White Paper | September 2022

Investing at a Crossroads: Three Themes for Today's New Challenges

The global economy and financial markets have benefitted from several significant tailwinds over the past four decades. Inflation moderated and stabilized, giving central banks greater policy flexibility; global interest rates declined; geopolitical tensions eased during the 1990s, creating the conditions for the efficiency gains of globalization; labor markets lost pricing power and grew more flexible; corporate tax burdens lifted; natural resource- and fossil fuel-intensive growth raised living standards and generated investment opportunities worldwide. It was a particularly golden era for investors in fixed income securities, technology and other "long-duration" assets.

Many of those tailwinds are now turning to headwinds, and we believe this demands a new investment playbook. Here, we distill an era of sometimes bewildering change into three themes for managing risk and seeking return opportunities in the new regime.

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Our Three Themes At a Glance

OUTLOOK: Adapt to Today's New Challenges

Two multi-decade economic tailwinds are under threat. Globalization is hitting geopolitical, strategic, populist and practical roadblocks, and unsustainable growth powered by fossil fuels faces a difficult transition to ultimately more efficient growth powered by renewables.

Potential economic implications:

- A return to structurally higher inflation and more hawkish central bank policy
- A return to shorter and more volatile business cycles
- A global energy transition

Investment playbook:

- Favoring the fittest
- Rethinking regional risk
- Harvesting global macro trends, tactical dislocations and volatility premia
- Accounting for "Net Zero"
- Prioritizing real assets: Commodities, real estate, infrastructure

RETURNS: Mind the Gap

Lower and more volatile growth, together with higher inflation and interest rates, could slow the performance of many equity and bond indices, opening a wider gap between targeted returns and return outlooks. This "exhausted beta" phenomenon, together with the potential for higher price volatility and an upward bias in rates, is likely to make return profiles more reliant on income, illiquidity and niche-market premia, as well as active management (asset-allocation, stock-selection, corporate-engagement and operational "alpha").

Potential portfolio implications:

- Lower asset class return outlooks, with higher volatility

Investment playbook:

- Looking beyond "exhausted beta"
- Going short as well as long
- Rebalancing toward value investing
- Becoming fully flexible in fixed income and credit
- Prioritizing income across asset classes
- Integrating public and private market investments
- Exploiting your natural advantages while seeking effective partners

RISK: Diversify Differently

Higher volatility and economic uncertainty, as well as the use of increased portfolio risk to align return profiles with return targets, make portfolio diversification more important than ever. Diversification could be more difficult to achieve, however, as equity-bond correlation tends to rise in more inflationary environments.

Potential portfolio implications:

- Higher equity-bond correlation leading to higher portfolio volatility

Investment playbook:

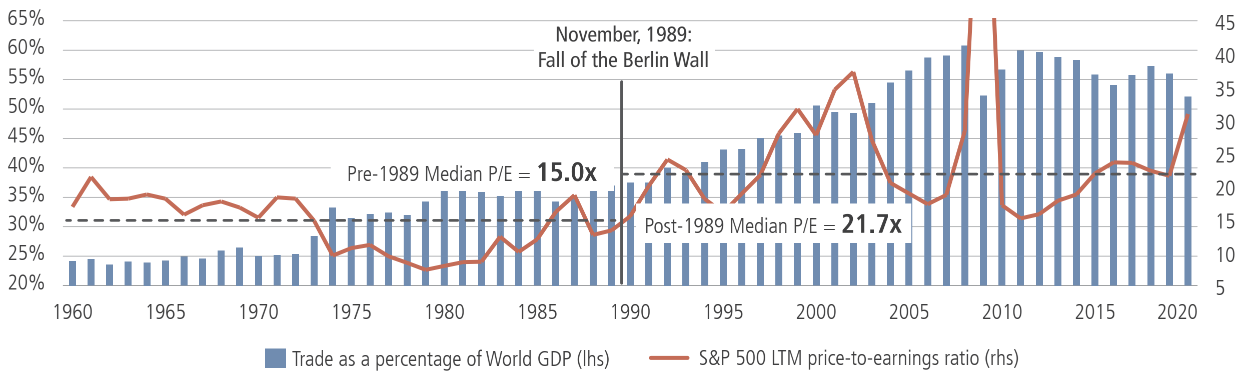
- Adding flexibility and shortening duration in fixed income
- Seeking out uncorrelated markets and strategies
- Prioritizing inflation-sensitive real and financial assets
- Identifying and hedging the tail risks that matter to you

Why Do They Matter? Charting Our Three Themes

OUTLOOK: Adapt to Today's New Challenges

Two multi-decade tailwinds are under threat: globalization…

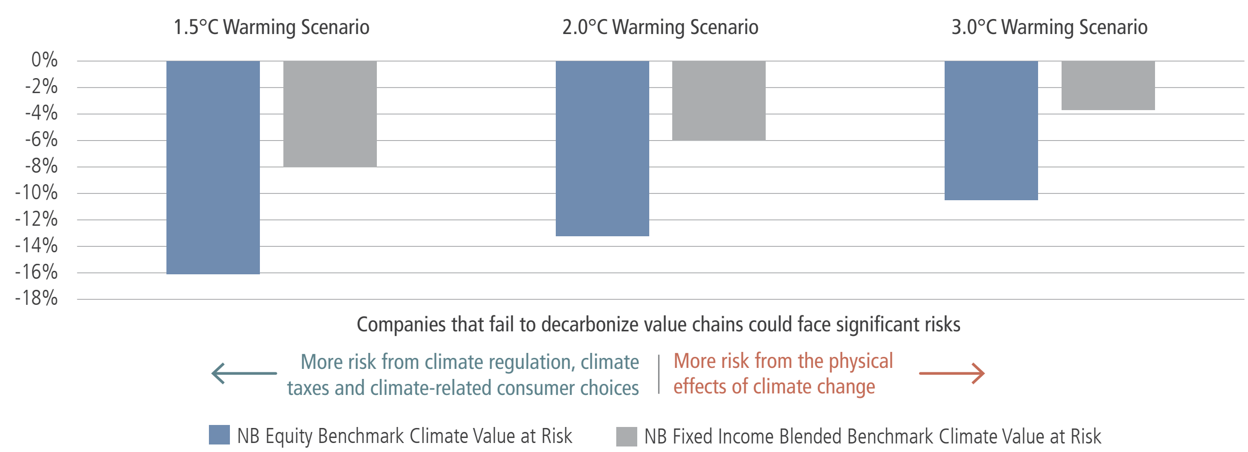
U.S. EQUITY MARKET MULTIPLES AND WORLD TRADE, PRE- AND POST-1989



Source: World Bank, Robert Shiller, Neuberger Berman. As of December 2020. The pre- and post-1989 median price-to-earnings ratios were calculated by taking the mean average of 12 monthly readings for last-12-month earnings per share for each calendar year, and calculating the median average of those calendar-year readings for the two periods. For illustrative purposes only. Nothing herein constitutes a prediction or projection of future events or future market behavior. Due to a variety of factors, actual events or market behavior may differ significantly from any views expressed or any historical results. Indices are unmanaged and not available for direct investment. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future results.**

… and consequence-free growth powered by fossil fuels

EQUITY AND FIXED INCOME CLIMATE VALUE AT RISK IN THREE DIFFERENT GLOBAL WARMING SCENARIOS

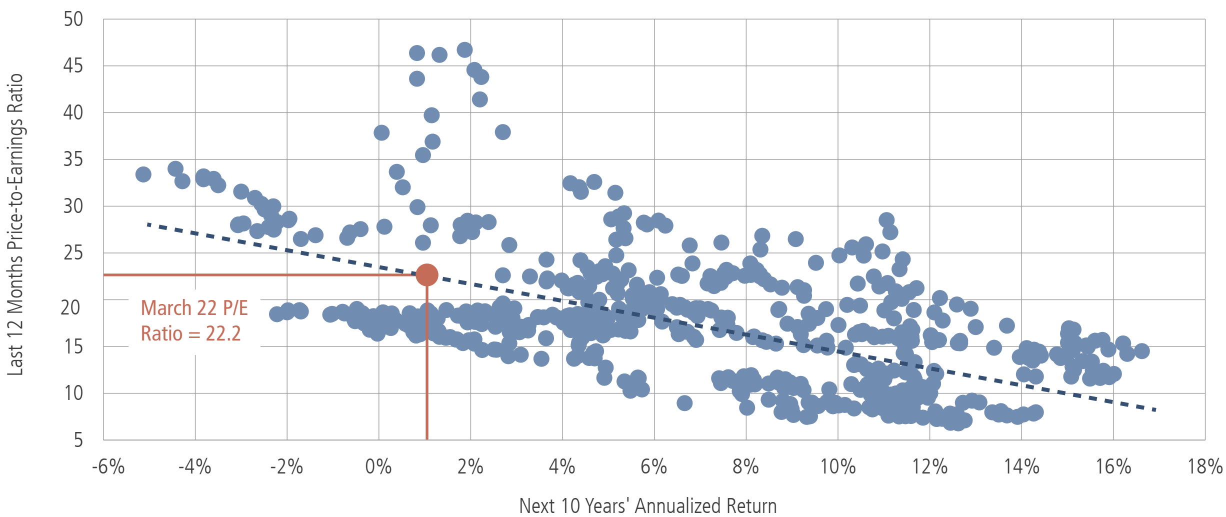


Source: Neuberger Berman. As of August 2022. Neuberger Berman has implemented top-down scenario analysis for modelling transition risks (business risks associated with the net-zero transition), physical risks (from the impact of extreme weather events, wildfires and floods), regulatory costs and commercial opportunities at the company level, in line with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD), for different levels of global warming above pre-industrial temperatures. Different securities and companies will have varying levels of exposure to physical risk depending on the nature of their business models and physical locations. Additionally, the analysis considers potential regulatory costs, as well as technology opportunities related to low-carbon technology solutions for companies that need to comply with greenhouse gas reduction requirements. The Equity Benchmark is the MSCI All Country World Index; the Fixed Income Blended Benchmark is 50% Bloomberg Global Aggregate Index and 50% ICE BoA Global High Yield Index.

