Quarterly Review and Outlook Using the CAPE Ratio

Q2 2024 – **Robert J. Shiller and Laurence Black**

Introduction

World stock markets continued their seemingly relentless rise over most of the quarter. The quarterly performance of global indices was the best in the last 5 years, driven by enthusiasm for artificial intelligence while the world economy continued to hum along.

The strong AI narrative continued for most of the quarter. AI companies and start-ups were hot, and areas tangential to AI were of interest to investors. Nvidia continued its stunning performance and, according to the Financial Times*, it added over a trillion dollars in market cap over this quarter. This excitement over Nvidia reminds Prof. Shiller of the excitement over other technological boom periods; for example, in the 1920s, when people were excited by radio, RCA was the big tech stock of the day.

However other members of the Magnificent Seven struggled in the first two months of the year. Tesla was down by over a quarter in the last three months. Apple's performance was held back by fines in Europe and disappointing news about its car product.

Excitement over new technologies has driven the U.S. CAPE[1] ratio to over 34, this is one of the highest on record. The AI narrative has some similarities to the rallies of the 1920s and the dot-com boom, which both ended badly. We do acknowledge that some of the technology companies are producing solid earnings; however, when prices get too far ahead of earnings, there will eventually be a reckoning. We believe there's a good chance that U.S. stock market returns will be lower over the next decade than the last one.

In the U.S., some sectors that have received less investor attention remain cheap. We have been encouraging investors to diversify, and this quarter Europe and Japanese markets have outperformed U.S. markets and still have attractive CAPE ratios.

The U.S. economy has not fallen into a much-talked-about recession – inflation has actually risen slightly, and the labor market seems to be strong. The Fed has not cut rates yet and is expected to cut rates this summer. Given the strength of the economy, strong labor market, stubborn inflation and strong asset prices, we wonder if the market is premature in its hopes for rate cuts. Despite increased global conflict, the global economy has been solid, and we have seen a few countries begin to cut rates. With the level of uncertainty, we encourage investors to be diversified.

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*Source: FT AI boom drives global stock markets to best first quarter in 5 years. March 28, 2024. Magnificent 7 includes: Apple, Microsoft, Nvidia, Meta, Alphabet, Amazon and Tesla.

[1] The CAPE Ratio was developed by Robert Shiller and John Campbell in the late 1980s for forecasting 10-year equity market returns. John Y. Campbell and Robert J. Shiller, "Stock Prices, Earnings and Expected Dividends," Journal of Finance, 43:3, 661-76, July 1988.

Key Findings: Our Forecasts Based on the CAPE Ratio

The graph below highlights our 10-year annualized nominal forecasts using the CAPE Ratio for the three key regions. Japan has the highest expected annualized total returns at 7%[2], Europe is at 6.7%, and the United States comes in at 5.3%. Note these are in local currencies. These are nominal returns, and the equalization of expected returns between the United States and Europe is partly being driven by different inflation expectations. We use trailing OECD historical inflation numbers and include the Q4 2025 expected expectation numbers; for the U.S. this is 3%, for Europe this is 2.6%, and for Japan it is 1.2%. We show a range for a 95% confidence level 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. In addition, unforeseen events provide another layer of difficulty and can impact our forecasts in both a positive and a negative manner.

United States – Forecasts Based on the S&P 500 Index
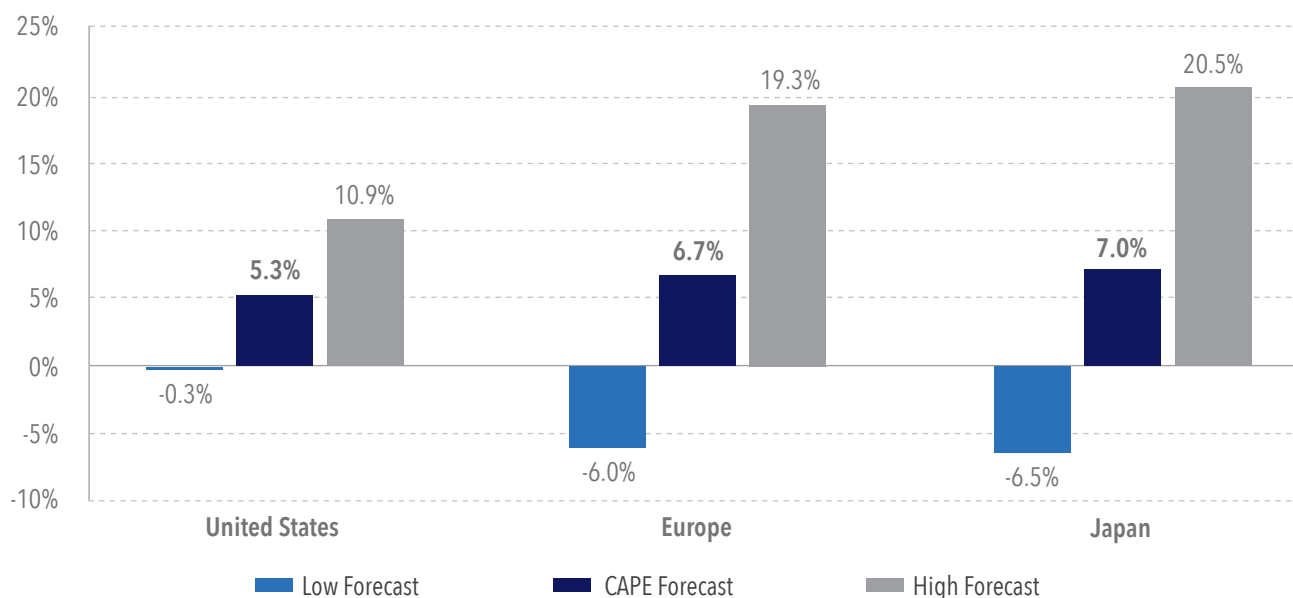
Source: Robert Shiller online data, MSCI and OECD.

