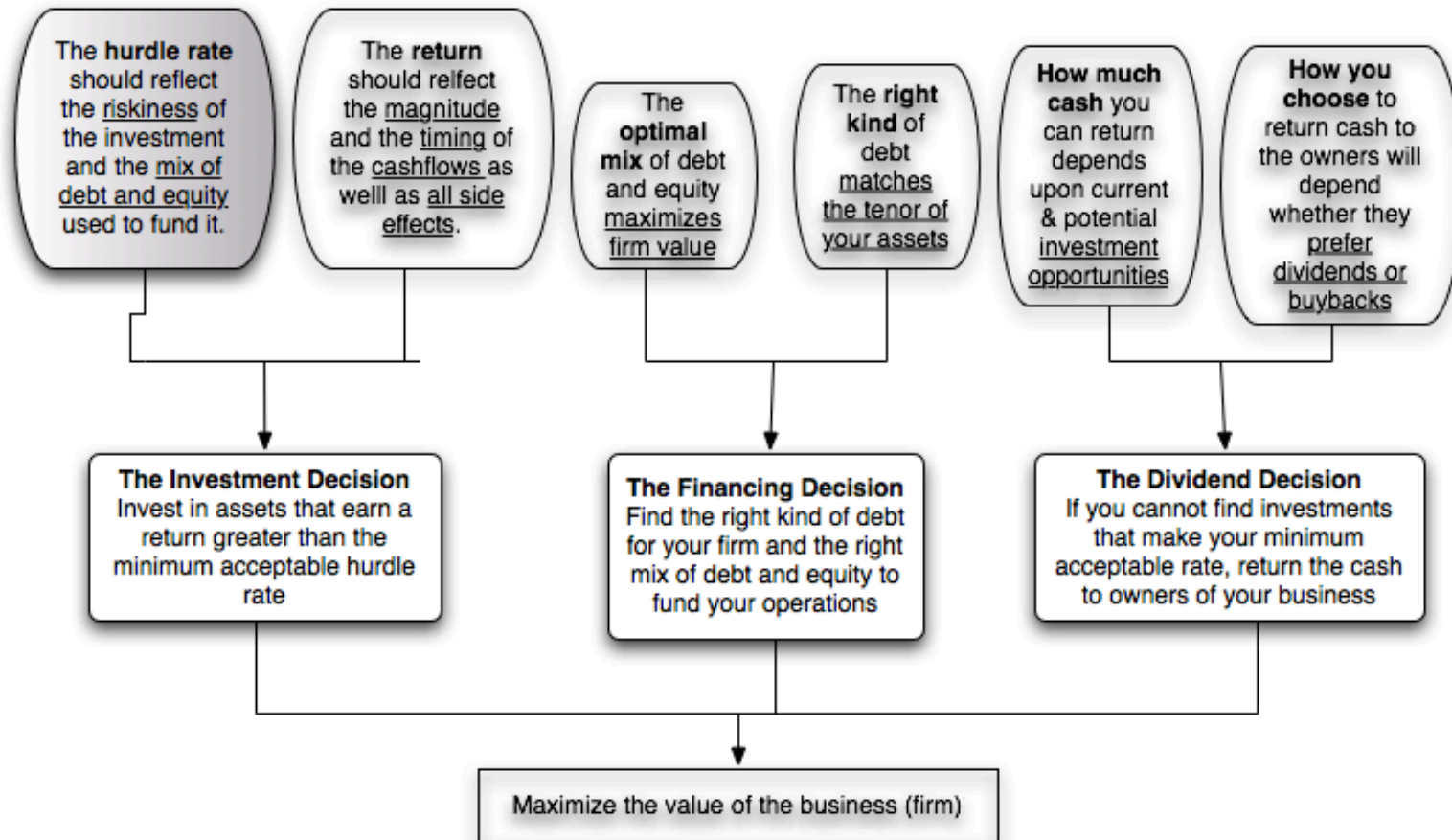
Business	Cost of Equity	After-tax cost of debt	E/(D+E)	D/(D+E)	Cost of capital
Media Networks	8.61%	3.72%	75.00%	25.00%	7.39%
Parks and Resorts	8.20%	3.72%	64.68%	35.32%	6.62%
Studio Entertainment	13.53%	3.72%	68.64%	31.36%	10.45%
Consumer Products	10.86%	3.72%	80.84%	19.16%	9.49%
Disney	8.91%	3.72%	73.04%	26.96%	7.51%

Tata Chemicals

Business	Cost of equity	Pre-tax cost of debt	After-tax cost of debt	D/(D+E)	Cost of capital
Fertilizers	14.14%	10.0%	6.60%	34.02%	11.58%
Chemicals	13.58%	10.0%	6.60%	34.02%	11.21%
Tata Chemicals	13.93%	10.0%	6.60%	34.02%	11.44%

Back to First Principles

Chapters 3 & 4: Risk, Financing Mix and Hurdle Rates



Measuring Returns Right: The Basic Principles

- Use cash flows rather than earnings. You cannot spend earnings.
- Use “incremental” cash flows relating to the investment decision, i.e., cashflows that occur as a consequence of the decision, rather than total cash flows.
- Use “time weighted” returns, i.e., value cash flows that occur earlier more than cash flows that occur later.

The Return Mantra: “Time-weighted, Incremental Cash Flow Return”

Earnings versus Cash Flows: A Disney Theme Park

- The theme parks to be built near Rio, modeled on Euro Disney in Paris and Disney World in Orlando.
- The complex will include a “Magic Kingdom” to be constructed, beginning immediately, and becoming operational at the beginning of the second year, and a second theme park modeled on Epcot Center at Orlando to be constructed in the second and third year and becoming operational at the beginning of the fourth year.
- The earnings and cash flows are estimated in nominal U.S. Dollars.

Step 1: Estimate Accounting Earnings on Project

	0	1	2	3	4	5	6	7	8	9	10
Magic Kingdom - Revenues		\$0	\$1,000	\$1,400	\$1,700	\$2,000	\$2,200	\$2,420	\$2,662	\$2,928	\$2,987
Epcot Rio - Revenues		\$0	\$0	\$0	\$300	\$500	\$550	\$605	\$666	\$732	\$747
Resort & Properties - Revenues		\$0	\$250	\$350	\$500	\$625	\$688	\$756	\$832	\$915	\$933
Total Revenues			\$1,250	\$1,750	\$2,500	\$3,125	\$3,438	\$3,781	\$4,159	\$4,575	\$4,667
Magic Kingdom – Direct Expenses		\$0	\$600	\$840	\$1,020	\$1,200	\$1,320	\$1,452	\$1,597	\$1,757	\$1,792
Epcot Rio – Direct Expenses		\$0	\$0	\$0	\$180	\$300	\$330	\$363	\$399	\$439	\$448
Resort & Property – Direct Expenses		\$0	\$188	\$263	\$375	\$469	\$516	\$567	\$624	\$686	\$700
Total Direct Expenses			\$788	\$1,103	\$1,575	\$1,969	\$2,166	\$2,382	\$2,620	\$2,882	\$2,940
Depreciation & Amortization		\$50	\$425	\$469	\$444	\$372	\$367	\$364	\$364	\$366	\$368
Allocated G&A Costs		\$0	\$188	\$263	\$375	\$469	\$516	\$567	\$624	\$686	\$700
Operating Income		(\$50)	(\$150)	(\$84)	\$106	\$315	\$389	\$467	\$551	\$641	\$658
Taxes		(\$19)	(\$57)	(\$32)	\$40	\$120	\$148	\$178	\$209	\$244	\$250
Operating Income after Taxes		(\$31)	(\$93)	(\$52)	\$66	\$196	\$241	\$290	\$341	\$397	\$408

Direct expenses: 60% of revenues for theme parks, 75% of revenues for resort properties

Allocated G&A: Company G&A allocated to project, based on projected revenues. Two thirds of expense is fixed, rest is variable.

