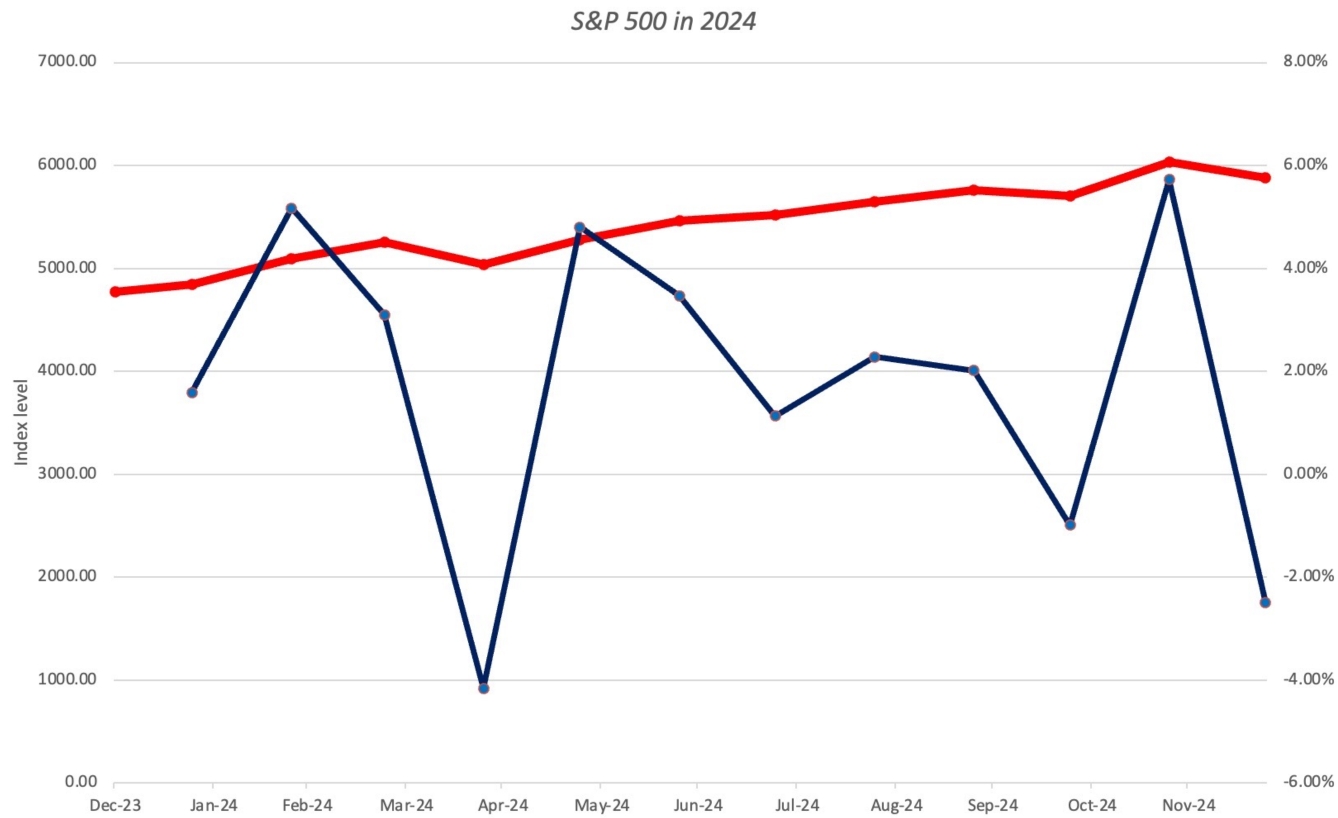
DATA UPDATE 2 FOR 2025: THE PARTY CONTINUES FOR US EQUITIES

Playing Moneyball (again)!

US EQUITIES: A DOMINANT YEAR

- In my last post, I noted that the US has extended its dominance of global equities in recent years, increasing its share of market capitalization from 42% in at the start of 2023 to 44% at the start of 2024 to 49% at the start of 2025.
- That rise was driven by a surge in US equity values during 2024, with stocks delivering returns of close to 25%, all the more impressive, given that stocks delivered returns in excess of 26% in 2023.
- In this session, I will zero in on US equities, in the aggregate, first by looking at **month-by-month returns during 2024**, and then putting their performance **in the last two years in a historical context**.

