Stocks, Bonds and Future Returns

Prof. Jeremy J. Siegel ~ The Wharton School

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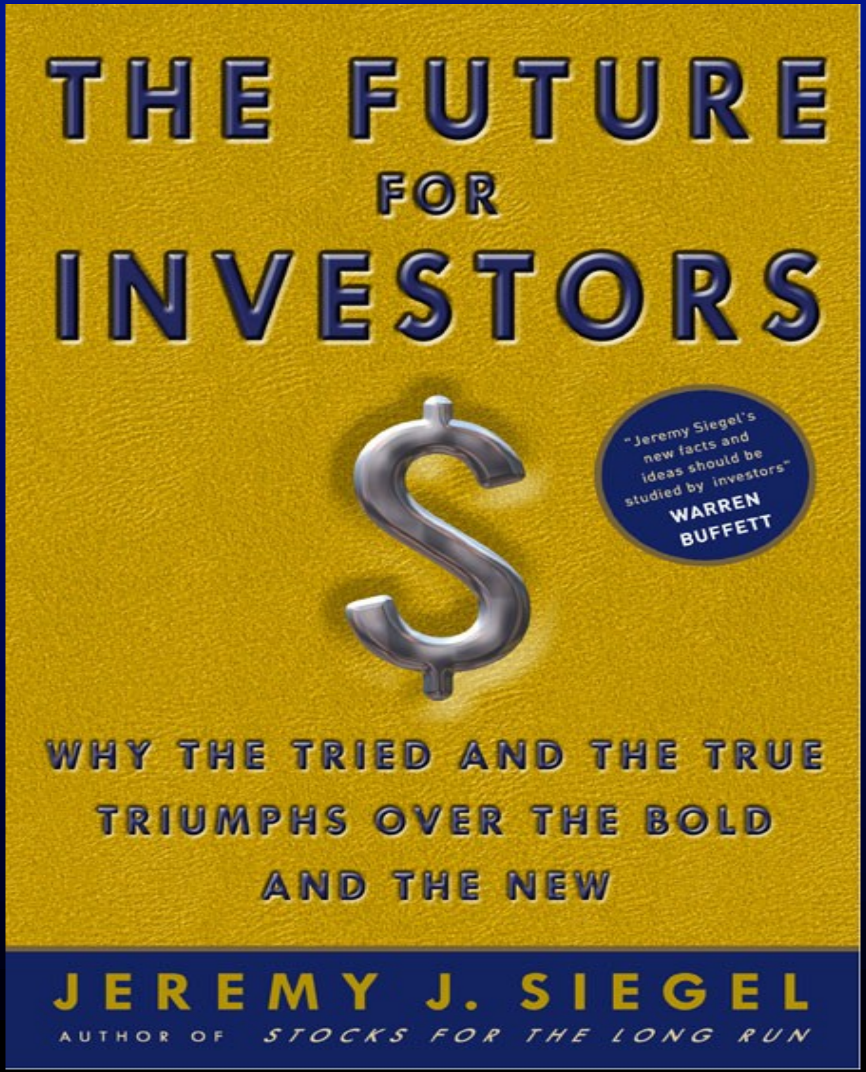
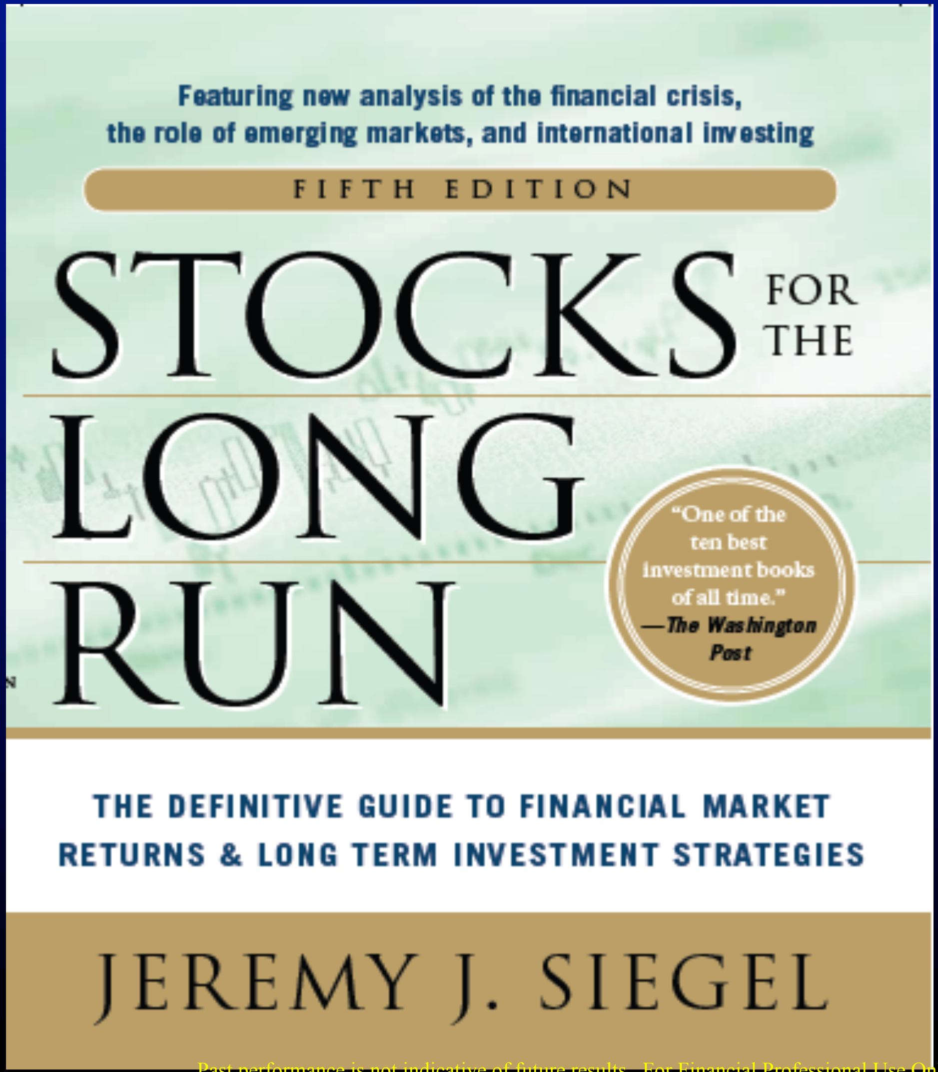
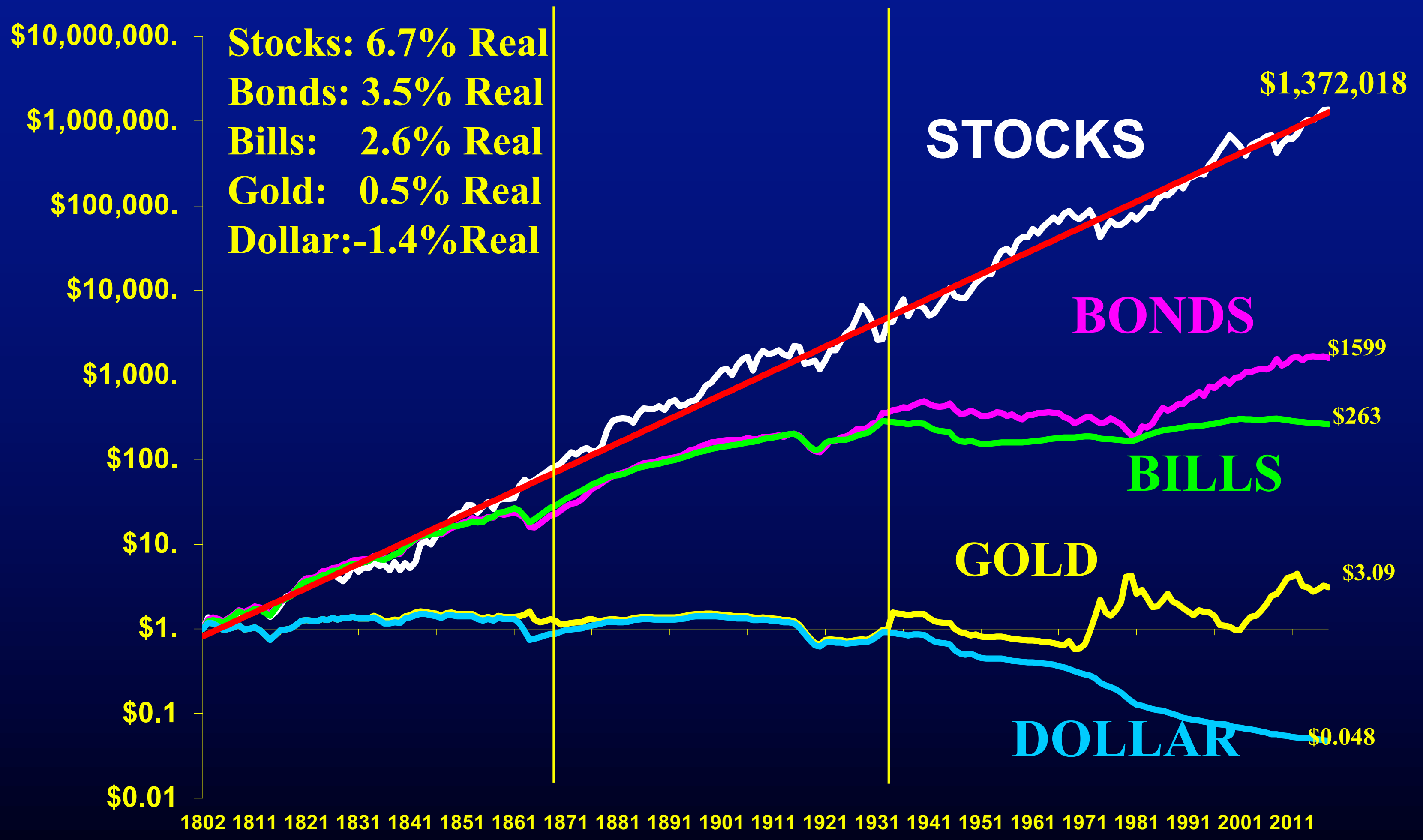