Taxes: Based on marginal tax rate of 38%

And the Accounting View of Return

Year	After-tax Operating Income	Book value of				Average BV of Capital	ROC (a)	ROC (b)
		Pre-project investment	Fixed assets	Working capital	Total Capital			
0		\$500	\$2,000	\$0	\$2,500		NA	NA
1	-\$31	\$450	\$3,000	\$0	\$3,450	\$2,975	-1.04%	-1.24%
2	-\$93	\$400	\$3,813	\$63	\$4,275	\$3,863	-2.41%	-2.70%
3	-\$52	\$350	\$4,145	\$88	\$4,582	\$4,429	-1.18%	-1.22%
4	\$66	\$300	\$4,027	\$125	\$4,452	\$4,517	1.46%	1.44%
5	\$196	\$250	\$3,962	\$156	\$4,368	\$4,410	4.43%	4.39%
6	\$241	\$200	\$3,931	\$172	\$4,302	\$4,335	5.57%	5.52%
7	\$290	\$150	\$3,931	\$189	\$4,270	\$4,286	6.76%	6.74%
8	\$341	\$100	\$3,946	\$208	\$4,254	\$4,262	8.01%	8.00%
9	\$397	\$50	\$3,978	\$229	\$4,257	\$4,255	9.34%	9.34%
10	\$408	\$0	\$4,010	\$233	\$4,243	\$4,250	9.61%	9.59%
Average							4.05%	3.99%

(a) Based upon book capital at the start of each year

(b) Based upon average book capital over the year

Estimating a hurdle rate for Rio Disney

- We did estimate a cost of capital of 6.62% for the Disney theme park business, using a bottom-up levered beta of 0.7829 for the business.
- This cost of equity may not adequately reflect the additional risk associated with the theme park being in an emerging market.
- The only concern we would have with using this cost of equity for this project is that it may not adequately reflect the additional risk associated with the theme park being in an emerging market (Brazil).
- Country risk premium for Brazil = $2.50\% (34/21.5) = 3.95\%$
- Cost of Equity in US\$ = $3.5\% + 0.7829 (6\% + 3.95\%) = 11.29\%$
 - We multiplied the default spread for Brazil (2.50%) by the relative volatility of Brazil's equity index to the Brazilian government bond. (34%/21.5%)
- Using this estimate of the cost of equity, Disney's theme park debt ratio of 35.32% and its after-tax cost of debt of 3.72% (see chapter 4), we can estimate the cost of capital for the project:
 - Cost of Capital in US\$ = $11.29\% (0.6468) + 3.72\% (0.3532) = 8.62\%$

The cash flow view of this project..

	0	1	2	3	4	5	6	7	8	9	10
Operating Income		-\$50	-\$150	-\$84	\$106	\$315	\$389	\$467	\$551	\$641	\$658
Taxes		-\$19	-\$57	-\$32	\$40	\$120	\$148	\$178	\$209	\$244	\$250
Operating Income after Taxes		-\$31	-\$93	-\$52	\$66	\$196	\$241	\$290	\$341	\$397	\$408
+ Depreciation & Amortization		\$50	\$425	\$469	\$444	\$372	\$367	\$364	\$364	\$366	\$368
- Capital Expenditures	\$2,500	\$1,000	\$1,188	\$752	\$276	\$258	\$285	\$314	\$330	\$347	\$350
- Change in Working Capital	\$0	\$0	\$63	\$25	\$38	\$31	\$16	\$17	\$19	\$21	\$5
Cash flow to Firm	-\$2,500	-\$981	-\$918	-\$360	\$196	\$279	\$307	\$323	\$357	\$395	\$422

To get from income to cash flow, we

- added back all non-cash charges such as depreciation. Tax benefits:

	1	2	3	4	5	6	7	8	9	10
Depreciation	\$50	\$425	\$469	\$444	\$372	\$367	\$364	\$364	\$366	\$368
Depreciaton * t	\$19	\$162	\$178	\$169	\$141	\$139	\$138	\$138	\$139	\$140

- subtracted out the capital expenditures
- subtracted out the change in non-cash working capital

The incremental cash flows on the project

\$ 500 million
has already
been spent &
\$ 50 million
in
depreciation
will exist
anyway

	0	1	2	3	4	5	6	7	8	9	10
Operating Income		-\$50	-\$150	-\$84	\$106	\$315	\$389	\$467	\$551	\$641	\$658
Taxes		-\$19	-\$57	-\$32	\$40	\$120	\$148	\$178	\$209	\$244	\$250
Operating Income after Taxes		-\$31	-\$93	-\$52	\$66	\$196	\$241	\$290	\$341	\$397	\$408
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- Change in Working Capital	\$0	\$0	\$63	\$25	\$38	\$31	\$16	\$17	\$19	\$21	\$5
Cash flow to Firm	-\$2,500	-\$981	-\$918	-\$360	\$196	\$279	\$307	\$323	\$357	\$395	\$422
+ Pre-Project Investment	500										
- Pre-project Deprecn * t		\$19	\$19	\$19	\$19	\$19	\$19	\$19	\$19	\$19	\$19
+ Fixed G&A (1-t)		\$0	\$78	\$109	\$155	\$194	\$213	\$234	\$258	\$284	\$289
Incremental Cash flow to Firm	-\$2,000	-\$1,000	-\$859	-\$270	\$332	\$454	\$501	\$538	\$596	\$660	\$692

2/3rd of allocated G&A is fixed.

Add back this amount (1-t)

Tax rate = 38%

Closure on Cash Flows

- In a project with a finite and short life, you would need to compute a salvage value, which is the expected proceeds from selling all of the investment in the project at the end of the project life. It is usually set equal to book value of fixed assets and working capital
- In a project with an infinite or very long life, we compute cash flows for a reasonable period, and then compute a terminal value for this project, which is the present value of all cash flows that occur after the estimation period ends..
- Assuming the project lasts forever, and that cash flows after year 10 grow 2% (the inflation rate) forever, the present value at the end of year 10 of cash flows after that can be written as:
Terminal Value in year 10 = $CF \text{ in year 11} / (\text{Cost of Capital} - \text{Growth Rate})$
 $= 692 (1.02) / (.0862 - .02) = \$ 10,669 \text{ million}$

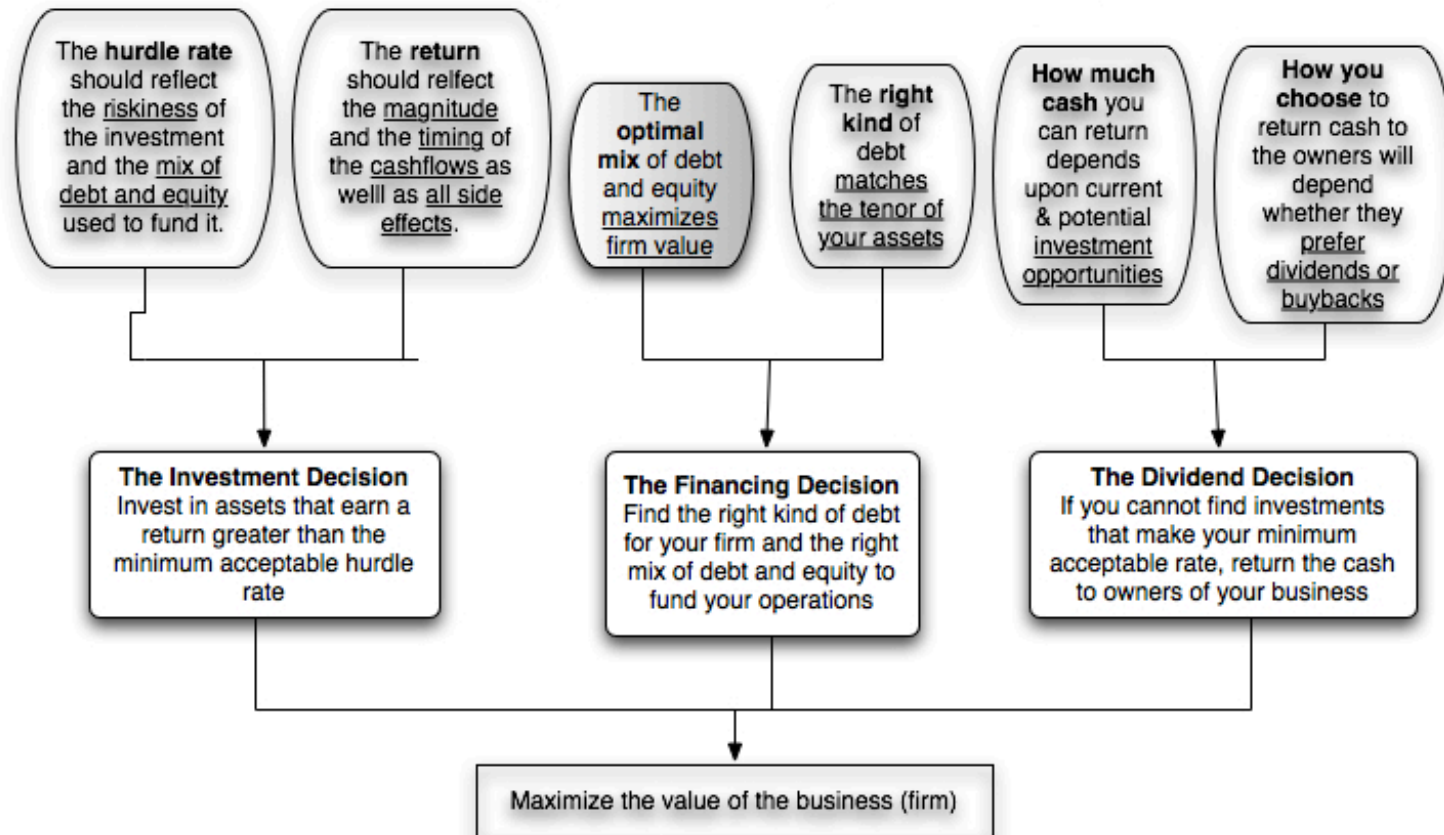
Which yields a NPV of..

