Alternative thinking

Helping investors understand alternative investment strategies



How can alternative investments help build a more effective portfolio?	
Alternative investments can help diversify a traditional portfolio and provide the potential for improved risk-adjusted returns.	
How can investors access alternative strategies?	
Certain alternative investment strategies are now available to all investors, although it is important to understand the investment benefits and risk considerations of each structure prior to investing.	
How can hedge funds help protect a portfolio? 9	
The investment flexibility of hedge funds has helped investors participate in positive equity markets while helping protect capital when these markets experienced increased volatility.	
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Private capital provides access to investment opportunities beyond the public markets, resulting in the potential for high returns.	
Please see the end of this report for the risks associated with alternative investments and asset classes along with definitions of the indexes.	Alternative thinking 2



Helping investors understand alternative investments

Pensions, endowments, and institutional investors have long incorporated alternative investments, including hedge funds and private capital funds, in their asset allocation framework.

Some individual investors, on the other hand, may not be familiar with these important investment tools, resulting in portfolios that have exposure limited solely to traditional assets, such as stocks and bonds. That may be changing. With an ever-evolving investment environment, many investors — institutional and individuals alike — are recognizing the potential benefits alternative investments can offer and are choosing to include them in their diversified portfolios.

Wells Fargo Investment Institute believes in the importance of looking for ways to diversify portfolios and using strategies focused on unlocking value or complementing traditional allocation strategies. The following provides foundational knowledge on alternative investments. It also illustrates why we believe many investors can benefit from an allocation to these diversifying strategies.

Key topics

- · Potential benefits of alternative investments within the framework of an asset allocation model
- Various structures available to investors and how they differ
- · How hedge funds can help protect a portfolio during market downturns
- Potential investment opportunities that can be accessed through private capital
- How alternative investments may prove beneficial in the current market environment

How can alternative investments help build a more effective portfolio?

Alternative investments may improve portfolio results

History has shown that diversification — putting money into a variety of different types of investments or asset classes — generally has been an effective strategy to help manage a portfolio's risk and return profile. True diversification, however, is more than a mix of traditional long-only stock, bond, and cash holdings. Although diversification may not protect against market losses, it potentially can enhance performance and help mitigate the risk associated with any one investment or asset class.

What are alternative investments?

Alternative investments can help diversify or complement a traditional portfolio through the types of investments owned or the techniques employed. They include asset classes, strategies, and structures that often are different from traditional investments and employ hedging and arbitrage techniques using long and short positions, leverage, derivatives, private investments, and investments in a variety of global markets. Types of alternative investments include alternative mutual funds (liquid alternatives); private funds (hedge funds, managed futures, private equity, and private debt); and certain real assets, such as private real estate.

Building a truly diversified portfolio

2022 was a difficult year for both stocks and bonds. Over the long term, traditional asset classes have performed well and served investors admirably. Yet, the world today is filled with uncertainty, as growing risks in the economic and geopolitical landscape can negatively impact your portfolio. By incorporating alternative strategies, we believe investors can build a portfolio that offers greater diversification in an effort to withstand challenging market environments.

Wells Fargo Investment Institute suggests investors consider a four-asset-group allocation, such as the example shown in the right sidebar, as we believe this may help manage a portfolio's risk and return.

Our strategic moderate growth and income with alternatives allocation

Our belief is that many investors can benefit from alternative investments

30%

Alternative investments and real assets

39%

Stocks

29%

Fixed income

2%

Cash alternatives

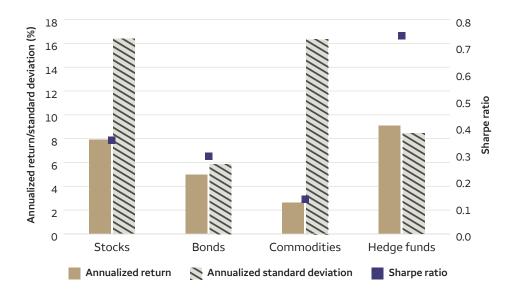
What alternative investments may deliver

- Exposure to a broader range of investment opportunities and strategies
- Potential for improved risk-adjusted returns
- Less-extreme market cycle peaks and troughs
- Access to less-efficient markets, which can create investment opportunities
- Historically lower correlation that is, they may respond differently to market conditions versus traditional investments



Potential benefits of alternative investments

The chart below shows the annualized return, standard deviation, and Sharpe ratio of stocks, bonds, commodities, and hedge funds. Hedge funds have historically produced the highest Sharpe ratio — a measure of risk-adjusted returns — which when combined with a traditional portfolio of long-only stocks and bonds has increased return and decreased risk.



