Tale of two halves doesn't have a happy ending.

Quarterly Snapshot

- Developed-market equities fell by less than emerging markets in the third quarter, although the relatively small decline posted by the U.S. masked steeper declines by Europe and the U.K.
- Government-bond rates climbed during the quarter. Fixed-interest performance produced a range of losses as yields increased around the globe (yields and prices have an inverse relationship).
- A global recession is forming on the horizon, with Europe and the U.K. more vulnerable to a downturn than the U.S. in the months immediately ahead. Short-term gyrations notwithstanding, the primary trend in risk assets still appears negative.

A line chart of global equity market performance during the third quarter looks remarkably like a mirror image: climbing higher toward mid-quarter, then tumbling downward thereafter.

The relationship between signs of softening economic activity in late spring and the presumption that it would enable central banks to increase rates by less than feared spurred a rally across equity and fixed-income markets from June to August. Federal Reserve (Fed) Chair Jerome Powell shattered this complacency by explaining that lower growth and softer labor markets will likely be the unfortunate costs of hiking rates to fight inflation, and that expectations for a premature pivot to looser policy will probably be disappointed. His remarks sent markets reeling through the end of the quarter.

Developed-market equities fell by less than emerging markets during the third quarter, although the relatively small decline posted by the U.S. masked steeper declines by Europe and the U.K. Latin American shares had the only positive regional performance for the period, while China and Hong Kong had the steepest declines.

Government-bond rates climbed in the U.S., U.K., and eurozone for the full third quarter—declining during July in the U.K. and eurozone while the U.S. yield curve flattened as short-term rates rose and long-term rates fell; rates then climbed through August and September across all three jurisdictions. The U.S. and U.K. yield curves grew more inverted (that is, when shorter-term rates are higher than longer-term rates) as the quarter progressed.

Fixed-income performance produced a range of losses during the quarter as yields increased around the globe (yields and prices have an inverse relationship). Global government bonds had the deepest losses, while U.S. high-yield bonds had a comparably modest decline.

Commodity markets were mixed during the third quarter. The Bloomberg Commodity Index fell by 4.75% as West-Texas Intermediate and Brent crude-oil prices plummeted 24.84% and 21.91%, respectively. However, natural gas prices jumped 25.60% for the full quarter (including a decline after skyrocketing by 79.59% thru mid-to-late August) and wheat prices increased by 4.24%.

Key Measures: Q3 2022

EQUITY		
Dow Jones Industrial Average	-6.17%	↓
S&P 500 Index	-4.88%	↓
NASDAQ Composite Index	-3.91%	↓
MSCI ACWI Index (Net)	-6.82%	↓
BOND		
Bloomberg Global Aggregate Index	-6.94%	↓
VOLATILITY		
Chicago Board Options Exchange Volatility Index PRIOR Quarter: 28.71	31.62	↑
OIL		
WTI Cushing crude oil prices PRIOR Quarter: $105.76	$79.49	↓
CURRENCIES		
Sterling vs. U.S. dollar	$1.12	↓
Euro vs. U.S. dollar	$0.98	↓
U.S. dollar vs. yen	¥144.72	↑

Sources: Bloomberg, FactSet, Lipper

Liz Truss was chosen as leader of the Conservative Party and became U.K. prime minister in early September, promising tax cuts to stimulate economic growth and relief for mounting electricity bills over the next two years. The tax program was detailed in a “mini-budget” by Kwasi Kwarteng, the new chancellor of the exchequer, on September 23. Totaling roughly £45 billion, the tax cuts were perceived as irresponsible; long-term gilt rates spiked to their highest levels in 20 years and sterling fell to its lowest-ever exchange rate versus the U.S. dollar. The disruption strained pension funds, which depend heavily on the long-term gilt market, and forced the Bank of England to offer open-ended gilt purchases to restore order. The new government partially reversed course in early October, announcing that it would scrap its tax-cut plans for top earners.

The German government announced in late September it would nationalize Uniper, a major European electricity producer with heavy dependence on natural gas, after seeking to rescue the company with a recapitalization in July. At the end of the quarter, Germany announced a €200 billion package intended to cap gas and electricity prices for businesses and consumers amid the energy crisis.

Russia’s pipeline-supplied natural gas flows to Europe via Nord Stream 1 completely ceased by late August. The pipeline and its never-operational counterpart Nord Stream 2 were sabotaged in late September, rendering their future use questionable.