Year	Annual Cashflow	Terminal Value	Present Value
0	-\$2,000		-\$2,000
1	-\$1,000		-\$921
2	-\$860		-\$729
3	-\$270		-\$211
4	\$332		\$239
5	\$453		\$300
6	\$502		\$305
7	\$538		\$302
8	\$596		\$307
9	\$660		\$313
10	\$692	\$10,669	\$4,970
Net Present Value =			\$2,877

Discounted at Rio
Disney cost of
capital of 8.62%

First Principles

Chapters 7 & 8: Financing Choices and an Optimal Mix



Debt: Summarizing the trade off

<i>Advantages of Debt</i>	<i>Disadvantages of debt</i>
<p>1. Tax Benefit: Interest expenses on debt are tax deductible but cash flows to equity are generally not. <i>Implication: The higher the marginal tax rate, the greater the benefits of debt.</i></p>	<p>1. Expected Bankruptcy Cost: The expected cost of going bankrupt is a product of the probability of going bankrupt and the cost of going bankrupt. The latter includes both direct and indirect costs. The probability of going bankrupt will be higher in businesses with more volatile earnings and the cost of bankruptcy will also vary across businesses. <i>Implication:</i> <ol style="list-style-type: none"> <i>1. Firms with more stable earnings should borrow more, for any given level of earnings.</i> <i>2. Firms with lower bankruptcy costs should borrow more, for any given level of earnings.</i> </p>
<p>2. Added Discipline: Borrowing money may force managers to think about the consequences of the investment decisions a little more carefully and reduce bad investments. <i>Implication: As the separation between managers and stockholders increases, the benefits to using debt will go up.</i></p>	<p>2. Agency Costs: Actions that benefit equity investors may hurt lenders. The greater the potential for this conflict of interest, the greater the cost borne by the borrower (as higher interest rates or more covenants). <i>Implication: Firms where lenders can monitor/ control how their money is being used should be able to borrow more than firms where this is difficult to do.</i></p>
	<p>3. Loss of flexibility: Using up available debt capacity today will mean that you cannot draw on it in the future. This loss of flexibility can be disastrous if funds are needed and access to capital is shut off. <i>Implication:</i> <ol style="list-style-type: none"> <i>1. Firms that can forecast future funding needs better should be able to borrow more.</i> <i>2. Firms with better access to capital markets should be more willing to borrow more today.</i> </p>

Mechanics of Cost of Capital Estimation

1. Estimate the Cost of Equity at different levels of debt:

Equity will become riskier -> Beta will increase -> Cost of Equity will increase.

Estimation will use levered beta calculation

2. Estimate the Cost of Debt at different levels of debt:

Default risk will go up and bond ratings will go down as debt goes up -> Cost of Debt will increase.

To estimating bond ratings, we will use the interest coverage ratio (EBIT/Interest expense)

3. Estimate the Cost of Capital at different levels of debt

4. Calculate the effect on Firm Value and Stock Price.

Finding an optimal mix: Disney's cost of capital schedule...

Debt Ratio	Beta	Cost of Equity	Cost of Debt (after-tax)	Cost of capital
0%	0.73	7.90%	2.95%	7.90%
10%	0.78	8.20%	2.95%	7.68%
20%	0.85	8.58%	2.95%	7.45%
30%	0.93	9.07%	3.26%	7.32%
40%	1.04	9.72%	3.72%	7.32%
50%	1.19	10.63%	4.03%	7.33%
60%	1.42	11.99%	4.34%	7.40%
70%	1.79	14.26%	7.44%	9.49%
80%	2.55	18.81%	8.37%	10.46%
90%	5.05	33.83%	8.84%	11.34%

Extension to a family group company: Tata Chemical's Optimal Capital Structure

Actual

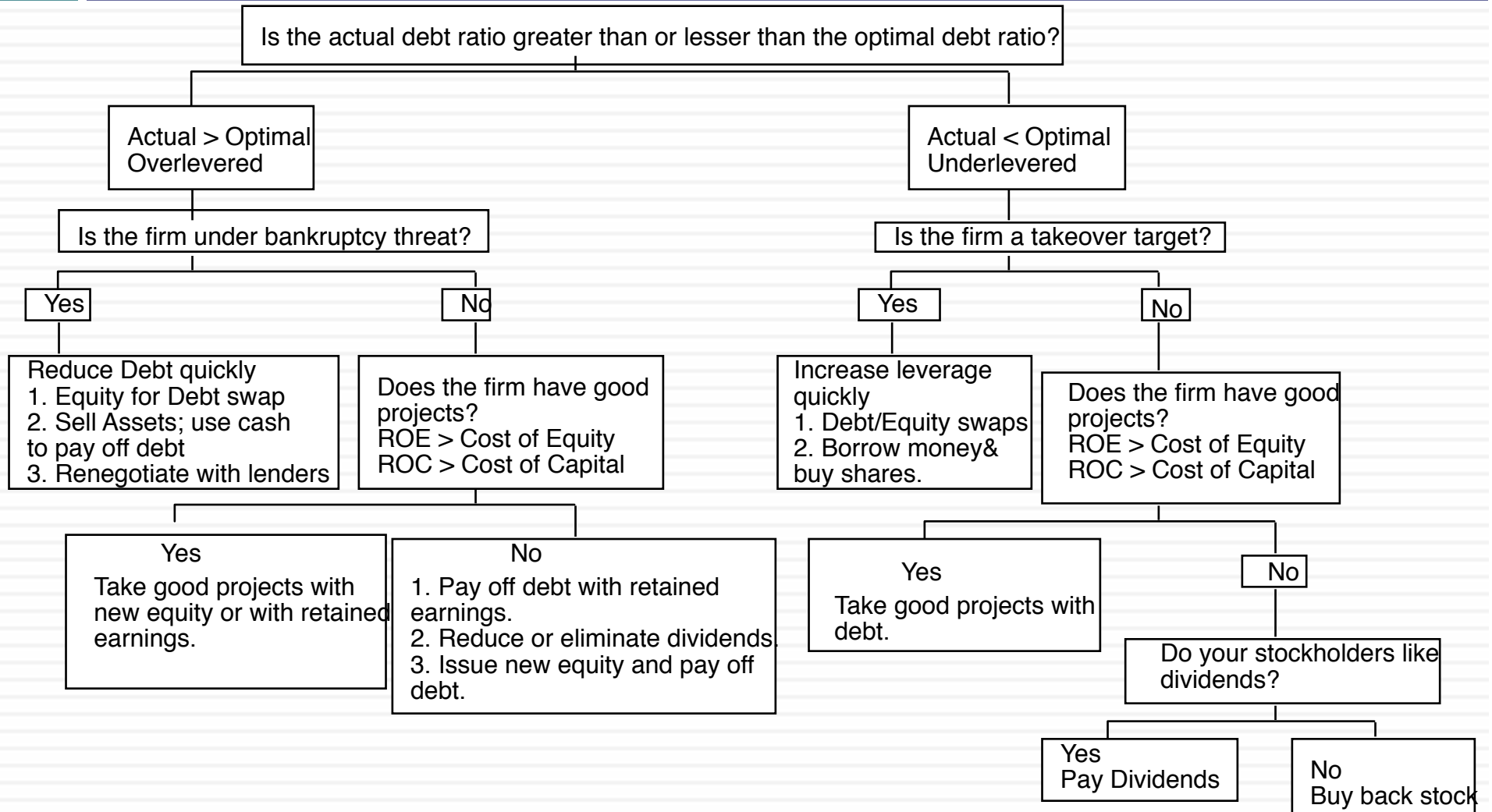
Business	Cost of equity	Pre-tax cost of debt	After-tax cost of debt	D/(D+E)	Cost of capital
Fertilizers	14.14%	10.0%	6.60%	34.02%	11.58%
Chemicals	13.58%	10.0%	6.60%	34.02%	11.21%
Tata Chemicals	13.93%	10.0%	6.60%	34.02%	11.44%