RETURNS: Mind the Gap

Higher market valuations suggest lower return outlooks (especially if risk premia are expected to rise)…

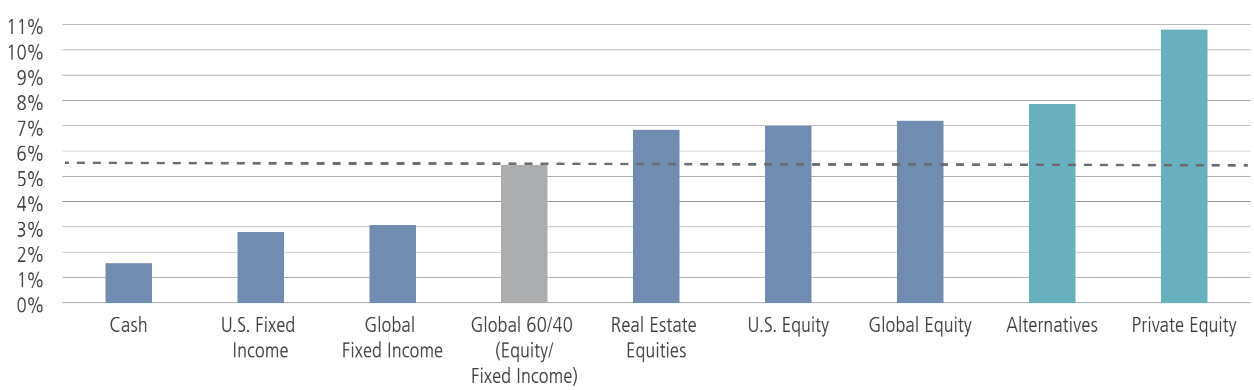
S&P 500 INDEX, VALUATION MULTIPLES AND SUBSEQUENT 10-YEAR RETURNS, 1960 – 2012



Source: Robert Shiller, Neuberger Berman. Data as of March 2022. Data excludes the P/E ratios for November 2008 through October 2009, which were extraordinarily high not due to rising valuations but due to the earnings depression that followed the Great Financial Crisis. For illustrative purposes only. Nothing herein constitutes a prediction or projection of future events or future market behavior. Due to a variety of factors, actual events or market behavior may differ significantly from any views expressed or any historical results. Indices are unmanaged and not available for direct investment. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future results.**

… strengthening the case for private markets and other alternatives...

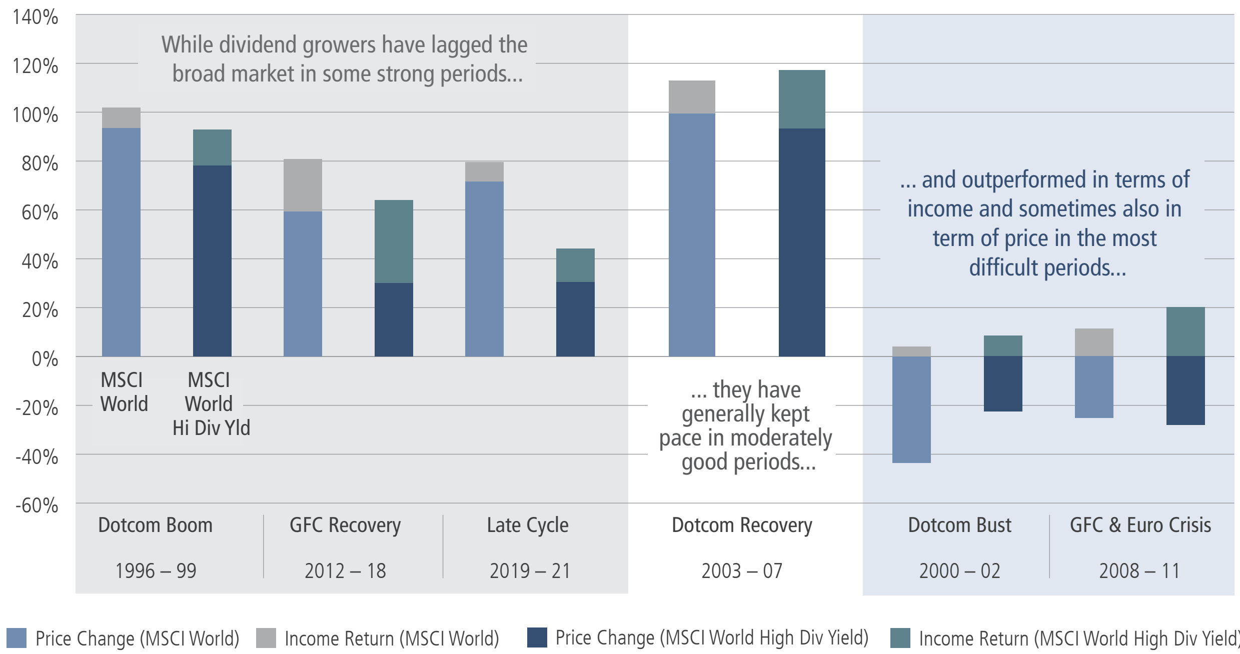
FORWARD-LOOKING ESTIMATED RETURNS

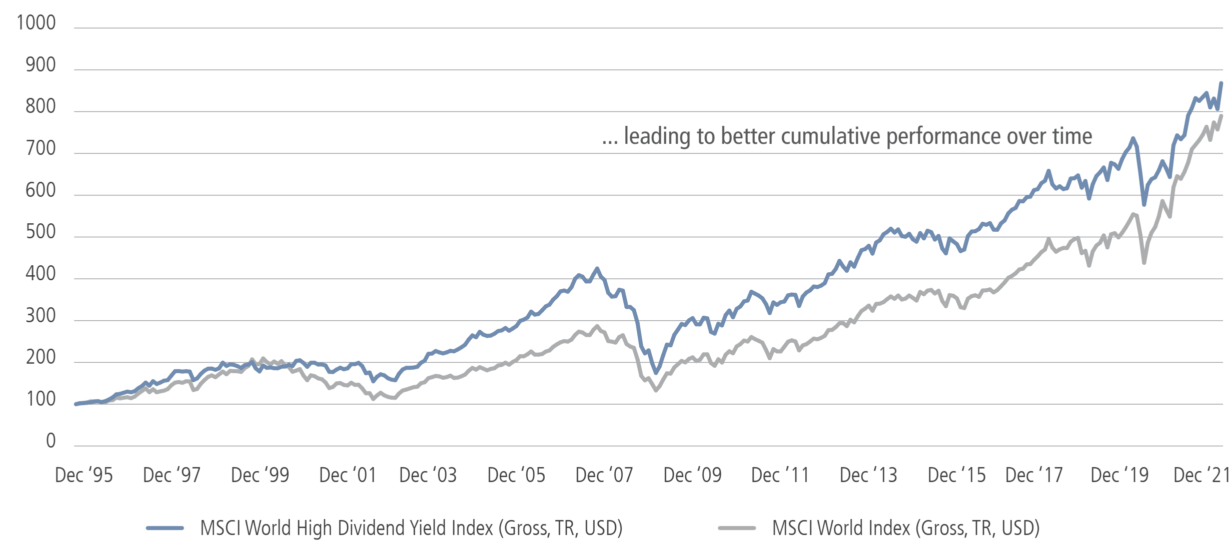


Source: Neuberger Berman, Bloomberg-Barclays, Cambridge Associates, FactSet; Analytics are as of June 7, 2022. Alternatives basket includes hedged strategies (15%), Commodities (5%), Private debt (10%), Value add real estate (10%), Core real estate (30%), Private Equity (30%). The Global 60/40 basket includes the MSCI All Country World Index (60%) and the Bloomberg Global Aggregate Index (40%). IMPORTANT: The performance estimates are hypothetical in nature and reflect the Neuberger Berman's Capital Market Assumptions. The estimates do not reflect actual investment results and are not guarantees of future results. Alternative Assets may include investment vehicles that are subject to investor eligibility restrictions and may not be suitability for all investors. Please see Additional Disclosures at the end of the presentation for asset class and index definitions, terminology definitions and Neuberger Berman's Capital Market Assumptions. Indexes are unmanaged and are not available for direct investment. Investing entails risks, including possible loss of principal.

