

Occam’s razor and portfolio rebalancing



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Having an approach to help forecast market returns is useful for investors, especially as they seek to address imbalances among asset classes following a year of significant runups in equity markets. One approach to forecasting market returns involves breaking down the sources of return into individual components. These components can be analyzed and forecasted separately, and then combined to provide an estimate for total returns of financial markets.

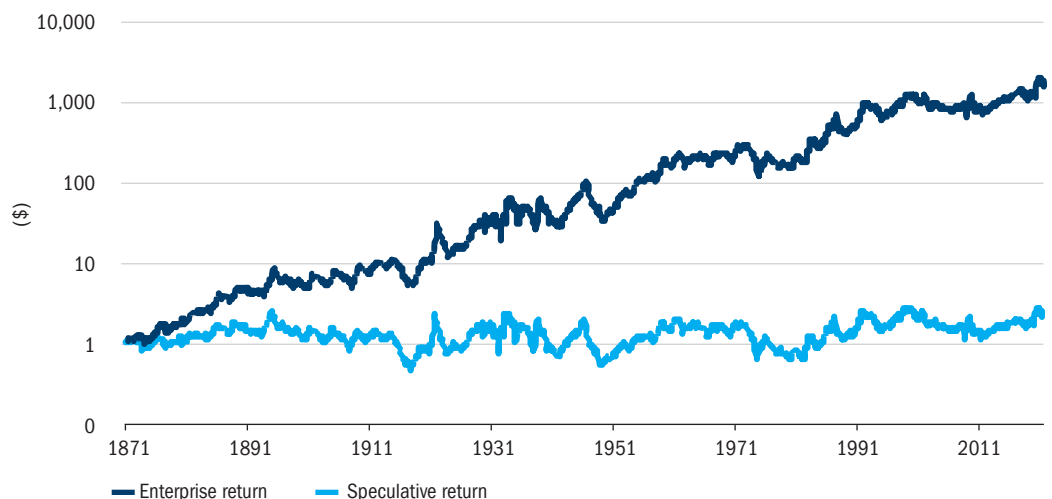
In this piece, we’ll review this “building blocks” model for deconstructing market returns and discuss how investors may use this approach for further research, analysis and portfolio reallocation.

Historical perspective to understand future expectations of return

In their 2015 paper, “Occam’s Razor Redux: Establishing Reasonable Expectations for Financial Market Returns,”¹ authors John C. Bogle and Michael W. Nolan describe a simple model for developing capital market expectations, looking at the sources that have driven the performance of stocks and bonds. Bogle was inspired by Keynes’ concepts of enterprise and speculation. “Enterprise” (or investment) refers to the actual business results of a corporation, whereas “speculation” is the changing price investors are willing to pay for a dollar of earnings.

This approach can be applied to analyzing the historical performance of the U.S. equity markets, which can then inform the capital markets assumptions that are used to rebalance portfolios.

