

# The Value of Asset Allocation

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	AVERAGE
Public Real Estate 38.0%	Emg-Mkt Equities 34.5%	Public Real Estate 42.4%	Emg-Mkt Equities 39.8%	Dev Ex-U.S. Fixed Inc 11.4%	Emg-Mkt Equities 79.0%	U.S. Small-Cap Equities 26.9%	Emg-Mkt Fixed Inc 8.5%	Public Real Estate 28.7%	U.S. Small-Cap Equities 38.8%	Public Real Estate 15.9%	U.S. Large-Cap Equities 1.4%	U.S. Small-Cap Equities 21.3%	Emg-Mkt Equities 37.8%	CPI 2.2%	U.S. Mid-Cap Equities 8.9%
Emg-Mkt Equities 26.0%	Commodities 21.4%	Emg-Mkt Equities 32.6%	Commodities 16.2%	Inv-Grade Fixed Inc 5.2%	High-Yield Fixed Inc 58.2%	U.S. Mid-Cap Equities 25.5%	Inv-Grade Fixed Inc 7.8%	Emg-Mkt Equities 18.6%	U.S. Mid-Cap Equities 34.8%	U.S. Large-Cap Equities 13.7%	Emg-Mkt Fixed Inc 1.2%	High-Yield Fixed Inc 17.1%	Dev Ex-U.S. Equities 25.6%	Cash Alternatives 1.8%	Emg-Mkt Equities 8.3%
Dev Ex-U.S. Equities 20.7%	Public Real Estate 15.4%	Dev Ex-U.S. Equities 26.9%	Dev Ex-U.S. Equities 11.6%	Cash Alternatives 1.8%	U.S. Mid-Cap Equities 40.5%	Public Real Estate 20.4%	Dev Ex-U.S. Fixed Inc 5.9%	Emg-Mkt Fixed Inc 18.5%	U.S. Large-Cap Equities 32.4%	U.S. Mid-Cap Equities 13.2%	60%/40% Portfolio 1.2%	U.S. Mid-Cap Equities 13.8%	U.S. Large-Cap Equities 21.8%	Inv-Grade Fixed Inc 0.0%	U.S. Large-Cap Equities 7.8%
U.S. Mid-Cap Equities 20.2%	Dev Ex-U.S. Equities 14.0%	U.S. Small-Cap Equities 18.4%	Dev Ex-U.S. Fixed Inc 11.3%	CPI 0.1%	Public Real Estate 38.3%	Emg-Mkt Equities 19.2%	High-Yield Fixed Inc 5.0%	Dev Ex-U.S. Equities 17.9%	Dev Ex-U.S. Equities 23.3%	60%/40% Portfolio 10.6%	CPI 0.7%	U.S. Large-Cap Equities 12.0%	U.S. Mid-Cap Equities 18.5%	Dev Ex-U.S. Fixed Inc -1.7%	Public Real Estate 7.6%
U.S. Small-Cap Equities 18.3%	U.S. Mid-Cap Equities 12.7%	U.S. Large-Cap Equities 15.8%	Hedge Funds 10.0%	Emg-Mkt Fixed Inc -10.9%	Dev Ex-U.S. Equities 32.5%	Commodities 16.8%	60%/40% Portfolio 5.0%	U.S. Mid-Cap Equities 17.3%	60%/40% Portfolio 17.7%	MG&I Port (4AG w/o PC) 6.6%	Inv-Grade Fixed Inc 0.5%	Commodities 11.8%	U.S. Small-Cap Equities 14.6%	High-Yield Fixed Inc -2.1%	U.S. Small-Cap Equities 7.5%
MG&I Port (4AG w/o PC) 13.1%	Emg-Mkt Fixed Inc 10.7%	U.S. Mid-Cap Equities 15.3%	MG&I Port (4AG w/o PC) 7.4%	Hedge Funds -19.0%	Emg-Mkt Fixed Inc 28.2%	High-Yield Fixed Inc 15.1%	CPI 3.0%	U.S. Small-Cap Equities 16.3%	MG&I Port (4AG w/o PC) 12.1%	Inv-Grade Fixed Inc 6.0%	Public Real Estate 0.1%	Emg-Mkt Equities 11.6%	60%/40% Portfolio 14.3%	60%/40% Portfolio -2.3%	High-Yield Fixed Inc 7.0%
Dev Ex-U.S. Fixed Inc 12.0%	Hedge Funds 9.3%	MG&I Port (4AG w/o PC) 14.5%	Inv-Grade Fixed Inc 7.0%	60%/40% Portfolio -21.6%	U.S. Small-Cap Equities 27.2%	U.S. Large-Cap Equities 15.1%	U.S. Large-Cap Equities 2.1%	U.S. Large-Cap Equities 16.0%	Hedge Funds 9.1%	Emg-Mkt Fixed Inc 5.5%	Cash Alternatives 0.0%	Emg-Mkt Fixed Inc 10.2%	MG&I Port (4AG w/o PC) 13.2%	Hedge Funds -4.1%	Emg-Mkt Fixed Inc 6.9%
Emg-Mkt Fixed Inc 11.7%	MG&I Port (4AG w/o PC) 7.9%	Hedge Funds 12.9%	Emg-Mkt Fixed Inc 6.3%	MG&I Port (4AG w/o PC) -24.3%	U.S. Large-Cap Equities 26.5%	MG&I Port (4AG w/o PC) 14.6%	MG&I Port (4AG w/o PC) 0.8%	High-Yield Fixed Inc 15.8%	High-Yield Fixed Inc 7.4%	U.S. Small-Cap Equities 4.9%	Dev Ex-U.S. Equities -0.4%	MG&I Port (4AG w/o PC) 9.0%	Public Real Estate 11.4%	U.S. Large-Cap Equities -4.4%	60%/40% Portfolio 6.5%