… and potentially making income a more important component of total return (and a more highly valued characteristic)

HIGH-DIVIDEND STOCKS VERSUS THE BROAD MARKET, 1996 – 2021



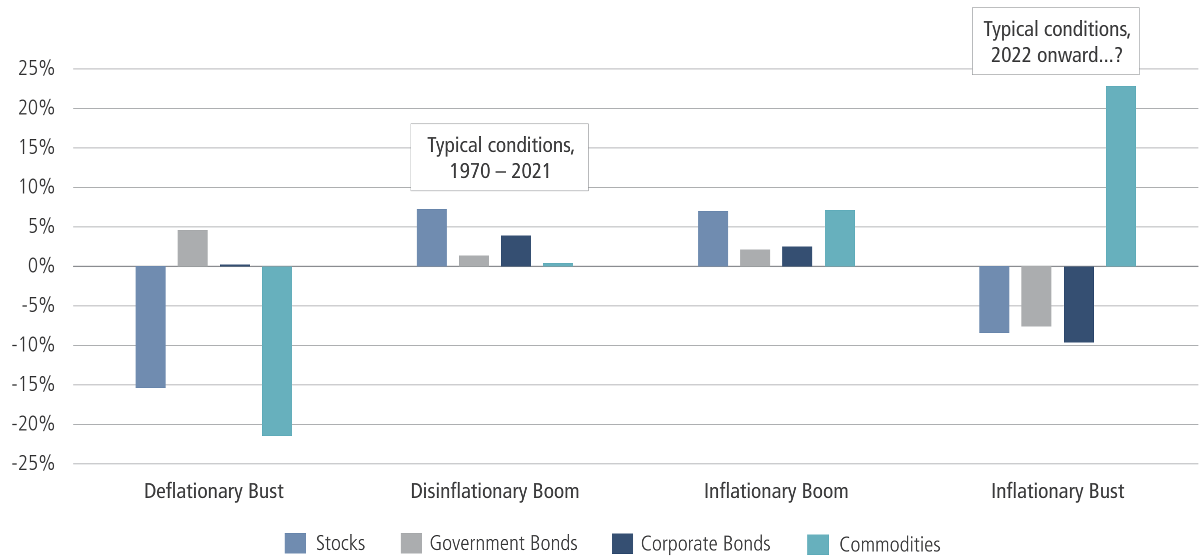


Source: MSCI. Data as of December 31, 2021. For illustrative purposes only. Nothing herein constitutes a prediction or projection of future events or future market behavior. Due to a variety of factors, actual events or market behavior may differ significantly from any views expressed or any historical results. Indices are unmanaged and not available for direct investment. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future results.**

RISK: Diversify Differently

Structurally higher inflation makes a case for real assets…

AVERAGE ANNUAL REAL RETURNS DURING FOUR DIFFERENT GROWTH AND INFLATION REGIMES, 1961 – 2021

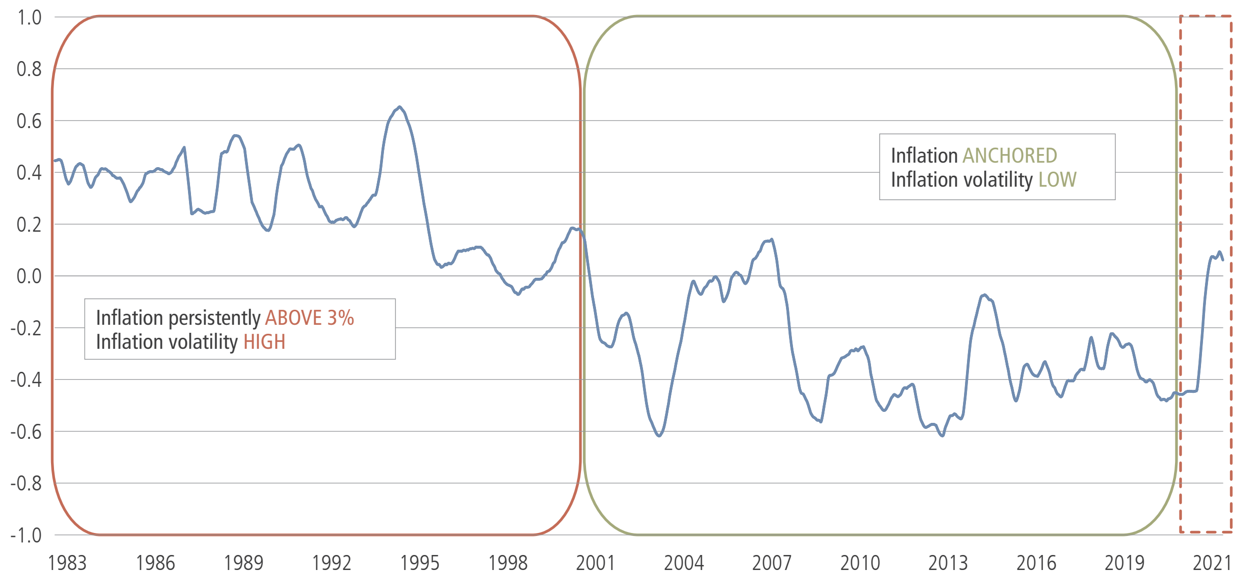


Source: Bloomberg, Federal Reserve Bank of St. Louis (FRED), Bank of America, Ibbotson. Data from January 1, 1961 to December 31, 2021. Stocks are represented by the MSCI World Index (backfilled with the S&P 500 Index by Ibbotson prior to Jan 1970); Government Bonds by the ICE BoA Global Sovereign Bond Index (backfilled with the Bloomberg U.S. Long Term Government Bond Index by Ibbotson prior to Jan 1986); Corporate Bonds by the ICE BoA Global Corporate Bond Index (backfilled with the Bloomberg U.S. Long Term Corporate Bond Index by Ibbotson prior to Jan 1997); and Commodities by the Bloomberg Commodity Index. Inflationary regime is defined by the year-over-year (YoY) percent change in the OECD CPI (backfilled with the U.S. CPI prior to Feb 1971). Bust and boom regimes are defined by the change in the level of OECDGDP compared to the previous year. If the current YoY GDP minus the YoY GDP lagged one year is less than zero, it is considered a bust regime and vice versa. If the current YoY CPI minus the YoY CPI lagged one year is less than zero, it is considered a deflationary regime and vice versa. Nothing herein constitutes a prediction or projection of future events or future market behavior. Due to a variety of factors, actual events or market behavior may differ significantly from any views expressed. Indexes are unmanaged and are not available for direct investment. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future results.**

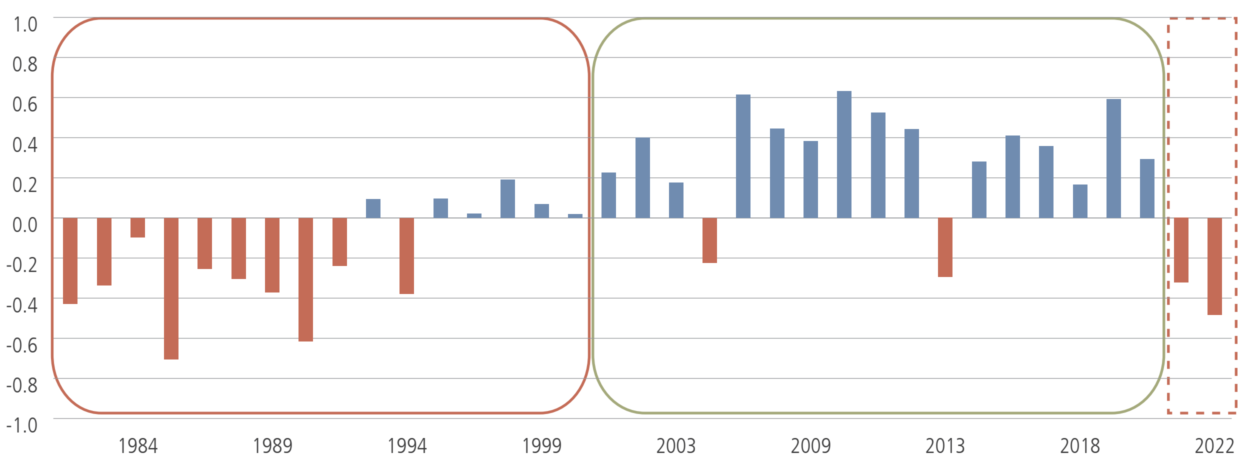
… as part of a wider effort to “diversify differently”, as higher inflation could raise equity-bond correlation

EQUITY-BOND CORRELATION, 1983 – 2022

One-year rolling correlation of daily returns, S&P 500 Index versus U.S. 10-year Treasury



Average U.S. 10-year Treasury return on days when the S&P 500 Index ended down by 2% or more



Source: Bloomberg. Data as of April, 2022. For illustrative purposes only. Nothing herein constitutes a prediction or projection of future events or future market behavior. Due to a variety of factors, actual events or market behavior may differ significantly from any views expressed. Indexes are unmanaged and are not available for direct investment. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future results.**

What Is Our Thinking? Macro Inflections and Their Economic Implications

Macro Inflections: Deglobalization, Labor Power, A Changing Policy Environment

Deglobalization

Since the Great Financial Crisis of 2008 – 09 (GFC), we have seen protectionism, economic populism and nationalism rewarded at the ballot box. We have seen democracies chastened and autocracies emboldened around the world. Russia's invasion of Ukraine is a grave threat to both the post-Cold War strategic settlement and the flow of global trade. The European Union, home to the world's largest single market for goods, services, capital and labor, has faced financial fragility in the south, Brexit in the west and threats to the rule of law and its core values in the east.

