



# S&P 500

## Monthly Valuation Analysis

*As Of April 30th, 2018*

*J. Brett Freeze, CFA, founder of Global Technical Analysis. Each month Brett will provide you their valuable S&P 500 Valuation Chart Book. This unique analysis provides an invaluable long term perspective of equity valuations. If you are interested in learning more about their services, please [connect with them](#).*

## Introduction

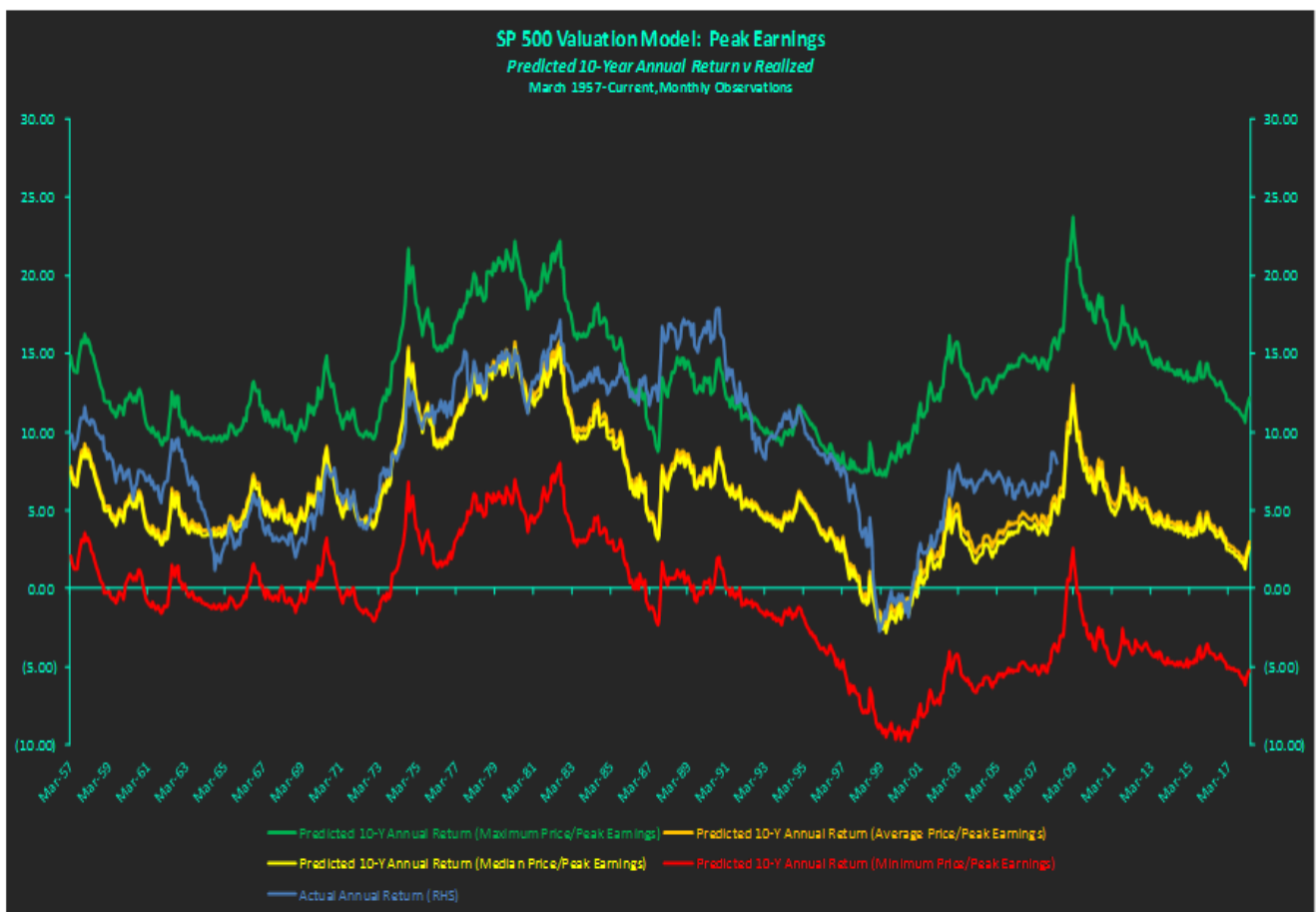
We believe that the chief determinant of future total returns is the relative valuation of the index at the time of purchase. We measure valuation using the Price/Peak Earnings multiple as advocated by Dr. John Hussman. We believe the main benefit of using peak earnings is the inherent conservatism it affords: not subject to analyst estimates, not subject to the short-term ebbs and flows of business, and not subject to short-term accounting distortions. Annualized total returns can be calculated over a horizon period for given scenarios of multiple expansion or contraction. Our