Optimal

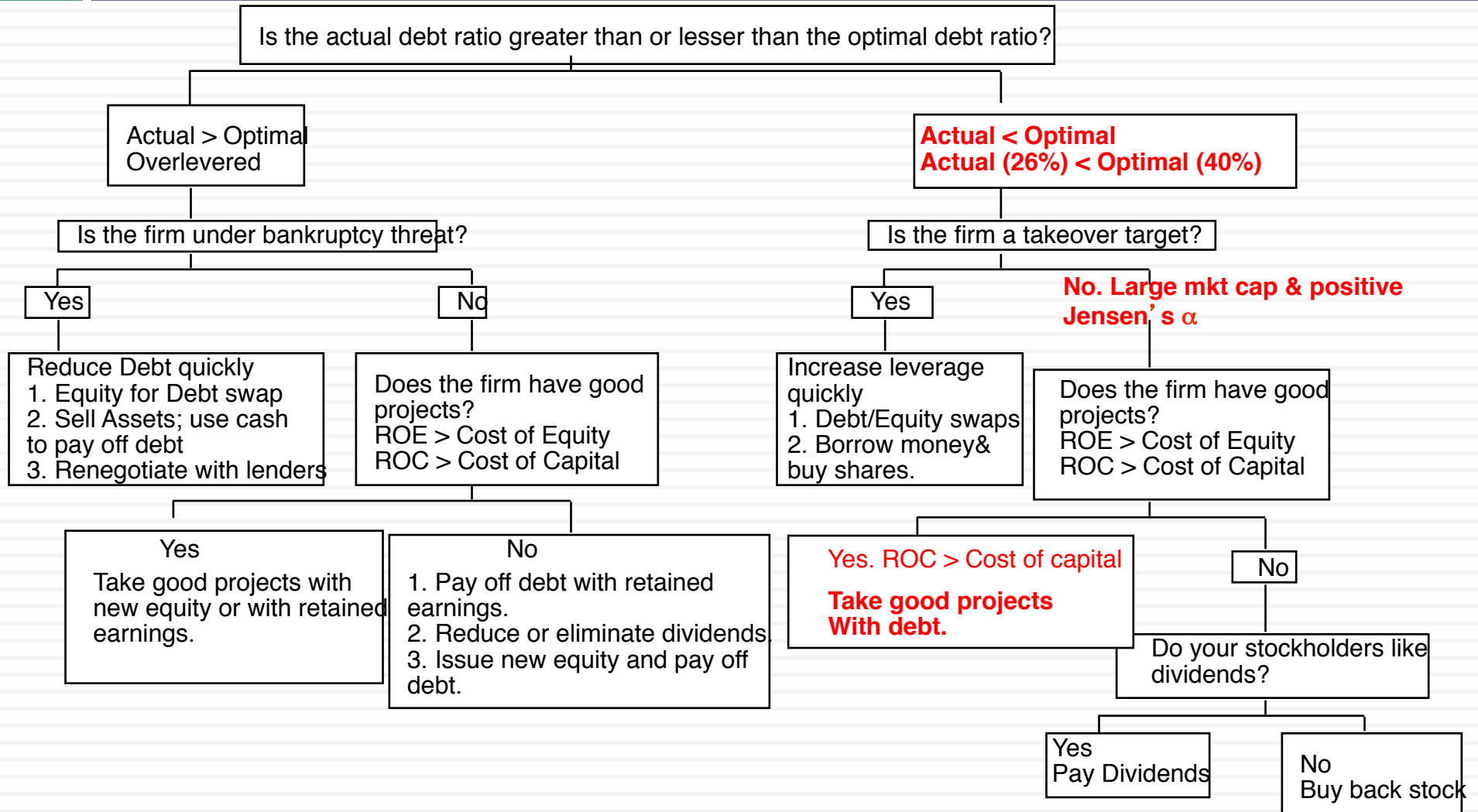
Debt Ratio	Beta	Cost of Equity	Bond Rating	Interest rate on debt	Tax Rate	Cost of Debt (after-tax)	WACC	Firm Value (G)
0%	0.70	11.39%	AAA	8.25%	33.99%	5.45%	11.39%	Rs 79,626
10%	0.75	11.93%	A+	9.25%	33.99%	6.11%	11.35%	Rs 80,084
20%	0.82	12.61%	BB	12.00%	33.99%	7.92%	11.67%	Rs 76,586
30%	0.90	13.48%	B-	15.50%	33.99%	10.23%	12.51%	Rs 68,768
40%	1.01	14.64%	CC	19.00%	33.99%	12.54%	13.80%	Rs 59,257
50%	1.23	16.98%	C	22.00%	24.43%	16.63%	16.80%	Rs 44,637
60%	1.58	20.64%	D	27.00%	16.59%	22.52%	21.77%	Rs 31,272
70%	2.11	26.19%	D	27.00%	14.22%	23.16%	24.07%	Rs 27,325
80%	3.17	37.28%	D	27.00%	12.44%	23.64%	26.37%	Rs 24,189
90%	6.33	70.56%	D	27.00%	11.06%	24.01%	28.67%	Rs 21,638

Tata Chemical looks like it is over levered (34% actual versus 10% optimal), but it is tough to tell without looking at the rest of the group.

