



Avoiding the cash trap: Why and how to step out of cash



Using insights to get invested
1Q 2025



Cash looks more attractive today than at any point in the last twenty years. However, investors should be wary of falling into the “cash trap”. After all, there is a real risk of leaving money on the table by not taking some risk in investing. In [“Avoiding the Cash Trap,”](#) learn why even now cash still is not king, what the markets may deliver in the rest of 2025 and beyond, and how to gain the confidence to be a long-term, diversified investor against an uncertain backdrop.



Avoiding the cash trap

- 1 Holding too much cash has significant opportunity cost
- 2 Even when cash performs well, other assets typically perform better
- 3 In the face of inflation, investors need more from their portfolios
- 4 High quality bonds provide income and portfolio protection
- 5 All-time highs aren't trouble for the stock market
- 6 Waiting to get invested can harm portfolio performance
- 7 Long-term investors have time on their side



AVOIDING THE CASH TRAP

1 Holding too much cash has significant opportunity cost

While investors should always keep some cash on hand for a rainy day, having too much cash has had significant opportunity cost.

History has shown that when interest rates peak, stocks and bonds typically outperform a cash investment, like a Certificate of Deposit (CD), over the subsequent 12 months. In fact, in the last seven instances of peaking interest rates, high quality fixed income has outperformed cash every time, and large cap U.S. stocks have outperformed cash most of the time. This has resulted in a 60/40 portfolio averaging a 20% return over these time periods, compared to just 7% from cash.

With the Federal Reserve likely still easing, it seems that interest rates have peaked in this cycle. As a result, investors should feel comfortable stepping out of cash and into riskier assets.

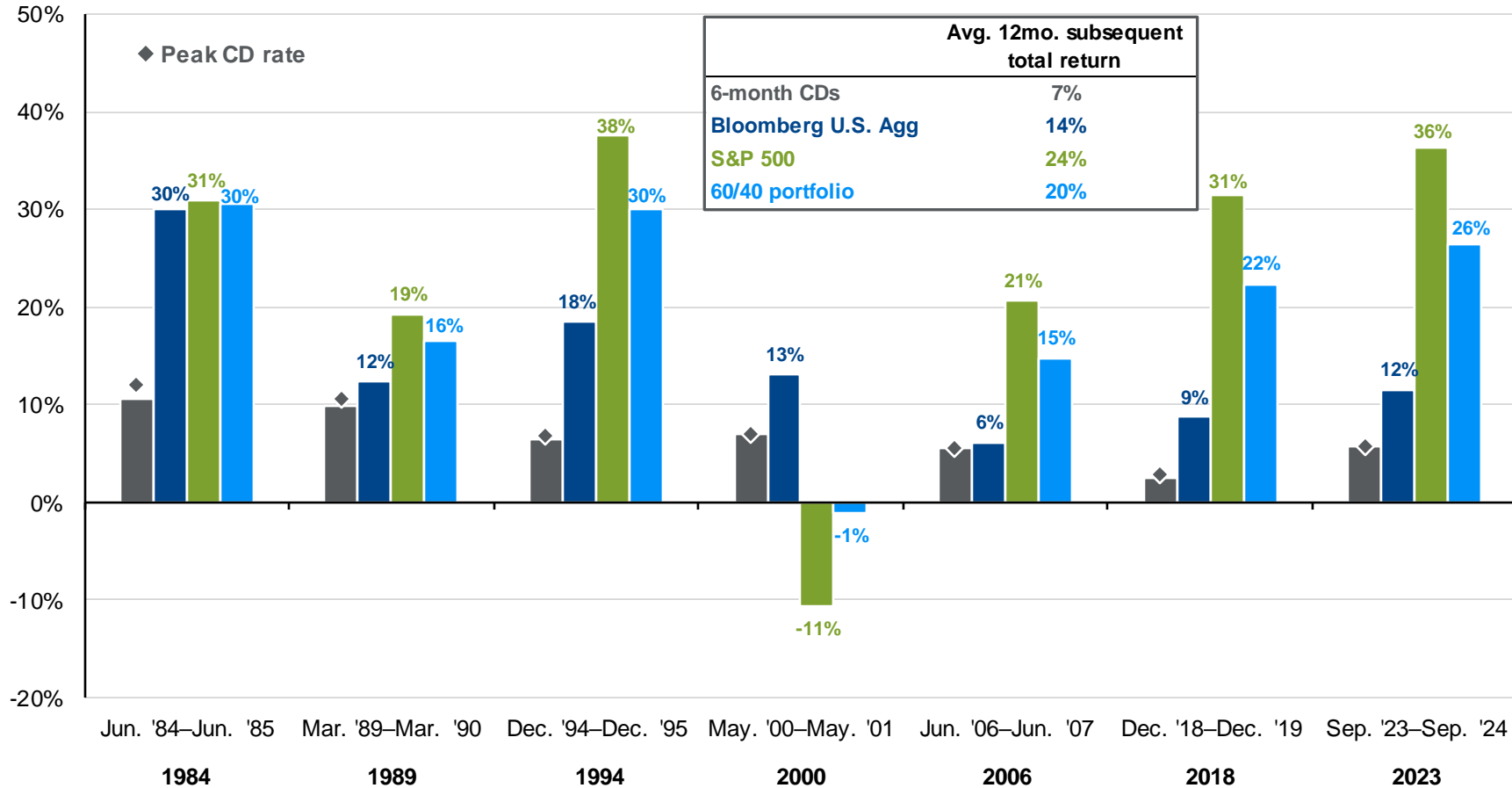


1 – Holding too much cash has significant opportunity cost

GTM U.S. 66

Investment opportunities outside of CDs

Peak 6-month certificate of deposit (CD) rate during previous rate hiking cycles and subsequent 12-month total returns



Investing Principles

Source: Bloomberg, FactSet, Federal Reserve, Standard & Poor's, J.P. Morgan Asset Management. The 60/40 portfolio is 60% invested in S&P 500 Total Return Index and 40% invested in Bloomberg U.S. Aggregate Total Return Index. The analysis references the month in which the month-end 6-month CD rate peaked during previous rate hiking cycles. CD rate data prior to 2013 are sourced from the Federal Reserve, whereas data from 2013 onward are sourced from Bloomberg. CD subsequent 12-month return calculation assumes reinvestment at the prevailing 6-month rate when the initial CD matures. *Guide to the Markets – U.S.* Data are as of December 31, 2024.



