APPLIED CORPORATE FINANCE: CREATING SHAREHOLDER VALUE

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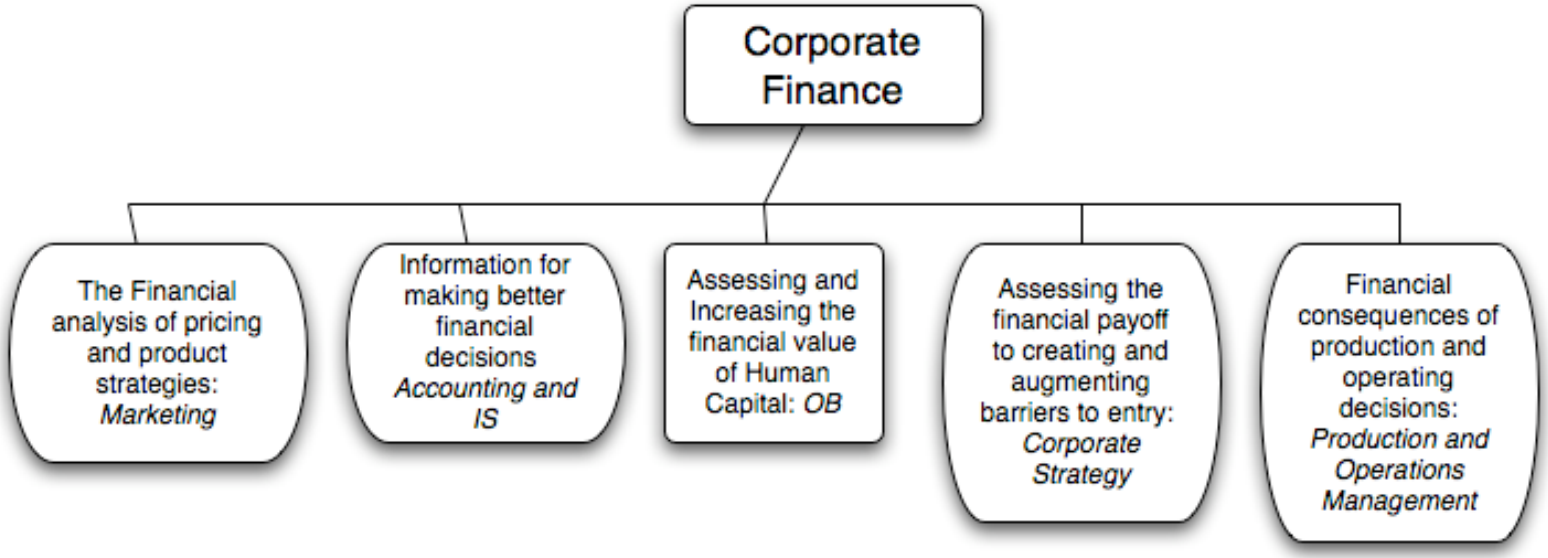
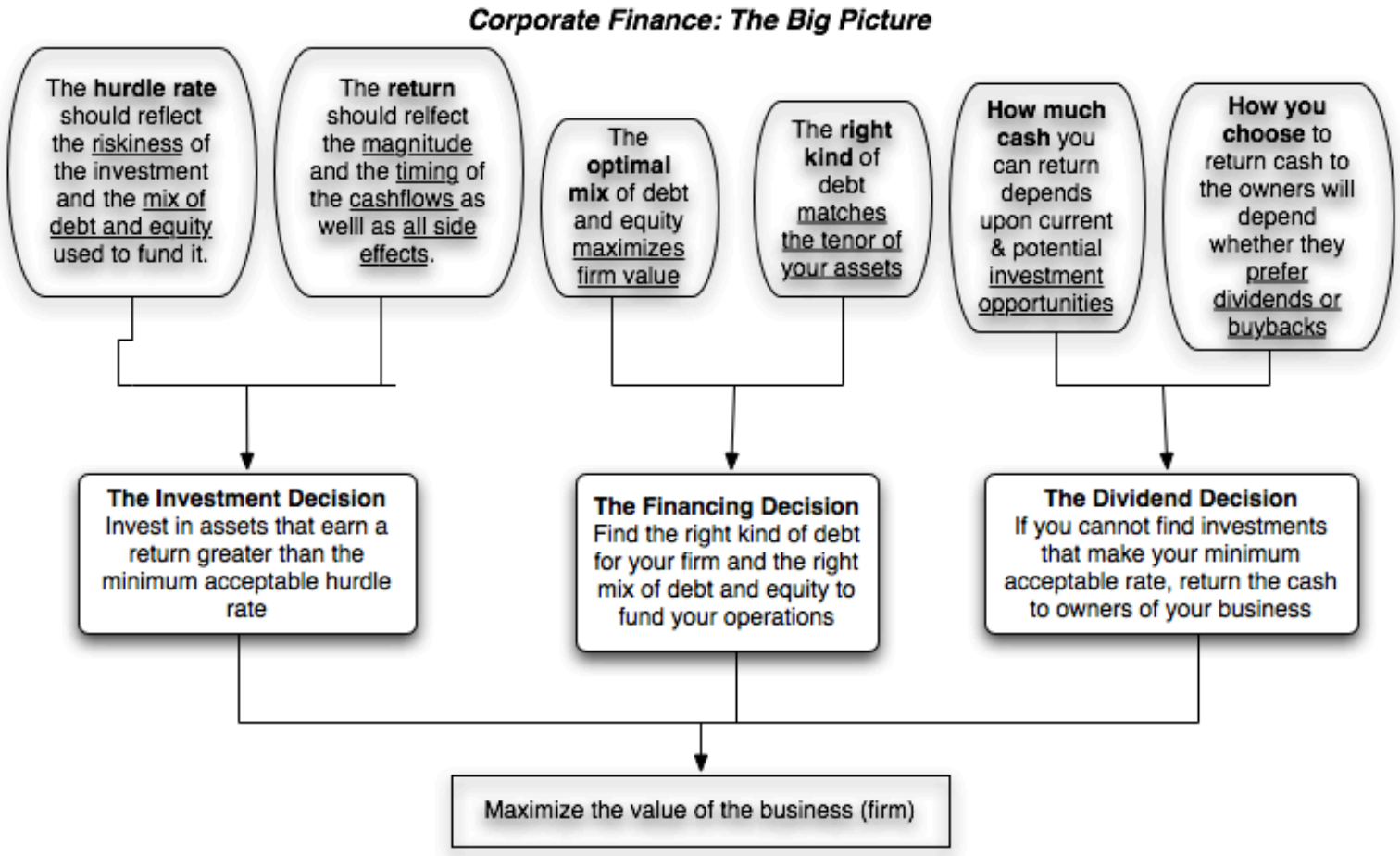
What is corporate finance?

- 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.

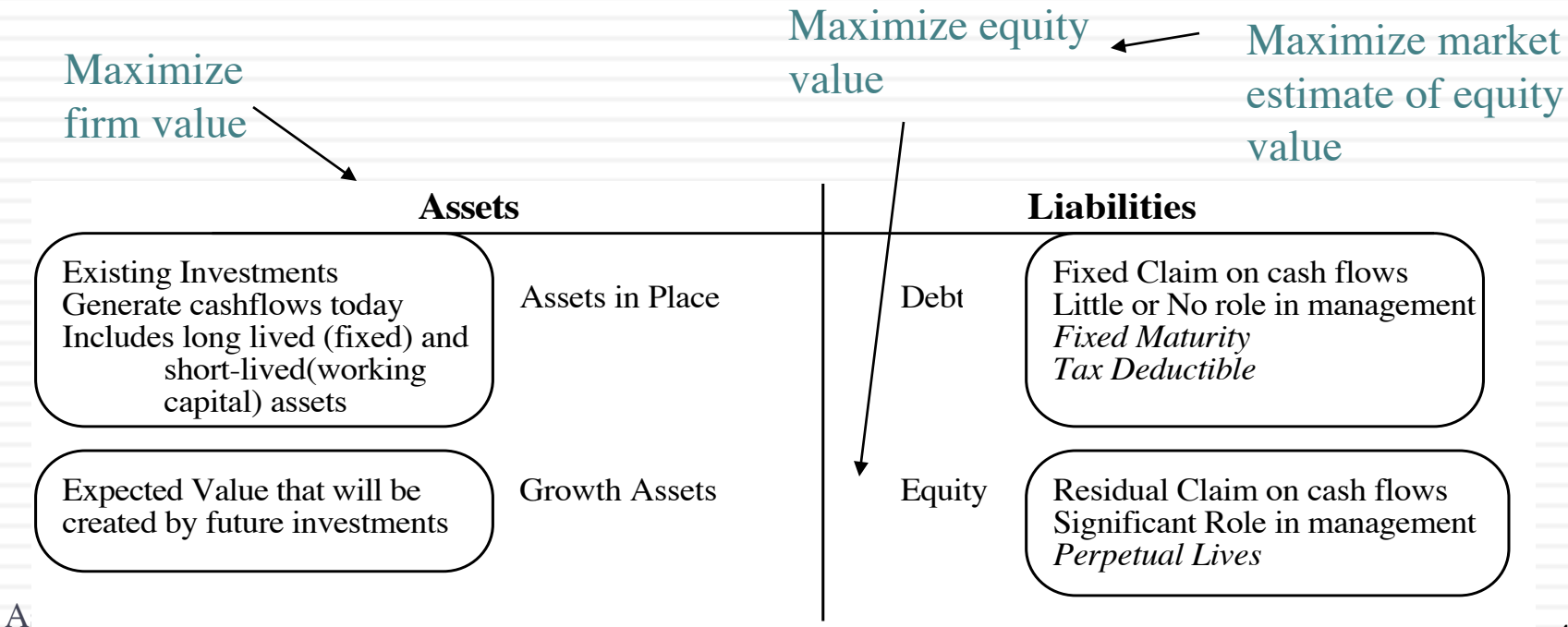


First Principles



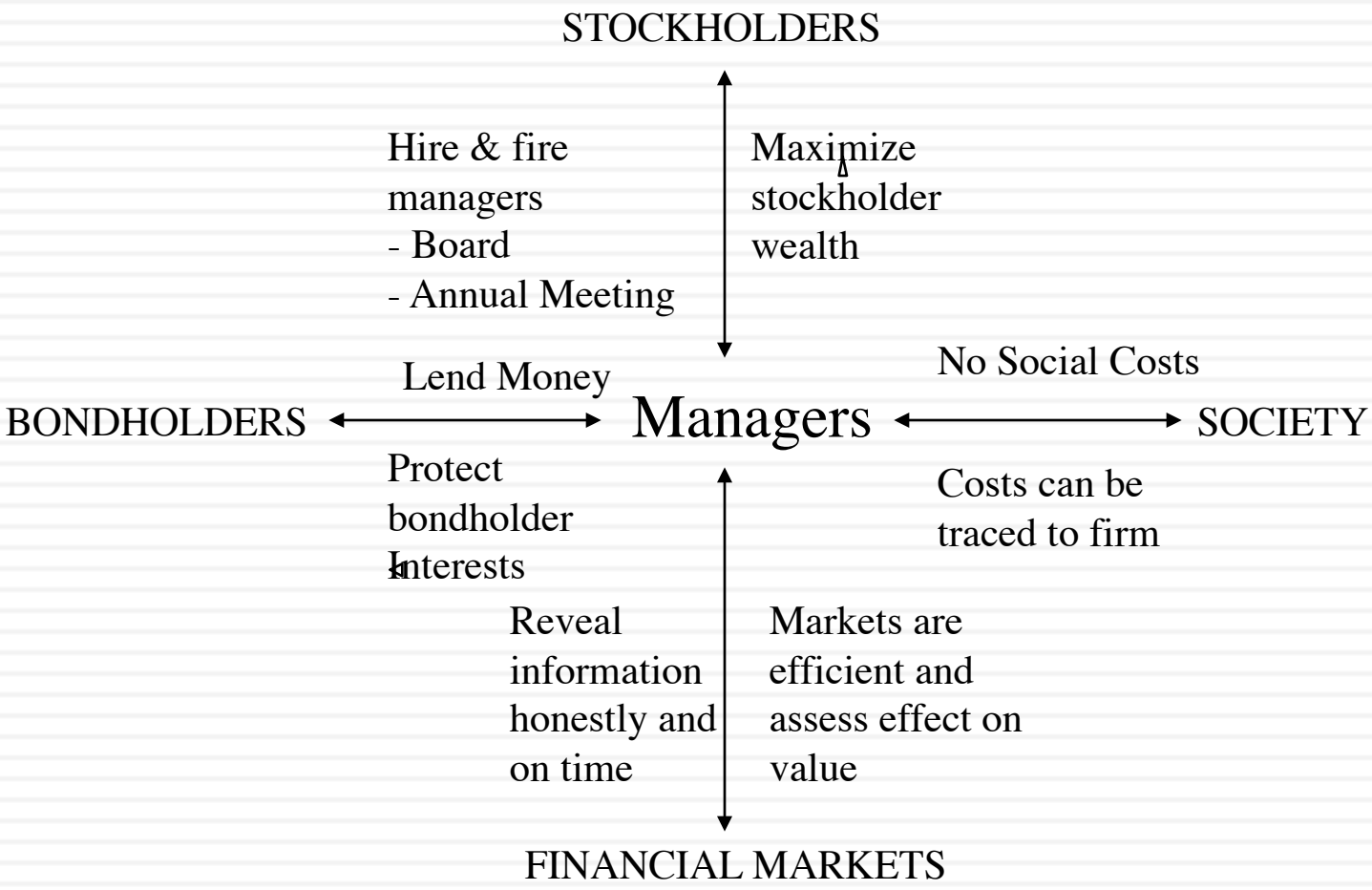
The Objective in Decision Making

- In traditional corporate finance, the objective in decision making is to maximize the value of the firm.
- A narrower objective is to maximize stockholder wealth. When the stock is traded and markets are viewed to be efficient, the objective is to maximize the stock price.

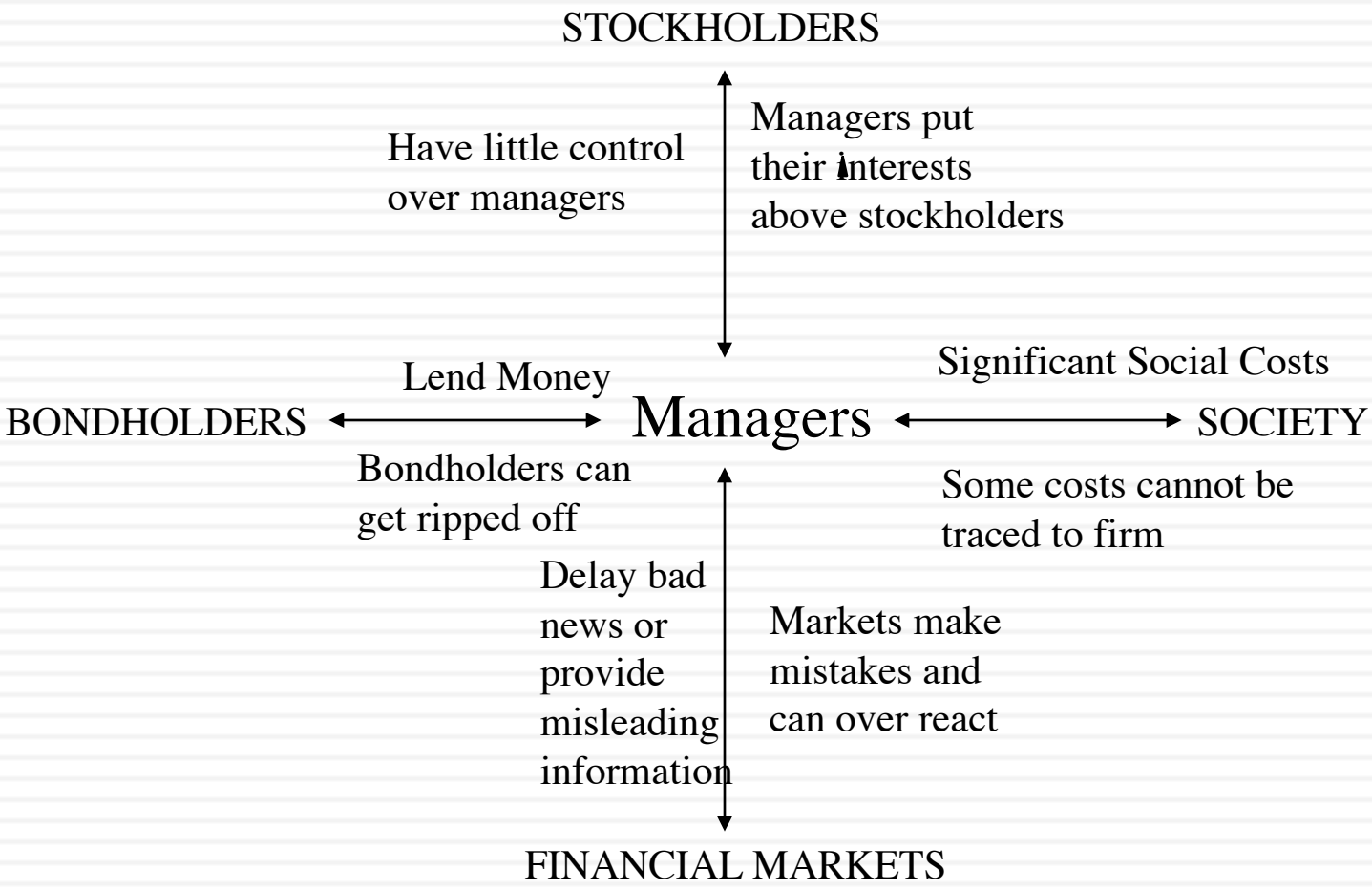


A

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

Who is on Board? Falabella

	Chilean I.D. Number	Name	Title	Occupation	Member since	2016 Attendance
1.	9.585.749-3	Carlo Solari Donaggio	Chairman	Civil Engineer	2011	17
2.	7.017.522-3	Juan Carlos Cortés Solari	Vice Chairman	Business Administrator	2002	16
3.	5.718.666-6	Hernán Büchi Buc	Director (Independient)	Civil Engineer	1996	15
4.	5.082.229-K	Sergio Cardone Solari	Director	Business Administrator	1986	17
5.	6.888.500-0	Carolina del Río Goudie	Director	Business Administrator	2011	15
6.	4.773.832-6	José Luis del Río Goudie	Director	Civil Engineer	2003	15
7.	8.717.000-4	Carlos Heller Solari	Director	Agricultural Engineer	2002	14
8.	7.005.097-8	María Cecilia Karlezi Solari	Director	Entrepreneur	2003	13
9.	8.506.868-7	Paola Cúneo Queirolo	Director	Business Administrator	2014	17

Does Falabella have an independent board?

a. Yes
b. No

Does Falabella have an effective board?

a. Yes
b. No

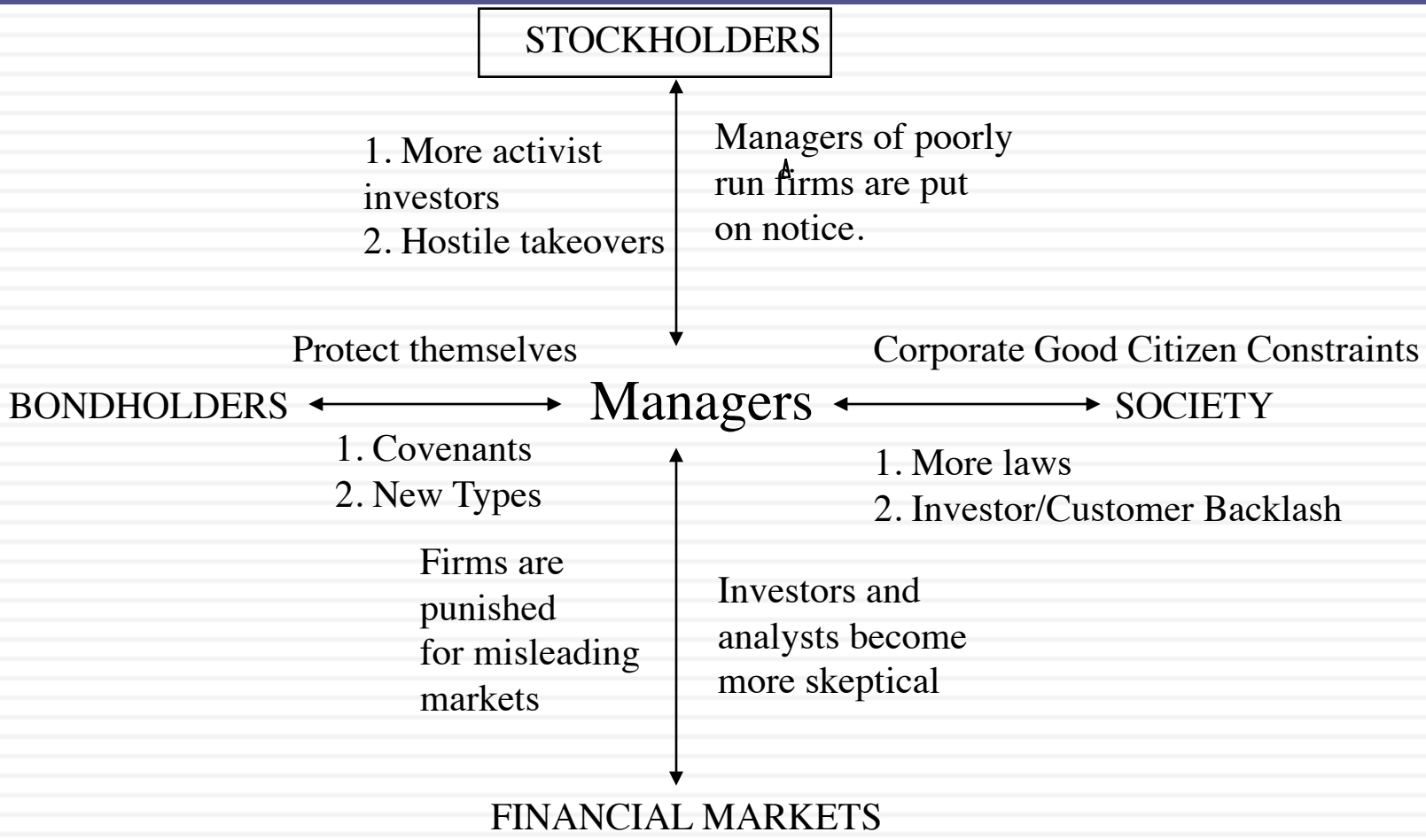
Number of Directors by years of service

Service	Directors
Under 3 years	-
Between 3 and 6 years	3
Between 6 and 9 years	-
Between 9 and 12 years	-
Over 12 Years	6

When traditional corporate financial theory breaks down, the solution is:

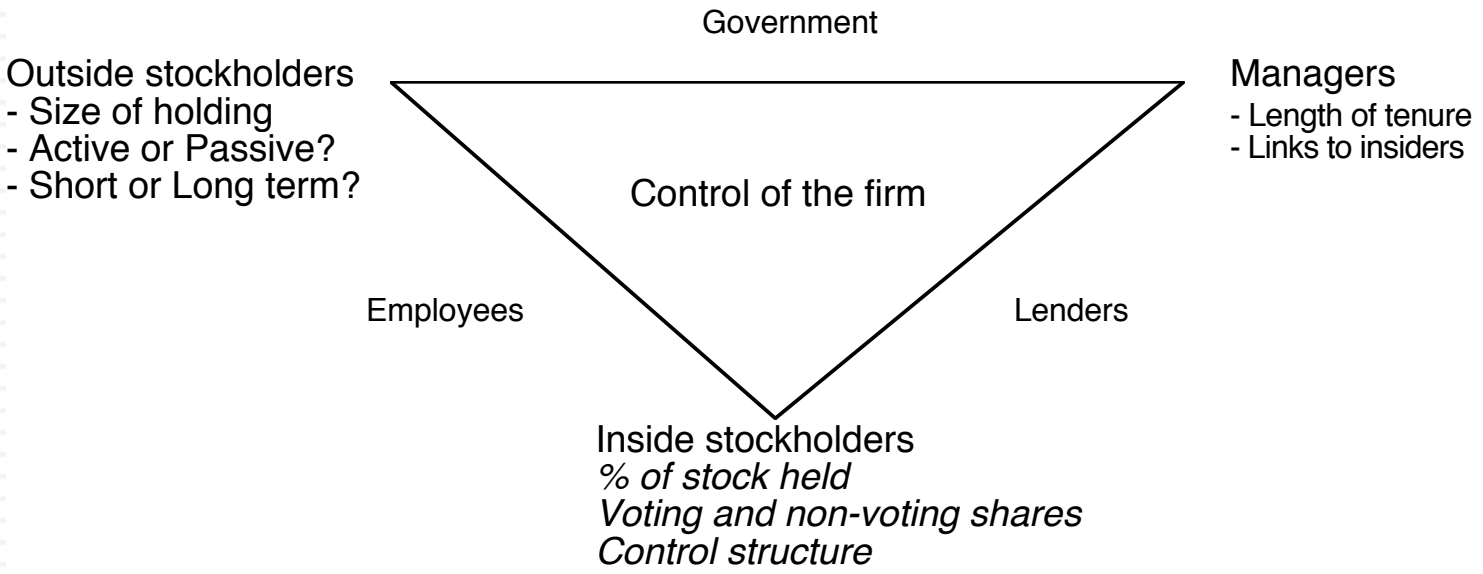
- To choose a different mechanism for corporate governance, i.e, assign the responsibility for monitoring managers to someone other than stockholders.
- To choose a different objective for the firm.
- To maximize stock price, but reduce the potential for conflict and breakdown:
  - Making managers (decision makers) and employees into stockholders
  - Protect lenders from expropriation
  - By providing information honestly and promptly to financial markets
  - Minimize social costs

A Market Based Solution



Application Test: Who owns/runs 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?



