EQUITIES | IN DEPTH

The Art and Science of Forecasting Equity Returns

In today’s uncertain environment, which fundamental market factors may aid us in navigating the investing landscape? Which historically have been relatively reliable predictors of future returns?

DEEPER ANALYSIS OF INVESTMENT TRENDS AND TOPICS

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Key Insights

» As we face more challenging times ahead, which of our “Four Pillar” factors have been the strongest predictors of equity returns, and which have been less effective? In this report, we share the indicators that we have found to be most reliable in our investment process.

» While economic and trade-related risks are rising, our “Four Pillar” methodology results continue to signal that long-term investors should remain invested near their strategic asset allocation targets for most equity classes.

» We prefer to use a combination of factors as we forecast future equity target prices and returns, but our favored factors change over time. We regularly review our models to assess which factors are working best to predict future performance.

» The investment landscape is increasingly unpredictable. In order to remain nimble, we will regularly review our tactical guidance and forecasts and guide equity rebalancing, based on our Growth, Value, Quality, and Economic Pillar signals.

Predicting the future direction of equity markets is both art and science. Investment and economic professionals use many indicators to estimate future performance (over the next 1, 3, 5, or 10 years). In 2013, Yale University Professor Robert Shiller won the Nobel Prize in Economic Sciences partially based on his research on market-based valuation indicators. Robert Shiller developed the Cyclically Adjusted P/E Ratio (CAPE Ratio)—also called the Shiller P/E Ratio and P/E 10 Ratio. This well-known market valuation metric uses average, inflation-adjusted earnings per share (EPS) over a 10-year period (that is, “real” EPS, rather than nominal EPS) to compare to the equity index price. Simply put, it uses 10-year smoothed real earnings at the equity index level to eliminate fluctuations caused by the typical business or economic cycle.
The CAPE Ratio for the S&P 500 Index has varied from a low of 4.8 in December 1920 to a high of 44.2 in December 1999. As of July 31, 2019, this ratio’s average was 30.3 (based on the past 10 years of inflation-adjusted earnings versus the S&P 500 Index price). In July 2014, it was 25.8. Knowing that the typical CAPE Ratio average has been in the range of 16-17x (depending on the time period selected) would have suggested that the S&P 500 Index was significantly overvalued in July 2014. This would imply that investors using only this ratio to evaluate U.S. large-cap valuations may have chosen to be underweight the S&P 500 Index based on the ratio 5 years ago (and today). Yet, the S&P 500 Index has risen by 8% per annum over the past 5 years.

**Chart 1. The CAPE Ratio**

Sources: Professor Robert Shiller of Yale University, Wells Fargo Investment Institute (WFII), as of August 16, 2019. Standard Deviation is a statistical measure of the volatility of a portfolio’s returns. The higher the standard deviation, the greater volatility has been.
What does this tell us? While we find the CAPE Ratio to be insightful, we believe that a single indicator or a single valuation metric is not the best methodology to use for predicting future S&P 500 Index returns. Rather, our research shows that a multi-factor method is more useful. Instead of simply relying on the past 10 years of inflation-adjusted earnings growth, we consider other drivers of equity class performance, including future earnings growth and current valuation (using multiple corporate fundamentals), along with the quality of earnings and economic indicators. Our philosophy does not rely solely on a single valuation metric; instead, we use a Four Pillar methodology (see Chart 2).

**Our Four-Pillar methodology**

We believe that a multifactor methodology offers increased explanatory and predictive capability—and more flexibility—than a single-factor approach to forecasting equity returns. It also allows the investor to incorporate views on growth, economic outcomes, and what could be driving equity pricing in the current market environment.

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**Chart 2. Our four-pillar philosophy: No single factor style consistently predicts performance**

**Economic Pillar**

These measures help to forecast equity market performance. Examples include: consumer price index (CPI), industrial production growth, yield curve shifts, unemployment rates, and the balance of trade.

**Quality Pillar**

Accurately reflects equity index-level current and past operating performance (including profitability, predictability of EPS or cash flow growth, and debt or leverage position)—and may be indicative of future operating performance. It may be a reliable index-level measure of quality for the market regardless of the level of earnings.

**Value Pillar**

Considers the premium or discount that is associated with the equity market and relative to other markets.

**Growth Pillar**

Attempts to identify equity markets with above-average growth prospects and with growth potential that is not reflected in the current index-level price.

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**Conclusion:** We believe that a systematic methodology can more consistently predict equity market returns.

