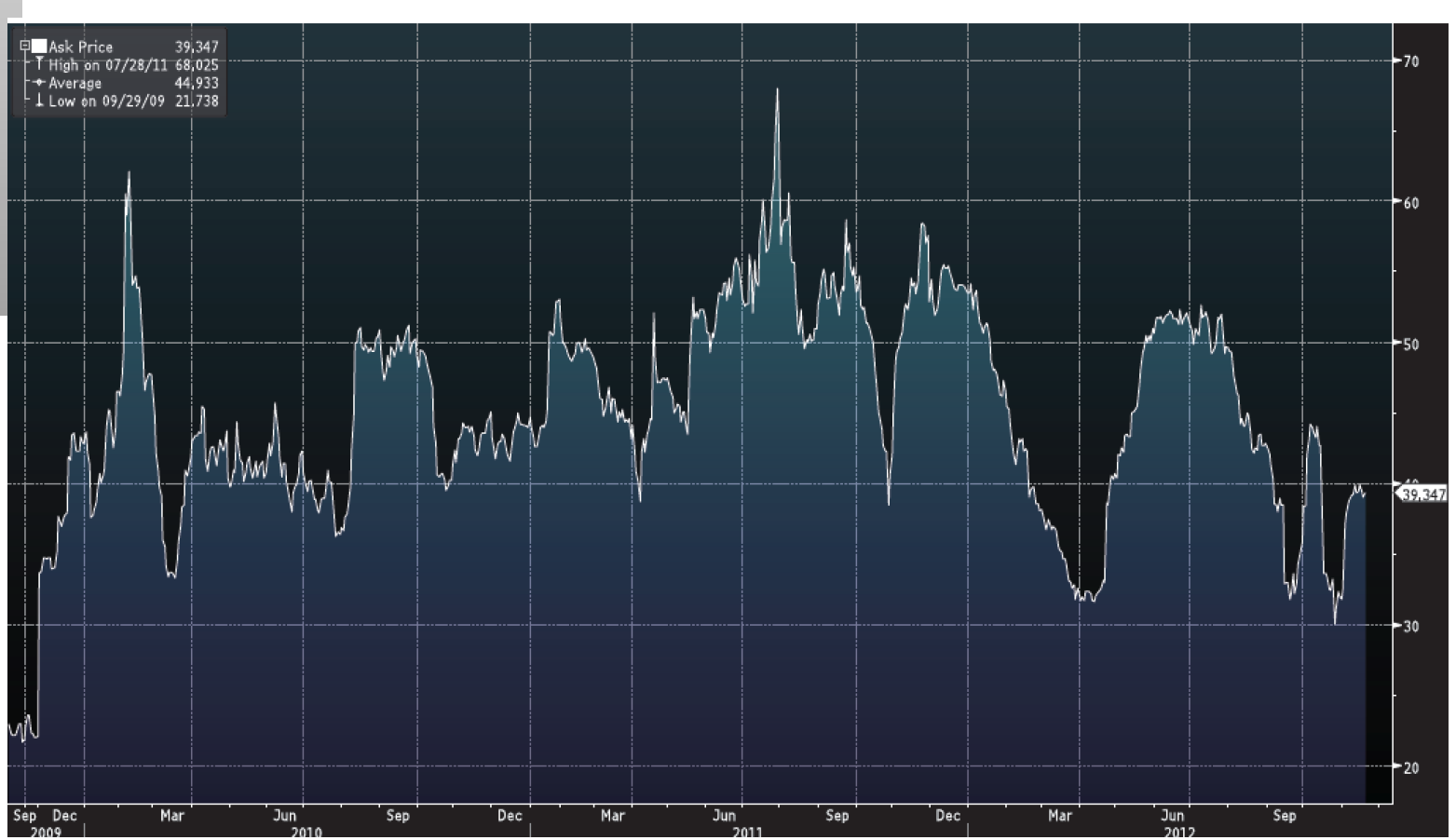
Corporate Finance: The New World Order

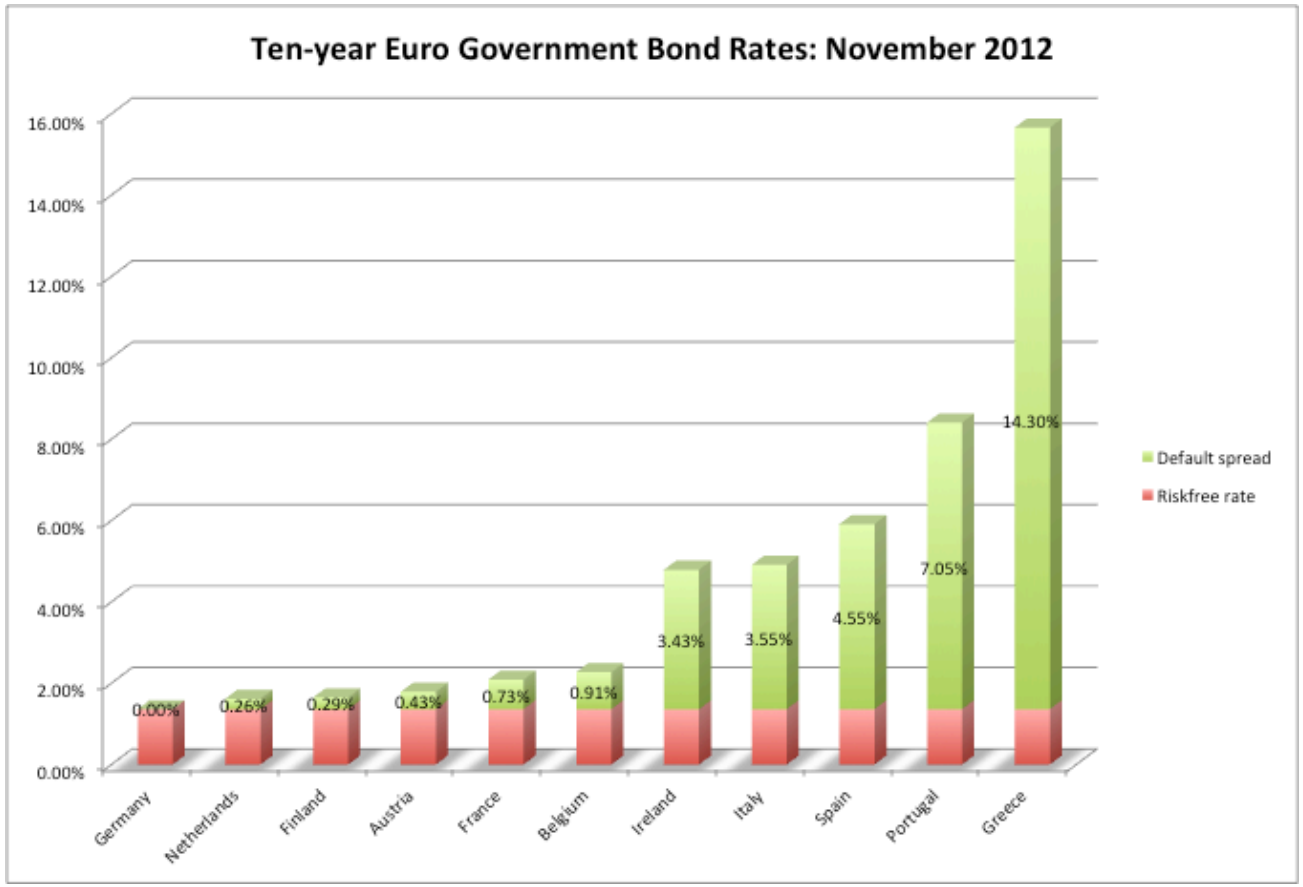
Lessons learned, unlearned and relearned from a crisis

Aswath Damodaran

Lesson 1: There may be no risk free investment…
CDS Spreads on US Government – 2008-2012



Response: Countries don't have risk free rates, currencies do…



And getting a risk free rate may take some work…

The Indian government had 10-year Rupee bonds outstanding, with a yield to maturity of about 8.5% on January 1, 2012. In January 2012, the Indian government had a local currency sovereign rating of Baa3. The typical default spread (over a default free rate) for Baa3 rated country bonds in early 2012 was 2%. The riskfree rate in Indian Rupees is

a) The yield to maturity on the 10-year bond (8.5%)
b) The yield to maturity on the 10-year bond + Default spread (10.5%)
c) The yield to maturity on the 10-year bond – Default spread (6.5%)
d) None of the above

Lesson 2: Risk premiums should be forward looking, not backwards…

	Arithmetic Average		Geometric Average	
	Stocks - T. Bills	Stocks - T. Bonds	Stocks - T. Bills	Stocks - T. Bonds
1928-2011	7.55%	5.79%	5.62%	4.10%
	2.22%	2.36%		
1962-2011	5.38%	3.36%	4.02%	2.35%
	2.39%	2.68%		
2002-2011	3.12%	-1.92%	1.08%	-3.61%
	6.46%	8.94%		

← *Historical premium*

In the trailing 12 months, the cash returned to stockholders was 74.17. Using the average cash yield of 4.71% for 2002-2011 the cash returned would have been 59.29.