analysis highlights expansion/contraction to the minimum, mean, average, and maximum multiples (our data-set begins in January•1900) . The baseline assumptions for nominal growth and horizon period are 6% and 10 years, respectively. We also provide graphical•analysis of how predicted returns compare to actual returns historically. We provide sensitivity analysis to our baseline assumptions. The first sensitivity table, ceterus paribus, shows how future returns are•impacted by changing the horizon period. The second sensitivity table, ceterus paribus, shows how future returns are impacted by•changing the growth assumption. We also include the following information: duration, over(under)-valuation, inflation adjusted price/10-year real earnings, dividend•yield, option-implied volatility, skew, realized volatility, historical relationships between inflation and p/e multiples, and historical•relationship between p/e multiples and realized returns.

*Our analysis is not intended to forecast the short-term direction of the SP500 Index. • The purpose of our analysis is to identify the relative valuation and inherent risk offered by the index currently.*

## Predicted Returns

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As of 04/30/2018: If current Price/Peak Earnings of 21.8 expands or contracts to:

|   |                      |                |
|---|----------------------|----------------|
| Maximum Price/Peak Earnings of 33.5, Predicted Return = 12.16%, | Capital Gain 10.63%  | Dividend 1.53% |
| Minimum Price/Peak Earnings of 3.0, Predicted Return = -5.46%,  | Capital Gain -13.19% | Dividend 7.73% |
| Average Price/Peak Earnings of 12.7 Predicted Return = 2.91%,   | Capital Gain 0.39%   | Dividend 2.52% |
| Median Price/Peak Earnings of 12.2, Predicted Return = 2.59%,   | Capital Gain 0.01%   | Dividend 2.58% |