A Framework for Getting to the Optimal

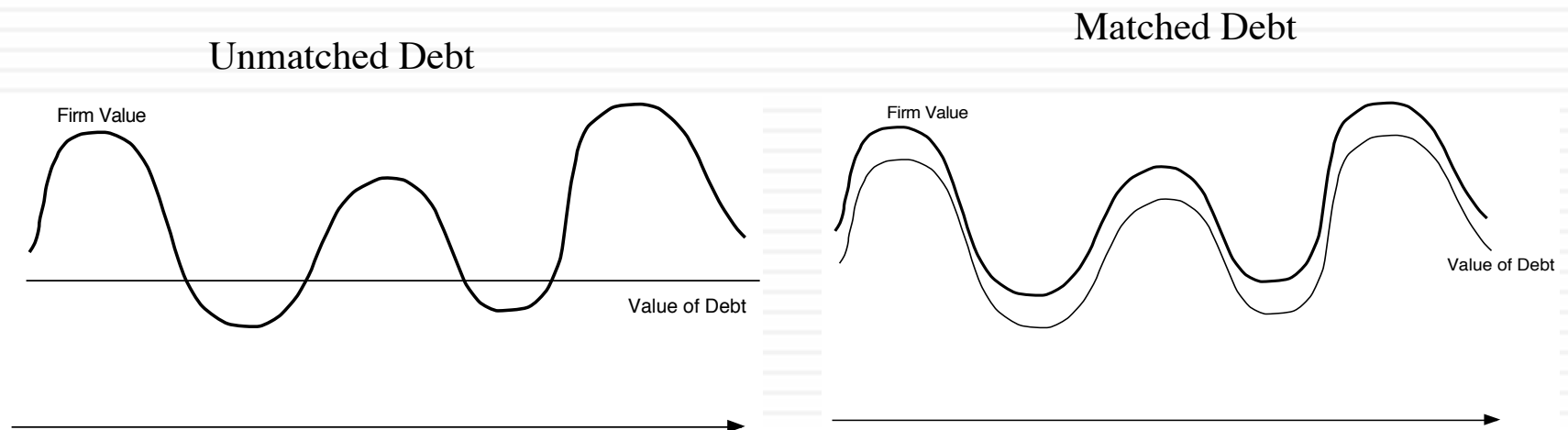


Disney: Applying the Framework

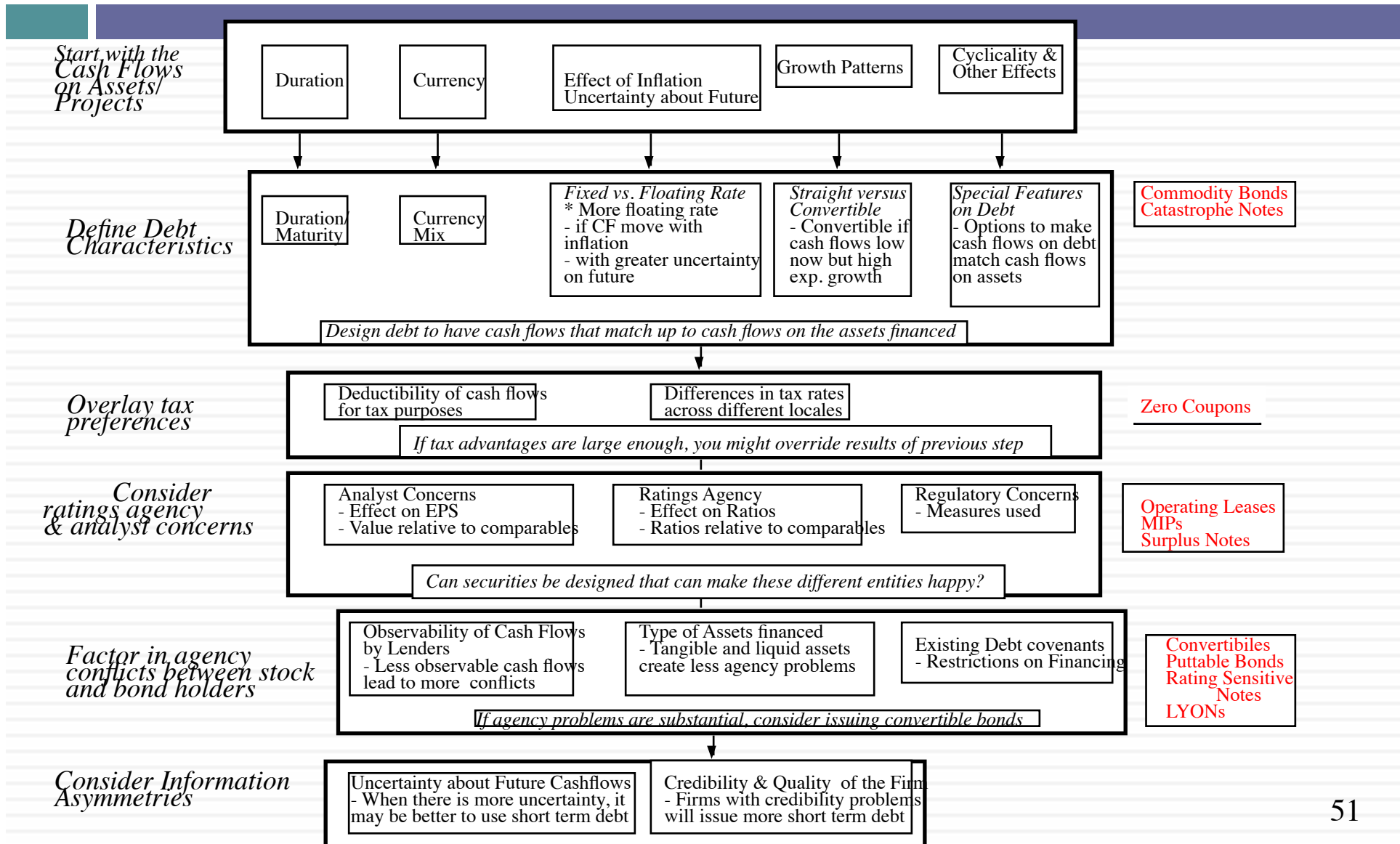


Designing Debt: The Fundamental Principle

- The objective in designing debt is to make the cash flows on debt match up as closely as possible with the cash flows that the firm makes on its assets.
- By doing so, we reduce our risk of default, increase debt capacity and increase firm value.



Designing Debt: Bringing it all together



Designing Disney's Debt

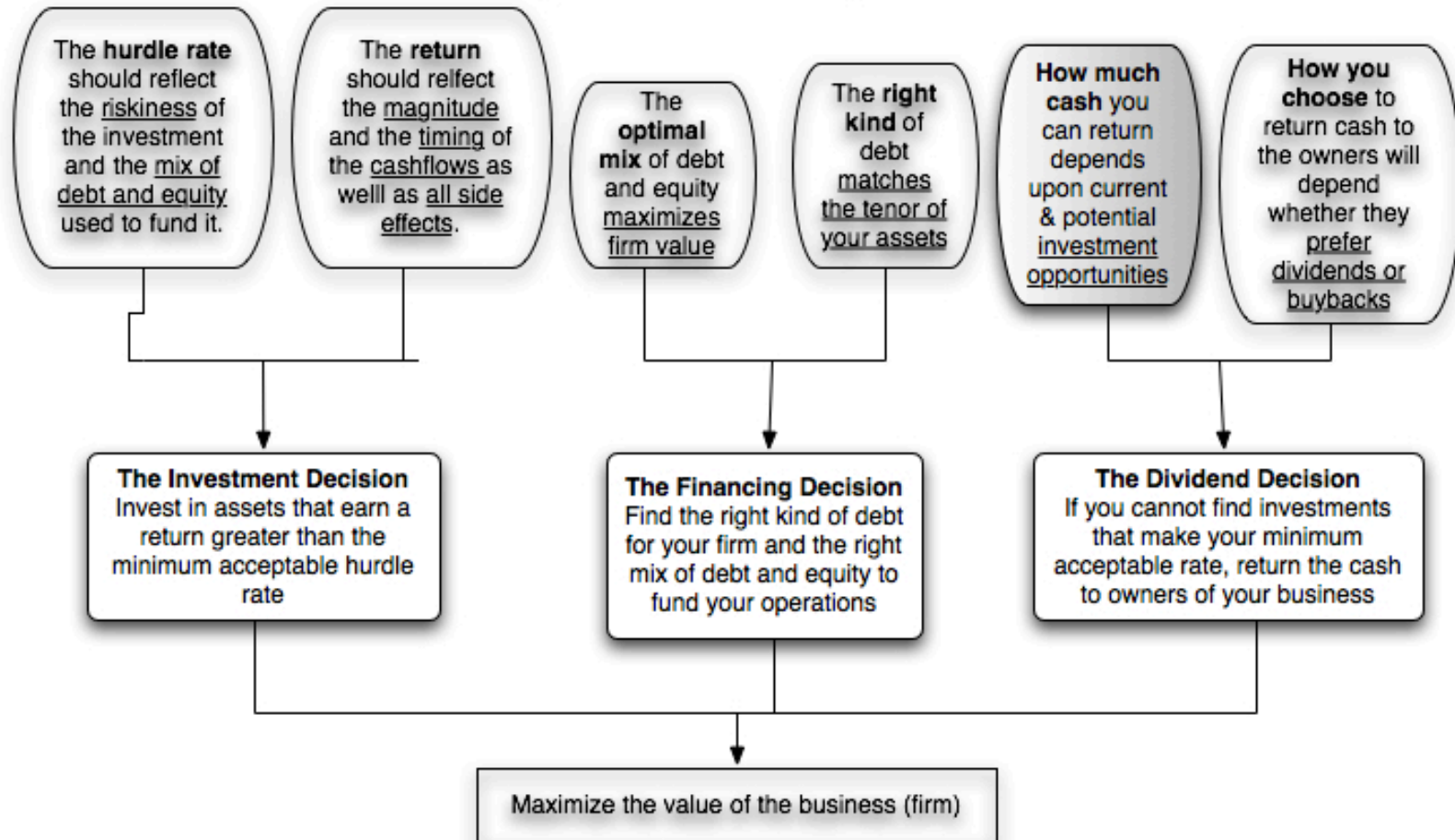
<i>Business</i>	<i>Project Cash Flow Characteristics</i>	<i>Type of Financing</i>
Studio entertainment	<p>Movie projects are likely to</p> <ol style="list-style-type: none"> 1. Be short-term 2. Have cash outflows primarily in dollars (because Disney makes most of its movies in the U.S.), but cash inflows could have a substantial foreign currency component (because of overseas revenues) 3. Have net cash flows that are heavily driven by whether the movie is a hit, which is often difficult to predict 	<p>Debt should be</p> <ol style="list-style-type: none"> 1. Short-term 2. Primarily dollar debt 3. If possible, tied to the success of movies (Lion King or Mulan bonds)
Media networks	<p>Projects are likely to be</p> <ol style="list-style-type: none"> 1. Short-term 2. Primarily in dollars, though foreign component is growing 3. Driven by advertising revenues and show success (Nielsen ratings) 	<p>Debt should be</p> <ol style="list-style-type: none"> 1. Short-term 2. Primarily dollar debt 3. If possible, linked to network ratings
Park resorts	<p>Projects are likely to be</p> <ol style="list-style-type: none"> 1. Very long-term 2. Primarily in dollars, but a significant proportion of revenues come from foreign tourists, who are likely to stay away if the dollar strengthens 3. Affected by success of studio entertainment and media networks divisions 	<p>Debt should be</p> <ol style="list-style-type: none"> 1. Long-term 2. Mix of currencies, based on tourist makeup
Consumer products	<p>Projects are likely to be short- to medium-term and linked to the success of the movie division; most of Disney's product offerings are derived from their movie productions</p>	<p>Debt should be</p> <ol style="list-style-type: none"> a. Medium-term b. Dollar debt

Analyzing Disney's Current Debt

- Disney has \$16 billion in debt with a face-value weighted average maturity of 5.38 years. Allowing for the fact that the maturity of debt is higher than the duration, this would indicate that Disney's debt is of the right maturity.
- Of the debt, about 10% is yen denominated debt but the rest is in US dollars. Based on our analysis, we would suggest that Disney increase its proportion of debt in other currencies to about 20% in Euros and about 5% in Chinese Yuan.
- Disney has no convertible debt and about 24% of its debt is floating rate debt, which is appropriate given its status as a mature company with significant pricing power. In fact, we would argue for increasing the floating rate portion of the debt to about 40%.

First Principles

Chapter 10: Dividend Policy



Assessing Dividend Policy

- Step 1: How much could the company have paid out during the period under question?
- Step 2: How much did the the company actually pay out during the period in question?
- Step 3: How much do I trust the management of this company with excess cash?
 - How well did they make investments during the period in question?
 - How well has my stock performed during the period in question?

How much has the company returned to stockholders?