Historical Total Real Return Indexes

January 1802 – June 2018



Source: Siegel, Jeremy, *Stocks for the Long Run (2014), With Updates to 2018*

Past performance is not indicative of future results.

P-E Ratio on S&P 500 , 1954-2018

Price	2602.71	BEst EPS (Y)	157.93	BEst P/E	16.48	High	29.83 on 06/30/1999
52 Week High	2872.87	BEst EPS (Y+1)	173.69	BEst P/B	2.99	Low	7.15 on 03/31/1980
52 Week Low	2352.72	BEst EPS (Y+2)	191.46	BEst Sales	1.31B	Average	16.55
Price Chg 1Yr	214.58	CAGR	11.64	BEst EBITDA	275.98M	Median	17.07

Source: Bloomberg 12/31/1954-5/5/16

Definitions of S&P 500 Earnings

- **Firm Reported**: Most liberal, excludes asset impairments, severance costs, Cash plant closing costs, litigation expense, pension value changes, and stock option expenses; 2017 $133.12; Est. 2018 $162.79, Est. 2019 $179.32.
- **S&P Operating**: Excludes some asset impairments (except for financials) and severance costs; 2017 = $124.51 Est. 2018 = $157.79, Est. 2019. $177.00.
- **GAAP**: Mandates write-downs and asset impairments, whether sold or not; Does not permit "write-ups" unless asset sold. 2017= $109.88; Est. 2018 = $142.99; Est. 2019 = $163.51
- Warren Buffet, in 2017 Annual Report, said new mark-to-market rules make GAAP earnings, for analytical purposes, "useless."

What do PE Ratios Mean for Returns?

- Earning Yield (E/P) is good predictor of long-term real returns.
- Over past 140 years, P-E ratio averaged about 15, which corresponds to 1/15, or 6.7% E/P, or real return on stocks.
- With S&P at 2871 (Sep 7), stocks are selling for about 18 times 2018 and 16.1 times 2019 estimated operating earnings.
- A PE ratio of 18 forecasts a real return of 5.5% for stocks (or about 7.5% nominal return with 2% inflation). This is more than 4 ½ percentage points over Treasury bonds, a margin economists call the "equity risk premium." This premium is also above the historical average of 3% to 3 ½%.
- 5.5% real returns comprised of 2% dividend, 3.5% real EPS growth (2.5% of which caused by buybacks).
- Warranted P-E ratio is higher than historical average because of virtually zero cost of indexing, allowing investors to receive far superior risk return trade-offs.

Source: S&P 1/18/18

What is "warranted" Equity return?

- Indexed return over 19th and first half of 20th century 6.7% real.
- But few, if any investors were able to achieve that net of transactions costs (brokerage plus bid/ask spreads).
- Cost of maintaining cap-weighted portfolio likely 150 bps per year or more in earlier period, leaving a net real return of about 5%.
- Today cost of indexation is virtually zero. An 18 P-E ratio, leading to a 5.5% real return, can be regarded as the "new normal" equity return.
- Record low real interest rates, could push equilibrium P-E ratio even higher.