## Predicted Returns: Sensitivity Analysis

April 30, 2018

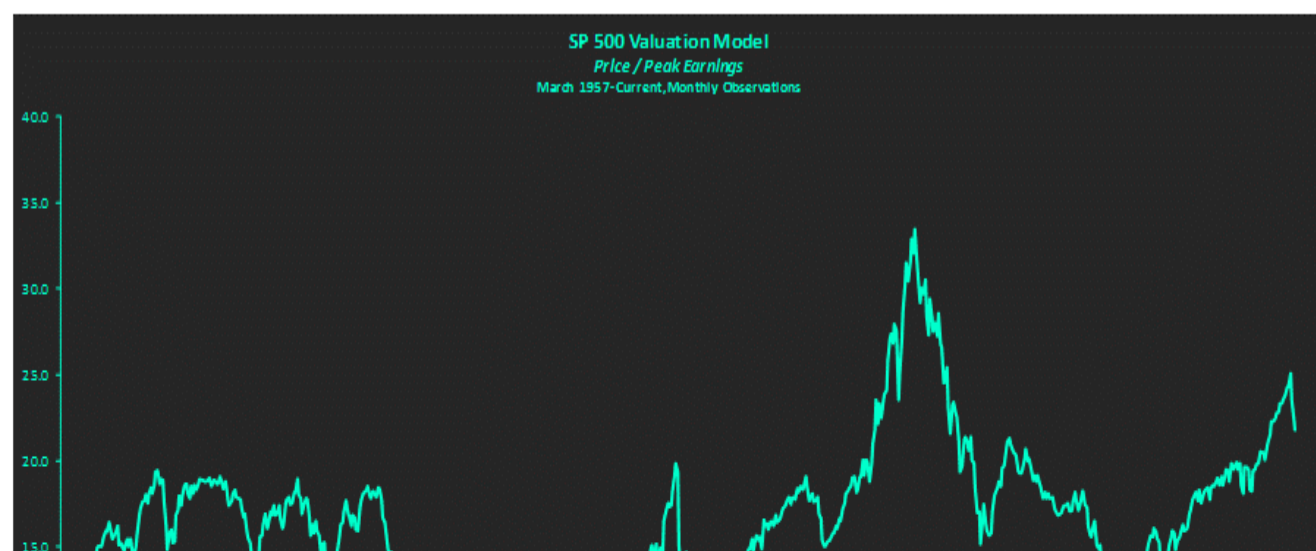
| Time Horizon | Price / Peak Earnings |         |         |         |         |         |         |         |         |      |       |       |       |       |       |       |
|--------------|-----------------------|---------|---------|---------|---------|---------|---------|---------|---------|------|-------|-------|-------|-------|-------|-------|
|              | 3.0                   | 7.0     | 9.0     | 11.0    | 12.2    | 12.7    | 14.0    | 16.0    | 18.0    | 21.0 | 23.0  | 25.0  | 27.0  | 29.0  | 31.0  | 33.5  |
| 10           | (5.29)                | (1.51)  | 0.25    | 1.80    | 2.64    | 2.96    | 3.81    | 4.99    | 6.07    | 7.52 | 8.40  | 9.22  | 9.99  | 10.71 | 11.39 | 12.19 |
| 9            | (7.19)                | (2.69)  | (0.70)  | 1.05    | 2.00    | 2.36    | 3.31    | 4.64    | 5.84    | 7.47 | 8.46  | 9.38  | 10.24 | 11.06 | 11.82 | 12.72 |
| 8            | (9.52)                | (4.16)  | (1.88)  | 0.12    | 1.20    | 1.61    | 2.69    | 4.20    | 5.57    | 7.42 | 8.54  | 9.58  | 10.56 | 11.49 | 12.36 | 13.38 |
| 7            | (12.41)               | (6.01)  | (3.37)  | (1.07)  | 0.18    | 0.65    | 1.90    | 3.63    | 5.21    | 7.34 | 8.64  | 9.85  | 10.98 | 12.05 | 13.06 | 14.23 |
| 6            | (16.11)               | (8.41)  | (5.32)  | (2.62)  | (1.16)  | (0.61)  | 0.86    | 2.89    | 4.74    | 7.25 | 8.77  | 10.20 | 11.53 | 12.80 | 13.99 | 15.39 |
| 5            | (21.00)               | (11.67) | (7.98)  | (4.76)  | (3.01)  | (2.34)  | (0.59)  | 1.85    | 4.08    | 7.11 | 8.96  | 10.69 | 12.32 | 13.86 | 15.32 | 17.02 |
| 4            | (27.76)               | (16.34) | (11.82) | (7.87)  | (5.71)  | (4.89)  | (2.72)  | 0.32    | 3.10    | 6.91 | 9.24  | 11.43 | 13.50 | 15.46 | 17.33 | 19.51 |
| 3            | (37.62)               | (23.55) | (17.87) | (12.83) | (10.05) | (8.99)  | (6.17)  | (2.19)  | 1.50    | 6.57 | 9.71  | 12.68 | 15.50 | 18.19 | 20.76 | 23.79 |
| 2            | (53.05)               | (36.08) | (28.70) | (21.93) | (18.12) | (16.65) | (12.69) | (7.01)  | (1.65)  | 5.90 | 10.66 | 15.22 | 19.61 | 23.84 | 27.94 | 32.82 |
| 1            | (77.71)               | (62.11) | (53.05) | (43.76) | (38.11) | (35.86) | (29.59) | (20.06) | (10.49) | 3.92 | 13.55 | 23.19 | 32.84 | 42.50 | 52.17 | 64.09 |