High-Yield Fixed Inc 11.1%	U.S. Large-Cap Equities 4.9%	High-Yield Fixed Inc 11.8%	60%/40% Portfolio 6.2%	High-Yield Fixed Inc -26.2%	MG&I Port (4AG w/o PC) 26.0%	60%/40% Portfolio 12.2%	Cash Alternatives 0.1%	MG&I Port (4AG w/o PC) 12.6%	Public Real Estate 4.4%	Hedge Funds 3.0%	Hedge Funds -1.1%	60%/40% Portfolio 8.2%	Dev Ex-U.S. Fixed Inc 9.9%	Emg-Mkt Fixed Inc -4.6%	MG&I Port (4AG w/o PC) 6.5%
U.S. Large-Cap Equities 10.9%	U.S. Small-Cap Equities 4.6%	60%/40% Portfolio 11.1%	U.S. Mid-Cap Equities 5.6%	U.S. Small-Cap Equities -33.8%	Hedge Funds 20.0%	Emg-Mkt Fixed Inc 12.0%	U.S. Mid-Cap Equities -1.5%	60%/40% Portfolio 11.4%	CPI 1.5%	High-Yield Fixed Inc 2.5%	MG&I Port (4AG w/o PC) -1.9%	Hedge Funds 5.4%	Emg-Mkt Fixed Inc 9.3%	MG&I Port (4AG w/o PC) -4.7%	Dev Ex-U.S. Equities 5.2%
Commodities 9.1%	60%/40% Portfolio 3.9%	Emg-Mkt Fixed Inc 9.9%	U.S. Large-Cap Equities 5.5%	Commodities -35.6%	Commodities 18.9%	Hedge Funds 10.2%	U.S. Small-Cap Equities -4.2%	Hedge Funds 6.4%	Cash Alternatives 0.0%	CPI 0.8%	U.S. Mid-Cap Equities -2.4%	Public Real Estate 5.0%	Hedge Funds 8.5%	Public Real Estate -4.7%	Hedge Funds 4.5%
Hedge Funds 9.0%	CPI 3.4%	Dev Ex-U.S. Fixed Inc 6.8%	Cash Alternatives 4.8%	U.S. Large-Cap Equities -37.0%	60%/40% Portfolio 18.5%	Dev Ex-U.S. Equities 8.2%	Hedge Funds -5.3%	Inv-Grade Fixed Inc 4.2%	Inv-Grade Fixed Inc -2.0%	Cash Alternatives 0.0%	U.S. Small-Cap Equities -4.4%	Inv-Grade Fixed Inc 2.6%	High-Yield Fixed Inc 7.5%	U.S. Mid-Cap Equities -9.1%	Inv-Grade Fixed Inc 3.9%
60%/40% Portfolio 8.4%	Cash Alternatives 3.0%	Cash Alternatives 4.8%	CPI 4.1%	U.S. Mid-Cap Equities -41.5%	Inv-Grade Fixed Inc 5.9%	Dev Ex-U.S. Fixed Inc 6.8%	Public Real Estate -5.8%	CPI 1.7%	Emg-Mkt Equities -2.3%	Emg-Mkt Equities -1.8%	High-Yield Fixed Inc -4.5%	CPI 2.1%	Inv-Grade Fixed Inc 3.5%	U.S. Small-Cap Equities -11.0%	Dev Ex-U.S. Fixed Inc 3.0%
Inv-Grade Fixed Inc 4.3%	High-Yield Fixed Inc 2.7%	Inv-Grade Fixed Inc 4.3%	High-Yield Fixed Inc 1.9%	Dev Ex-U.S. Equities -43.1%	Dev Ex-U.S. Fixed Inc 3.9%	Inv-Grade Fixed Inc 6.5%	Dev Ex-U.S. Equities -11.7%	Dev Ex-U.S. Fixed Inc 0.8%	Dev Ex-U.S. Fixed Inc -5.1%	Dev Ex-U.S. Fixed Inc -2.5%	Dev Ex-U.S. Fixed Inc -4.8%	Dev Ex-U.S. Fixed Inc 1.9%	CPI 2.2%	Commodities -11.2%	CPI 2.1%
CPI 3.3%	Inv-Grade Fixed Inc 2.4%	CPI 2.5%	U.S. Small-Cap Equities -1.6%	Public Real Estate -47.7%	CPI 2.7%	CPI 1.5%	Commodities -13.3%	Cash Alternatives 0.1%	Emg-Mkt Fixed Inc -6.6%	Dev Ex-U.S. Equities -4.5%	Emg-Mkt Equities -14.6%	Dev Ex-U.S. Equities 1.5%	Commodities 1.7%	Dev Ex-U.S. Equities -13.4%	Cash Alternatives 1.3%
Cash Alternatives 1.2%	Dev Ex-U.S. Fixed Inc -9.2%	Commodities 2.1%	Public Real Estate -7.0%	Emg-Mkt Equities -53.2%	Cash Alternatives 0.1%	Cash Alternatives 0.1%	Emg-Mkt Equities -18.2%	Commodities -1.1%	Commodities -9.5%	Commodities -17.0%	Commodities -24.7%	Cash Alternatives 0.3%	Cash Alternatives 0.8%	Emg-Mkt Equities -14.2%	Commodities -2.5%