Splintering of Stockholders
Disney's top stockholders in 2003

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

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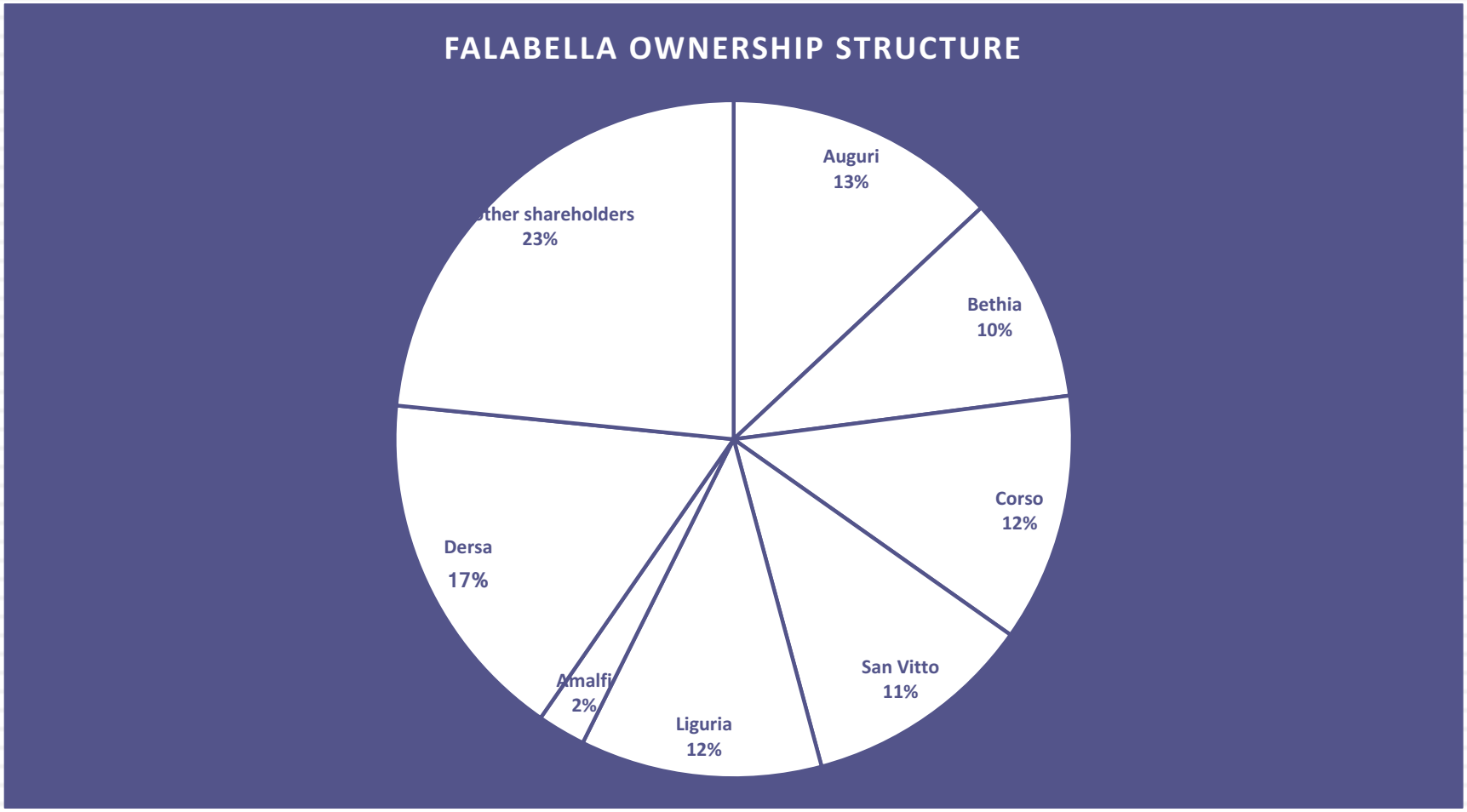
DIS US DISNEY (WALT) CO Page 1 / 100

Holder name	Portfolio Name	Source	Held	Percent Outstd	Latest Change	Filing 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
* 5SOUTHEASTRN 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
16AXA 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		

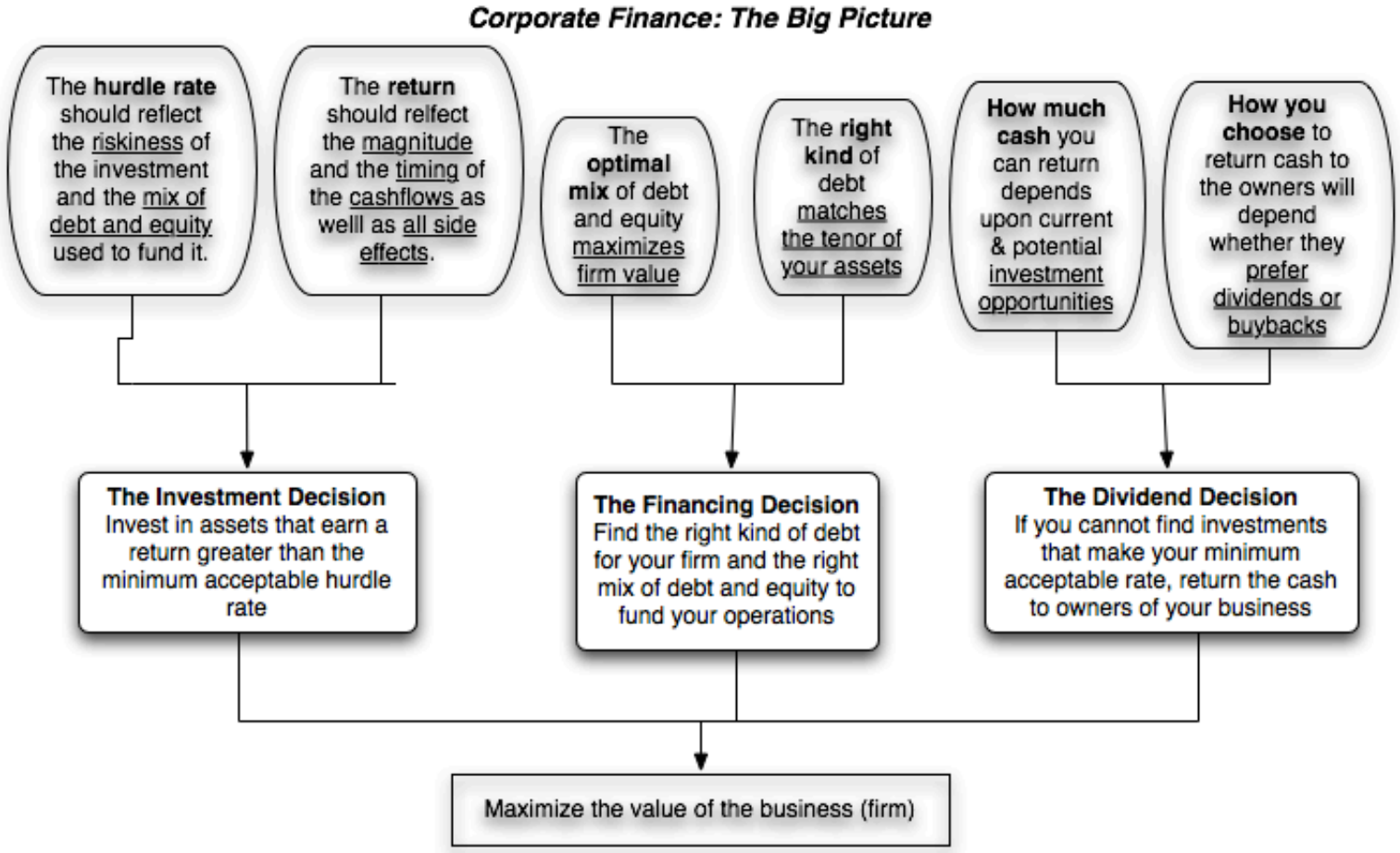
* Money market directory info available. Select portfolio, then hit IP<GO>.

Bloomberg PROFESSIONAL

Falabella: Who's in control?



First Principles



What is Risk?

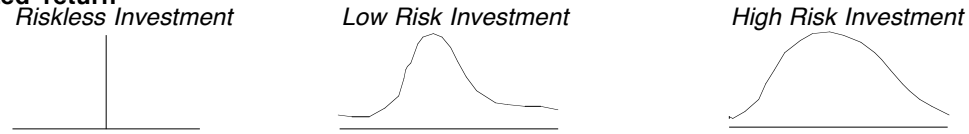
- Risk, in traditional terms, is viewed as a ‘negative’. Webster’s dictionary, for instance, defines risk as “exposing to danger or hazard”. The Chinese symbols for risk, reproduced below, give a much better description of risk:

- 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

The risk in an investment can be measured by the variance in actual returns around an expected return



Step 2: Differentiating between Rewarded and Unrewarded Risk

Risk that is specific to investment (Firm Specific)
Can be diversified away in a diversified portfolio
1. each investment is a small proportion of portfolio
2. risk averages out across investments in portfolio

Risk that affects all investments (Market Risk)
Cannot be diversified away since most assets are affected by it.

The marginal investor is assumed to hold a "diversified" portfolio. Thus, only market risk will be rewarded and priced.

Step 3: Measuring Market Risk

The CAPM	**The APM**	**Multi-Factor Models**	**Proxy Models**
If there is 1. no private information 2. no transactions cost the optimal diversified portfolio includes every traded asset. Everyone will hold this<u>market portfolio</u> **Market Risk = Risk added by any investment to the market portfolio:**	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. **Market Risk = Risk exposures of any asset to market factors**	Since market risk affects most or all investments, it must come from macro economic factors. **Market Risk = Risk exposures of any asset to macro economic factors.**	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. **Market Risk = Captured by the Proxy Variable(s)**
Beta of asset relative to Market portfolio (from a regression)	Betas of asset relative to unspecified market factors (from a factor analysis)	Betas of assets relative to specified macro economic factors (from a regression)	Equation relating returns to proxy variables (from a regression)

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.

I. A Riskfree Rate

- On a riskfree asset, the actual return is equal to the expected return. Therefore, there is no variance around the expected return.
- For an investment to be riskfree, then, it has to have
  - No default risk
  - No reinvestment risk

1. Time horizon matters: Thus, the riskfree rates in valuation will depend upon when the cash flow is expected to occur and will vary across time.
2. Not all government securities are riskfree: Some governments face default risk and the rates on bonds issued by them will not be riskfree.

- The conventional practice of estimating riskfree rates is to use the government bond rate, with the government being the one that is in control of issuing that currency. **That assumes that governments are default free, and to the extent that is not true, your risk free rate is not risk free.**

Getting Risk Free Rates

PB Page 14-21

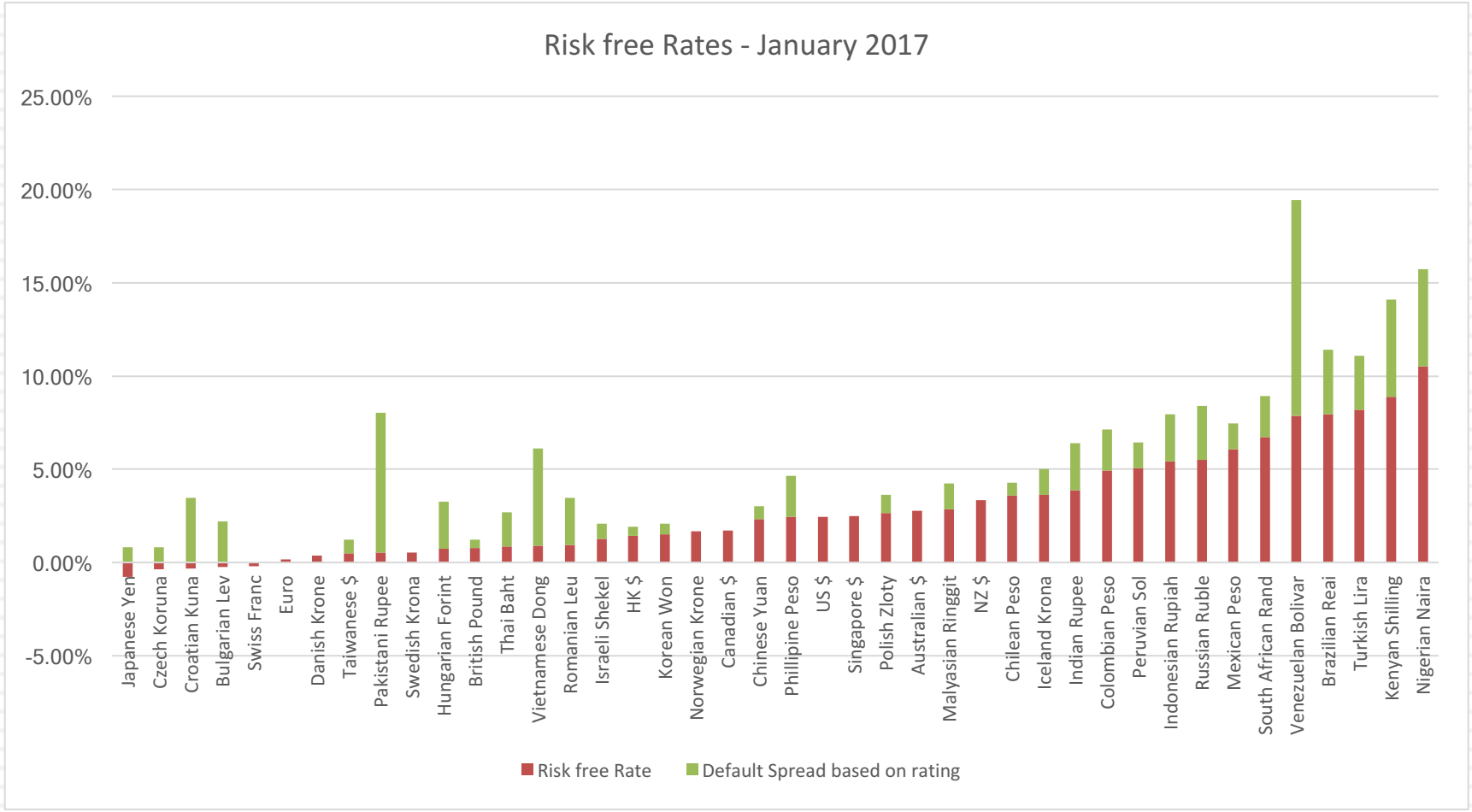
- In US dollars in November 2013: I used the US ten-year T.Bond rate of 2.75% as my risk free rate in my analysis of Disney.
- For Falabella in July 2017, I started with the ten-year Chilean government bond rate of 4.12%. Chile was rated Aa3, with a default spread of 0.70%. The resulting risk free rate in Chilean pesos is 3.42%.

  Risk free rate in CLP = Government Bond Rate in CLP – Default Spread for Chile

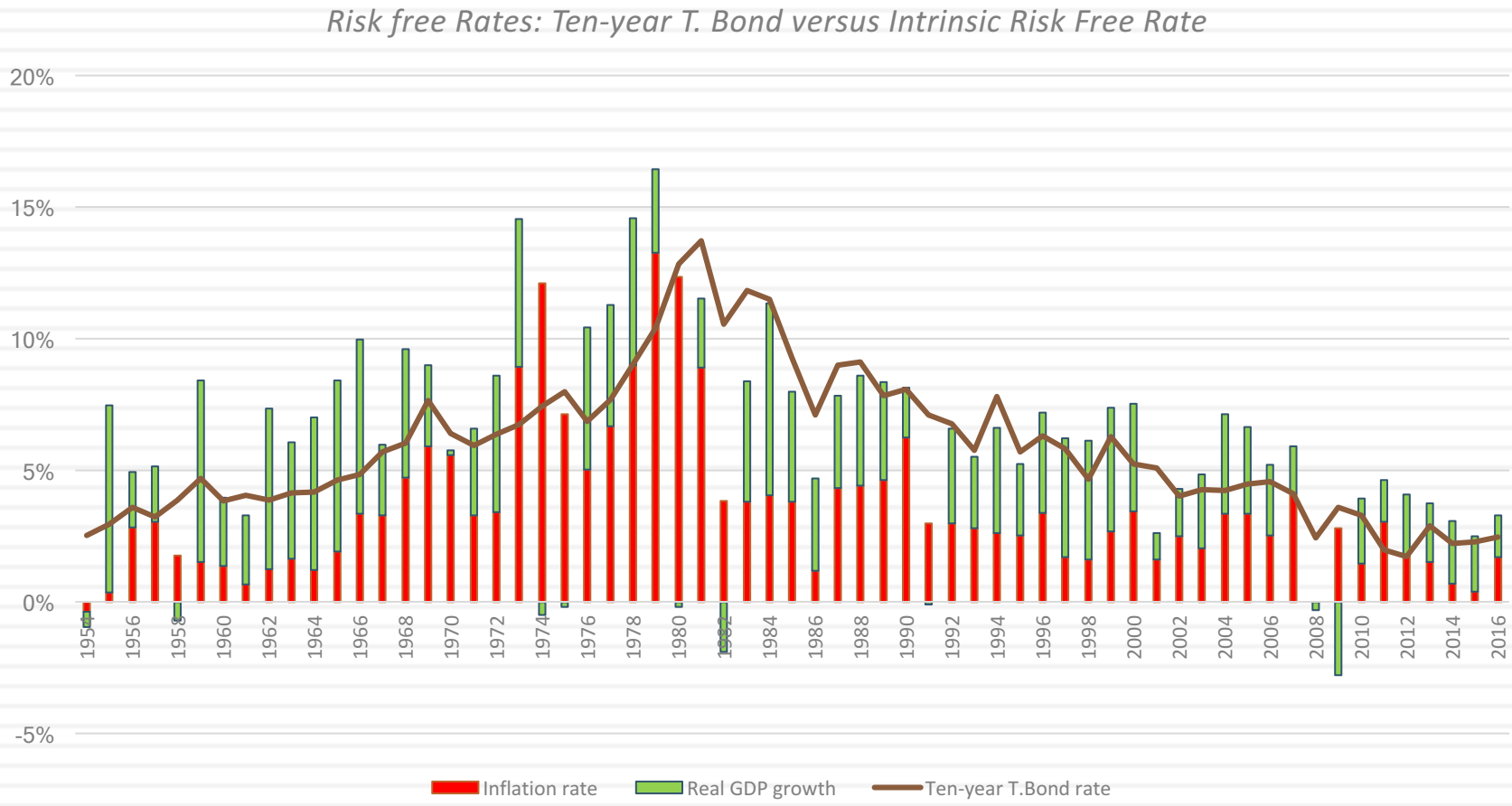
  = 4.12% - 0.70% = 3.42%

- There are two other options available for me on Falabella:
  - Do everything in US dollars: The risk free rate would be the current US treasury bond rate of 2.25%.
  - Do everything in real terms: There is the option of doing your analysis in real terms, in which case your risk free rate will be a real risk free rate.

Risk free rates by currency: January 2017



But the risk free rate is ”too low”



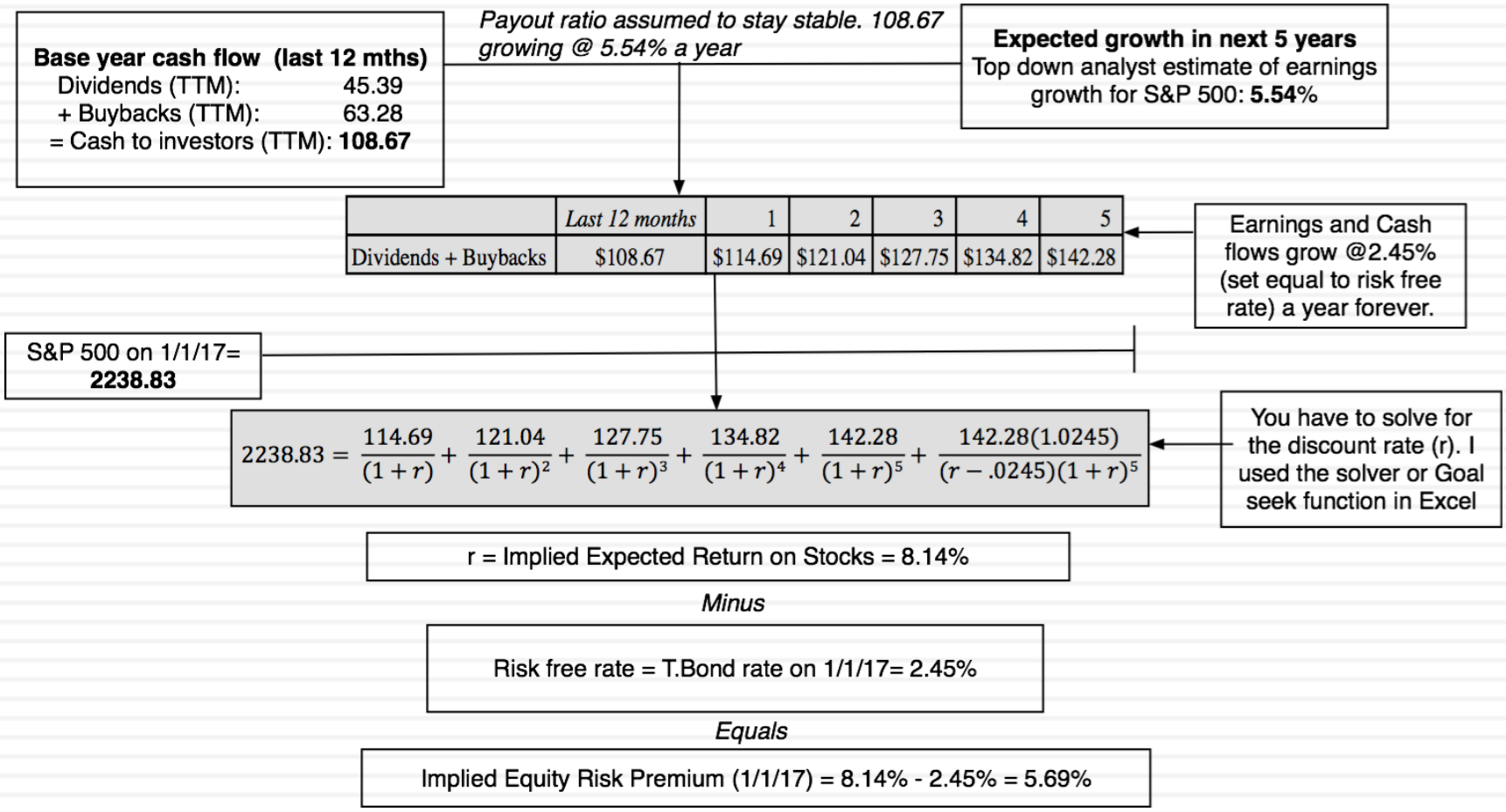
II. The Equity Risk Premium – A backward looking estimate

	Arithmetic Average		*Geometric Average*	
	Stocks - T. Bills	*Stocks - T. Bonds*	*Stocks - T. Bills*	*Stocks - T. Bonds*
1928-2016	7.96%	6.24%	6.11%	4.62%
Std Error	2.13%	2.28%		
1967-2016	6.57%	4.37%	5.26%	3.42%
Std Error	2.42%	2.74%		
2007-2016	7.91%	3.62%	6.15%	2.30%
Std Error	6.06%	8.66%		

Historical premium for the US

- If you are going to use a historical risk premium, make it
  - Long term (because of the standard error)
  - Consistent with your risk free rate
  - A "compounded" average
- No matter which estimate you use, recognize that it is backward looking, is noisy and may reflect selection bias.

And a forward one..