THE S&P 500 IN 2024

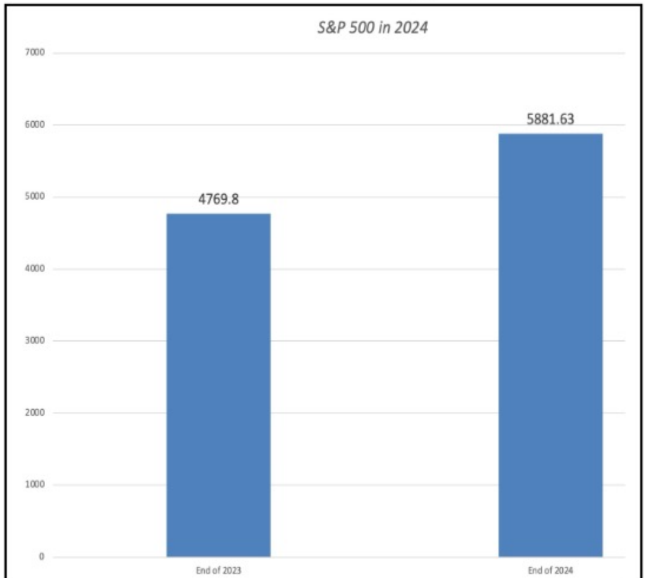


	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
SP500	4769.83	4845.65	5096.27	5254.35	5035.69	5277.51	5460.48	5522.30	5648.40	5762.48	5705.45	6032.38	5881.63
Return		1.59%	5.17%	3.10%	-4.16%	4.80%	3.47%	1.13%	2.28%	2.02%	-0.99%	5.73%	-2.50%

THE S&PP 500: RETURNS IN 2024

The S&P 500 in 2024

Price Change



Price change
= (5881.63/4769.8) -1 = **23.31%**

Dividends

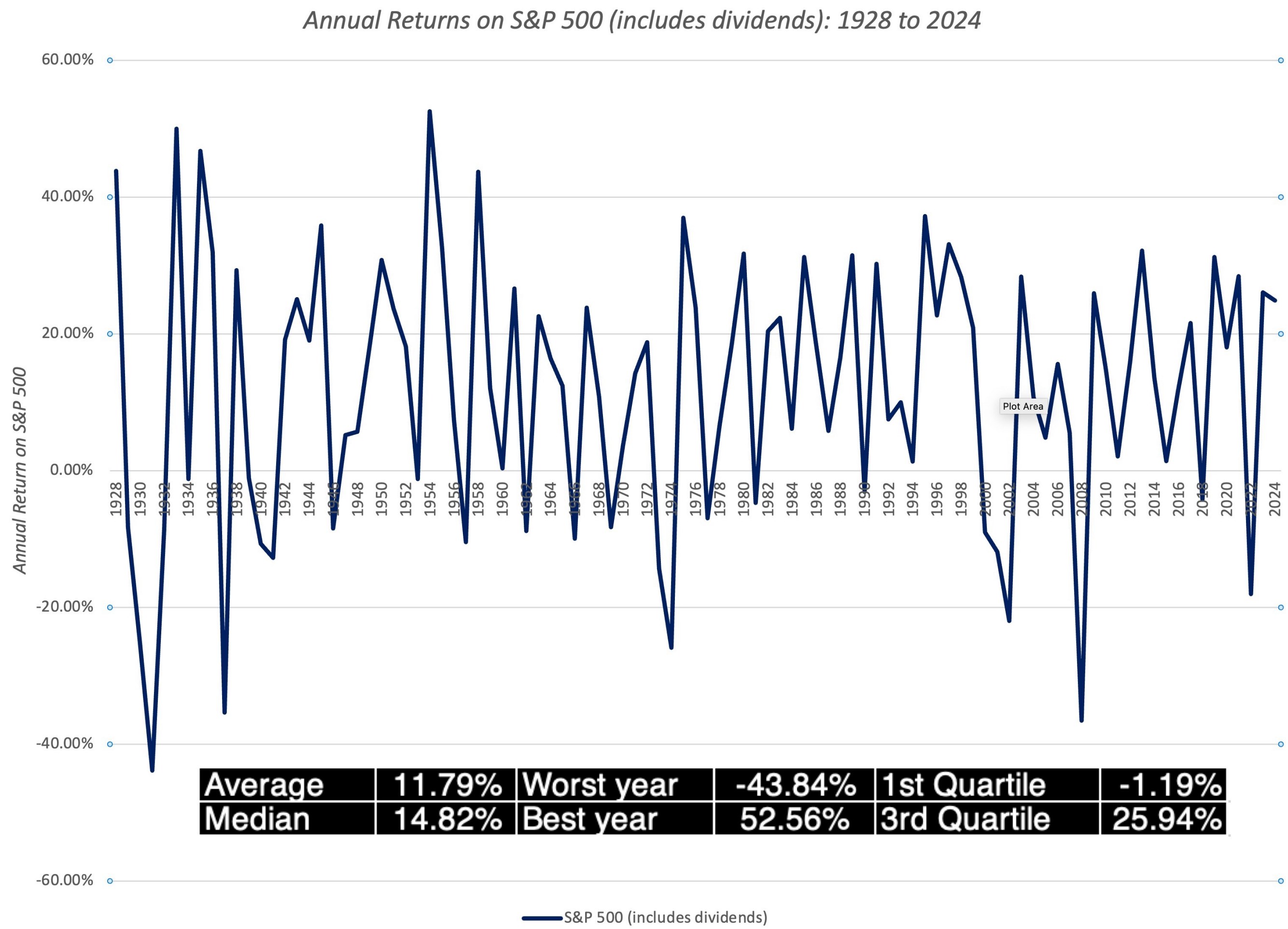
Dividends on the S&P 500 in 2024
= 74.83 (estd thru Dec)
Index Level on Jan 1, 2024
= 4769.8
Dividend Yield = 74.83/4769.8 =**1.57%**