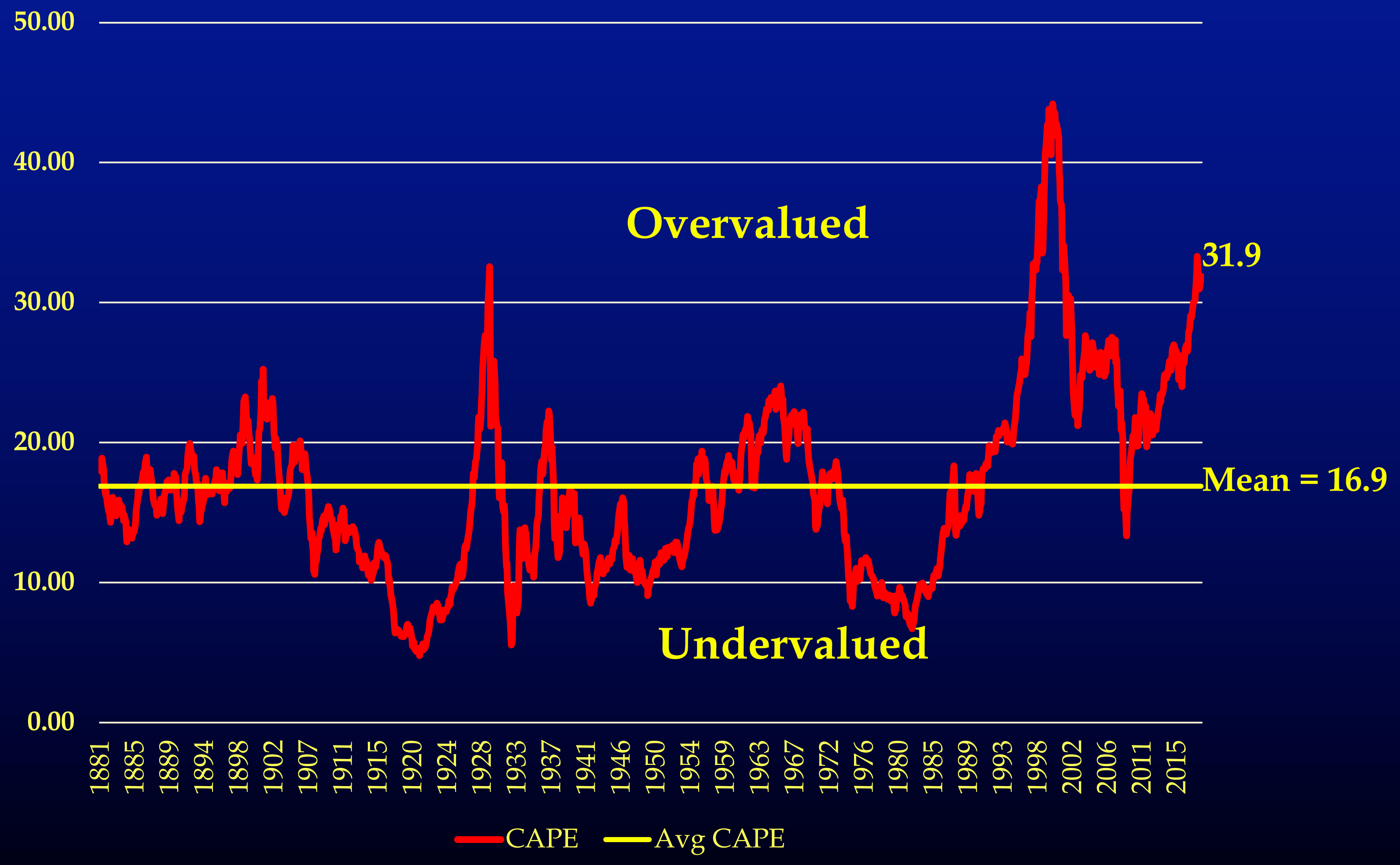
Lower Payout Ratio = Higher EPS Growth

	Reported Real EPS Growth	Real Dividend Growth	Dividend Yield	Real Capital Gains	Real Stock Returns	Payout Ratio
1871-2018	1.96%	1.56%	4.34%	2.36%	6.94%	61.5%
1871-1945	0.67%	0.74%	5.31%	1.32%	6.84%	70.8%
1946-2018	3.30%	2.42%	3.35%	3.44%	7.05%	51.5%

Shiller CAPE ratio

- In 1996. Robert Shiller, with John Campbell, both at Yale, devised a "Cyclically Adjusted P-E ratio" to judge valuation of the market.
- Shiller averaged past 10 years of (real) per share GAAP earnings on market index portfolio to compute his PE ratio.
- P-E ratio in August 2018 is about 32, based on GAAP earnings, nearly double the 140-year mean value of the series.
- CAPE methodology forecasts forward 10 year real returns on stocks of only 2.6%, about 40% of long-run average (but still more than bonds).