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

- In this approach, the country equity risk premium is set equal to the default spread for the country, estimated in one of three ways:
  - The default spread on a dollar denominated bond issued by the country. (In July 2017, Chilean US $ bond rate of 3.05% was trading at a spread of **0.69%** over the US T.Bond rate of 2.36%)
  - The sovereign CDS spread for the country. In July 2017, the ten year CDS spread for Chile was 1.15%. Netting out the CDS spread for the US of 0.34% would have yielded a net default spread of **0.81%**
  - The default spread based on the local currency rating for the country. Chile's sovereign local currency rating is Aa3 and the default spread for a Aa3 rated sovereign was about **0.70%** in July 2017.
- 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 5.32% for Chile, if we use 4.62% as the US risk premium and the default spread based on the rating.

Beyond the default spread

- Country ratings measure default risk. While default risk premiums and equity risk premiums are highly correlated, one would expect equity spreads to be higher than debt spreads.
- Another is to multiply the bond default spread by the relative volatility of stock and bond prices in that market. Using this approach for Chile in January 2017, you would get:
  - Country Equity risk premium = Default spread on country bond* $\sigma_{\text{Country Equity}} / \sigma_{\text{Country Bond}}$
    - Standard Deviation in Chilean Stock Market Select (Equity) = 18%
    - Standard Deviation in Chilean government bond = 14%
    - Default spread on Chilean $ bond = 0.70%
  - Chile Country Risk Premium = 0.70% (18%/14%) = 0.90%
  - Mature Market Premium in January 2017= 5.69%
  - Chile Total ERP = Mature Market Premium + CRP = 5.69% + 0.90% = 6.59%

ERP : Nov 2013

Andorra	7.45%	1.95%
Austria	5.50%	0.00%
Belgium	6.70%	1.20%
Cyprus	22.00%	16.50%
Denmark	5.50%	0.00%
Finland	5.50%	0.00%
France	5.95%	0.45%
Germany	5.50%	0.00%
Greece	15.63%	10.13%
Iceland	8.88%	3.38%
Ireland	9.63%	4.13%
Italy	8.50%	3.00%
Liechtenstein	5.50%	0.00%
Luxembourg	5.50%	0.00%
Malta	7.45%	1.95%
Netherlands	5.50%	0.00%
Norway	5.50%	0.00%
Portugal	10.90%	5.40%
Spain	8.88%	3.38%
Sweden	5.50%	0.00%
Switzerland	5.50%	0.00%
Turkey	8.88%	3.38%
United Kingdom	5.95%	0.45%
Western Europe	**6.72%**	**1.22%**

Canada	5.50%	0.00%
United States of America	5.50%	0.00%
North America	**5.50%**	**0.00%**

Argentina	15.63%	10.13%
Belize	19.75%	14.25%
Bolivia	10.90%	5.40%
Brazil	8.50%	3.00%
Chile	6.70%	1.20%
Colombia	8.88%	3.38%
Costa Rica	8.88%	3.38%
Ecuador	17.50%	12.00%
El Salvador	10.90%	5.40%
Guatemala	9.63%	4.13%
Honduras	13.75%	8.25%
Mexico	8.05%	2.55%
Nicaragua	15.63%	10.13%
Panama	8.50%	3.00%
Paraguay	10.90%	5.40%
Peru	8.50%	3.00%
Suriname	10.90%	5.40%
Uruguay	8.88%	3.38%
Venezuela	12.25%	6.75%
Latin America	**9.44%**	**3.94%**

Country	*TRP*	*CRP*
Angola	10.90%	5.40%
Benin	13.75%	8.25%
Botswana	7.15%	1.65%
Burkina Faso	13.75%	8.25%
Cameroon	13.75%	8.25%
Cape Verde	12.25%	6.75%
Egypt	17.50%	12.00%
Gabon	10.90%	5.40%
Ghana	12.25%	6.75%
Kenya	12.25%	6.75%
Morocco	9.63%	4.13%
Mozambique	12.25%	6.75%
Namibia	8.88%	3.38%
Nigeria	10.90%	5.40%
Rwanda	13.75%	8.25%
Senegal	12.25%	6.75%
South Africa	8.05%	2.55%
Tunisia	10.23%	4.73%
Uganda	12.25%	6.75%
Zambia	12.25%	6.75%
Africa	**11.22%**	**5.82%**

Albania	12.25%	6.75%
Armenia	10.23%	4.73%
Azerbaijan	8.88%	3.38%
Belarus	15.63%	10.13%
Bosnia	15.63%	10.13%
Bulgaria	8.50%	3.00%
Croatia	9.63%	4.13%
Czech Republic	6.93%	1.43%
Estonia	6.93%	1.43%
Georgia	10.90%	5.40%
Hungary	9.63%	4.13%
Kazakhstan	8.50%	3.00%
Latvia	8.50%	3.00%
Lithuania	8.05%	2.55%
Macedonia	10.90%	5.40%
Moldova	15.63%	10.13%
Montenegro	10.90%	5.40%
Poland	7.15%	1.65%
Romania	8.88%	3.38%
Russia	8.05%	2.55%
Serbia	10.90%	5.40%
Slovakia	7.15%	1.65%
Slovenia	9.63%	4.13%
Ukraine	15.63%	10.13%
E. Europe & Russia	**8.60%**	**3.10%**

Bahrain	8.05%	2.55%
Israel	6.93%	1.43%
Jordan	12.25%	6.75%
Kuwait	6.40%	0.90%
Lebanon	12.25%	6.75%
Oman	6.93%	1.43%
Qatar	6.40%	0.90%
Saudi Arabia	6.70%	1.20%
United Arab Emirates	6.40%	0.90%
Middle East	**6.88%**	**1.38%**

Bangladesh	10.90%	5.40%
Cambodia	13.75%	8.25%
China	6.94%	1.44%
Fiji	12.25%	6.75%
Hong Kong	5.95%	0.45%
India	9.10%	3.60%
Indonesia	8.88%	3.38%
Japan	6.70%	1.20%
Korea	6.70%	1.20%
Macao	6.70%	1.20%
Malaysia	7.45%	1.95%
Mauritius	8.05%	2.55%
Mongolia	12.25%	6.75%
Pakistan	17.50%	12.00%
Papua NG	12.25%	6.75%
Philippines	9.63%	4.13%
Singapore	5.50%	0.00%
Sri Lanka	12.25%	6.75%
Taiwan	6.70%	1.20%
Thailand	8.05%	2.55%
Vietnam	13.75%	8.25%
Asia	**7.27%**	**1.77%**

Australia	5.50%	0.00%
Cook Islands	12.25%	6.75%
New Zealand	5.50%	0.00%
Australia & NZ	**5.50%**	**0.00%**

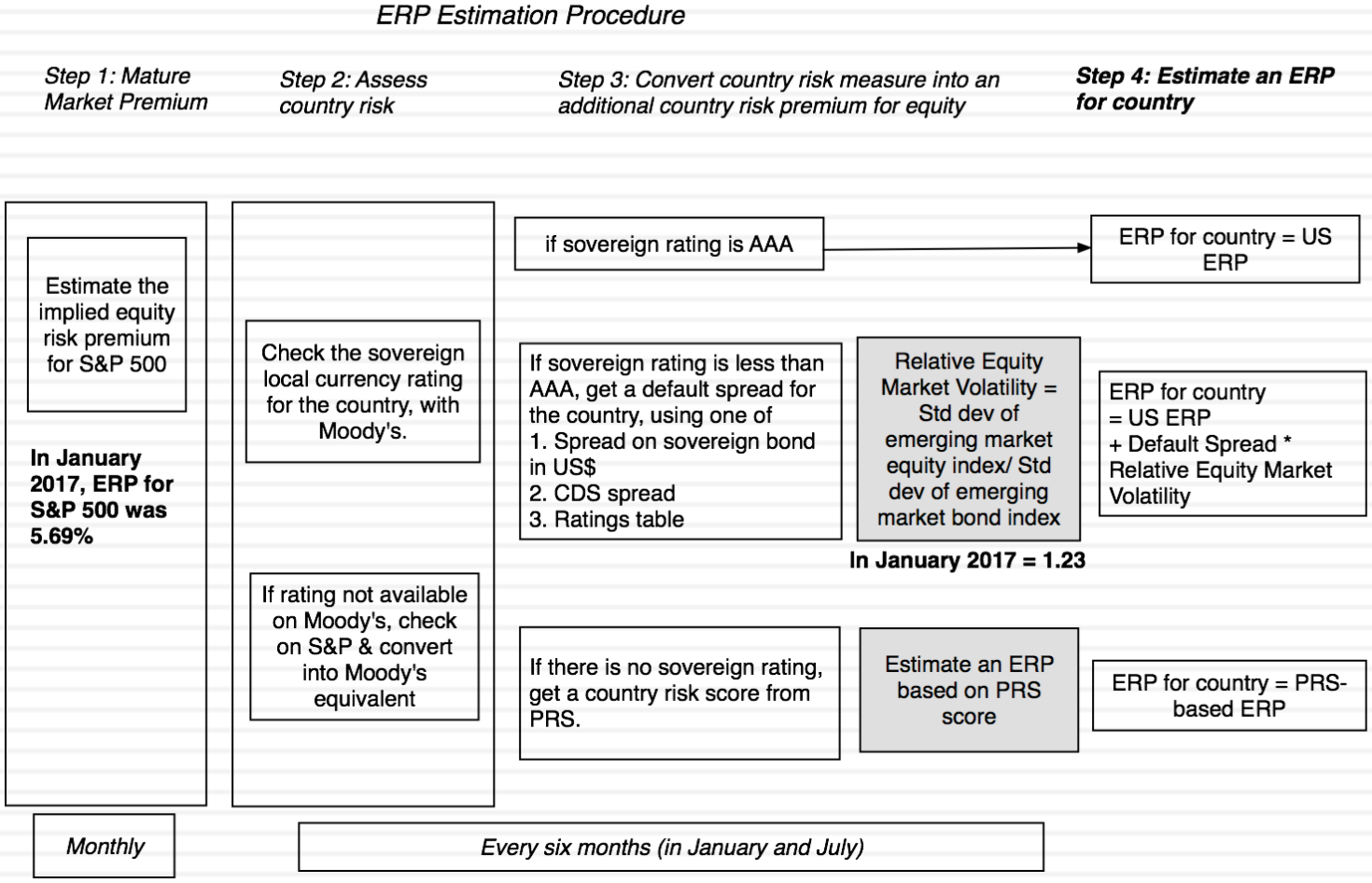
Black #: Total ERP
Red #: Country risk premium
AVG: GDP weighted average

Estimating ERP for Disney: November 2013

- Incorporation: The conventional practice on equity risk premiums is to estimate an ERP based upon where a company is incorporated. Thus, the cost of equity for Disney would be computed based on the US equity risk premium, because it is a US company, and the Brazilian ERP would be used for Vale, because it is a Brazilian company.
- Operations: The more sensible practice on equity risk premium is to estimate an ERP based upon where a company operates. For Disney in 2013:

Region/ Country	*Proportion of Disney's Revenues*	*ERP*
US& Canada	82.01%	5.50%
Europe	11.64%	6.72%
Asia-Pacific	6.02%	7.27%
Latin America	0.33%	9.44%
Disney	**100.00%**	**5.76%**

A Template for Estimating the ERP – January 2017



ERP : Jan 2017

Andorra	8.81%	3.12%	Jersey	6.26%	0.57%
Austria	6.26%	0.57%	Liechtenstein	5.69%	0.00%
Belgium	6.55%	0.86%	Luxembourg	5.69%	0.00%
Cyprus	12.09%	6.40%	Malta	7.40%	1.71%
Denmark	5.69%	0.00%	Netherlands	5.69%	0.00%
Finland	6.26%	0.57%	Norway	5.69%	0.00%
France	6.39%	0.70%	Portugal	9.24%	3.55%
Germany	5.69%	0.00%	Spain	8.40%	2.71%
Greece	19.89%	14.20%	Sweden	5.69%	0.00%
Guernsey	6.26%	0.57%	Switzerland	5.69%	0.00%
Iceland	7.40%	1.71%	Turkey	9.24%	3.55%
Ireland	7.40%	1.71%	UK	6.26%	0.57%
Isle of Man	6.26%	0.57%	**W.Europe**	**6.81%**	**1.12%**
Italy	8.40%	2.71%			

Canada	5.69%	0.00%
USA	5.69%	0.00%
North America	**5.69%**	**0.00%**

Caribbean	**13.81%**	**8.12%**

Argentina	14.93%	9.24%
Belize	18.48%	12.79%
Bolivia	10.81%	5.12%
Brazil	9.96%	4.27%
Chile	6.55%	0.86%
Colombia	8.40%	2.71%
Costa Rica	9.24%	3.55%
Ecuador	14.93%	9.24%
El Salvador	14.93%	9.24%
Guatemala	9.24%	3.55%
Honduras	13.51%	7.82%
Mexico	7.40%	1.71%
Nicaragua	13.51%	7.82%
Panama	8.40%	2.71%
Paraguay	9.24%	3.55%
Peru	7.40%	1.71%
Suriname	12.09%	6.40%
Uruguay	8.40%	2.71%
Venezuela	19.89%	14.20%
Latin America	**10.11%**	**4.42%**

Angola	12.09%	6.40%
Botswana	6.90%	1.21%
Burkina Faso	14.93%	9.24%
Cameroon	13.51%	7.82%
Cape Verde	13.51%	7.82%
Congo (DR)	14.93%	9.24%
Congo (Rep)	14.93%	9.24%
Côte d'Ivoire	10.81%	5.12%
Egypt	14.93%	9.24%
Ethiopia	12.09%	6.40%
Gabon	12.09%	6.40%
Ghana	14.93%	9.24%
Kenya	12.09%	6.40%
Morocco	9.24%	3.55%
Mozambique	19.89%	14.20%
Namibia	8.81%	3.12%
Nigeria	12.09%	6.40%
Rwanda	13.51%	7.82%
Senegal	12.09%	6.40%
South Africa	8.40%	2.71%
Tunisia	10.81%	5.12%
Uganda	13.51%	7.82%
Zambia	14.93%	9.24%
Africa	**11.98%**	**6.29%**

Albania	12.09%	6.40%
Armenia	12.09%	6.40%
Azerbaijan	9.24%	3.55%
Belarus	16.34%	10.65%
Bosnia and Her	14.93%	9.24%
Bulgaria	8.40%	2.71%
Croatia	9.96%	4.27%
Czech Republic	6.69%	1.00%
Estonia	6.69%	1.00%
Georgia	10.81%	5.12%
Hungary	8.81%	3.12%
Kazakhstan	8.81%	3.12%
Kyrgyzstan	13.51%	7.82%
Latvia	7.40%	1.71%
Lithuania	7.40%	1.71%
Macedonia	10.81%	5.12%
Moldova	14.93%	9.24%
Montenegro	12.09%	6.40%
Poland	6.90%	1.21%
Romania	8.81%	3.12%
Russia	9.24%	3.55%
Serbia	12.09%	6.40%
Slovakia	6.90%	1.21%
Slovenia	8.81%	3.12%
Ukraine	19.89%	14.20%
E.Europe	**9.09%**	**3.40%**

Bahrain	9.96%	4.27%
Iraq	14.94%	9.25%
Israel	6.69%	1.00%
Jordan	12.09%	6.40%
Kuwait	6.40%	0.71%
Lebanon	13.51%	7.82%
Oman	7.96%	2.27%
Qatar	6.40%	0.71%
Ras Al Khaimah	6.90%	1.21%
Saudi Arabia	6.69%	1.00%
Sharjah	7.40%	1.71%
United Arab Emirates	6.40%	0.71%
Middle East	**7.50%**	**1.81%**

Country	ERP	CRP	Country	ERP	CRP
Algeria	13.72%	7.47%	Malawi	17.24%	10.99%
Brunei	9.75%	3.50%	Mali	13.90%	7.65%
Gambia	13.72%	7.47%	Myanmar	13.72%	7.47%
Guinea	20.00%	13.75%	Niger	17.24%	10.99%
Guinea-Bissau	12.48%	6.23%	Sierra Leone	16.61%	10.36%
Guyana	12.48%	6.23%	Somalia	20.00%	13.75%
Haiti	16.61%	10.36%	Sudan	20.00%	13.75%
Iran	11.22%	4.97%	Syria	20.00%	13.75%
Korea, D.P.R.	17.24%	10.99%	Tanzania	13.90%	7.65%
Liberia	17.24%	10.99%	Togo	13.72%	7.47%
Libya	20.00%	13.75%	Yemen, Republic	17.24%	10.99%
Madagascar	12.48%	6.23%	Zimbabwe	17.24%	10.99%

Bangladesh	10.81%	5.12%
Cambodia	13.51%	7.82%
China	6.55%	0.86%
Fiji	12.09%	6.40%
Hong Kong	6.26%	0.57%
India	8.81%	3.12%
Indonesia	8.81%	3.12%
Japan	6.69%	1.00%
Korea	6.39%	0.70%
Macao	6.55%	0.86%
Malaysia	7.40%	1.71%
Mauritius	7.95%	2.26%
Mongolia	16.34%	10.65%
Pakistan	14.93%	9.24%
Papua New Guinea	13.51%	7.82%
Philippines	8.40%	2.71%
Singapore	5.69%	0.00%
Sri Lanka	12.09%	6.40%
Taiwan	6.55%	0.86%
Thailand	7.95%	2.26%
Vietnam	12.09%	6.40%
Asia	**7.12%**	**1.43%**

Australia	5.69%	0.00%
Cook Islands	12.09%	6.40%
New Zealand	5.69%	0.00%
Australia & NZ	**5.70%**	**0.01%**

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

Falabella: Estimating the Equity Risk Premium in 2017

Country	*Revenues (in billions)*	*Weight*	*ERP*
Chile	CLP 2,769	53.52%	6.55%
Peru	CLP 1,429	27.62%	7.40%
Argentina	CLP 459	8.87%	14.94%
Colombia	CLP 350	6.76%	8.40%
Brazil	CLP 167	3.23%	9.96%
Falabella	**CLP 5,174**	**100.00%**	**7.76%**

III. The Beta

- The beta of a stock (asset) measures its exposure to market risk, i.e., the risk that cannot be diversified away by the marginal investors. It is therefore a measure of exposure to broad macroeconomic risk factors.
- The beta of a stock is standardized around one.
  - A beta that is greater than one indicates above-average risk
  - A beta that is close to one indicates average risk
  - A beta less than one indicates below average risk
  - A beta below zero is a indication of a market risk reducing investment
- Implications:
  - The weighted average beta of stocks in any market (even the most risky ones) is one. Thus, beta cannot carry the weight of country risk.
  - A stock can be risky and have a low beta, if most of the risk in the stock is firm-specific risk.

Measuring Beta

- The standard procedure is to regress stock returns (Rj) against market returns (Rm):

$$R_j = a + b\ R_m$$

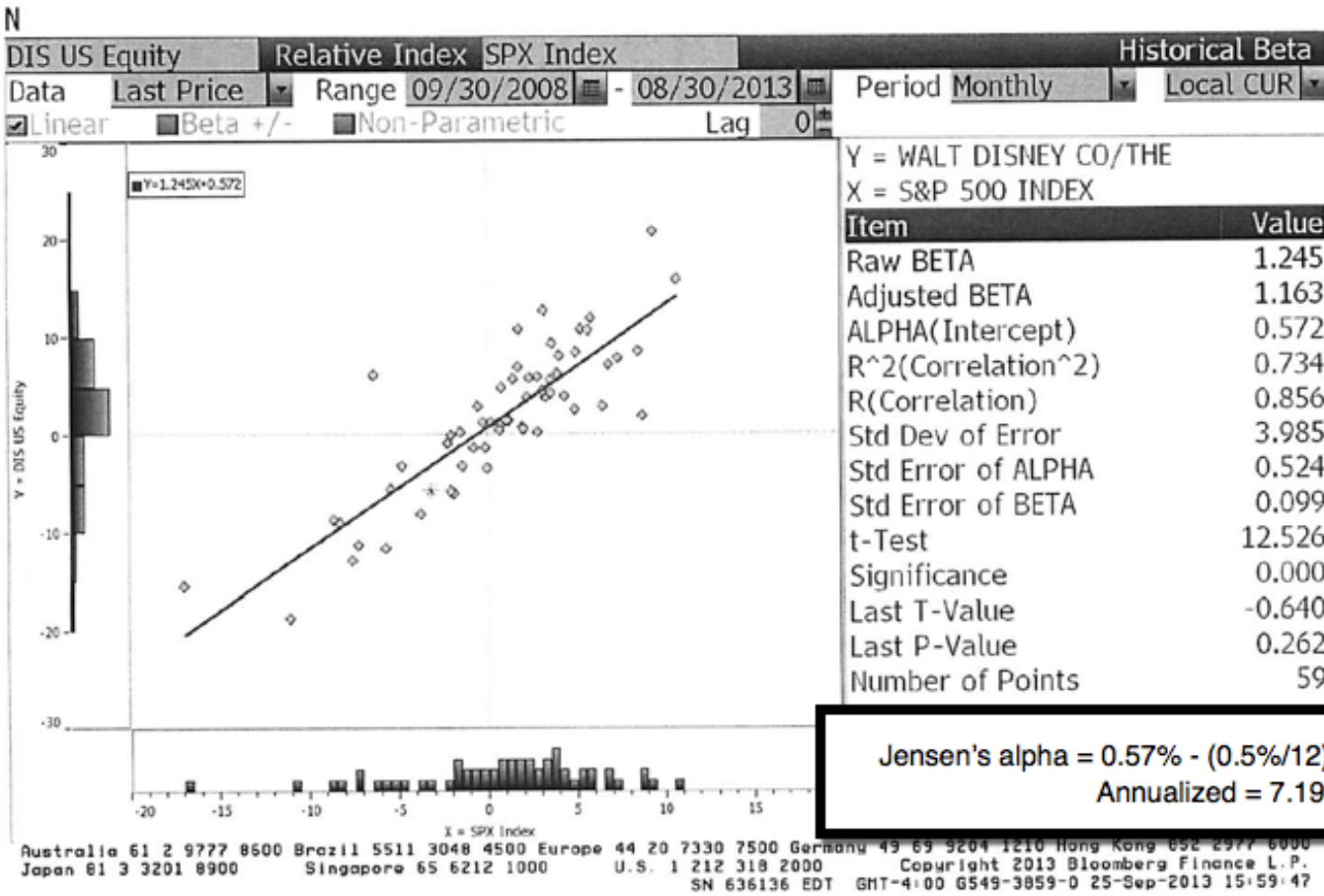
- Risk measure: The slope of the regression (b) corresponds to the beta of the stock, and measures the riskiness of the stock. The regression yields a range on the beta that can be computed from the standard error of the beta estimate.
  - Plus (minus) one standard errors: 67% confidence interval
  - Plus (minus) two standard errors: 95% confidence interval
- Performance measure: The intercept (a) of the regression is a measure of how well or badly the stock performed during the period of the regression, after adjusting for risk and market performance. If the regression is run with raw returns, the intercept has to be compared to Rf (1- Beta) to measure what's called **Jensen's alpha (a – Rf (1- Beta)**

  a > Rf (1-b) : Positive Jensen's alpha = Stock did better than expected during regression period

  a = Rf (1-b): : Zero Jensen's alpha = Stock did better than expected during regression period

  a < Rf (1-b) : Negative Jensen's alpha = Stock did better than expected during regression period
- Risk source: The R squared (R^2) of the regression provides an estimate of the proportion of the risk (variance) of a firm that can be attributed to market risk.

