MARKET AND MACRO DELUSIONS!

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Confessions of an Impostor!

- **I am a terrible market timer**. I think it is the impossible dream.
- **I am even worse at macro forecasting**. I think it exists to make tarot card reading look good.
- **I think we spend way too much time trying to both explain what markets have already done and to forecast what they will do**. We would all be better off just admitting that we don't know and moving on to more productive pursuits.

Implied Equity Risk Premiums

The Most Important Number in Equity Markets

Risk Premiums and Asset Prices

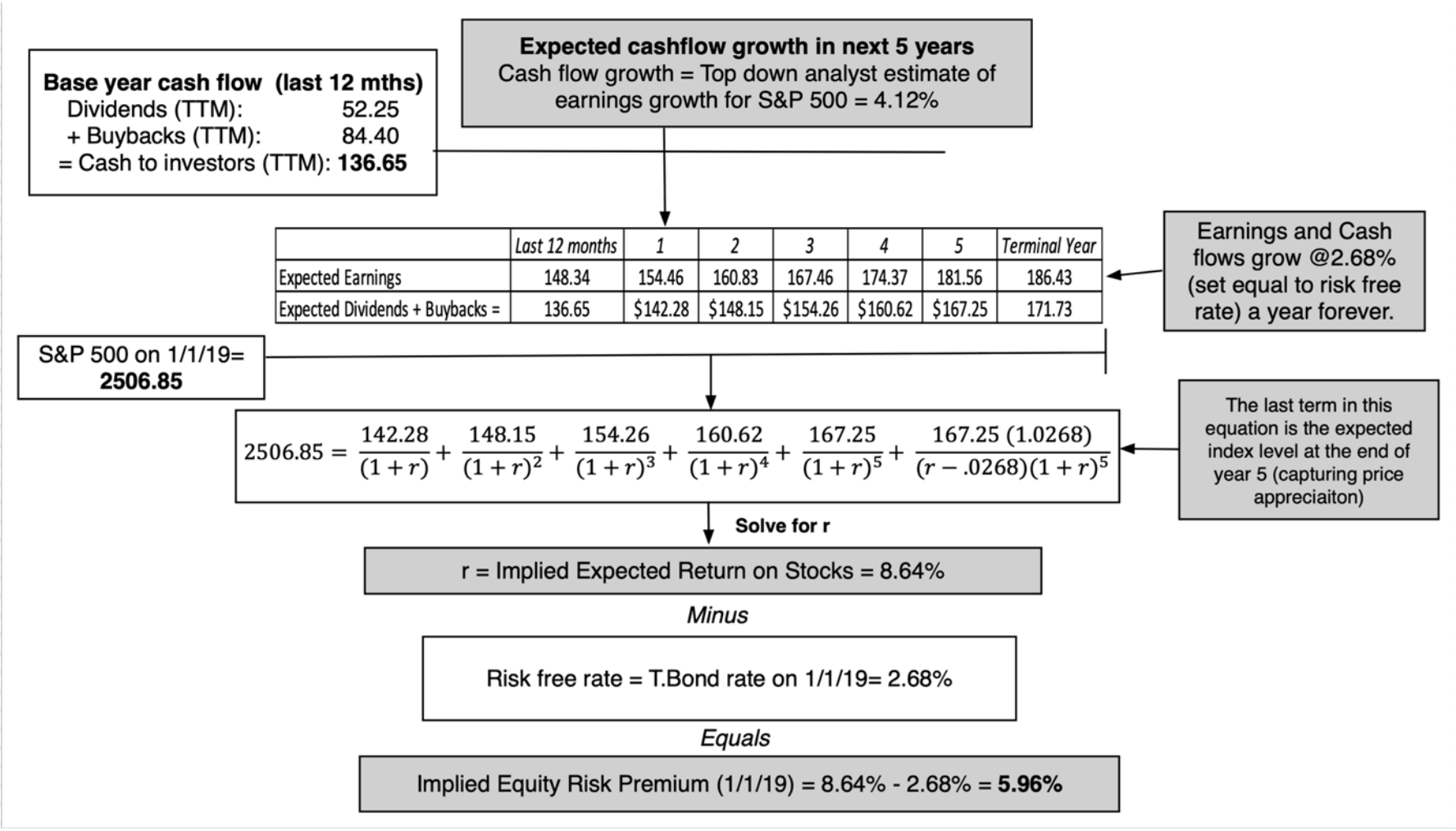
- If investors are risk averse, they need inducement to invest in risky assets. That inducement takes the form of a risk premium, a premium you would demand over and above the riskfree asset to invest in a risky asset.
- Every risky asset market has a "risk" premium that determines how individual assets in that market are priced.
  - In an equity market, that risk premium for dealing with the volatility of equities and bearing the residual risk is the equity risk premium.
  - In the bond market, the risk premium for being exposed to default risk is the default spread.
  - In real asset markets, there are equivalent (though less widely publicized markets).

The ubiquitous historical risk premium

- The historical premium is the premium that stocks have historically earned over riskless securities.
- While the users of historical risk premiums act as if it is a fact (rather than an estimate), it is sensitive to
  - How far back you go in history…
  - Whether you use T.bill rates or T.Bond rates
  - Whether you use geometric or arithmetic averages.
- For instance, looking at the US:

	Arithmetic Average		Geometric Average	
	Stocks - T. Bills	Stocks - T. Bonds	Stocks - T. Bills	Stocks - T. Bonds
1928-2018	7.93%	6.26%	6.11%	4.66%
Std Error	2.09%	2.22%		
1969-2018	6.34%	4.00%	5.01%	3.04%
Std Error	2.38%	2.71%		
2009-2018	13.00%	11.21%	12.48%	11.00%
Std Error	3.71%	5.50%		