Ukraine mounted a counteroffensive against Russia’s invasion as summer progressed, targeting Kherson in the south and Kharkiv in the east. Its eastern initiative produced a string of successes, enabling defense forces to push south into the northern Donbas region. Russia announced plans to mobilize 300,000 citizens in late September, prompting at least as many draft-eligible Russian men to flee the country. Vladimir Putin also threatened to use nuclear weapons against any outside power that sought to intervene in its invasion of Ukraine. At the end of the quarter, Putin presided over a ceremony to annex four south-east regions of Ukraine based on sham referendums despite limited control over the regions.

Hong Kong concluded its three-day hotel quarantine requirement for foreigners in late September, allowing visitors to travel freely aside from a three-day ban from restaurants, bars, and entertainment venues. Japan also announced looser travel restrictions will begin in early October, with plans to let individual tourists return (as opposed to tour groups), the removal of a cap on daily visitors, and the resumption of visa-free short-term travel. Taiwan entered the fray as well, with plans to end three-day quarantine in October and a return to visa-free entry.

Economic Data

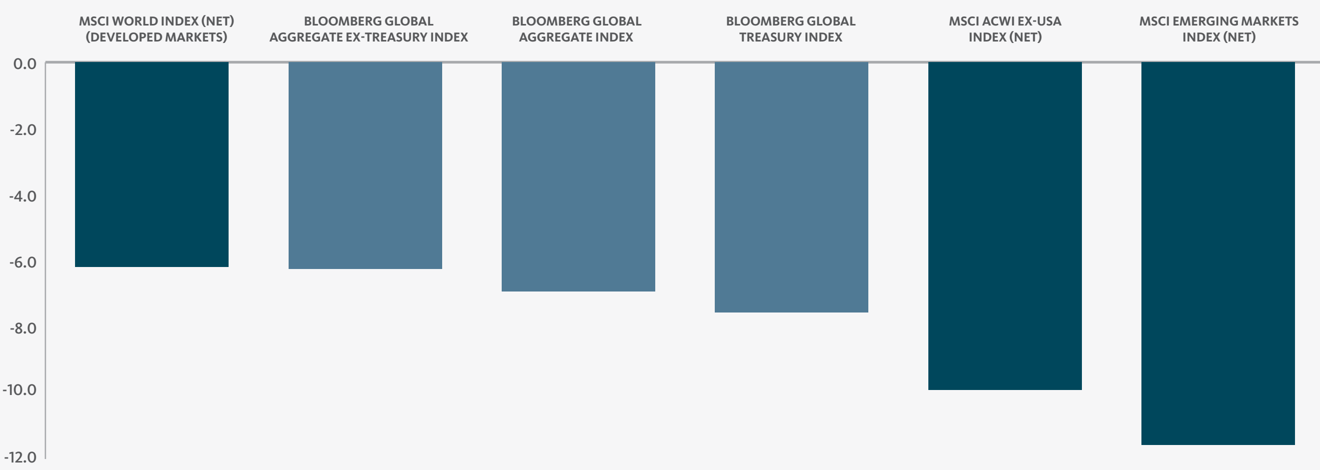
U.S.

- U.S. manufacturing growth ended with a mild acceleration in September, remaining otherwise modest throughout the third quarter after slowing sharply in June.
- A contraction in U.S. services activity that began in July started to ease back toward breakeven levels at the end of the third quarter.
- The U.S. labor market remained quite healthy during the third quarter. New claims for unemployment benefits declined throughout the quarter, falling back below 200,000 per week in late September for the first time since the spring.
- The U.S. Personal Consumption Expenditures (PCE) Price Index (the Federal Reserve's preferred inflation gauge) slid to 6.3% in the year through July and 6.2% in August (from 6.8% in June). The core PCE Index, however, climbed to 4.9% in August, its highest level since April, on a monthly increase of 0.6%.

U.K.

- U.K. manufacturing activity contracted in August after a few months of softening growth, but the slowdown eased in September.
- U.K. services sector activity tipped into contraction during September after growing at a modest-to-healthy pace through the summer.
- Broad U.K. consumer price inflation peaked at 10.1% in the year through July before edging down to 9.9% during August. Core consumer prices, however, continued to accelerate through August, peaking at 6.3% year over year.
- Improvement in the U.K. claimant count (which calculates the number of people claiming Jobseeker's Allowance) levelled off during the third quarter—declining by roughly 14,500 from June to July, and then increasing by 6,300 in August—with total claimants holding at 3.9% of the population during the time frame.

