Quarterly Review and Outlook Using the CAPE Ratio

Q1 2024 – **Robert J. Shiller and Laurence Black**

Introduction

Equity markets were "exuberant" in Q4 2023 led by U.S. benchmarks, driven by expectations of the Fed cutting rates as inflation moderated. The S&P 500 PR index ended 2023 up 24.2%; however, it is worth remembering that the U.S. markets don't always perform the best, and positive returns can come from other regions. Japan on a price return basis was up 20.7% and Europe also had a solid year at 20.6% price return. We have been urging diversification and these numbers show the value of this.

We have discussed the AI narrative and the enthusiasm for it. U.S. equity returns have been driven by big-tech companies linked to AI to the extent that the so-called Magnificent 7[1] now accounts for almost 30% of the S&P 500. The AI narrative itself need not predict a brilliant future for these companies. Recall the weak performance in recent decades of the former tech giants Remington Rand (maker of the Univac computer starting 1951) or International Business Machines (maker of the first mainframe computer IBM System/360 starting in 1964). Investors should have suspected that buying these magnificent stocks was not the same thing as buying the future of technology; these stocks have had their ups and downs. But this time around, the experience of experimenting with ChatGPT and other chatbots created an emotionally arousing and contagious narrative about the glamorous future of these seven companies.

In terms of valuations with a U.S. CAPE[2] ratio of 31.7, this is in the 95th percentile of historical CAPEs since 1988 and may indicate some froth. This is evidenced by the S&P 500 Index PE ratio, which is 23.8. The Magnificent 7 has a combined PE of 36.5 and the remaining 493 stocks have a PE of just 21.

The European CAPE at 20.1 and Japanese CAPE at 22.2 ratios look more in line with historical norms. These are 58th and 16th percentiles in terms of historical numbers.

The global economy has ended 2023 in solid shape despite two wars, bank failure and fears of a U.S. recession at the beginning of the year. There is a great deal of uncertainty going into 2024 – typically U.S. equity markets do well in an election year. Additionally, there is almost $6 trillion[3] in money markets that have been yielding substantially higher than they have for the last decade. If this money were to be deployed into other asset classes, this could drive returns.

Set against this, is that equity valuations are frothy with double digit rises in equity markets since November. Many people are forecasting a mild slowdown in GDP across most countries, but not falling into negative territory.

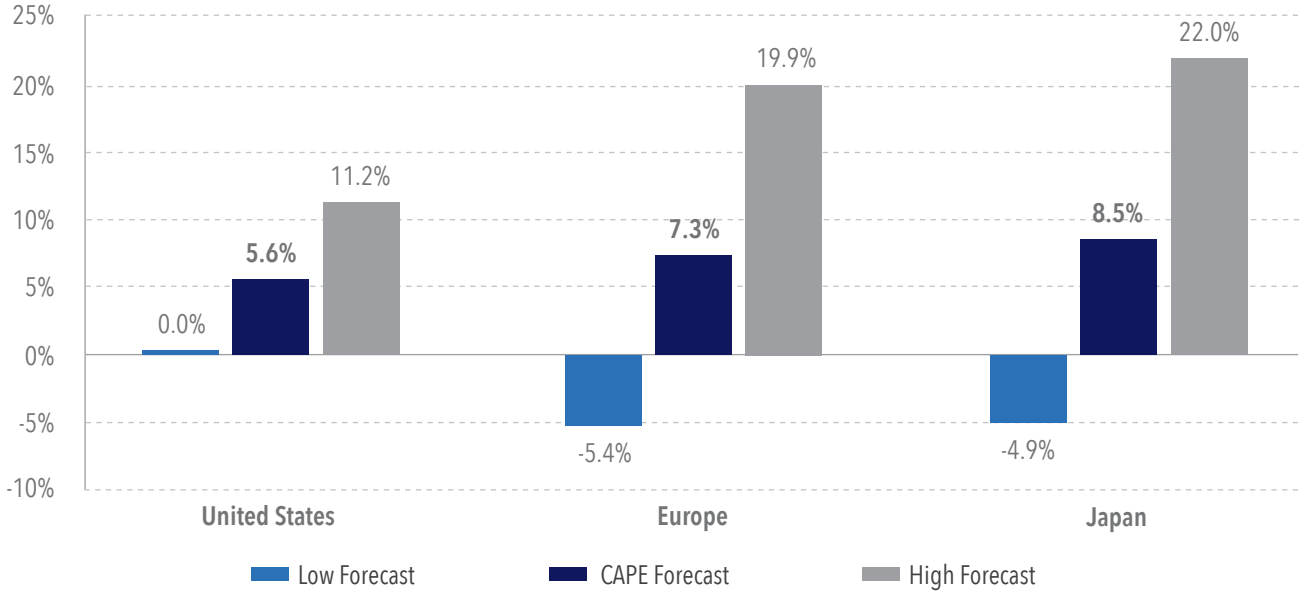
Market participants expect the Fed to cut interest rates, but with the U.S. economy seemingly on a sound footing with perhaps a mild slowdown, but not a recession, how much will the Fed cut? Perhaps market participants have got ahead of expecting a slew of rate cuts. From a behavioral point of view, we think the Fed may not want to revert back so quickly to an era of extremely low interest rates again that distorted markets from 2009 to 2021.

