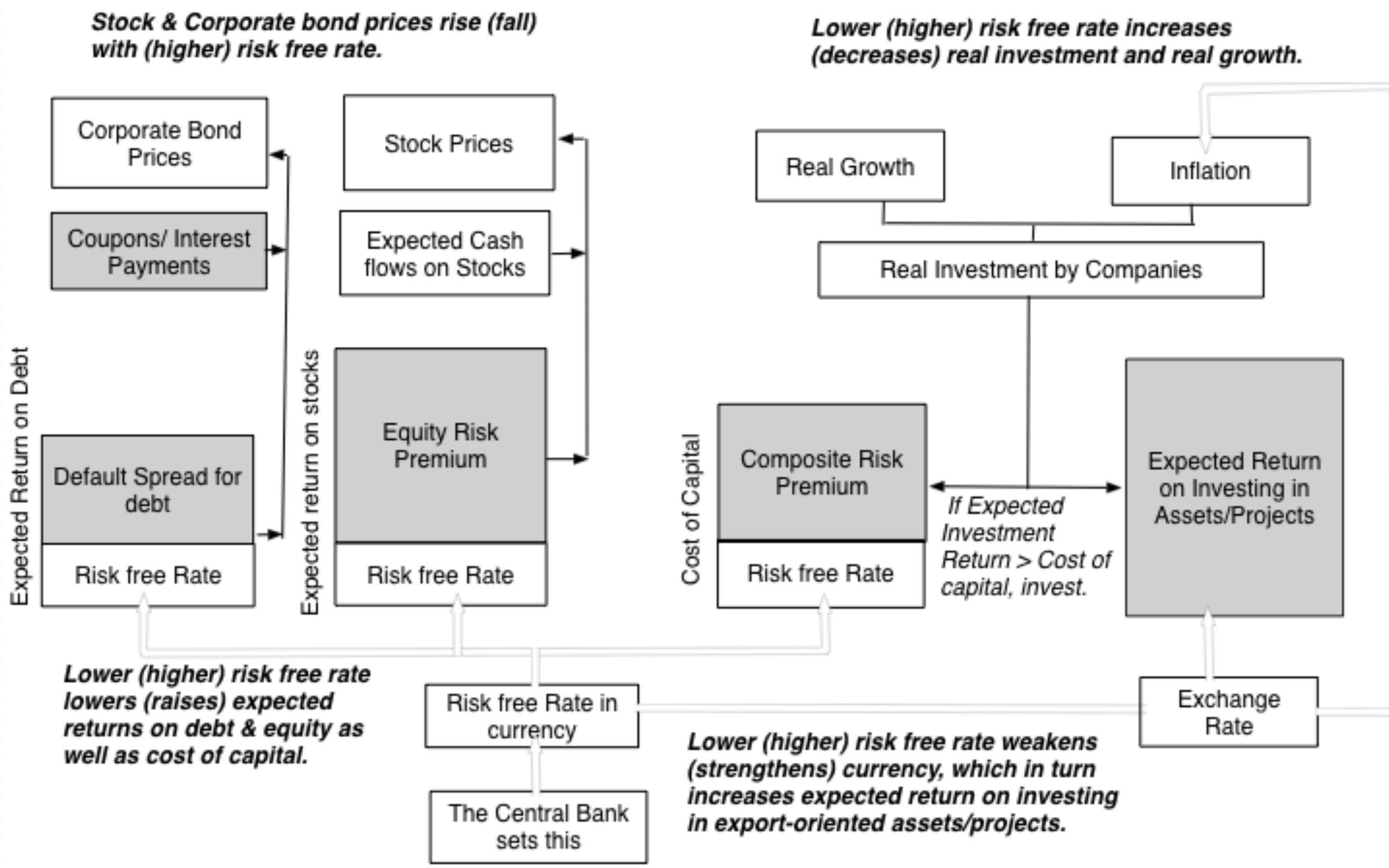
DISCOUNT RATE MYTH 5: IF THE RISK FREE RATE CHANGES..