Major Index Performance in Q3 2022 (Percent Return)



Sources: FactSet, Lipper

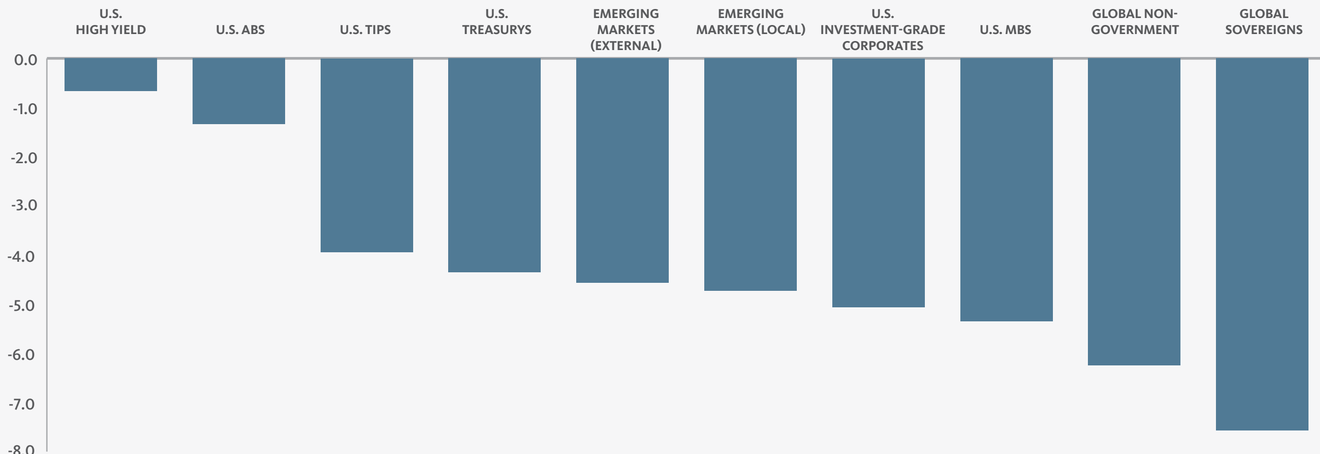
Eurozone

- Manufacturing conditions steadily deteriorated in the eurozone during the third quarter. Growth ground to a standstill in July and began to contract modestly through August, before the slowdown accelerated in September.
- Activity in the eurozone services sector contracted during September. Growth in services slowed abruptly beginning in June from a relatively robust pace in May, then continued to cool throughout the third quarter.
- The eurozone consumer price index jumped to 10.0% in September, from 9.1% in August, hitting an all-time high and essentially doubling the inflation rate from the beginning of the calendar year, as consumer prices increased in September at a 1.2% monthly pace.
- Eurozone unemployment held at a 6.6% rate in August for the third straight month, remaining at a record low (since Eurostat began tracking the dataset in 1998).

Central Banks

- The Federal Reserve's (Fed) Federal Open Market Committee (FOMC) increased the federal-funds rate by 0.75% toward the end of July, and again in late September, raising the benchmark rate's target range to 3.0%-3.25%. The central bank also began to accelerate balance sheet reduction in September, doubling the amount of monthly Treasury and mortgage holdings that mature without being replaced to maximum respective paces of $60 billion and $35 billion.
- At its early August meeting, the Bank of England's (BoE) Monetary Policy Committee hiked its benchmark rate by 0.50%, the largest individual increase in 27 years, and then issued another increase of the same size at its late September meeting, bringing the bank rate to 2.25%. The BoE was compelled