The chart below shows calendar-year returns for the same asset classes stocks, bonds, commodities, and hedge funds. Hedge funds have been the second-best-performing asset class in 11 out of the past 14 years.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Average
Stocks	29.99%	11.76%	-5.54%	15.83%	26.68%	4.94%	-0.87%	7.51%	22.40%	-8.71%	27.67%	15.90%	21.82%	-18.14%	10.80%
Hedge funds	19.98%	10.25%	-5.25%	6.36%	9.13%	2.98%	-1.12%	5.44%	8.59%	-4.75%	10.45%	11.83%	10.16%	-4.20%	5.70%
Bonds	6.93%	5.54%	5.64%	4.32%	-2.60%	0.59%	-3.15%	2.09%	7.40%	-1.20%	6.84%	9.20%	-4.71%	-16.25%	1.47%
Commodities	18.91%	16.83%	-13.32%	-1.06%	-9.52%	-17.01%	-24.66%	11.77%	1.70%	-11.25%	7.69%	-3.12%	27.11%	16.09%	1.44%
		First in	n returns		Secon	d in retur	ns	Thir	d in retu	rns	Fou	ırth in re	turns		

Sources: MPI Stylus and Wells Fargo Investment Institute

Top chart data is from January 1, 1992, through December 31, 2022. Bottom chart data is from January 1, 2009, through December 31, 2022.

Standard deviation is a measure of the volatility of a portfolio's return. The higher the standard deviation, the greater volatility has been. Sharpe ratio is the annualized excess return of a particular investment or index over a guaranteed return (such as the 90-day Treasury bill) divided by the annual standard deviation of the excess return. The higher its Sharpe ratio, the better an investment's or index's returns have been relative to the amount of investment risk it has taken.

Stocks are represented by the MSCI World Index, bonds by the Bloomberg Global Aggregate Bond Index, commodities by the Bloomberg Commodity Index, and hedge funds by the HFRI Fund Weighted Composite Index. An index is unmanaged and not available for direct investment. Past performance is no guarantee of future results.

How can investors access alternative strategies?

Alternative mutual funds open the door to more investors

Until the relatively recent introduction of alternative mutual funds, the availability of alternative investment strategies was limited to private placement vehicles that have high net worth and investable asset thresholds. With alternative mutual funds, or liquid alternatives, a broader range of investors now have access to certain alternative investment strategies.

Alternative mutual funds attempt to employ some of the same investment strategies typically followed by hedge funds, which aims to add to the diversification of a portfolio while also lowering its risk by offering exposure to nontraditional investments and trading strategies. There are differences between alternative mutual funds and hedge funds that are important to understand before considering investing. For example, mutual funds are regulated by the U.S. Securities and Exchange Commission — primarily under the Investment Company Act of 1940 — which imposes various limitations and restrictions on their investments and on the use of leverage, shorting, and derivatives. These regulations provide for daily liquidity and pricing but also impose limitations on what alternative mutual funds can own and how they can implement their strategy.

Alternative mutual fund strategies

Strategies that alternative mutual funds may employ include:

Short selling

Looking to profit from investments that decline in value

Leverage

Using borrowed funds to purchase investments that can magnify gains and losses

Derivatives

Purchasing financial instruments, such as futures and options, whose values are derived from that of underlying investments or assets



Who should invest in alternative investments?

In short, we think many investors should consider including alternative investments in their portfolios.

