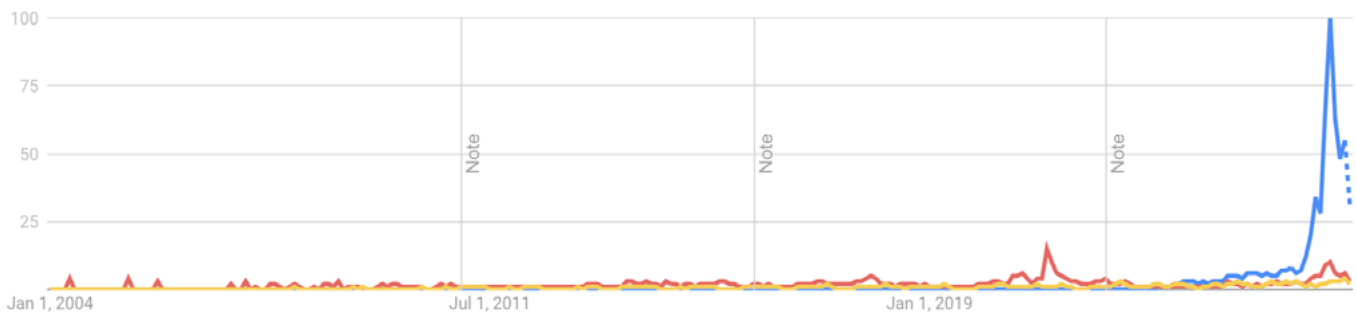


Quarterly Review and Outlook Using the CAPE Ratio

Q1 2026 – Robert J. Shiller and Laurence Black

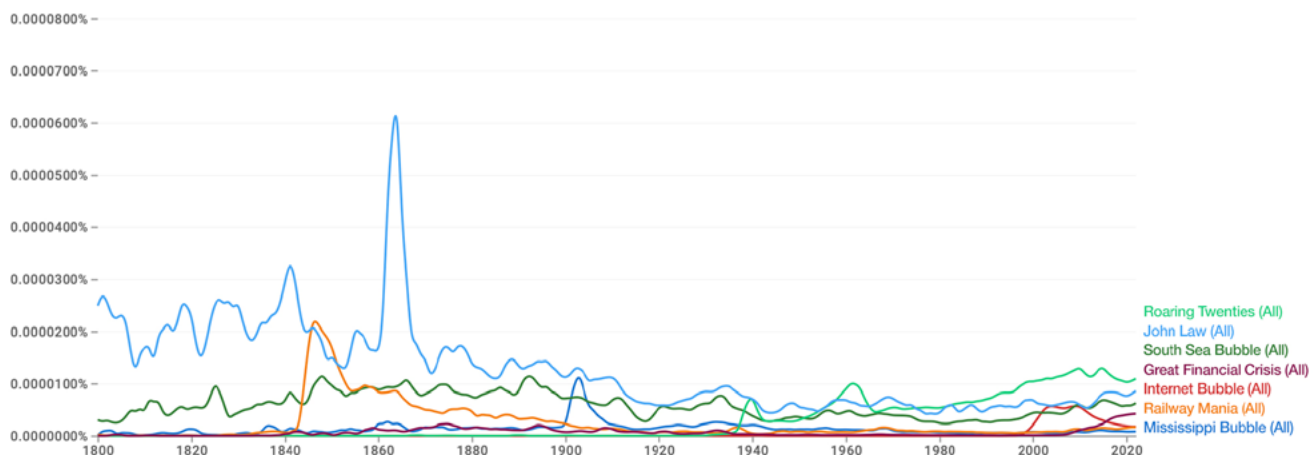
Signs of Rationality in an Irrational Market

In recent quarterly updates, we have frequently referenced investor enthusiasm for the Artificial Intelligence (A.I.) narrative. With the S&P 500 CAPE reaching 40 during the quarter, we have observed some characteristics of a speculative bubble. Enthusiasm, FOMO, and YOLO are widespread, and high valuations could certainly persist in 2026. However, what is also notable today is the extent to which concerns about a possible bubble have become widespread. We present the Google Trends data for the terms “A.I. Bubble” and “Stock Market Bubble,” where the elevated mentions of an “A.I. Bubble” are in blue.



Source: Google Trends, Jan, 12th, 2026. (Blue A.I. Bubble, Red Stock Market Bubble, Yellow is stock market boom.)
Past performance is not indicative of future performance.

There have been numerous comparisons to the A.I. Bubble with the Dot-Com Bubble, particularly regarding similarities to vendor financing. The frequent mentions of an A.I. Bubble in financial commentary suggests that the idea of high valuations have become “common knowledge” in the market.