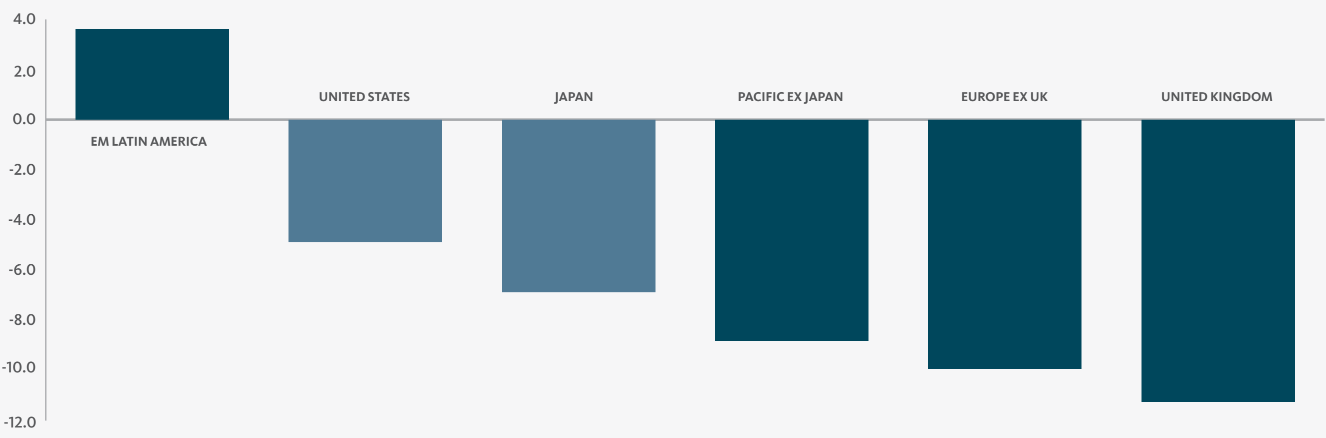
Fixed-Income Performance in Q3 2022 (Percent Return)



Sources: FactSet, Lipper. See "Corresponding Indexes for Fixed-Income Performance Exhibit" in the Index Descriptions section for more information.

Regional Equity Performance in Q3 2022 (Percent Return)

■ COUNTRIES ■ REGIONS



Sources: FactSet, Lipper. See "Corresponding Indexes for Regional Equity Performance Exhibit" in the Index Descriptions section for more information.

to intervene with temporary gilt purchases toward the end of the quarter over concerns about financial stability as long-term rates skyrocketed in response to the new government's mini-budget.

- The European Central Bank (ECB) increased its three benchmark rates by 0.50% at its July meeting for the first time in 11 years, surprising investors who were expecting hikes of 0.25%. At the same meeting, the ECB approved the establishment of a Transmission Protection Instrument (TPI) to ensure the smooth transmission of monetary policy normalization across eurozone countries. At its early September meeting, the ECB raised rates by 0.75%. ECB President Christine Lagarde emphasized that rates were well below the levels likely needed to get inflation under control and that a few more "large steps" lie ahead.
- The Bank of Japan (BOJ) earned the distinction of being the last major central bank with a negative interest-rate target during the third quarter as the ECB began to lift rates. Its short-term interest rate remained at -0.1%, and the 10-year Japanese government-bond (JGB) yield target held near 0% at both its July and September meetings. The central bank continued to offer purchases of 10-year JGBs at 0.25% in order to keep its yield within the BOJ's acceptable range. It also announced its first intervention in currency markets since 1998 to limit the yen's slide.

SEI's View

The war in Ukraine and Russia's energy blackmail against Europe, high global inflation and central banks' aggressive response to it, and a severe COVID-related slowdown in China are not exactly new; they have simply increased in intensity. Most important, they have forced monetary policy makers to finally admit that they have a major inflation problem on their hands, one that is neither transitory nor likely to be resolved without pain.

In our opinion, investors should be prepared to see a federal funds rate that could exceed 5%. Other central banks are following the Fed's lead, talking tough and following up with outsized policy-rate increases. In the U.K., the bond market has gone haywire and the country's currency has come under intense downward pressure. To use a newly popular phrase among economists and financial-market participants, things are starting to break.

Europe will continue to be the area most under the gun owing to Russia's suspension of natural gas exports. Although storage facilities within the European Union are now 80%-to-90% full, the continent still needs to have a steady flow of gas to get through the high-usage winter months. Governments may be forced to impose disruptive energy-saving restrictions on businesses and citizens. Heavy users of electricity, from aluminum smelters to glassmakers, have already been shutting down.