For approximately three decades, investors who met fairly high qualification standards have had access to private placement alternative investments. More recently, mutual funds have been developed that offer many of the benefits of alternative investments to all investors. These benefits seek to mitigate downside risk and participate in market gains. Additionally, like all mutual funds, alternative mutual funds offer greater liquidity, daily pricing, and simpler tax reporting than private placements. However, greater liquidity may come with a trade-off, as we expect private placement strategies may offer greater potential returns and investment opportunities relative to mutual fund strategies.

How alternative mutual funds are different

Alternative mutual funds and private placements have some overlapping portfolio benefits but also significant differences that are important to understand before considering investing:

Alternative mutual funds	Private placements
Greater flexibility and investment techniques than traditional stock and bond mutual funds	Broadest security and investment technique flexibility
Able to sell short securities and use leverage within regulatory limitations	Able to sell short securities and use leverage without regulatory limitations
Limited ability to invest in illiquid securities and strategies (including private equity and private debt) due to regulatory constraints	Can invest in illiquid securities and strategies (including private equity and private debt)
Daily liquidity and pricing	Less frequent liquidity and pricing
Simplified tax reporting	More complex tax reporting
Typically lower investment minimums	Typically higher investment minimums
Generally lower fees and expenses	Generally higher fees and expenses

Alternative mutual funds' role in a portfolio

Alternative mutual funds can complement stock and bond allocations in a portfolio by offering the potential for:

Reduced volatility

Alternative mutual funds seek returns that do not solely track stock and bond markets, so they may reduce a portfolio's volatility by improving its diversification.

Protection in down markets

Alternative mutual funds may hold up better than stock funds during an equity market downturn. Limiting losses may help an investor stick with a long-term investing strategy during difficult markets.

Exposure to growth

Many alternative mutual funds can pursue growth opportunities in a wide range of market environments.

There is no assurance traditional mutual funds or alternative mutual funds will achieve their investment objectives. All investing involves risks, including the possible loss of principal.



How can hedge funds help protect a portfolio?

Hedge funds can add another dimension to portfolios

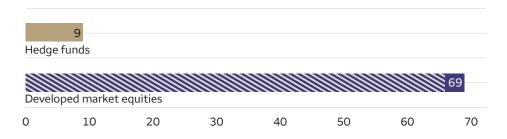
Hedge funds are private, pooled investments that generally are available only to qualified investors. These funds have the ability to use an array of techniques and a variety of investments. Fund managers typically do not rely on the general movement of the equity or fixed-income markets as a key driver of returns. Instead, most have the flexibility to construct portfolios that seek to dampen market risk, attempting to take advantage of mispriced securities; political or corporate events; trends in interest rates, currencies, and commodity prices; or other economic scenarios. This flexibility, paired with some of the most respected investment minds, has resulted in an asset group that we believe can deliver portfolio benefits.

Historically, including hedge funds in a portfolio generally has helped enhance its overall return and reduce its overall risk. We believe hedge funds deserve a permanent allocation in portfolios regardless of the market environment but it's when there's a market decline or sustained increased volatility that hedge funds often have helped protect a portfolio's value.

Helping investors win by not losing

Hedge funds have been able to help preserve capital during negative equity markets by experiencing only 21% of equity losses while maintaining participation in up markets by capturing 51% of positive equity returns.¹ Looking at it another way, hedge funds have helped investors navigate difficult markets over the long term by experiencing significantly fewer negative months than equities.

Months with significant negative returns

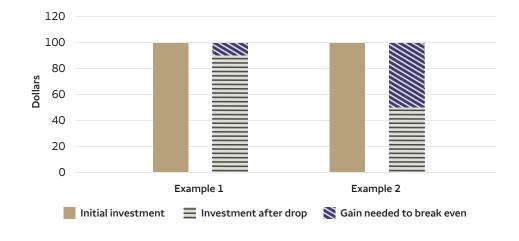


Equities have experienced a much bumpier ride than hedge funds.

The importance of limiting downside exposure

Hedge funds' ability to help investors limit the full downside of market volatility may not seem that important, but consider the chart below. Given a 10% decline, an investor would need an 11% gain to get back to where they started. With a 50% decline — similar to what the stock market experienced during the Great Recession — it would take a 100% gain to recoup the loss.

Deeper losses mean tougher recoveries



Protecting the value of your portfolio to the extent possible during a downturn may mean your portfolio won't have to work as hard to grow in the coming years.