Disney: Beta Regression



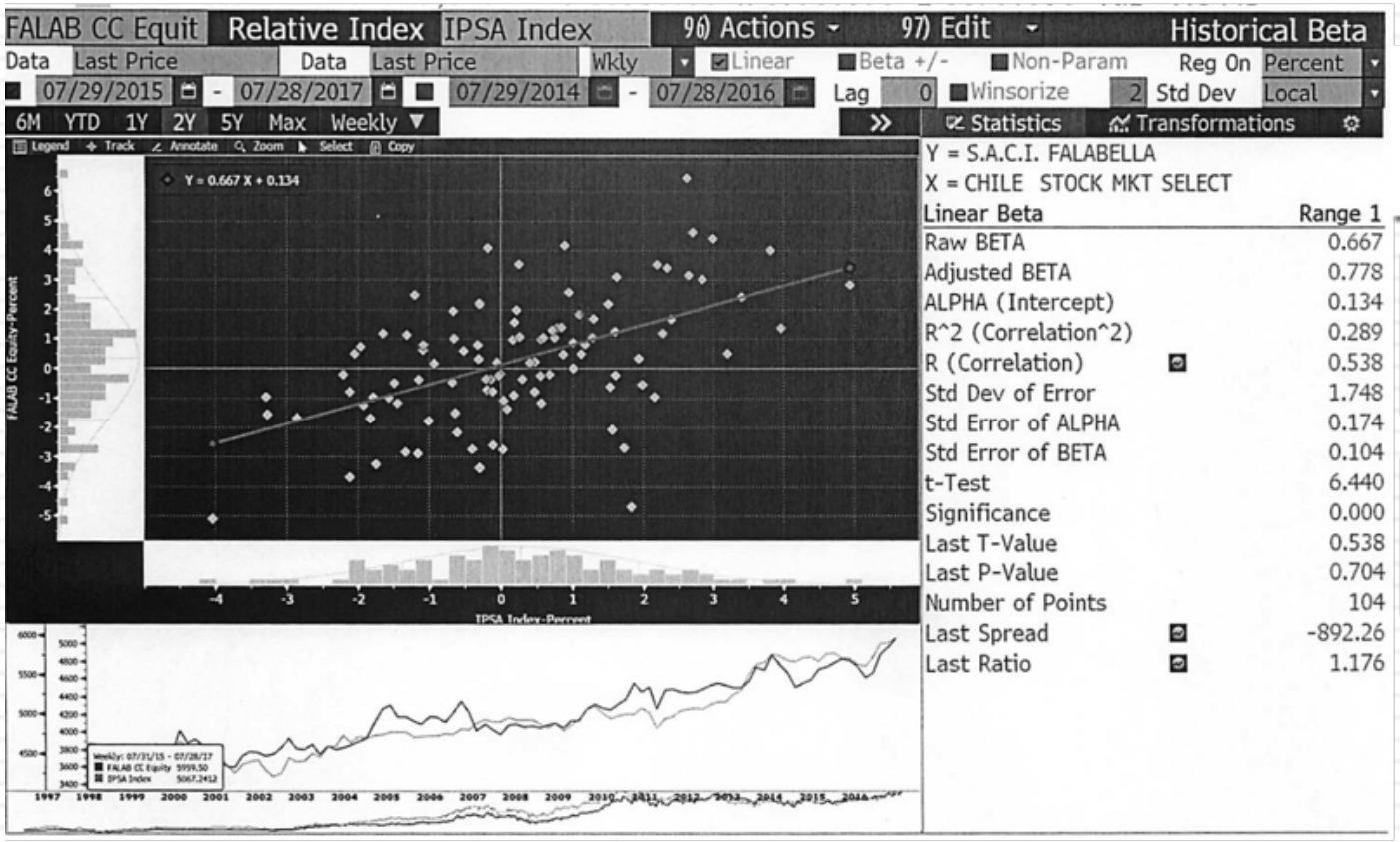
Beta =1.25

73% of risk is from market

67% (95%) range on beta: 1.15 - 1.35 (1.05-1.45)

Jensen's alpha = 0.57% - (0.5%/12) (1-1.245) = 0.58%
Annualized = 7.19%

Falabella: Beta Regression



Risk (Beta)
Raw Beta = 0.67
67% range = 0.57-0.77
95% range = 0.47- 0.87

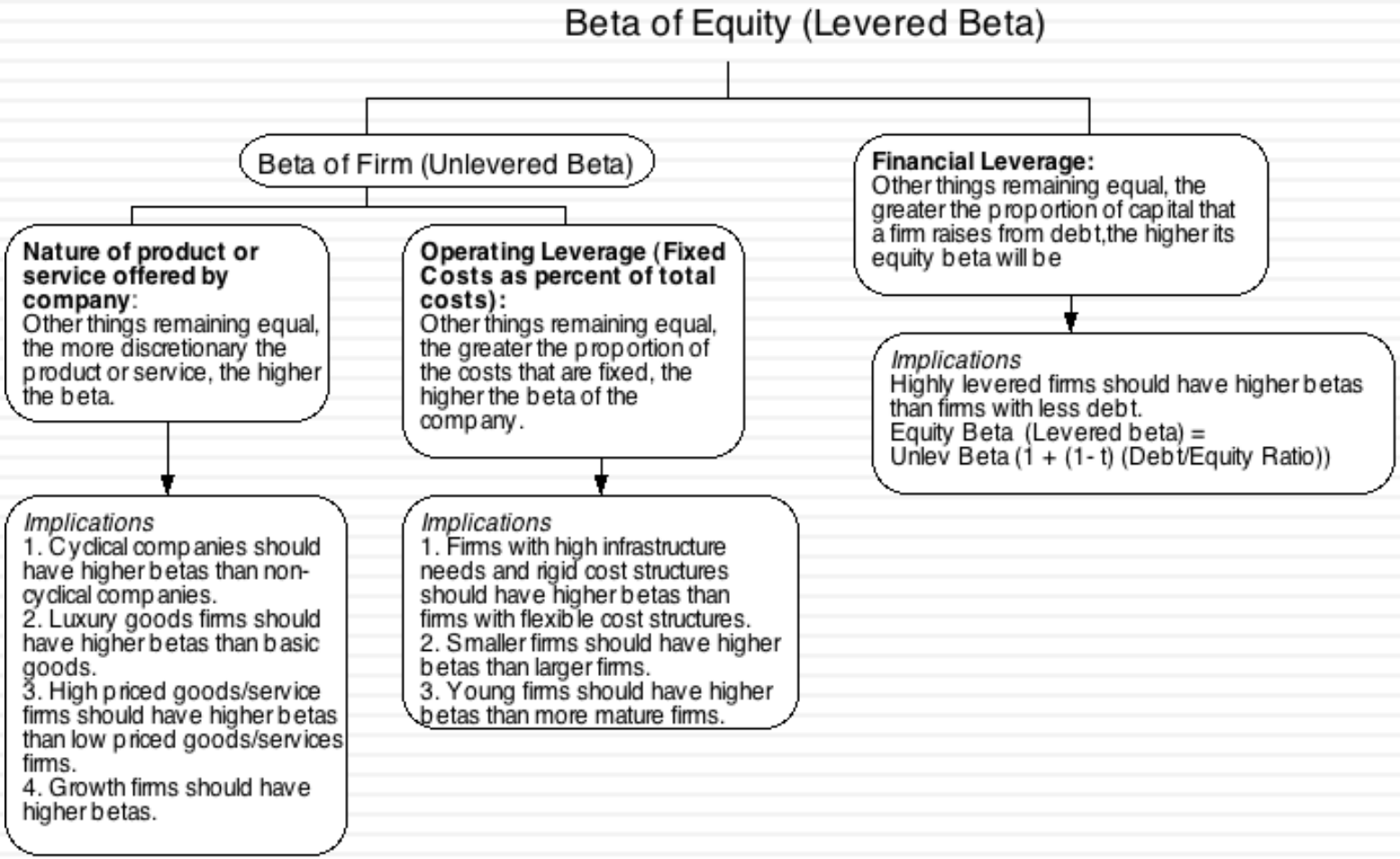
Performance (Alpha)
Weekly= 0.13%-0.1%
(1-0.67) = 0.10%
Annual - 5.17%

Risk Source (R sqd)
% from market = 29%
% from firm = 71%

The problem with regression betas

- They are backward looking: By definition, a regression beta is backward looking because it is computed based upon past returns. Consequently, if a company's business mix or financial leverage has changed during the regression period, the regression beta (even if well estimated) is no longer operational.
- They are subject to manipulation: Changing the market index used, the time period of the regression or even the return intervals (daily, weekly,monthly) can yield very different regression output.
- They are noisy: A regression slope (which is what we use as a beta) comes with a standard error, and if you regress a stock against a broad enough index, the regression beta should have a high standard error (it is a feature, not a bug)>

Determinants of Betas



Disney's business betas

$$\text{Unlevered Beta} = \frac{\text{Unlevered Beta}}{(1 - \text{Cash/ Firm Value})}$$

Business	*Comparable firms*	*Sample size*	*Median Beta*	*Median D/E*	*Median Tax rate*	*Company Unlevered Beta*	*Median Cash/ Firm Value*	*Business Unlevered Beta*
Media Networks	US firms in broadcasting business	26	1.43	71.09%	40.00%	1.0024	2.80%	1.0313
Parks & Resorts	Global firms in amusement park business	20	0.87	46.76%	35.67%	0.6677	4.95%	0.7024
Studio Entertainment	US movie firms	10	1.24	27.06%	40.00%	1.0668	2.96%	1.0993
Consumer Products	Global firms in toys/games production & retail	44	0.74	29.53%	25.00%	0.6034	10.64%	0.6752
Interactive	Global computer gaming firms	33	1.03	3.26%	34.55%	1.0085	17.25%	1.2187

Disney's Levered beta by division

Business	*Revenues*	*EV/Sales*	*Value of Business*	*Proportion of Disney*	*Unlevered beta*	*Value*	*Proportion*
Media Networks	$20,356	3.27	$66,580	49.27%	1.03	$66,579.81	49.27%
Parks & Resorts	$14,087	3.24	$45,683	33.81%	0.70	$45,682.80	33.81%
Studio Entertainment	$5,979	3.05	$18,234	13.49%	1.10	$18,234.27	13.49%
Consumer Products	$3,555	0.83	$2,952	2.18%	0.68	$2,951.50	2.18%
Interactive	$1,064	1.58	$1,684	1.25%	1.22	$1,683.72	1.25%
Disney Operations	$45,041		$135,132	100.00%	0.9239	$135,132.11	

Business	*Unlevered beta*	*Value of business*	*D/E ratio*	*Levered beta*	*Cost of Equity*
Media Networks	1.0313	$66,580	10.03%	1.0975	9.07%
Parks & Resorts	0.7024	$45,683	11.41%	0.7537	7.09%
Studio Entertainment	1.0993	$18,234	20.71%	1.2448	9.92%
Consumer Products	0.6752	$2,952	117.11%	1.1805	9.55%
Interactive	1.2187	$1,684	41.07%	1.5385	11.61%
Disney Operations	0.9239	$135,132	13.10%	1.0012	8.52%

Estimating Bottom Up Betas: Falabella

Business	*Revenues*	*EV/Sales*	*Estimated Value*	*Weight*	*Unlevered Beta*
Retail (General)	$2,886.00	0.7399	$2,135.37	23.24%	0.8148
Retail (Grocery and Food)	$2,001.00	0.6488	$1,298.32	14.13%	0.5678
Retail (Building Supply)	$1,372.00	1.4657	$2,010.92	21.88%	0.7273
Real Estate (General/Diversified)	$332.00	3.4183	$1,134.88	12.35%	0.6751
Banking	$497.00	5.2507	$2,609.58	28.40%	0.4490
Falbella	**$7,088.00**		**$9,189.07**		**0.6396**

Falabella: Cost of Equity by Business

Business	*Unlevered Beta*	*D/E ratio*	*Levered Beta*	*Risk free*	*ERP*	*Cost of Equity*
Retail (General)	0.8148	32.47%	1.0159	3.42%	8.31%	11.86%
Retail (Grocery and Food)	0.5678	32.47%	0.7079	3.42%	6.96%	8.35%
Retail (Building Supply)	0.7273	32.47%	0.9068	3.42%	6.94%	9.71%
Real Estate (General/Diversified)	0.6751	32.47%	0.8417	3.42%	6.55%	8.93%
Banking	0.4490	NA	0.8800	3.42%	8.49%	10.89%
Falabela	**0.6396**	**32.47%**	**0.7974**	**3.42%**	**7.76%**	**9.61%**

Different country mixes for different businesses

Discussion Issue

- The head of the supermarket business has come to you with a new acquisition of a supermarket chain in **Brazil,** that he would like you to fund. He claims that his analysis of the investment indicates that it will generate a return on equity of 12% (in **Brazilian Reais**). Would you fund it?
  a. Yes.
  b. No.

  What return on equity would this investment need to make to be justified? Why? (The inflation rate in Reais is 7% whereas the inflation rate in pesos is 3%).

Cost of Equity$_{\text{Nominal R\$}}$ (1+ Cost of Equity$_{\text{US \$}}$

Falabella: Cost of Equity for a Brazilian supermarket investment in nominal $R

- To convert a discount rate in one currency to another, all you need are expected inflation rates in the two currencies

$$(1 + Cost\ of\ Equity\ in\ CLP)\frac{(1 + Inflation\ Rate_{Brazil})}{(1 + Inflation\ Rate_{Chile})}$$

- To estimate the cost of equity that Falabella should use for a supermarket investment in Brazil, let's start by estimating the cost of equity in Chilean pesos:

Cost of equity in CLP = 3.42% + 0.6499 (9.96%) = 9.89%

- The risk free rate is in US dollars, the beta is that of the supermarket business and the equity risk premium is for Brazil.

Cost of equity in $R = (1.0989) (1.07/1.03) -1 = 14.16%

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 = EBIT / Interest Expenses

- The interest coverage ratio measures how much operating income a firm generates relative to a dollar of interest expenses.

Company	*Operating income*	*Interest Expense*	*Interest coverage ratio*
Disney	$10,023	$444	22.57
Falabella	$ 1,056	$193	5.48

Interest Coverage Ratios, Ratings and Default Spreads- November 2013

Large cap (>$5 billion)	*Small cap or risky (<$5 billion)*	*Rating is (S&P/ Moody's)*	*Spread (11/13)*
>8.50	>12,5	Aaa/AAA	0.40%
6.5-8.5	9.5-12.5	Aa2/AA	0.70%
5.5-6.5	7.5-9.5	A1/A+	0.85%
4.25-5.5	6-7.5	A2/A	1.00%
3-4.25	4.5-6	A3/A-	1.30%
2.5-3	4-4.5	Baa2/BBB	2.00%
2.25-2.5	3.5-4	Ba1/BB+	3.00%
2-2.25	3-3.5	Ba2/BB	4.00%
1.75-2.25	2.5-3	B1/B+	5.50%
1.5-1.75	2-2.5	B2/B	6.50%
1.25-1.5	1.5-2	B3/B-	7.25%
0.8-1.25	1.25-1.5	Caa/CCC	8.75%
0.65-0.8	0.8-1.25	Ca2/CC	9.50%
0.2-0.65	0.5-0.8	C2/C	10.50%
<0.2	<0.5	D2/D	12.00%

Disney: Large cap, developed 22.57 → AAA

Falabella: Small cap, emerging 5.58 → A-

Synthetic versus Actual Ratings: Rated Firms

- Disney's synthetic rating is AAA, whereas its actual rating is A. The difference can be attributed to any of the following:
  - Synthetic ratings reflect only the interest coverage ratio whereas actual ratings incorporate all of the other ratios and qualitative factors
  - Synthetic rating was based on 2013 operating income whereas actual rating reflects normalized earnings

  Cost of debt for Disney (pre-tax) = 2.75% + 1.00% = 3.75%

  After-tax cost of debt = 3.75% (1-.361) = 2.40%
- Falabella's synthetic rating is A-, but the actual rating for dollar debt is, probably because it is Chile-based.

  Cost of debt for Falabella = Risk free rate + Default $\text{Spread}_{\text{Country}}$ + Default $\text{Spread}_{\text{Company}}$ =3.42% + 0.70% +1.25%= 5.37%

  After-tax cost of debt = 5.37% (1-.24) = 4.08%

Divisional Costs of Capital: Disney and Vale

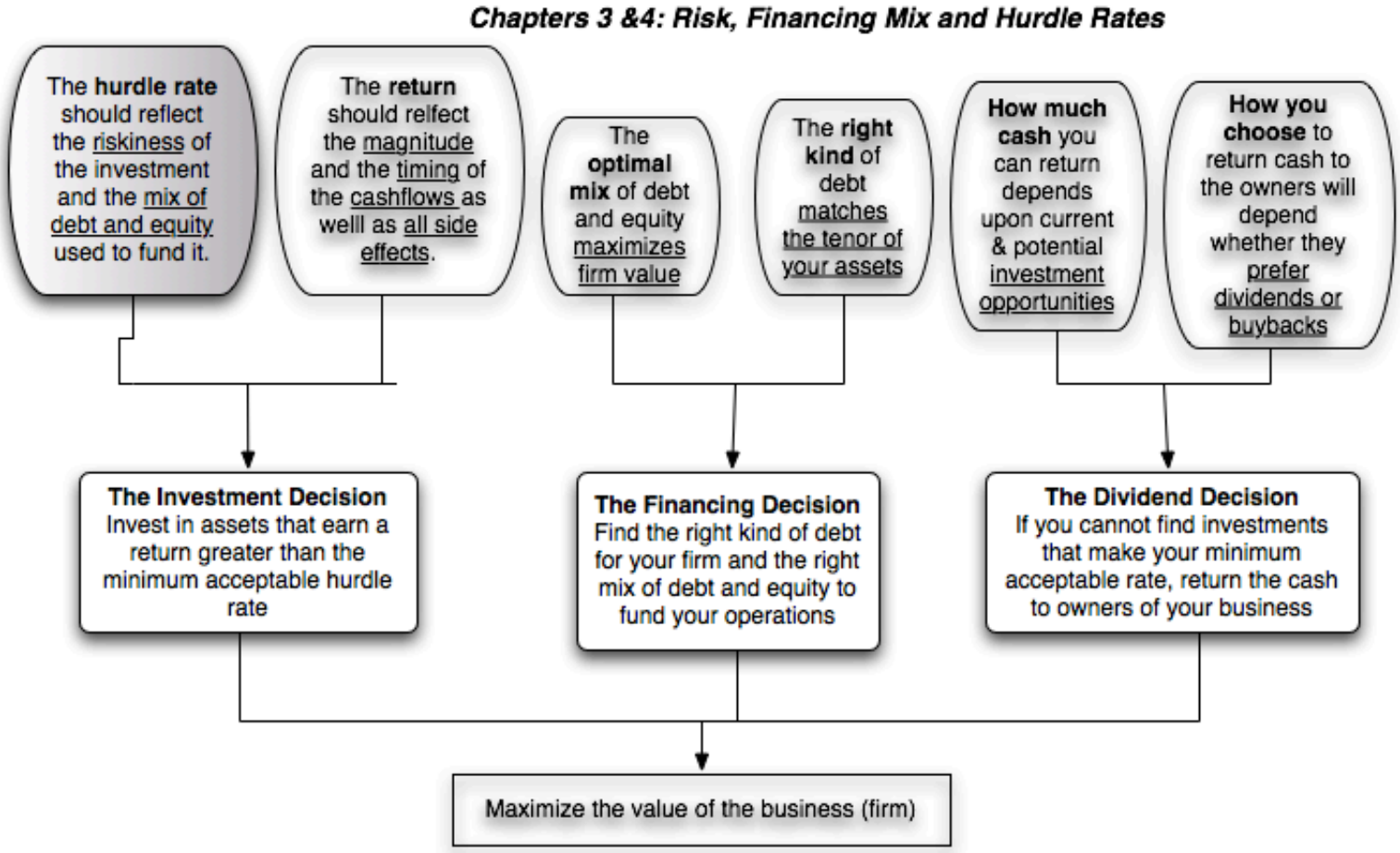
Disney

	Cost of equity	Cost of debt	Marginal tax rate	After-tax cost of debt	Debt ratio	Cost of capital
Media Networks	9.07%	3.75%	36.10%	2.40%	9.12%	8.46%
Parks & Resorts	7.09%	3.75%	36.10%	2.40%	10.24%	6.61%
Studio Entertainment	9.92%	3.75%	36.10%	2.40%	17.16%	8.63%
Consumer Products	9.55%	3.75%	36.10%	2.40%	53.94%	5.69%
Interactive	11.65%	3.75%	36.10%	2.40%	29.11%	8.96%
Disney Operations	8.52%	3.75%	36.10%	2.40%	11.58%	7.81%

Falabella

Business	*Cost of Equity*	*E/(D+E)*	*Cost of Debt*	*D/(D+E)*	*Cost of capital*
Retail (General)	11.86%	75.49%	4.08%	24.51%	9.95%
Retail (Grocery and Food)	8.35%	75.49%	4.08%	24.51%	7.30%
Retail (Building Supply)	9.71%	75.49%	4.08%	24.51%	8.33%
Real Estate (General/Diversified)	8.93%	75.49%	4.08%	24.51%	7.74%
Banking	10.89%	NA	NA	NA	NA
Falabela	**9.61%**	**75.49%**	**4.08%**	**24.51%**	**8.25%**

Back to First Principles



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		-$18	-$54	-$30	$38	$114	$141	$169	$199	$231	$238
Operating Income after Taxes		-$32	-$96	-$54	$68	$202	$249	$299	$352	$410	$421

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 36.1%

And the Accounting View of Return

Year	After-tax Operating Income	BV of pre-project investment	BV of fixed assets	BV of Working capital	BV of Capital	Average BV of Capital	ROC(a)	ROC(b)
0		500	2000	0	$2,500			
1	-$32	$450	$3,000	$0	$3,450	$2,975	-1.07%	-1.28%
2	-$96	$400	$3,813	$63	$4,275	$3,863	-2.48%	-2.78%
3	-$54	$350	$4,145	$88	$4,582	$4,429	-1.22%	-1.26%
4	$68	$300	$4,027	$125	$4,452	$4,517	1.50%	1.48%
5	$202	$250	$3,962	$156	$4,368	$4,410	4.57%	4.53%
6	$249	$200	$3,931	$172	$4,302	$4,335	5.74%	5.69%
7	$299	$150	$3,931	$189	$4,270	$4,286	6.97%	6.94%
8	$352	$100	$3,946	$208	$4,254	$4,262	8.26%	8.24%
9	$410	$50	$3,978	$229	$4,257	$4,255	9.62%	9.63%
10	$421	$0	$4,010	$233	$4,243	$4,250	9.90%	9.89%
Average							4.18%	4.11%

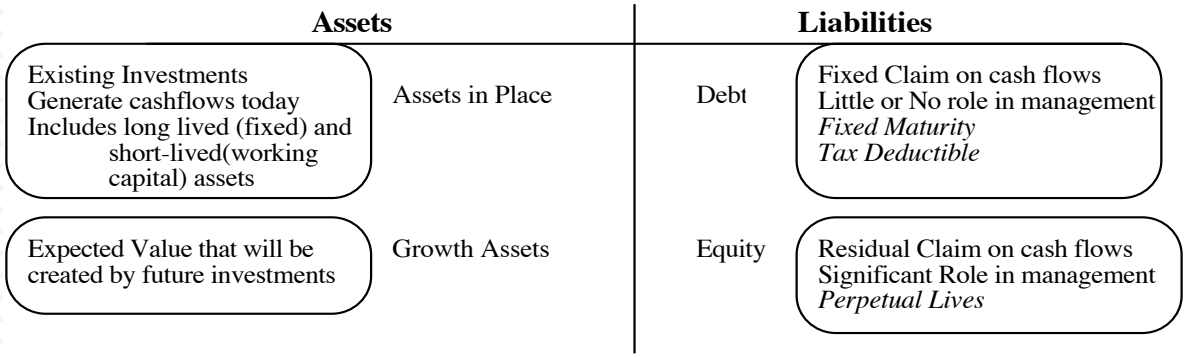
(a) Based upon book capital at the start of each year
(b) Based upon average book capital over the year

Estimating a hurdle rate for Rio Disney

- We did estimate a cost of capital of 6.61% for the Disney theme park business, using a bottom-up levered beta of 0.7537 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). We first computed the Brazil country risk premium (by multiplying the default spread for Brazil by the relative equity market volatility) and then re-estimated the cost of equity:
  - Country risk premium for Brazil = 5.5%+ 3% = 8.5%
  - Cost of Equity in US$= 2.75% + 0.7537 (8.5%) = 9.16%
- Using this estimate of the cost of equity, Disney's theme park debt ratio of 10.24% and its after-tax cost of debt of 2.40% (see chapter 4), we can estimate the cost of capital for the project:
  - Cost of Capital in US$ = 9.16% (0.8976) + 2.40% (0.1024) = 8.46%

A Tangent: From New to Existing Investments: ROC for the entire firm

How "good" are the existing investments of the firm?



Measuring ROC for existing investments..

Company	*EBIT (1-t)*	*BV of Debt*	*BV of Equity*	*Cash*	*BV of Capital*	*Return on Capital*	*Cost of Capital*	*ROC - Cost of Capital*
Disney	$6,920	$16,328	$41,958	$3,387	$54,899	12.61%	7.81%	4.80%
Falabella	835 CLP	3938 CLP	4812 CLP	1133 CLP	7616 CLP	10.54%	7.55%	2.99%

The cash flow view of this project..