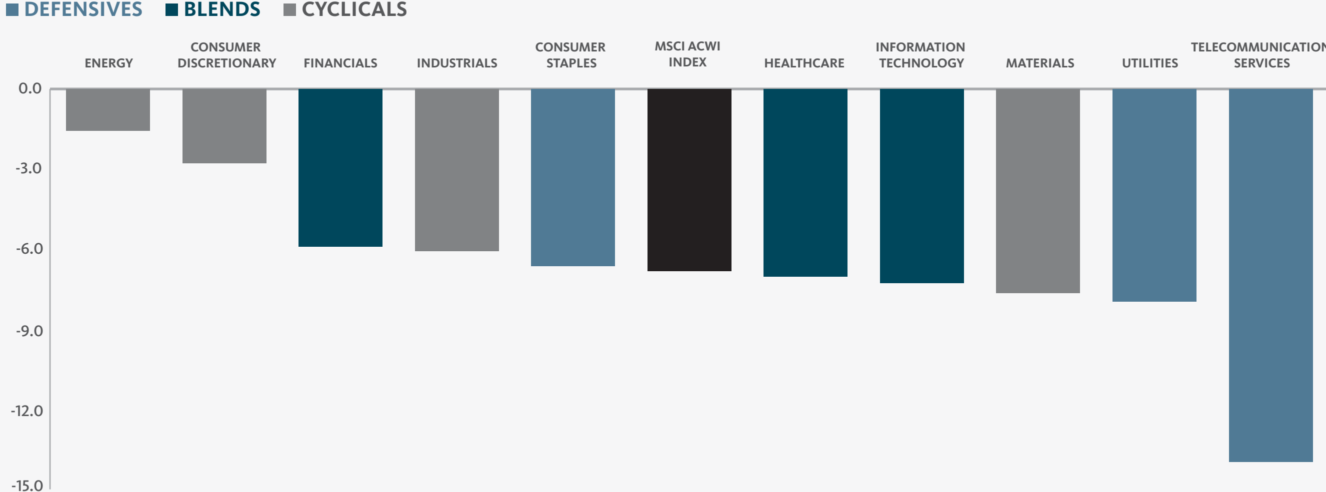
The U.K.'s new Prime Minister, Liz Truss, has rolled out a plan to cap the cost of residential electricity at £2,500 per year over the next 18 months. Along with other measures previously announced, funding totals £180 billion, or 6.5% of GDP. Other countries that have allocated funds for energy-related relief in excess of 3% of GDP include Croatia, Greece, Italy and Latvia.

It would not be surprising to see more energy-related relief come down the pike. Deficits could balloon in the same way they did during the early months of the COVID crisis as policy makers do what they must to protect their populations.

Central bankers are forced by their mandates to lean hard against the rising trend in prices, although they are essentially working at cross purposes against their own governments' stimulus efforts. Unfortunately, they're running just to keep up with the Fed. Interest-rate differentials versus the U.S. are still wide, with only Canada on par with the U.S.

The large differential in favor of the U.S., along with the perception that it's better positioned economically, are two major reasons behind the U.S. dollar's extraordinary appreciation this year. Although a declining currency may give a

Global Equity Sector Performance in Q3 2022 (Percent Return)



Sources: FactSet, Lipper. MSCI ACWI Index Components (as defined by SEI).

competitive boost to domestic firms that export goods and services to the U.S. market, it exacerbates the inflationary pressures stemming from imports that are priced in dollars, most importantly, oil and liquefied natural gas.

Several large U.S. multinational companies have warned that dollar strength is beginning to exert a negative impact on revenues, suggesting that the currency's value has risen well beyond its purchasing power parity (PPP) level. But discrepancies can last for a long time between PPP and market-based exchange rates.

That noted, it would not be surprising to see at least a temporary reversal in the dollar's trend. Given a catalyst—coordinated government action to weaken the dollar or a surprisingly weak U.S. unemployment report, for example—traders might cover their long positions in a major way, causing the dollar to fall abruptly.

The rise in U.S. hourly compensation has been extensive, with annualized gains exceeding 6% even when measured over a three-year span. This is the sharpest increase in almost four decades. Similar to the 1970s experience, compensation gains have been accelerating even as productivity growth has slowed. This divergence is concerning.

The difference between the change in compensation and the change in productivity equals the change in unit labor costs.

Although unit labor costs are more volatile than inflation, there is still a strong positive correlation between the two.