Example 1 drop Example 2 drop gain

1. Source: MPI Stylus. Data as of December 31, 2022. Data since January 1, 1990, the inception of the HFRI Fund Weighted Composite Index. Up/down market capture ratios are a measure of investment performance in up and down markets relative to the market itself. A down market is one in which the index's quarterly return is less than zero.

Top chart source is MPI Stylus. Numbers indicate months with returns of less than -3%. Data based on historical performance from January 1, 1990, through December 31, 2022.

For illustrative purposes only. Index returns do not represent fund 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 indexes, HFR Index returns reflect deduction for fees. Because the HFR indexes are calculated based on information that is voluntarily provided, actual returns may be lower than those reported. An index is unmanaged and not available for direct investment. Past performance is no guarantee of future results. Please see the end of this report for definitions of the indexes and important risk considerations. Hedge funds are represented by the HFRI Fund Weighted Composite Index. Developed market equities are represented by the MSCI World Index.

Bottom chart: Data shown in the chart is for illustrative purposes only. Results are not based on an actual portfolio or representative index.

How can private capital potentially enhance returns?

Private capital may unlock significant opportunity

Many businesses today are choosing to remain private longer. In 1999, the average U.S. technology firm transitioned to the public markets after four years of operating history, and by 2019 that figure increased to 11 years.² The additional seven years (on average) that the companies remained private meant that much of the value accrued during the early, faster growth phase of a firm's lifecycle benefited private market investors.

Companies that remain private can avoid the burden and cost of regulatory requirements and focus on longer-term strategic plans, compared with public market entities that pay greater attention to shorter-term financial results. While there are advantages and disadvantages to each side, investors that can allocate across private and public markets may be able to capitalize on the broadest array of opportunities to reach their financial goals.

Here's where private capital comes in

Private capital gives these investors access to private companies primarily through:

Private equity

Investing directly in private companies or assets in return for an ownership position

The capital can be used to:

- Fund new technologies
- · Expand working capital
- Make acquisitions
- Strengthen a balance sheet

Strategies typically include:

- Buyout
- Special situations
- Growth equity
- Venture capital

Private debt

Directly providing debt capital to private companies, typically in return for interest income

Strategies traditionally include providing debt across a company's capital structure to include:

- · Senior-secured debt
- Junior-secured debt
- · Mezzanine debt

A variety of potential benefits

Access to private capital is normally open to qualified purchasers, and sometimes accredited investors, through an investment in a privately offered fund that pools investors' money to invest in a portfolio of private equity, private debt, or both. It can offer a number of benefits for these investors, including:

Exploiting pricing inefficiencies

Private equity can take advantage of the difficulty in determining a company's worth because of the lack of public information available.

Effecting corporate change

Private equity managers often use a hands-on approach to investing and get involved directly with company management and advise on improvements.

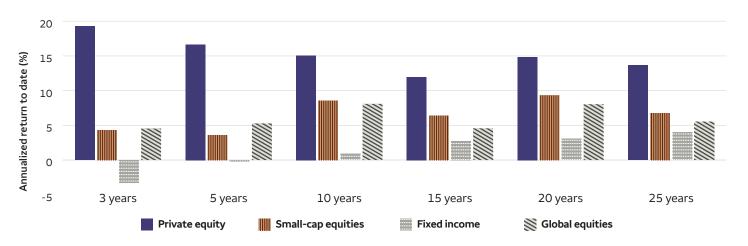
Using patient capital

Private capital provides access to investments that are longer term in nature and, as a result, may have greater return potential.