An Implied Equity Risk Premium



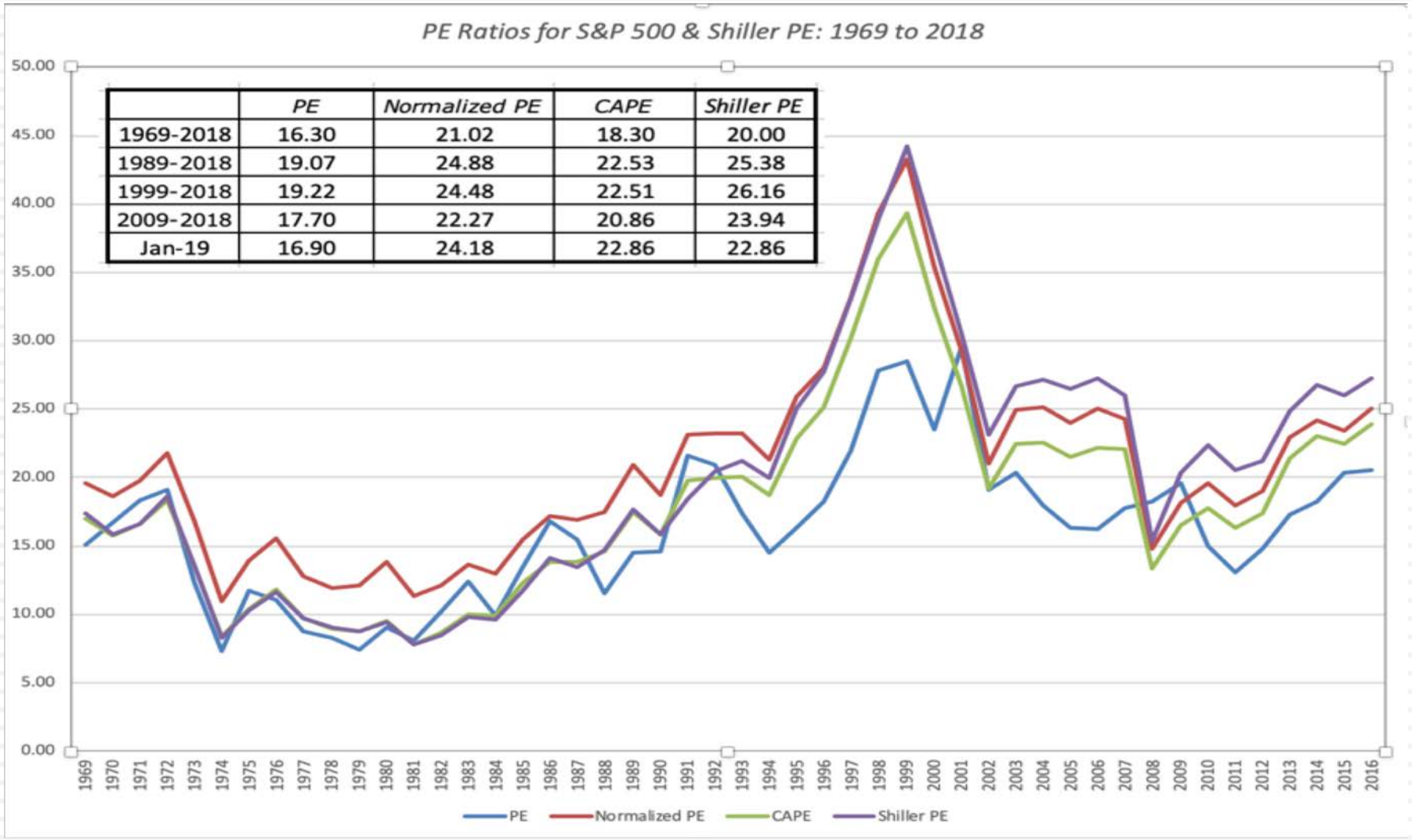
If you want market neutrality..

- Because your job description proscribes market views: If your job is to value individual companies, not pass judgment on the overall market, you should use the current implied equity risk premium and move on, no matter how much you disagree with it.
- Because you have a bad history at market timing: If you have a history of bad market timing, you should stick with the current implied ERP.

Are stocks in a bubble?

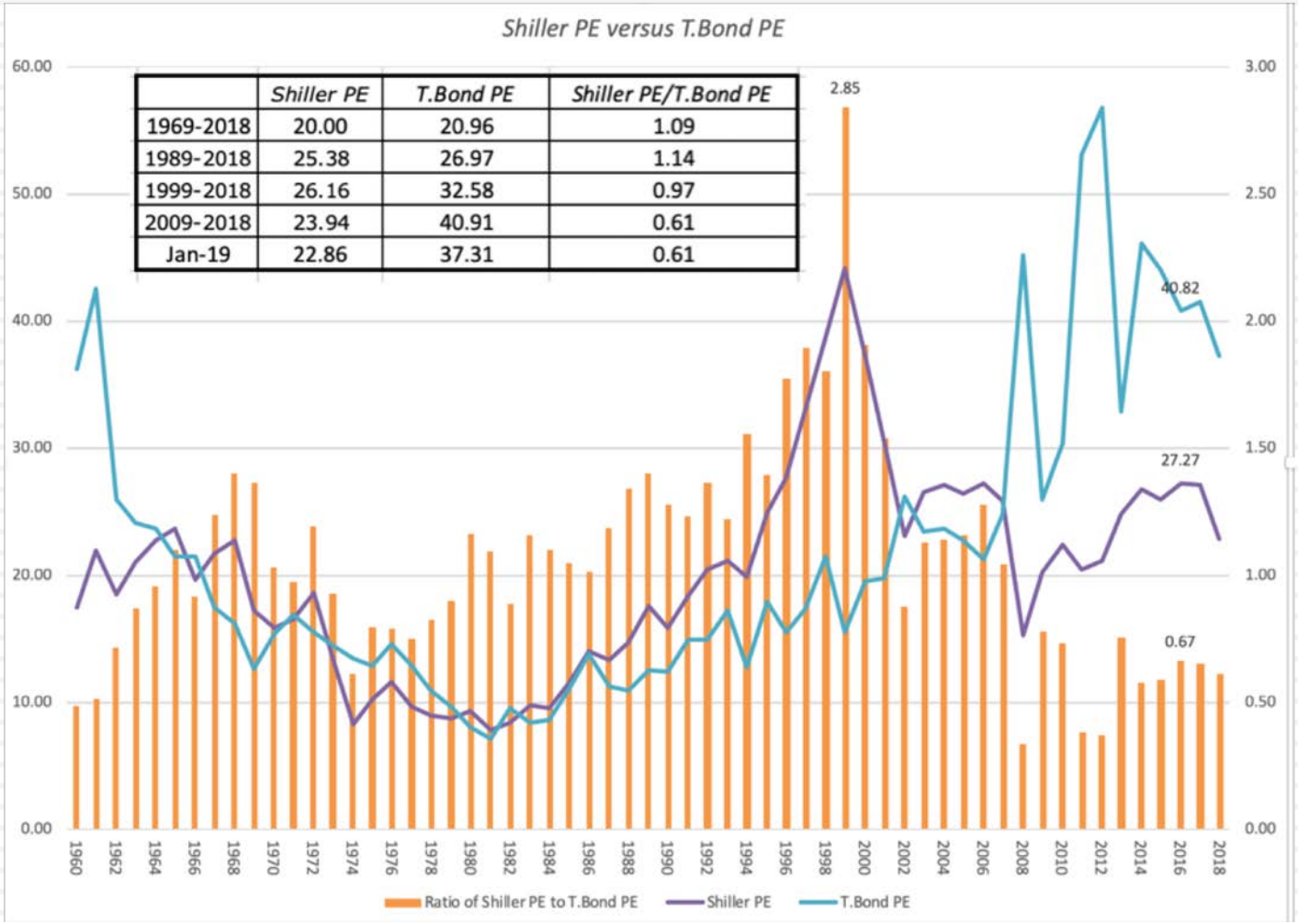
Bubble, bubble, toil and trouble!