Analysts expect earnings to grow 9.6% in 2012, 11.9% in 2013, 8.2% in 2014, 4.5% in 2015 and 2% therafter, resulting in a compounded annual growth rate of 7.18% over the next 5 years. We will assume that dividends & buybacks will grow 7.18% a year for the next 5 years.

After year 5, we will assume that earnings on the index will grow at 1.87%, the same rate as the entire economy (= riskfree rate).

63.54 68.11 73.00 78.24 83.86

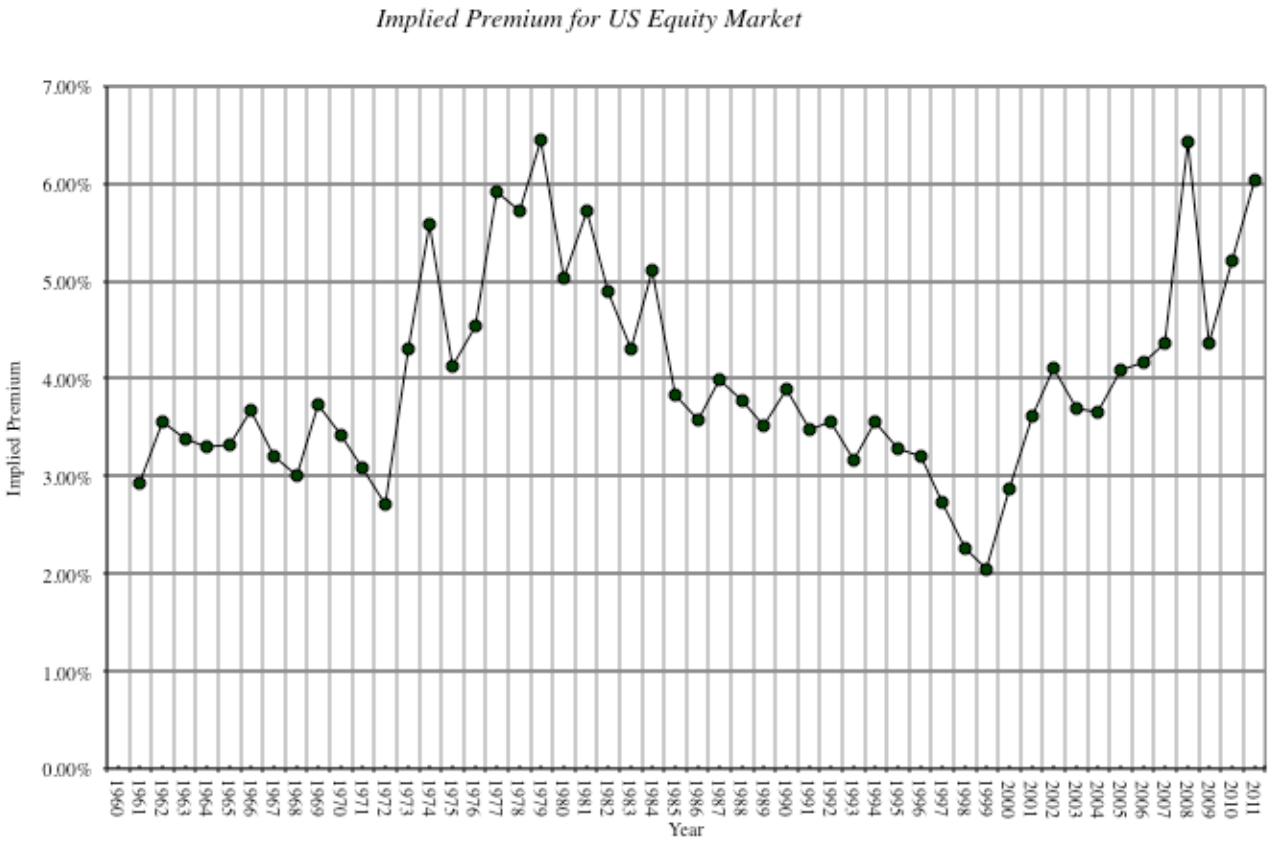
$$1257.60 = \frac{63.54}{(1+r)} + \frac{68.11}{(1+r)^2} + \frac{73.00}{(1+r)^3} + \frac{78.24}{(1+r)^4} + \frac{83.86}{(1+r)^5} + \frac{83.86(1.0187)}{(r-.0187)(1+r)^5}$$

January 1, 2012
S&P 500 is at 1257.60
Adjusted Dividends & Buybacks for 2011 = 59.29

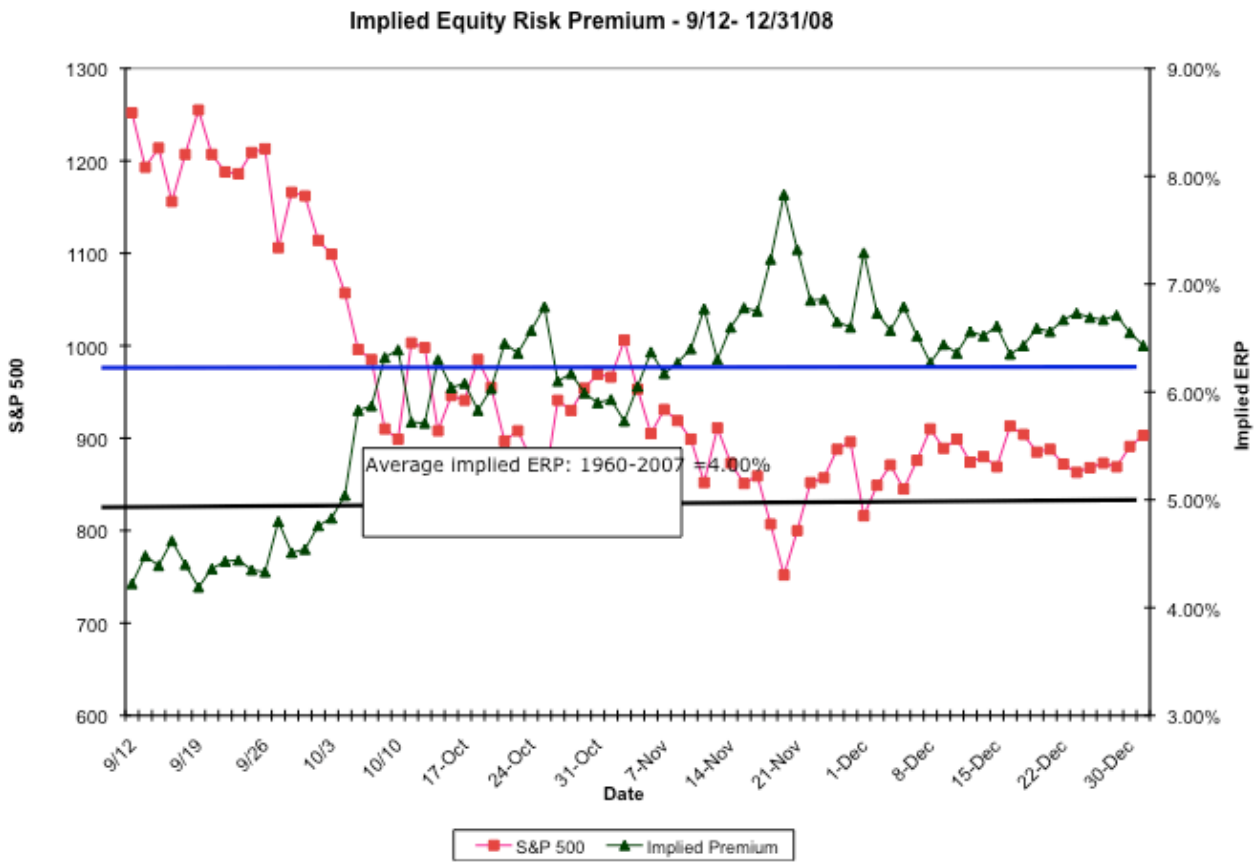
Expected Return on Stocks (1/1/12) = 7.91%
T.Bond rate on 1/1/12 = 1.87%
Equity Risk Premium = 8.03% - 3.29% = 6.04%