Sources: Wells Fargo Investment Institute and Morningstar Direct. As of 12/31/2018. Hypothetical and past performance do not guarantee future results. An index is unmanaged and not available for direct investment. Please see pages 2-3 for definitions of the indices, descriptions of the asset class risks, and the composition of the hypothetical Moderate Growth & Income Portfolio and hypothetical 60%/40% Portfolio. The average is the 15-year compounded (geometric) annual growth rate. Information has been obtained from sources believed to be reliable, but its accuracy is not guaranteed. Average is calculated as geometric mean. Average is calculated as 15 years from 2004-2018.

**Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. Unlike most asset class indices, HFR Index returns reflect deduction for fees. Because the HFR indices are calculated based on information that is voluntarily provided actual returns may be lower than those reported.**

## Index Definitions

- **Hypothetical 60%/40% Portfolio:** Composed of 60% S&P 500 Index and 40% Bloomberg Barclays U.S. Aggregate Bond Index.
  - **Hypothetical Moderate Growth & Income Portfolio (4 Asset Groups without Private Capital):** 3% Bloomberg Barclays U.S. Treasury Bill 1-3 Months, 11% Bloomberg Barclays U.S. Aggregate (5-7Y), 6% Bloomberg Barclays U.S. Aggregate (10+Y), 6% Bloomberg Barclays U.S. Corporate High Yield Index, 3% JPM GBI Global Ex-U.S. TR USD Index, 5% JPM EMBI Global TR USD Index, 20% S&P 500 Index, 8% Russell Mid Cap TR USD Index, 6% Russell 2000 Index, 5% MSCI EAFE GR USD Index, 5% MSCI EM GR USD, 5% FTSE EPRA/NAREIT Developed TR USD Index, 2% Bloomberg Commodities Index, 3% HFRI Relative Value Arbitrage Index, 6% HFRI Macro Index, 4% HFRI Event Driven Index, 2% HFRI Equity Hedge Index.
- The compositions of the Hypothetical Moderate Growth & Income Portfolio and the Hypothetical 60%/40% Portfolios are for illustrative purposes only. Hypothetical results do not represent actual trading, and the results achieved do not represent the experience of any individual investor. In addition, hypothetical results do not reflect the impact of any fees, expenses, or taxes applicable to an actual investment. The indices reflect the historical performance of the represented assets and assume the reinvestment of dividends and other distributions. Hypothetical and past performance are no guarantee of future results.
- HFRI Relative Value Arbitrage Index** tracks funds that attempt to take advantage of relative pricing discrepancies between instruments, including equities, debt, options, and futures. Managers may use mathematical, fundamental, or technical analysis to determine misvaluations. Securities may be mispriced relative to the underlying security, related securities, groups of securities, or the overall market.
- HFRI Macro Index** tracks managers that trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency, and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom up theses, quantitative and fundamental approaches, and long- and short-term holding periods.
- HFRI Event Driven Index** is also known as “corporate life cycle” investing. This involves investing in opportunities created by significant transactional events, such as spin-offs, mergers and acquisitions, bankruptcy reorganizations, recapitalizations, and share buybacks. The portfolio of some event driven managers may shift in majority weighting between risk arbitrage and distressed securities, while others may take a broader scope. Instruments include long and short common and preferred stocks, as well as debt securities and options. Leverage may be used by some managers. Fund managers may hedge against market risk by purchasing S&P put options or put option spreads.
- HFRI Equity Hedge (Total) Index** is a fund-weighted index of select hedge funds focusing on equity hedge strategies. Equity hedge investing consists of a core holding of long equities hedged at all times with short sales of stocks and/or stock index options.