	0	1	2	3	4	5	6	7	8	9	10
After-tax Operating Income		-$32	-$96	-$54	$68	$202	$249	$299	$352	$410	$421
+ Depreciation & Amortization	$0	$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 non-cash Work Capital		$0	$63	$25	$38	$31	$16	$17	$19	$21	$5
Cashflow to firm	($2,500)	($982)	($921)	($361)	$198	$285	$314	$332	$367	$407	$434

To get from income to cash flow, we

I. 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
Tax Bendfits from Depreciation	$18	$153	$169	$160	$134	$132	$132	$132	$132	$133

II. subtracted out the capital expenditures

III. subtracted out the change in non-cash working capital

The incremental cash flows on the project

	0	1	2	3	4	5	6	7	8	9	10
After-tax Operating Income		-$32	-$96	-$54	$68	$202	$249	$299	$352	$410	$421
+ Depreciation & Amortization	$0	$50	$425	$469	$444	$372	$367	$364	$364	$366	$368
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Cashflow to firm	($2,500)	($982)	($921)	($361)	$198	$285	$314	$332	$367	$407	$434
+ Pre-project investment (sunk)	$500										
- Pre-project Depreciation * tax rate		$18	$18	$18	$18	$18	$18	$18	$18	$18	$18
+ Non-incremental Allocated Expense (1-t)		$0	$80	$112	$160	$200	$220	$242	$266	$292	$298
Incremental Cash flow to the firm	($2,000)	($1,000)	($860)	($267)	$340	$467	$516	$555	$615	$681	$715

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

2/3rd of allocated G&A is fixed. Add back this amount (1-t)
Tax rate = 36.1%

Closure on Cash Flows

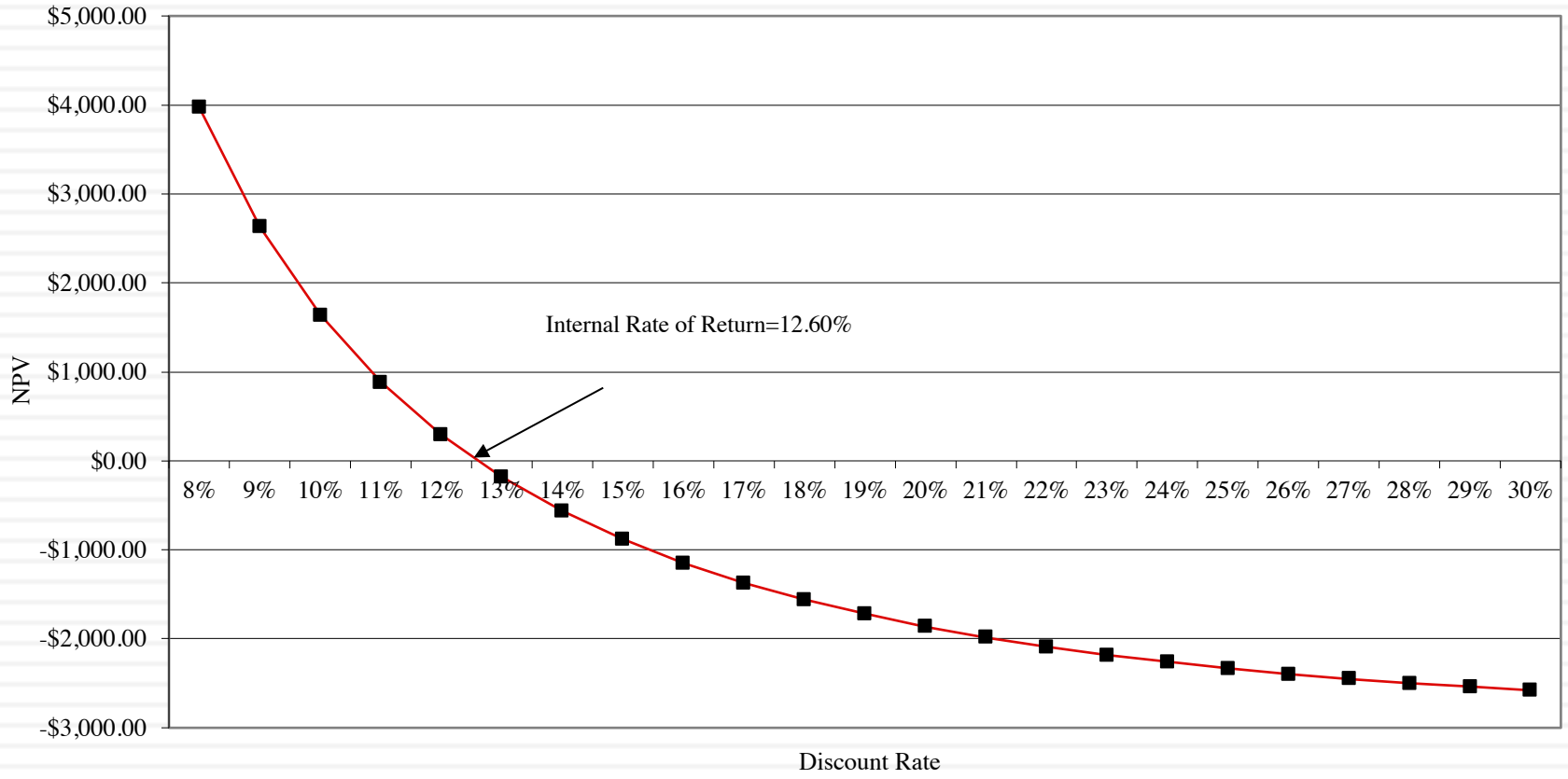
- In a project with a finite and short life, you would need to compute a salvage value, which is the expected proceeds from selling all of the investment in the project at the end of the project life. It is usually set equal to book value of fixed assets and working capital
- In a project with an infinite 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 in year 11/(Cost of Capital - Growth Rate)
    =715 (1.02) /(.0846-.02) = $ 11,275 million

Which yields a NPV of..

Year	Annual Cashflo	Terminal Value	Present Value
0	-$2,000		-$2,000
1	-$1,000		-$922
2	-$859		-$730
3	-$267		-$210
4	$340		$246
5	$466		$311
6	$516		$317
7	$555		$314
8	$615		$321
9	$681		$328
10	$715	$11,275	$5,321
			$3,296

Discounted at Rio Disney cost of capital of 8.46%

The IRR of this project



Disney Theme Park: $R NPV

Expected Exchange Rate$_t$
= Exchange Rate today * $(1.09/1.02)^t$

Discount at $R cost of capital
= (1.0846) (1.09/1.02) – 1 = 15.91%

Year	Cashflow ($)	$R/$	Cashflow ($R)	Present Value
0	-R$ 2,000.00	R$ 2.35	-R$ 4,700.00	-R$ 4,700.00
1	-R$ 1,000.00	R$ 2.51	-R$ 2,511.27	-R$ 2,166.62
2	-R$ 859.03	R$ 2.68	-R$ 2,305.29	-R$ 1,715.95
3	-R$ 267.39	R$ 2.87	-R$ 766.82	-R$ 492.45
4	R$ 340.22	R$ 3.06	R$ 1,042.63	R$ 577.68
5	R$ 466.33	R$ 3.27	R$ 1,527.21	R$ 730.03
6	R$ 516.42	R$ 3.50	R$ 1,807.31	R$ 745.36
7	R$ 555.08	R$ 3.74	R$ 2,075.89	R$ 738.63
8	R$ 614.95	R$ 4.00	R$ 2,457.65	R$ 754.45
9	R$ 681.46	R$ 4.27	R$ 2,910.36	R$ 770.81
10	R$ 11,989.85	R$ 4.56	R$ 54,719.84	R$ 12,503.50
				R$ 7,745.43

NPV = R$ 7,745/2.35= $ 3,296 Million
NPV is equal to NPV in dollar terms

Equity Analysis: The Parallels

- The investment analysis can be done entirely in equity terms, as well. The returns, cashflows and hurdle rates will all be defined from the perspective of equity investors.
- If using accounting returns,
  - Return will be Return on Equity (ROE) = Net Income/BV of Equity
  - ROE has to be greater than cost of equity
- If using discounted cashflow models,
  - Cashflows will be cashflows after debt payments to equity investors
  - Hurdle rate will be cost of equity

A New Supermarket Acquisition in Brazil: Cash Flows to Equity and NPV

- Assume that Falabella is considering an acquisition of Sonda, the Brazilian supermarket chain for R$ 1 billion.
- In 2016, Sonda generated net income of R$70 million on revenues of R$ 3.4 billion. After reinvestments and net debt issuances, the free cash flow to equity for the year was R$ 50 million.

Net Income	=	R$ 70 million
(minus) Reinvestment	=	R$ 30 million
(plus) Net Debt raised	=	R$ 10 million
FCFE	=	R$ 50 million

- The net income and FCFE is expected to grow 8% a year in perpetuity, in $R terms.
- The cost of equity, for a Brazilian supermarket investment, in $R and using the debt ratio that Falabella uses is 14.16%.

Valuing Sonda's equity

- Value of Sonda's equity

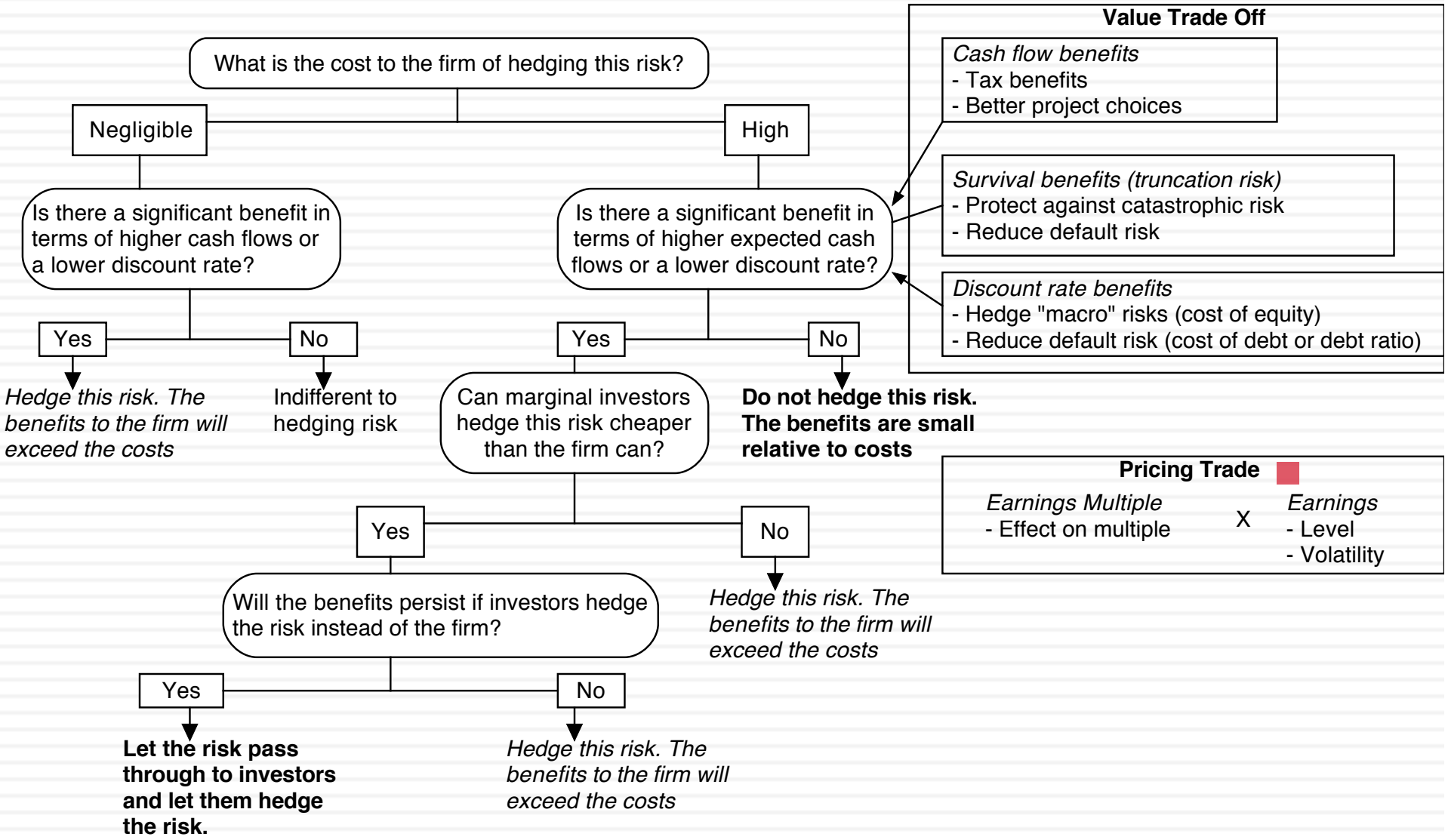
  = FCFE next year/ (Cost of equity – Expected growth rate)

  = R$50 (1.08)/ (.1416 - .08) = R$ 811.68 million

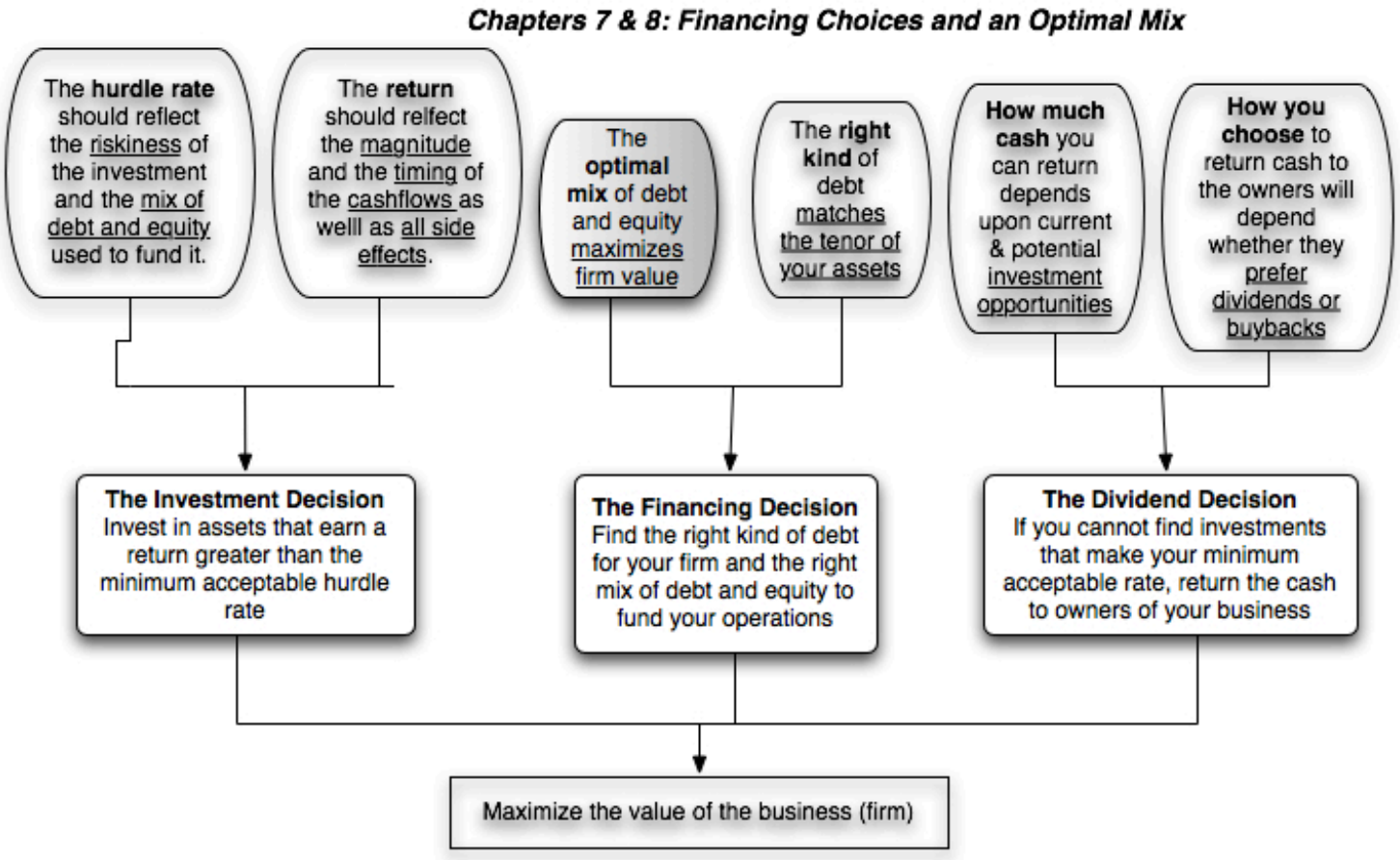
- Since the acquisition cost is R$ 1 billion, as a stand alone investment, this acquisition does not make sense.
- It is possible that Falabella could gain synergies that account for the difference, but if that is the rationale, you need specifics about what these synergies are and their effect on cash flows.

Macro Risks

- If Disney opens a new theme part in Rio, it will be exposed to exchange rate risk. Should Disney hedge this risk?
  a. Yes
  b. No
- If Falabella acquires Sonda, it will be exposed to exchange rate risk. Should Falabella hedge this risk?
  a. Yes
  b. No


What is the cost to the firm of hedging this risk?
Negligible
High
Is there a significant benefit in terms of higher cash flows or a lower discount rate?
Is there a significant benefit in terms of higher expected cash flows or a lower discount rate?
Yes
No
Yes
No
Hedge this risk. The benefits to the firm will exceed the costs
Indifferent to hedging risk
Can marginal investors hedge this risk cheaper than the firm can?
Do not hedge this risk. The benefits are small relative to costs
Yes
No
Will the benefits persist if investors hedge the risk instead of the firm?
Hedge this risk. The benefits to the firm will exceed the costs
Yes
No
Let the risk pass through to investors and let them hedge the risk.
Hedge this risk. The benefits to the firm will exceed the costs
Value Trade Off
Cash flow benefits
- Tax benefits
- Better project choices
Survival benefits (truncation risk)
- Protect against catastrophic risk
- Reduce default risk
Discount rate benefits
- Hedge "macro" risks (cost of equity)
- Reduce default risk (cost of debt or debt ratio)
Pricing Trade
Earnings Multiple
- Effect on multiple
X
Earnings
- Level
- Volatility

First Principles



Debt: Summarizing the trade off

Advantages of Debt	*Disadvantages of debt*
1. Tax Benefit: Interest expenses on debt are tax deductible but cash flows to equity are generally not. *Implication: The higher the marginal tax rate, the greater the benefits of debt.*	**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. *Implication:* *1. Firms with more stable earnings should borrow more, for any given level of earnings.* *2. Firms with lower bankruptcy costs should borrow more, for any given level of earnings.*
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. *Implication: As the separation between managers and stockholders increases, the benefits to using debt will go up.*	**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). *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.*
	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. *Implication:* 1. *Firms that can forecast future funding needs better should be able to borrow more.* 2. *Firms with better access to capital markets should be more willing to borrow more today.*

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.

Disney's cost of capital schedule…

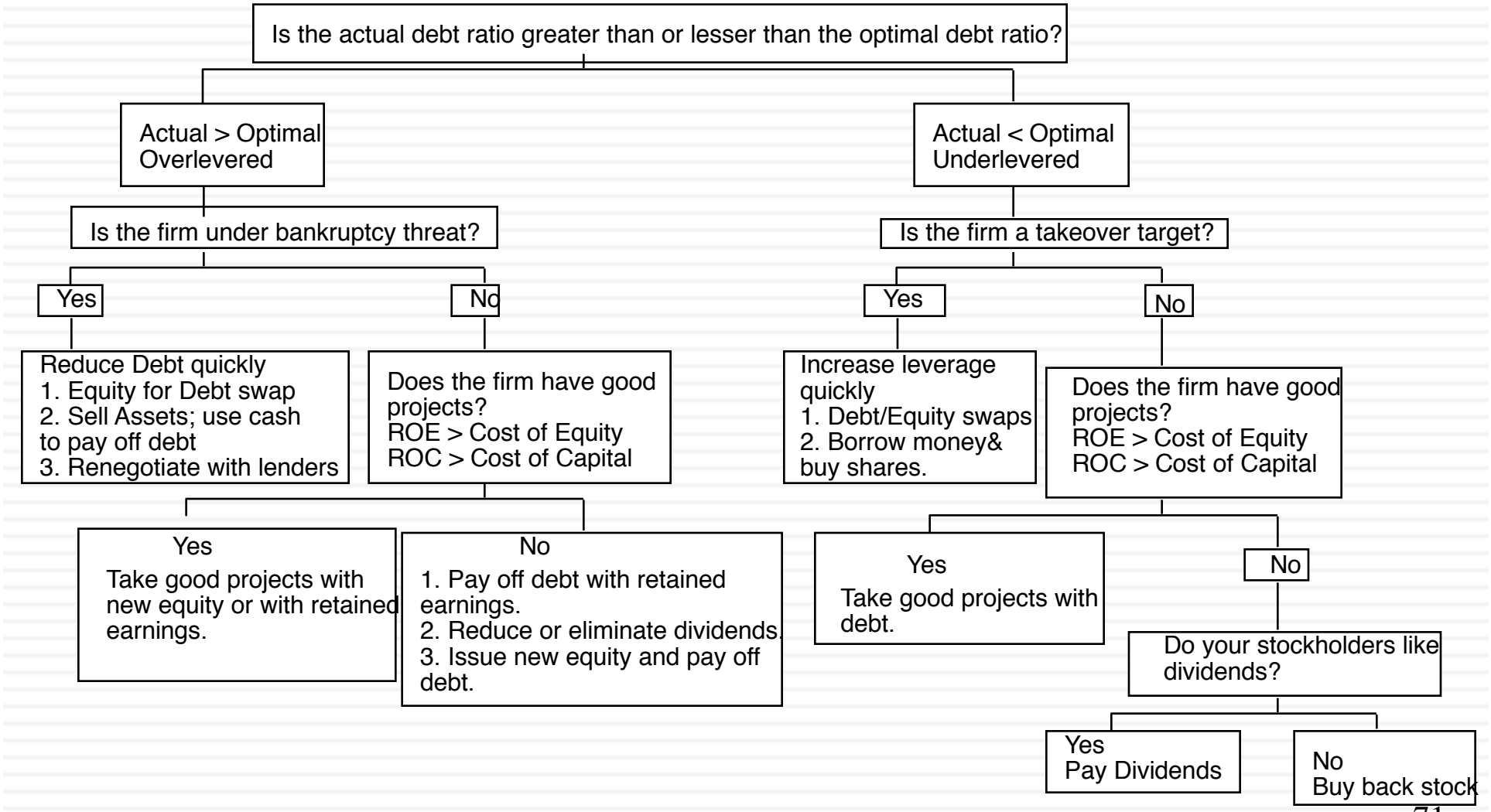
Debt Ratio	Beta	Cost of Equity	Cost of Debt (after-tax)	WACC
0%	0.9239	8.07%	2.01%	8.07%
10%	0.9895	8.45%	2.01%	7.81%
20%	1.0715	8.92%	2.01%	7.54%
30%	1.1770	9.53%	2.20%	7.33%
40%	1.3175	10.34%	2.40%	7.16%
50%	1.5143	11.48%	6.39%	8.93%
60%	1.8095	13.18%	7.35%	9.68%
70%	2.3762	16.44%	7.75%	10.35%
80%	3.6289	23.66%	8.97%	11.90%
90%	7.4074	45.43%	10.33%	13.84%

Extension to a firm with volatile earnings: Falabella's Optimal Debt Ratio

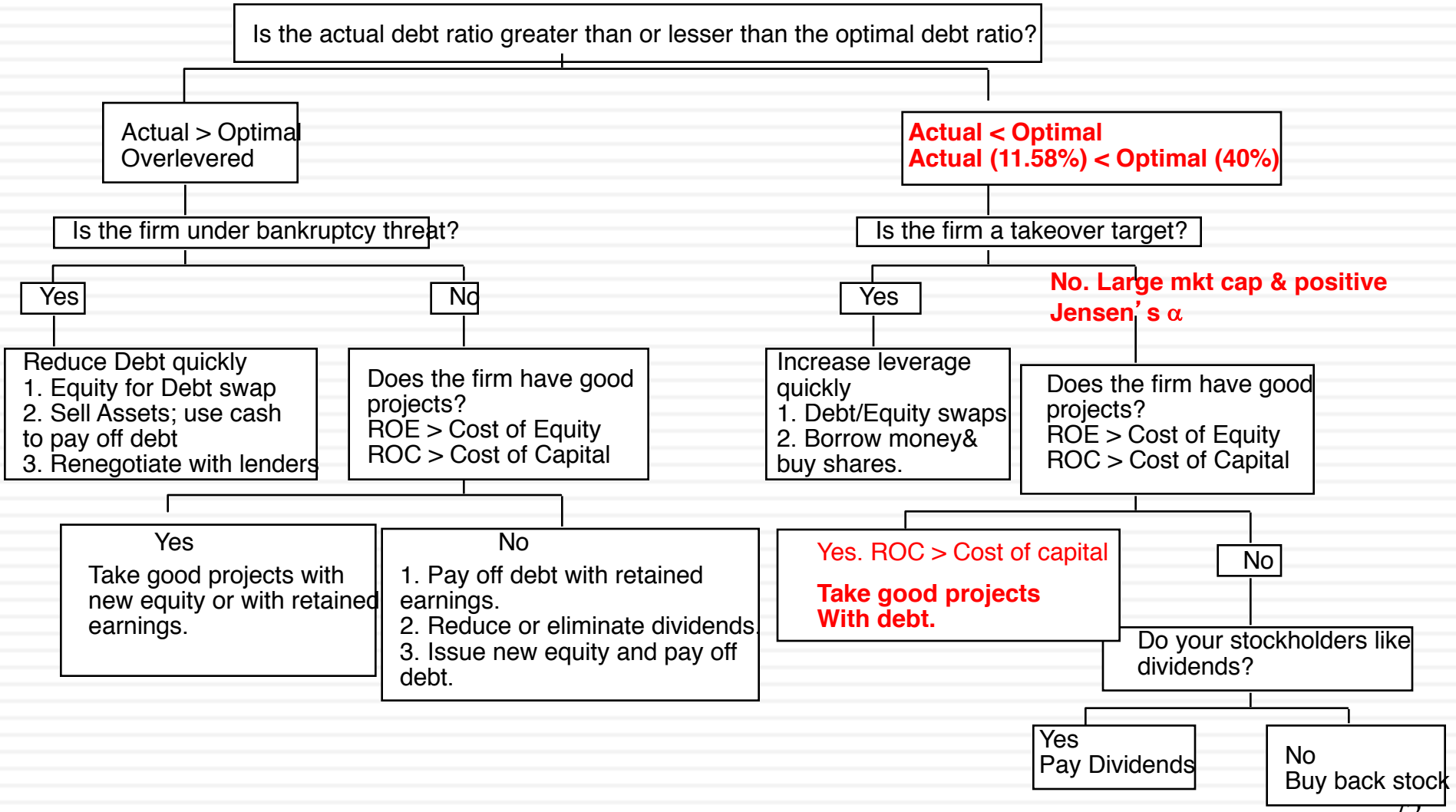
Debt Ratio	Beta	Cost of Equity	Bond Rating	Interest rate on debt	Tax Rate	Cost of Debt (after-tax)	WACC	Enterprise Value
0%	0.6396	8.38%	Aaa/AAA	4.72%	24.00%	3.59%	8.38%	$17,503,548
10%	0.6936	8.80%	Aa2/AA	4.92%	24.00%	3.74%	8.30%	$17,822,098
20%	0.7611	9.33%	A3/A-	5.37%	24.00%	4.08%	8.28%	$17,892,292
30%	0.8479	10.00%	B3/B-	9.62%	24.00%	7.31%	9.19%	$12,032,681
40%	0.9986	11.17%	C2/C	14.62%	15.80%	12.31%	11.63%	$7,037,576
50%	1.1983	12.72%	C2/C	14.62%	12.64%	12.77%	12.75%	$6,184,629
60%	1.5254	15.26%	D2/D	18.12%	7.67%	16.73%	16.14%	$4,076,088
70%	2.0338	19.20%	D2/D	18.12%	6.58%	16.93%	17.61%	$3,651,308
80%	3.0507	27.09%	D2/D	18.12%	5.75%	17.08%	19.08%	$3,306,708
90%	6.1014	50.77%	D2/D	18.12%	5.12%	17.19%	20.55%	$3,021,543

Falabella's actual debt ratio is 24.51% and its current cost of capital is 8.25%.