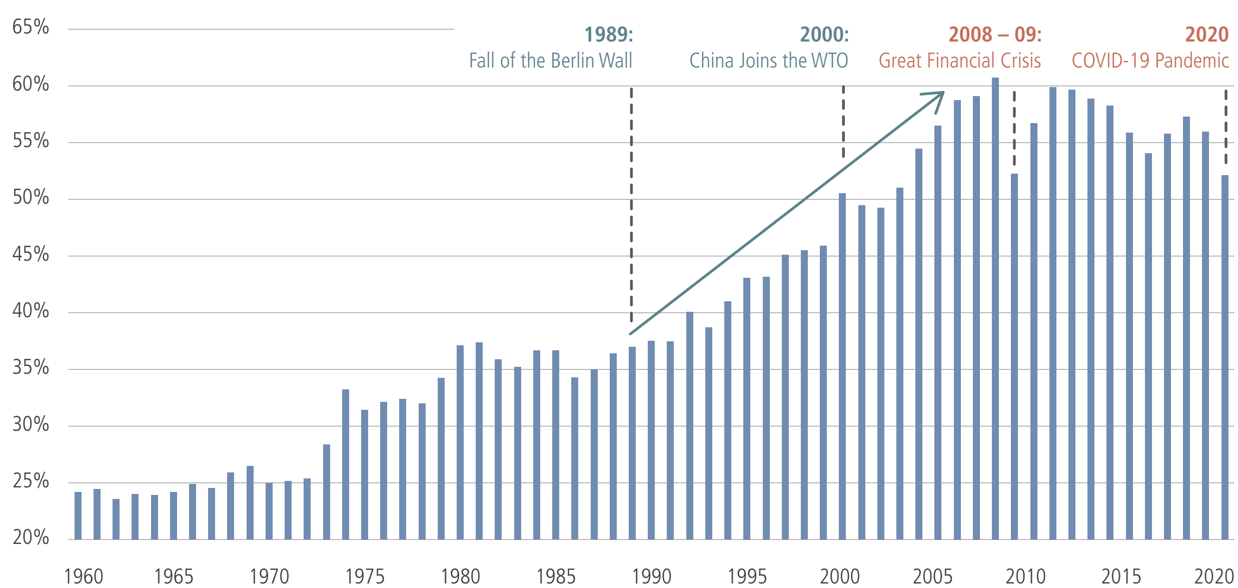
We have also seen the most important economic relationship underpinning globalization, that between the U.S. and China, come under strain. The rise of China as an economic power, once a potent symbol of globalization, has become a major reason why it is stalling and reversing. As the country's workforce has simultaneously aged and moved up the manufacturing value chain, China has become increasingly self-sufficient and focused on "common prosperity," and correspondingly less reliant on fast-paced, export-driven growth. Concerns over security and strategic industries have led to a regional decoupling in technology, and the development of new U.S.- and China-led "spheres of influence." The growing importance of China's renminbi as a reserve currency raises the possibility that it could one day rival the U.S. dollar's dominance in international trade; the decarbonization of the economy and consequent decline in the circulation of "petrodollars" could further fragment the dollar-centric, post-Bretton Woods global trade regime.

Finally, in addition to populist, nationalist and strategic concerns, the COVID-19 pandemic continues to raise profound questions about the fragility of the globalized, just-in-time supply chains that industry has built over the past three decades.

Even without the increased probability of potentially highly disruptive events, such as tit-for-tat trade wars or financial crises that are not met with 2008-style central bank solidarity, these developments are likely to generate substantial new headwinds to global growth, as well as structurally higher global inflation.

THE END OF 20 YEARS OF HYPER-GLOBALIZATION

Trade as a proportion of world GDP



Source: World Bank. As of December 2020. For illustrative purposes only.

Labor Power

Apart from a brief recovery in the late 1990s, in many developed economies the share of GDP that accrues not to owners of capital but to labor, via wages and social welfare benefits, has been declining for 50 years. We think there are several reasons to anticipate a swing back in favor of labor.

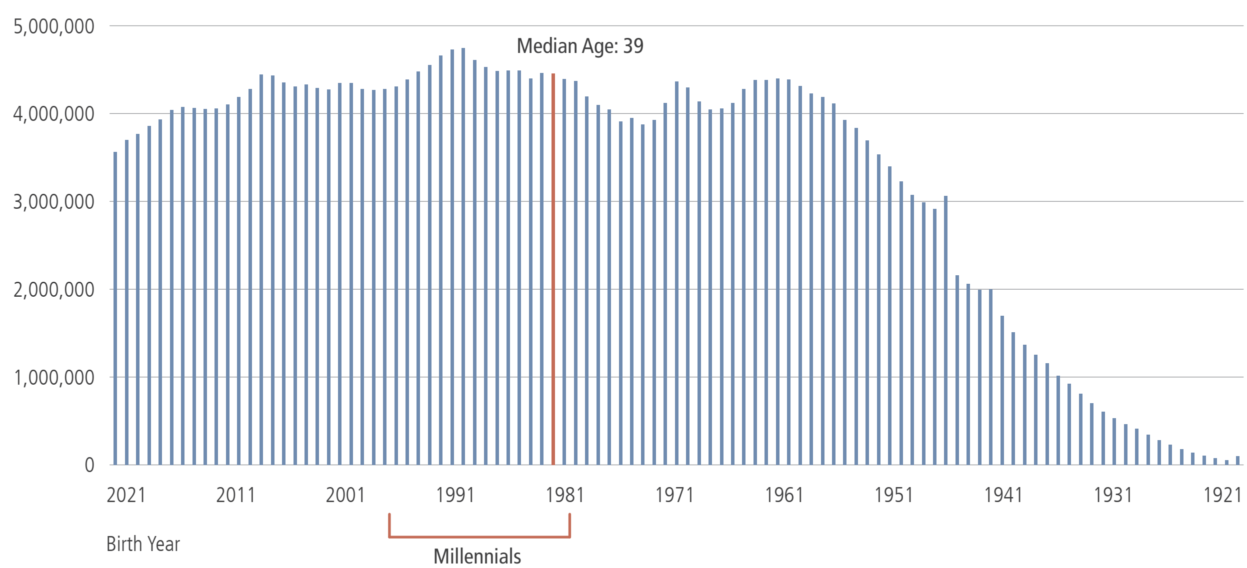
An important dynamic behind this loss of labor share of GDP, particularly since China joined the World Trade Organization in 2000, was globalization: the shifting of productivity-enhancing manufacturing jobs out of developed economies and into low-cost economies. This was made politically sustainable via a grand bargain in developed economies: the working and middle classes accepted stagnating real wage growth in return for cheaper consumer goods, moderate inflation and wider access to credit at low interest rates.

It is notable that the sharp decline in labor share of GDP in the U.S. was arrested by the GFC. This event revealed the grand bargain between capital and labor to be financially unsustainable. Thereafter, an aging, more consumption-oriented China ceased to be a low-cost manufacturing center, and more recently it has redirected its policy goals toward greater economic self-sufficiency and "common prosperity" at home. At the same time, in developed economies the hardships and perceived injustices of the GFC fueled a rise in populist demands for protectionism and the return of manufacturing jobs. Governments are now recognizing that security concerns and the low-carbon transition offer convenient additional reasons to support a domestic manufacturing renaissance. Finally, the COVID-19 pandemic appears to have put an end to the moderate inflation and low interest rates that enabled those without substantial capital to sustain their lifestyles, and changed what economists would call the utility function of lower-paid work: the health crisis and lockdowns were a sharp reminder of how dependent wealthy economies are on low-wage workers.

At the same time, powerful demographic forces are in play—and not only in China. The median American is now a Millennial. Because Millennials began to enter the workforce around the turn of the century, they have borne a particularly sharp fall in labor share of GDP. They have also been highly exposed because they tend to own less capital than older cohorts. This might explain why the data from a 2019 YouGov survey of 2,100 Americans suggested that 70% of U.S. Millennials would vote for a self-proclaimed socialist and only 50% of under-40s had a favorable opinion of capitalism. As this cohort hits its 40s and begins to dominate politics and the economy, economic populism—and especially redistributive and pro-labor policies—could find more support.

THE MEDIAN AMERICAN IS NOW A MILLENNIAL…

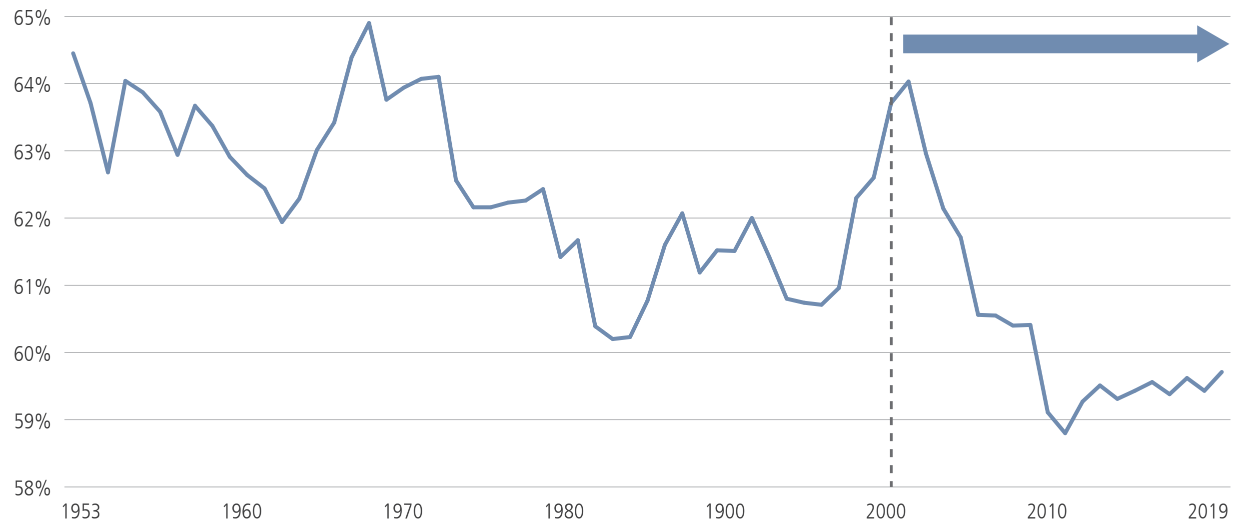
Population of U.S. by birth year



Source: U.S. Census Bureau, as of July 2021.

… AND MILLENNIALS, JOINING THE WORKFORCE FROM AROUND 2000, HAVE BORNE THE BRUNT OF THE LOSS OF LABOR SHARE OF GDP SINCE THE 1950s

Labor share of U.S. GDP



Source: University of Groningen Penn World Table 10.0, as of 2019.