[1] Magnificent 7 includes: Apple, Microsoft, Nvidia, Meta, Alphabet, Amazon and Tesla.
[2] 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.
[3] Reuters, "A $6 trillion cash hoard could fuel more U.S. stock gains as Fed pivots," Dec. 14, 2023.

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 8.5%[4], Europe at 7.3%, and the United States comes in at 5.6%. 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%, 2.6% for Europe 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: Data 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.

[4] Note our forecasts include the bubble period in Japan in the 1980s, and this may overstate some of the numbers.

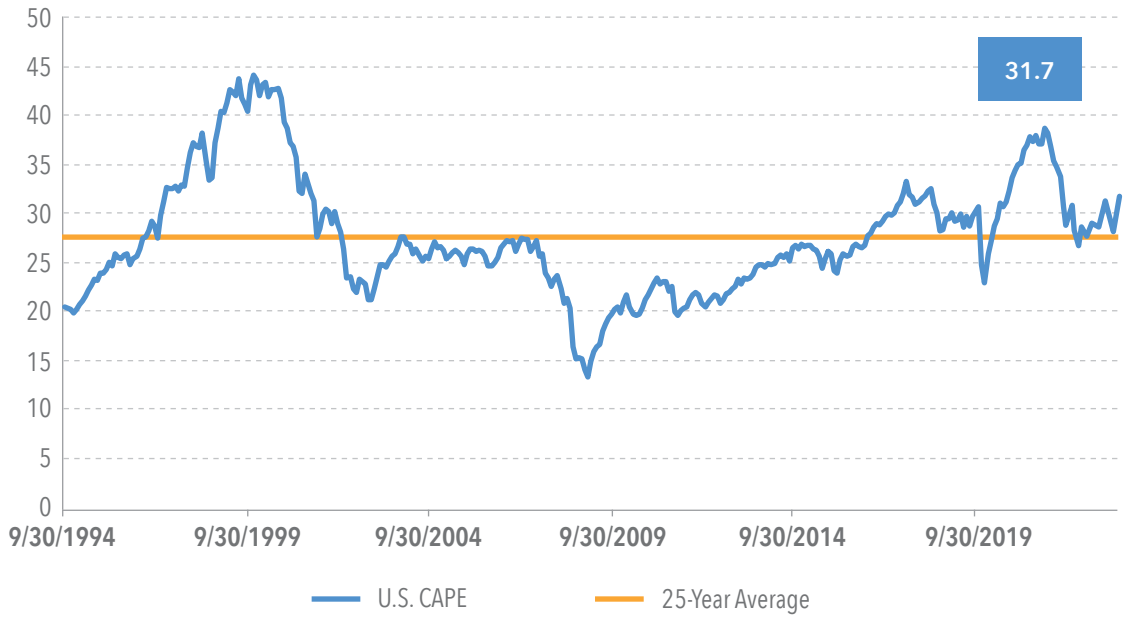
United States – Forecasts Based on the S&P 500 Index