The Bubblers' strongest case… (if you can call it that…)



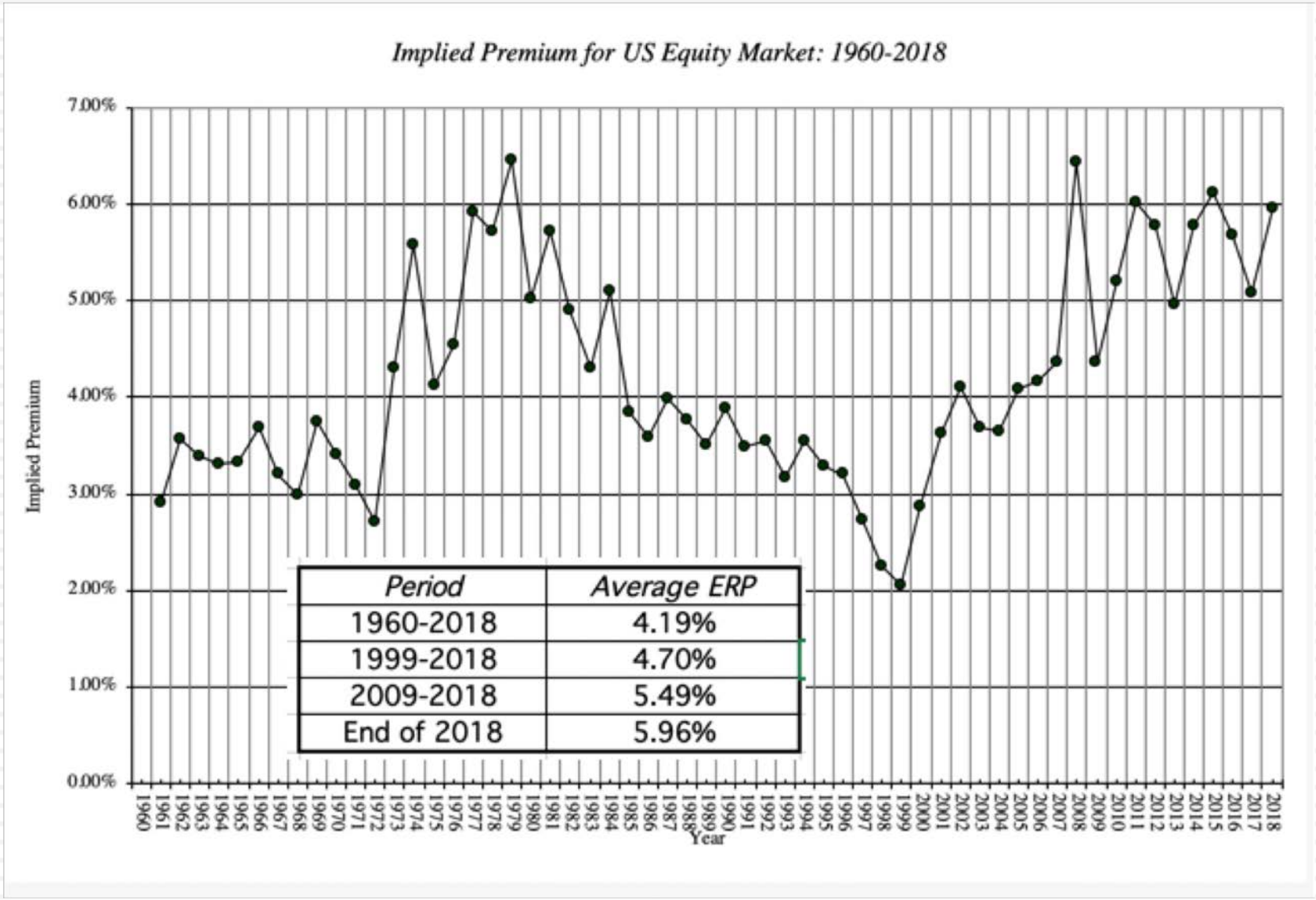
	PE	Normalized PE	CAPE	Shiller PE
1969-2018	16.30	21.02	18.30	20.00
1989-2018	19.07	24.88	22.53	25.38
1999-2018	19.22	24.48	22.51	26.16
2009-2018	17.70	22.27	20.86	23.94
Jan-19	16.90	24.18	22.86	22.86

And the easy takedown..



	Shiller PE	T.Bond PE	Shiller PE/T.Bond PE
1969-2018	20.00	20.96	1.09
1989-2018	25.38	26.97	1.14
1999-2018	26.16	32.58	0.97
2009-2018	23.94	40.91	0.61
Jan-19	22.86	37.31	0.61

The ERP: A Composite Measure



Period	Average ERP
1960-2018	4.19%
1999-2018	4.70%
2009-2018	5.49%
End of 2018	5.96%

As Predictor of future returns

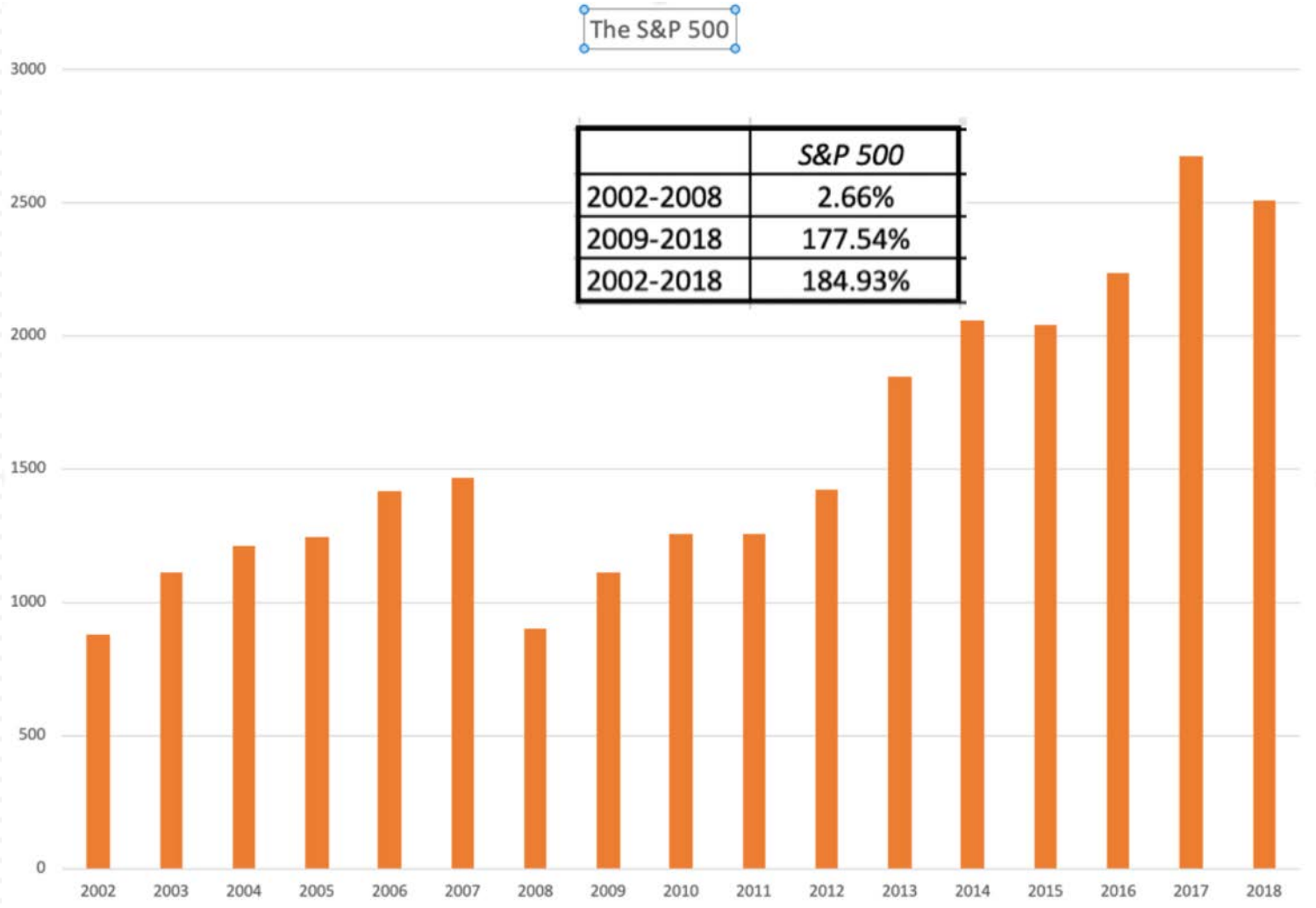
If you assume this	Premium to use
Premiums revert back to historical norms and your time period yields these norms	Historical risk premium
Market is correct in the aggregate or that your valuation should be market neutral	Current implied equity risk premium
Marker makes mistakes even in the aggregate but is correct over time	Average implied equity risk premium over time.