Data Sources:
Dividends and Buybacks last year: S&P
Expected growth rate: News stories, Yahoo! Finance, Bloomberg

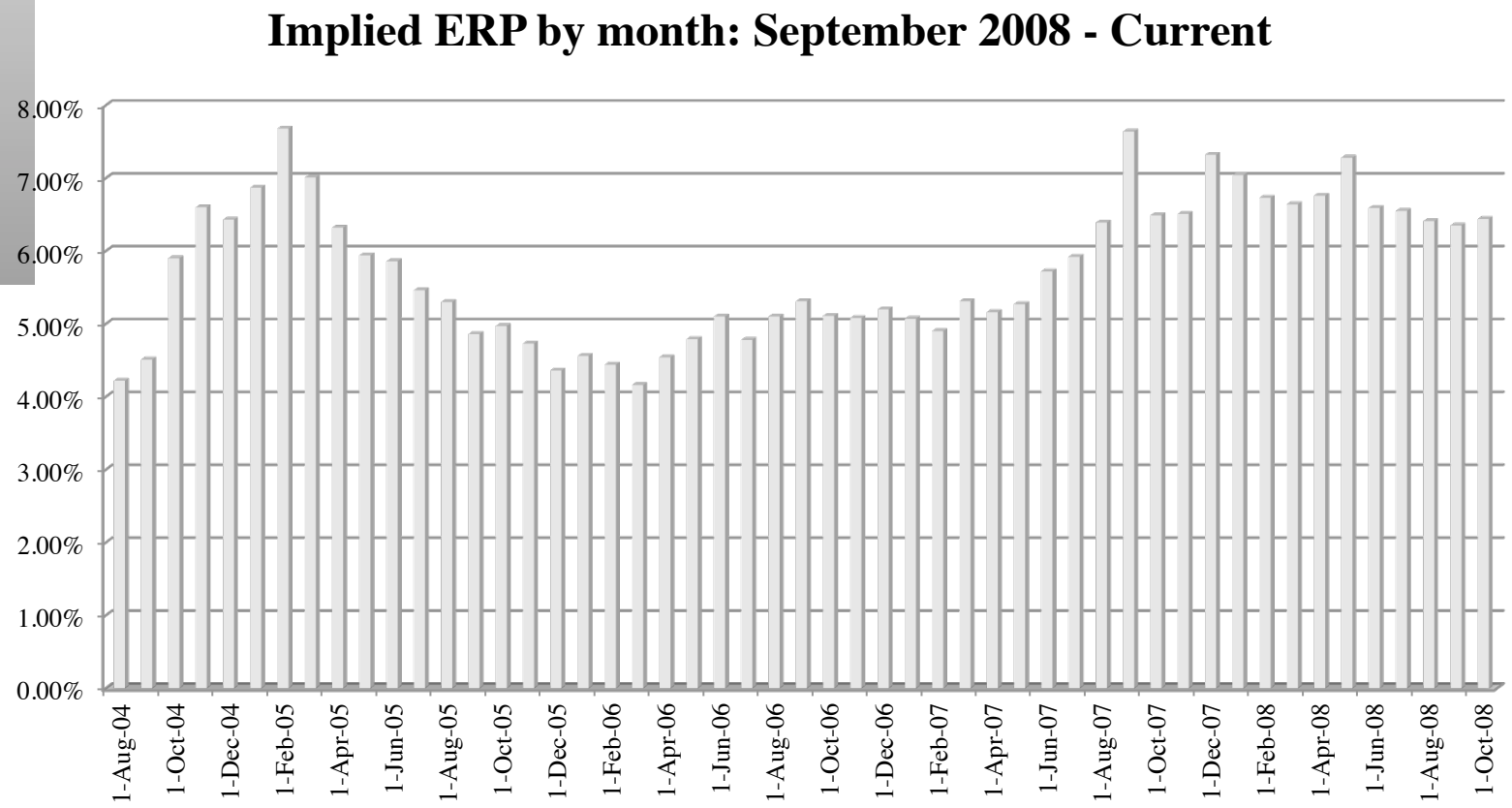
A history of implied ERP for US: 1960-2011



Risk premiums change dramatically even in mature markets: ERP from 9/12/2008 – 12/31/2008



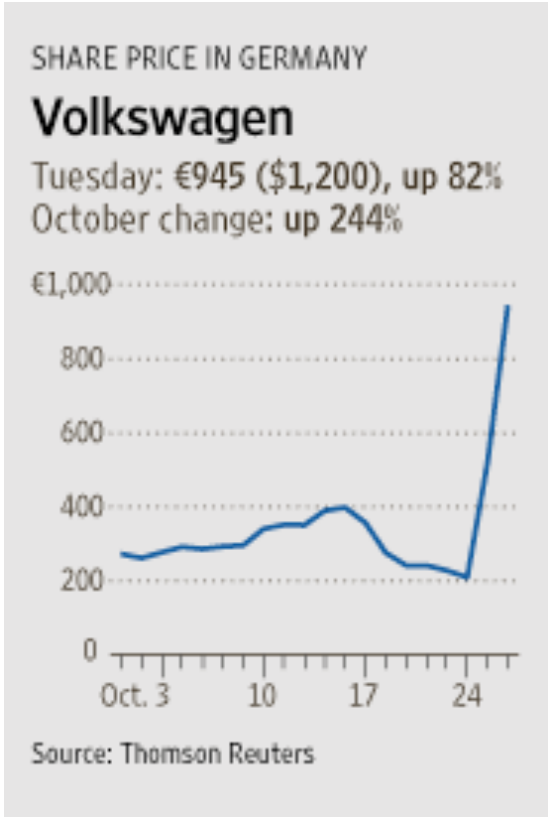
The response: Get updated equity risk premiums



Lesson 3: Even large cap stocks in developed markets can become illiquid..

- Panic selling..

- And buying…

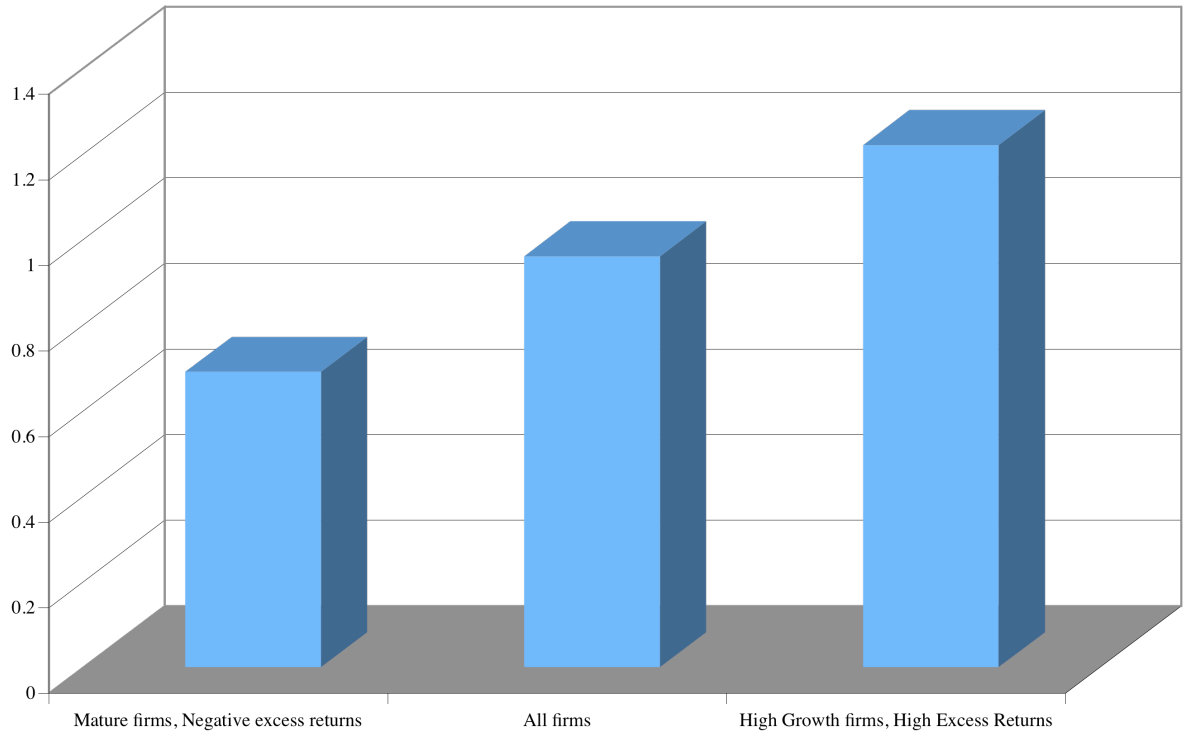


Response: Illiquidity has to be considered explicitly in corporate finance & valuation… for all companies..