Of the 500 companies in the index, 367 paid dividends during 2024, and 342 of these firms increased dividends during the year.

Total Return

Return in 2024
= 23.31% + 1.57%
= 24.88%

HISTORICAL PERSPECTIVE: RETURNS FROM 1928 TO 2024



Average	11.79%	Worst year	-43.84%	1st Quartile	-1.19%
Median	14.82%	Best year	52.56%	3rd Quartile	25.94%

THE RETURNS IN 2024: A RANKED ASSESSMENT

- Looking at the 24.88% return in 2024 in terms of rankings, it ranks as the **27th best year across the last 97 years**, indicating that while it was a good year, there have been far better years for US stocks.
- **Combining 2023 and 2024 returns** yield a cumulative a two-year return for the S&P 500 of 57.42%, making it **one the ten best two-year periods in US market history**.
- The riskless alternative to investing in US stocks during this period, in US dollar terms, are US treasuries, and in 2024, that contest was won hands down by US equities:
  - Equity risk premium earned in 2024, over 3-month treasury bills

    = Return on stocks - Return on 3-month treasuries (averaged over 2024)

    = 24.88% -4.97% = 19.91%
  - Equity risk premium earned in 2024, over 10-year treasuries

    = Return on stocks - Return on 10-year treasury

    = 24.88% -1.64% = 26.52%

EQUITY RISK PREMIUM: NOMINAL & REAL

Nominal

	Arithmetic Average		Geometric Average	
	Stocks - T. Bills	Stocks - T. Bonds	Stocks - T. Bills	Stocks - T. Bonds
1928-2024	8.44%	7.00%	6.63%	5.44%
Std Error	*2.01%*	*2.12%*		
1975-2024	9.25%	7.03%	8.02%	6.22%
Std Error	*2.30%*	*2.67%*		
2015-2024	12.34%	13.54%	11.22%	12.71%
Std Error	*5.04%*	*3.84%*		