Predictor	Correlation with implied premium next year	Correlation with actual return- next 5 years	Correlation with actual return – next 10 years
Current implied premium	0.763	0.427	0.500
Average implied premium: Last 5 years	0.718	0.326	0.450
Historical Premium	-0.497	-0.437	-0.454
Default Spread based premium	0.047	0.143	0.160

The Drivers of Implied ERP

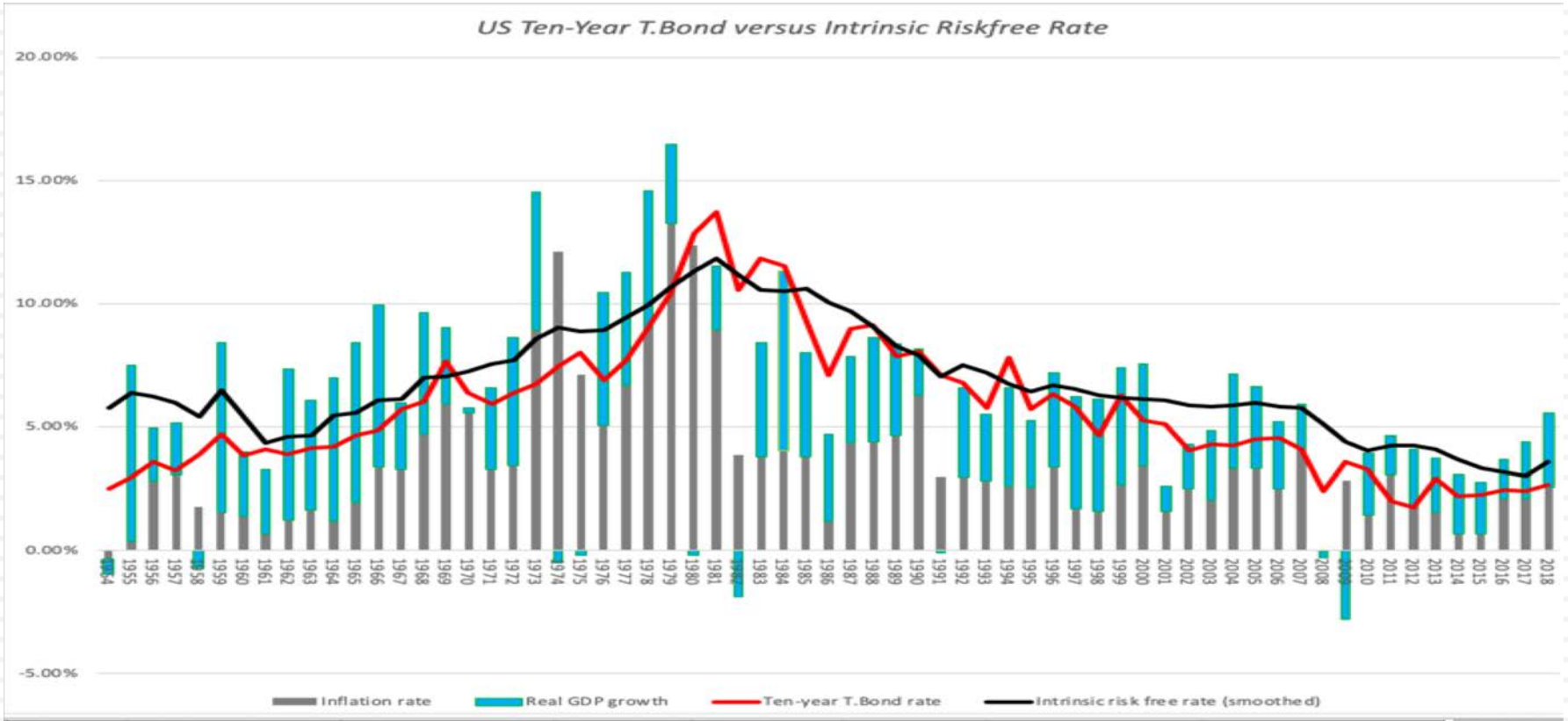
Cash flows, Growth, Risk and Pricing

Stocks have surged…



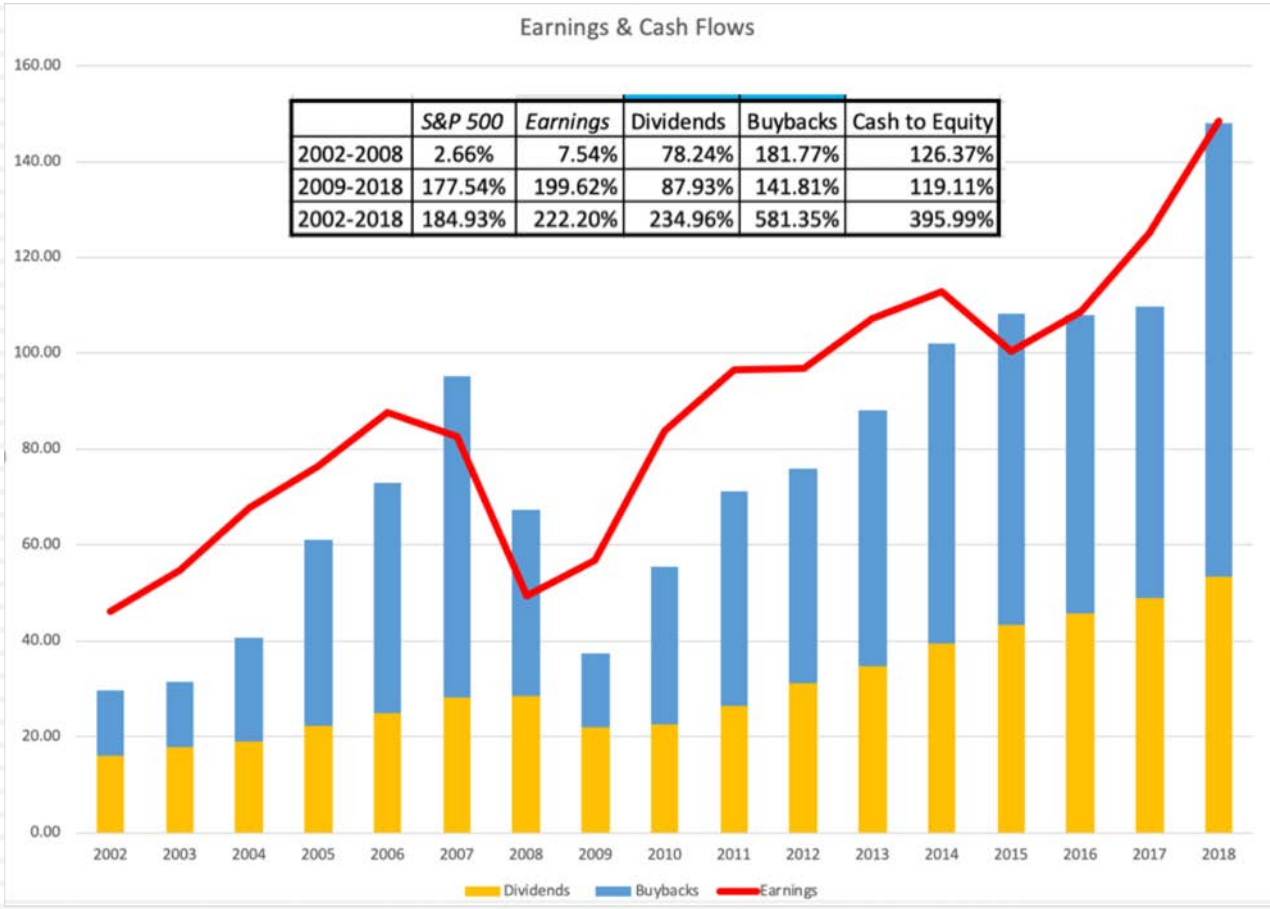
	S&P 500
2002-2008	2.66%
2009-2018	177.54%
2002-2018	184.93%

Interest rates have fallen… And the Fed had only a small role to play



Period	T.Bond rate	Inflation rate	Real GDP growth	Intrinsic Riskfree Rate	T.Bond - Intrinsic Rate	Smoothed Intrinsic Riskfree Rate	T.Bond Rate - Smoothed Intrinsic Rate
1954-2017	5.82%	3.57%	3.03%	6.60%	-0.77%	6.85%	-1.02%
1954-1980	5.83%	4.49%	3.50%	7.98%	-2.15%	7.10%	-1.27%
1981-2008	6.88%	3.26%	3.04%	6.30%	0.58%	7.59%	-0.71%
2009-2018	2.55%	1.86%	1.72%	3.58%	-1.03%	3.77%	-1.22%
End of 201	2.68%	2.54%	3.00%	5.54%	-2.86%	3.58%	-0.90%

Earnings & Cash Flows have risen more than stocks..

