

Quarterly Review and Outlook Using the CAPE Ratio

Q3 2026 – Robert J. Shiller and Laurence Black

FOMO, Bubbles and the AI Narrative

“Science is the great antidote to the poison of enthusiasm and superstition.” – Adam Smith

Periods of major technological change are often shaped by powerful stories. In the 1800s, people were fascinated by the speed and power of new locomotive engines. Today, many people are equally fascinated by artificial intelligence. FOMO (Fear of Missing Out) is a newer term, but we see strong evidence of it in today's markets. One young investor in the United States says that a 10% return is no longer enough for him.¹ Another investor in Asia has invested all of her life savings in the market and says she can gain or lose the value of a month's salary within seconds. Even her friends, who had never previously invested, are buying stocks.¹ One agent told us about a client who wants to invest a large amount of money in the Nasdaq because “we are not going back to the buggy and whip era.”² Perhaps this is similar to what investors experienced during Tulip Mania.

As we have noted in previous quarterly letters, we are living through an extraordinary period. The narrative surrounding artificial intelligence has captured the attention of investors around the world. Investor enthusiasm has shifted quickly from one group of AI-related companies to another. The focus first centered on companies such as Nvidia and then moved toward memory-chip manufacturers and the infrastructure required to support the next generation of computing.

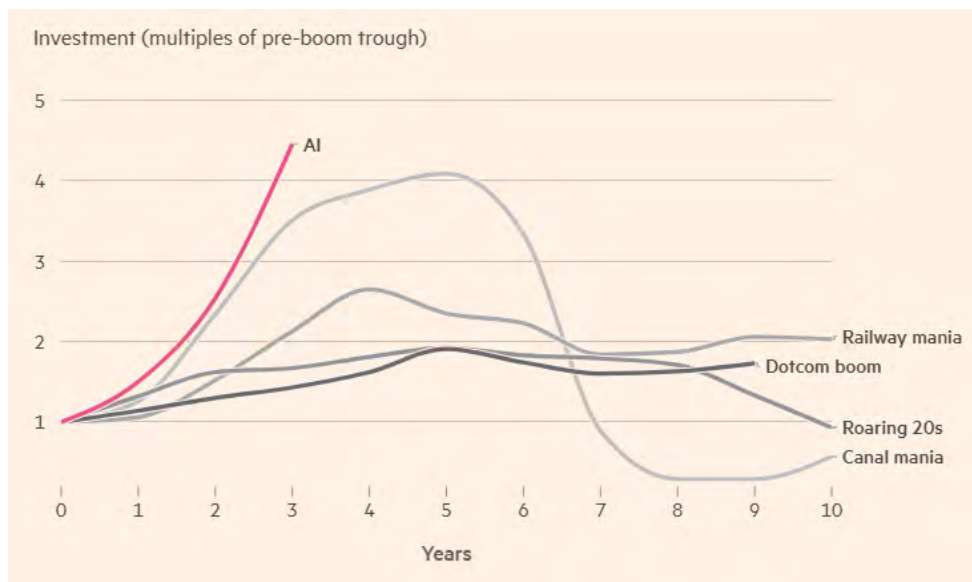
Since our last update, the CAPE ratio, a valuation metric that assesses whether a stock or market index is overvalued or undervalued, has risen to approximately 41.4. Since the late nineteenth century, the CAPE ratio has been higher than this level only for brief periods, most notably during the technology boom of the late 1990s. History shows that high valuations do not automatically lead to an immediate market decline.

Markets can remain expensive for long periods, and investor enthusiasm can last longer than many people expect. During Japan's market bubble in the late 1980s, the CAPE ratio reached 77. However, valuation levels often move back toward historical averages over time. Europe and Japan currently trade at CAPE ratios of 23.3 and 30.6, respectively, which appear more reasonable by comparison.

The central question, in our view, is not whether artificial intelligence is a transformative technology. The more difficult question is whether today's market prices for hyperscalers, semiconductor companies, and memory-chip manufacturers already reflect too much optimism about the future. The technology boom of the late 1990s offers an important lesson. Excitement about the internet drove valuations to extraordinary levels. Many companies disappeared, while others went on to become some of the most valuable businesses in the world. The lesson is clear: technological revolutions are real, but investors often have difficulty identifying which companies will capture the greatest long-term benefits.