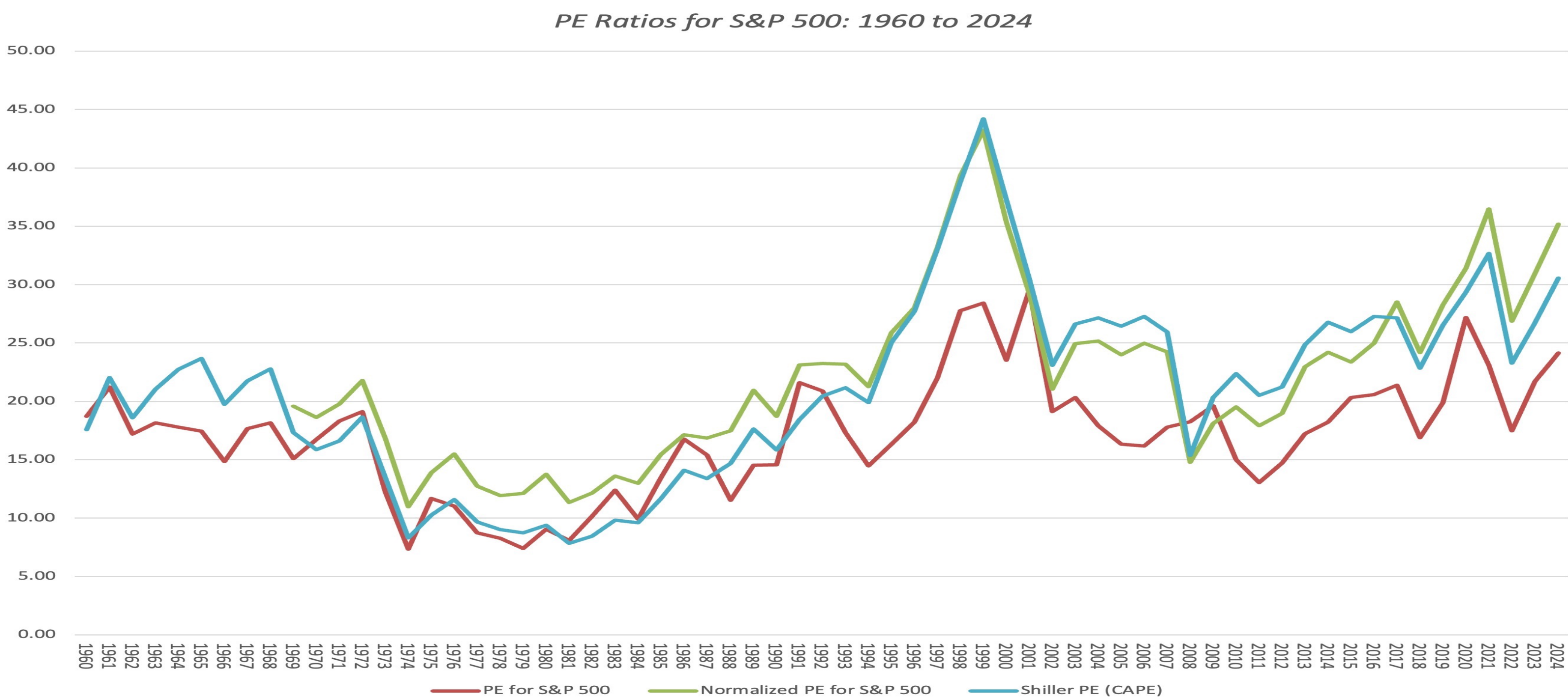
Real

	Arithmetic Average		Geometric Average	
	Stocks - T. Bills	Stocks - T. Bonds	Stocks - T. Bills	Stocks - T. Bonds
1928-2023	8.21%	6.75%	6.43%	5.28%
Std Error	*1.97%*	*2.08%*		
1974-2023	8.95%	6.70%	7.73%	6.00%
Std Error	*2.23%*	*2.59%*		
2014-2023	12.01%	13.07%	10.89%	12.34%
Std Error	*4.83%*	*3.86%*		