The CAPE Ratio for the United States is 31.7, and the expected 10-year annualized nominal total return is 5.6%. Returns for the S&P 500 Price Return Index are expected to be around 3.5%, when we subtract the average historical dividends of 2.1%. We also show ranges for U.S. returns. Professor Shiller created a series of value-based indices with Barclays, namely the Shiller Barclays CAPE Family of Indices, which seek 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)	5.6%
Approximate Expected Nominal Price Returns (S&P 500 Price Return Index)	3.5%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	11.2%
Lower Range of Expected Nominal Total Returns* (95% Confidence Level)	0%

*using the CAPE Ratio

United States – Historical CAPE Ratio



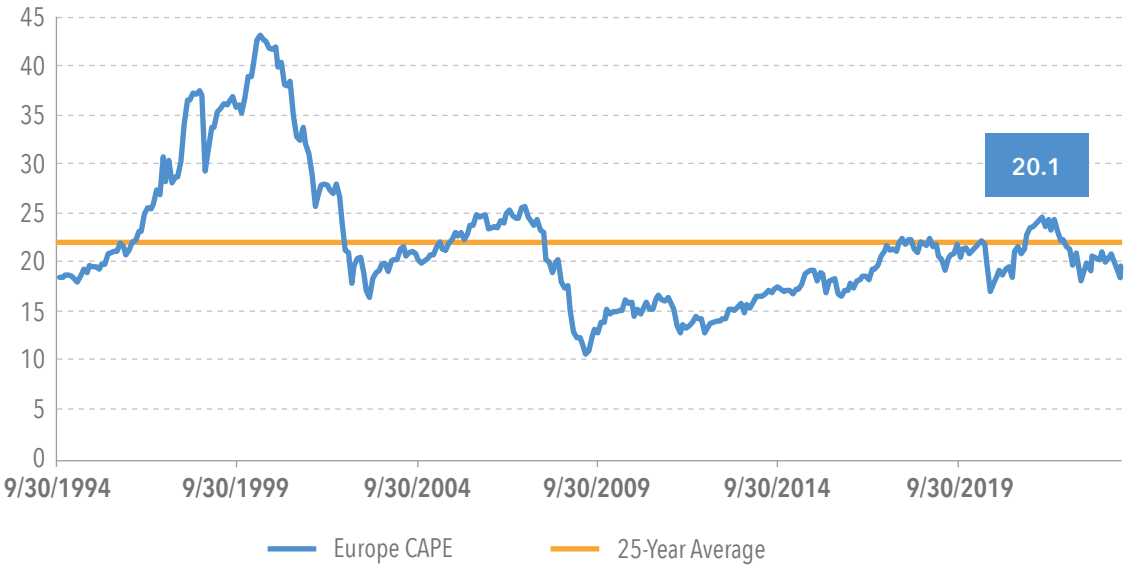
Europe – Forecasts Based on the MSCI Europe Index

The CAPE Ratio for Europe is 20.1, and the expected 10-year annualized nominal total return is 7.3% as of the end of Q4. Price returns for the MSCI Europe Price Return Index are forecast to be around 4.1%, 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%
Approximate Expected Nominal Price Returns (MSCI Europe Price Return Index)	4.1%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	19.9%
Lower Range of Expected Nominal Total Returns* (95% Confidence Level)	-5.4%

*using the CAPE Ratio

Europe – Historical CAPE Ratio



Japan – Forecasts Based on the MSCI Japan Index

The CAPE Ratio for Japan is 22.2, and the expected 10-year annualized nominal total return with the CAPE Ratio is 8.5%. Price returns for the MSCI Japan Price Return Index are forecast to be 6.3%; 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)	8.5%
Approximate Expected Nominal Price Returns (MSCI Japan Price Return Index)	6.3%
Upper Range of Expected Nominal Total Returns* (95% Confidence Level)	22%
Lower Range of Expected Nominal Total Returns * (95% Confidence Level)	-4.9%

*using the CAPE Ratio

Japan – Historical CAPE Ratio

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.

Professor Shiller noted that returns are influenced both by the CAPE and an estimated real long-term interest rate in the 3rd 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.

With the expansion of our use of digitized text and artificial intelligence to look for specific indicators of public spreading of ideas, we expect that in years to come, the science of narrative economics 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.