Exhibit 1: Cumulative returns by component for the U.S. equity markets

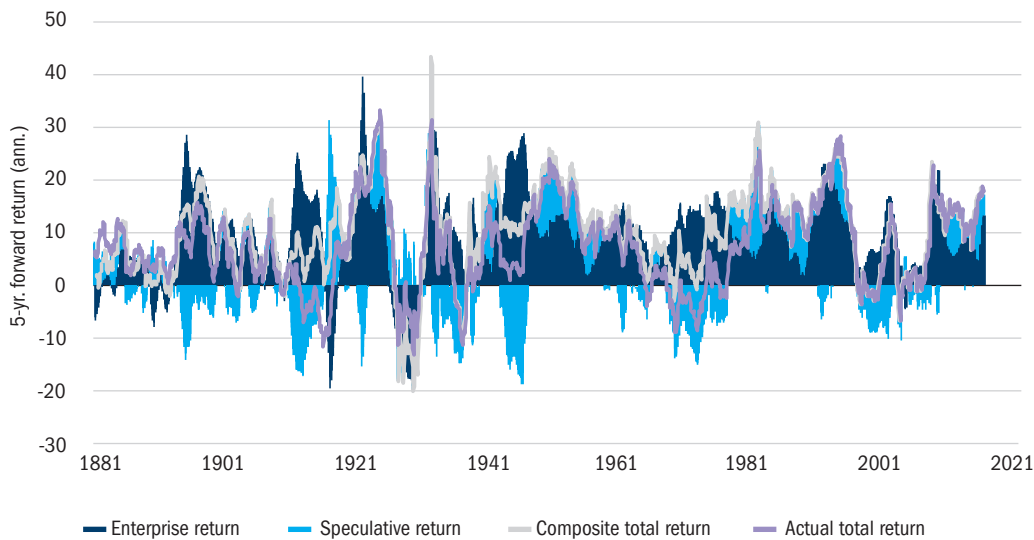


Source: Bloomberg, Shiller, Robert J. “U.S. Stock Markets 1871-Present and CAPE Ratio.” Online Data: Robert Shiller, 2021, Columbia Threadneedle Investments as of Dec. 31, 2021. **Past performance does not guarantee future results.** Indices shown are unmanaged and do not reflect the impact of fees. It is not possible to invest directly in an index.

The next step in this approach, after quantifying enterprise and speculation in the performance of U.S. equities, involves quantifying each of these components. According to the authors, speculative return can be represented by the expansion/contraction of the price-to-earnings (P/E) multiple. Investment return is captured by adding the dividend yield (i.e., income) at the beginning of the period and nominal earnings growth during the period.

When we apply these definitions to U.S. equities, we see that while speculative returns have recently been growing as a percentage of total return, the bulk of U.S. equity returns still comes from enterprise return (e.g., actual business results). Speculative returns have been more volatile compared with enterprise returns. In the runup to the dot-com bubble in 2000, equity returns fell sharply to zero. Enterprise returns fell to near zero levels, while the sharp price drops pushed speculative returns past the zero mark. Over the next decade, valuations continued to detract from equity returns until 2009–10, after the depths of the Global Financial Crisis. Since the crisis, growth has been positive in the U.S., as can be seen in the enterprise returns. Within enterprise returns, earnings growth is the most volatile component and has recently contributed significantly to the overall total return.

Exhibit 2: U.S. equities total return attribution



Note: Five-year smoothing has been applied when plotting five-year forward returns and the return components. All five-year numbers are computed using average annual returns.

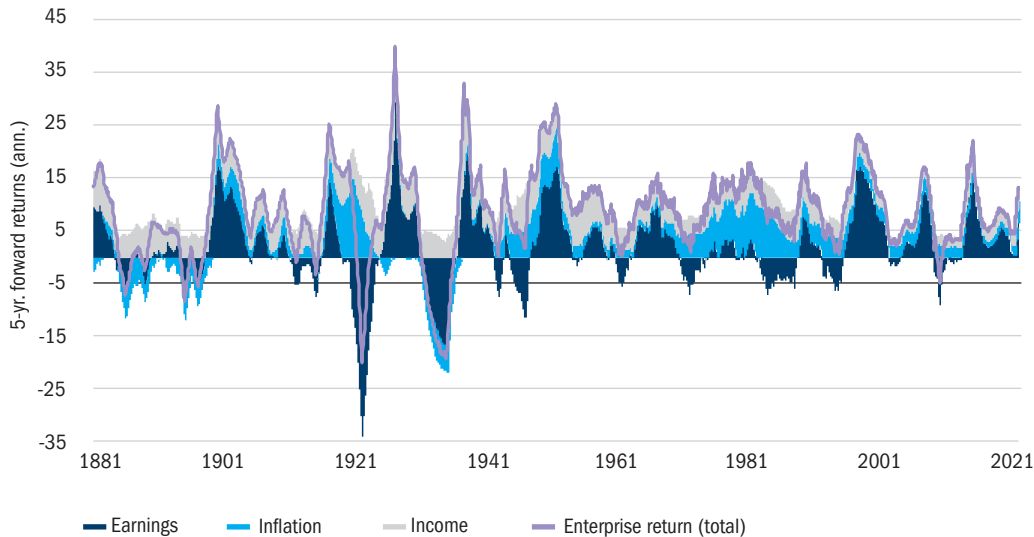
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Breaking down the drivers of return

While speculative return is difficult to decompose, enterprise return can be broken down further into individual drivers, which can be quantified and analyzed, including return from income (e.g., dividends) and return on earnings growth. The first component, income return, can be considered "carry" returns from the stock. Carry refers to the return (or cost) of holding the asset. In this case, by holding the stock, the investor may expect to receive a dividend payment (if the stock pays dividends). The second component, earnings growth return, captures the changes in the cash flow growth of the security. As a company's earnings rise, its stock price appreciates in value. Nominal earnings growth can be calculated by including inflation.