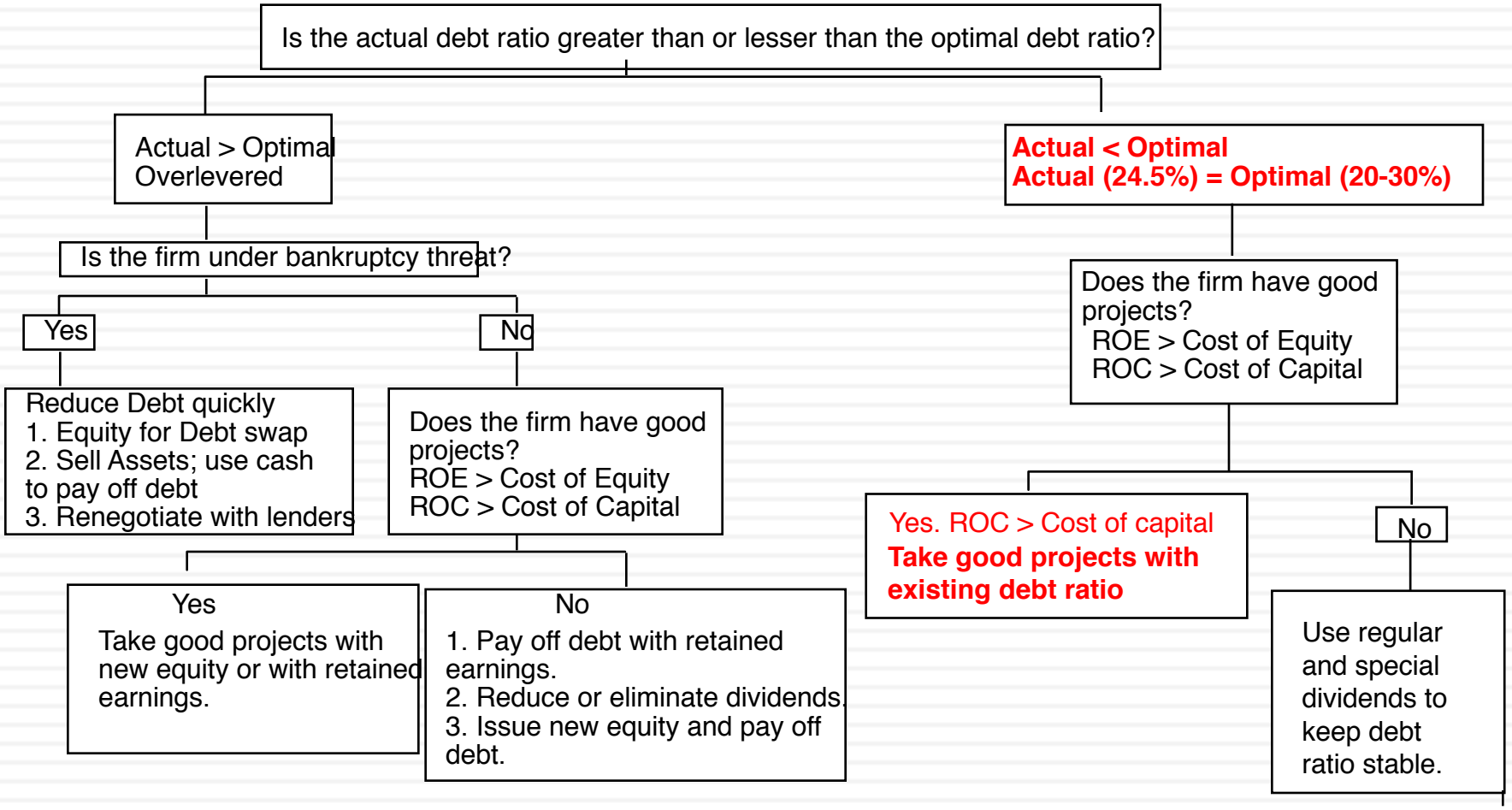
A Framework for Getting to the Optimal



Disney: Applying the Framework



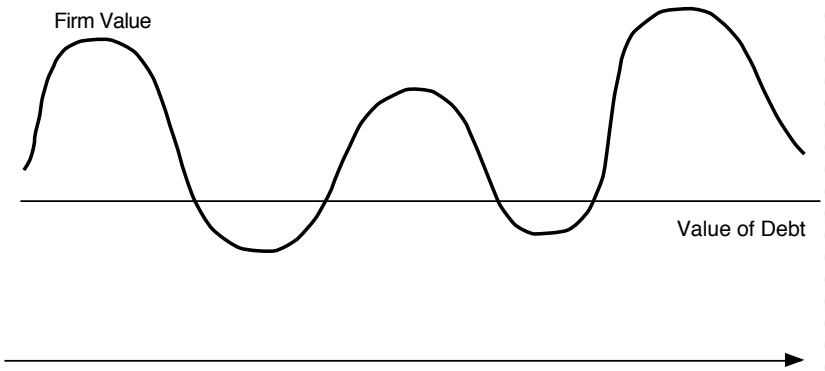
Falabella: Applying the Framework



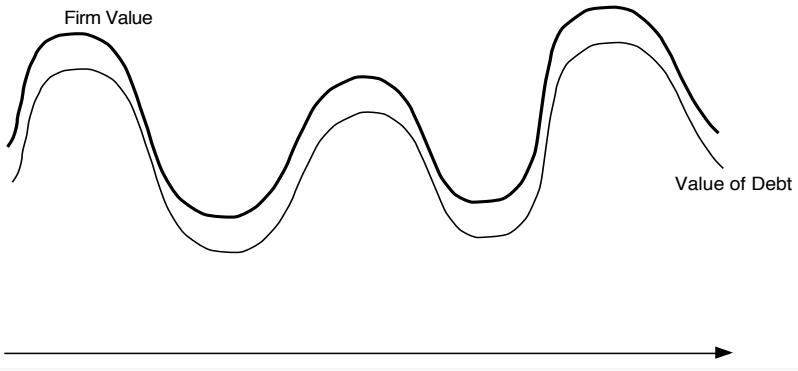
Designing Debt: The Fundamental Principle

- 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.

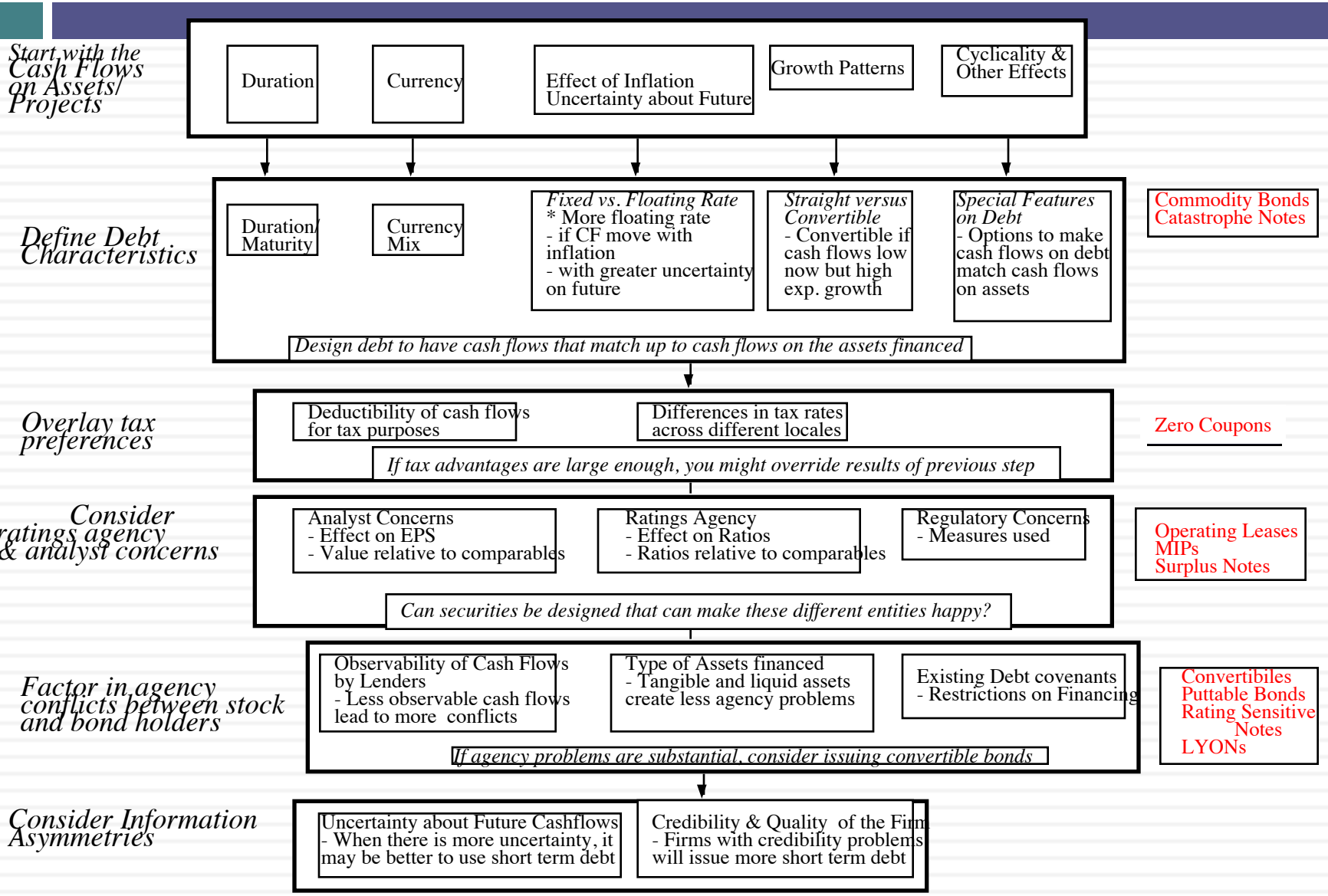
Unmatched Debt



Matched Debt



Designing Debt: Bringing it all together



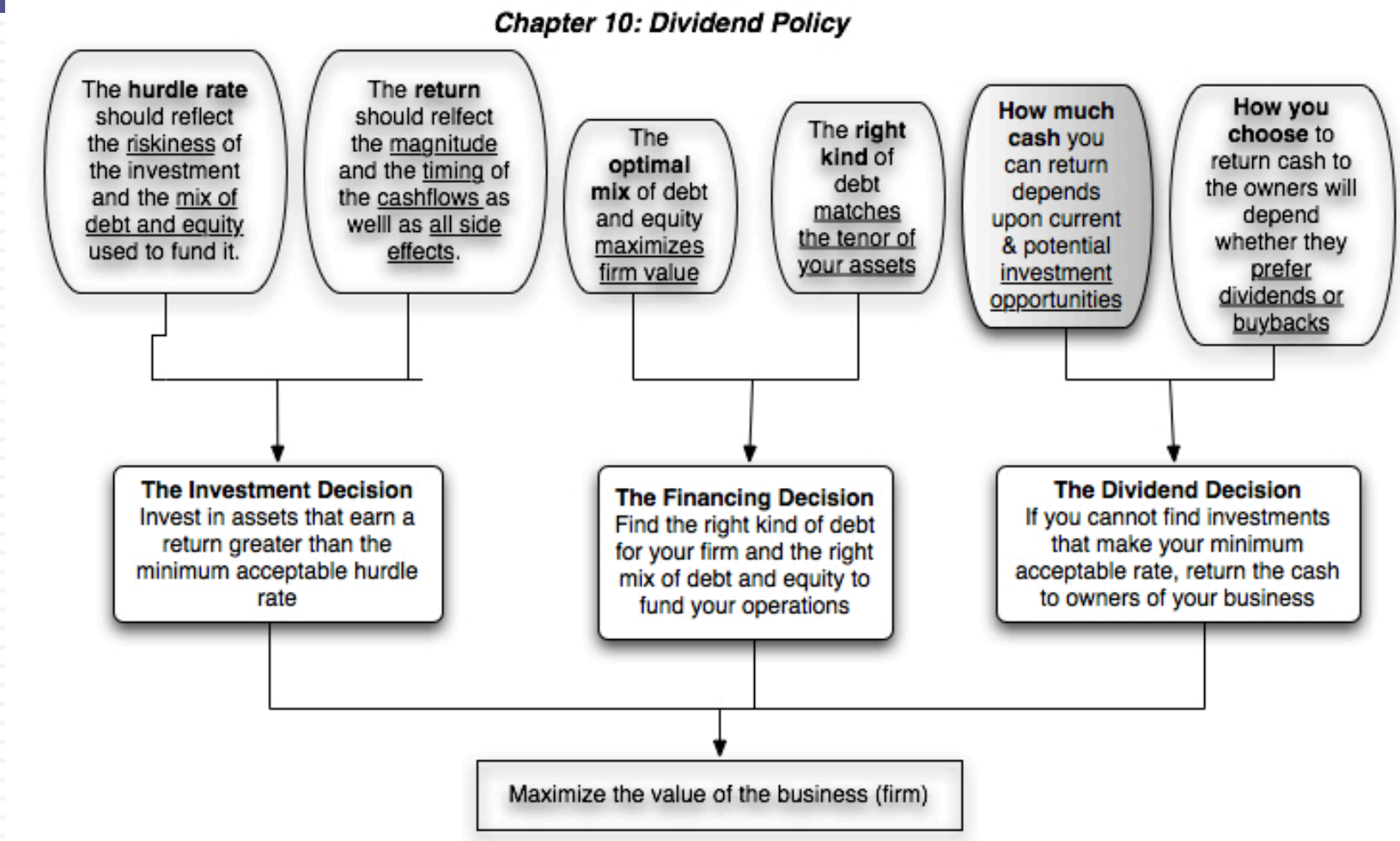
I. Disney's perfect debt

Business	*Project Cash Flow Characteristics*	*Type of Financing*
Studio entertainment	Movie projects are likely to • Be short-term • 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) • Have net cash flows that are heavily driven by whether the movie is a hit, which is often difficult to predict	Debt should be 1. Short-term 2. Mixed currency debt, reflecting audience make-up. 3. If possible, tied to the success of movies.
Media networks	Projects are likely to be 1. Short-term 2. Primarily in dollars, though foreign component is growing, especially for ESPN. 3. Driven by advertising revenues and show success (Nielsen ratings)	Debt should be 1. Short-term 2. Primarily dollar debt 3. If possible, linked to network ratings
Park resorts	Projects are likely to be 1. Very long-term 2. Currency will be a function of the region (rather than country) where park is located. 3. Affected by success of studio entertainment and media networks divisions	Debt should be 1. Long-term 2. Mix of currencies, based on tourist makeup at the park.
Consumer products	Projects are likely to be short- to medium-term and linked to the success of the movie division; most of Disney's product offerings and licensing revenues are derived from their movie productions	Debt should be 1. Medium-term 2. Dollar debt
Interactive	Projects are likely to be short-term, with high growth potential and significant risk. While cash flows will initially be primarily in US dollars, the mix of currencies will shift as the business ages.	Debt should be short-term, convertible US dollar debt.

II. Falabella's perfect debt

- Typical investment: Falabella's typical investment is a new retail outlet, a department store, a supermarket or a home improvement outlet.
- Recommendation: If the property is acquired, the debt should be long term, fixed rate and in the currency of whichever country the property is in. If it is leased, the lease should be a long term lease, with flexibility built into the lease to allow for Falabella to abandon the lease if the retail outlet does not do as well as expected.
- Actual: The existing debt at Vale is primarily long term, local currency debt.

First Principles



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.
- Looking at Disney & Falabella

	Disney			*Falabella*	
Year	Dividends	Buybacks	Year	Dividends	Buybacks
2008	$648	$648	2012	$291	$0
2009	$653	$2,669	2013	$171	$0
2010	$756	$4,993	2014	$179	$3
2011	$1,076	$3,015	2015	$197	$5
2012	$1,324	$4,087	2016	$216	$26
2008-12	**$4,457**	**$15,412**		**$1054**	**$34**

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 and Cash Returned: 2008 – 2012

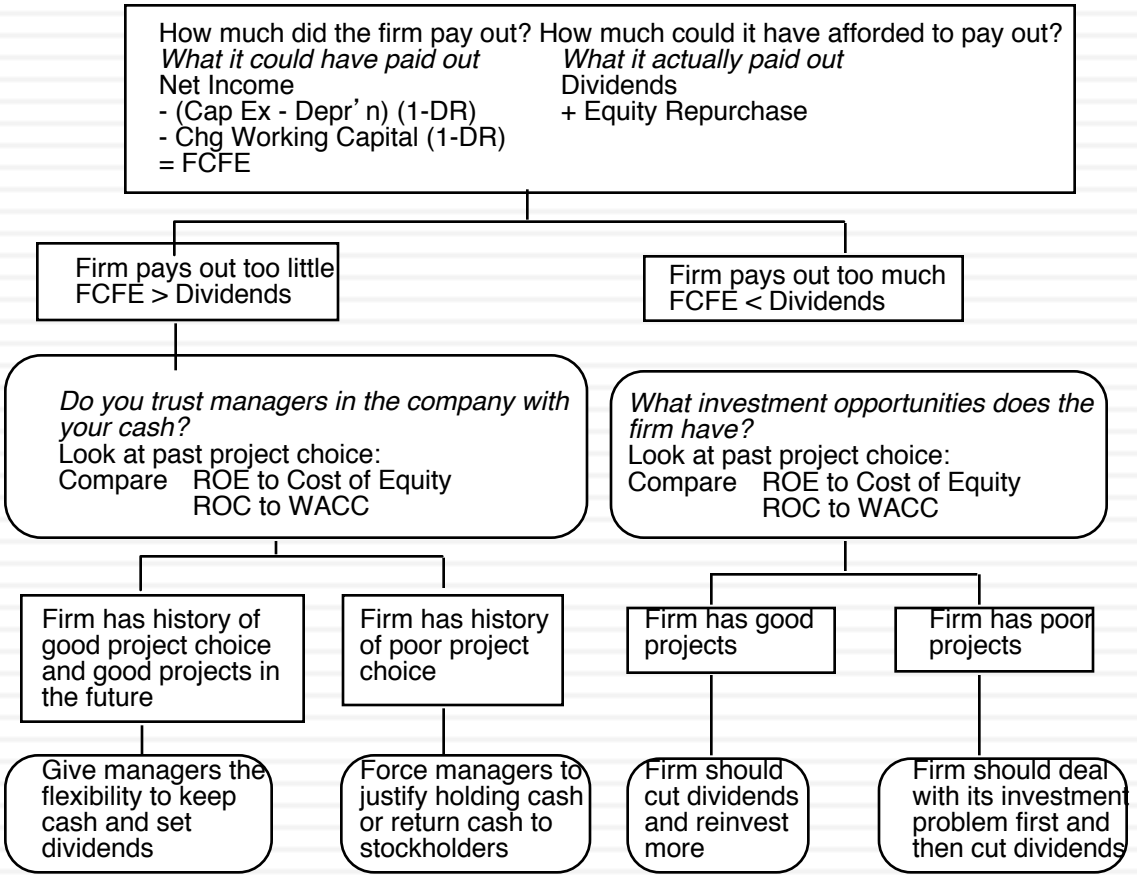
	2012	2011	2010	2009	2008	Aggregate
Net Income	$6,136	$5,682	$4,807	$3,963	$3,307	$23,895
- (Cap. Exp - Depr)	$604	$1,797	$1,718	$397	$122	$4,638
- ∂ Working Capital	($133)	$940	$950	$308	($109)	$1,956
Free CF to Equity (pre-debt)	$5,665	$2,945	$2,139	$3,258	$3,294	$17,301
+ Net Debt Issued	$1,881	$4,246	$2,743	$1,190	($235)	$9,825
= Free CF to Equity (actual debt)	$7,546	$7,191	$4,882	$4,448	$3,059	$27,126
Free CF to Equity (target debt ratio)	$5,720	$3,262	$2,448	$3,340	$3,296	$18,065
Dividends	$1,324	$1,076	$756	$653	$648	$4,457
Dividends + Buybacks	$5,411	$4,091	$5,749	$3,322	$1,296	$19,869

Disney returned about $1.5 billion more than the $18.1 billion it had available as FCFE with a normalized debt ratio of 11.58% (its current debt ratio).