Shiller CAPE Ratio: Reported and Operating



Source: Siegel, "The Shiller CAPE Ratio: A New Look" May 2016, Updated

Shiller CAPE Ratio: Reported and Operating

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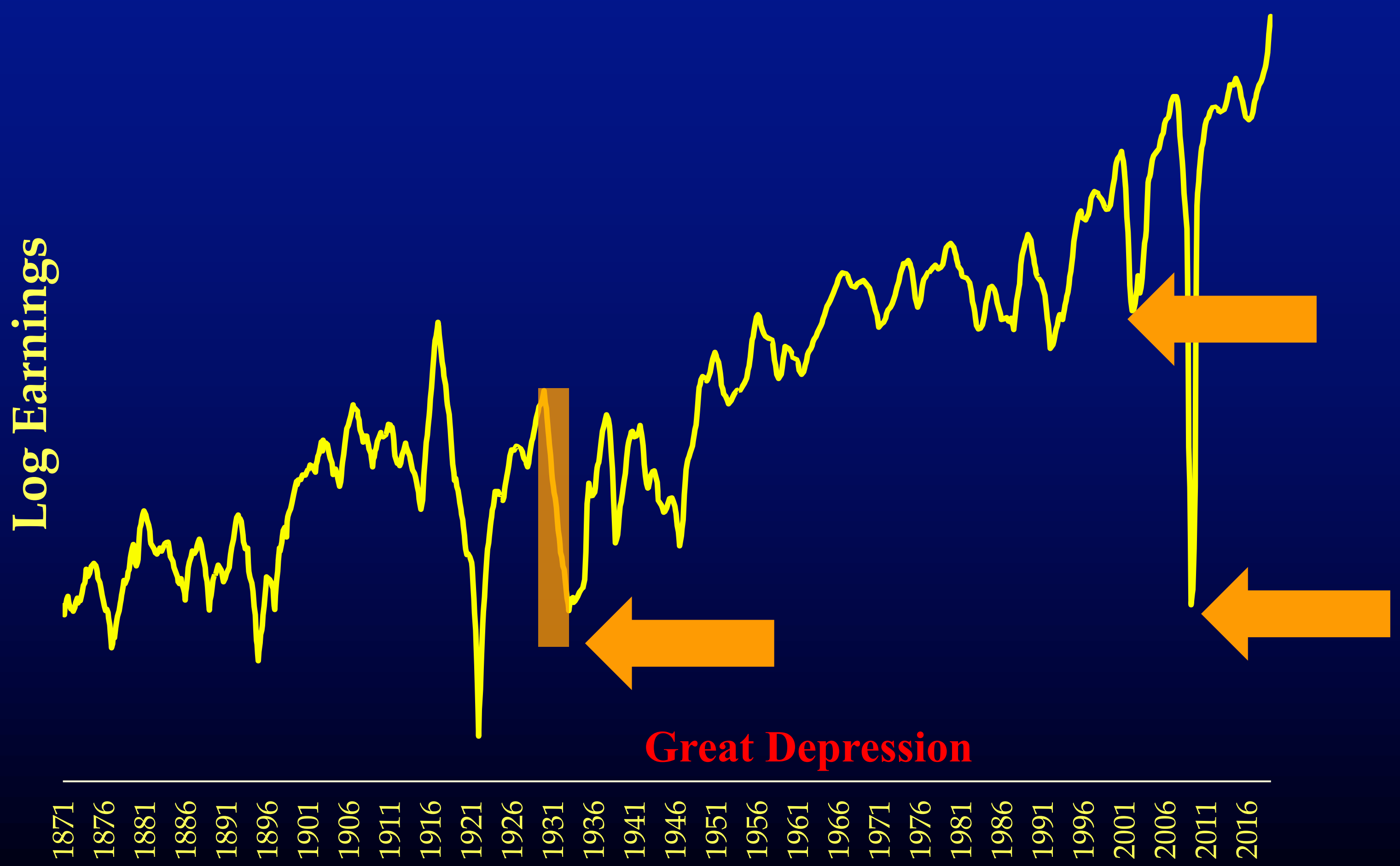
Real Per Share Reported Earnings