AVOIDING THE CASH TRAP

② **Even when cash performs well, other assets typically perform better**

With the Federal Reserve raising rates more aggressively than it had in decades, many investors were drawn to the strong and safe yield in cash. Indeed, in 2024, returns from cash were the best seen since 2001.

However, even with these strong returns, investors left money on the table in 2024 if they over-allocated to cash. In fact, except for commodities, which fared poorly in 2023, investments across asset classes, geographies, styles and sizes outperformed cash, in some cases by a significant margin.

This outperformance looks even more compelling over the long run. Over the last 15 years, cash returned a modest 1.2% annualized while the S&P 500 and Bloomberg U.S. Aggregate returned 13.9% and 2.4%, respectively. Holding too much cash in portfolios can make it even more difficult to achieve long-term goals.



2 – Even when cash performs well, other assets typically perform better

Investing Principles

2010–2024		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Ann.	Vol.															
Large Cap 13.9%	Small Cap 20.6%	REITs 27.9%	REITs 8.3%	REITs 19.7%	Small Cap 38.8%	REITs 28.0%	REITs 2.8%	Small Cap 21.3%	EM Equity 37.8%	Cash 1.8%	Large Cap 31.5%	Small Cap 20.0%	REITs 41.3%	Comdty. 16.1%	Large Cap 26.3%	Large Cap 25.0%
Small Cap 10.3%	EM Equity 17.9%	Small Cap 26.9%	Fixed Income 7.8%	High Yield 19.6%	Large Cap 32.4%	Large Cap 13.7%	Large Cap 1.4%	High Yield 14.3%	DM Equity 25.6%	Fixed Income 0.0%	REITs 28.7%	EM Equity 18.7%	Large Cap 28.7%	Cash 1.5%	DM Equity 18.9%	Small Cap 11.5%
REITs 9.4%	REITs 16.8%	EM Equity 19.2%	High Yield 3.1%	EM Equity 18.6%	DM Equity 23.3%	Fixed Income 6.0%	Fixed Income 0.5%	Large Cap 12.0%	Large Cap 21.8%	REITs -4.0%	Small Cap 25.5%	Large Cap 18.4%	Comdty. 27.1%	High Yield -12.7%	Small Cap 16.9%	Asset Alloc. 10.0%
Asset Alloc. 7.2%	DM Equity 16.5%	Comdty. 16.8%	Large Cap 2.1%	DM Equity 17.9%	Asset Alloc. 14.9%	Asset Alloc. 5.2%	Cash 0.0%	Comdty. 11.8%	Small Cap 14.6%	High Yield -4.1%	DM Equity 22.7%	Asset Alloc. 10.6%	Small Cap 14.8%	Fixed Income -13.0%	Asset Alloc. 14.1%	High Yield 9.2%
High Yield 5.9%	Comdty. 16.1%	Large Cap 15.1%	Cash 0.1%	Small Cap 16.3%	High Yield 7.3%	Small Cap 4.9%	DM Equity -0.4%	EM Equity 11.6%	Asset Alloc. 14.6%	Large Cap -4.4%	Asset Alloc. 19.5%	DM Equity 8.3%	Asset Alloc. 13.5%	Asset Alloc. -13.9%	High Yield 14.0%	EM Equity 8.1%
DM Equity 5.7%	Large Cap 15.1%	High Yield 14.8%	Asset Alloc. -0.7%	Large Cap 16.0%	REITs 2.9%	Cash 0.0%	Asset Alloc. -2.0%	REITs 8.6%	High Yield 10.4%	Asset Alloc. -5.8%	EM Equity 18.9%	Fixed Income 7.5%	DM Equity 11.8%	DM Equity -14.0%	REITs 11.4%	Comdty. 5.4%
EM Equity 3.4%	Asset Alloc. 10.4%	Asset Alloc. 13.3%	Small Cap -4.2%	Asset Alloc. 12.2%	Cash 0.0%	High Yield 0.0%	High Yield -2.7%	Asset Alloc. 8.3%	REITs 8.7%	Small Cap -11.0%	High Yield 12.6%	High Yield 7.0%	High Yield 1.0%	Large Cap -18.1%	EM Equity 10.3%	Cash 5.3%
Fixed Income 2.4%	High Yield 9.4%	DM Equity 8.2%	DM Equity -11.7%	Fixed Income 4.2%	Fixed Income -2.0%	EM Equity -1.8%	Small Cap -4.4%	Fixed Income 2.6%	Fixed Income 3.5%	Comdty. -11.2%	Fixed Income 8.7%	Cash 0.5%	Cash 0.0%	EM Equity -19.7%	Fixed Income 5.5%	REITs 4.9%
Cash 1.2%	Fixed Income 4.7%	Fixed Income 6.5%	Comdty. -13.3%	Cash 0.1%	EM Equity -2.3%	DM Equity -4.5%	EM Equity -14.6%	DM Equity 1.5%	Comdty. 1.7%	DM Equity -13.4%	Comdty. 7.7%	Comdty. -3.1%	Fixed Income -1.5%	Small Cap -20.4%	Cash 5.1%	DM Equity 4.3%
Comdty. -1.0%	Cash 0.9%	Cash 0.1%	EM Equity -18.2%	Comdty. -1.1%	Comdty. -9.5%	Comdty. -17.0%	Comdty. -24.7%	Cash 0.3%	Cash 0.8%	EM Equity -14.2%	Cash 2.2%	REITs -5.1%	EM Equity -2.2%	REITs -24.9%	Comdty. -7.9%	Fixed Income 1.3%