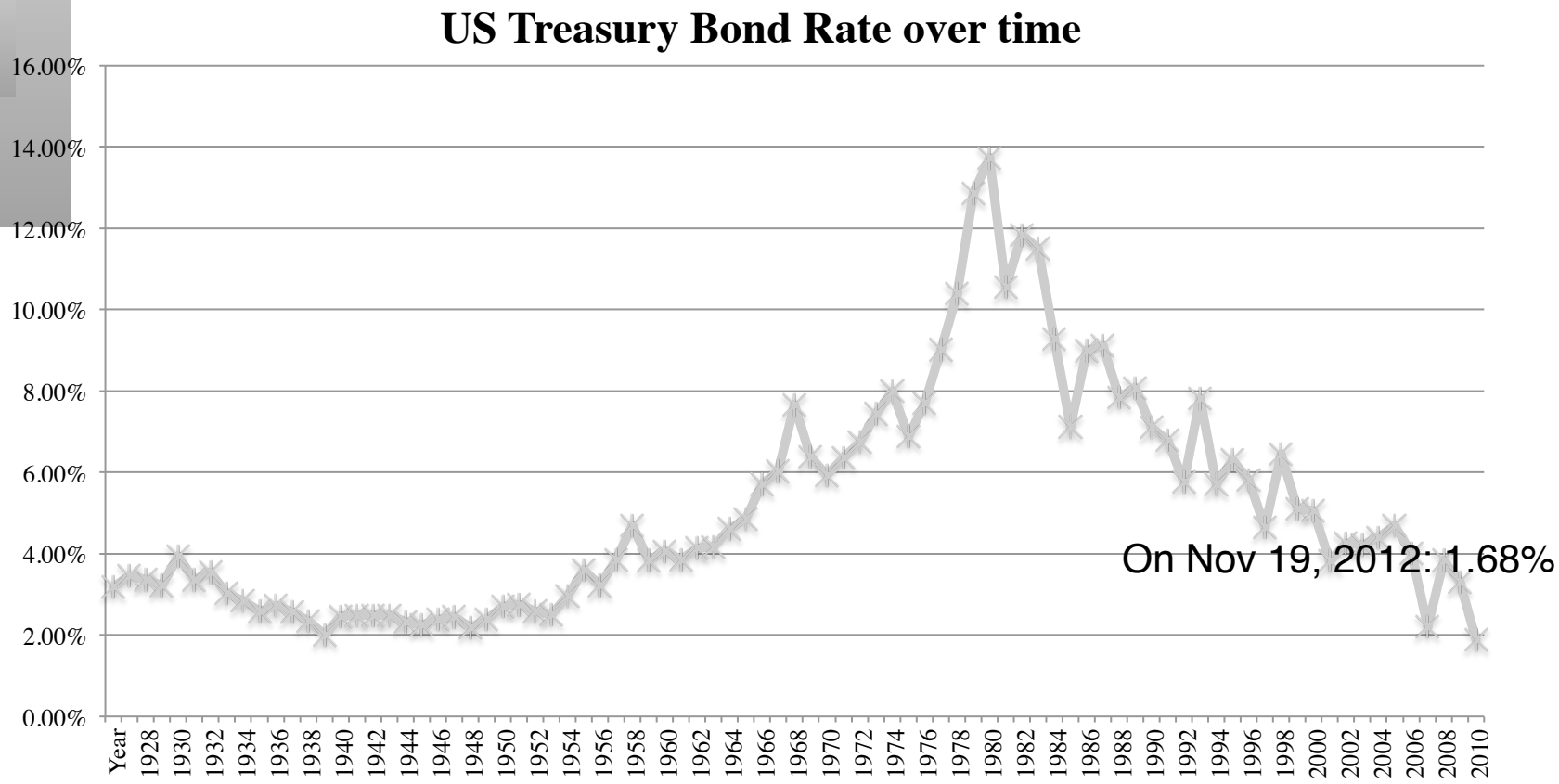
- Build into value: If we accept the premise that illiquidity can be a significant problem, even with large market cap companies, we have to consider ways in which we can explicitly incorporate the illiquidity risk into value. In general, we have two choices:
  - Adjust discount rates: As a general proposition, we could argue that illiquidity is a risk and that discount rates should be higher for illiquid companies. Holding cash flows constant, we will arrive at lower values for illiquid assets.
  - Reduce estimated value for illiquidity: Alternatively, we can ignore illiquidity while estimating value but discount the expected value for illiquidity (like private company practitioners have.
- Cash holdings: If illiquidity is a threat even to large market cap companies in developed markets, it behooves companies to hold larger cash balances both as a buffer against crises and as a "fund" to use to take advantage of unanticipated opportunities.

But not all companies have the license to hold cash…

Market Value of $ 1 in cash:
Estimates obtained by regressing Enterprise Value against Cash Balances



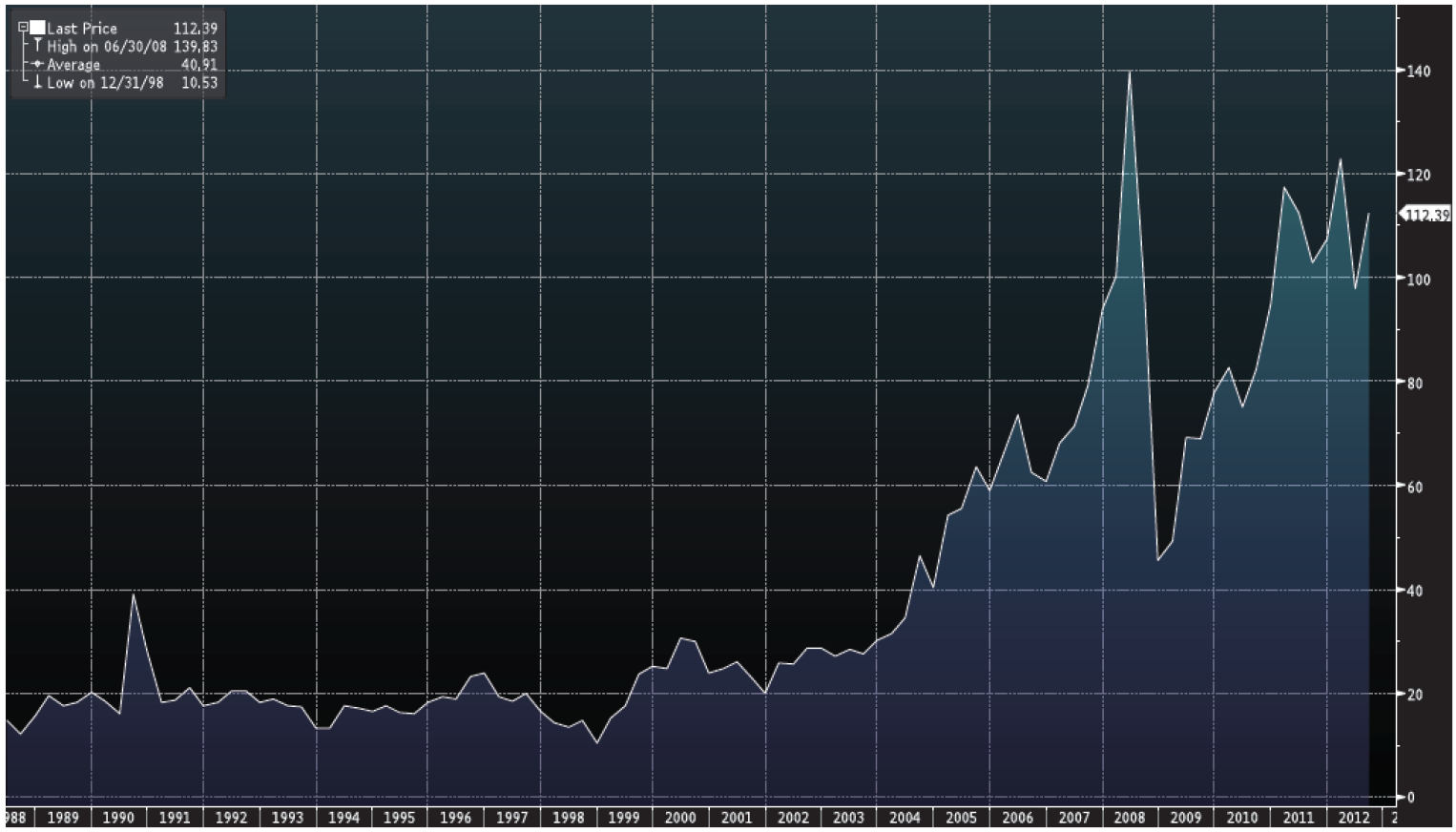
Lesson 4: Macro variables behave in unusual ways…