A Changing Policy Environment

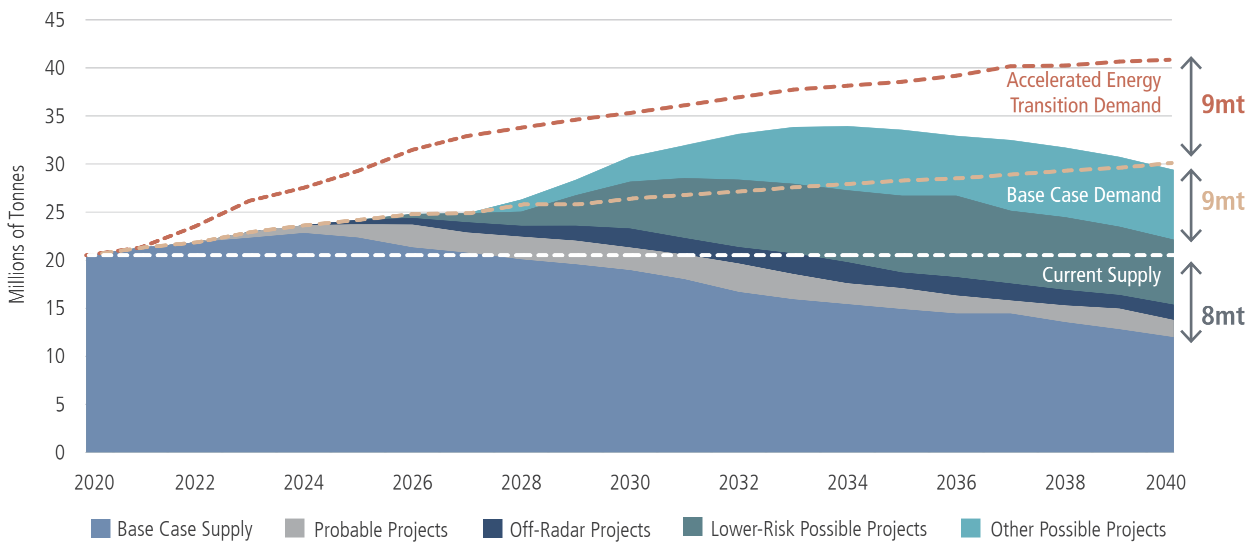
Deglobalization and the shift back to a multipolar world, as well as economic populism and a swing back to redistributive and pro-labor policies, suggest to us that the accommodative fiscal stance adopted during and in response to the COVID-19 pandemic is largely here to stay. We arguably see evidence for that in the reflexive response of many governments to the current energy crisis: policies such as gasoline tax subsidies and caps on energy bills are designed to save consumers from immediate hardship today, but they risk embedding higher inflation over the longer term. In addition, a potentially more volatile geostrategic environment than we have seen for many decades suggests a return to higher defense spending on top of this higher social welfare spending—and therefore, in all likelihood, broader and higher taxes.

Another major policy trend is the drive to decarbonize the global economy, with a view to achieving net-zero greenhouse gas emissions by 2050. When delegates met to negotiate the Paris Agreement on climate in 2015, the world was on a trajectory toward global temperatures of 4°C to 6°C above pre-industrial levels. The commitments made since then, and at the COP26 conference last year, are considered enough to limit that warming to 1.8°C. The current energy crisis highlights the challenges of the transition, but it arguably strengthens the energy-security case against reliance on imported fossil fuels.

If companies fail to respond to the energy transition and decarbonize their value chains, they are likely to face significant political, regulatory and physical risks. In our illustration of Climate Value at Risk on p.4, we have shown how we think that risk could translate to market valuations. But the energy transition also offers a range of potential investment opportunities, from venture capital investments in new renewable technologies and the financing of critical infrastructure and the raw materials that will go into it, to adaptations to help us live with some of the climate change-induced events that have already started to affect us.

THE ENERGY TRANSITION: GOING TO THE WIRE

Projected global copper supply and demand scenarios



Source: Wood Mackenzie. Data as of March 31, 2022. For illustrative purposes only. Nothing herein constitutes a prediction or projection of future events or future market behavior. Due to a variety of factors, actual events or market behavior may differ significantly from any views expressed or any historical results. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future results.**

Economic Implications: Structurally Higher Inflation, Shorter and More Volatile Cycles

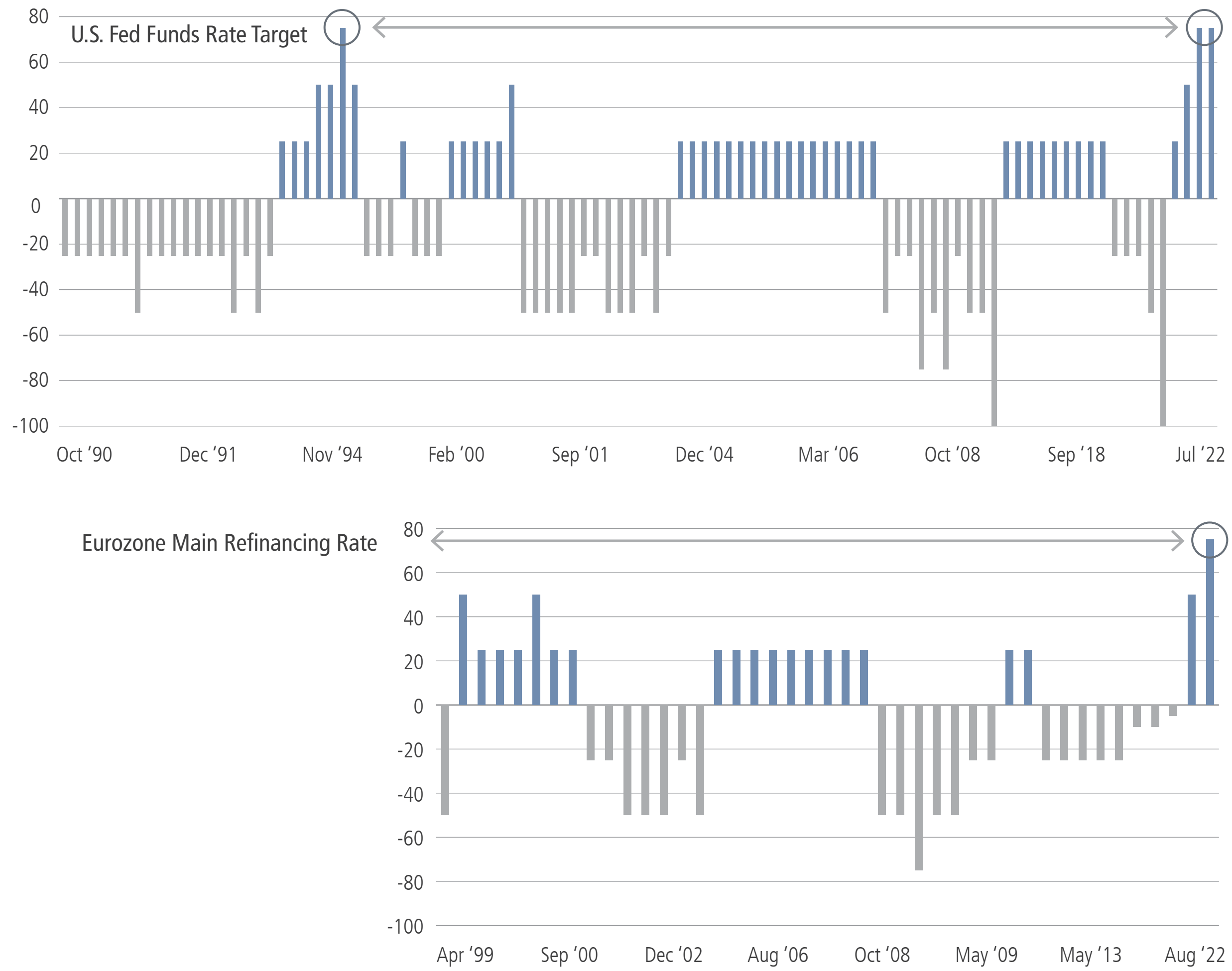
Structurally Higher Inflation

Spending on productivity-enhancing training, education and infrastructure expenditure, particularly for the energy transition, would be one way to mitigate the inflationary impact of higher government expenditure. On balance, however, we believe this new fiscal and environmental policy mix, combined with the deglobalization themes of economic nationalism and shorter, more robust supply chains, is likely to lead to structurally higher inflation than we have experienced over the past 20 years.

That could have profound implications for monetary policy, as it places even more onus on central banks to contain the volatility of consumer prices. We anticipate greater tolerance for inflation running slightly hotter than official targets, and we suspect that debt burdens will effectively cap the level that interest rates can reach—the European Central Bank has already had to develop a "Transmission Protection Instrument" to enable it to raise rates without causing excessive volatility in southern Eurozone bond markets. Overall, however, the appearance of 75-basis-point rate hikes at the U.S. Federal Reserve and the European Central Bank suggests to us that the age of the "central bank put option" underneath risky financial asset markets is now a thing of the past.