- **Cash Alternatives:** Bloomberg Barclays U.S. Treasury Bills (1-3M) Index is representative of money markets.
  - **Commodities:** Bloomberg Commodity Index represents futures contracts on 22 physical commodities. No related group of commodities (e.g., energy, precious metals, livestock and grains) may constitute more than 33 percent of the index as of the annual re-weightings of the components. No single commodity may constitute less than 2 percent of the index.
  - **Emerging-Market Equities:** MSCI Emerging Markets Index (MSCI EM GR) is a free float-adjusted market capitalization index designed to measure equity market performance of emerging markets.
  - **Developed Market Ex-U.S. Fixed Income:** JP Morgan Global Ex. United States Index (JPM GBI Global Ex-U.S.) is a total return, market capitalization weighted index, rebalanced monthly, consisting of the following countries: Australia, Germany, Spain, Belgium, Italy, Sweden, Canada, Japan, United Kingdom, Denmark, Netherlands, and France.
  - **Emerging-Market Fixed Income:** JPM EMBI Global Index is a U.S. dollar-denominated, investible, market cap-weighted index representing a broad universe of emerging market sovereign and quasi-sovereign debt. While products in the asset class have become more diverse, focusing on both local currency and corporate issuance, there is currently no widely accepted aggregate index reflecting the broader opportunity set available, although the asset class is evolving. By using the same index provider as the one used in the developed-market bonds asset class, there is consistent categorization of countries among developed international bonds (ex. U.S.) and emerging market bonds.
  - **High-Yield Taxable Fixed Income:** Bloomberg Barclays U.S. Corporate High-Yield Bond Index covers the U.S. dollar-denominated, non-investment grade, fixed-rate, taxable corporate bond market. Securities are classified as high-yield if the middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB= or below. Included issues must have at least one year until final maturity.
  - **Inflation-CPI:** IA SBBI U.S. Inflation Index is a custom unmanaged index designed to track the U.S. inflation rate.
  - **Developed Market Ex-U.S. Equities:** MSCI EAFE Index (Europe, Australasia, Far East) Index (MSCI EAFE GR) is a free float-adjusted market capitalization index designed to measure the equity market performance of developed markets, excluding the U.S. and Canada.
  - **U.S. Taxable Investment-Grade Fixed Income:** Bloomberg Barclays U.S. Aggregate Bond Index is composed of the Bloomberg Barclays U.S. Government/Credit Index and the Bloomberg Barclays U.S. Mortgage-Backed Securities Index and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities.
  - **U.S. Large-Cap Equities:** S&P 500 Index consists of 500 stocks chosen for market size, liquidity, and industry group representation. It is a market-value-weighted index with each stock's weight in the index proportionate to its market value.
  - **U.S. Mid-Cap Equities:** Russell Midcap® Index measures the performance of the 800 smallest companies in the Russell 1000® Index, which represent approximately 25% of the total market capitalization of the Russell 1000® Index.
  - **U.S. Small-Cap Equities:** Russell 2000® Index measures the performance of the 2,000 smallest companies in the Russell 3000® Index, which represents approximately 8% of the total market capitalization of the Russell 3000 Index.
  - **Public Real Estate:** FTSE EPRA/NAREIT Developed Index is designed to track the performance of listed real-estate companies and REITs in developed countries worldwide.
  - **Hedge Funds:** HFRI Fund Weighted Composite Index is a fund-weighted (equal-weighted) index designed to measure the total returns (net of fees) of the approximately 2,000 hedge funds that compose the index. Constituent funds must have either \$50 million under management or a track record of greater than 12 months.