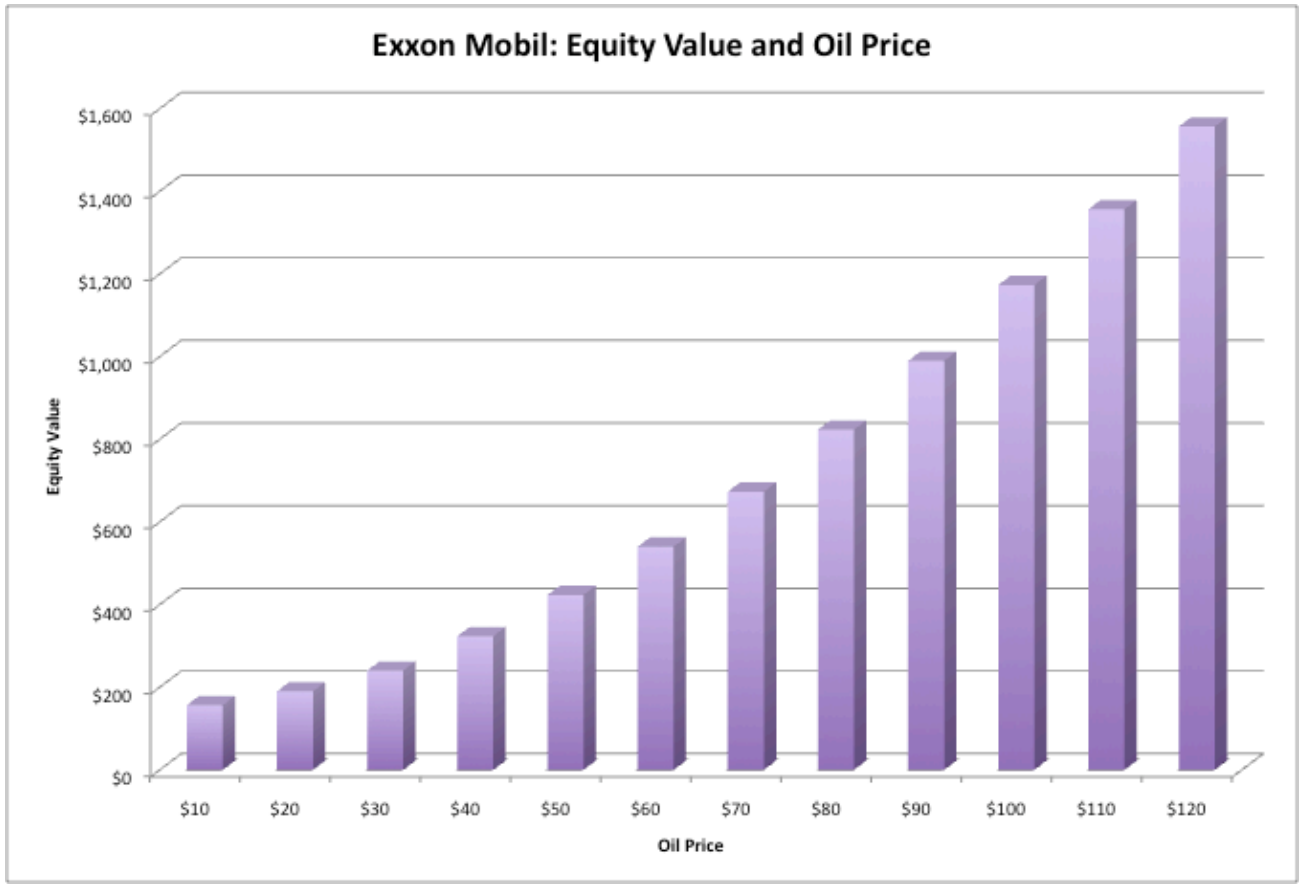
Response: Don't let your macro views drive your corporate finance and valuation decisions…

- Selective normalization: Analysts often pick and choose which variables they want to normalize. Thus, they may decide that interest are too low and use higher rates. However, the lower riskfree rate in early 2009 was the result of the market crisis (and the flight to safety), and the crisis also affected equity risk premiums and default spreads (pushing them to new highs) and economic growth (to lows). If you raise the riskfree rate but leave equity risk premiums, default spreads and real growth untouched, you are creating an inconsistent valuation.
- Macro and micro views: When the macro environment becomes unstable, there will be strong disagreements about where the economy, interest rates and exchange rates will go in the near and far future. It is therefore important to separate out your views on the macro economy from your views on a company, when you do valuation. A person looking at your valuation can then decide which of your views is reasonable and which ones are not.

Lesson 5: There may be no normal…
Crude oil prices from 1988-2012

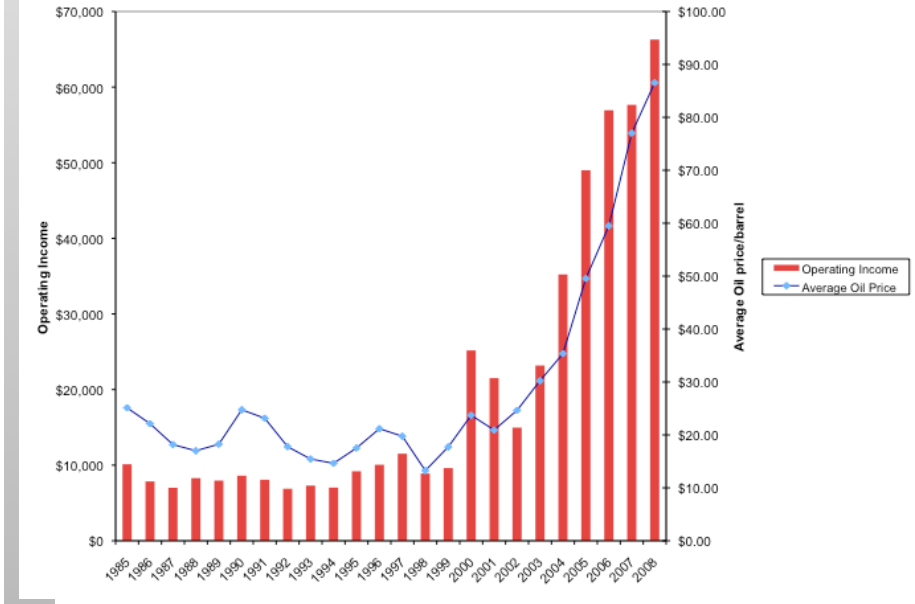


And value will be a function of your expectations… Exxon Mobil's value per share & oil price/barrel