Source: Bloomberg, FactSet, MSCI, NAREIT, Russell, Standard & Poor's, J.P. Morgan Asset Management. Large cap: S&P 500, Small cap: Russell 2000, EM Equity: MSCI EME, DM Equity: MSCI EAFE, Comdty: Bloomberg Commodity Index, High Yield: Bloomberg Global HY Index, Fixed Income: Bloomberg U.S. Aggregate, REITs: NAREIT Equity REIT Index, Cash: Bloomberg 1-3m Treasury. The "Asset Allocation" portfolio assumes the following weights: 25% in the S&P 500, 10% in the Russell 2000, 15% in the MSCI EAFE, 5% in the MSCI EME, 25% in the Bloomberg U.S. Aggregate, 5% in the Bloomberg 1-3m Treasury, 5% in the Bloomberg Global High Yield Index, 5% in the Bloomberg Commodity Index and 5% in the NAREIT Equity REIT Index. Balanced portfolio assumes annual rebalancing. Annualized (Ann.) return and volatility (Vol.) represents period from 12/31/2009 to 12/31/2024. Please see disclosure page at end for index definitions. All data represents total return for stated period. The "Asset Allocation" portfolio is for illustrative purposes only. Past performance is not indicative of future returns. Guide to the Markets - U.S. Data are as of December 31, 2024.



AVOIDING THE CASH TRAP

3 In the face of inflation, investors need more from their portfolios

In the aftermath of the COVID-19 pandemic, the United States went through a period of inflation not seen in over 40 years. While income and wealth both rose during this time, too, many Americans are feeling the pressure of higher prices. As a result, they may try to “play it safe” by holding cash.

Unfortunately for these individuals, cash just has not cut it over the long run. In fact, over the last 30 years, cash has not been able to keep up with higher prices. By contrast, other investments across stocks and bonds have been much better places to park capital, especially when compared to the creep of inflation.

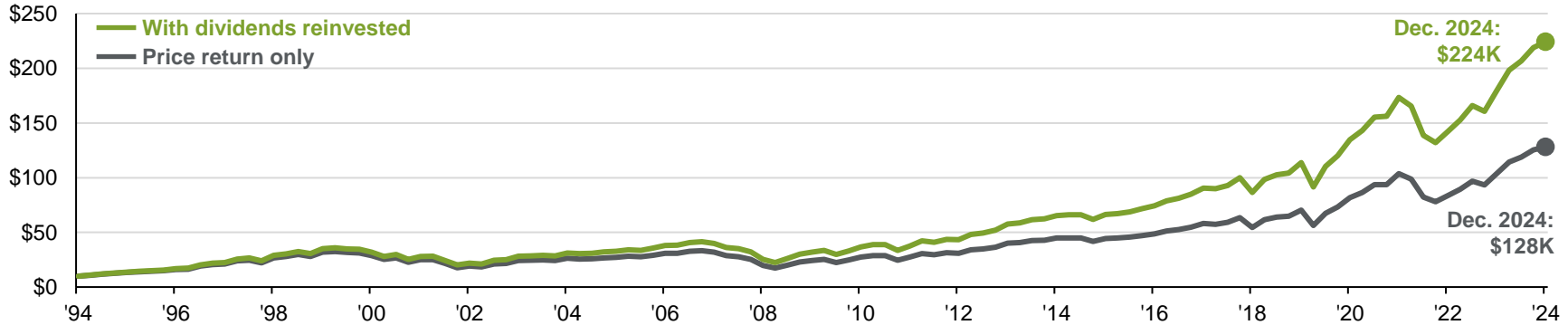


3 – In the face of strong inflation, investors need more from their portfolios

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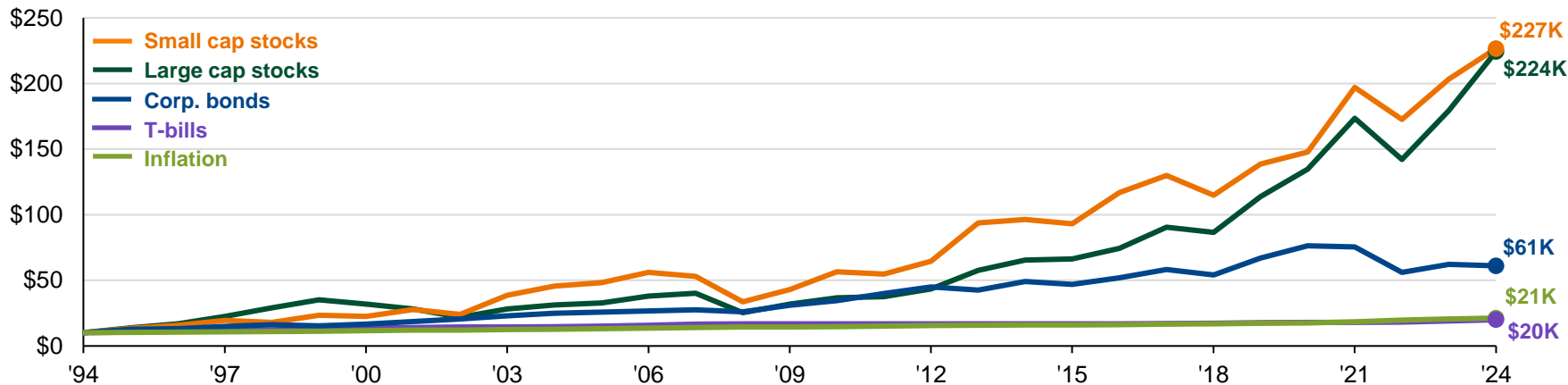
The power of compounding

S&P 500 price return versus total return, growth of \$10,000, quarterly, USD thousands



Major asset classes versus inflation

Growth of \$10,000 from 1994–2024, annual returns, USD thousands



Source: Bloomberg, Ibbotson, Standard & Poor's, J.P. Morgan Asset Management. Guide to the Markets – U.S. Data are as of December 31, 2024.

J.P.Morgan
ASSET MANAGEMENT

Investing Principles



AVOIDING THE CASH TRAP

④ High quality bonds provide income and portfolio protection

As cash yields have risen, so too have yields across fixed income. In fact, compared to cash, bond coupons look impressive. These high coupons, especially from longer-duration bonds, allow investors to weather interest rate volatility while the economy finds its footing. In other words, there is more upside potential than downside risk in today's bond market.