A consistent track record

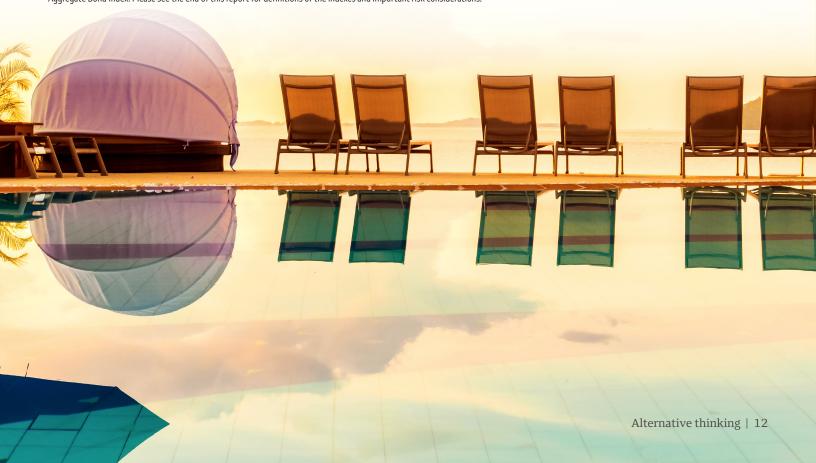
One reason for qualified investors to consider private capital is that it offers the potential for higher returns than many other asset classes.

Private equity has outperformed other asset classes over the long term



Source: MPI Stylus. Data as of September 30, 2022.

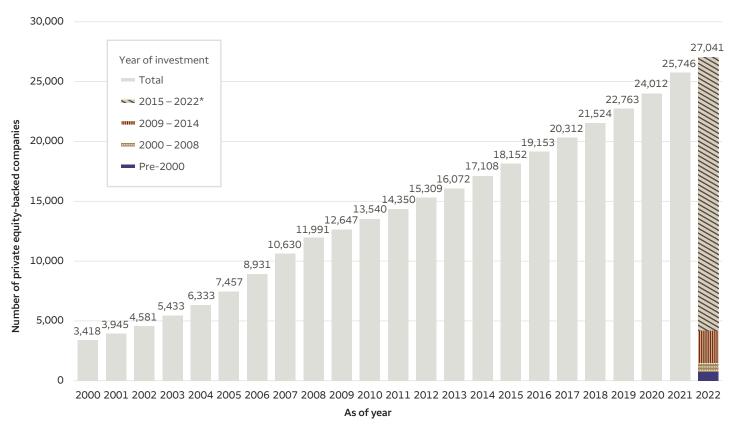
Performance results are for illustrative purposes only. Index returns do not represent fund performance or the results of actual trading. An index is unmanaged and not available for direct investment. Past performance is no guarantee of future results. The index representing private equity uses a modified private market equivalent (mPME) calculation as a way to replicate private investment performance under public market conditions. While traditional public market indexes calculate an average annual compounded return (time weighted over specified time periods), private indexes measure performance using internal rates of return and multiples based on cash flows (money-weighted returns). Public market indexes assume the reinvestment of dividends and other distributions but do not reflect deduction for fees, expenses, or taxes applicable to an actual investment. Index comparisons have limitations. No index is directly comparable with traditional or private investments and should not be relied upon as a measure of the performance a portfolio may achieve. Private equity represented by the Cambridge Associates U.S. Private Equity Index, developed market equities represented by the MSCI World Index, small-capitalization equities represented by the Russell 2000 Index, and fixed income represented by the Bloomberg U.S. Aggregate Bond Index. Please see the end of this report for definitions of the indexes and important risk considerations.



More opportunities may lie ahead

The number of companies backed by private equity has been growing steadily and now represents more than five times the number of publicly traded U.S. companies. However, this is still only a fraction of the total number of private companies, suggesting there could be many new investment opportunities in the coming years.

Global inventory of private equity-backed companies



Sources: Pitchbook and Wells Fargo Investment Institute. *Data as of December 31, 2022.





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Mark Steffen is a global alternative investment strategist for Global Investment Strategy, a division of Wells Fargo Investment Institute. Mr. Steffen formulates and leads strategy and asset allocation guidance for alternative investments, including hedge funds, private equity, private debt, and private real assets. He has more than 25 years of experience in financial services, Mr. Steffen earned a Bachelor of Science from St. Cloud State University. He has earned the right to use the Chartered Financial Analyst® (CFA®)and Chartered Alternative Investment Analyst (CAIA) designations.



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Risk considerations

Diversification cannot eliminate the risk of fluctuating prices and uncertain returns.