Another concern in the current AI cycle is the scale of investment and sunk costs. Estimates suggest that AI-related capital spending could reach between \$3 trillion and \$5 trillion.³ Previous technological revolutions often led to periods of overinvestment. Railways in the nineteenth century, canals, highways, and internet infrastructure in the late 1990s all required enormous amounts of capital. In many cases, a large share of that investment was never recovered. The technology was valuable, but many investors underestimated how much money would ultimately be wasted.

A similar issue exists today. Hyperscalers and other technology companies are committing vast resources to building data centers. The Financial Times chart below⁴ highlights the current AI boom alongside previous periods of rapid capital spending.



But what happens if future AI models become much cheaper to develop and operate? If lower-cost large language models emerge and compete with today's leading systems, including possible alternatives from China, the economics of current data-center investments could change significantly. Another lesson comes from the history of initial public offerings (IPOs). Research by Professor Jay Ritter shows that IPOs have often underperformed the broader market over longer periods. One possible explanation is that companies tend to go public during times of strong investor enthusiasm, when valuations and expectations are especially high. History provides several examples. Apple went public during the excitement of the 1980s. Many technology companies were listed during the Internet boom of the late 1990s. Blackstone went public shortly before the global financial crisis. Today, investors are closely watching several potential AI-related listings, including SpaceX, Anthropic, and OpenAI. Whether these companies become examples of lasting technological value or symbols of excessive enthusiasm will only become clear with time.

This does not mean artificial intelligence will fail. Rather, it suggests that the benefits of a technological revolution may not be distributed evenly across all companies. Some firms may justify today's valuations through genuine innovation and productivity gains. Others may discover that expectations were simply too high.

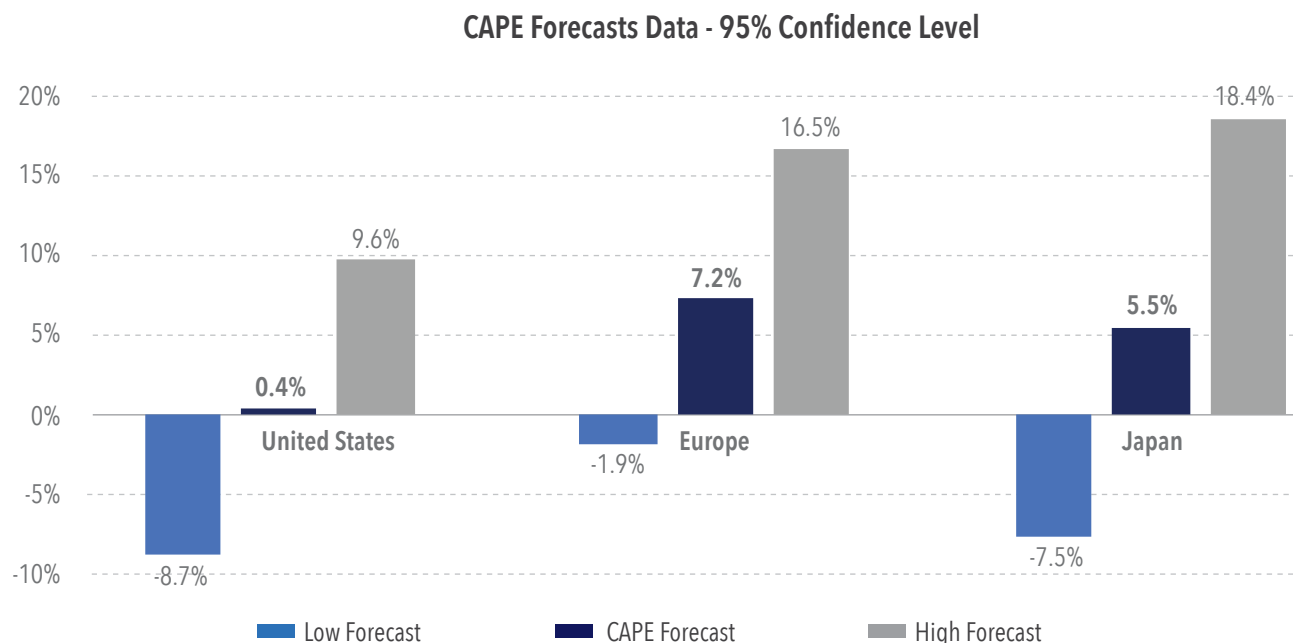
For investors, the challenge is not to dismiss the AI story. The challenge is to recognize the difference between technological progress and investment returns. The two are related, but they are not the same. As history repeatedly shows, markets are influenced by stories. These narratives can create extraordinary optimism, but sentiment can change quickly. As a result, disciplined investors may want to focus on valuation, diversification, and opportunities where expectations remain more reasonable.