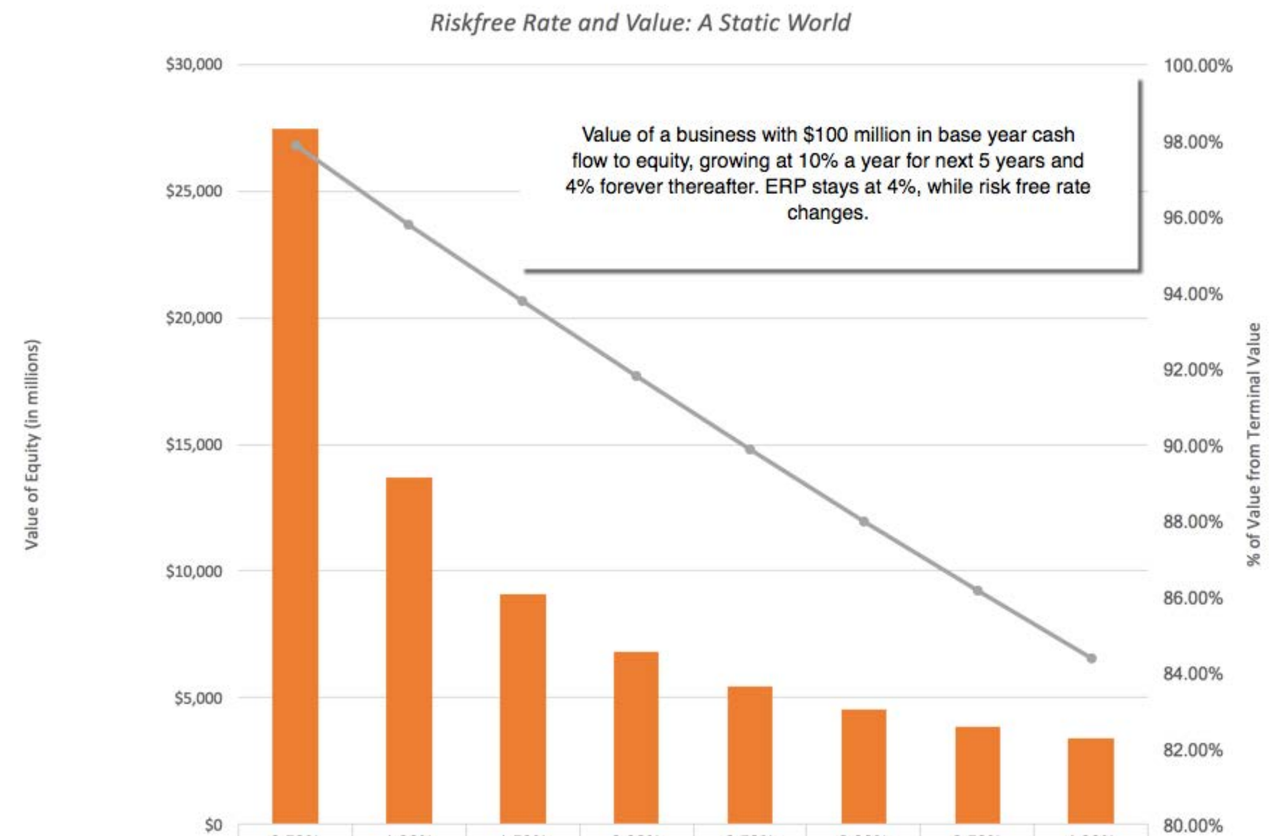
Riskfree Rates and Value in DCF

- Riskfree rate is part of discount rate: In a conventional DCF, the riskfree rate enters the process only in the estimation of discount rates, forming the base from which both cost of equity anc capital are computed.
- As riskfree rate changes, discount rates change in tandem: If you hold all else constant (cash flows, growth, debt ratios and risk premiums), lowering the riskfree rate will always increase value, with the pace of increase picking up the lower the risk free rate gets.
- Low rates = Sky high valuations: In today's environment of near-zero and even negative risk free rates, this has the potential to blow up DCF valuations.

In this world, all eyes turn to central bankers..