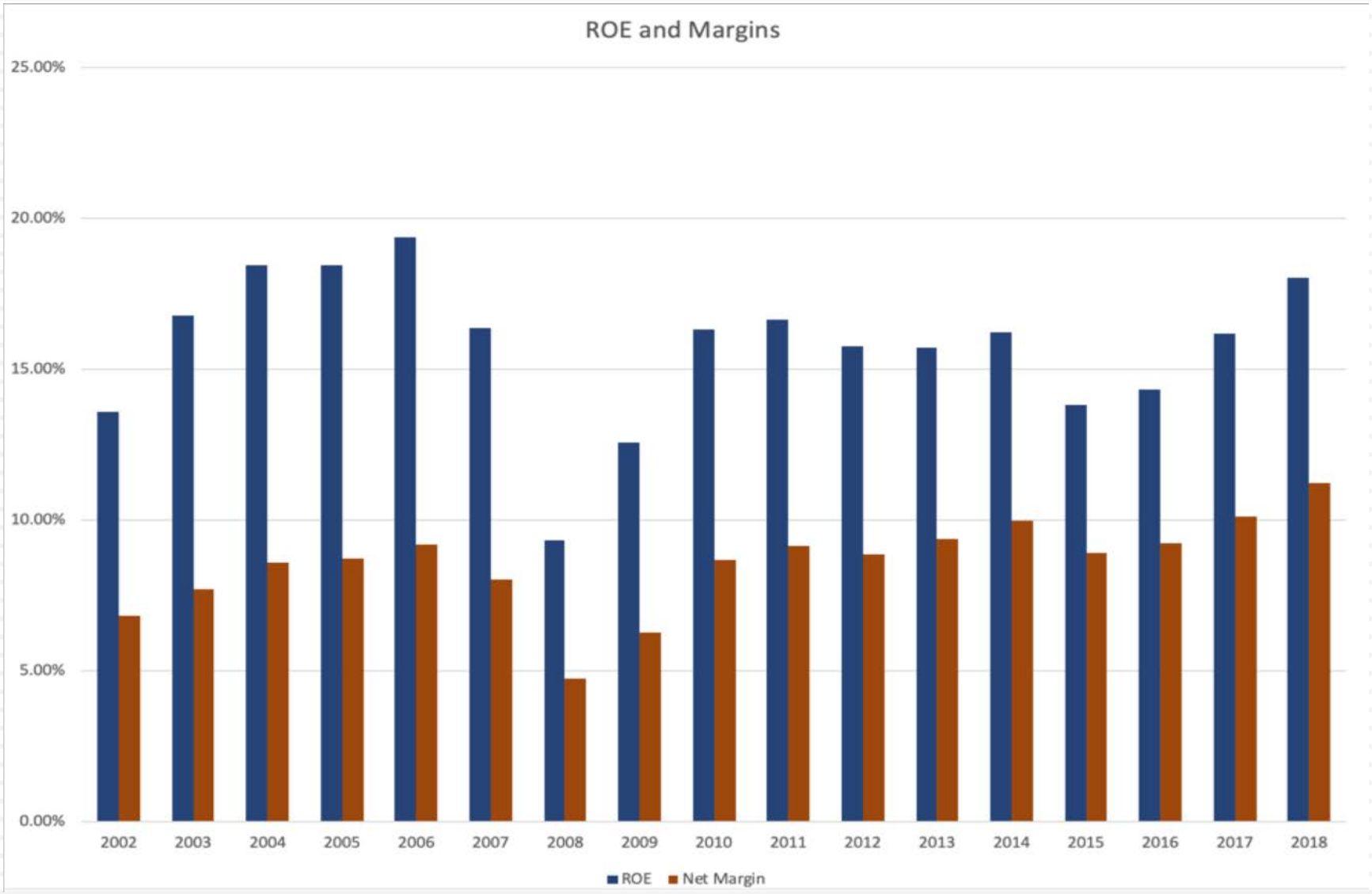


	S&P 500	*Earnings*	Dividends	Buybacks	Cash to Equity
2002-2008	2.66%	7.54%	78.24%	181.77%	126.37%
2009-2018	177.54%	199.62%	87.93%	141.81%	119.11%
2002-2018	184.93%	222.20%	234.96%	581.35%	395.99%

Growth Rates ebbed and flowed.. And analysts forecasts are wrong in both directions..

Year	Analyst Estimate	Actual Earnings Growth
2002	10.30%	18.51%
2003	8.00%	18.79%
2004	11.00%	23.75%
2005	8.50%	12.96%
2006	8.00%	14.74%
2007	12.50%	-5.91%
2008	5.00%	-20.78%
2009	4.00%	-8.78%
2010	7.20%	40.25%
2011	6.95%	16.01%
2012	7.18%	5.58%
2013	5.27%	4.86%
2014	4.28%	5.17%
2015	5.58%	-5.92%
2016	5.51%	2.39%
2017	5.54%	14.77%
2018	7.05%	18.73%
2019	4.12%	NA

But growth has become more efficient..