With markets uncertain about the future direction of rates, investors should take comfort in their ability to clip a healthy coupon. In addition, if the U.S. economy tips into recession, the Federal Reserve should cut rates by more than expected, providing much-needed portfolio protection and boosting bond prices, too.



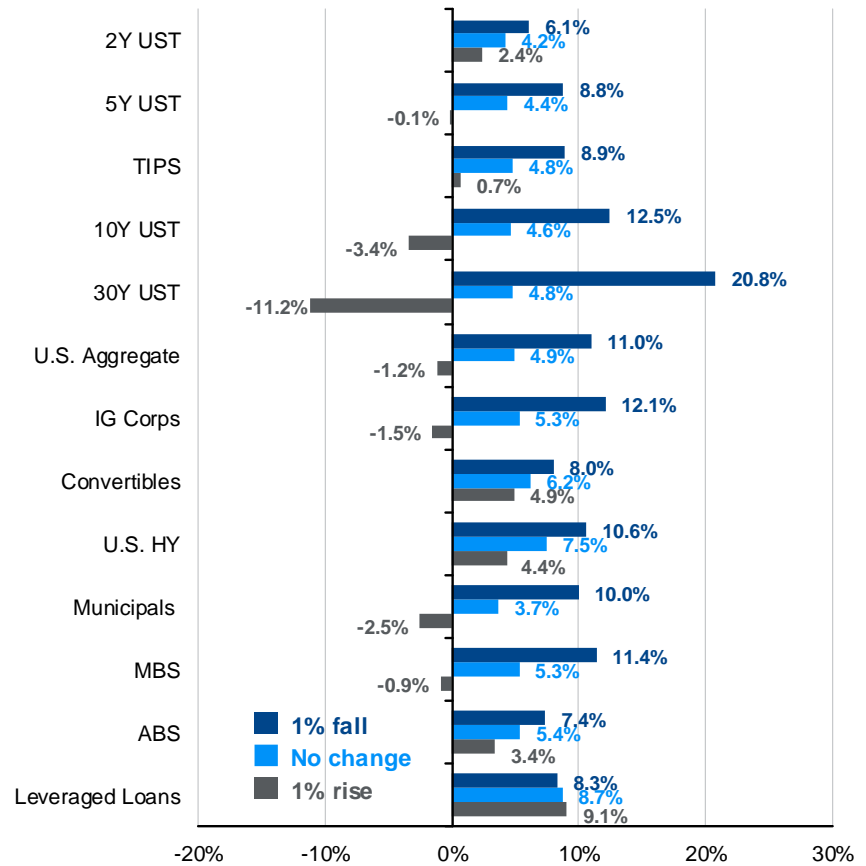
4 – High quality bonds provide income and portfolio protection

Fixed Income

U.S. Treasuries	Yield		Return	Avg. Maturity	Correlation to 10-year	Correlation to S&P 500
	12/31/2024	12/31/2023	2024			
2-Year	4.25%	4.23%	3.79%	2 years	0.75	0.00
5-Year	4.38%	3.84%	1.19%	5	0.94	-0.02
TIPS	2.13%	1.72%	1.84%	7.1	0.73	0.33
10-Year	4.58%	3.88%	-1.73%	10	1.00	-0.07
30-Year	4.78%	4.03%	-8.09%	30	0.93	-0.11
Sector						
U.S. Aggregate	4.91%	4.53%	1.25%	8.4	0.90	0.25
IG Corps	5.33%	5.06%	2.13%	10.5	0.69	0.47
Convertibles	6.22%	7.26%	10.95%	-	-0.04	0.86
U.S. HY	7.49%	7.59%	8.19%	4.7	0.09	0.79
Municipals	3.74%	3.22%	1.05%	13.6	0.74	0.26
MBS	5.27%	4.68%	1.20%	7.8	0.81	0.26
ABS	5.38%	5.65%	6.81%	2.3	0.42	0.22
Leveraged Loans	8.68%	10.59%	9.33%	4.7	-0.22	0.62

Fixed income returns in different interest rate scenarios

Total return, assumes a parallel shift in the yield curve



Source: Bloomberg, FactSet, Federal Reserve Bank of Cleveland, Standard & Poor's, U.S. Treasury, J.P. Morgan Asset Management. Sectors shown above are provided by Bloomberg unless otherwise noted and are represented by – U.S. Aggregate; MBS: U.S. Aggregate Securitized - MBS; ABS: J.P. Morgan ABS Index; IG Corporates: U.S. Corporates; Municipals: Muni Bond; High Yield: Corporate High Yield; Leveraged Loans: J.P. Morgan Leveraged Loan Index; TIPS: Treasury Inflation-Protected Securities; Convertibles: U.S. Convertibles Composite. Convertibles yield is as of most recent month-end and is based on U.S. portion of Bloomberg Global Convertibles Index. Yield and return information based on bellwethers for Treasury securities. Yields shown for TIPS are real yields. TIPS returns consider the impact that inflation could have on returns by assuming the Cleveland Fed's 1-year inflation expectation forecasts are realized. Sector yields reflect yield-to-worst. Leveraged loan yields reflect the yield to 3Y takeout. Correlations are based on 15-years of monthly returns for all sectors. ABS returns prior to June 2012 are sourced from Bloomberg. Past performance is not indicative of future results.
 Guide to the Markets – U.S. Data as of December 31, 2024.



AVOIDING THE CASH TRAP

5 All-time highs aren't trouble for the stock market

Once the market sell-off started in 2022, it took just over two years for the S&P 500 to reach its prior peak. Then, the stock market went on a tear, breaking through to new all-time highs. Now, volatility has re-entered the environment.

However, despite these concerns, stocks can stay attractive at or near all-time highs. Since 1950, the S&P 500 has achieved an all-time high roughly 7% of the time; and of these all-time highs, almost a third end up becoming new market “floors” – levels from which prices never fall by more than 5% again, and investors never get a “second bite of the apple.” In fact, investing at all-time highs has generally been a good idea: since the 1980s, that strategy has on average outperformed investing on any given day.