Sources:

1. WSJ: "Crazy Rich Returns Lure Cabbies and Even Kids to Red-Hot Asian Markets", June 2026.
2. Conversation with Laurence Black, June 17th 2026.
3. FT: "Absolutely Immense, the companies on the hook for the \$3 trillion AI building boom". May 2026 and "AI's \$5 Trillion Cost Needs Every Debt Market, JPMorgan Says". November 2025.
4. FT: "AI 'exuberance' risks ending in lengthy investment bust, BIS warns". June 2026.

Key Findings: Our Forecasts based on the CAPE Ratio

These forecasts are presented in local currencies and show nominal returns. We also provide a 95% prediction interval to illustrate the uncertainty surrounding these forecasts. We use established methods to estimate future returns, but financial markets are highly unpredictable. As a result, forecasting remains difficult. Unexpected events can also affect outcomes and may cause actual results to differ from our estimates, either positively or negatively.



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

A Note About Forecasting

These forecasts are long-term annualized estimates based on a 10-year horizon. They are intended to provide a framework and guide investors around strategic equity allocations. They are not intended for those seeking to time markets or obtain short- to medium-term forecasts, as short-term forecasts are unreliable. All forecasts are shown as nominal annualized total returns in local currencies and should be viewed as a guide rather than a precise prediction. These forecasts do not attempt to measure the impact of unique events such as COVID-19, political developments, or changes in monetary policy. This is not because those factors are unimportant, but because their effects are difficult to estimate without relying on speculation. We also provide forecast ranges using 95% prediction intervals to show the uncertainty surrounding our estimates. Readers should remember that some uncertainty cannot be measured. Certain risks and future developments are simply unknown. For example, some would argue that the upper bound for the ten-year annualized return for Japan in the preceding table is too high, based on their knowledge that the investors in Japan have learned their lesson from the 1980s-1990s and will not overprice markets that much again. It is impossible to be sure one way or the other whether this “knowledge” is correct since it relies on human judgment about people’s thinking.

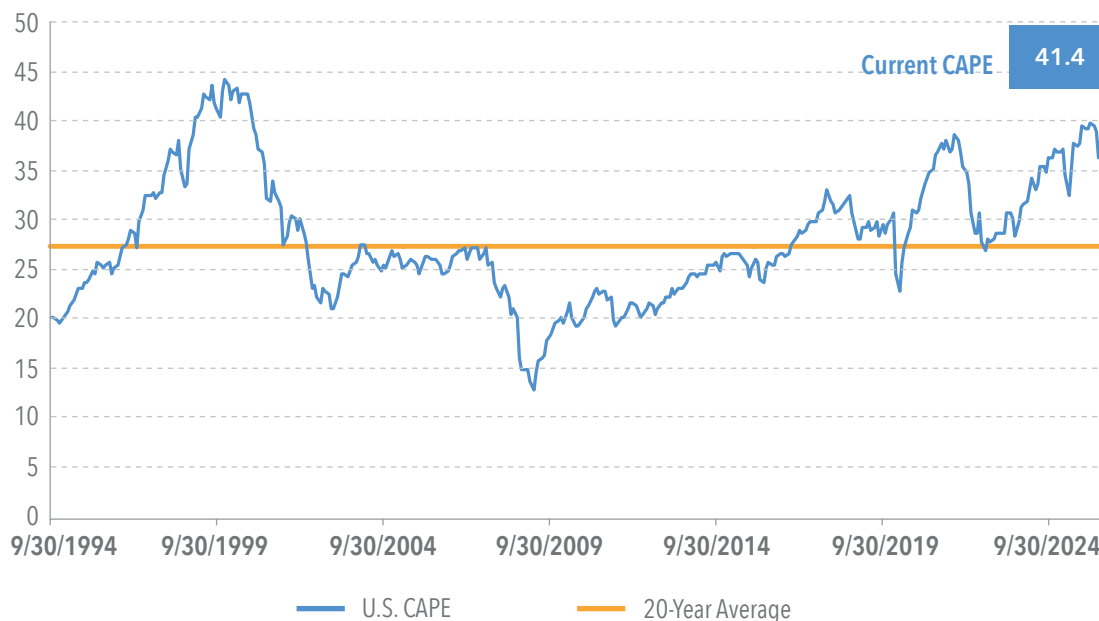
United States - Forecasts Based on the S&P 500 Index