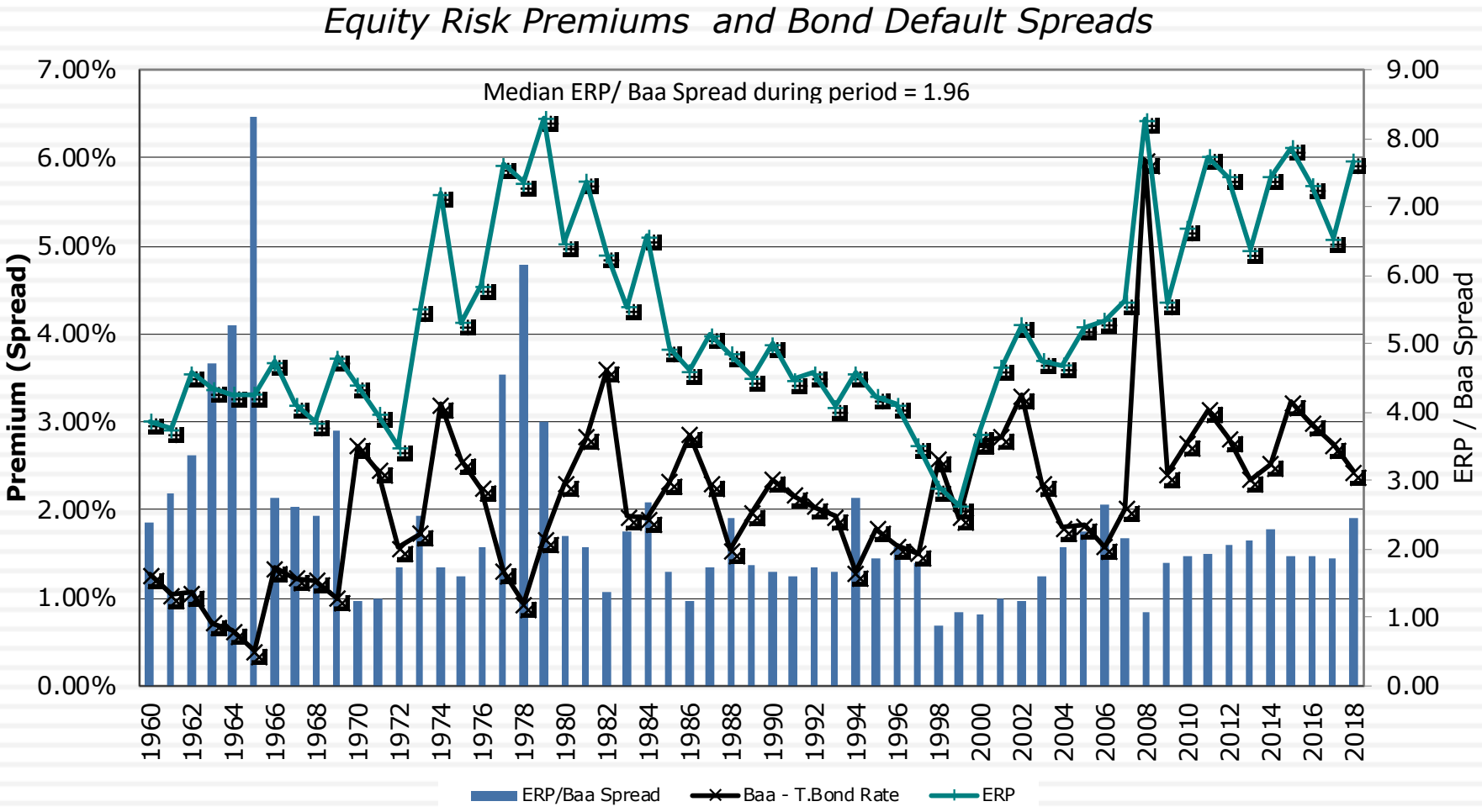


And no, leverage is not the reason why…

	Millions of US $				Millions of US $					
	Total Debt				Total Debt				As % of Market Cap	
Sub Group	*3rd Qtr 2017*	*3rd Qtr 2018*	*Change*	*% Change*	*3rd Qtr 2017*	*3rd Qtr 2018*	*Change*	*% Change*	*3rd Qtr 2017*	*3rd Qtr 2018*
Africa and Middle East	$ 515,642.50	$ 551,193.18	$35,550.68	6.89%	$ 398,260	$ 428,401	$ 30,141	7.57%	42.13%	45.56%
Australia & NZ	$ 238,020.62	$ 229,521.03	$ (8,500)	-3.57%	$ 172,784	$ 164,043	$ (8,741)	-5.06%	25.27%	21.78%
Canada	$ 666,503.20	$ 708,515.03	$ 42,012	6.30%	$ 596,571	$ 630,020	$ 33,448	5.61%	48.07%	47.62%
China	$ 3,735,084.40	$ 4,160,148.27	$ 425,064	11.38%	$ 2,040,584	$ 2,463,782	$ 423,197	20.74%	38.56%	48.49%
EU & Environs	$ 3,930,006.36	$ 4,121,097.70	$ 191,091	4.86%	$ 2,962,459	$ 3,147,606	$ 185,146	6.25%	37.60%	38.57%