5 – All-time highs aren't trouble for the stock market

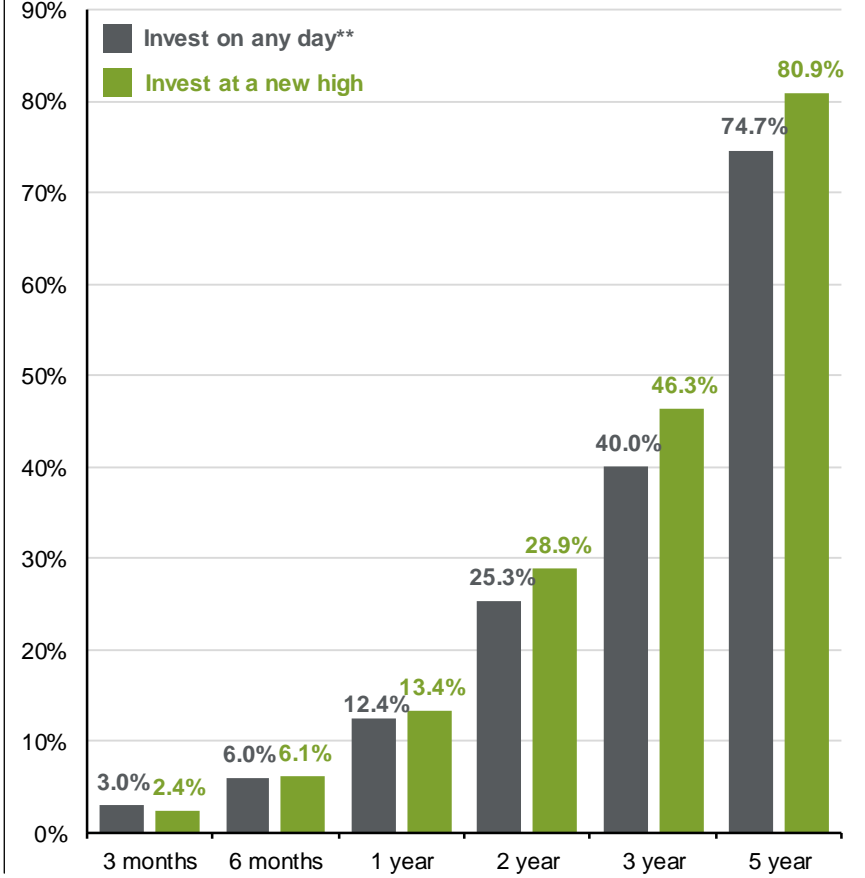
All-time highs and market floors

S&P 500 price index, daily, 1950–today



Average cumulative S&P 500 total returns

Jan. 1, 1988–Dec. 31, 2024



Investing Principles

Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management.

(Left) *Market floor is defined as an all-time high from which the market never fell more than 5%. (Right) ***"Invest on any day" represents average of forward returns for the entire time period whereas "Invest at a new high" represents average of rolling forward returns calculated from each new S&P 500 high for the subsequent 3-months, 6-months, 1-year, 2-year and 3-year intervals, with data starting 1/1/1988 through 12/31/2024. Guide to the Markets – U.S. Data are as of December 31, 2024.



AVOIDING THE CASH TRAP

6 **Waiting to get invested can harm portfolio performance**

After such an unexpectedly strong year of performance in 2024, many investors may feel apprehensive about deploying more capital into markets. However, this strategy can be very damaging to long-term portfolio values.

History has shown that by missing only a handful of the best days, investment performance can suffer dramatically. In fact, an equity investor who missed just the 10 best trading days since 2004 would have seen their annualized performance nearly cut in half. Unfortunately, missing those best days is easier than might initially be imagined. After all, over the last 20 years, many of the best days in the stock market occur after the worst days, when investors could be tempted to sell.