USING HISTORICAL RISK PREMIUMS

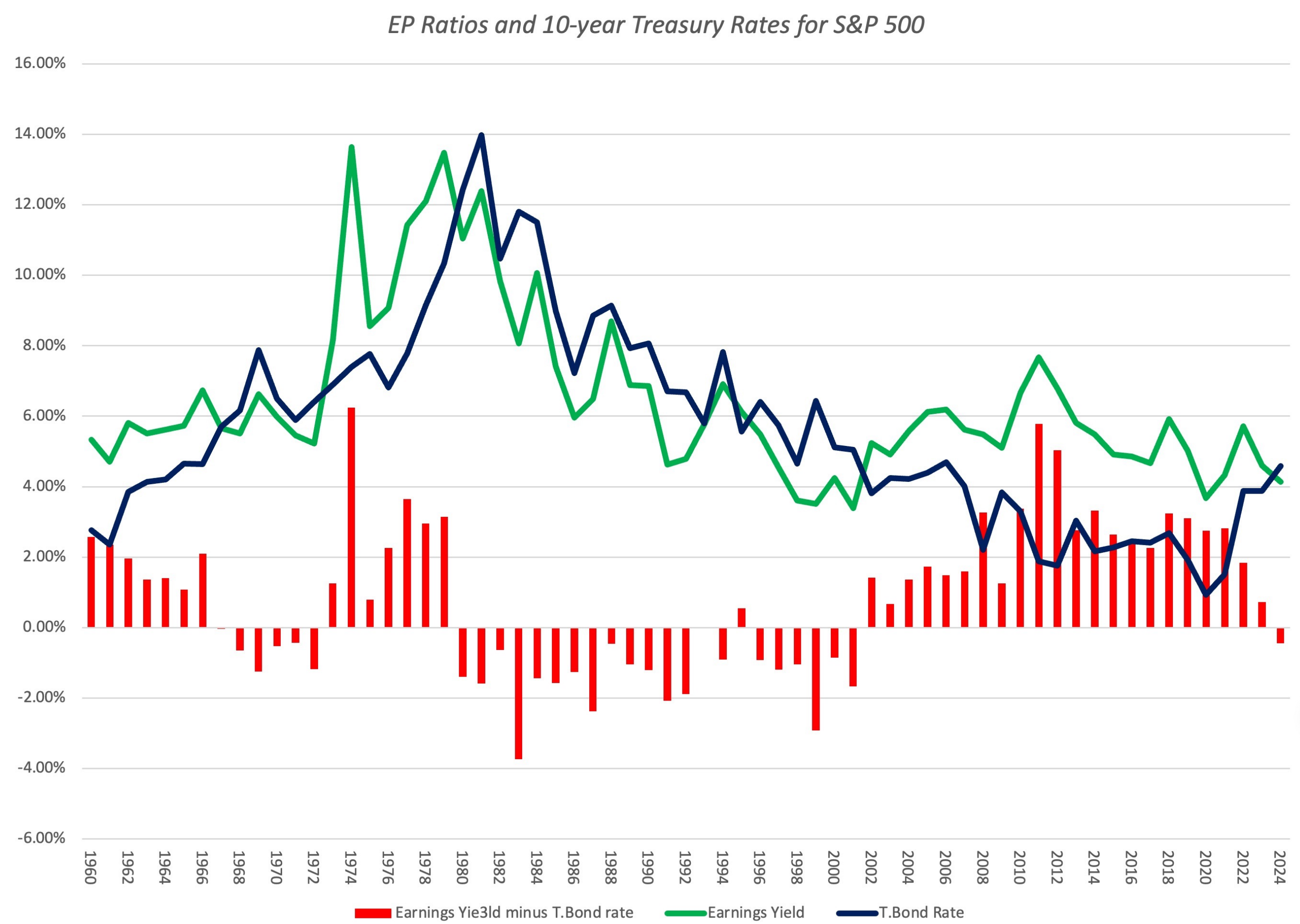
- Many valuation practitioners use these historical averages, when forecasting equity risk premiums in the future, but it is a practice that deserves scrutiny, partly because
  - it is **backward looking** (with the expectation that things will revert back to the way they used to be)
  - but mostly because the estimates that you get for the equity risk premium have **significant error terms** (see standard errors listed below the estimates in the table).
- Thus, if are using the average equity risk premium for the last 97 years of 5.44% (7.00%), i.e., the arithmetic or geometric averages, it behooves you to also inform users that the standard error of 2.12% will create a range of about 4% on either side of the estimate.