CPI (consumer price index) measures the price of a fixed basket of goods and services purchased by an average consumer.

## Asset Class Risks

**Asset allocation is an investment method used to help manage risk. It does not ensure a profit or protect against a loss.**

**Commodities:** The commodities markets are considered speculative, carry substantial risks, and have experienced periods of extreme volatility. Commodities may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or other factors affecting a particular industry or commodity.

**Equity Securities:** Stocks are subject to market risk, which means their value may fluctuate in response to general economic and market conditions, the prospects of individual companies, and industry sectors.

**Fixed Income:** Investments in fixed-income securities are subject to interest rate, credit/default, liquidity, inflation and other risks. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in the decline in the bond's price. Credit risk is the risk that an issuer will default on payments of interest and principal. This risk is higher when investing in high yield bonds, also known as junk bonds, which have lower ratings and are subject to greater volatility. If sold prior to maturity, fixed income securities are subject to market risk. All fixed income investments may be worth less than their original cost upon redemption or maturity. U.S. government securities are backed by the full faith and credit of the federal government as to payment of principal and interest if held to maturity and are subject to interest rate risk.

**Foreign/Emerging Markets:** 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.

**Hedge Funds:** Hedge Funds are available only to persons who are "accredited investors" or "qualified purchasers" within the meaning of U.S. securities laws. Hedge funds trade in diverse complex strategies that are affected in different ways and at different times by changing market conditions. Strategies may, at times, be out of market favor for considerable periods with adverse consequences for the investor.

**Real Estate:** Investing in real estate investment trusts (REITs) has special risks, including possible illiquidity of the underlying properties, credit risk, interest rate fluctuations, and the impact of varied economic conditions.

**Small/Mid-Cap:** The prices of small/mid-company stocks are generally more volatile than large-company stocks. They often involve higher risks because of smaller and mid-sized companies may lack the management expertise, financial resources, product diversification, and competitive strengths to endure adverse economic conditions.

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