CENTRAL BANKS ARE HIKING AT SPEEDS UNSEEN FOR 20 – 30 YEARS

U.S. Federal Reserve Fed Funds Rate (upper limit of target range) (top) and European Central Bank Main Refinancing Operations Rate (bottom), change from previous level in basis points, all changes since 1990



Source: U.S. Federal Reserve (top), European Central Bank (bottom). Data as of September 8, 2022. For illustrative purposes only. Nothing herein constitutes a prediction or projection of future events or future market behavior. Due to a variety of factors, actual events or market behavior may differ significantly from any views expressed or any historical results. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future**

Shorter and More Volatile Cycles

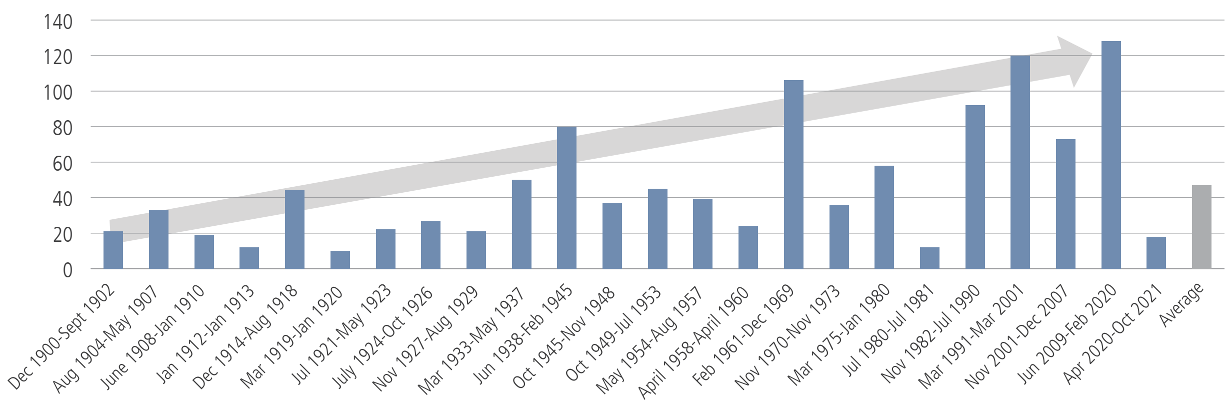
Over the course of the 20th century, and particularly since the 1980s, U.S. economic expansions tended to get longer—culminating in the record-breaking 128-month expansion that began after the GFC and was ended by the COVID-19 pandemic.

When we look at the principal causes of the recessions that ended those expansions, they suggest some reasons for this lengthening trend. Between 1945 and 1982, recessions were primarily caused by manufacturing inventory imbalances, energy shocks and restrictive monetary policy responses to high inflation. As labor- and energy-intensive manufacturing was progressively exported to lower-cost economies, and just-in-time supply chains rendered large stock inventories unnecessary, the impact of these traditional causes of recession dissipated. The primary causes of the three U.S. recessions after 1982 were financial imbalances—a reflection of the excessive risks that governments, corporations and consumers tend to take on when they begin to believe that the traditional business cycle has been abolished.

It is notable that, should the current U.S. slowdown develop into a recession, the 2020 – 2022 expansion will be not only one of the shortest on record, but also one that was ended by all three of the old-fashioned principal causes of recession. We think the COVID-19 and Ukraine shocks, coming on top of the GFC, have revealed the fragility of the economic model that underpinned the lengthening expansions of the past 60 years, and we anticipate at least a partial reversal: more manufacturing and fixed-asset investment in the developed economies; shorter and more diversified supply chains; fewer financial excesses (albeit alongside expansionary fiscal policy that could generate imbalances); and, as a result, shorter business cycles with potentially slightly longer but relatively shallow recessions.

U.S. ECONOMIC EXPANSIONS HAD BEEN TRENDING LONGER, ESPECIALLY SINCE THE 1960s…

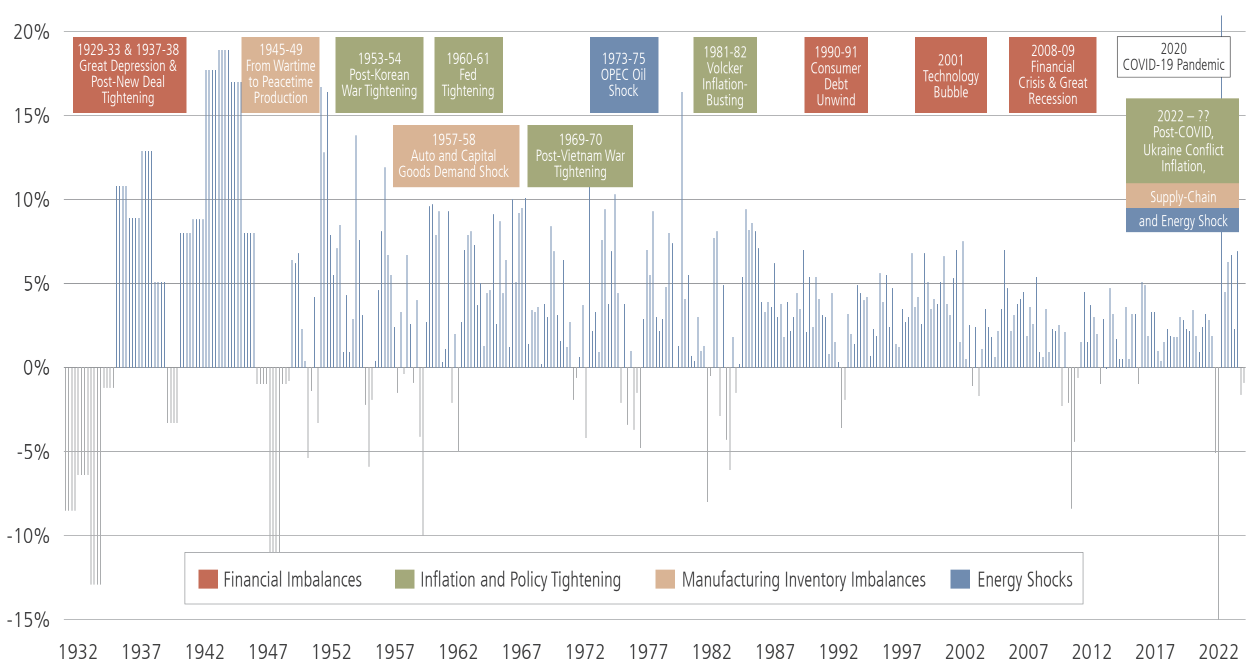
U.S. economic expansions without recessions, number of months trough-to-peak, 1900 – 2022



Source: National Bureau of Economic Research, Bureau of Economic Analysis. Data as of June 2022.

… AS TRADITIONAL RECESSIONARY FORCES WERE TAMED

U.S. GDP growth, quarter-over-quarter annualized, with principal causes of recessions, 1930 – 2022



Source: Bureau of Economic Analysis, Neuberger Berman. Data as of June 2022. The National Bureau of Economic Research has yet to classify the current U.S. downturn as a technical recession; however, the advance report of U.S. GDP growth for 2Q 2022 suggests that the U.S. may have experienced two consecutive quarters of negative real GDP growth, and eight consecutive months of negative real GDP growth beginning in November 2021.

How Can We Respond? Playbooks for the New Regime

OUTLOOK: Adapt to Today's New Challenges

Two multi-decade economic tailwinds are under threat. Globalization is hitting geopolitical, strategic, populist and practical roadblocks, and unsustainable growth powered by fossil fuels faces a difficult transition to ultimately more efficient growth powered by renewables.

FAVORING THE FITTEST. We think owners of capital face growing headwinds, including higher taxes to fund a more accommodative fiscal stance, rising costs of raw materials and debt, increasing labor power, and deglobalization both voluntary and involuntary. Margins are likely to be squeezed and some growing markets could be cut off by deglobalization. Higher interest rates could mean lower valuation multiples and fewer debt-financed share buybacks, while investors demanding higher risk premia could effectively cap broad-market valuations at lower levels than we have become used to. We think quality and fundamental selectivity are likely to be more important determinants of return outlooks from now on.

RETHINKING REGIONAL RISK. The return to a multipolar world of rising geopolitical tensions, new "spheres of influence" and more localized supply chains is likely to complicate and increase the importance of regional asset allocation. Think of the starkly different impact of the Ukraine crisis on Europe, the U.S. and Japan, for example; the differing exposure to deglobalization of large, relatively closed economies and small, open economies; the specific risks around Eurozone fragmentation; the trifurcation of U.S., Chinese and European technology markets and regulatory regimes; the growing need to consider China's huge equity and bond markets on their own terms rather than just another part of the emerging world; or the way some emerging markets are highly positively exposed to strengthening commodity prices, but highly negatively exposed to geopolitical and strong-dollar risk. The picture may be too complex to favor particular regional allocations, but we do believe it will be more important to avoid unconscious regional biases in portfolios.

HARVESTING GLOBAL MACRO TRENDS, TACTICAL DISLOCATIONS AND VOLATILITY PREMIA. Shorter business cycles and investors' demands for higher risk premia are likely to result in more volatile, sideways-trending markets. Collateralized equity index put option writing can be used to sell and monetize equity market volatility in this environment, potentially generating valuable additional return opportunities. Many Uncorrelated Strategies, such as short-term trading strategies and global macro funds, are also able to take advantage of these dynamics. Global macro strategies, in particular, could generally perform well in an environment of higher foreign exchange volatility, diverging inflation and interest rate conditions, and heightened geopolitical tensions.

ACCOUNTING FOR "NET ZERO". Governments, corporations and institutional investors are increasingly adopting net-zero emissions commitments. The ways investors respond to this will differ. Some will wish to divest from carbon-intensive sectors and achieve net-zero emissions in their portfolios as soon as possible, cognizant of the financial risk this carries; others may take a more active approach focused on real-world outcomes, encompassing engagement, climate risk assessment and investment in climate solutions. Those anticipating a longer, more difficult transition may favor longer exposure to fossil fuels and greater emphasis on investments in climate-change adaptation. There is certainly a case that the lack of investment in fossil fuels over the past decade has created a major opportunity for capital allocation in these sectors over the next decade, to help make the transition less inflationary, but also to finance the decarbonization of these sectors. Whatever your view, we think it is risky to assume that the past—whether the past 50 years or the past decade—is a useful guide to the future in the energy sector.