Eastern Europe & Russia	$ 196,640.47	$ 191,066.16	$ (5,574)	-2.83%	$ 137,835	$ 136,934	$ (901)	-0.65%	55.75%	51.68%
India	$ 276,364.59	$ 295,712.72	$ 19,348	7.00%	$ 233,018	$ 256,228	$ 23,210	9.96%	17.69%	19.24%
Japan	$ 2,130,364.47	$ 2,280,109.23	$ 149,745	7.03%	$ 1,210,454	$ 1,355,229	$ 144,776	11.96%	42.38%	41.56%
Latin America & Caribbean	$ 636,456.96	$ 616,130.84	$ (20,326)	-3.19%	$ 523,924	$ 496,019	$ (27,905)	-5.33%	16.86%	46.81%
Small Asia	$ 1,624,151.20	$ 1,767,737.81	$ 143,587	8.84%	$ 1,064,337	$ 1,202,757	$ 138,421	13.01%	39.55%	41.19%
UK	$ 857,640.36	$ 937,024.28	$ 79,384	9.26%	$ 681,481	$ 728,470	$ 46,989	6.90%	34.93%	37.64%
United States	$ 6,930,805.34	$ 7,364,860.24	$ 434,055	6.26%	$ 5,635,010	$ 6,080,970	$ 445,961	7.91%	29.53%	26.60%
Global	$21,737,680.46	$23,223,116.49	$1,485,436	6.83%	$ 15,656,718	$ 17,090,460	$ 1,433,743	9.16%	33.74%	35.09%

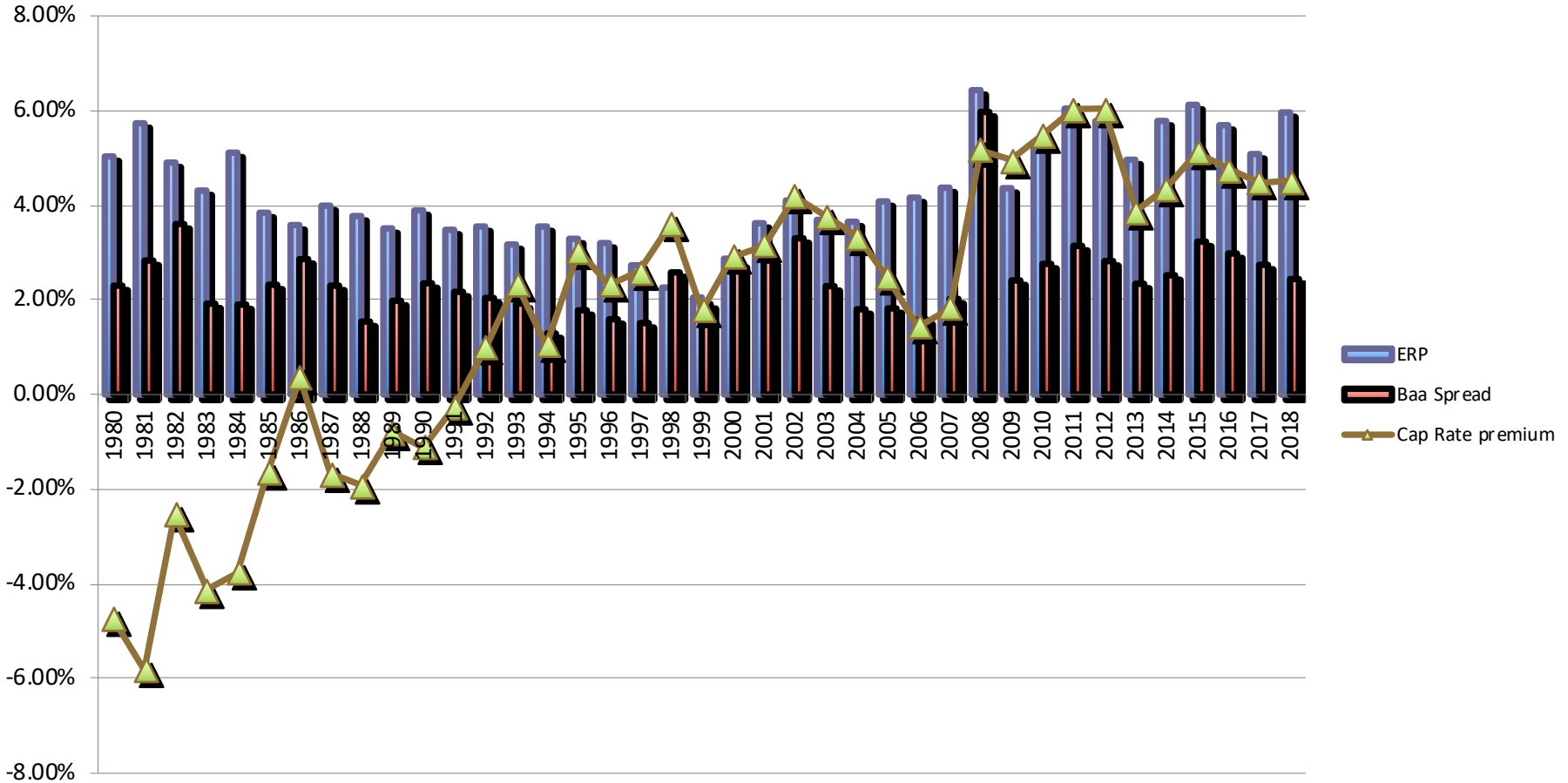
Hope springs eternal.. Other asset classes