Riskfree Rates and Value: Ceteris Paribus

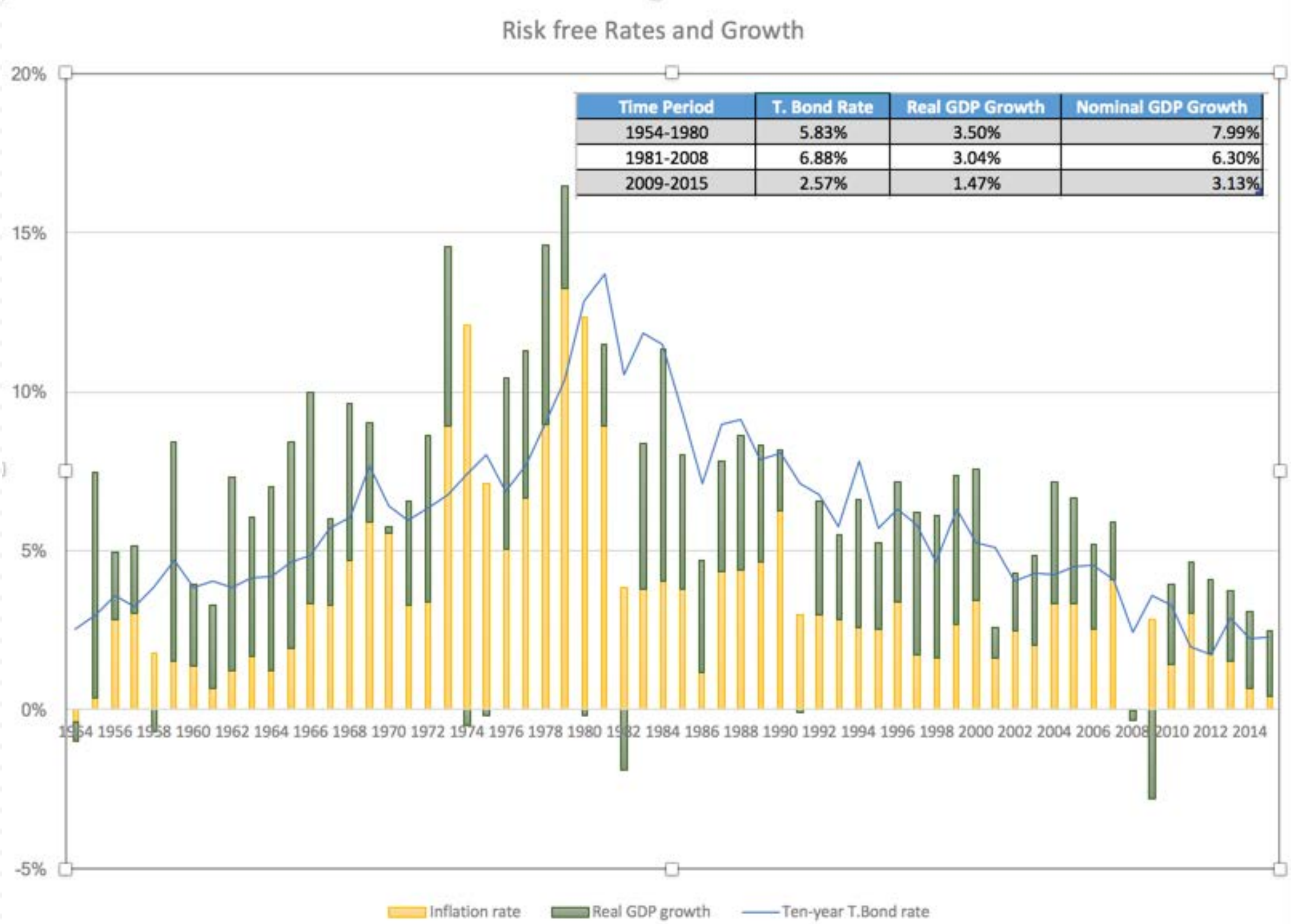


	0.50%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%
Value of equity	$27,466	$13,700	$9,111	$6,818	$5,442	$4,524	$3,869	$3,378
% from terminal value	97.87%	95.79%	93.77%	91.79%	89.86%	87.98%	86.15%	84.36%