Source: Google N-grams, Jan 12th, 2026. Past performance is not indicative of future performance.

To provide historical context, we present Google N-grams counts of some famous bubbles, going all the way back to the Mississippi Bubble, which burst in the year 1720. Mentions of the Mississippi Bubble and its promoter, John Law, still resonate, and we are continually reminded of more recent bubbles as mentions in books accumulate. The re-emergence of these comparisons today suggests that investors are keenly aware of historical parallels and the risks they entail.

Against this backdrop, recent market behavior shows tentative signs of heightened rationality and increased discipline. Toward the end of December, A.I.-related firms that delivered disappointing guidance—particularly forecasts combining lower expected A.I. revenues with higher A.I. data expenditures—experienced sharp declines in share prices. Oracle shares fell following forward guidance that failed to meet expectations around financial discipline, which was soon followed by a similar reaction to results from Broadcom.^{1,2} Firms closely associated with the current A.I. financing cycle, including CoreWeave, have also seen notable share price declines in recent weeks. CoreWeave, a data center company with Microsoft as its largest client, has received an investment from Nvidia and, in turn, purchases Nvidia chips. OpenAI is also a major CoreWeave investor and maintains close financial partnerships with both Nvidia and Microsoft.³

We believe that A.I. is likely to benefit firms that apply it in ways that enhance productivity, rather than merely fueling some of the excitement we see today. We think that industrial companies will integrate A.I. technologies into their operations and achieve tangible efficiency gains. We have referenced the “Four Horseman” of the late 1990’s (Dell, Cisco, Intel, and Microsoft) and history suggests that while some firms will ultimately justify their valuations through durable innovation, others will not. Microsoft was the clear winner among the “Four Horsemen,” and it seems there will similarly be both winners and losers from the A.I. era. The market is simply trying to discern who the winners will be.

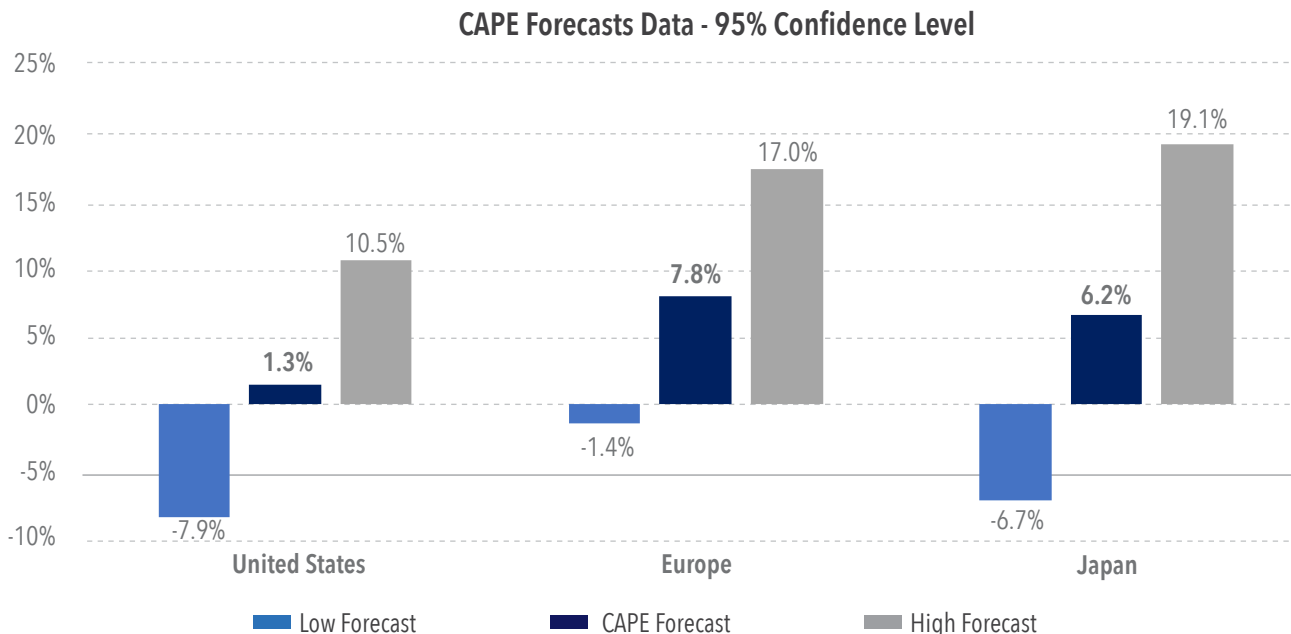
Against this backdrop, we believe it makes sense to adopt a value-oriented approach and rotate through sectors that have relatively cheaper valuations while the market reassesses some of the excessive ones. Value investing is inherently unemotional – unlike much of the emotional investing associated with A.I.