PRICING QUESTION



	PE	Normalized PE	Shiller PE
1970-1990	12.23	15.46	12.13
1991-2000	21.06	29.58	28.61
2001-2010	18.98	23.54	24.88
2011-2020	18.95	24.48	25.25
2021-2024	21.61	32.36	28.31
Start of 2025	24.15	35.18	30.55

EARNINGS YIELDS VS T. BOND RATE



IS EARNINGS YIELD = EXPECTED RETURN ON EQUITIES?

- The earning to price ratio is the expected return on stocks only if you make one of two assumptions:
  - That there will be no growth in earnings in the future, i.e., you will earn last year's earnings every year in perpetuity, making stocks into glorified bonds.
  - In a more subtle variants, there will be growth, but that growth will come from investments that earn returns equal to the cost of equity.
- The problem with both assumptions is that they are in conflict with the data.
  - First, the **earnings on the S&P 500 companies has increased 6.58% a year** between 2000 and 2024, making the no-growth assumption a non-started.
  - Second, the return on equity for the S&P 500 companies **was 20.61% in 2023, and has averaged 16.38% since 2000**, both numbers well in excess of the cost of equity

AN IMPLIED EQUITY RISK PREMIUM

Analyst estimates of growth in earnings for the near term, scaling down to a growth rate = riskfree rate, in perpetuity.

Growth rate in perpetuity = Riskfree Rate

Base year Cash flows from owning Equities = Dividends + Buybacks

Cash payout as a percent of earnings, adjusted for changing growth over time.

CFs continue in perpetuity

$E(CF)_1$ $E(CF)_2$ $E(CF)_3$ $E(CF)_4$ $E(CF)_5$

Stock (Index) level today

$$Index\ Price = \frac{E(CF_1)}{(1+r)} + \frac{E(CF_2)}{(1+r)^2} + \frac{E(CF_3)}{(1+r)^3} + \frac{E(CF_4)}{(1+r)^4} + \frac{E(CF_5)}{(1+r)^5} + \frac{E(CF_6)}{(r-g)(1+r)^5}$$

Solve for r

E(Return on Stocks)= Discount rate that makes the present value of the expected cash flows equal to stock (index) price today
ERP = E(Return on Stocks) - Riskfree Rate

The implied equity risk premium is a number backed out from what investors are paying for stocks and their expected cash flows from holding stocks. It is an internal rate of return for equity investors, analogous to a yield to maturity for a bondholder.

IMPLIED ERP ON JAN 1, 2025

In the trailing 12 months, across all companies in the index.

Base year cash flow (last 12 mths)
Dividends (TTM): 73.39
+ Buybacks (TTM): 109.40
= Cash to investors (TTM): **182.79**

Expected earnings/cashflow growth in next 5 years
Earnings growth rate of 9.57% based upon analyst estimates for 2025 and 2026 and growth dropping to 4.58% over the following years.

Modified Payout
This computation assumes that the payout ratio changes over time to reflect a sustainable payout ratio = g/ROE, in the stable growth. The resulting ERP is 4.00%

Actual numbers

Forecasted numbers

	Lat 12 months	*2025*	*2026*	*2027*	*2028*	*2029*	*Terminal Year*
Earnings	243.32	266.62	292.14	320.12	350.77	384.35	401.95
Cash Payout (%)	80.65%	80.65%	80.65%	80.65%	80.65%	80.65%	80.65%
Cash Return	182.79	215.03	235.62	258.18	282.90	309.99	324.19

Earnings and Cash flows grow @4.58% (set equal to risk free rate) a year forever.

S&P 500 on 1/1/25= **5881.63**

$$5881.63 = \frac{266.62}{(1+r)} + \frac{292.14}{(1+r)^2} + \frac{320.12}{(1+r)^3} + \frac{350.77}{(1+r)^4} + \frac{384.35}{(1+r)^5} + \frac{401.95}{(r-.0458)(1+r)^5}$$