PRIORITIZING REAL ASSETS: COMMODITIES, REAL ESTATE, INFRASTRUCTURE. Keeping the lights on is a real-assets investment theme. New energy and power-transmission infrastructure will be required, and stricter specifications for energy sustainability are likely to generate a premium for high-quality new or upgraded real estate. Renewable energy infrastructure could be particularly attractive: the feedstock is free, but, especially during the decarbonization transition, it can benefit from the same high consumer energy prices set by fossil fuel utilities. It's important to note that a more sustainable economy is not necessarily a less commodity-intensive economy: renewable energy infrastructure is metals-intensive, for example. In addition, a multipolar world may be one in which raw materials are hoarded within nations or between geostrategic partners—especially food, energy and the metals that are critical to the energy transition. Finally, greater policy focus on equality implies more spending power for those on lower incomes, who tend to spend more on commodities.

RETURNS: Mind the Gap

Lower and more volatile growth, together with higher inflation and interest rates, could slow the performance of many equity and bond indices, opening a wider gap between targeted returns and return outlooks. This "exhausted beta" phenomenon, together with the potential for higher price volatility and an upward bias in rates, is likely to make return profiles more reliant on income, illiquidity and niche-market premia, as well as active management (asset-allocation, stock-selection, corporate-engagement and operational "alpha").

LOOKING BEYOND "EXHAUSTED BETA". After four decades in which bond yields trended downward, we are now in an era where they are more likely to trend upward or sideways, with heightened volatility. We believe this strengthens the case for flexibility in fixed income portfolios, but it also suggests that the broad equity market may no longer benefit from declining discount rates on future earnings—the source of mechanically rising valuation multiples over recent years. Stock dispersion is likely to rise as investors refocus on finding two types of company: those that are undervalued; and those judged more likely to actually achieve their earnings-growth projections, as opposed to having them baked into today's stock prices by near-zero discount rates. As investors demand higher risk premia, the era of generous valuations, especially for speculative growth, is likely at an end.

GOING SHORT AS WELL AS LONG. Many Uncorrelated Strategies, such as short-term trading strategies and equity or credit market-neutral strategies, have the potential to generate positive returns when broad markets are volatile and trending sideways. Should "alpha" become a more important component of returns, investors may favor higher allocations to long/short equity strategies to amplify exposure to this active element.

REBALANCING TOWARD VALUE INVESTING. Before 2022, the performance of value investing lagged that of growth investing for a decade. This was largely because of declining rates: growth companies' projected earnings are weighted further into the future, making their present value more sensitive to the decline in the discount rate. Now, by contrast, value stocks are sought after because of their lower sensitivity to rising rates. Investors should also be aware that the long period of outperformance by growth stocks has made them dominant in many core equity indices—which could mean that passive equity investing is more growth-biased than it seems. Careful manager selection is important, too, as even some value managers have drifted toward growth exposures over recent years to mitigate underperformance.

BECOMING FULLY FLEXIBLE IN FIXED INCOME AND CREDIT. The first half of 2022 suggested the benefits of a flexible approach to credit investing. When interest rates were low and credit spreads tight in 2021, it was tempting to try to maintain yield targets by simply holding longer-dated bonds, investing in lower-grade securities and accepting less liquidity. Positioning like that would have left you exposed to the rising rates and widening credit spreads of 2022, however, with little ability to trade into higher yields as they became available. In volatile and often low-yielding fixed income markets, we favor a flexible approach that enables investment and rotation across the widest range of fixed income markets. We think that is more likely to meet portfolio yield targets with a more diverse spread of risk exposures. The opportunity set stretches from ordinary investment grade and high yield corporate bonds to loans, securitized credit, emerging markets debt, mortgages, corporate hybrid securities, semi-liquid credit markets and beyond.

PRIORITIZING INCOME ACROSS ASSET CLASSES. In an environment in which investors demand higher risk premia and valuations tend to be volatile and trend sideways, income becomes a bigger proportion of total return. The attractiveness of income can also support the prices of higher-yielding stocks and bonds over those with lower yields, as our chart comparing the MSCI World with the MSCI World High Dividend Yield indices, on p.6, suggests (the cumulative outperformance of income is still more evident in the U.S. market). Rising rates also make "cash today" more attractive than "growth tomorrow": longer-dated cash flows are more sensitive to changes in rates, and cash today can be reinvested in higher rates tomorrow. We think this supports the case for seeking income as an asset in its own right, across multiple markets. This could include the full range of fixed income markets, particularly short-duration credit; cash-generative and higher-yielding equities, including real estate investment trusts (REITs); rent- and fee-generating assets such as real estate and infrastructure; alternative sources of income such as catastrophe bonds and other insurance-linked strategies; and even commodities—where substantial "roll yield" can be generated when scarcity leads to near-dated futures trading at higher prices than longer-dated futures.

INTEGRATING PRIVATE AND PUBLIC MARKET INVESTMENTS. Private markets are generally at the mercy of the same economic forces as public markets. Nonetheless, they have particular qualities. Illiquidity and exposure to specialized, niche assets often deliver risk premia to investors over and above those available from public, easily accessible markets. Private companies often have more flexibility to adapt operationally to the changing economic environment; and sustaining margins through a slowdown may be easier for a smaller company working out of the glare of the public market. Private debt can be a useful source of relatively high risk-adjusted yields and floating rates. Private real estate and infrastructure are generally useful sources of often inflation-linked rental and fee-based cash flows. But as well as private assets being attractive in themselves, we believe they can be made still more attractive when managed together with public assets as a truly integrated portfolio. We believe that enables investors to identify and take advantage of relative value opportunities or dislocations between liquid and illiquid equity or credit markets; it makes it easier to measure and monitor equity, credit and other economic risk exposures across the whole portfolio, agnostic of the assets' liquidity profiles; and it can help to make the complex cash-flow management associated with private assets more efficient.

EXPLOITING YOUR NATURAL ADVANTAGES WHILE SEEKING EFFECTIVE PARTNERS. When returns are easier to come by, it is all too easy to follow the investing crowd. By that, we don't only mean index investing, but also failing to recognize the natural advantages that each investor can have as a single participant in the market. Do you have more freedom than most to hold illiquid or more volatile investments, for example? Does the size of your portfolio give you economies of scale? Are you free of the regulatory constraints that prohibit some investors from exploring niche markets? Shorter, more volatile cycles and less liquid markets make value dislocations more likely: do you benefit from a lighter governance structure that makes it easier to move quickly? Exploiting these potential advantages, and accessing other niche investment opportunities, can add complexity to an investment program that might require more tailored solutions. If this complexity stopped you from acting in the past, seeking help from trusted partners might remove some of those obstacles.

RISK: Diversify Differently

Higher volatility and economic uncertainty, as well as the use of increased portfolio risk to align return profiles with return targets, make portfolio diversification more important than ever. Diversification could be more difficult to achieve, however, as equity-bond correlation tends to rise in more inflationary environments.

ADDING FLEXIBILITY AND SHORTENING DURATION IN FIXED INCOME. Traditionally, government bonds have been seen as an important source of income for portfolios, but also of diversification against equity exposures—as in the classic "60/40" allocation. An environment of structurally higher inflation and heightened market volatility makes it more likely that government bond yields could rise at the same time as equity markets decline, however, as we saw in the first half of 2022. A broader, more flexible approach to fixed income allocations, which enables investment and rotation across the widest range of fixed income markets—from ordinary investment grade and high yield corporate bonds to loans, securitized credit, emerging markets debt, mortgages, corporate hybrid securities, semi-liquid credit markets and beyond—could deliver higher overall yield than government bonds with less exposure to rising interest rates. Short-duration credit, in particular, can offer investors the advantage of less exposure to volatile interest rates while giving up very little yield relative to longer-dated bonds. Exposure to credit risk is likely to come with some correlation with equity markets, but the more diversified the fixed income portfolio, the lower that correlation is likely to be.

SEEKING OUT UNCORRELATED MARKETS AND STRATEGIES. Some market risks are entirely different from the economic risks of equities and bonds, such as those associated with catastrophe bonds and other insurance-linked securities, whose cash flows and pricing respond to events such as earthquakes and hurricanes. Low correlation can also potentially be achieved with relative-value and market-neutral hedge funds; or with short- and medium-term trading strategies.

PRIORITIZING INFLATION-SENSITIVE REAL AND FINANCIAL ASSETS. Inflation-sensitive real assets classes include commodities, real estate and infrastructure. As we have seen in 2022, rising prices in raw materials often drive spikes in broader consumer-price inflation, while over the longer term, the decarbonization of the economy is likely to increase demand for many commodities, especially metals. In real estate, as construction costs rise, the value of existing real assets also tends to rise; many sectors have longer-term leases with contractual inflation-linked escalators, while others have annually renewable leases, whose rents rise and fall with consumer prices and wages. Similarly, in infrastructure, long-term usage contracts often adjust in line with a producer or consumer price index or, in the case of a utility, the price of its commodity feedstock; other assets are often critical enough to have considerable pricing power. Among financial assets, Treasury Inflation Protected Securities (TIPS) and other index-linked bonds, especially those with short maturities, are one of the few bond markets where total returns can match severe spikes in inflation. Real yields have risen rapidly this year, creating more attractive entry points in some markets. And in equity markets, some stocks are more "real" than others: commodity producers, real-asset owners, semiconductor manufacturers, banks and capital goods manufacturers generally find it easier to pass on their costs than "downstream" business, such as retailers.