In this report, we analyze several Growth, Value, and Quality Pillars to determine which have been predictive as leading indicators of expected benchmark equity index returns over the next 12 months (NTM). We also have our eyes on the factors in our Economic Pillar to determine what signals they are providing late in the expansion cycle. Table 1 shows a sample of the Pillar metrics that we use to help prepare our market outlook and guidance.

### Table 1. A sample list of the Growth, Value, Quality, and Economic Pillar metrics currently in focus

<table>
<thead>
<tr>
<th>Growth Factors</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Revision Ratio</td>
<td>The three month change in consensus forecast for fiscal year 1 and fiscal year 2 estimates divided by the consensus forecast change rate over the past six months.</td>
</tr>
<tr>
<td>Forecast Earnings Per Share (Next 12 Months)</td>
<td>Estimated operating profits for the next 12 months (NTM).</td>
</tr>
<tr>
<td>Earnings Per Share Growth Trend</td>
<td>The earnings growth trend is calculated as the (growth) rate of change of the NTM forecast earnings per share (EPS) relative to the growth rate over the past three years.</td>
</tr>
<tr>
<td>Dividend Growth Trend</td>
<td>The dividend growth trend is calculated as the (growth) rate of change of the NTM forecast dividend yield relative to the growth rate over the past five years.</td>
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<tr>
<th>Value Factors</th>
<th>Definitions</th>
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<tbody>
<tr>
<td>Price to Free Cash Flow (P/FCF) Ratio</td>
<td>The Price-to-Free Cash Flow Ratio is a valuation method used to compare a company’s current share price to its per-share free cash flow. Free cash flow is the amount of cash generated by a company in one year after subtracting short-term and long-term investments in the company, expenses, and taxes.</td>
</tr>
<tr>
<td>Forward Price/Earnings (P/E) Ratio</td>
<td>The Forward P/E Ratio (or forward price-to-earnings ratio) divides the current share price of a company by its estimated future (“forward”) EPS.</td>
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<tr>
<td>Enterprise Value to EBITDA Ratio</td>
<td>The Enterprise Value to EBITDA (earnings before interest, taxes, depreciation, and amortization) Ratio is calculated by dividing a company’s enterprise value (market capitalization + preferred shares + minority interest + debt - total cash) by its EBITDA.</td>
</tr>
<tr>
<td>Forecast Total Yield</td>
<td>The Forecast Total Yield is a valuation indicator that measures the combined total of the forecasted dividend yield plus the buyback yield. The buyback yield divides the amount of outstanding shares repurchased (through a share buyback) by the existing market capitalization of a company. Dividend yield measures the amount of income a stock generates; the higher the yield, the greater the anticipated income. It should not be relied upon as a measure of the performance a portfolio or stock might achieve.</td>
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<th>Quality Factors</th>
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<tbody>
<tr>
<td>Return on Equity</td>
<td>The Return on Equity (ROE) Ratio is a company’s net income divided by its average stockholder’s equity. It is a profitability ratio that measures the ability of the company to generate profits from its shareholders’ investments in the company. It shows how much profit each dollar of common stockholders’ equity generates.</td>
</tr>
<tr>
<td>WFII Company Quality Score (CQS) Leverage Ratio</td>
<td>The CQS Leverage Ratio measures a firm's ability to pay current obligations and service its long-term debt.</td>
</tr>
<tr>
<td>Earnings Estimate Dispersion</td>
<td>Earnings Estimate Dispersion measures the distance between the distribution of analyst estimated earnings for the next two fiscal years.</td>
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<tr>
<td>Cash Flow to Return on Assets</td>
<td>The Cash Flow to Return on Assets is calculated as cash flows from operations (CFO) divided by total assets. This factor measures how efficiently a firm uses its assets to generate cash flow.</td>
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<td>Industrial Production Growth</td>
<td>This is the 12-month change in trailing Industrial Production, as measured by the Federal Reserve.</td>
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<tr>
<td>Exchange Rate</td>
<td>This measures the 9-month change in the U.S. dollar spot currency rate versus the trade-weighted broad foreign exchange basket (as measured by the U.S. Dollar Index, or DXY).</td>
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<tr>
<td>Energy Prices</td>
<td>This is the 12-month change in the monthly average price for West Texas Intermediate (WTI) crude oil.</td>
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<tr>
<td>Inflation Expectations</td>
<td>This measure of future inflation expectations is the 12-month forward Consumer Price Index (CPI), as provided by the Federal Reserve Bank of Philadelphia.</td>
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Predicting S&P 500 Index returns—Indicators that appear to be less reliable