Stocks versus Bonds



Stocks, Bonds and Real Estate

Figure 18: Equity Risk Premiums, Cap Rates and Bond Spreads

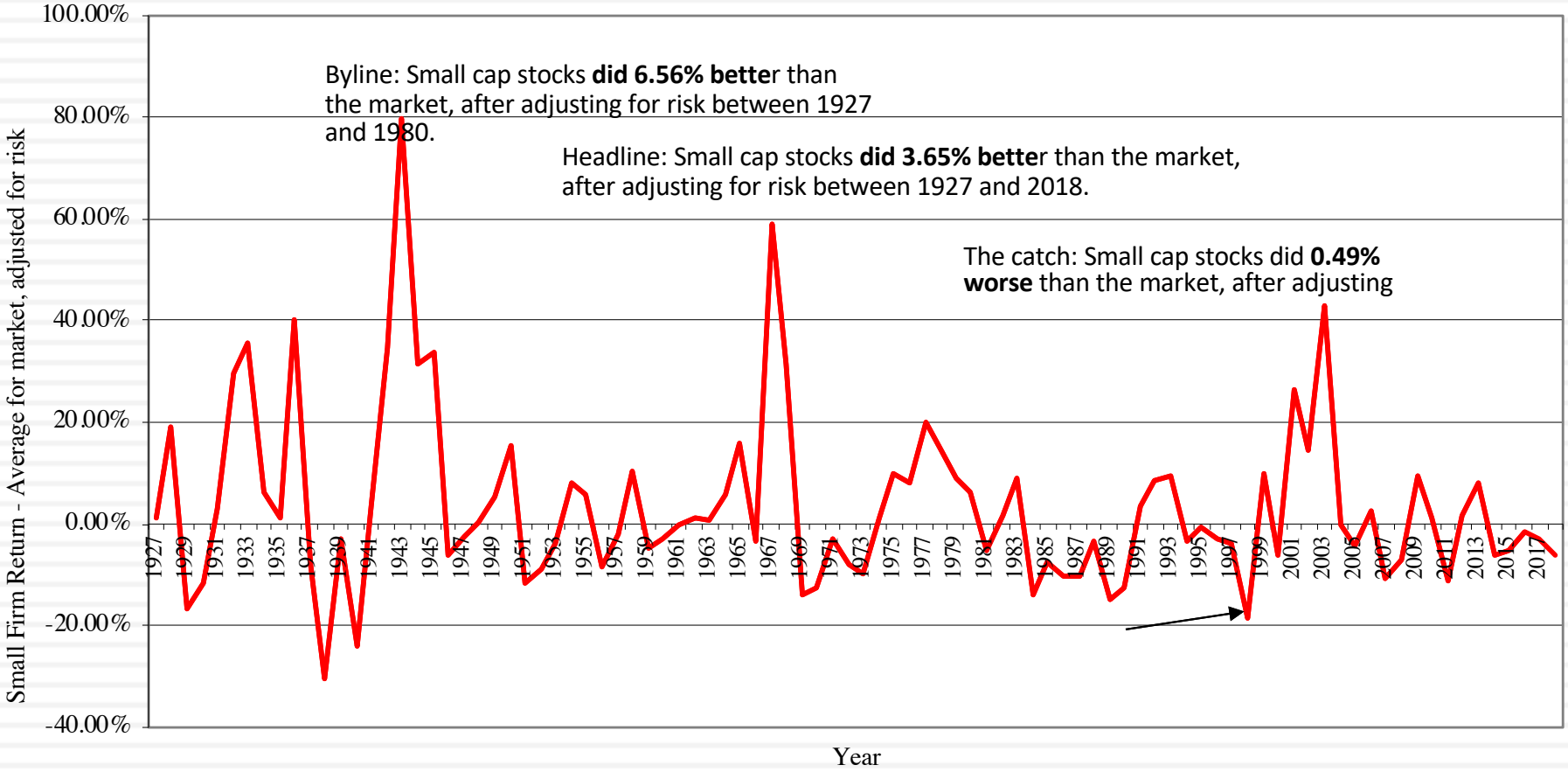


Global Equities?

Start of year	*PBV (Developed)*	*PBV (Emerging)*	*ROE (Developed)*	*ROE (Emerging)*	*US T.Bond Rate*	*Growth Rate (Developed)*	*Growth Rate (Emerging)*	*Cost of Equity (Developed)*	*Cost of Equity (Emerging)*	*Differential*
2004	2.00	1.19	10.81%	11.65%	4.25%	3.75%	4.75%	7.28%	10.55%	3.27%
2005	2.09	1.27	11.12%	11.93%	4.22%	3.72%	4.72%	7.26%	10.40%	3.14%
2006	2.03	1.44	11.32%	12.18%	4.39%	3.89%	4.89%	7.55%	9.95%	2.40%
2007	1.67	1.67	10.87%	12.88%	4.70%	4.20%	5.20%	8.19%	9.80%	1.60%
2008	0.87	0.83	9.42%	11.12%	4.02%	3.52%	4.52%	10.30%	12.47%	2.17%
2009	1.20	1.34	8.48%	11.02%	2.21%	1.71%	2.71%	7.35%	8.91%	1.56%
2010	1.39	1.43	9.14%	11.22%	3.84%	3.34%	4.34%	7.51%	9.15%	1.64%
2011	1.12	1.08	9.21%	10.04%	3.29%	2.79%	3.79%	8.52%	9.58%	1.05%
2012	1.17	1.18	9.10%	9.33%	1.88%	1.38%	2.38%	7.98%	8.27%	0.29%
2013	1.56	1.63	8.67%	10.48%	1.76%	1.26%	2.26%	6.01%	7.30%	1.29%
2014	1.95	1.50	9.27%	9.64%	3.04%	2.54%	3.54%	5.99%	7.61%	1.62%
2015	1.88	1.56	9.69%	9.75%	2.17%	1.67%	2.67%	5.94%	7.21%	1.27%
2016	1.99	1.59	9.24%	10.16%	2.27%	1.77%	2.77%	5.52%	7.42%	1.89%
2017	1.76	1.48	8.71%	9.53%	2.68%	2.18%	3.18%	5.89%	7.47%	1.58%
2018	1.98	1.66	11.23%	11.36%	2.68%	2.18%	3.18%	6.75%	8.11%	1.36%
2019	1.64	1.31	12.09%	11.35%	2.68%	2.18%	3.18%	8.22%	9.42%	1.19%

And if you are looking to small caps for salvation, look elsewhere…

Small Firm Premium over time- 1927 -2018



And a forward looking small cap premium..

Base year cash flow (last 12 mths)
Dividends (TTM): 18.06
+ Buybacks (TTM): 7.12
= Cash to investors (TTM): **25.18**

Expected cashflow growth in next 5 years
Cash flow growth = Top down analyst estimate of earnings growth for S&P 600 = 8.74%

	Last 12 months	1	2	3	4	5	*Terminal Year*
Expected Earnings	40.02	43.52	47.32	51.46	55.95	60.84	62.48
Cash Payout (%)	62.92%	67.35%	71.78%	76.21%	80.64%	85.07%	85.07%
Expected Dividends + Buyba	25.18	$29.31	$33.97	$39.21	$45.12	$51.76	53.15

Earnings and Cash flows grow @2.68% (set equal to risk free rate) a year forever.

S&P 600 on 1/1/19= **844.94**

$$844.94 = \frac{29.31}{(1+r)} + \frac{33.97}{(1+r)^2} + \frac{39.21}{(1+r)^3} + \frac{45.12}{(1+r)^4} + \frac{51.76}{(1+r)^5} + \frac{53.15}{(1+r)^5(r-.0268)}$$

The last term in this equation is the expected index level at the end of year 5 (capturing price appreciaiton)

Solve for r

r = Implied Expected Return on Stocks = 7.94%

Minus

Risk free rate = T.Bond rate on 1/1/19= 2.68%

Equals

Implied Equity Risk Premium (1/1/19) = 7.94% - 2.68% = **5.26%**

Final Thoughts…

1. Don't worship at the mean reversion altar: That time-tested way of making money is history. We will revert to a mean, just not the mean that we think holds.
2. Don't obsess over trees & miss forests: Looking at only one part of the market (PE, Interest rates etc.), you risk missing the big picture.
3. Play more Moneyball: Absolute rules for investing make no sense when you are making relative judgments.