The U.S. CAPE ratio is 41.4, one of the highest levels ever recorded. Based on our model, the expected 10-year annualized nominal total return is 0.4%. Returns for the S&P 500 Price Return Index are expected to be below zero. We also provide forecast ranges for U.S. returns. Professor Shiller worked with Barclays to create the Shiller Barclays CAPE Family of Indices. These value-oriented indices seek to identify potentially undervalued sectors and stocks using the CAPE ratio. These indices aim to earn a long-term value premium. While past performance is not guaranteed, if an investor purchased a value-based index and held this for the long term, they may generate 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)	0.4%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	9.6%
Lower Range of Expected Nominal Total Returns* (95% Confidence Level)	-8.7%
Approximate Expected Nominal Price Returns* (S&P 500 Price Return Index)	Less than zero

*using the CAPE Ratio

Historical U.S. CAPE Ratio



Europe – Forecasts Based on the MSCI Europe Index

The CAPE Ratio for Europe is 23.3 and the expected 10-year annualized nominal total return is 7.3% as of the end of this quarter. Price returns for the MSCI Europe Price Return Index are forecast to be around 4.5% when we subtract the historical dividend yield and assume this holds true for the next 10 years. We also show ranges for European returns.

EUROPE FORECAST RETURNS	EXPECTED ANNUALIZED RETURNS
Expected Nominal Total Returns* (MSCI Europe Total Return Index)	7.3%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	16.5%
Lower Range of Expected Nominal Total Returns* (95% Confidence Level)	-1.9%
Approximate Expected Nominal Price Returns (MSCI Europe Price Return Index)	4.5%

*using the CAPE Ratio

Historical Europe CAPE Ratio



Japan - Forecasts Based on the MSCI Japan Index

The CAPE Ratio for Japan is 30.6 and the expected 10-year annualized nominal total return with the CAPE Ratio is 5.5%. Price returns for the MSCI Japan Price Return Index are forecast to be 3.7%, again we subtract the historical dividend yield from Bloomberg and assume this holds for the next 10 years. We also show ranges for Japanese returns. Note our forecasts include the bubble period in Japan in the 1980's and this may overstate some of the numbers.

JAPAN FORECAST RETURNS	EXPECTED ANNUALIZED RETURNS
Expected Nominal Total Returns* (MSCI Japan Total Return Index)	5.5%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	18.3%
Lower Range of Expected Nominal Total Returns * (95% Confidence Level)	-7.5%
Approximate Expected Nominal Price Returns (MSCI Japan Price Return Index)	3.7%

*using the CAPE Ratio

Historical Japan CAPE Ratio



Approach to Forecasting

We outline our approach to forecasting in this section. Firstly, we predict the nominal total returns based on the CAPE Ratio, which was developed by Robert Shiller and John Campbell in their paper *"Stock Prices, Earnings and Expected Dividends."* To create our forecasts, we examine the relationship between current CAPE levels and the nominal returns that followed over the next ten years. We also provide forecast ranges for each market to highlight the uncertainty that exists around all forecasts.

In the third edition of *Irrational Exuberance*, Professor Shiller noted that future returns are influenced not only by valuation measures such as the CAPE ratio, but also by long-term interest rates. Looking ahead, advances in the field of narrative economics may improve forecasting. As researchers gain access to larger collections of digital text and more powerful artificial intelligence tools, they may be able to better track how economic ideas spread through society.

These tools could help researchers measure public attitudes toward important economic themes, including pandemics, geopolitical risks, and climate change. Improved understanding of these narratives may eventually lead to more accurate forecasts and narrower prediction ranges. For now, however, we continue to rely primarily on the CAPE ratio as a tool for identifying whether markets appear overvalued or undervalued and for estimating potential long-term returns.

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