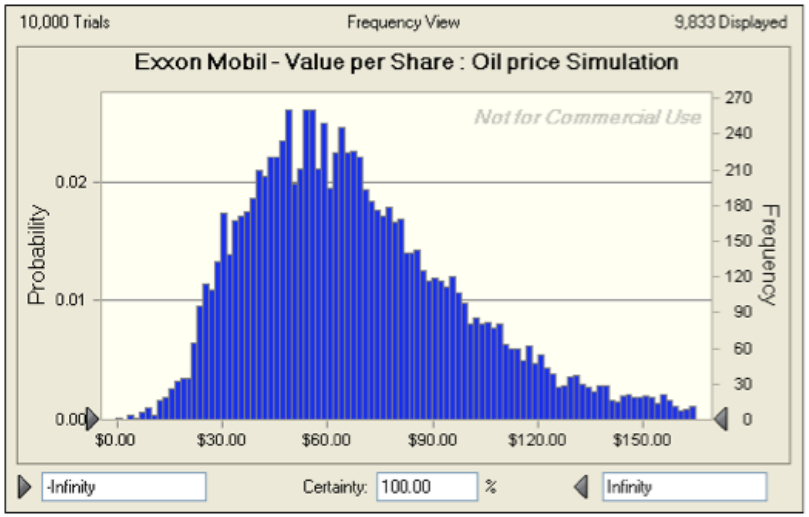


Response: Draw on probabilistic tools…

Step 1: Look at history



Step 3: Run simulation



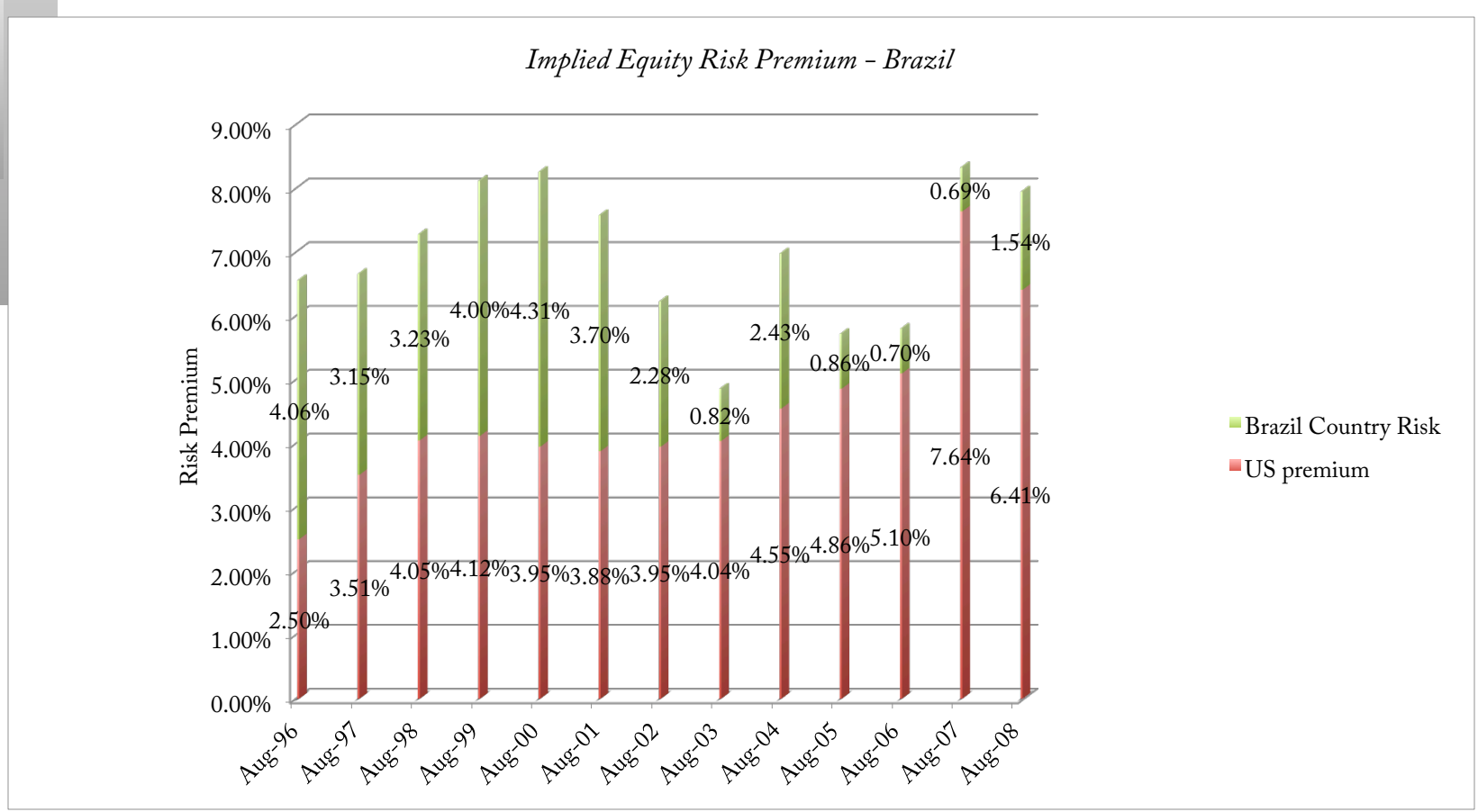
Step 2: Look for relationship

Regression of Exxon income against oil price

Op Inc = -6,934 + 911 (Price per barrel of oil)

R squared = 94%

Lesson 6: Country risk can change over time and quickly…



Country Risk Premiums June 2012

Canada	6.00%	0.00%
United States	6.00%	0.00%
NORTH AM	6.00%	0.00%

Argentina	15.00%	9.00%
Belize	9.00%	3.00%
Bolivia	10.88%	4.88%
Brazil	8.63%	2.63%
Chile	7.05%	1.05%
Colombia	9.00%	3.00%
Costa Rica	9.00%	3.00%
Ecuador	18.75%	12.75%
El Salvador	10.13%	4.13%
Guatemala	9.60%	3.60%
Honduras	13.50%	7.50%
Mexico	8.25%	2.25%
Nicaragua	15.00%	9.00%
Panama	9.00%	3.00%
Paraguay	12.00%	6.00%
Peru	9.00%	3.00%
Uruguay	9.60%	3.60%
Venezuela	12.00%	6.00%
LAT AM	9.42%	3.42%

Spain	9.00%	3.00%
Austria	6.00%	0.00%
Belgium	7.05%	1.05%
Cyprus	10.88%	4.88%
Denmark	6.00%	0.00%
Finland	6.00%	0.00%
France	6.00%	0.00%
Germany	6.00%	0.00%
Greece	16.50%	10.50%
Iceland	9.00%	3.00%
Ireland	9.60%	3.60%
Italy	7.73%	1.73%
Malta	7.73%	1.73%
Netherlands	6.00%	0.00%
Norway	6.00%	0.00%
Portugal	10.88%	4.88%
Sweden	6.00%	0.00%
Switzerland	6.00%	0.00%
Turkey	9.60%	3.60%
United Kingdom	6.00%	0.00%
W. EUROPE	6.80%	0.80%

Angola	10.88%	4.88%
Botswana	7.50%	1.50%
Egypt	13.50%	7.50%
Mauritius	8.25%	2.25%
Morocco	9.60%	3.60%
Namibia	9.00%	3.00%
South Africa	7.73%	1.73%
Tunisia	9.00%	3.00%
AFRICA	9.82%	3.82%

Albania	12.00%	6.00%
Armenia	10.13%	4.13%
Azerbaijan	9.00%	3.00%
Belarus	15.00%	9.00%
Bosnia	15.00%	9.00%
Bulgaria	8.63%	2.63%
Croatia	9.00%	3.00%
Czech Republic	7.28%	1.28%
Estonia	7.28%	1.28%
Georgia	10.88%	4.88%
Hungary	9.60%	3.60%
Kazakhstan	8.63%	2.63%
Latvia	9.00%	3.00%
Lithuania	8.25%	2.25%
Moldova	15.00%	9.00%
Montenegro	10.88%	4.88%
Poland	7.50%	1.50%
Romania	9.00%	3.00%
Russia	8.25%	2.25%
Slovakia	7.50%	1.50%
Slovenia [1]	7.50%	1.50%
Ukraine	13.50%	7.50%
E. EUROPE	8.60%	2.60%

Bahrain	8.25%	2.25%
Israel	7.28%	1.28%
Jordan	10.13%	4.13%
Kuwait	6.75%	0.75%
Lebanon	12.00%	6.00%
Oman	7.28%	1.28%
Qatar	6.75%	0.75%
Saudi Arabia	7.05%	1.05%
UAE	6.75%	0.75%
MIDDLE EAST	7.16%	1.16%