- As firms increasing use stock buybacks, we have to measure cash returned to stockholders as not only dividends but also buybacks.
- For instance, for Disney and Tata Chemicals, we obtain the following

	Disney		Aracruz		Tata Chemicals		Deutsche Bank	
<i>Year</i>	<i>Dividends</i>	<i>Buybacks</i>	<i>Dividends</i>	<i>Buybacks</i>	<i>Dividends</i>	<i>Buybacks</i>	<i>Dividends</i>	<i>Buybacks</i>
2004	\$430	\$335	\$74	\$0	Rs 1,307	\$0	€ 924	€ 0
2005	\$490	\$2,420	\$109	\$0	Rs 1,338	\$0	€ 1,386	€ 0
2006	\$519	\$6,898	\$199	\$0	Rs 1,589	\$0	€ 1,995	€ 0
2007	\$637	\$6,923	\$139	\$0	Rs 1,716	\$0	€ 2,255	€ 0
2008	\$664	\$4,453	\$252	\$0	Rs 2,010	\$0	€ 285	€ 0

A Measure of How Much a Company Could have Afforded to Pay out: FCFE

- The Free Cashflow to Equity (FCFE) is a measure of how much cash is left in the business after non-equity claimholders (debt and preferred stock) have been paid, and after any reinvestment needed to sustain the firm's assets and future growth.

Net Income

+ Depreciation & Amortization

= Cash flows from Operations to Equity Investors

- Preferred Dividends

- Capital Expenditures

- Working Capital Needs

- Principal Repayments

+ Proceeds from New Debt Issues

= Free Cash flow to Equity

Disney's FCFE

Year	Net Income	Capital Expenditures	Depreciation	Chg in WC	Change in Net Debt	FCFE
1999	\$1,300	\$6,113	\$3,779	-\$363	\$176	-\$495
2000	\$920	\$1,091	\$2,195	-\$1,184	\$2,118	\$5,326
2001	-\$158	\$2,015	\$1,754	\$244	-\$77	-\$740
2002	\$1,236	\$3,176	\$1,042	\$27	-\$1,892	-\$2,817
2003	\$1,267	\$1,034	\$1,077	-\$264	\$1,145	\$2,719
2004	\$2,345	\$1,484	\$1,210	\$51	\$2,203	\$4,223
2005	\$2,533	\$1,691	\$1,339	\$270	\$699	\$2,610
2006	\$3,374	\$1,300	\$1,437	-\$136	-\$941	\$2,706
2007	\$4,687	\$627	\$1,491	\$45	-\$2,696	\$2,810
2008	\$4,427	\$2,162	\$1,582	\$485	-\$528	\$2,834
Aggregate	\$21,931	\$20,693	\$16,906	-\$825	\$207	\$19,176
Average					\$21	\$1,918

Disney's actual cash returned...

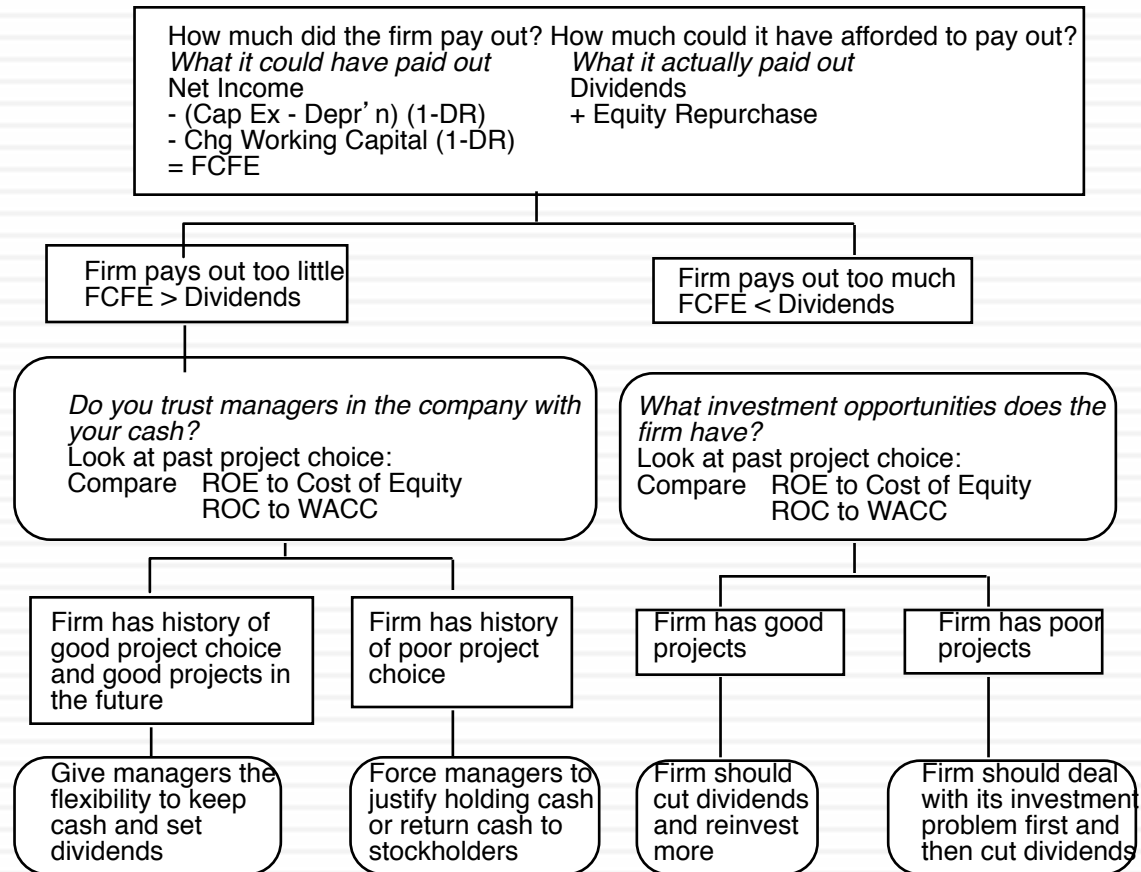
Year	Dividends	Earnings	Payout Ratio	Cash Returned	FCFE	Cash/FCFE
1999	\$0.00	\$1,300.00	0.00%	\$19.00	-\$495.00	-3.84%
2000	\$434.00	\$920.00	47.17%	\$600.00	\$5,326.00	11.27%
2001	\$438.00	-\$158.00	-277.22%	\$1,511.00	-\$740.00	-204.19%
2002	\$428.00	\$1,236.00	34.63%	\$428.00	-\$2,817.00	-15.19%
2003	\$429.00	\$1,267.00	33.86%	\$429.00	\$2,719.00	15.78%
2004	\$430.00	\$2,345.00	18.34%	\$765.00	\$4,223.00	18.12%
2005	\$490.00	\$2,533.00	19.34%	\$2,910.00	\$2,610.00	111.49%
2006	\$519.00	\$3,374.00	15.38%	\$7,417.00	\$2,706.00	274.09%
2007	\$637.00	\$4,687.00	13.59%	\$7,560.00	\$2,810.00	269.04%
2008	\$664.00	\$4,427.00	15.00%	\$5,117.00	\$2,834.00	180.56%
Aggregate	\$4,469.00	\$21,931.00	20.38%	\$26,756.00	\$19,176.00	139.53%

5. Tata Chemicals: The Cross Holding Effect: 2009

	Average	Standard Deviation	Maximum	Minimum
Free CF to Equity	INR 2,258	INR 6,557	INR 11,176	(INR 7,141)
Dividends	INR 1,592	INR 290	INR 2,010	INR 1,307
Dividends+Repurchases	INR 1,592	INR 290	INR 2,010	INR 1,307
Dividend Payout Ratio	25.65%			
Cash Paid as % of FCFE	70.50%			
ROE	17.34%			
Return on Stock	17.97%			
Required Return	19.89%			
ROE - Required return	-2.55%			
Actual - Required Return	-1.91%			

Much of the cash held back was invested in other Tata companies.

A Practical Framework for Analyzing Dividend Policy



Disney in 2003

□ FCFE versus Dividends

- Between 1994 & 2003, Disney generated \$969 million in FCFE each year.
- Between 1994 & 2003, Disney paid out \$639 million in dividends and stock buybacks each year.

□ Cash Balance

- Disney had a cash balance in excess of \$ 4 billion at the end of 2003.

□ Performance measures

- Between 1994 and 2003, Disney has generated a return on equity, on it's projects, about 2% less than the cost of equity, on average each year.
- Between 1994 and 2003, Disney's stock has delivered about 3% less than the cost of equity, on average each year.
- The underperformance has been primarily post 1996 (after the Capital Cities acquisition).