| Growth Rate | Price / Peak Earnings |        |        |        |        |        |        |      |      |      |      |      |      |       |       |       |
|-------------|-----------------------|--------|--------|--------|--------|--------|--------|------|------|------|------|------|------|-------|-------|-------|
|             | 3.0                   | 7.0    | 9.0    | 11.0   | 12.2   | 12.7   | 14.0   | 16.0 | 18.0 | 21.0 | 23.0 | 25.0 | 27.0 | 29.0  | 31.0  | 33.5  |
| 0.06        | (5.29)                | (1.51) | 0.25   | 1.80   | 2.64   | 2.96   | 3.81   | 4.99 | 6.07 | 7.52 | 8.40 | 9.22 | 9.99 | 10.71 | 11.39 | 12.19 |
| 0.05        | (6.11)                | (2.40) | (0.67) | 0.86   | 1.70   | 2.02   | 2.86   | 4.02 | 5.09 | 6.52 | 7.39 | 8.20 | 8.97 | 9.68  | 10.36 | 11.15 |
| 0.04        | (6.93)                | (3.29) | (1.58) | (0.07) | 0.76   | 1.07   | 1.90   | 3.05 | 4.10 | 5.53 | 6.39 | 7.19 | 7.94 | 8.65  | 9.32  | 10.10 |
| 0.03        | (7.75)                | (4.18) | (2.50) | (1.00) | (0.19) | 0.12   | 0.94   | 2.08 | 3.12 | 4.53 | 5.38 | 6.18 | 6.92 | 7.62  | 8.29  | 9.06  |
| 0.02        | (8.57)                | (5.08) | (3.41) | (1.94) | (1.13) | (0.82) | (0.01) | 1.11 | 2.14 | 3.53 | 4.38 | 5.16 | 5.90 | 6.60  | 7.25  | 8.01  |
| 0.01        | (9.38)                | (5.97) | (4.33) | (2.87) | (2.07) | (1.77) | (0.97) | 0.14 | 1.16 | 2.54 | 3.37 | 4.15 | 4.88 | 5.57  | 6.22  | 6.97  |

|                               |           |
|-------------------------------|-----------|
| Valuation Date                | 4/30/2018 |
| Current Price / Peak Earnings | 21.8      |
| Growth Rate                   | 0.06      |
| Time Horizon (Years)          | 10        |
| Current Dividend Yield        | 0.0189    |

## Price to Peak Earnings

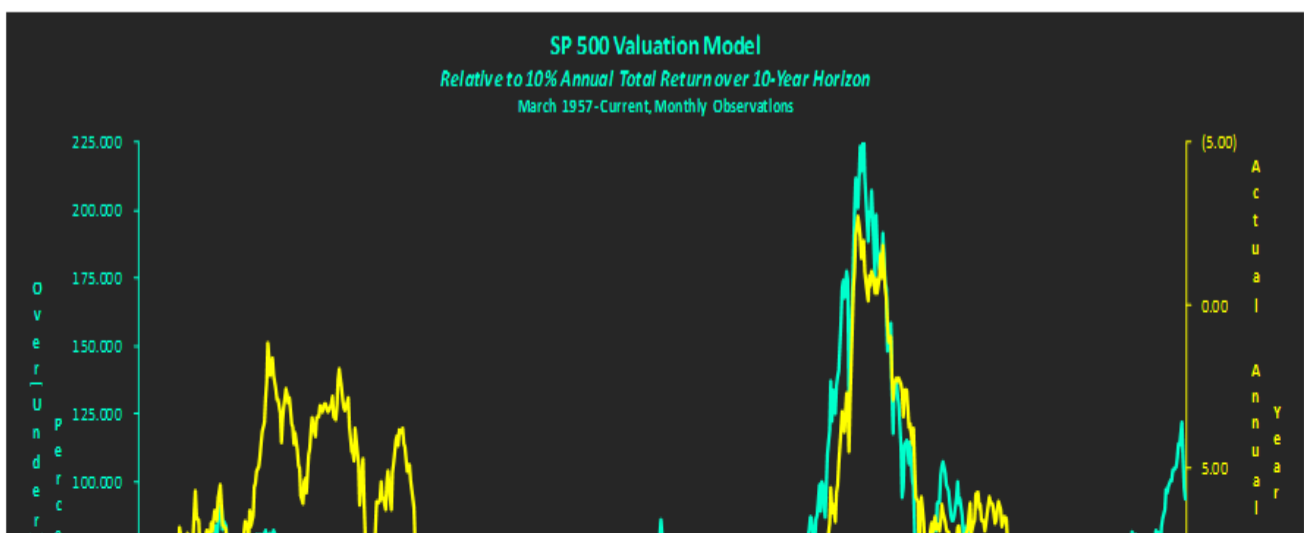
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As of 04/30/2018: Duration 54.1 years

In the case of equities, *duration measures the percentage change in stock prices in response to a 1% change in the long-term return that stocks are priced to deliver.* So we have a basic financial planning concept. If a buy-and-hold investor with no particular view about market conditions or future returns wishes to have a fairly predictable amount of wealth at some future date, that investor should hold a portfolio with a duration that is roughly equal to the investment horizon. (Excerpted from Dr. John Hussman)