From a valuation standpoint, the broader U.S. market remains stretched. In late November, the CAPE ratio reached approximately 40, a level exceeded only briefly since data collection began in 1881. Over the 144 years for which we can measure the U.S. CAPE Ratio, it has only been higher for 1.75 years, all of which occurred during the new millennium and technology boom of 2000. Historically, such valuations have been associated with subdued long-term returns, and for the U.S., we forecast 10-year returns at 1.3%. In contrast, we forecast 10-year returns of 7.8% for Europe and 6.2% for Japan. When comparing relative valuations to each country’s historical averages, the U.S. stands at 1.5x its 20-year average, while Europe is close to 1. For Japan, valuations are at 0.9x over the last 20-years, indicating there is value in international equities.

Taken together, the current environment reflects perennial narratives of technology enthusiasm and labor-saving devices, tempered by growing skepticism and emerging examples of selective discipline. How the A.I. narrative will ultimately unfold remains uncertain, and that is what makes markets fascinating. From a valuation perspective, we believe it makes sense to consider international markets, be highly selective in U.S. markets, and maintain a prudent allocation to safe assets.

Key Findings: Our Forecasts Based on the CAPE Ratio

Note these forecasts are in local currencies in nominal returns. We show a range for a 95% prediction interval indicating our uncertainty around these forecasts. We use conventional tools to forecast expected returns, however financial markets are very unpredictable, making forecasting an inherently difficult task.



Source: Data Robert Shiller online data, MSCI, World Bank and OECD.

A Note About Forecasting

These are annualized long-term forecasts with a horizon of 10 years. They are intended to provide a framework and guide investors in making strategic equity allocations. These forecasts are not suitable for those seeking to time markets or obtain short- to medium-term predictions, as short-term forecasts are inherently unreliable. The forecasts are meant to serve as a guide only. They do not attempt to account for the one-of-a-kind factors such as COVID-19, political changes, or shifts in monetary policy—not because these factors are unimportant, but because quantifying them without guesswork is not feasible.

Readers should remember that prediction intervals have inherent limits due to uncertainties that cannot be quantified. For example, some might argue that the upper bound for the 10-year annualized return for Japan in the preceding table is too high, based on the belief that Japanese investors, having learned their lesson from the 1980s-1990s, will not overprice markets to such an extent again. However, it is impossible to determine with certainty whether this belief is correct, as it relies on subjective human judgement about investor behavior.

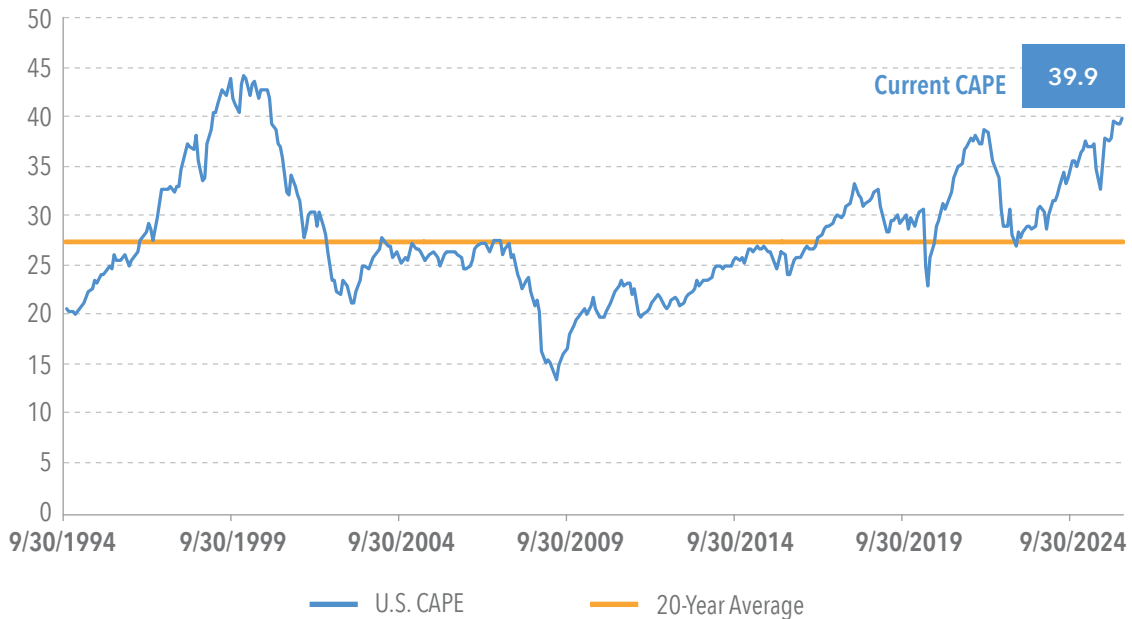
United States - Forecasts Based on the S&P 500 Index