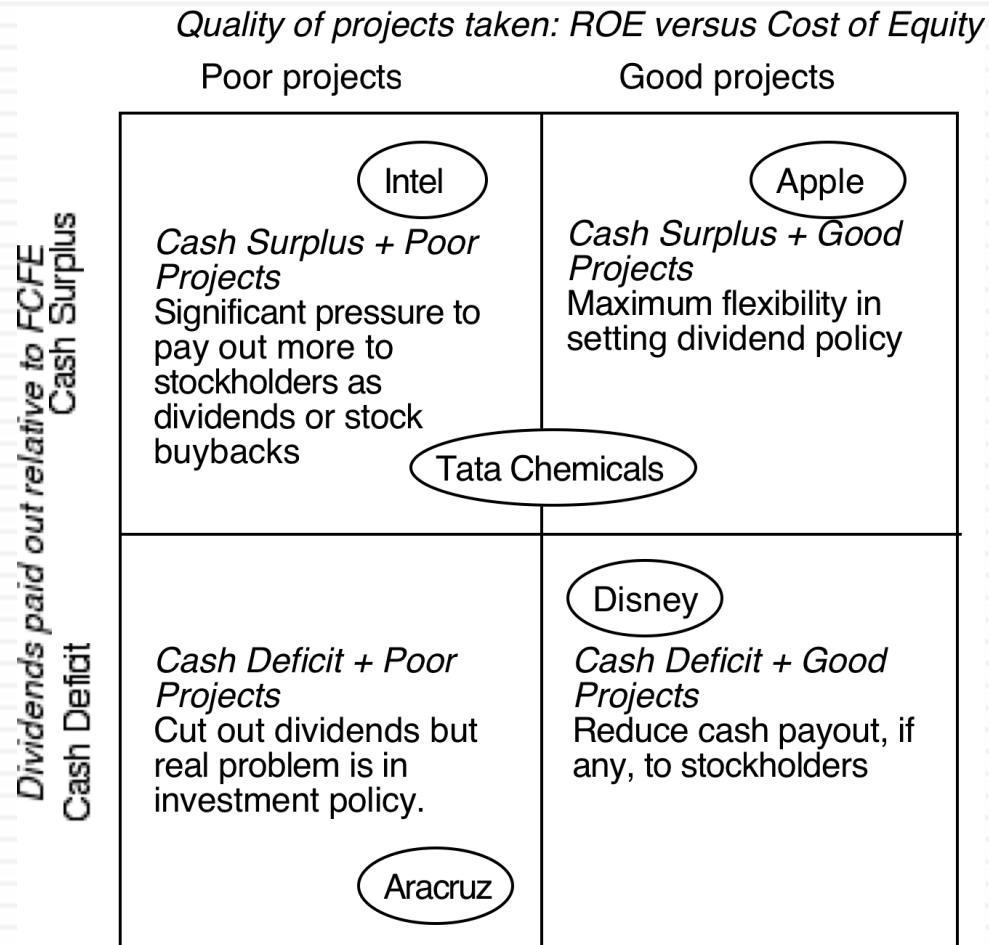
Can you trust Disney's management?

- Given Disney's track record between 1994 and 2003, if you were a Disney stockholder, would you be comfortable with Disney's dividend policy?
 - Yes
 - No
- Does the fact that the company is run by Michael Eisner, the CEO for the last 10 years and the initiator of the Cap Cities acquisition have an effect on your decision.
 - Yes
 - No

Following up: Disney in 2009

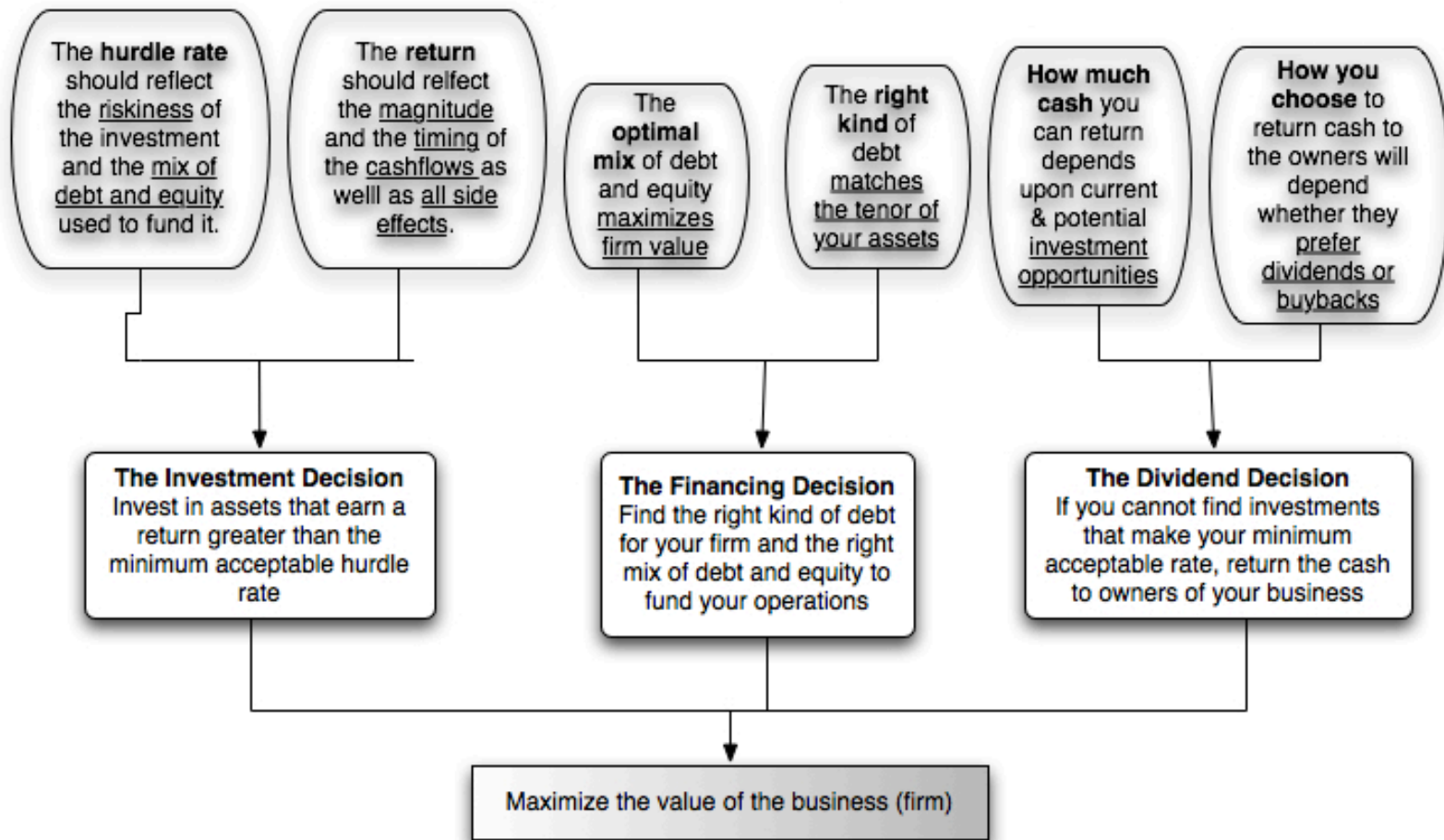
- Between 2004 and 2008, Disney made significant changes:
 - It replaced its CEO, Michael Eisner, with a new CEO, Bob Iger, who at least on the surface seemed to be more receptive to stockholder concerns.
 - It's stock price performance improved (positive Jensen's alpha)
 - It's project choice improved (ROC moved from being well below cost of capital to above)
- The firm also shifted from cash returned < FCFE to cash returned > FCFE and avoided making large acquisitions.
- If you were a stockholder in 2009 and Iger made a plea to retain cash in Disney to pursue investment opportunities, would you be more receptive?
 - Yes
 - No

Summing up...