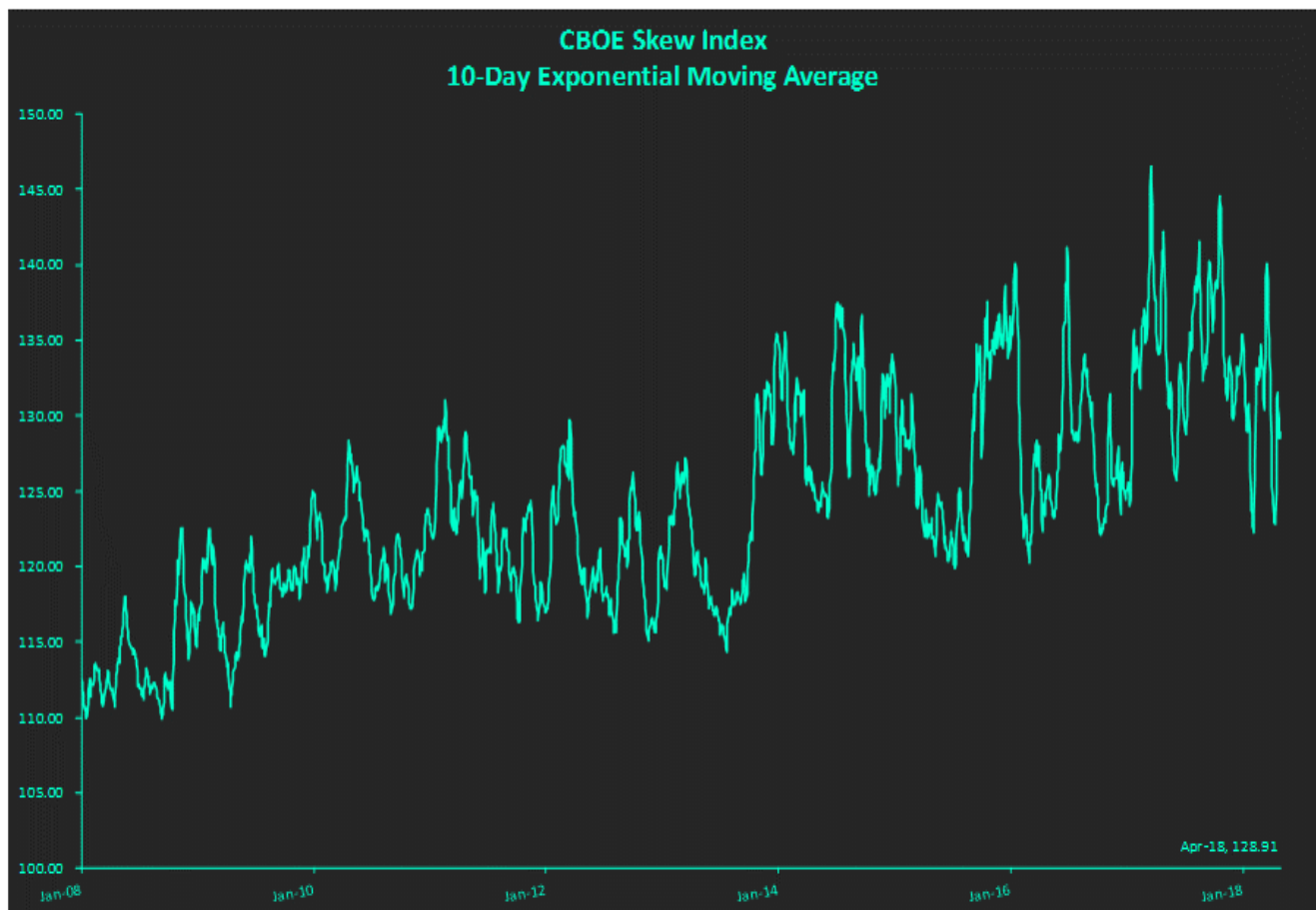






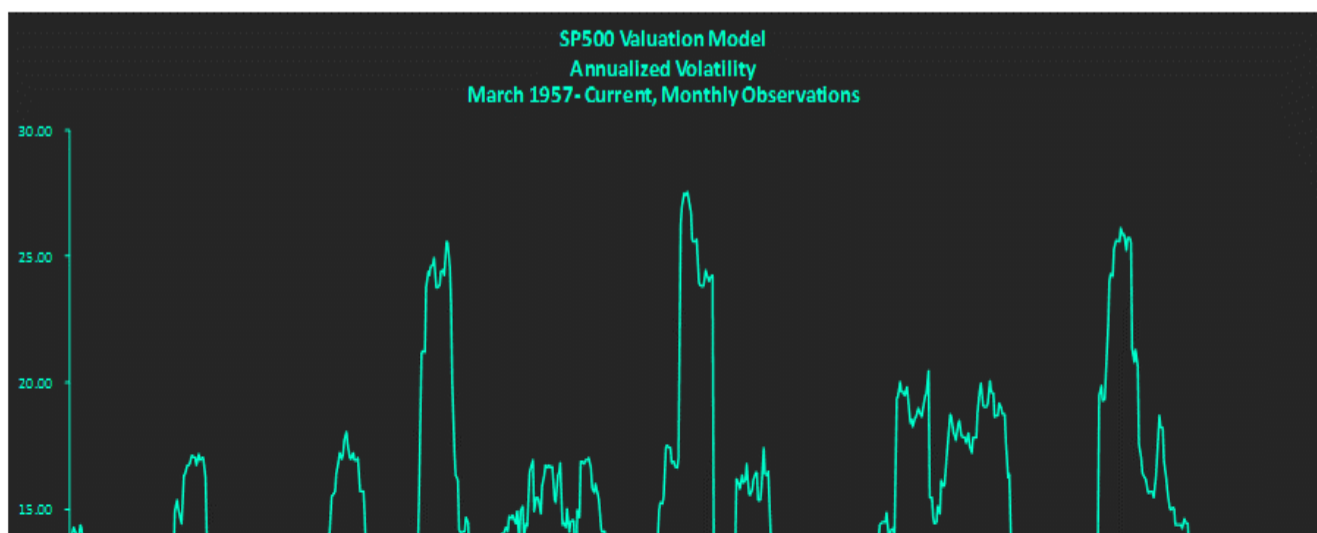
As of 04/30/2018: Real Price to 10-Year Real Earnings 30.9x