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

Solve for r

r = Implied Expected Return on Stocks = 8.91%

Minus

Risk free rate =10-yr T.Bond rate on 1/1/25= 4.58%

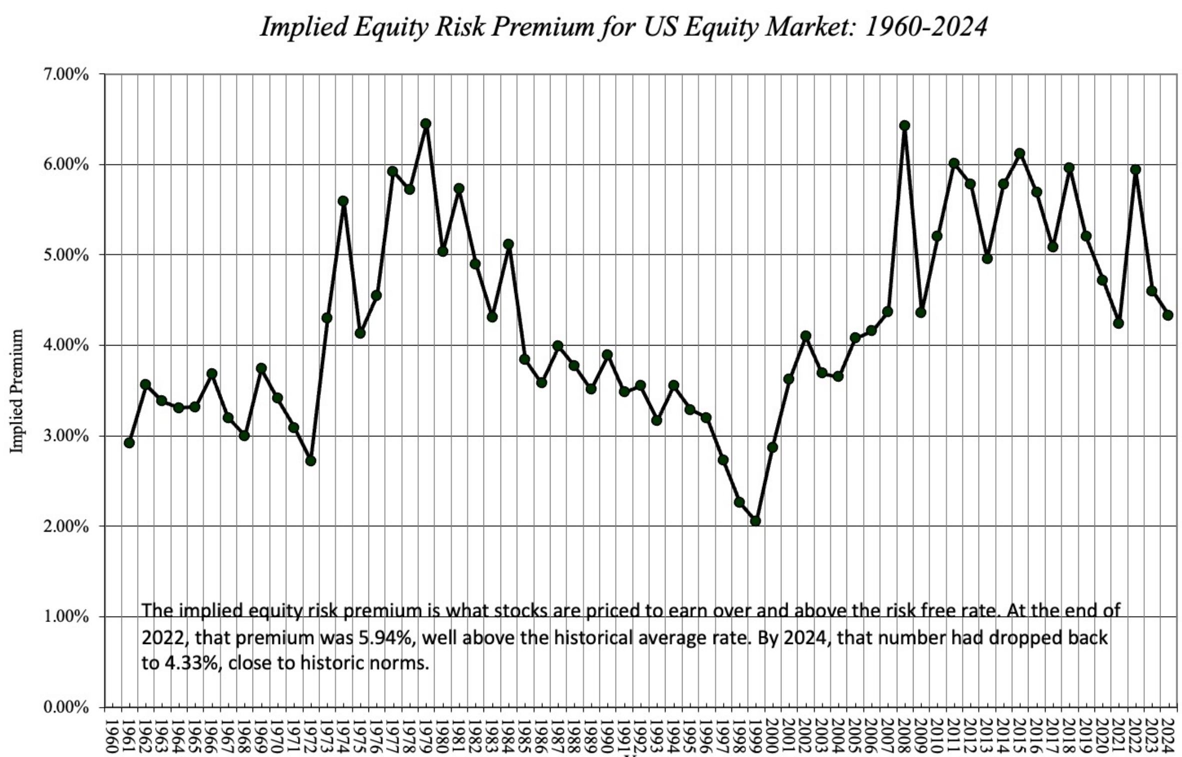
Equals

Implied Equity Risk Premium (1/1/25) = 8.91% - 4.58% = 4.33%

ERP AND MARKET LEVELS (TIMING)

- Every argument about markets (from them being in a bubble to basement level bargains) can be restated in terms of the equity risk premium.
  - If you believe that the equity risk premium today (4.33%) is too low, you are, in effect, stating that stocks are overvalued, and if you view it as too high, you are taking the opposite position.
  - If you are truly not in the market timing business, you take the current premium as a fair premium and move on.
- I will not hide behind the "one hand, other hand" dance that so many strategists do. I think that we face significant volatility (inflation, tariffs, war) in the year to come, and I would be more comfortable with a higher ERP. At the same time, I don't fall into the bubble crowd, since the ERP is not 2%, as it was at the end of 1999.

IMPLIED ERP OVER HISTORY



Period	ERP	ERP + Riskfree Rate
1960-2024	4.25%	9.95%
2005-2024	5.15%	8.04%
2015-2024	5.19%	7.84%
End of 2023	4.60%	8.48%
End of 2024	4.33%	8.91%

VALUING THE S&P 500

An Intrinsic Value of the S&P 500

At Current Interest Rates and With Market Consensus Earnings Estimates

Earnings estimates: Analyst estimates of earnings for 2025 & 2026, with growth scaling down to steady state growth (set equal to the riskfree rate)

Riskfree rate: The treasury bond rate of 4.58% will remain as the steady state.

ERP: The equity risk premium converges on 4.5%, higher than the all-time average, but lower than the post-2008 value.