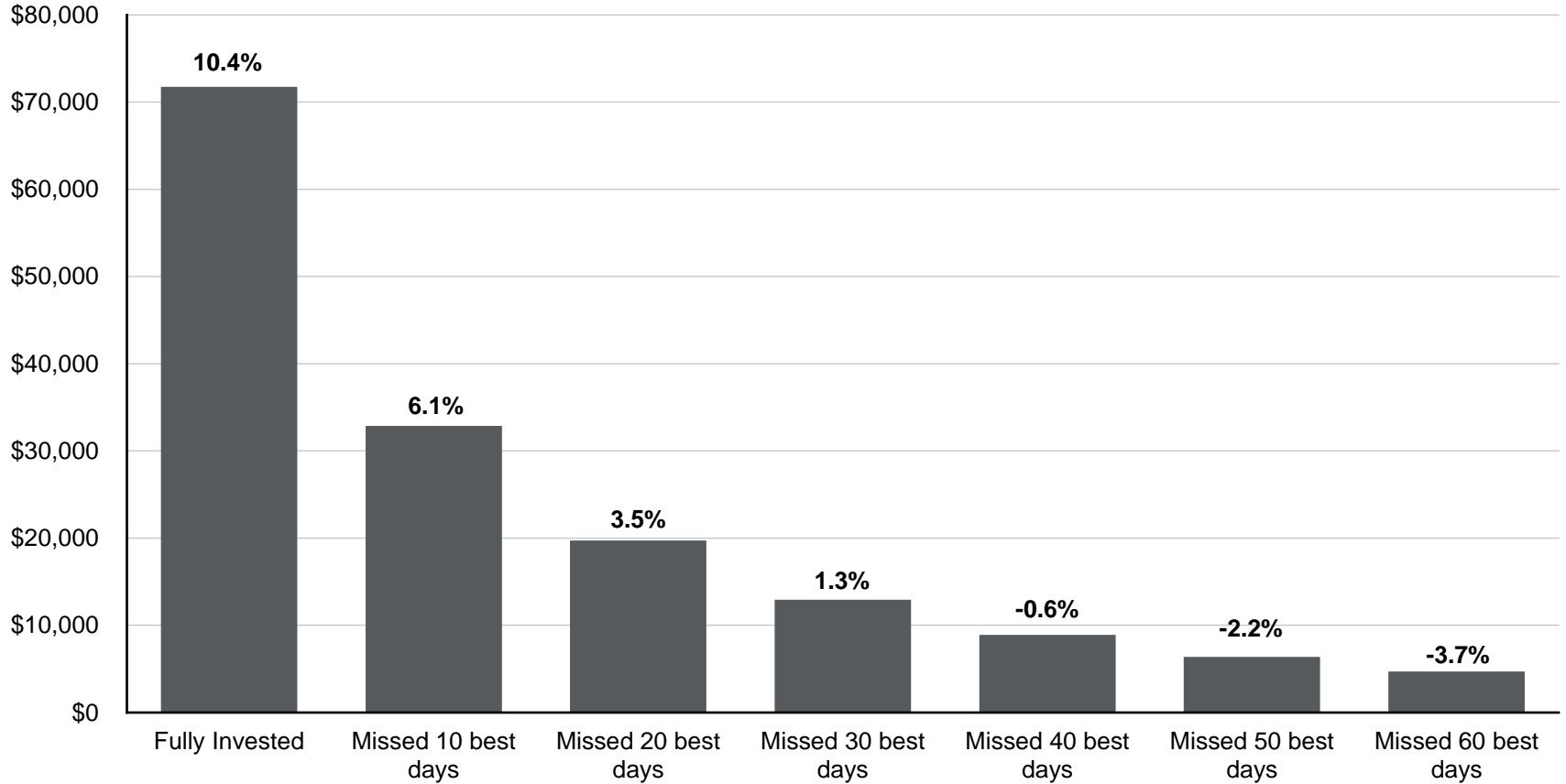


6 – Waiting to get invested can harm portfolio performance

Investing

Returns of S&P 500

Performance of a \$10,000 investment between January 3, 2005, and December 31, 2024, annualized returns



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management. Returns are based on the S&P 500 Total Return Index. Indices do not include fees or operating expenses and are not available for actual investment. The hypothetical performance calculations are shown for illustrative purposes only and are not meant to be representative of actual results while investing over the time periods shown. The hypothetical performance calculations for the respective strategies are shown gross of fees. If fees were included returns would be lower. Hypothetical performance returns reflect the reinvestment of all dividends. The hypothetical performance results have certain inherent limitations. Unlike an actual performance record, they do not reflect actual trading, liquidity constraints, fees and other costs. Past performance is not indicative of future returns. *Guide to Retirement* - Data are as of December 31, 2024.



AVOIDING THE CASH TRAP

7 Long-term investors have time on their side

Volatility is a normal part of investing, and over the short-term it can feel like anything is possible from your portfolio, both good and bad. For example, over the last seven decades, the equity market has been up over 50% or down almost 40% in a calendar year. This volatility may lead investors to think of stocks and bonds as being unsafe, driving them into cash.

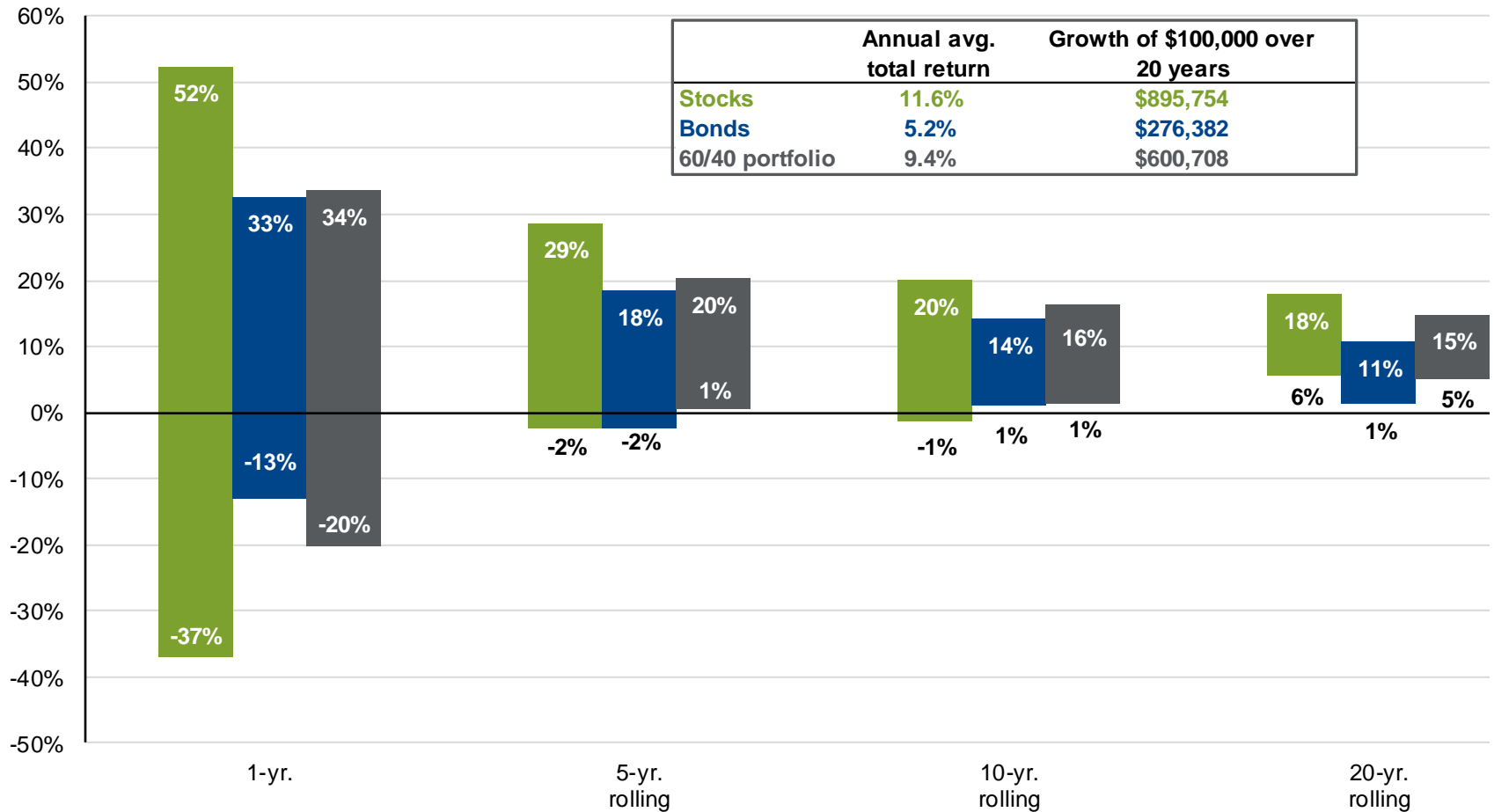
However, while markets can be quite volatile over the short run, as time increases, that volatility decreases. By holding assets for the long term, the range of potential outcomes in portfolios narrows. In fact, the 60/40 has not delivered negative returns over any 5-year rolling window over the last 75 years. For that reason, investors would do well to remember that time is on their side.