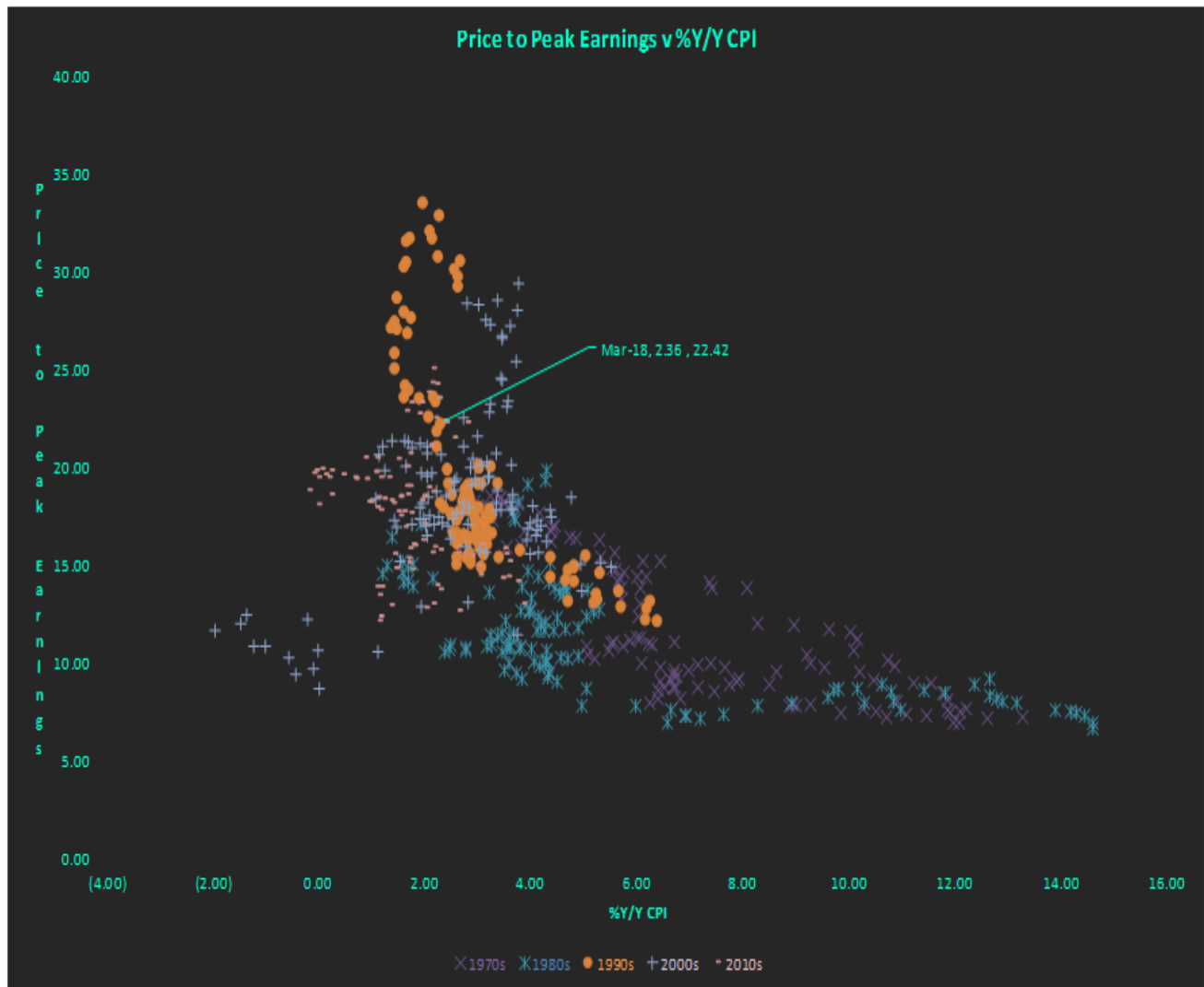




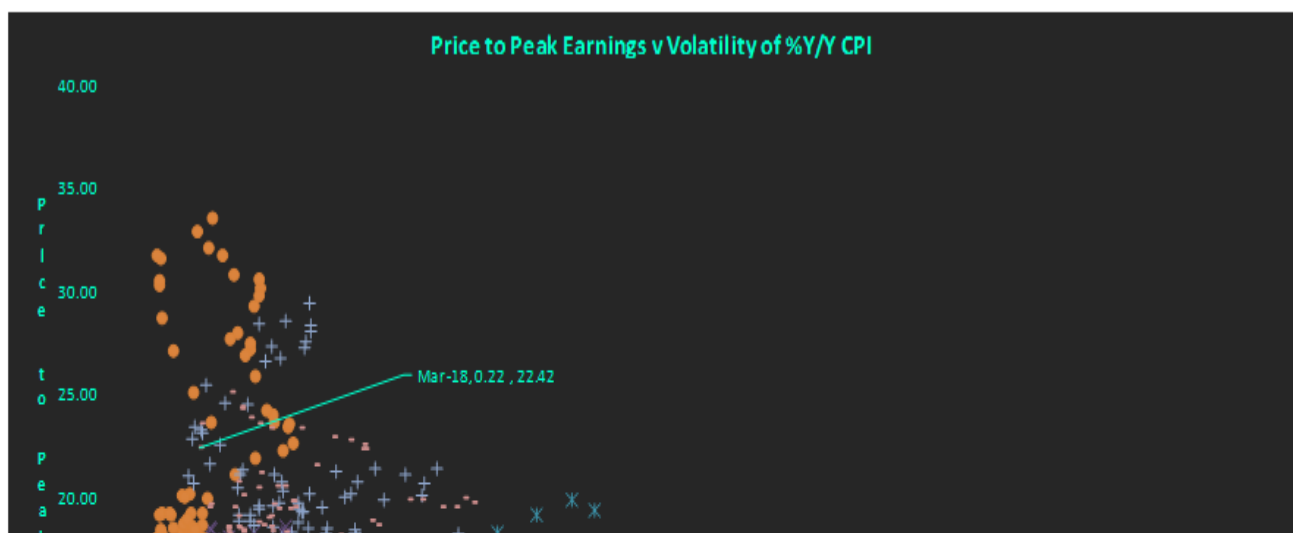
The CBOE SKEW Index ("SKEW") is an index derived from the price of S&P 500 tail risk. The price of S&P 500 tail risk is calculated from the prices of S&P 500 out-of-the-money options. SKEW typically ranges from 100 to 150. A SKEW value of 100 means that the perceived distribution of S&P 500 log-returns is normal, and the probability of outlier returns is therefore negligible. As SKEW rises above 100, the left tail of the S&P 500 distribution acquires more weight, and the probabilities of outlier returns become more significant.