In forecasting expectations for these drivers, we rely on both historical returns and on related metrics that can inform those expectations. For example, for return from income, we can use mean reversion and long-term averages for dividend yield, which tend to stay constant. In forecasting earnings growth, we compute a separate forecast for U.S. GDP growth and estimate how this would translate to growth in corporate earnings.

Exhibit 3: U.S. equities enterprise returns attribution



Source: Bloomberg, Shiller, Robert J. "U.S. Stock Markets 1871-Present and CAPE Ratio." Online Data: Robert Shiller, 2021, Columbia Threadneedle Investments as of December 31, 2021. **Past performance does not guarantee future results.** Indices shown are unmanaged and do not reflect the impact of fees. It is not possible to invest directly in an index.

Beyond equities: Extending the building blocks approach to additional asset classes

Understanding what drives equity returns may be difficult, but Bogle and Nolan argue for an Occam's Razor approach, which argues to keep things simple, and not over complicate your assumptions. Their simple model has, so far, held up and has proven to be useful in understanding equity return attribution. We use this approach to describe what has contributed to returns and as an integral input into our forecast efforts, which feeds into the development of capital markets assumptions and decisions on rebalancing.

This "building blocks" approach can be extended to other asset classes, such as fixed income and commodities. In doing so, we can explore the concepts of enterprise return and speculative return and understand how these might apply to other instruments. In the case of equities, valuation could be measured by P/E levels and tended to be mean reverting. When analyzing government bonds, for example, expected valuation return can be forecast with an expectation of yield changes. By splitting enterprise returns into performance obtained from carry and cash flow growth, we can extend this approach to other markets.

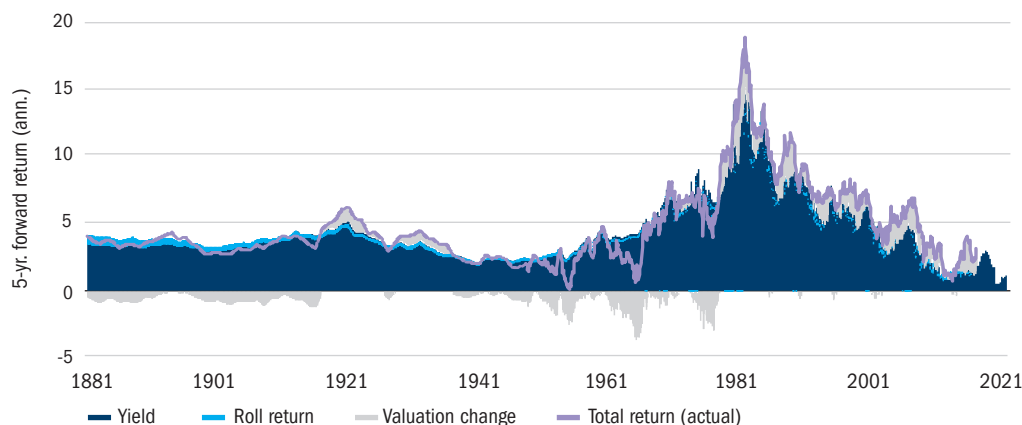
Exhibit 4:

Asset class	Enterprise returns	Valuation Returns
Stocks	Payout yield (D/P + buybacks net of new issues) + E[EPS growth]	E[$\Delta P/E$]
Government bonds	Yield + Roll	E[Δ Yield]
Corporate credit bonds	Yield + Roll + E[default losses]	E[Δ Yield]
TIPS	Yield	E[inflation surprise]
Commodity futures	Roll + Collateral rate	E[Δ Price]

Note: E[] signifies expectations. D/P refers to dividend/price.

Let's take a closer look at how this methodology can be applied to bonds. With government bonds, "carry" refers to the yield return plus any effects from rolldown (roll) or costs. Since government bonds — especially U.S. Treasuries — are considered safe and default-free, there is no expected change in cash flow, so the second component of enterprise returns is zero. However, for riskier bonds, which have a higher probability of defaulting, there is a chance that cash flows may change. This estimated loss from default makes up the return (loss) for cashflow growth for risky bonds. As seen below, return from bond yield is a major component for fixed-income total returns.