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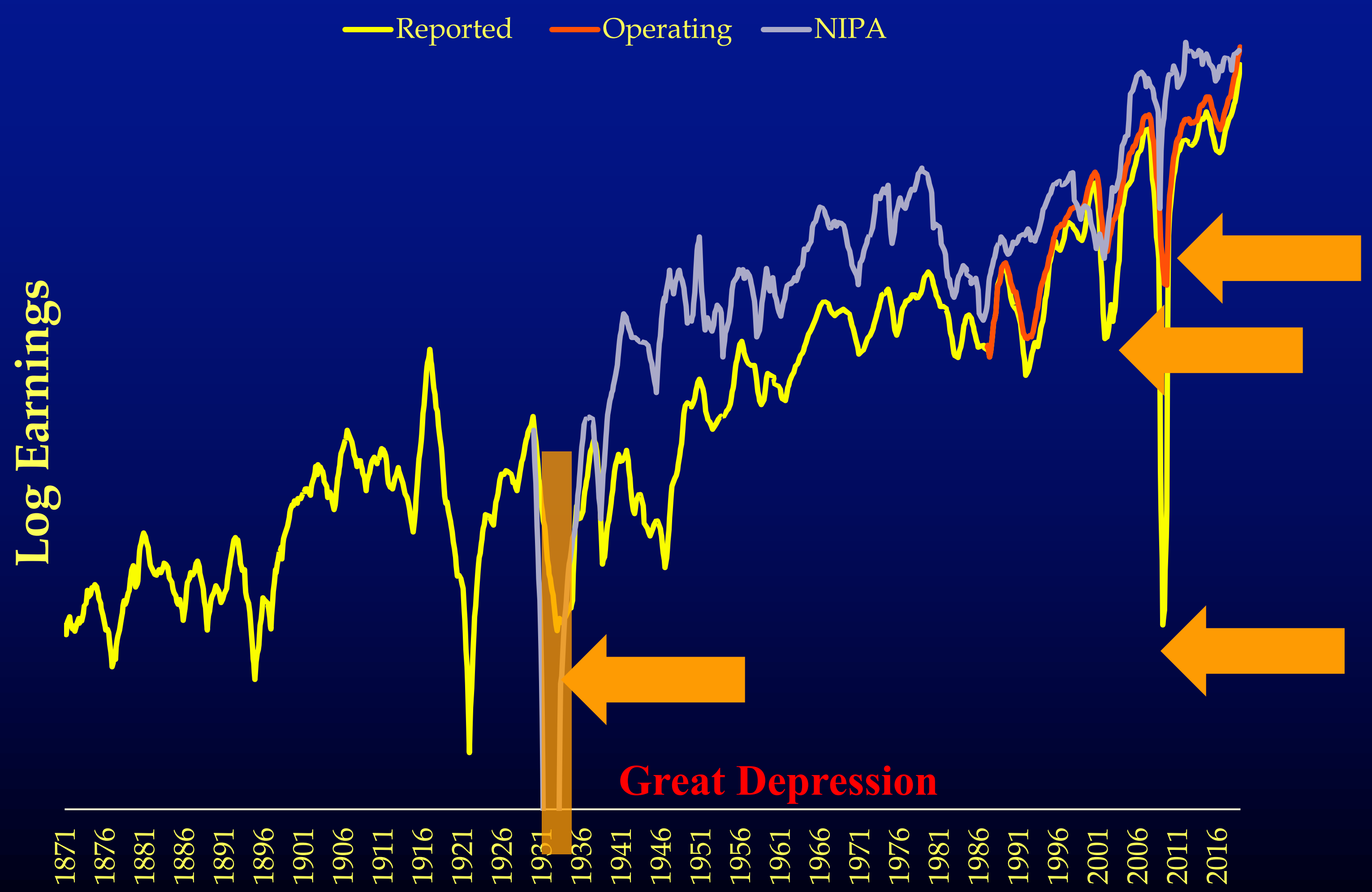
Source: "The Shiller CAPE Ratio: A new Look" J. Siegel May 2016