There are several indicators that we found do not reliably predict future S&P 500 Index performance over a one-, three-, or five-year outlook. For example, our research shows that the Forward P/E (price-to-earnings) ratio—using estimated earnings from “The Street” (Wall Street) forecasters—does not reliably predict future S&P 500 performance in the short or longer term. We found that a “consensus” Forward P/E ratio does not predict future S&P 500 performance for either the next 6 or 12 months (1 year) or 5-year holding periods (see Chart 3). There are several reasons why this may be the case. One reason could be the historically upward bias of analyst earnings forecasts.¹ Higher estimated earnings (the denominator of the P/E ratio) would mean that P/E valuation ratios appear lower than they actually are. Other factors that we have found to be less reliable in predicting future 12-month S&P 500 Index returns include the forecasted EPS, the EPS growth trend, analyst estimate dispersion, and the company quality score (CQS) leverage ratio, to name a few.

Pillar metrics that we find to be surprisingly resilient S&P 500 Index return predictors

We discovered that two of our Pillar metrics—one Growth and one Value—had the greatest predictive capability for predicting S&P 500 returns over the past 25-year period. These were the Price-to-Free-Cash Flow (P/FCF) Ratio and the Composite Revision Ratio. The Composite Revision Ratio (a Growth metric) looks at changes in “The Street’s” EPS forecasts for the next two fiscal years. When the Composite Revision Ratio is high and rising, then the S&P 500 Index historically has tended to appreciate over the next year (and vice versa). A higher Composite Revision Ratio essentially means that analysts expect improving profits for firms over the next two fiscal years.

Chart 3. 12-month “Street” forward P/E ratio has not reliably predicted future S&P 500 returns

Sources: Wells Fargo Investment Institute, Bloomberg, FactSet, IBES, monthly data as of July 31, 2019. YoY = year over year. An index is unmanaged and not available for direct investment. Past performance is no guarantee of future results.

The P/FCF Ratio (a Value metric) measures how much the market is willing to pay for businesses’ current free cash flow. Chart 4a suggests the S&P 500 Index is currently trading at 18 times a unit of cash flow. Valuation metrics like the P/FCF Ratio tend to be “mean-reverting.” Therefore, if the S&P 500 Index is trading at a low P/FCF Ratio, then the S&P 500 Index historically has tended to rise over the next 12 months (and vice versa). In other words, investors may be willing to pay a higher price for cash flow as the market is currently trading at a discount to the typical cash flow (and vice versa). Chart 4b illustrates that the P/FCF Ratio has a 0.44 correlation with future 12-month S&P 500 returns and is typically “leading” the future returns. When the P/FCF Ratio declines, the market tends to rise (and vice versa). Chart 4b shows a predictive relationship.

**Chart 4a. Price-to-Free-Cash Flow Ratio appears to have predictive S&P 500 capability**

**Chart 4b. Price-to-Free-Cash Flow Ratio shows a predictive relationship to future S&P 500 returns**

Sources: Wells Fargo Investment Institute, Bloomberg, FactSet, IBES, monthly data as of July 31, 2019. Past performance is no guarantee of future results.

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2 Mean reversion is the assumption that a fundamental factor, such as the P/FCF Ratio will tend to move to the average level over time. In other words, deviations from the average value level are expected to revert to the (mean) average level.
Why have we found the P/FCF Ratio to be historically reliable in predicting future S&P 500 returns?

We believe that there are two primary reasons for this. First, unlike earnings valuations, the calculation of free cash flow (and P/FCF) is much less ambiguous (given accounting practices for each). Second, during this economic cycle, companies have been deploying their high cash balances to buy back their equity shares. In the U.S. equity market, stock buybacks have fueled a large positive inflow of funds.

For example, approximately $800 billion worth of shares was purchased by S&P 500 companies in 2018 (a record amount). Year to date, we generally have seen strong share buyback activity continue. This matters, because the size of equity buybacks has exceeded both the amount of money entering the equity market from exchange-traded fund (ETF) purchases and the outflows from active equity mutual funds (see Chart 5). This buyback activity, therefore, has helped to fuel the continuation of the record U.S. equity bull market.

Chart 5. Free cash flow has helped companies to buy back stock—this has supported the U.S. market

Sources: Wells Fargo Investment Institute, ASR Ltd., S&P Dow Jones, Investment Company Institute, as of July 2019. ETF = exchange-traded funds.
Developed market equities: Combining Pillar metrics to develop price targets and guidance

Up to this point, we have discussed the predictive power in the Growth and Value Pillars. Our work with developed equity markets introduces a predictive factor from our Quality Pillar—cash flow to return on assets (ROA). This factor measures how efficient firms are at managing assets to generate cash. When we combine this measure with the Composite Revision Ratio (a Growth indicator) and Forward P/E Ratio (a Value indicator), we find what we believe is a strong, statistically significant, predictive model. The 3-factor model illustrated in Chart 6 shows the relationship between the predicted return of the combined 3 metrics with the actual return over the next 6 months. Similarly, this 3-factor combination successfully predicted the next 12 month return. The predicted return is suggesting that the MSCI EAFE Index will have a 6-8% price return over the next 6- to 12-month horizon. (The model has an R² of 0.44 when predicting 6-month returns for the MSCI EAFE Index of developed market stocks. An R² of 0.44 is a relatively strong measure.)