A Note About Forecasting

These are annualized long-term forecasts with a horizon of 10 years. These forecasts 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. The forecasts are presented as nominal total annualized returns in local currencies and are presented as a guide only. The forecasts make no attempt to judge the impact of one-of-a-kind transient factors like COVID-19, political changes, or monetary policy changes, not because these are not potentially important, but because we are not able to quantify them without guesswork. We also are showing ranges here (95% confidence levels) to give some indication of the uncertainty around our forecasts. The reader must bear in mind that confidence levels intervals are hampered by fundamental epistemic uncertainty which is unquantifiable. For example, some would argue that the upper bound for the 10-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.

[2] Note our forecasts include the bubble period in Japan in the 1980s, and this may overstate some of the numbers.
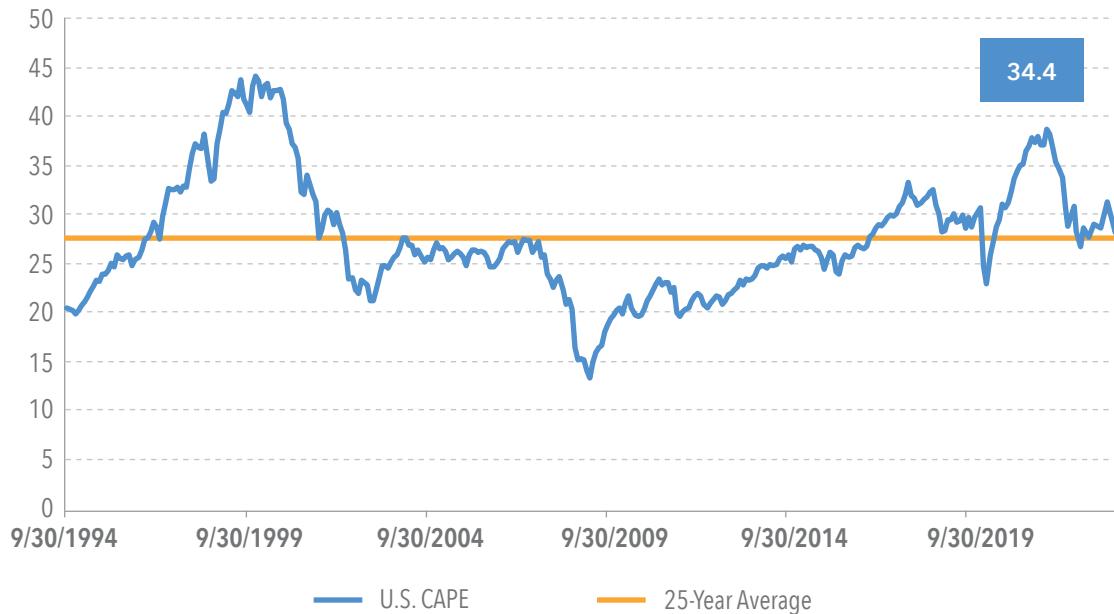
United States – Forecasts Based on the S&P 500 Index

The CAPE Ratio for the United States is 34.4 and the expected 10-year annualized nominal total return is 5.3%. Returns for the S&P 500 Price Return Index are expected to be around 3.2%; here we subtract the average historical dividends of 2.1%. We also show ranges for U.S. returns. Prof. Shiller created a series of value-based indices with Barclays, namely the Shiller Barclays CAPE Family of Indices, which seeks to identify undervalued sectors or 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)	5.3%
Approximate Expected Nominal Price Returns (S&P 500 Price Return Index)	3.2%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	10.9%
Lower Range of Expected Nominal Total Returns* (95% Confidence Level)	-0.3%