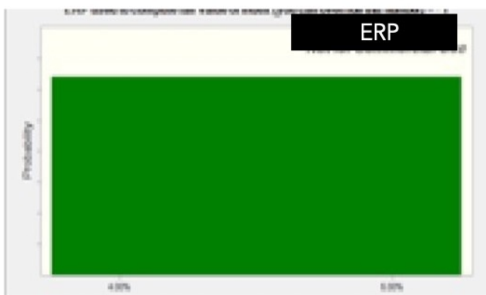
	LTM	*2025*	*2026*	*2027*	*2028*	*2029*	*Terminal Year*
Expected Earnings	$226.64	273.79	309.97	342.01	367.52	384.35	401.95
Expected Earnings Growth Rate		20.80%	13.21%	10.34%	7.46%	4.58%	4.58%
Expected cash payout	80.65%	80.65%	78.95%	77.24%	75.53%	73.83%	73.83%
Expected Dividends + Buybacks =	$182.79	$220.82	$244.71	$264.17	$277.60	$283.76	296.76
Expected Terminal Value =						$6,853.49	
Riskfree Rate	4.58%	4.58%	4.58%	4.58%	4.58%	4.58%	4.58%
Required Return on Stocks	9.08%	9.08%	9.08%	9.08%	9.08%	9.08%	9.08%
Present Value =		$202.75	$206.31	$204.49	$197.31	$4,657.92	
Intrinsic Value of Index =	5261.80						
Intrinsic Trailing PE =	24.13						
Intrinsic Forward PE =	19.97						
Intrinsic CAPE	58.44						
Actual Index level =	5881.63						
% Under or Over Valuation =	11.78%						

Cash Payout as % of Earnings: Starts at 2024 levels, but changes over time to reflect sustainable payout, given growth and ROE. Using the average ROE of 17.5%, this yields a payout ratio of 73.8% (= 1 -.0458/.175) in 2030.

IN A WORLD OF UNCERTAINTY

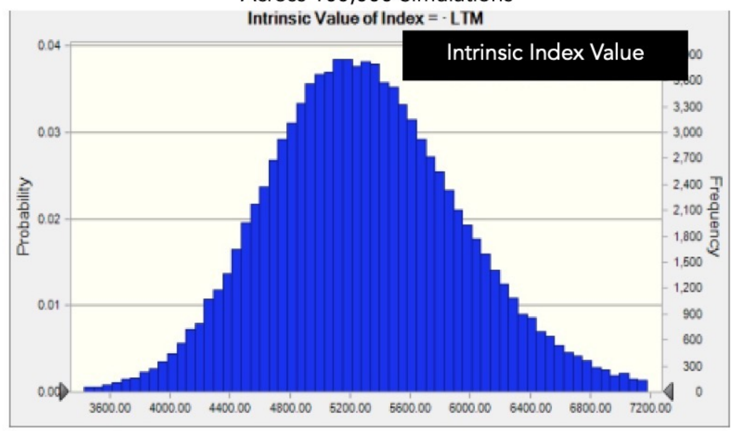
Ten-year T.Bond Rate
Normal: Average = 4.58%, Std Dev = 0.46%

Equity Risk Premium
Uniform: Exp=4.5%, Min=3.75%, Max= 5.25%



Earnings Error in 2025 and 2026
Lognormal: Exp = 0%, Std Dev = 3%

Intrinsic Index Value on January 1, 2025
Across 100,000 Simulations



Percentile	*Index Value*
Minimum	2497
10%	4495
20%	4751
30%	4940
40%	5107
50%	**5268**
60%	5430
70%	5612
80%	5834
90%	6158
Maximum	9932

THE END GAME

- I don't dish out market advice, and as one whose market timing skills are questionable, you should not take my (or anyone else's) assessments at face value, especially heading into a year, where change will be the byword.
- It is possible that lower taxes and less regulation may cause to come in higher than expected, and that global investment fund flows will keep interest rates and equity risk premiums low.
- My advice is that you download the valuation spreadsheet, change the inputs to reflect your views of the world, and value the index yourself.
- Good investing requires taking ownership of the decisions and judgments you make, and I am glad to provide tools that help you in that process.