Unfortunately, history shows that it usually takes an outright recession to beat down inflation, especially when it gets this intense. Fed Chairman Powell's hope for a soft landing appears to be an exercise in wishful thinking. Unit labor costs have run far ahead of inflation, and we see no reason to expect a major reversal in the near term, even if the economy stumbles into a bona fide recession.

U.S. companies have been able to push higher employment and supply costs onto the consumer. There hasn't been much of a decline in profit margins yet—they've remained above all the previous cyclical peaks going back to 1947. But we suspect that margins are on the cusp of a substantial erosion. It's typical for profit margins to decline well before an economic recession materializes.

If the economy does fall into recession and profits decline, analysts will probably be forced to mark down earnings estimates aggressively to catch up with reality. Investors aren't waiting for those earnings revisions. They have been pushing equities lower in reaction to the Fed's aggressive shift and in anticipation of a recession, both in the U.S. and globally.

A funds rate in the 4.4%-to-4.9% range next year, as projected by Fed policymakers, might still be lower than the actual out-turn. But unless the Fed is truly ready to engineer a severe recession, we think PCE price inflation could settle in a 3%-to-4% range instead of the sub-2% pace recorded over much of the past 25 years.

Several asset classes look sharply oversold again, including equities, bonds, currencies and commodities.

President Xi's position may seem unassailable, but we bet he's looking for a way out of his zero-COVID policy.

The dollar's sharp climb has reversed most of this year's appreciation in the commodities complex. If the dollar breaks to the downside, commodities should break to the upside.

We are still bullish on commodities despite the demand destruction that is occurring in Europe and other parts of the globe. Years of underinvestment in fossil fuels and metals mines will likely lead to periodic shortages over the next few years.

In recent weeks, the Chinese central government has allowed Hong Kong and Macau to open up. This might be a preview of what will happen on the Mainland once the Communist Party National Congress installs President Xi Jinping for an unprecedented third term as General Secretary of the party in October.

President Xi's position may seem unassailable, but we bet he's looking for a way out of his zero-COVID policy. The loosening of restrictions and return to stronger economic growth is the only logical way out.

Other emerging economies would be big beneficiaries of a revival in Chinese economic activity. Yet dollar strength is a central factor for investors in emerging market equities. The relative performance of the MSCI Emerging Market Total Return Index versus the MSCI World Index peaked in 2010, more-or-less concurrent with the trough in the trade-weighted value of the dollar. EM equity has now given up almost all of its relative gains versus advanced-country stock markets achieved between 2000 and 2010 as the dollar has grown stronger.

The rate-hiking cycle actually began far sooner in less-developed economies, during the latter months of 2020. Interest-rate hikes in the emerging world have accelerated significantly this year, in both frequency and magnitude. Three-month government bonds are in double digits in Brazil (14.3%), Colombia (10.4%), Hungary (10.0%) and Turkey (17.8%).

Among these four, only Brazil's rate is comfortably above the inflation rate. Turkey, by contrast, is facing an inflation rate of close to 80%. Little wonder that the Brazilian real has maintained its value against the dollar this year, while the Turkish lira has declined by almost 30%.

The bottom line is that a global recession is forming on the horizon, with Europe and the U.K. more vulnerable to a downturn than the U.S. in the months immediately ahead.

Short-term gyrations notwithstanding, the primary trend in risk assets still appears negative. Inflation in the U.S. has probably peaked, but we do not expect it to fall as rapidly or as far as the Fed projects. The central bank may still be underestimating the extent to which it needs to tighten policy in order to slow the economy and produce slack in the labor markets.

Glossary of Financial Terms

Anti-fragmentation tool: An anti-fragmentation tool refers to the ECB's plans to mitigate widening spreads between German government bond yields and those of economically weaker EU members.

Asset Purchase Programme (APP): The ECB's APP is part of a package of non-standard monetary policy measures that also includes targeted longer-term refinancing operations, and which was initiated in mid-2014 to support the monetary policy transmission mechanism and provide the amount of policy accommodation needed to ensure price stability.

Bull market: A bull market refers to a market environment in which prices are generally rising (or are expected to rise) and investor confidence is high.

Commercial paper: Commercial paper is a type of short-term loan that is not backed by collateral and does not tend to pay interest.

Cyclical stocks: Cyclical stocks or sectors are those whose performance is closely tied to the economic environment and business cycle. Managers with a pro-cyclical market view tend to favor stocks that are more sensitive to movements in the broad market and therefore tend to have more volatile performance.