*using the CAPE Ratio

United States – Historical CAPE Ratio

## Europe – Forecasts Based on the MSCI Europe Index

The CAPE Ratio for Europe is 20.1, and the expected 10-year annualized nominal total return is 6.7% as of the end this quarter. Price returns for the MSCI Europe Price Return Index are forecast to be around 3.2%, 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)	6.7%
Approximate Expected Nominal Price Returns (MSCI Europe Price Return Index)	3.2%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	19.4%
Lower Range of Expected Nominal Total Returns* (95% Confidence Level)	-6%

*using the CAPE Ratio

Europe – Historical CAPE Ratio

Japan – Forecasts Based on the MSCI Japan Index

The CAPE Ratio for Japan is 25.7, and the expected 10-year annualized nominal total return with the CAPE Ratio is 7%. Price returns for the MSCI Japan Price Return Index are forecast to be 4.8%; 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 1980s, and this may overstate some of the numbers.

JAPAN FORECAST RETURNS	EXPECTED ANNUALIZED RETURNS
Expected Nominal Total Returns* (MSCI Japan Total Return Index)	7%
Approximate Expected Nominal Price Returns (MSCI Japan Price Return Index)	4.8%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	20.5%
Lower Range of Expected Nominal Total Returns * (95% Confidence Level)	-6.5%

*using the CAPE Ratio

Japan – Historical CAPE Ratio

Japan CAPE   25-Year Average
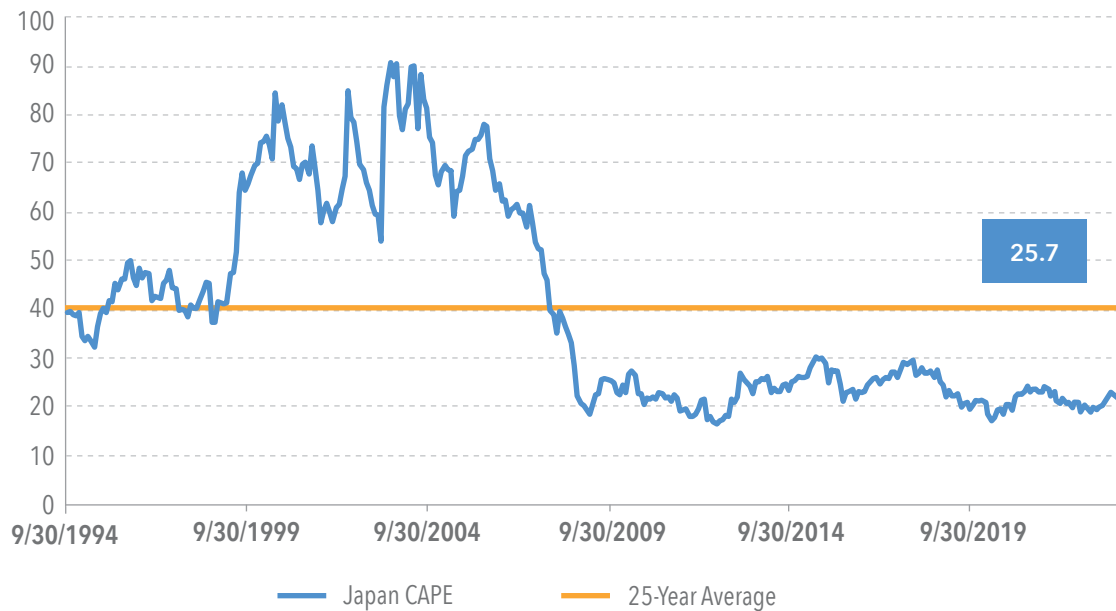
Approach to Forecasting

We outline our approach to forecasting in this section. Firstly, we predict the expected real 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 10-year real returns on the prevailing CAPE level and a real-long-term interest rate, and then we project returns based on the plane of best fit. These are then converted to nominal returns using average inflation rates from the OECD from 2017 to Q4 2023, which includes historical and forecast inflation rates from the OECD. We also show ranges for each country's forecasted returns to indicate the uncertainty around our forecasts.

Prof. Shiller noted that returns are influenced both by the CAPE and an estimated real long-term interest rate in the third edition of *Irrational Exuberance*. Given that interest rates are unusually low by historical standards, we also produce a third forecast of excess equity returns over bonds where we regress excess equity returns, the CAPE Ratio as well as the prevailing level of interest rates. Some commentary has noted that higher CAPE Ratios may be justified by low rates.

We expect that in years to come the science of narrative economics, with the expansion of our use of digitized text and artificial intelligence to look for specific indicators of public spreading of ideas, will be used to narrow our prediction intervals. They may be able to develop time series of evidence on how the public will be thinking about multiple relevant economic narratives, such as about the intense COVD-19 pandemic narrative with its politicized connection to other narratives, or about the prospects for world war, or about climate change, to improve our forecasts of economic variables. At this juncture, however, we use the CAPE ratio suggesting overpricing or underpricing to help us predict the markets.

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