Riskfree Rates and Value: The Real World

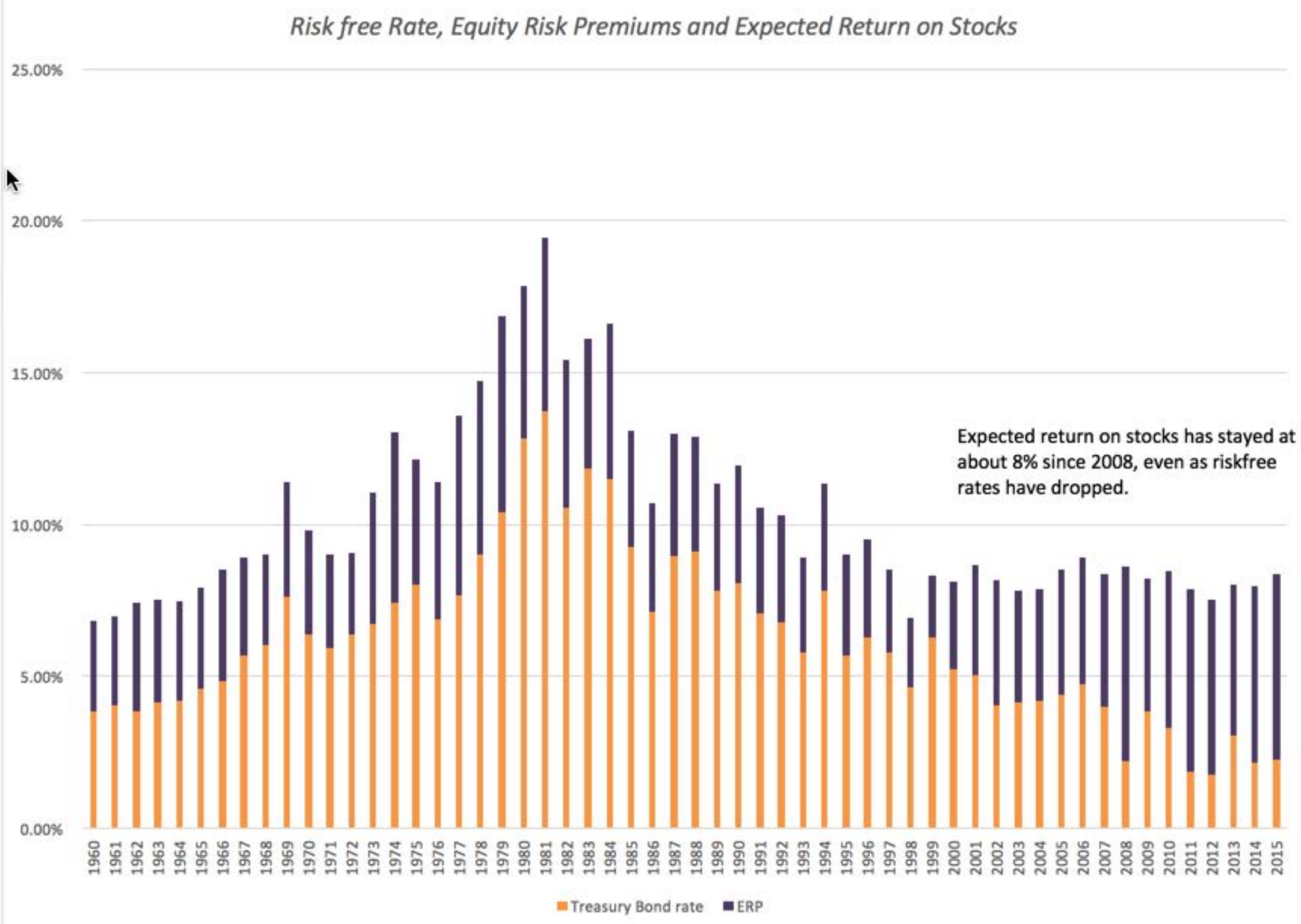
- Central banks don't set interest rates, but tweak them.
- When interest rates change significantly, the changes are coming from changes in the macroeconomic fundamentals which will also affect your other inputs into value.
- Put simply, you cannot hold all else constant.