Falabella – Dividends versus FCFE

	Aggregate	Average
Net Income	$57,404	$5,740
Dividends	$36,766	$3,677
Dividend Payout Ratio	$1	$1
Stock Buybacks	$6,032	$603
Dividends + Buybacks	$42,798	$4,280
Cash Payout Ratio	$1	
Free CF to Equity (pre-debt)	($1,903)	($190)
Free CF to Equity (actual debt)	$1,036	$104
Free CF to Equity (target debt ratio)	$19,138	$1,914
Cash payout as % of pre-debt FCFE	FCFE negative	
Cash payout as % of actual FCFE	4131.08%	
Cash payout as % of target FCFE	223.63%	

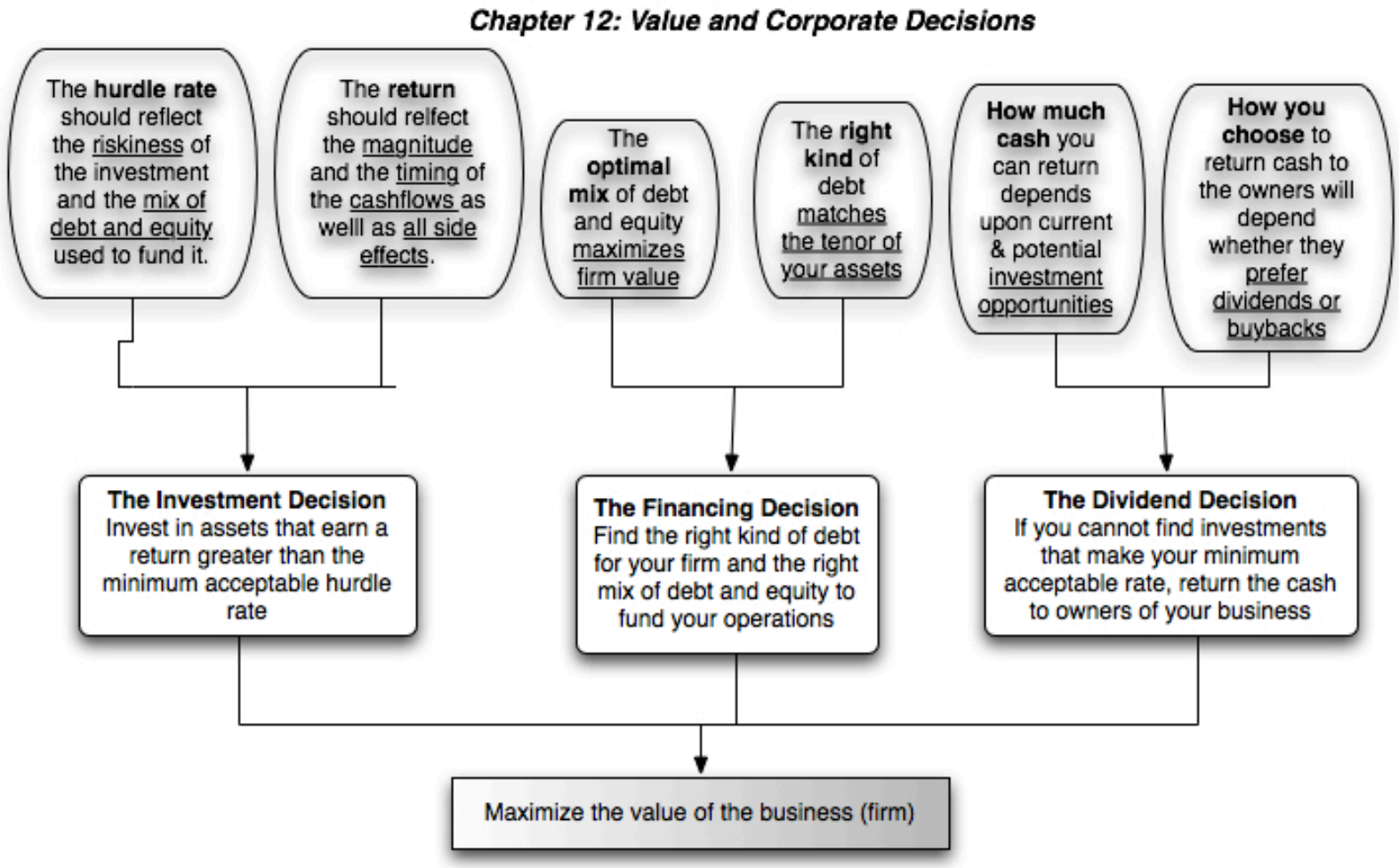
A Practical Framework for Analyzing Dividend Policy



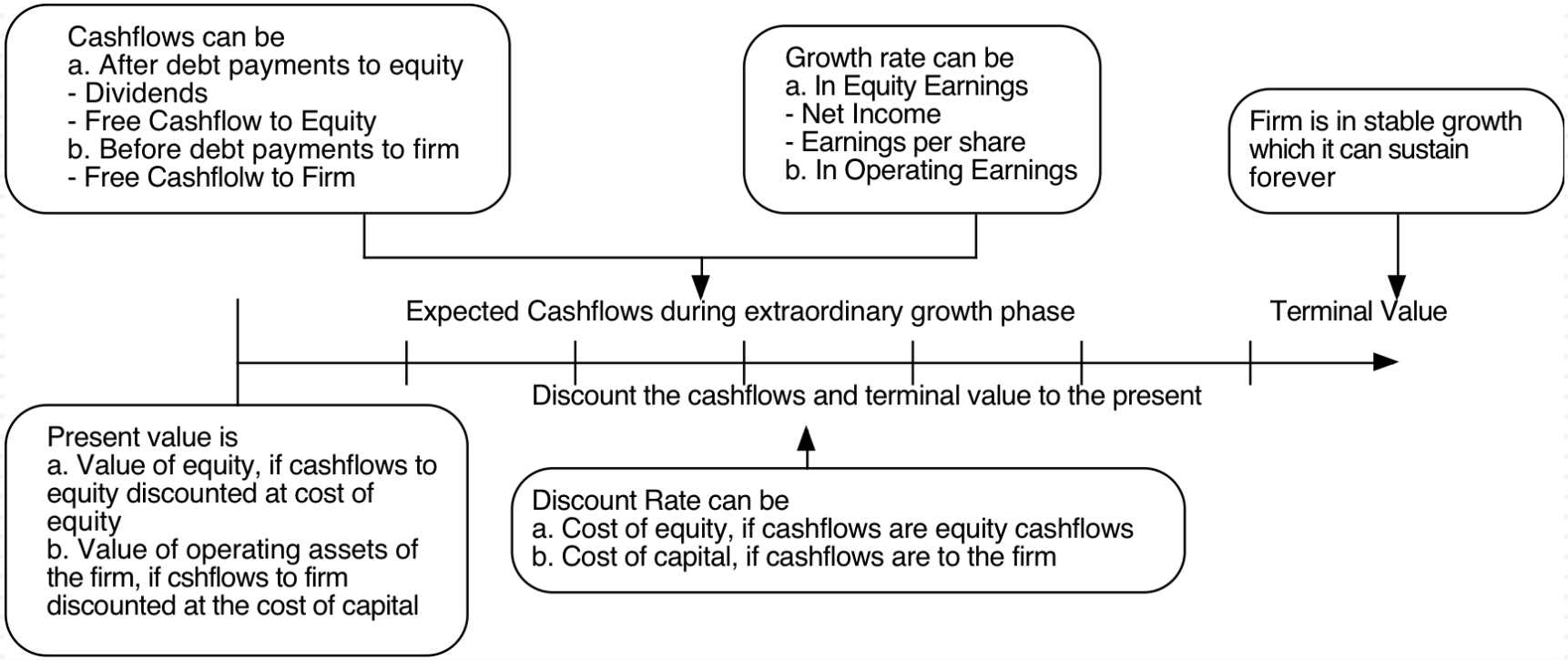
Can investors trust Falabella's management?

- Given Falabella's track record, if you were a Falabella common stockholder, would you be comfortable with Falabella's dividend policy?
  - Yes
  - No
- If you were not comfortable, would you be able to change Falabella's dividend policy?
  - Yes
  - No

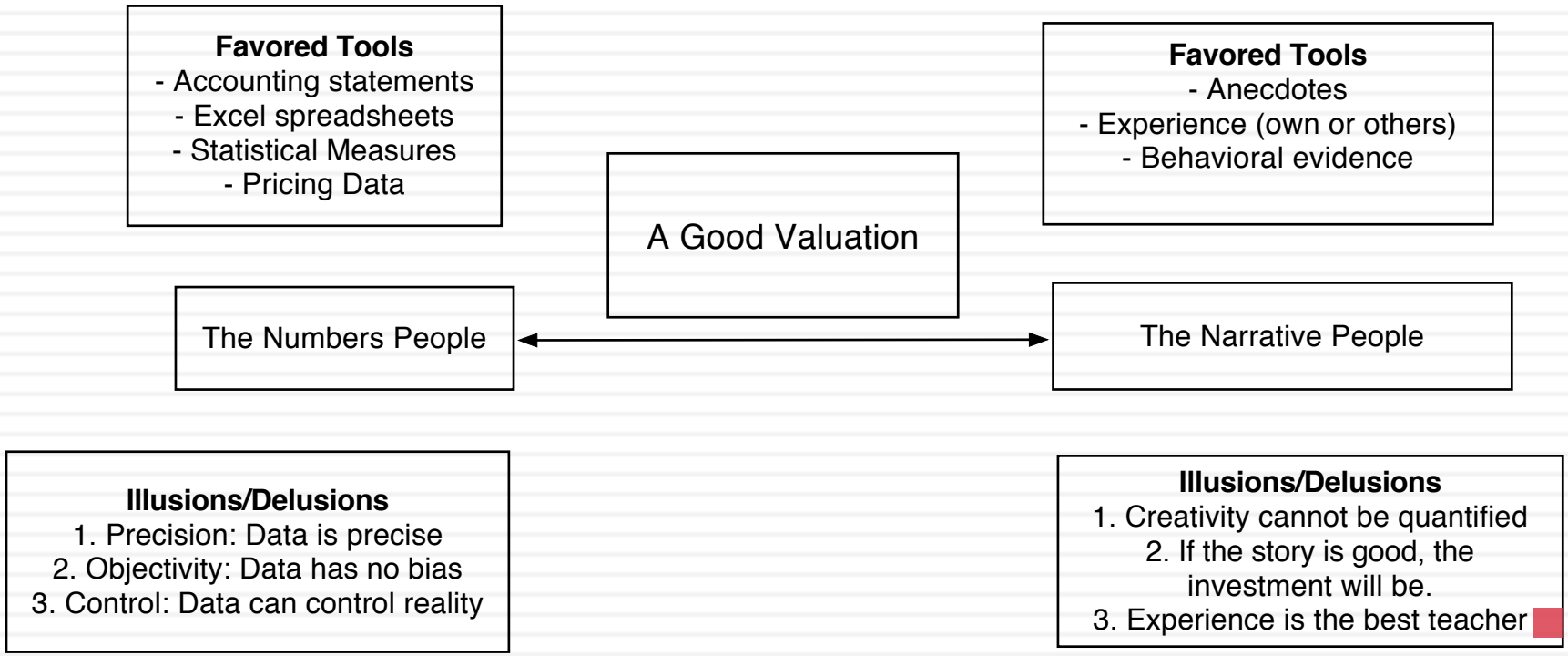
First Principles



The Ingredients that determine value.



Good valuation = Story + Numbers



Disney - November 2013

Current Cashflow to Firm
EBIT(1-t)= 10,032(1-.31)= 6,920
- (Cap Ex - Deprecn) 3,629
- Chg Working capital 103
= FCFF 3,188
Reinvestment Rate = 3,732/6920 =53.93%
Return on capital = 12.61%

Reinvestment Rate 53.93%

Return on Capital 12.61%

Expected Growth
.5393*.1261=.068 or 6.8%

Stable Growth
g = 2.75%; Beta = 1.00;
Debt %= 20%; k(debt)=3.75
Cost of capital =7.29%
Tax rate=36.1%; ROC= 10%;
Reinvestment Rate=2.5/10=25%

Terminal Value$_{10}$= 7,980/(.0729-.025) = 165,323

Term Yr
10,639
2,660
7,980

First 5 years

Growth declines gradually to 2.75%

	1	2	3	4	5	6	7	8	9	10
EBIT * (1 - tax rate)	$7,391	$7,893	$8,430	$9,003	$9,615	$10,187	$10,704	$11,156	$11,531	$11,819
- Reinvestment	$3,985	$4,256	$4,546	$4,855	$5,185	$4,904	$4,534	$4,080	$3,550	$2,955
FCFF	$3,405	$3,637	$3,884	$4,148	$4,430	$5,283	$6,170	$7,076	$7,981	$8,864

Op. Assets 125,477
+ Cash: 3,931
+ Non op inv 2,849
- Debt 15,961
- Minority Int 2,721
=Equity 113,575
-Options 972
Value/Share $ 62.56

Cost of Capital (WACC) = 8.52% (0.885) + 2.40% (0.115) = 7.81%

Cost of capital declines gradually to 7.29%

In November 2013, Disney was trading at $67.71/share

Cost of Equity
8.52%

Cost of Debt
(2.75%+1.00%)(1-.361)
= 2.40%
Based on actual A rating

Weights
E = 88.5% D = 11.5%

Riskfree Rate:
Riskfree rate = 2.75%

+

Beta
1.0013

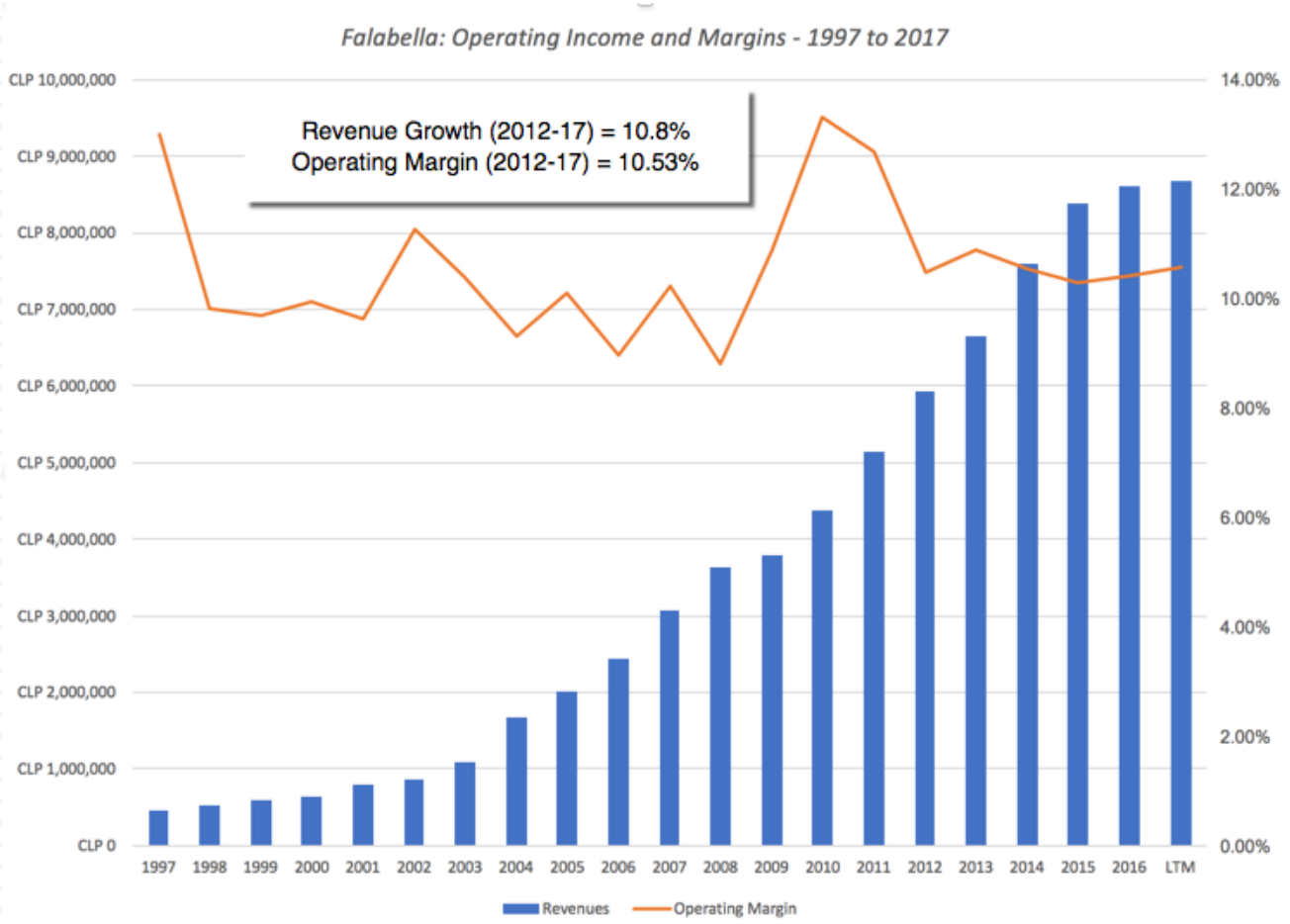
Unlevered Beta for Sectors: 0.9239

D/E=13.10%

X

ERP for operations
5.76%

Falabella: History



Falabella

The Story

Falabella's will continue with the status quo, growing at an aggressive rate and its operating margin, which is much higher than industry averages, will decline slightly to Falabella's long term average. Its reinvestment to sustain growth will taper down to reflect industry averages, as the company continues to grow and it will maintain its current debt ratio (which is close to its optimal).

The Assumptions

	Base year	Years 1-5	Years 6-10		After year 10	Link to story
Revenues (a)	#########	10.83%	→ 3.42%		3.42%	
Operating margin (b)	11.04%	11.04%	→ 10.53%		10.53%	
Tax rate	22.66%	22.66%	→ 24.00%		24.00%	
Reinvestment (c)		Sales to capital ratio =	2.66	RIR =	43.18%	
Return on capital	8.38%	Marginal ROIC =	26.91%		7.92%	
Cost of capital (d)		8.25%	→ 7.92%		7.92%	

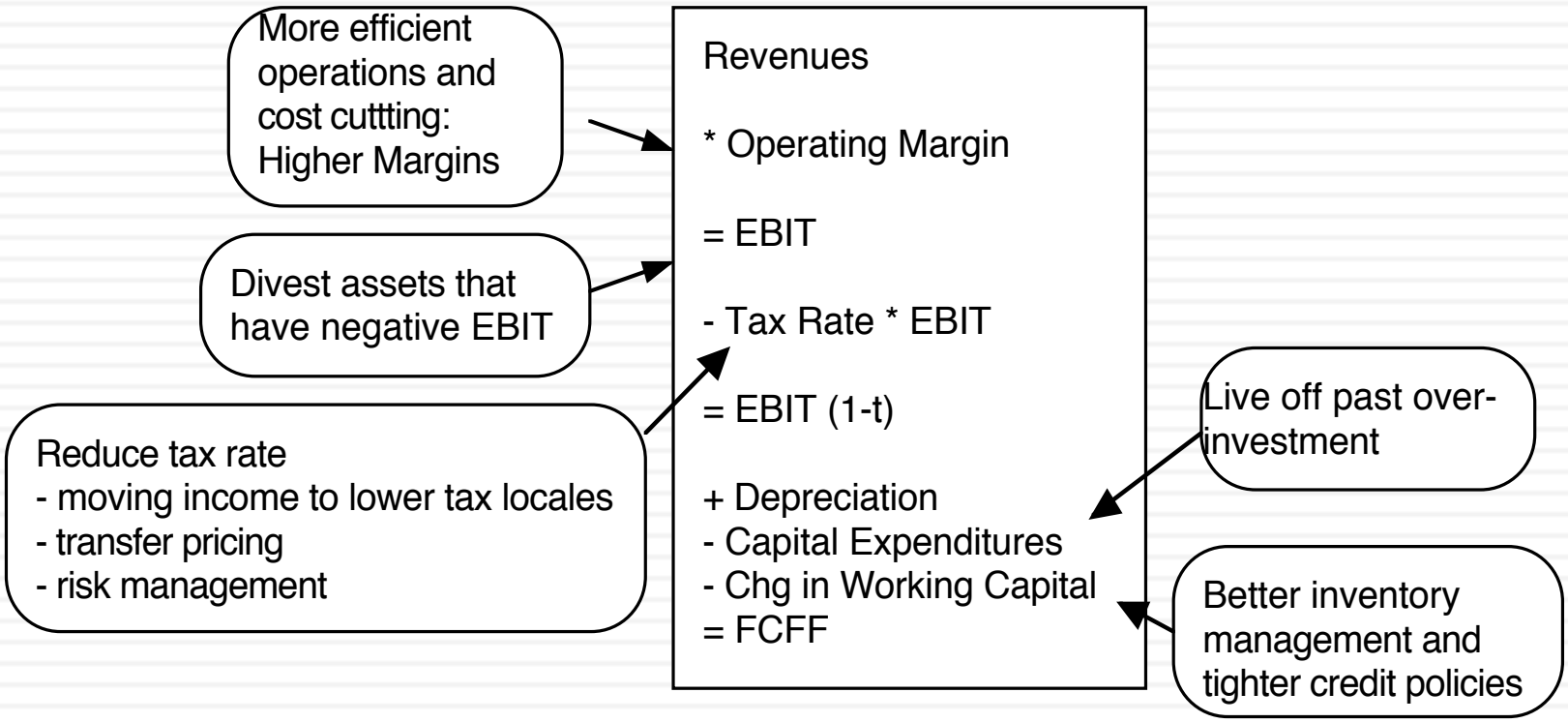
The Cash Flows

	Revenues	Operating Margin	EBIT	EBIT (1-t)	Reinvestment	FCFF
1	#########	10.99%	$ 1,057,249	$ 817,677	$ 354,060	$ 463,616
2	#########	10.94%	$ 1,166,342	$ 902,049	$ 392,405	$ 509,644
3	#########	10.88%	$ 1,286,664	$ 995,106	$ 434,903	$ 560,203
4	#########	10.83%	$ 1,419,368	$ 1,097,739	$ 482,003	$ 615,737
5	#########	10.78%	$ 1,565,725	$ 1,210,932	$ 534,204	$ 676,728
6	#########	10.73%	$ 1,704,040	$ 1,313,337	$ 511,039	$ 802,298
7	#########	10.68%	$ 1,829,397	$ 1,405,050	$ 470,219	$ 934,831
8	#########	10.63%	$ 1,936,949	$ 1,482,463	$ 411,646	$ 1,070,817
9	#########	10.58%	$ 2,022,209	$ 1,542,298	$ 336,264	$ 1,206,034
10	#########	10.53%	$ 2,081,348	$ 1,581,824	$ 246,103	$ 1,335,721
Terminal year	#########	10.53%	$ 2,152,530	$ 1,635,923	$ 706,421	$ 929,502

The Value

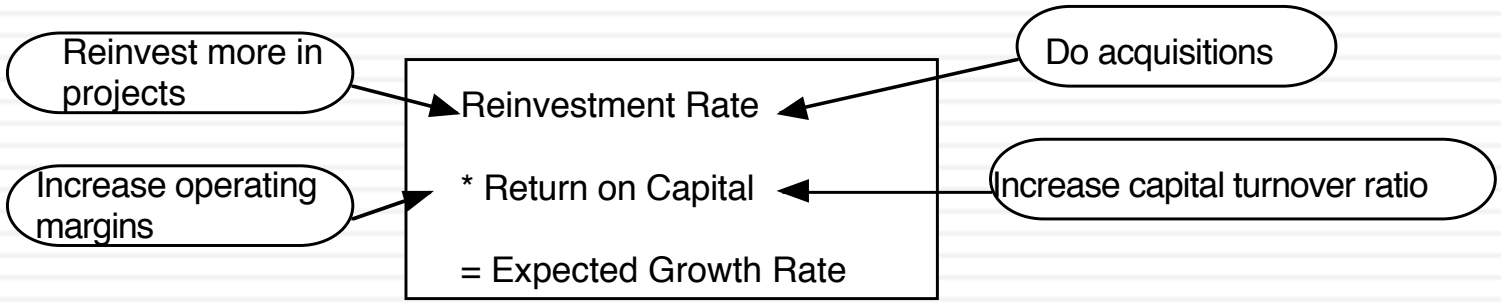
Terminal value	$ 20,655,591		
PV(Terminal value)	$ 9,434,847		
PV (CF over next 10 years)	$ 5,019,781		
Value of operating assets =	$ 14,454,628		
Adjustment for distress	$ -	Probability of failure =	0.00%
- Debt & Mnority Interests	$ 5,818,846		
+ Cash & Other Non-operating assets	$ 1,497,330		
Value of equity	$ 10,133,111		
- Value of equity options	$ -		
Number of shares	2,434.46		
Value per share	$ 4,162.37	Stock was trading at =	$5,959.50

Value Creation 1: Increase Cash Flows from Assets in Place



Value Creation 2: Increase Expected Growth

- Keeping all else constant, increasing the expected growth in earnings will increase the value of a firm, but only if the firm earns a return on capital that exceeds the cost of capital:

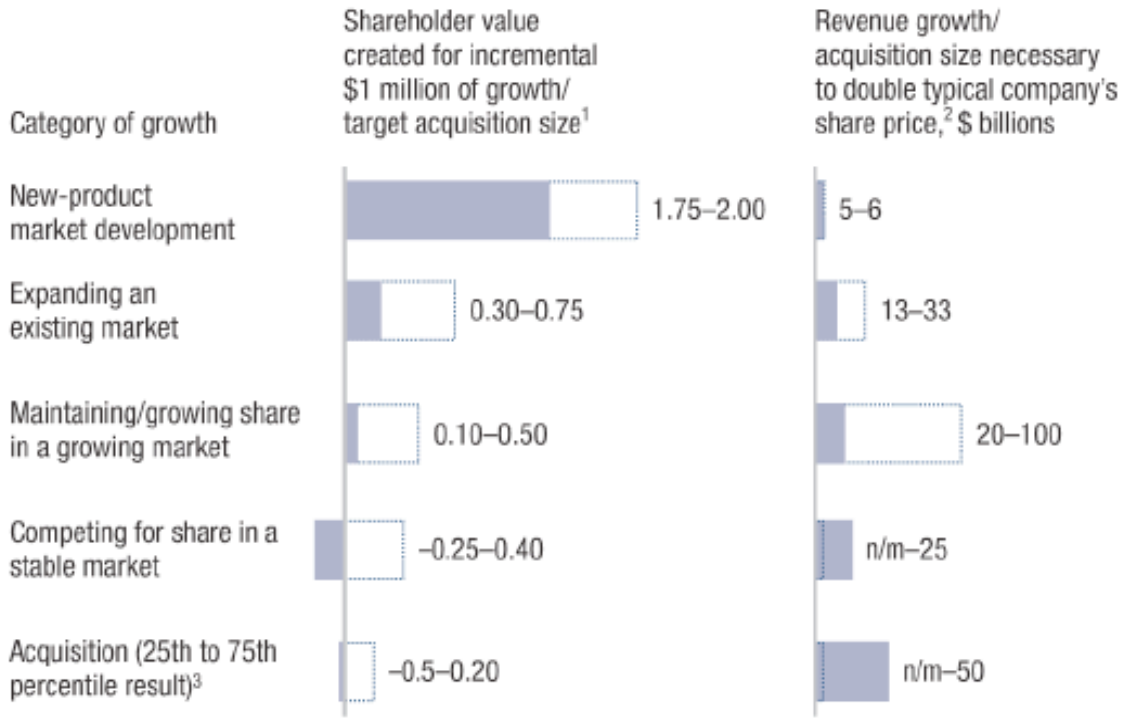


A postscript on creating growth: The Role of Acquisitions and Divestitures

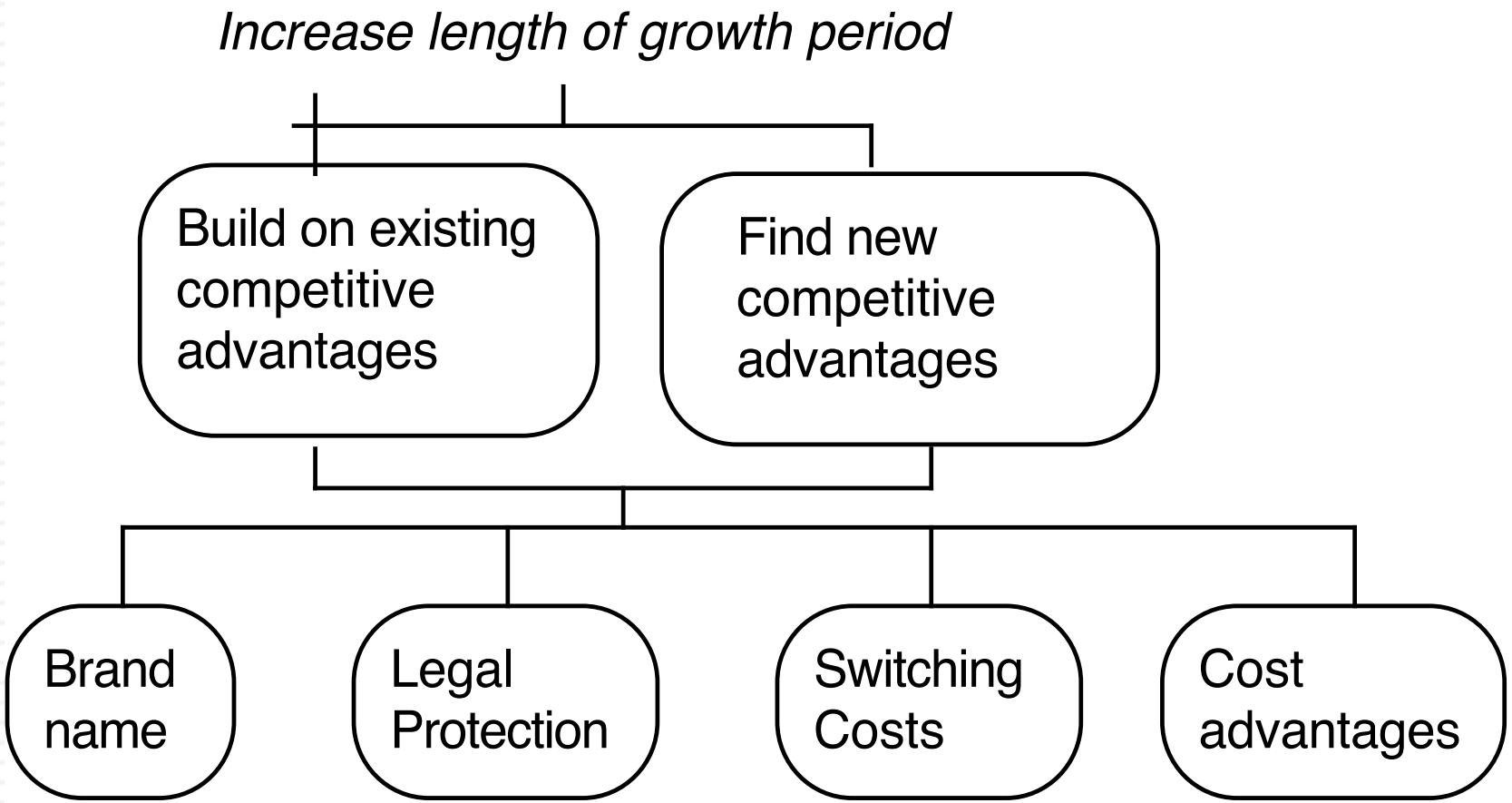
- An acquisition is just a large-scale project. All of the rules that apply to individual investments apply to acquisitions, as well. For an acquisition to create value, it has to
  - Generate a higher return on capital, after allowing for synergy and control factors, than the cost of capital.
  - Put another way, an acquisition will create value only if the present value of the cash flows on the acquired firm, inclusive of synergy and control benefits, exceeds the cost of the acquisitons
- A divestiture is the reverse of an acquisition, with a cash inflow now (from divesting the assets) followed by cash outflows (i.e., cash flows foregone on the divested asset) in the future. If the present value of the future cash outflows is less than the cash inflow today, the divestiture will increase value.
- A fair-price acquisition or divestiture is value neutral.

Value Creating Growth… Evaluating the Alternatives..

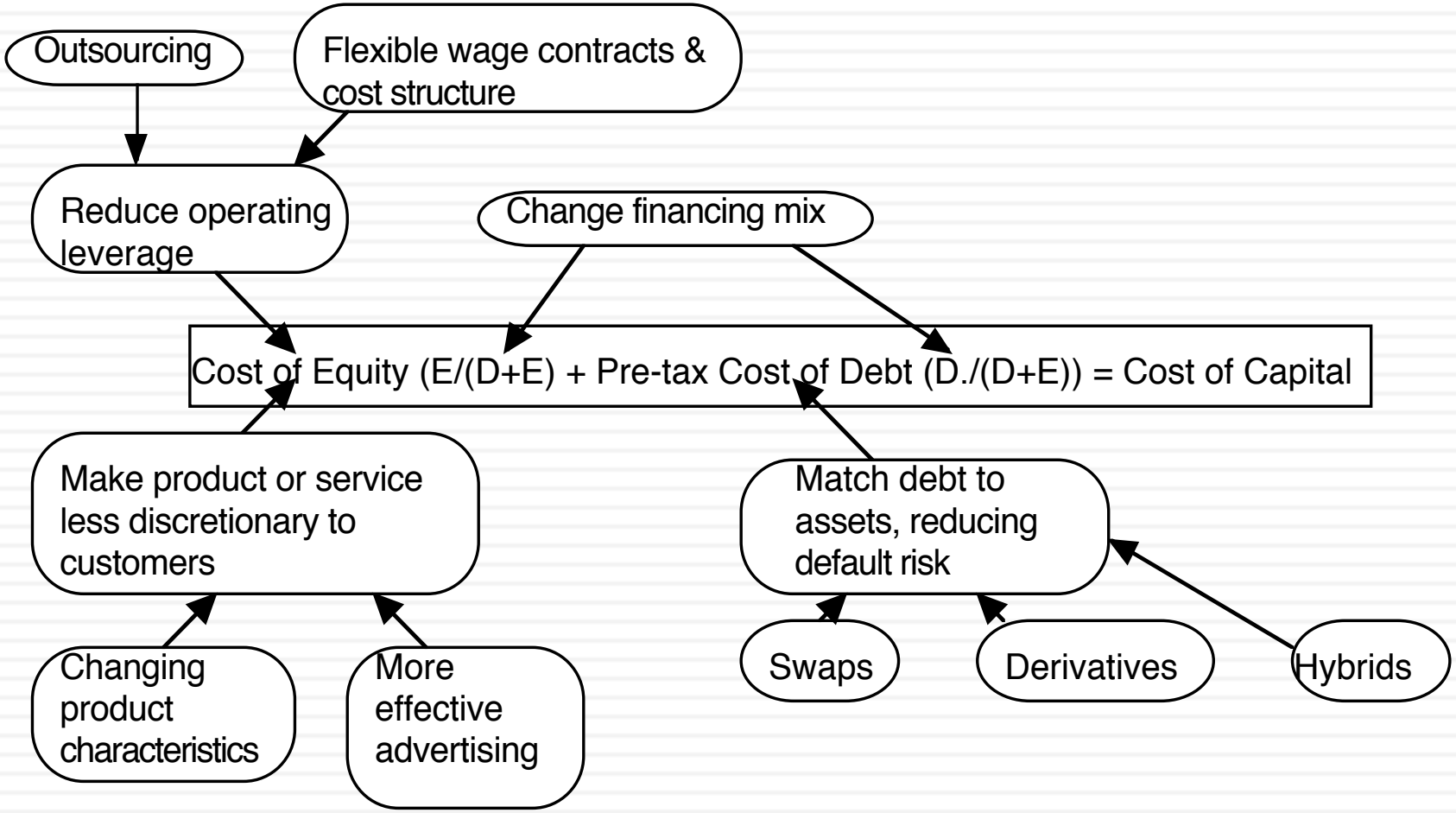
Modes of organic growth vary in value creation intensity—consumer goods industry



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

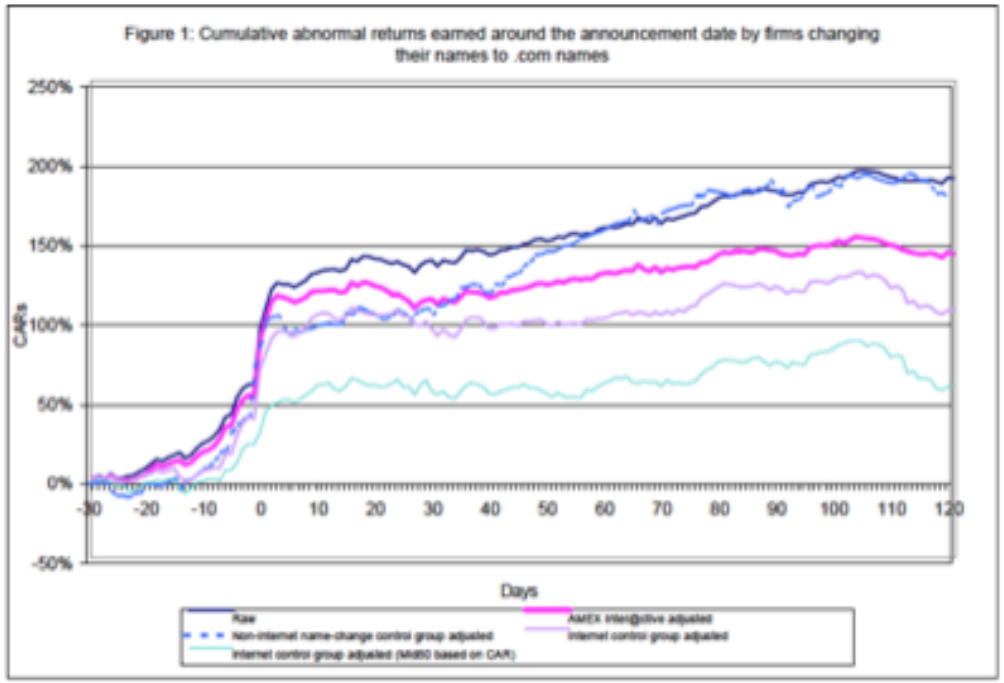


Value Creation 4: Reduce Cost of Capital

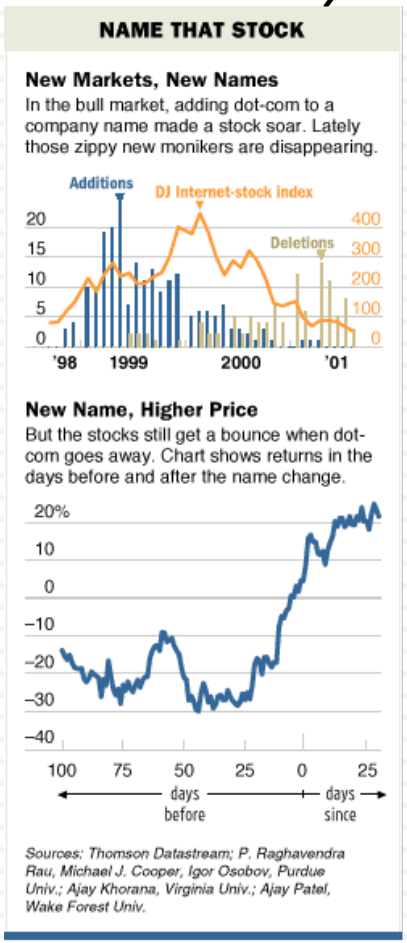


You can always play the pricing game..

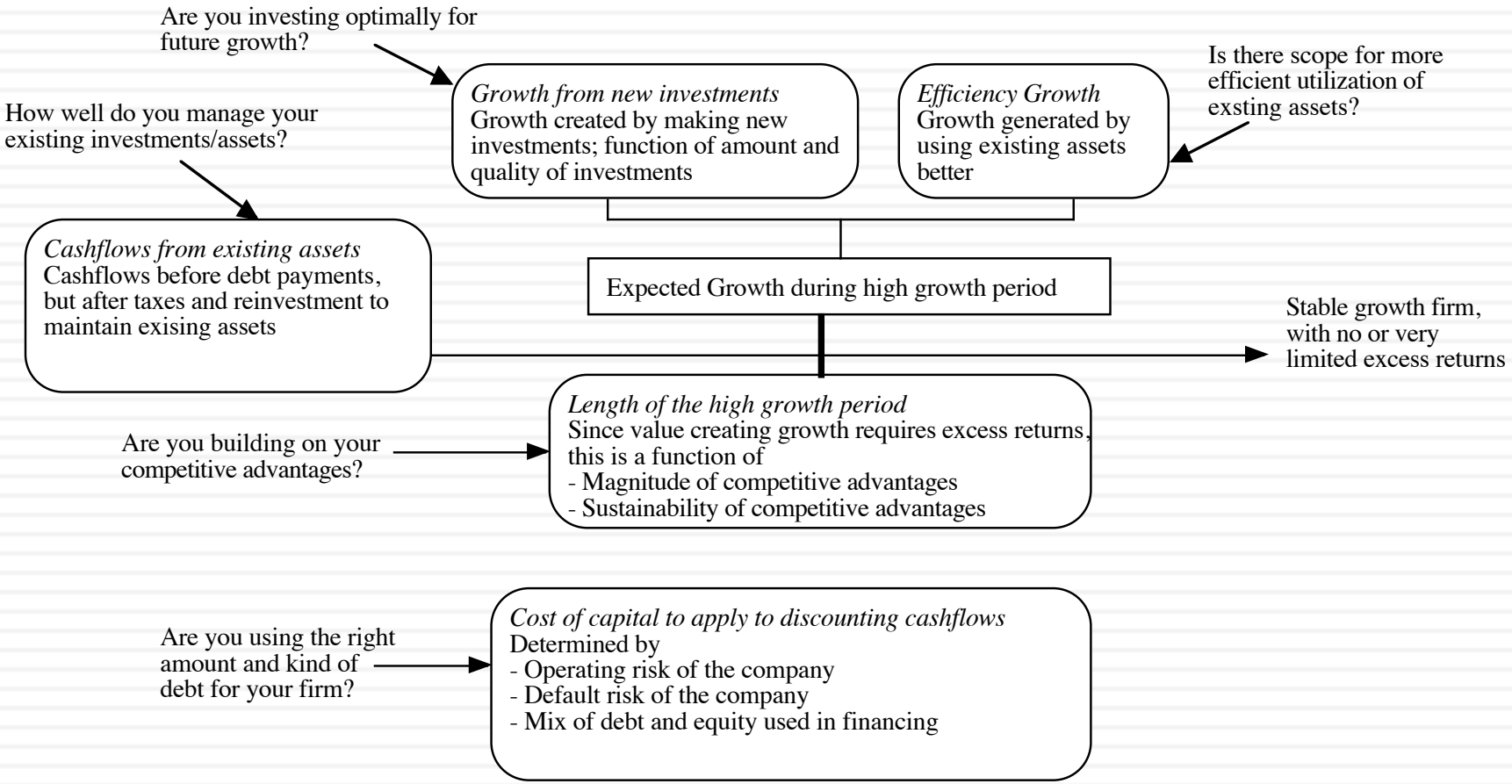
The market gives…



And takes away….



Ways of changing value…



Disney (Restructured)- November 2013

Current Cashflow to Firm
EBIT(1-t)= 10,032(1-.31)= 6,920
- (Cap Ex - Deprecn) 3,629
- Chg Working capital 103
= FCFF 3,188
Reinvestment Rate = 3,732/6920 =53.93%
Return on capital = 12.61%

Reinvestment Rate 50.00%

More selective acquisitions & payoff from gaming

Return on Capital 14.00%

Expected Growth
.50* .14 = .07 or 7%

Stable Growth
g = 2.75%; Beta = 1.20;
Debt %= 40%; k(debt)=3.75%
Cost of capital =6.76%
Tax rate=36.1%; ROC= 10%;
Reinvestment Rate=2.5/10=25%

Terminal Value$_{10}$= 9,206/(.0676-.025) = 216,262

Term Yr
12,275
3,069
9,206

First 5 years

Growth declines gradually to 2.75%

	1	2	3	4	5	6	7	8	9	10
EBIT * (1 - tax rate)	$7,404	$7,923	$8,477	$9,071	$9,706	$10,298	$10,833	$11,299	$11,683	$11,975
- Reinvestment	$3,702	$3,961	$4,239	$4,535	$4,853	$4,634	$4,333	$3,955	$3,505	$2,994
Free Cashflow to Firm	$3,702	$3,961	$4,239	$4,535	$4,853	$5,664	$6,500	$7,344	$8,178	$8,981

Op. Assets 147,704
+ Cash: 3,931
+ Non op inv 2,849
- Debt 15,961
- Minority Int 2,721
=Equity 135,802
-Options 972
Value/Share $ 74.91

Cost of Capital (WACC) = 8.52% (0.60) + 2.40%(0.40) = 7.16%

Cost of capital declines gradually to 6.76%

Cost of Equity
10.34%

Cost of Debt
(2.75%+1.00%)(1-.361)
= 2.40%
Based on synthetic A rating

Weights
E = 60% D = 40%

Move to optimal debt ratio, with higher beta.

In November 2013, Disney was trading at $67.71/share

Riskfree Rate:
Riskfree rate = 2.75%

+

Beta
1.3175

Unlevered Beta for Sectors: 0.9239

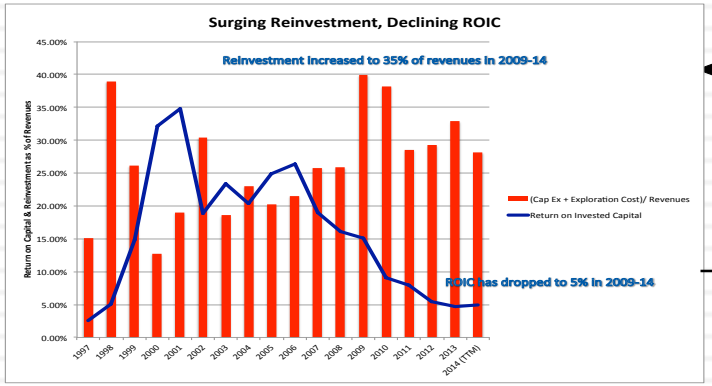
D/E=66.67%

x

ERP for operations
5.76%

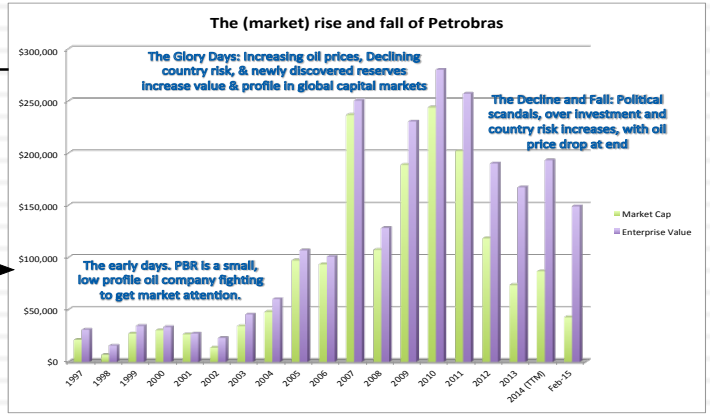
A Roadmap to destroying value: Petrobras (2015)

Step 1: Reinvest a lot, and reinvest badly..

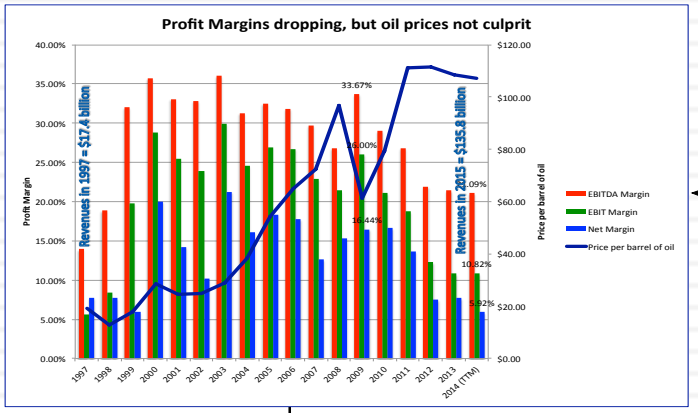


Rinse and Repeat

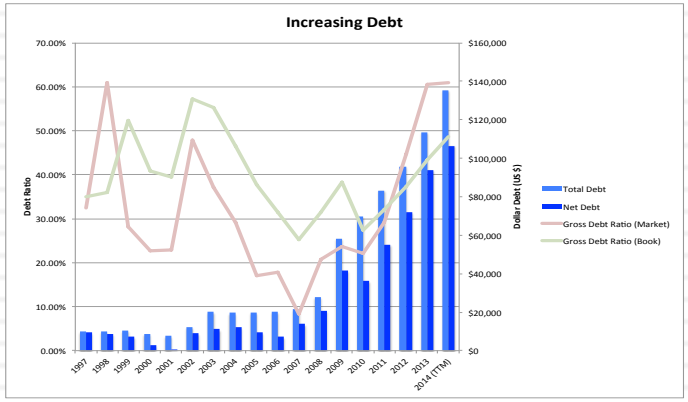
Step 5: Mission Accomplished



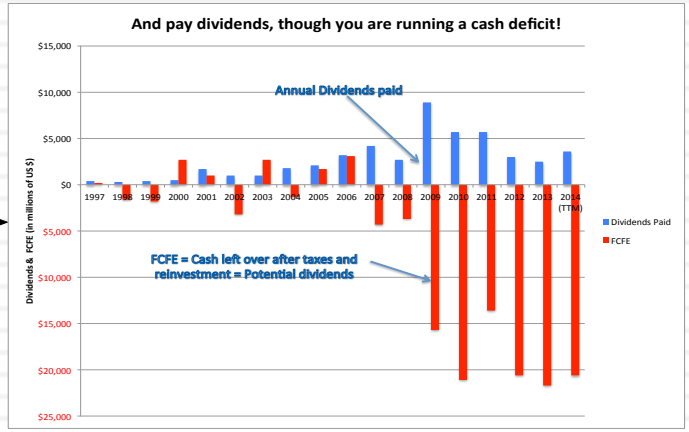
Step 2: Grow revenues, while letting profit margins slide



Step 4; Borrow money to cover the difference



Step 3: Pay dividends like a utility



First Principles