Alternative investments

Alternative investments, such as hedge funds, private capital, and private debt funds, are not appropriate for all investors and are only open to "accredited" or "qualified" investors within the meaning of U.S. securities laws. They are speculative and involve a high degree of risk that is appropriate only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program. Some of the risks associated with these funds include loss of all or a substantial portion of the investment due to leverage, short selling, or other speculative practices; lack of liquidity in that there may be no secondary market for a fund; volatility of returns; restrictions on transferring interests; potential lack of diversification and resulting higher risk due to concentration of trading authority when a single advisor is utilized; absence of information regarding valuations and pricing; complex tax structures and delays in tax reporting; less regulation and higher fees than mutual funds; and risks associated with the operations, personnel, and processes of the manager. An investor's ability to withdraw capital from funds or partnerships may be subject to specific limitations, including initial "lock-up" periods, advance notification requirements, and predetermined "windows" for redemptions. Private debt strategies seek to actively improve the capital structure of a company often through debt restructuring and deleveraging measures. In private debt investments, an investor acts as a lender to private companies and loans have specific contractual interest rate terms and repayment schedules. Such investments are subject to potential default, limited liquidity, the creditworthiness of the private company, and the infrequent availability of independent credit ratings for them. Because of their distressed situation, private debt funds may be illiquid, have low trading volumes, and be subject to substantial interest rate and credit risks. An investor should review the private placement memorandum, subscription agreement, and other related offering materials for complete information regarding terms, including all applicable fees, as well as the specific risks associated with a fund before investing.

Alternative mutual funds (liquid alternatives)

There is no assurance that traditional mutual funds or alternative mutual funds will achieve their investment objectives. All investing involves risks, including the possible loss of principal. Mutual funds that invest using alternative strategies are more complex investment vehicles. Relative to broad, long-only traditional asset class mutual funds, alternative mutual funds may employ more complex strategies, investments, and portfolio structures. Some of these risks include short selling, leverage, and the use of derivatives. Short selling involves the risk of potentially unlimited increase in the market value of the security sold short, which could result in potentially unlimited loss for the fund. In addition, taking short positions in securities is a form of leverage, which may cause a portfolio to be more volatile. Leverage increases a fund's sensitivity to market movements. The use of leverage in a portfolio varies by investment strategy. Leverage can significantly increase return potential but create greater risk of loss. Derivative prices depend on the performance of an underlying asset. A small movement in the price of the underlying asset may produce a disproportionate large movement, whether favorable or unfavorable, in the price of the derivative instrument. Derivatives generally have implied leverage, which can magnify volatility and may entail other risks such as market, interest rate, credit, liquidity, counterparty, and management risks. Alternative mutual funds may hold investments that may be difficult to value. At times, the fund may be unable to sell certain of its illiquid investments without a substantial drop in price, if at all. Other risks may apply as well, depending on the specific fund. Before considering, investors should carefully read the investment fund prospectus.

Asset-class risks

Each asset class has its own risk and return characteristics, which should be evaluated carefully before making any investment decision. Both stocks and bonds involve risk, and their returns and risk levels can vary depending on prevailing market and economic conditions. Stocks 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. Small-cap stocks are generally more volatile, subject to greater risks and are less liquid than large company stocks. Bonds are subject to interest rate, credit/default, liquidity, inflation, and other risks. Bond prices fluctuate inversely to changes in interest rates. Foreign investing entails risks not typically associated with investing domestically, such as currency, political, economic, and different accounting risks. The commodities markets are considered speculative, carry substantial risks, and have experienced periods of extreme volatility. Investing in a volatile and uncertain commodities market may cause a portfolio to rapidly increase or decrease in value which may result in greater share price volatility. Real estate has special risks including the possible illiquidity of underlying properties, credit risk, interest rate fluctuations and the impact of varied economic conditions.

Index definitions

Hedge funds: The HFRI Fund Weighted Composite Index is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in U.S. dollars and have a minimum of \$50 million under management or a 12-month track record of active performance. The HFRI Fund Weighted Composite Index does not include funds of hedge funds.