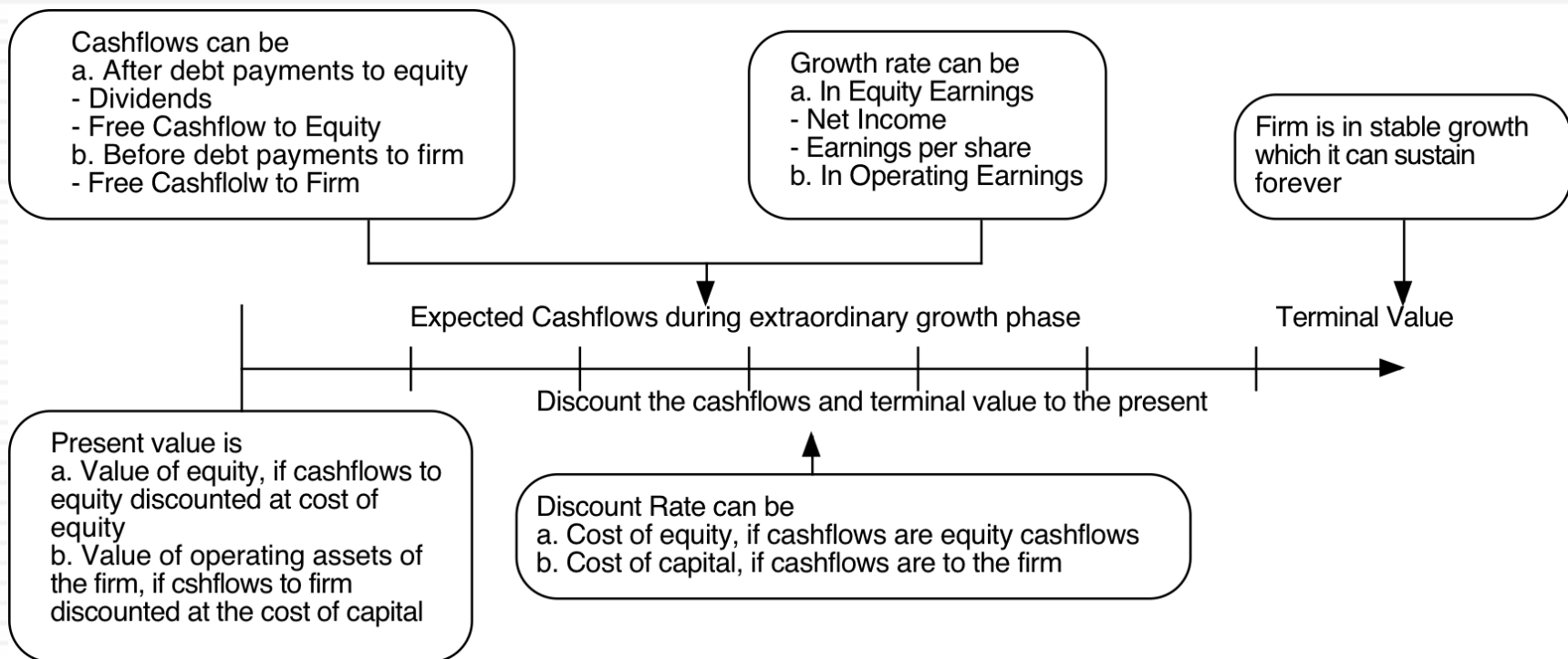


First Principles

Chapter 12: Value and Corporate Decisions



The Ingredients that determine value.



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	$ROC * Reinvestment Rate =$ $9.91\% * 53.72\% = 5.32\%$	Linear decline to Stable Growth Rate of 3%	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 changes 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)
 $.5372 * .0991 = .0532$
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
EBIT (1-t)	\$4,591	\$4,835	\$5,093	\$5,364	\$5,650	\$5,924	\$6,185	\$6,428	\$6,650	\$6,850
- Reinvestment	\$2,466	\$2,598	\$2,736	\$2,882	\$3,035	\$2,941	\$2,818	\$2,667	\$2,488	\$2,283
FCFF	\$2,125	\$2,238	\$2,357	\$2,482	\$2,615	\$2,983	\$3,366	\$3,761	\$4,162	\$4,567

Term Yr
7055
2351
4704

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

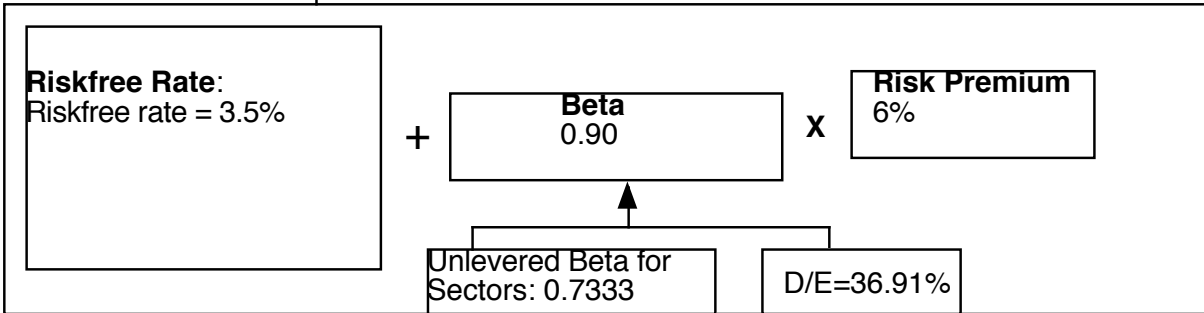
Cost of capital gradually increases to 7.95%

Cost of Equity
8.91%

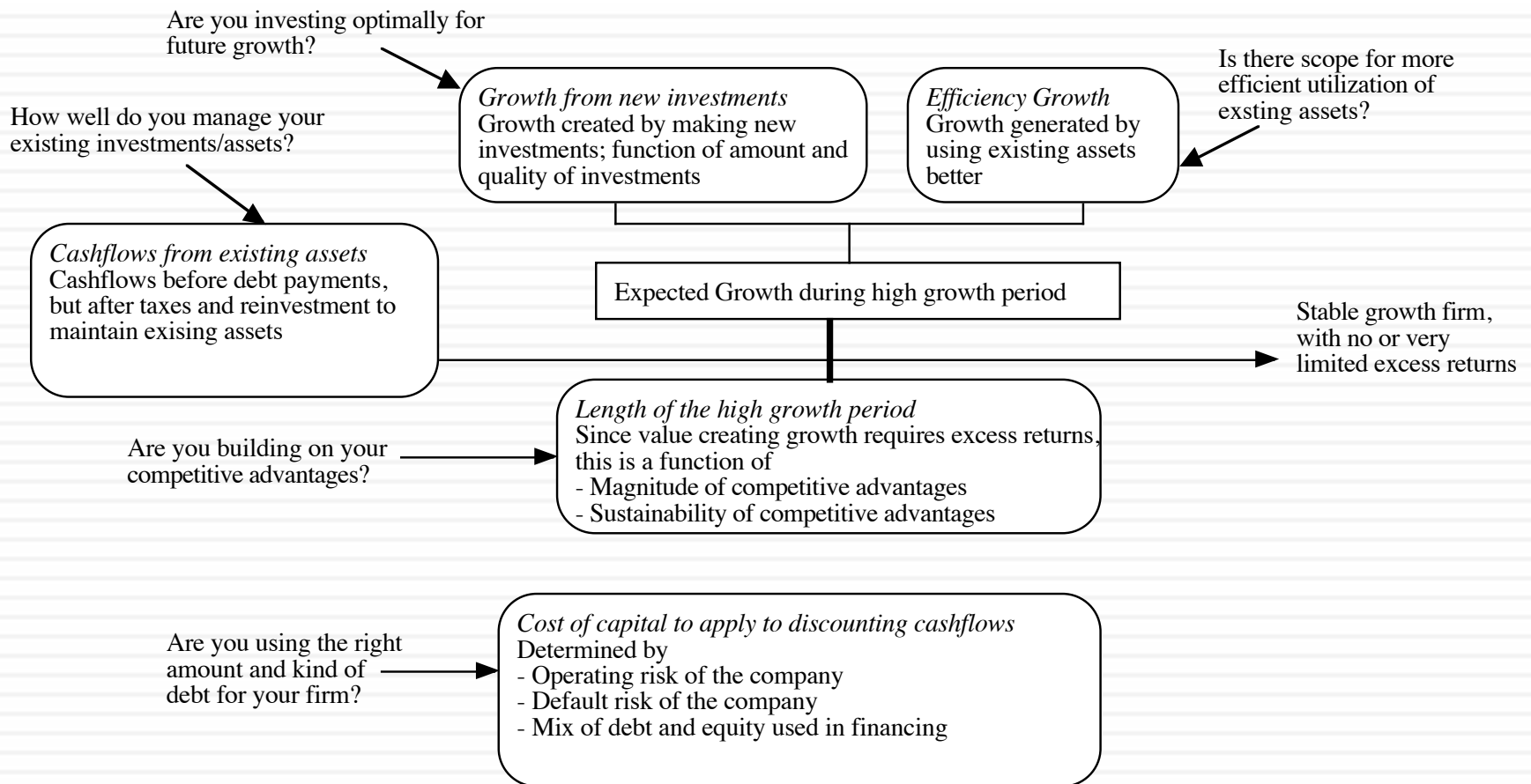
Cost of Debt
 $(3.5\% + 2.5\%)(1 - .38)$
 = 3.72%
 Based on actual A rating

Weights
 E = 73% D = 27%

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



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%

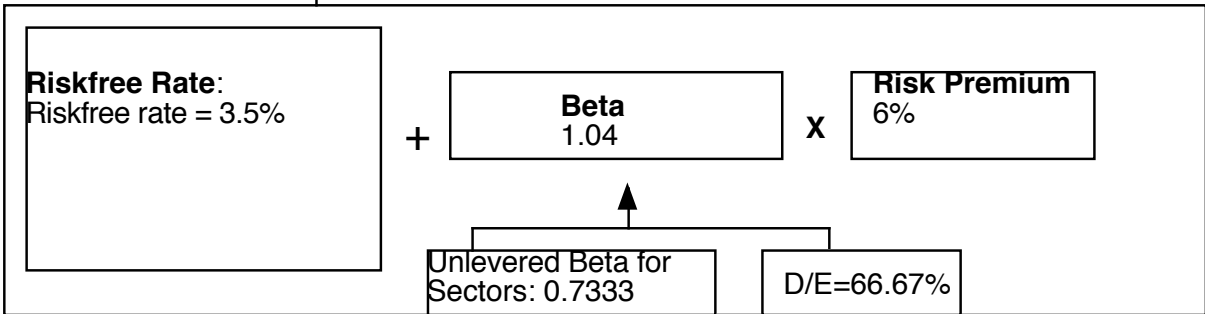
Cost of capital gradually decreases to 7.19%

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



First Principles