1. Riskfree Rates and Growth

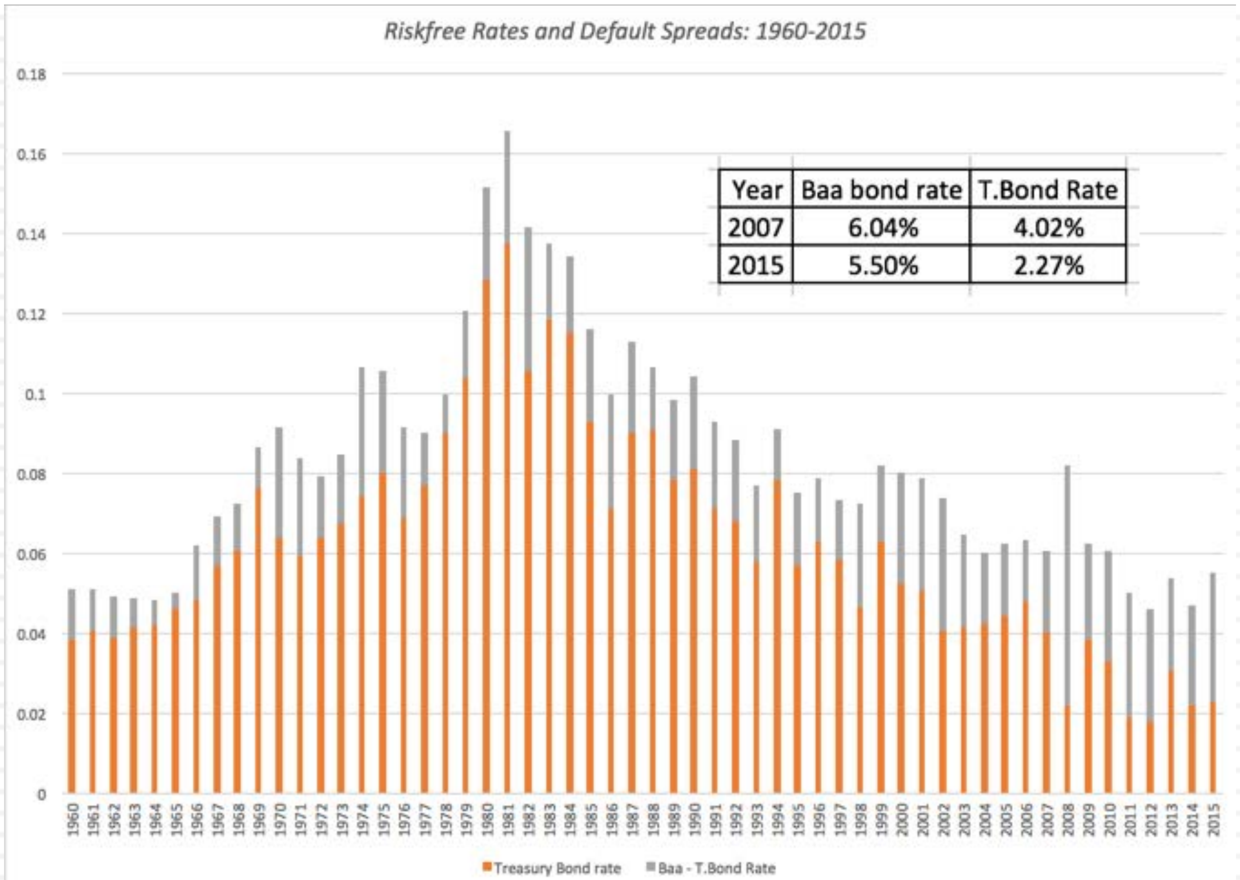


Time Period	T. Bond Rate	Real GDP Growth	Nominal GDP Growth
1954-1980	5.83%	3.50%	7.99%
1981-2008	6.88%	3.04%	6.30%
2009-2015	2.57%	1.47%	3.13%