Note: HFRI indexes have limitations (some of which are typical of other widely used indexes). These limitations include survivorship bias (the returns of the indexes may not be representative of all the hedge funds in the universe because of the tendency of lower-performing funds to leave the index); heterogeneity (not all hedge funds are alike or comparable to one another, and the index may not accurately reflect the performance of a described style); and limited data (many hedge funds do not report to indexes, and, therefore, the index may omit funds, the inclusion of which might significantly affect the performance shown. The HFRI indexes are based on information self-reported by hedge fund managers that decide on their own, at any time, whether or not they want to provide, or continue to provide, information to HFR Asset Management, L.L.C. Results for funds that go out of business are included in the index until the date that they cease operations. Therefore, these indexes may not be complete or accurate representations of the hedge fund universe and may be biased in several ways. Returns of the underlying hedge funds are net of fees and are denominated in USD.

Private equity: Cambridge Associates LLC U.S. Private Equity Index uses a horizon calculation based on data compiled from more than 1,400 institutional-quality buyout, growth equity, private equity energy, and subordinated capital funds formed between 1986 and 2017. The index uses a modified private market equivalent (mPME) calculation as a way to replicate private investment performance under public market conditions. While traditional public market indexes calculate an average annual compounded return (time weighted over specified time periods), private indexes measure performance using internal rates of return and multiples based on cash flows (money-weighted returns). The funds included in the index report their performance voluntarily, and therefore the index may reflect a bias toward funds with records of success. Funds report unaudited quarterly data to Cambridge Associates when calculating the index. The index is not transparent and cannot be independently verified because Cambridge Associates does not identify the funds included in the index. Because Cambridge Associates recalculates the index each time a new fund is added, the historical performance of the index is not fixed, can't be replicated, and will differ over time from the day presented. The returns shown are net of fees, expenses, and carried interest. Index returns do not represent fund performance.

Market-based

The Bloomberg U.S. Aggregate Bond Index is a broad-based index that measures the investment-grade, U.S.-dollar-denominated, fixed-rate taxable bond market, including Treasuries, governmentrelated and corporate securities, MBS, ABS, and CMBS.

The Bloomberg U.S. Corporate High Yield Index covers the universe of fixed-rate, non-investment-grade debt.

The Bloomberg Commodity Index is a broadly diversified index comprised of 23 exchange-traded futures on physical commodities and represents 20 commodities weighted to account for economic significance and market liquidity.

Bloomberg Global Aggregate Bond Index provides a broad-based measure of the global investment grade fixed-rate debt markets. It is comprised of the U.S. Aggregate, Pan-European Aggregate, and the Asian-Pacific Aggregate Indexes. It also includes a wide range of standard and customized subindices by liquidity constraint, sector, quality and maturity.

The FTSE EPRA/NAREIT Developed Index is designed to track the performance of listed real estate companies and REITs in developed countries worldwide.

The JPM EMBI Global Index is a U.S.-dollar-denominated, investable, market-cap-weighted index representing a broad universe of emerging market sovereign and quasi-sovereign debt.

The MSCI EAFE Index is a free-float-adjusted market-capitalization-weighted index that is designed to measure the equity market performance of 21 developed markets, excluding the U.S. and Canada.

The MSCI Emerging Markets Index is a free-float-adjusted market-capitalization-weighted index that is designed to measure equity market performance of 23 emerging market countries.

The MSCI World Index is a free-float-adjusted market-capitalization-weighted index that is designed to measure the equity market performance of 23 global developed markets.

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The 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

Russell 3000® Index measures the performance of the 3,000 largest U.S. companies based on total market capitalization, which represents approximately 98% of the investable U.S. equity market.

The S&P 500 Index is a market-capitalization-weighted index composed of 500 widely held common stocks that are generally considered representative of the U.S. stock market. Returns assume reinvestment of dividends and capital gain distributions.

Helping you build a stronger financial future

Wells Fargo Investment Institute (WFII) is dedicated to delivering consistent research, guidance, and investment advice to financial advisors. Featuring some of the best talent and thinking in the investment industry, WFII unites manager research, alternative investments, and investment strategy teams in an effort to help investors manage risk and pursue their financial goals.

To get more information about alternative investments and help determining whether they may be right for you, contact your investment professional.

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