IDENTIFYING AND HEDGING AGAINST THE TAIL RISKS THAT MATTER TO YOU. It is often prohibitively expensive to implement hedges against general market tail risk (such as buying equity index put options). It can be more cost-effective to identify the specific tail events that most concern you, or to which you are particularly exposed due to the nature of your liabilities or investment program, and work with a trusted partner to analyze and design tailored hedging solutions for them.

Summary: Not Just Another Turn in the Business Cycle

The global economy and financial markets have benefitted from several significant tailwinds over the past four decades. But many of those tailwinds began to dissipate after the GFC of 2008 – 09, and over the past six years, some have turned to headwinds—particularly the trends of moderate inflation and declining rates; the lengthening and stabilization of business cycles engendered by globalized just-in-time supply chains and low-cost manufacturing; and fossil fuel-intensive growth.

We believe this new economic regime demands a new investment playbook. In our view, portfolios steering into the next decade need to **ADAPT TO TODAY'S NEW CHALLENGES** of deglobalization and potentially lower returns to capital; **MIND THE GAP** that has opened up between return targets and the nominal- and real-return outlooks for traditional asset classes; and **DIVERSIFY DIFFERENTLY** due to rising equity-bond correlations and the renewed importance of inflation as a determinant of financial market risk and return outlooks.

Our investment ideas presented here are meant as a framework for that thinking. They are likely to evolve as we see the new regime take shape. But recognizing that we are in a fundamentally more challenging new environment, and not just another turn in the business cycle, is in our view an important first step in seeking an effective long-term investment strategy.

Index Definitions

The **S&P 500 Index** consists of 500 U.S. stocks chosen for market size, liquidity and industry group representation. It is a market value-weighted index (stock price times number of shares outstanding), with each stock's weight in the Index proportionate to its market value.

The **MSCI All Country World Index** is a market value-weighted index of more than 2,700 stocks from 23 developed and 24 emerging countries.

The **Bloomberg Global Aggregate Bond Index** is a broad-base, market capitalization-weighted bond market index representing intermediate term investment grade bonds traded worldwide.

The **ICE BofAML Global High Yield Index** tracks the performance of of USD, CAD, GBP and EUR denominated below investment grade, but not in default, corporate debt publicly issued in the major domestic or Eurobond markets, and includes issues with a credit rating of BBB or below, as rated by Moody's and S&P.

The **S&P 500 Dividend Aristocrats Index** measures the performance of S&P 500 Index companies that have increased dividends every year for the last 25 consecutive years.

The **MSCI World Index** tracks the performance of large- and mid-cap stocks across 23 developed markets countries.

The **MSCI World Index High Dividend Yield Index** tracks the performance of large- and mid-cap stocks across 23 developed markets countries. The index is designed to reflect the performance of equities in the MSCI World Index (excluding REITs) with higher dividend income and quality characteristics than average dividend yields that are both sustainable and persistent. The index also applies quality screens and reviews 12-month past performance to omit stocks with potentially deteriorating fundamentals that could force them to cut or reduce dividends.

The **ICE BoA Global Sovereign Bond Inde**x measures the market capitalization-weighted performance of public debt of investment-grade sovereign issuers, issued and denominated in their own domestic market and currency

The **ICE BoA Global Corporate Bond Index** measures the market capitalization-weighted performance of public debt of investment-grade corporate issuers, issued and denominated in their own domestic market and currency.

The **Bloomberg U.S. Long Treasury Total Return Index** measures the performance of USD-denominated, fixed-rate, nominal debt issued by the U.S. Treasury with a maturity greater than 10 years, excluding STRIPS. The U.S. Treasury Index is a component of the U.S. Aggregate Index.

The **Bloomberg U.S. Long Credit Total Return Index** measures the performance of investment grade, USD-denominated, fixed-rate, taxable corporate and government-related bond markets with a maturity greater than 10 years. It is composed of the U.S. Corporate Index and a non-corporate component that includes non-U.S. agencies, sovereigns, supranationals and local authorities, and is a subset of the U.S. Aggregate Index.

The **Bloomberg Commodity Index (BCOM)** is designed to be a highly liquid and diversified benchmark for commodities investments. The index provides broad-based exposure to commodities as an asset class, since no single commodity or commodity sector dominates the Index. This index is composed of futures contracts on 20 physical commodities traded on U.S. exchanges, with the exception of aluminum, nickel and zinc, which are traded on the London Metal Exchange (LME).

Asset Class Assumptions and Estimates

Capital market assumptions used herein reflect Neuberger Berman's forward-looking estimates of the benchmark return or volatility associated with an asset class. Estimated returns and volatilities are hypothetical return and risk estimates generated by Neuberger Berman's Institutional Solutions Group. Estimated returns and volatilities do not reflect the alpha of any investment manager or investment strategy/vehicle within an asset class. Information is not intended to be representative of any investment product or strategy and does not reflect the fees and expenses associated with managing a portfolio or any other related charges, such as commissions and surrender charges. Estimated returns and volatilities are hypothetical and generated by Neuberger Berman based on various assumptions and inputs, including current market conditions, historical market conditions and subjective views and estimates. Capital market assumptions shown reflect Neuberger Berman's long-term (20+ years into the future) estimates and are reviewed and revised at least annually. Neuberger Berman also produces intermediate-term (5–7 years into the future) capital market assumptions. If Neuberger Berman's intermediate-term (5–7 years into the future) capital market assumptions were used, the results presented would be different. Neuberger Berman's capital market assumptions are derived using a building block approach that reflects historical, current, and projected market environments, forward-looking trends of return drivers, and the historical relationships asset classes have to one another. These hypothetical returns are used for discussion purposes only and are not intended to represent, and should not be construed to represent, predictions of future rates of return. Actual returns may vary significantly. Neuberger Berman makes no representations regarding the reasonableness or completeness of any such assumptions and inputs. Assumptions, inputs, and estimates are periodically revised and subject to change without notice. Estimated returns and volatilities should not be used, or relied upon, to make investment decisions.

Asset Class	Index Source	Geometric Est. Return (%)	Arithmetic Est. Return (%)	OAS	OASD	OAD	Est. Annual Vol (%)
Cash (risk-free rate)	Bloomberg-Barclays	1.53	1.53	0	0	0.3	0.4
Investment Grade Credit	Bloomberg-Barclays	3.76	3.92	80	8.2	8.4	5.5
Municipals	Bloomberg-Barclays	2.95	3.04	50	5.5	5.2	4.2
U.S. Government/Agency	Bloomberg-Barclays	2.74	2.81	0	0	7	3.9
Investment Grade Corporates	Bloomberg-Barclays	3.88	4.06	84	8.5	8.7	6
Agency MBS	Bloomberg-Barclays	3.43	3.46	27	5	4.6	2.4
U.S. TIPS	Bloomberg-Barclays	2.37	2.52	0	0	7.9	5.5
High Yield (U.S. BB & B)	Bloomberg-Barclays	5.28	5.64	251	4.1	4.1	8.5
Non-US Fixed Income (Hedged to USD)	Bloomberg-Barclays	2.9	2.95	82	7.8	7.9	3
Non-US Dev Market Fixed Income (Hedged to USD)	Bloomberg-Barclays	2.47	2.51	97	7.9	8.1	2.7
Global Bonds (Hedged to USD)	Bloomberg-Barclays	2.98	3.04	65	7.4	7.5	3.5
ABS/CMBS	Bloomberg-Barclays	3.97	4.28	62	4.6	4.6	7.9
Emerging Market Debt	JPM EMBI/CEMBI	4.51	4.91	313	6.7	6.3	8.9
Bank Loans	S&P/LSTA LL 100	4.81	5.13	335	3.5	0.3	8
Munis 1-3 yrs	Bloomberg-Barclays	1.74	1.74	8	1.8	1.8	1.1

Asset Class	Index Source	Geometric Est. Return (%)	Arithmetic Est. Return (%)	OAS	OASD	OAD	Est. Annual Vol (%)
Corporates A above 1-3 yrs	Bloomberg-Barclays	2.72	2.76	23	1.9	1.9	2.6
Preferred Stock	ICE BofA	4.12	4.83	146	4.7	4.7	11.8
U.S. All Cap	Russell 3000	5.74	7	-	-	-	15.9
U.S. Large Cap	S&P 500	5.79	6.97	-	-	-	15.4
Large Cap Growth	S&P 500 Growth	5.85	7.21	-	-	-	16.4
Large Cap Value	S&P 500 Value	5.58	6.74	-	-	-	15.2
U.S. Small Cap	Russell 2000	5.29	7.36	-	-	-	20.4
Small Cap Growth	Russell 2000 Growth	5.23	7.4	-	-	-	20.8
Small Cap Value	Russell 2000 Value	5.2	7.33	-	-	-	20.6
Non-US Equities	MSCI ACWI ex US	6	7.6	-	-	-	17.9
Developed International Equities	MSCI EAFE	5.98	7.51	-	-	-	17.5
Emerging Market Equities	MSCI EM	5.54	7.86	-	-	-	21.5
Global Equities	MSCI ACWI	5.91	7.25	-	-	-	16.4
Public Real Estate	NAREIT Equity	4.25	6.83	-	-	-	22.7
Core Real Estate	NCREIF ODCE Index	5.52	6.62	-	-	-	14.8
Value Add Real Estate	Leveraged NPI	5.95	7.76	-	-	-	19
Commodities	Bloomberg	4.91	6.26	-	-	-	16.5
Hedged Strategies	HFRI	4.2	4.4	-	-	-	6.4
Private Equity	Cambridge Associates	9.06	10.79	-	-	-	18.6
Private Debt	Credit Suisse LL	7.72	8.59	534	3.5	0.3	10.1

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Neuberger Berman
1290 Avenue of the Americas
New York, NY 10104-0001

www.nb.com