Bangladesh	10.88%	4.88%
Cambodia	13.50%	7.50%
China	7.05%	1.05%
Fiji Islands	12.00%	6.00%
Hong Kong	6.38%	0.38%
India	9.00%	3.00%
Indonesia	9.00%	3.00%
Japan	7.05%	1.05%
Korea	7.28%	1.28%
Macao	7.05%	1.05%
Malaysia	7.73%	1.73%
Mongolia	12.00%	6.00%
Pakistan	15.00%	9.00%
New Guinea	12.00%	6.00%
Philippines	10.13%	4.13%
Singapore	6.00%	0.00%
Sri Lanka	12.00%	6.00%
Taiwan	7.05%	1.05%
Thailand	8.25%	2.25%
Vietnam	12.00%	6.00%
ASIA	7.63%	1,63%
WO JAPAN	7.77%	1.77%

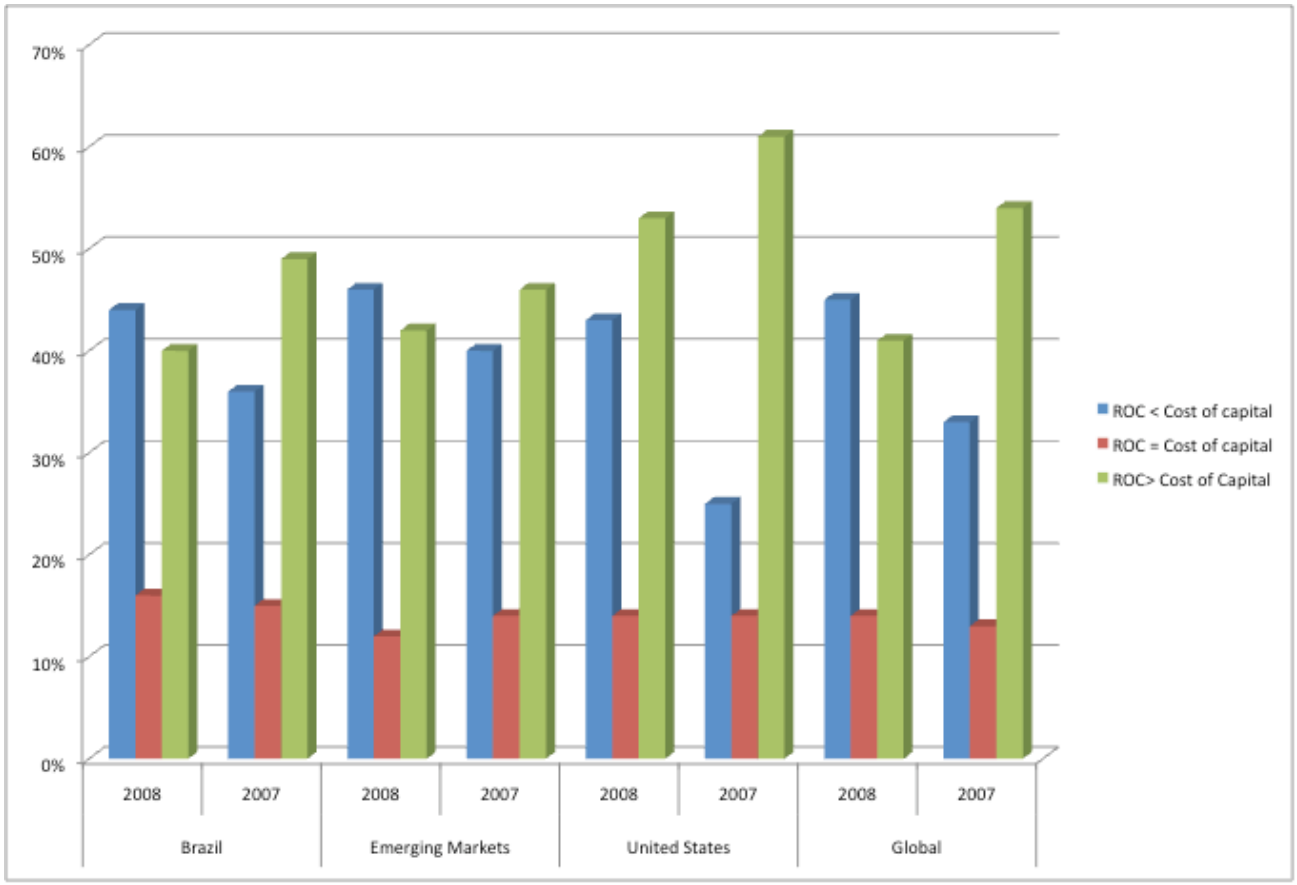
Australia	6.00%	0.00%
New Zealand	6.00%	0.00%
AUS & NZ	6.00%	0.00%

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

Response: Country risk derives from operations, not where you are incorporated..

Region	*Revenues*	*Total ERP*	*CRP*
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%

Lesson 7: There is good growth… and bad…



Response: Be clear about what you are making on your investments…

Adjust EBIT for
a. Extraordinary or one-time expenses or income
b. Operating leases and R&D
c. Cyclicality in earnings (Normalize)
d. Acquisition Debris (Goodwill amortization etc.)

Use a marginal tax rate to be safe. A high ROC created by paying low effective taxes is not sustainable

$$\text{ROC} = \frac{\text{EBIT (1- tax rate)}}{\text{Book Value of Equity + Book value of debt - Cash}}$$

Adjust book equity for
1. Capitalized R&D
2. Acquisition Debris (Goodwill)

Adjust book value of debt for
a. Capitalized operating leases

Use end of prior year numbers or average over the year but be consistent in your application

Lesson 8: We under estimate truncation risk..

- In both valuation and corporate finance, we under estimate the likelihood and consequences of truncation risk. Our assumptions of perpetual life and terminal value are based upon two premises:
  - The consequences of getting into financial trouble are short term and easily reversed.
  - Capital markets are always open and accessible. A company that needs to raise equity to cover negative cash flows or repay debt can always do so, albeit at a higher cost.
- *Lesson 10.1: Indirect bankruptcy costs are much higher than we thought*. In other words, the perception that you are in trouble can be almost as damaging as being in trouble, especially in businesses that are dependent upon intangible assets.
- *Lesson 10.2: Capital markets can shut down*, even in developed markets and even for the largest companies.

Response: Be more cautious about "financial leverage"

- In conventional corporate finance, the trade off is between tax benefits on the one hand and expected bankruptcy costs on the other. While the former is straightforward, the latter is more complex and is composed of two components:
  - The probability of bankruptcy: As earnings become more volatile, holding all else constant, the probability of bankruptcy increases.
  - The cost of bankruptcy has two parts to it: a direct cost associated with the legal and deadweight costs of going bankrupt and an indirect cost that comes about because of the perception that you are in trouble.
- When markets are roiled and economies are unsettled, the indirect bankruptcy costs become larger. Holding all else constant, that should translate into less debt at firms.

Lesson 9: Governments and regulators can affect value..

- In most developed market valuations, there is little explicit consideration for how governments and politics affect value. In fact, the only effect on value that governments have on value is through tax policy, primarily through tax rates.
- In this crisis, we have been reminded that governments can influence equity value in many ways…
  - Bailouts: By determining who is "too large to fail" and who is not, governments can determine the destiniex of even large enterprises.
  - Nationalizations: We used to think of the fear of nationalization as restricted to tinpot dictatorships in small emerging markets. No more!
  - Regulations and rules: We think of rules and regulations as clearly defined boundaries and constraints. We forget that rules are written and enforced by human beings, and they can be changed by those same humans.
- *Implication: When valuing companies, especially regulated businesses, we have to consider the effects of not only existing regulations, but changes in those regulations.*

Response: Incorporate the "Heavy Hand" into valuation and capital allocation…

	Average for companies where government has large stake	Average for other companies in the same sector
Tax Rate	41%	32%
ROIC	7%	11%
Debt ratio	43%	35%
Dividends/FCFE	135%	78%

The government's interests may diverge from your interests.
- Dividend policy
- Cost cutting
- Taxes

If the company is badly run, can you do anything about it as a stockholder?

The Government put: The government will not let a company that it owns go under, offering bailouts and other measures to save the firm. This will increase the value of the firm.