Exhibit 5: U.S. Treasuries total return attribution



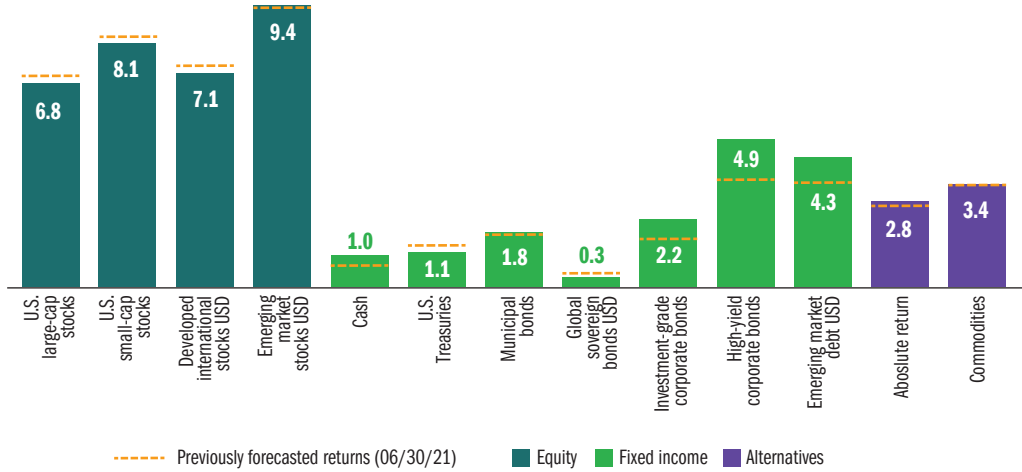
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Capital market assumptions and asset allocation

The building block approach to understanding market performance allows for greater insight into the drivers of performance. By applying a consistent framework across markets, we can compare the individual components of returns for each market, allowing for further insights. In our work at Columbia Threadneedle, we use this building blocks approach to help guide biannual five-year forecasts for our capital markets assumptions. We forecast the individual components of market returns and aggregate these components to arrive at a total return forecast with higher conviction.

As the economic landscape continues to evolve, capital market assumptions provide an opportunity to review allocations. These forecasts can be instrumental in informing investment decisions and can be factored into the asset class considerations of decision makers to ensure that investors are on track to meet their long-term investment goals.

Exhibit 6: 5-year forecasted returns from the Global Asset Allocation Team (as of December 2021, %).



Source: Columbia Threadneedle Investments as of December 31, 2021. Variation versus previously forecasted return is skewed by pandemic-driven volatility prevalent at the time of the last forecast. Equity forecasts are based on three components: expected dividend payments, expected earnings growth and change in valuation levels (price-to-earnings ratios). Expected earnings growth is driven by expected economic growth, input cost changes and pricing power. Fixed-income forecasts are based on the shape of the yield curve, direction of interest rates, increase/decrease in yield spreads and timing of those changes.

Appendix: Breakout of U.S. equity returns by decade (%)

Years	Enterprise returns			Speculative returns	Composite total return	Actual total returns	Residual (comp.-actual)
	Earnings growth	Inflation	Dividend yield	Valuation growth			
1870-1900	2.4	-0.9	5.1	0.7	7.2	8.1	-0.9
1900s	6.2	2.7	4.1	-2.5	10.5	7.7	2.8
1910s	1.0	4.0	4.9	-4.6	5.3	1.3	3.9
1920s	0.0	3.1	6.4	5.4	14.9	10.8	4.1
1930s	-1.0	-2.1	5.5	1.6	4.0	5.8	-1.8
1940s	1.1	4.4	5.5	-2.5	8.4	3.5	5.0
1950s	5.9	2.7	5.6	3.2	17.5	14.8	2.7
1960s	3.4	1.9	3.4	1.7	10.5	8.6	1.9
1970s	0.2	6.2	3.3	-5.3	4.4	-1.8	6.2
1980s	-0.5	6.4	4.7	4.5	15.2	8.7	6.5
1990s	5.1	3.4	3.2	4.2	15.9	15.8	0.1
2000s	3.3	2.6	1.6	-2.0	5.6	5.6	0.0
2010s	4.1	1.7	2.1	1.4	9.3	9.7	-0.4
2020s	3.5	2.1	2.1	6.2	13.8	14.3	-0.5
Overall	2.2	2.2	4.4	0.7	9.5	7.7	1.7
2000s avg.	3.7	2.2	1.9	0.2	8.0	8.2	-0.2

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¹ Bogle, John C., and Michael W. Nolan. 2015. "Occam's Razor Redux: Establishing Reasonable Expectations for Financial Market Returns", The Journal of Portfolio Management, 42, 119-134

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