The CAPE Ratio for the United States is 39.9, and the expected 10-year annualized nominal total return is 1.3%. Returns for the S&P 500 Price Return Index are expected to be around -0.7%, as we subtract the average historical dividends of 2%. We also present ranges for U.S. returns. Professor Shiller collaborated with Barclays to create a series of value-based indices, known as the Shiller Barclays CAPE Family of Indices, which aim to identify undervalued sectors or stocks using the CAPE Ratio. These indices are designed to capture a long-term value premium. While past performance is not guaranteed, an investor who purchases a value-based index and holds it for the long term may achieve higher returns than forecast if the value factor performs well.

UNITED STATES FORECAST RETURNS	EXPECTED ANNUALIZED RETURNS
Expected Nominal Total Returns* (S&P 500 Total Return Index)	1.3%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	10.5%
Lower Range of Expected Nominal Total Returns* (95% Confidence Level)	-7.9%
Approximate Expected Nominal Price Returns* (S&P 500 Price Return Index)	-0.7%

*using the CAPE Ratio

Historical U.S. CAPE Ratio Over the Last 30 Years



Europe – Forecasts Based on the MSCI Europe Index

The CAPE Ratio for Europe is 22.3, and the expected 10-year annualized nominal total return is 7.8% as of the end of this quarter. Price returns for the MSCI Europe Price Return Index are forecast to be around 4.9%, assuming the historical dividend yield remains consistent over the next 10 years. We also present ranges for European returns.

EUROPE FORECAST RETURNS	EXPECTED ANNUALIZED RETURNS
Expected Nominal Total Returns* (MSCI Europe Total Return Index)	7.8%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	17.0%
Lower Range of Expected Nominal Total Returns* (95% Confidence Level)	-1.4%
Approximate Expected Nominal Price Returns (MSCI Europe Price Return Index)	4.9%

*using the CAPE Ratio

Historical Europe CAPE Ratio Over the Last 30 Years



Japan - Forecasts Based on the MSCI Japan Index

The CAPE Ratio for Japan is 26.4, and the expected 10-year annualized nominal total return based on the CAPE Ratio is 6.2%. Price returns for the MSCI Japan Price Return Index are forecast to be 4%. As before, we subtract the historical dividend yield from Bloomberg and assume it remains consistent over the next 10 years. We also present ranges for Japanese returns. Note that our forecasts include Japan's bubble period in the 1980's, which may overstate some of the numbers.

JAPAN FORECAST RETURNS	EXPECTED ANNUALIZED RETURNS
Expected Nominal Total Returns* (MSCI Japan Total Return Index)	6.2%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	19.1%
Lower Range of Expected Nominal Total Returns * (95% Confidence Level)	-6.7%
Approximate Expected Nominal Price Returns (MSCI Japan Price Return Index)	4.0%

*using the CAPE Ratio

Historical Japan CAPE Ratio Over the Last 30 Years



Approach to Forecasting

In this section, we outline our approach to forecasting. First, we predict the nominal total returns based on the CAPE Ratio, as developed by Robert Shiller and John Campbell in their paper, “*Stock Prices, Earnings, and Expected Dividends.*” To generate the forecast, we regress ten-year nominal returns on the prevailing CAPE level. Additionally, we present ranges for each country’s forecasted returns to reflect the uncertainty around our predictions.

Professor Shiller noted in the 3rd Edition of *Irrational Exuberance* that returns are influenced by both the CAPE Ratio and an estimated long-term interest rate. We anticipate that, in years to come, the science of narrative economics—enhanced by the use of digitized text and A.I. to identify specific indicators of public dissemination of ideas—will help to narrow our prediction intervals. This approach may enable the development of trend data to track public sentiment on various economic narratives, such as views on the COVID-19 pandemic and its political implications, the prospects for global conflict, or concerns about climate change. Such information could help improve our forecasts of key economic variables. At this juncture, however, we rely on the CAPE Ratio to identify overpricing or underpricing as a basis for predicting market trends.

Sources:

1. Oracle: <https://www.ft.com/content/3633f277-d23b-44d0-b818-5fa3a89086cc>
2. Broadcom: <https://www.ft.com/content/8b9519df-9154-4eb5-ab3b-d3da0115b65e>
3. Coreweave: <https://www.theatlantic.com/economy/2025/12/nvidia-ai-financing-deals/685197/>

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