The Government call: If the firm becomes too valuable, the government may decide to expropriate the firm at favorable prices (nationalization).

Lesson 11: Independent Board ≠ Effective Board

SEPTEMBER 18, 2008

Where Was Lehman Board?

Firm's External Directors Had Relied on Experiences Of a Bygone Financial Era

By DENNIS K. BERMAN

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Nine of them are retired. Four are over 75 years old. One is a theater producer, another a former Navy admiral. Only two have direct experience in the financial-services industry.

Meet the Lehman Brothers Holdings external board directors, a group of 10 people who, perhaps unknowingly, carried the health of the world's financial system on their shoulders the past 18 months.

As the world nervously awaits the effects of the unprecedented Lehman Brothers liquidation, one can't help but wonder how and why this board let its longtime chairman and patron, Richard Fuld Jr., cling to both hope and power.

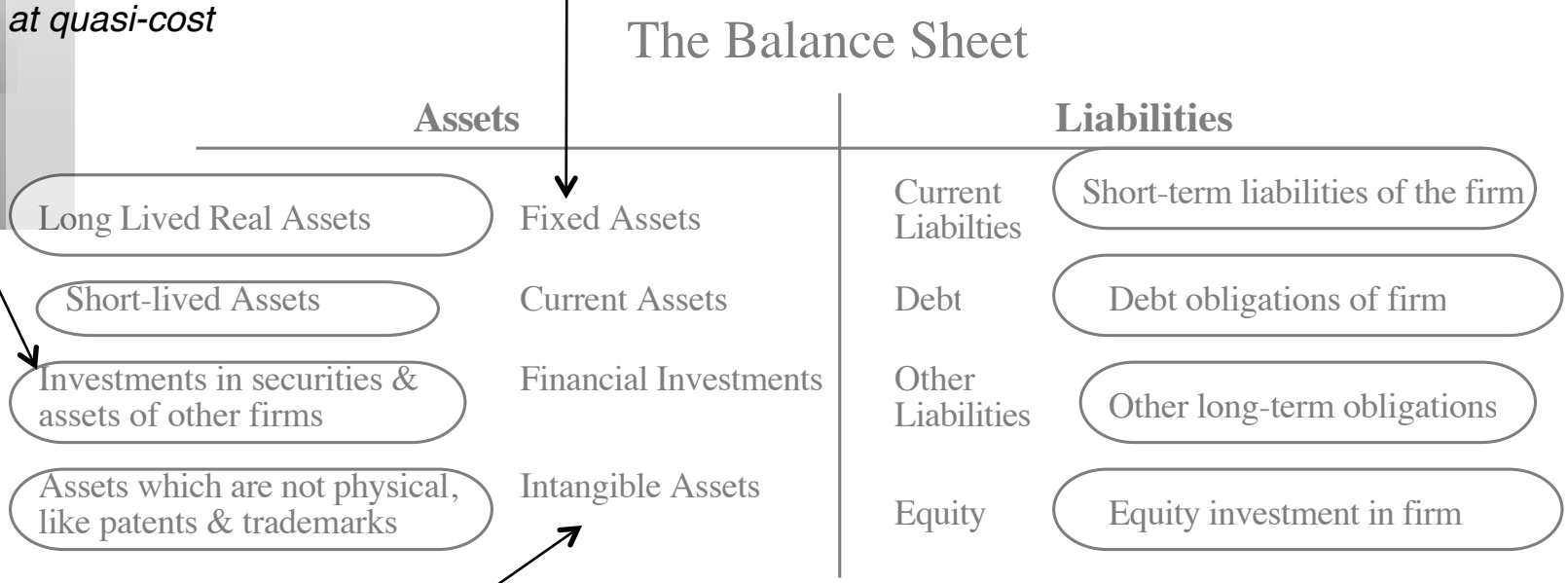
Response: Let's think about effective boards… Directors should..

- Know the business: If we want board members to oversee managers, we have to also accept the proposition that these board members understand the business that the company is in.
- (At least some should) serve the interests of those most opposed to incumbent managers: If one of the problems with boards is that they are unwilling to challenge incumbent managers, we need directors who represent stockholders who most disagree with incumbent managers (proportional voting for directors versus majority voting).
- Have a counter weight to the CEO: If it is human nature to assent to authority, we need to create counters to the power of the CEO. In effect, it may be time to create a "Devil's Advocate" on the Board, with powers (and resources) to match the CEO.

Lesson 12: Fair value accounting is an oxymoron… Here is a conventional balance sheet..

Valued based upon motive for investment – some marked to market, some recorded at cost and some at quasi-cost

Assets are recorded at original cost, adjusted for depreciation.

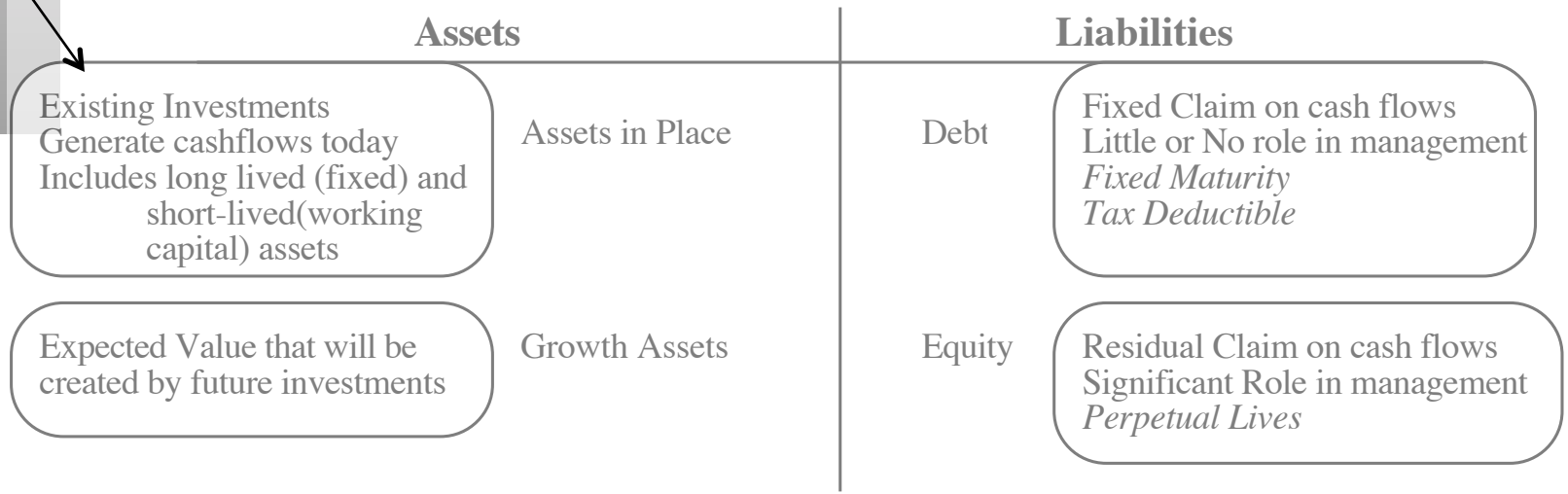


True intangible assets like brand name, patents and customer did not show up. The only intangible asset of any magnitude (goodwill) is a plug variable that is of consequence only if you do an acquisition.

Equity reflects original capital invested and historical retained earnings.

And an "intrinsic" value balance sheet

Recorded at intrinsic value (based upon cash flows and risk), not at original cost



Value will depend upon magnitude of growth investments and excess returns on these investments

Intrinsic value of equity, reflecting intrinsic value of assets, net of true value of debt outstanding.

Response: Don't lose focus…

- Financial statements should (and have been designed to) answer three questions:
  - How much did you earn last year?
  - What do you own and how much did you invest to get what you own?
  - What do you owe?
- In the process of moving to fair value accounting, we should not lose information that has been used to answer these questions. Therefore:
  - Replacing existing book values of assets (which measure capital invested) with the fair or market value of those assets replaces a useful piece of information with one that is redundant (if it just reflects market value), misleading (if it incorrectly tries to reflect market value) or confusing (if no one is quite sure).
  - Adjusting earnings for past mistakes in fair value assessment (inevitable with all fair value accounting) will make earnings less informative.
  - Trying to include potential, possible and imagined liabilities in balance sheet dilutes the meaning of debt.