Real Reported, Operating and NIPA Earnings



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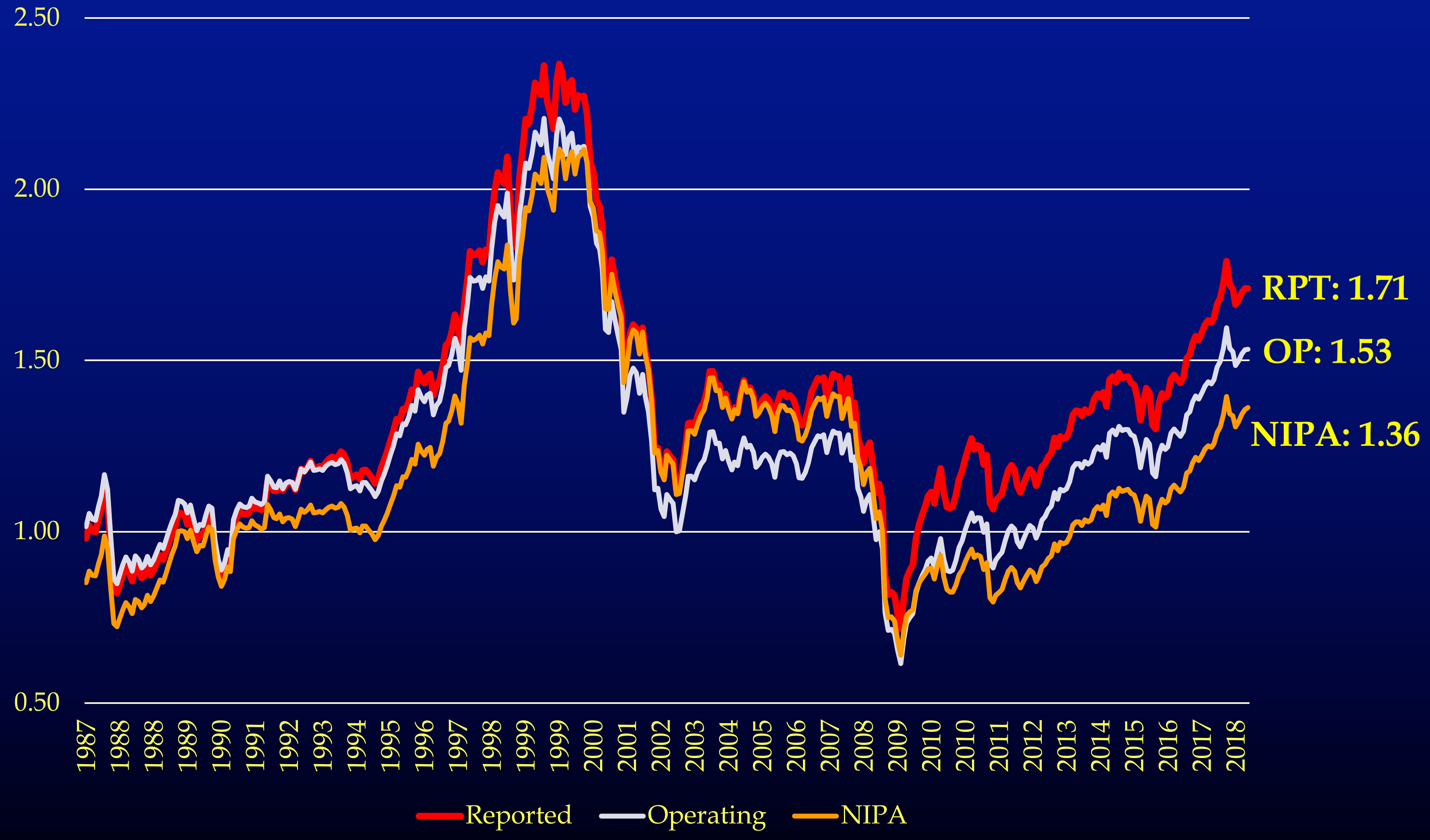
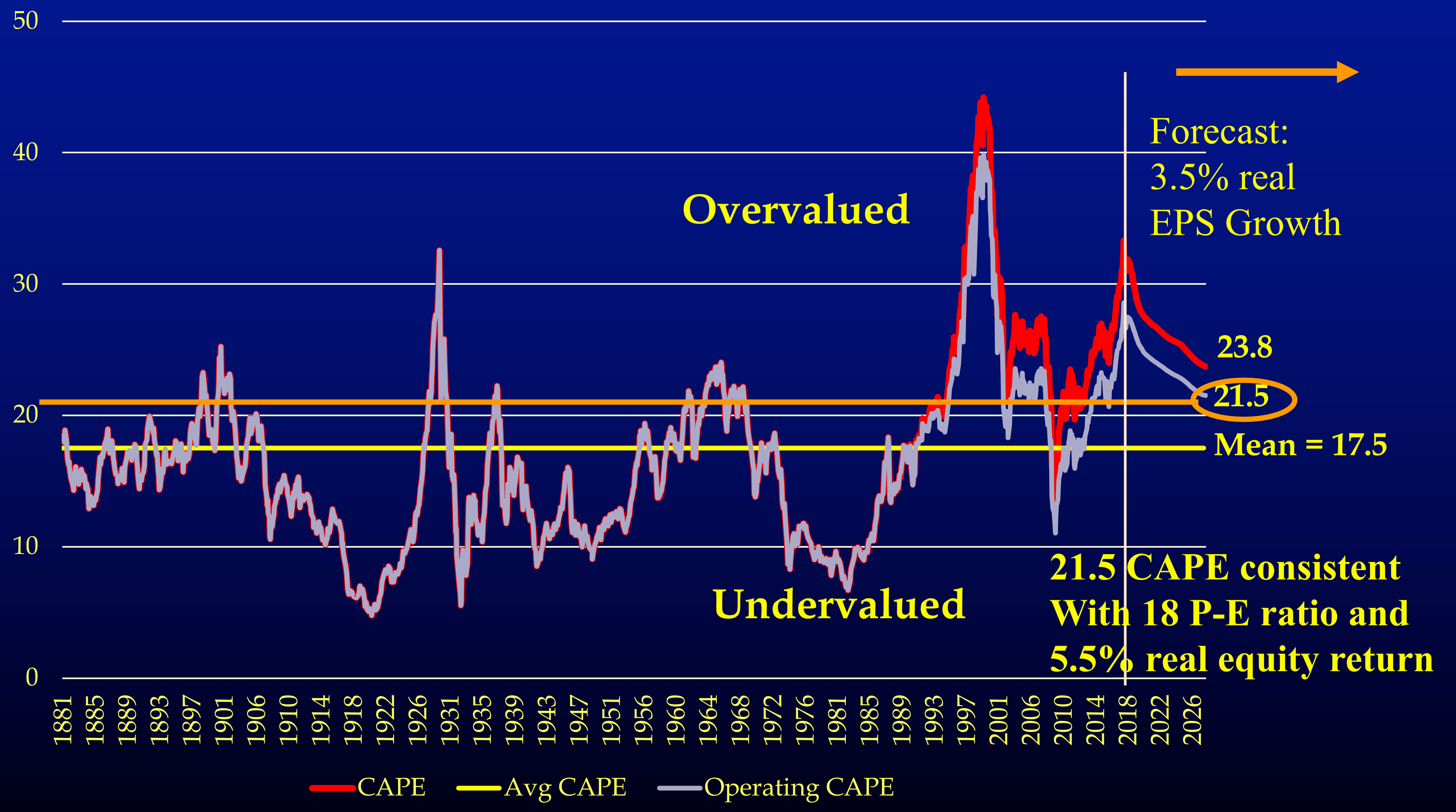
Source: "The Shiller CAPE Ratio: A new Look" J. Siegel May 2016

CAPE Ratio Relative to Long-term Mean
Shiller Total Return Portfolio 1987-2018



Source: "The Shiller CAPE Ratio: A new Look" J. Siegel May/June 2016, Updated

Shiller CAPE Ratio: Forecast 3.5% real EPS growth



Source: Siegel, "The Shiller CAPE Ratio: A New Look" May/June 2016, Updated

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The Shiller CAPE Ratio: A New Look

Jeremy J. Siegel

Robert Shiller's cyclically adjusted price–earnings ratio, or CAPE ratio, has served as one of the best forecasting models for long-term future stock returns. But recent forecasts of future equity returns using the CAPE ratio may be overpessimistic because of changes in the computation of GAAP earnings (e.g., "mark-to-market" accounting) that are used in the Shiller CAPE model. When consistent earnings data, such as NIPA (national income and product account) after-tax corporate profits, are substituted for GAAP earnings, the forecasting ability of the CAPE model improves and forecasts of US equity returns increase significantly.