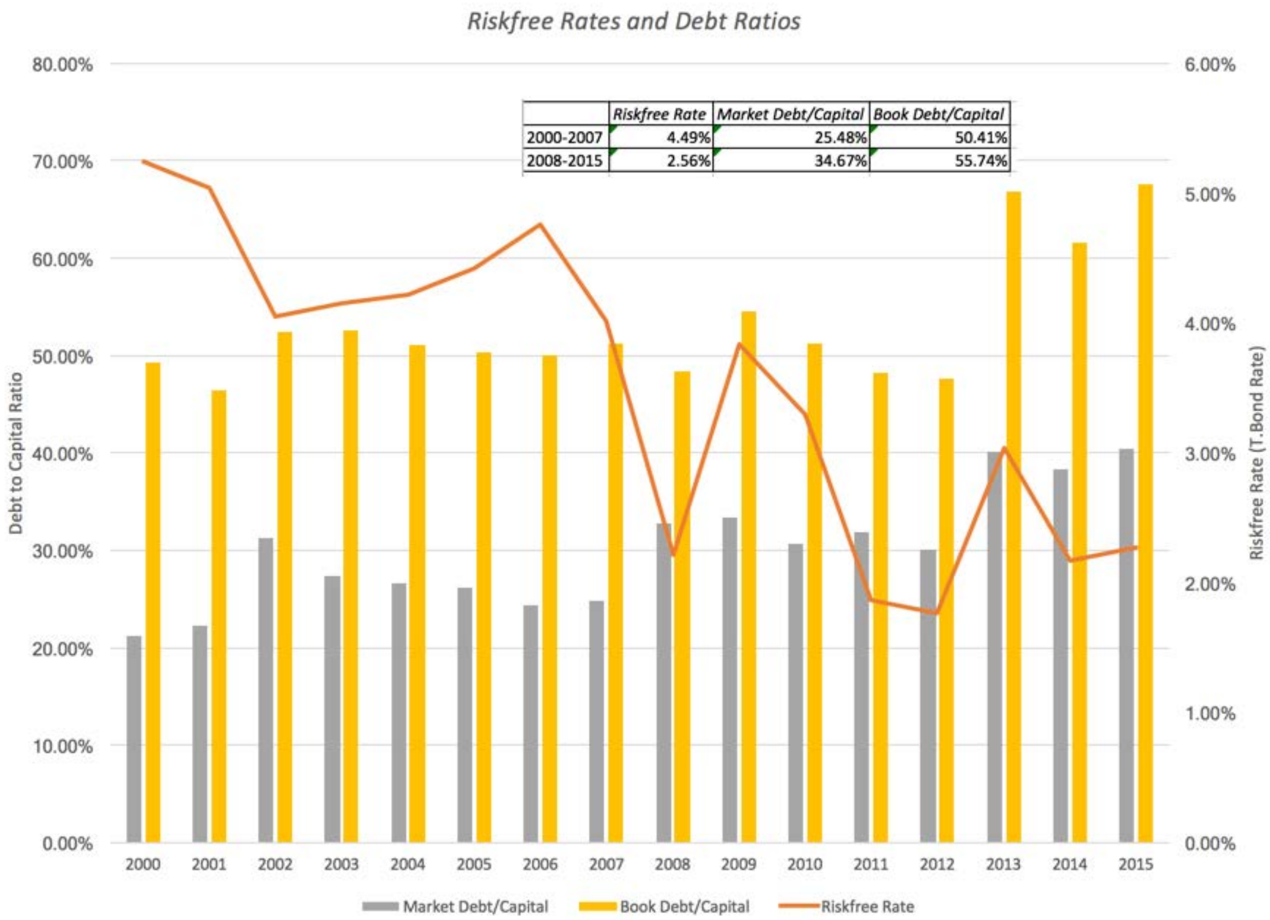
2. Riskfree Rates and ERP



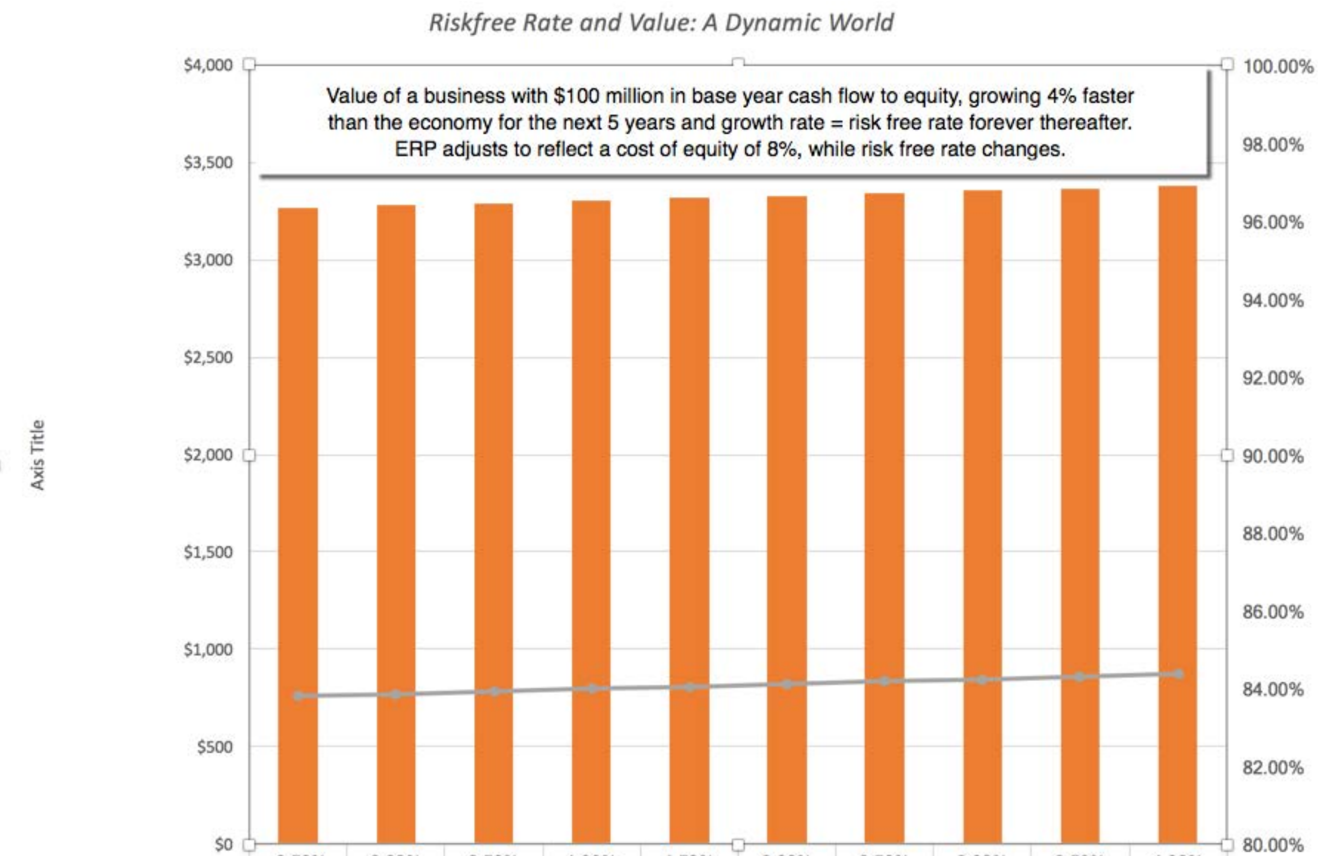
3. Riskfree Rates and Default Spreads



4. Riskfree Rates and Debt Ratios

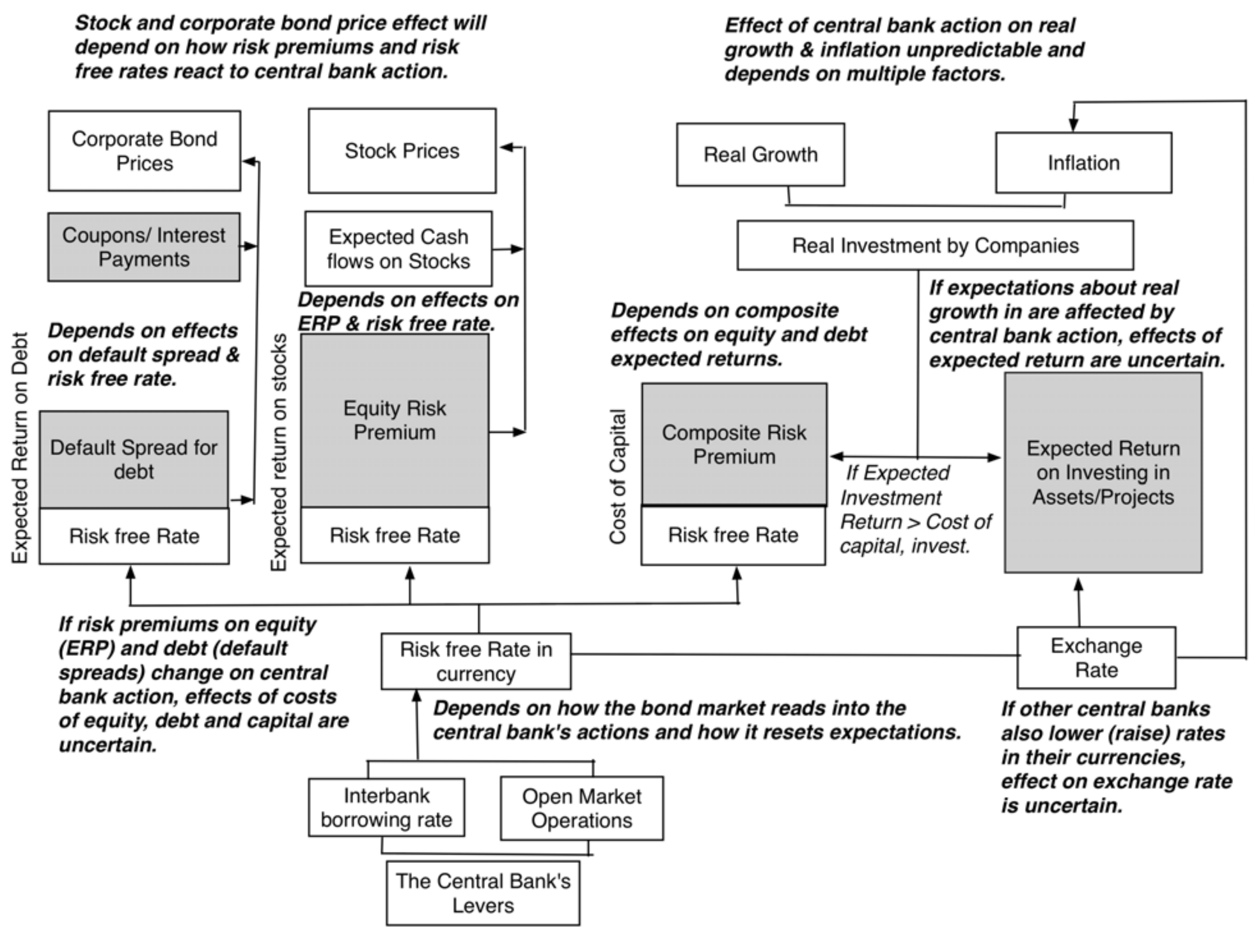


Riskfree Rates and Value: Dynamic Setting



	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%
Value of equity	$3,267	$3,279	$3,292	$3,304	$3,316	$3,329	$3,341	$3,354	$3,366	$3,378
% from terminal value	83.79%	83.85%	83.92%	83.98%	84.04%	84.11%	84.17%	84.23%	84.30%	84.36%

Riskfree Rates and Value: The Full Picture



Playing Devil's Advocate!

- Mean Reversion: The essence of mean reversion is that when something looks unusually low or high, it will be revert back to historic norms.
  - Assuming things will revert back to the way they used to be can be dangerous, if there has been a structural shift in the process.
  - You cannot selectively mean revert some numbers and no mean revert others.
- Central Bank as Master Manipulators: If you believe that the Fed sets interest rates and ty that markets are being led by the nose, you do have the basis for a "bubble" argument, where "artificially" low interest rates are leading all financial assets into bubble territory. The evidence, though, suggests that markets are not being fooled.