7 – Long-term investors have time on their side

Range of stock, bond and blended total returns

Annual total returns, 1950–2024



Investing Principles

Source: Bloomberg, FactSet, Federal Reserve, Standard & Poor's, Strategas/Ibbotson, J.P. Morgan Asset Management. Returns shown are based on calendar year returns from 1950 to 2024. Bonds represent Strategas/Ibbotson for periods prior to 1976 and the Bloomberg Aggregate thereafter. Growth of \$100,000 is based on annual average total returns from 1950 to 2024. Guide to the Markets – U.S. Data are as of December 31, 2024.



Getting started

- 1 Meet with your financial advisor to discuss your needs and ideal asset allocation
- 2 Determine how much cash is necessary to meet short-term goals
- 3 Assess market opportunities to find sources of return, income and protection
- 4 Step out of excess cash and build a long-term, diversified portfolio



J.P. Morgan Asset Management – Index definitions

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All indexes are unmanaged and an individual cannot invest directly in an index. Index returns do not include fees or expenses.

Equities:

The **Dow Jones Industrial Average** is a price-weighted average of 30 actively traded blue-chip U.S. stocks.

The **MSCI ACWI (All Country World Index)** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets.

The **MSCI EAFE Index (Europe, Australasia, Far East)** is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the US & Canada.

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

The **MSCI Europe Index** is a free float-adjusted market capitalization index that is designed to measure developed market equity performance in Europe.

The **MSCI Pacific Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the Pacific region.

The **Russell 1000 Index**® measures the performance of the 1,000 largest companies in the Russell 3000.

The **Russell 1000 Growth Index**® measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

The **Russell 1000 Value Index**® measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

The **Russell 2000 Index**® measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

The **Russell 2000 Growth Index**® measures the performance of those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.

The **Russell 2000 Value Index**® measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

The **Russell 3000 Index**® measures the performance of the 3,000 largest U.S. companies based on total market capitalization.

The **Russell Midcap Index**® measures the performance of the 800 smallest companies in the Russell 1000 Index.

The **Russell Midcap Growth Index**® measures the performance of those Russell Midcap companies with higher price-to-book ratios and higher forecasted growth values. The stocks are also members of the Russell 1000 Growth index.

The **Russell Midcap Value Index**® measures the performance of those Russell Midcap companies with lower price-to-book ratios and lower forecasted growth values. The stocks are also members of the Russell 1000 Value index.

The **S&P 500 Index** is widely regarded as the best single gauge of the U.S. equities market. The index includes a representative sample of 500 leading companies in leading industries of the U.S. economy. The **S&P 500 Index** focuses on the large-cap segment of the market; however, since it includes a significant portion of the total value of the market, it also represents the market.

Fixed income:

The **Bloomberg 1-3 Month U.S. Treasury Bill Index** includes all publicly issued zero-coupon US Treasury Bills that have a remaining maturity of less than 3 months and more than 1 month, are rated investment grade, and have \$250 million or more of outstanding face value. In addition, the securities must be denominated in U.S. dollars and must be fixed rate and non convertible.

The **Bloomberg Global High Yield Index** is a multi-currency flagship measure of the global high yield debt market. The index represents the union of the US High Yield, the Pan-European High Yield, and Emerging Markets (EM) Hard Currency High Yield Indices. The high yield and emerging markets sub-components are mutually exclusive. Until January 1, 2011, the index also included CMBS high yield securities.

The **Bloomberg Municipal Index**: consists of a broad selection of investment-grade general obligation and revenue bonds of maturities ranging from one year to 30 years. It is an unmanaged index representative of the tax-exempt bond market.

The **Bloomberg US Dollar Floating Rate Note (FRN) Index** provides a measure of the U.S. dollar denominated floating rate note market.

The **Bloomberg US Corporate Investment Grade Index** is an unmanaged index consisting of publicly issued US Corporate and specified foreign debentures and secured notes that are rated investment grade (Baa3/BBB or higher) by at least two ratings agencies, have at least one year to final maturity and have at least \$250 million par amount outstanding. To qualify, bonds must be SEC-registered.

The **Bloomberg US High Yield Index** covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB-/BBB+ and below using the middle of Moody's, S&P, and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.

The **Bloomberg US Mortgage Backed Securities Index** is an unmanaged index that measures the performance of investment grade fixed-rate mortgage backed pass-through securities of GNMA, FNMA and FHLMC.

The **Bloomberg US TIPS Index** consists of Inflation-Protection securities issued by the U.S. Treasury.

The **J.P. Morgan Emerging Market Bond Global Index (EMBI)** includes U.S. dollar denominated Brady bonds, Eurobonds, traded loans and local market debt instruments issued by sovereign and quasi-sovereign entities.

The **J.P. Morgan Domestic High Yield Index** is designed to mirror the investable universe of the U.S. dollar domestic high yield corporate debt market.

The **J.P. Morgan Corporate Emerging Markets Bond Index Broad Diversified (CEMBI Broad Diversified)** is an expansion of the **J.P. Morgan Corporate Emerging Markets Bond Index (CEMBI)**. The CEMBI is a market capitalization weighted index consisting of U.S. dollar denominated emerging market corporate bonds.

The **J.P. Morgan Emerging Markets Bond Index Global Diversified (EMBI Global Diversified)** tracks total returns for U.S. dollar-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, Eurobonds. The index limits the exposure of some of the larger countries.