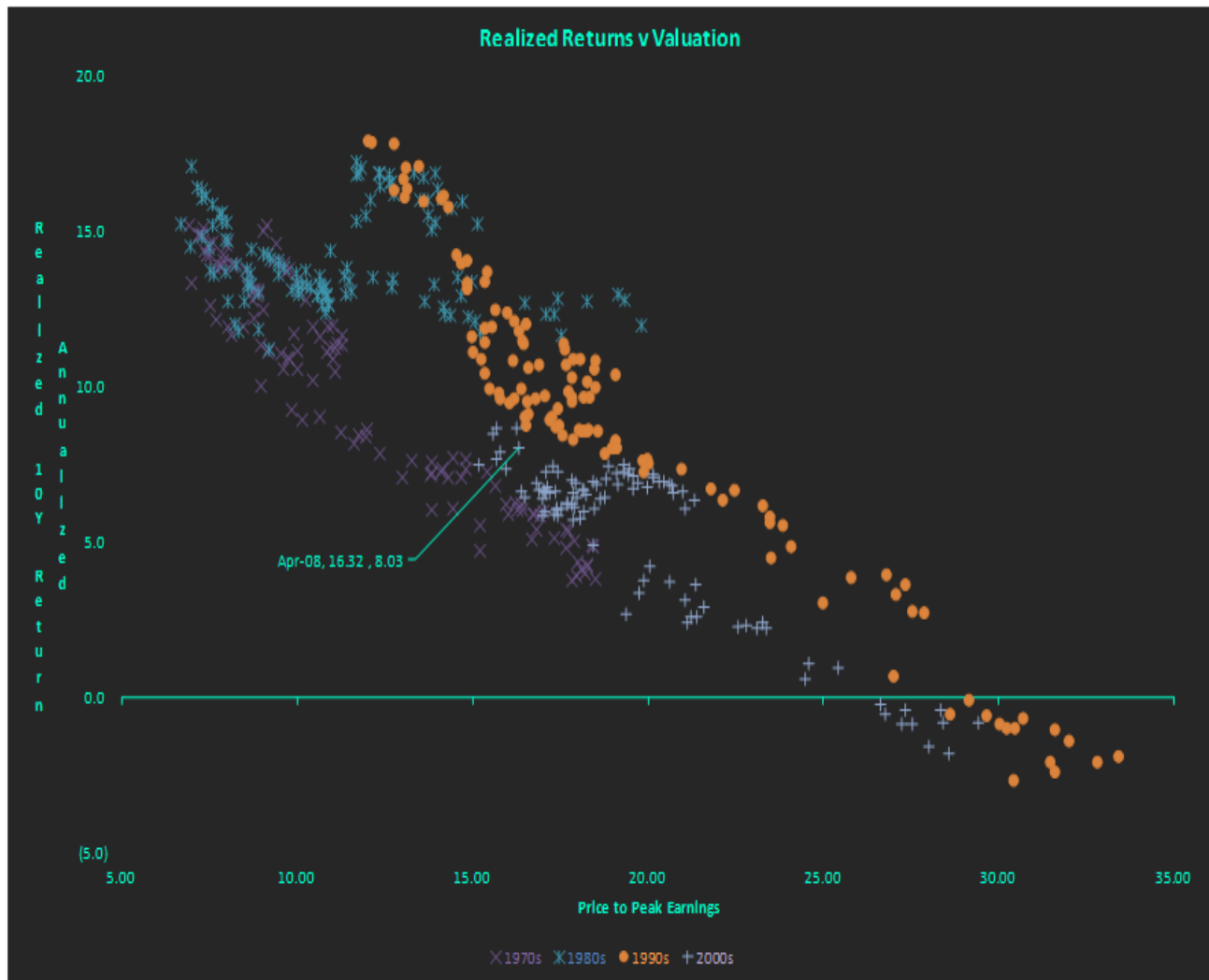
As of 04/30/2018: 10-Day EMA 128.91





Lower levels of inflation are rewarded with *higher* earnings multiples.  
Higher levels of inflation are punished with *lower* earnings multiples.





Lower valuations are rewarded with *higher* realized returns.

Higher valuations are punished with *lower* realized returns.

As of 04/30/2018: Price to Peak Earnings 21.8x Average: 12.7x