Chart 6. How does the MSCI EAFE return forecast compare with the actual annual return?

Source: Wells Fargo Investment Institute, August 16, 2019. The model is the fitted return from the regression model, estimated using 5.4 plus (1.0 times the Composite Revision Ratio) minus (0.5 times the Forward P/E Ratio) plus (55.8 times the Cash Flow to Return on Assets), as of July 31, 2019. An index is unmanaged and not available for direct investment. Past performance is no guarantee of future results.

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5 R-squared (R²) is a statistical measure that represents the proportion of the variance for a dependent variable that is explained by an independent variable or variables in a regression model. In other words, it shows how strong the “fit” of a model is. Results of above 0.25 to 0.30 (or 25% to 30%) are valid in this respect. An R² near zero would imply that those metrics have little to no correlations with future stock returns; that is, it would signify that the metrics are essentially useless. Alternatively, an R² of 1.00 would imply perfect correlation.
Predicting emerging market equity returns

We found Value metrics to be more helpful in predicting emerging market equity returns. After combining two Value Pillar metrics—the Forward P/E Ratio and Enterprise Value to EBITDA (earnings before interest, taxes, depreciation, and amortization)—with one Growth metric, the Earnings Revision Momentum indicator, we were able to predict next 12-month returns for the MSCI Emerging Markets Index with statistical significance. When we expanded our forecasting time horizon from one year to three years, a broader array of metrics in the Growth and Quality Pillars showed high correlations with predicted returns.

Investment implications

Each asset class has its own unique drivers that influence future returns. As we noted above, we do not believe in relying on only a single factor to forecast equity market index returns; instead, we use multiple factors. In addition, there are periods in which one factor may be better than another in predicting index returns (such as our current hypothesis that the Price-to-Free-Cash-Flow Ratio is a better predictor than the 12-month Forward P/E Ratio for the S&P 500 Index, while the 12-month Forward P/E Ratio is one of our favored metrics for predicting returns of the MSCI Emerging Markets Index today).

Our Pillar Methodology encompasses a full range of factors that help to drive our portfolio construction, tactical, and strategic investment decisions. We regularly review the toolbox of metrics to assess which are predictive in any given market environment—and how to combine metrics that are correlated with market returns to better estimate future returns for each equity class index.

Ms. Kaplan leads Wells Fargo Investment Institute’s (WFII) global equity strategy team, which sets investment strategy used by the investment professionals working on behalf of individual and institutional clients through Wells Fargo Wealth and Investment Management business units: Abbot Downing, Wells Fargo Advisors, Wells Fargo Asset Management, Wells Fargo Wealth Management, and WFII. Ms. Kaplan has 30 years of global investment industry experience focused on equity research, quantitative analysis, and portfolio strategy in global and domestic markets. She is based in New York.

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Mr. Wren produces strategy and guidance recommendations for global equities. Prior to joining Wells Fargo Advisors’ predecessor A.G. Edwards in 1998, Mr. Wren worked as a senior foreign exchange dealer for The Boatmen’s National Bank of St. Louis. He began his career on the trading floor of the Chicago Mercantile Exchange and has more than 30 years of experience in financial services. He is based in St. Louis.
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All investing involves risks including the possible loss of principal. Equity securities are subject to market risk which means their value may fluctuate in response to general economic and market conditions and the perception of individual issuers. Investments in equity securities are generally more volatile than other types of securities.

Investing in foreign securities presents certain risks not associated with domestic investments, such as currency fluctuation, political and economic instability, and different accounting standards. This may result in greater share price volatility. These risks are heightened in emerging markets.

Definitions

An index is unmanaged and not available for direct investment.

**U.S. Dollar Index** (USDX) measures the value of the U.S. dollar relative to majority of its most significant trading partners. This index is similar to other trade-weighted indexes, which also use the exchange rates from the same major currencies.

**MSCI EAFE Index** is designed to represent the performance of large and mid-cap securities across 21 developed markets, including countries in Europe, Australasia and the Far East, excluding the U.S. and Canada.

**MSCI Emerging Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets.

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