The **J.P. Morgan GBI EM Global Diversified** tracks the performance of local currency debt issued by emerging market governments, whose debt is accessible by most of the international investor base.

The **U.S. Treasury Index** is a component of the U.S. Government index.



J.P. Morgan Asset Management – Definitions

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Other asset classes:

The **Alerian MLP Index** is a composite of the 50 most prominent energy Master Limited Partnerships (MLPs) that provides investors with an unbiased, comprehensive benchmark for the asset class.

The **Bloomberg Commodity Index** and related sub-indices are composed of futures contracts on physical commodities and represents twenty two separate commodities traded on U.S. exchanges, with the exception of aluminum, nickel, and zinc

The **Cambridge Associates U.S. Global Buyout and Growth Index®** is based on data compiled from 1,768 global (U.S. & ex-U.S.) buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2013.

The **CS/Tremont Hedge Fund Index** is compiled by Credit Suisse Tremont Index, LLC. It is an asset-weighted hedge fund index and includes only funds, as opposed to separate accounts. The Index uses the Credit Suisse/Tremont database, which tracks over 4500 funds, and consists only of funds with a minimum of US\$50 million under management, a 12-month track record, and audited financial statements. It is calculated and rebalanced on a monthly basis, and shown net of all performance fees and expenses. It is the exclusive property of Credit Suisse Tremont Index, LLC.

The **HFRI Monthly Indices (HFRI)** are equally weighted performance indexes, utilized by numerous hedge fund managers as a benchmark for their own hedge funds. The HFRI are broken down into 4 main strategies, each with multiple sub strategies. All single-manager HFRI Index constituents are included in the HFRI Fund Weighted Composite, which accounts for over 2200 funds listed on the internal HFR Database.

The **NAREIT EQUITY REIT Index** is designed to provide the most comprehensive assessment of overall industry performance, and includes all tax-qualified real estate investment trusts (REITs) that are listed on the NYSE, the American Stock Exchange or the NASDAQ National Market List.

The **NFI-ODCE**, short for NCREIF Fund Index -Open End Diversified Core Equity, is an index of investment returns reporting on both a historical and current basis the results of 33 open-end commingled funds pursuing a core investment strategy, some of which have performance histories dating back to the 1970s. The NFI-ODCE Index is capitalization-weighted and is reported gross of fees. Measurement is time-weighted.

Definitions:

Investing in **alternative assets** involves higher risks than traditional investments and is suitable only for sophisticated investors. Alternative investments involve greater risks than traditional investments and should not be deemed a complete investment program. They are not tax efficient and an investor should consult with his/her tax advisor prior to investing. Alternative investments have higher fees than traditional investments and they may also be highly leveraged and engage in speculative investment techniques, which can magnify the potential for investment loss or gain. The value of the investment may fall as well as rise and investors may get back less than they invested.

Bonds are subject to interest rate risks. Bond prices generally fall when interest rates rise.

Investments in **commodities** may have greater volatility than investments in traditional securities, particularly if the instruments involve leverage. The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Use of leveraged commodity-linked derivatives creates an opportunity for increased return but, at the same time, creates the possibility for greater loss.

Derivatives may be riskier than other types of investments because they may be more sensitive to changes in economic or market conditions than other types of investments and could result in losses that significantly exceed the original investment. The use of derivatives may not be successful, resulting in investment losses, and the cost of such strategies may reduce investment returns.

Distressed Restructuring Strategies employ an investment process focused on corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings.

Investments in **emerging markets** can be more volatile. The normal risks of investing in foreign countries are heightened when investing in emerging markets. In addition, the small size of securities markets and the low trading volume may lead to a lack of liquidity, which leads to increased volatility. Also, emerging markets may not provide adequate legal protection for private or foreign investment or private property.

The price of **equity securities** may rise, or fall because of changes in the broad market or changes in a company's financial condition, sometimes rapidly or unpredictably. These price movements may result from factors affecting individual companies, sectors or industries, or the securities market as a whole, such as changes in economic or political conditions. Equity securities are subject to "stock market risk" meaning that stock prices in general may decline over short or extended periods of time.

Equity market neutral strategies employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. Equity Market Neutral Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short.

Global macro strategies 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.

International investing involves a greater degree of risk and increased volatility. Changes in currency exchange rates and differences in accounting and taxation policies outside the U.S. can raise or lower returns. Some overseas markets may not be as politically and economically stable as the United States and other nations.

There is no guarantee that the use of **long and short positions** will succeed in limiting an investor's exposure to domestic stock market movements, capitalization, sector swings or other risk factors. Using long and short selling strategies may have higher portfolio turnover rates. Short selling involves certain risks, including additional costs associated with covering short positions and a possibility of unlimited loss on certain short sale positions.

Merger arbitrage strategies which employ an investment process primarily focused on opportunities in equity and equity related instruments of companies which are currently engaged in a corporate transaction.

Mid-capitalization investing typically carries more risk than investing in well-established "blue-chip" companies. Historically, mid-cap companies' stock has experienced a greater degree of market volatility than the average stock.

Price to forward earnings is a measure of the price-to-earnings ratio (P/E) using forecasted earnings. **Price to book value** compares a stock's market value to its book value. **Price to cash flow** is a measure of the market's expectations of a firm's future financial health. **Price to dividends** is the ratio of the price of a share on a stock exchange to the dividends per share paid in the previous year, used as a measure of a company's potential as an investment.

Real estate investments may be subject to a higher degree of market risk because of concentration in a specific industry, sector or geographical sector. Real estate investments may be subject to risks including, but not limited to, declines in the value of real estate, risks related to general and economic conditions, changes in the value of the underlying property owned by the trust and defaults by borrower.

Relative Value Strategies maintain positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities.

Small-capitalization investing typically carries more risk than investing in well-established "blue-chip" companies since smaller companies generally have a higher risk of failure. Historically, smaller companies' stock has experienced a greater degree of market volatility than the average stock.



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Unless otherwise stated, all data are as of December 31, 2024 or most recently available.

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