European Commission: The European Commission is the executive branch of the European Union. It operates as a cabinet government, with 27 members of the Commission headed by a President.

Fiscal cliff: A fiscal cliff refers to the reduction or withdrawal of government spending, an increase in taxation, or both.

Fiscal policy: Fiscal policy relates to decisions about government revenues and outlays, like taxation and economic stimulus.

Fiscal stimulus: Fiscal stimulus refers to government spending intended to provide economic support.

Gilt: Gilts are sovereign debt securities issued by the U.K. government.

Group of 7 (G7): The G7 is an inter-governmental forum for the leaders of major advanced democratic nations that includes Canada, France, Germany, Italy, Japan, the U.K. and the U.S.

Hawk: Hawk refers to a central-bank policy advisor who has a negative view of inflation and its economic impact, and thus tends to favor higher interest rates.

Inflation: Inflation refers to rising prices.

Inflation-Protected Securities: Inflation-protected securities are typically indexed to an inflationary gauge to protect investors from the decline in the purchasing power of their money. The principal value of an inflation-protected security typically rises as inflation rises, while the interest payment varies with the adjusted principal value of the bond. The principal amount is typically protected so that investors do not risk receiving less than the originally invested principal.

International Monetary Fund: The International Monetary Fund (IMF) is an international organization of 189 member countries that promotes global economic growth and financial stability, encourages international trade, and reduces poverty.

Monetary policy: Monetary policy relates to decisions by central banks to influence the amount of money and credit in the economy by managing the level of benchmark interest rates and the purchase or sale of securities. Central banks typically make policy decisions based on their mandates to target specific levels or ranges for inflation and employment.

Mortgage-Backed Securities: Mortgage-Backed Securities (MBS) are pools of mortgage loans packaged together and sold to the public. They are usually structured in tranches that vary by risk and expected return.

NATO: The North Atlantic Treaty Organization (NATO) is an intergovernmental military alliance among 28 European countries and 2 North American countries.

Pandemic Emergency Purchase Programme (PEPP): PEPP is a temporary asset-purchase program of private and public sector securities established by the European Central Bank to counter the risks to monetary-policy transmission and the outlook for the euro area posed by the COVID-19 outbreak.

Price-to-earnings (PE) ratio: The PE ratio is equal to the market capitalization of a share or index divided by trailing (over the prior 12 months) or forward (forecasted over the next 12 months) earnings. The higher the PE ratio, the more the market is willing to pay for each dollar of annual earnings.

Purchasing power parity (PPP): Purchasing power parity is the exchange rate at which the currency of one country would have to be converted into that of another country to buy the same amount of goods and services in each country.

Quantitative easing: Quantitative easing refers to expansionary efforts by central banks to help increase the supply of money in the economy.

Recession: Recession refers to a period of economic decline and is generally defined by a drop in GDP over two successive quarters.

Summary of Economic Projections: The Fed's Summary of Economic Projections (SEP) is based on economic projections collected from each member of the Fed Board of Governors and each Fed Bank president on a quarterly basis.

Taper tantrum: Taper tantrum describes the 2013 surge in U.S. Treasury yields, resulting from the U.S. Federal Reserve's announcement of future tapering of its policy of quantitative easing.

Transmission Protection Instrument (TPI): The European Central Bank established the TPI to ensure the smooth transmission of monetary policy normalization across eurozone countries. According to the ECB, the TPI "can be activated to counter unwarranted, disorderly market dynamics" by making "secondary market purchases of securities issued in jurisdictions experiencing a deterioration in financing conditions."

Yield: Yield is a general term for the expected return, in percentage or basis points (one basis point is 0.01%), of a fixed-income investment.

Yield curve: The yield curve represents differences in yields across a range of maturities of bonds of the same issuer or credit rating (likelihood of default). A steeper yield curve represents a greater difference between the yields. A flatter curve indicates the yields are closer together.

Index and Benchmark Descriptions

All indexes are quoted in gross performance unless otherwise indicated.

The Bloomberg 1-10 Year US TIPS Index measures the performance of inflation-protected public obligations of the U.S. Treasury that have a remaining maturity of 1 to 10 years.

The Bloomberg Commodity Index is composed of futures contracts and reflects the returns on a fully collateralized investment in the Index. This combines the returns of the Index with the returns on cash collateral invested in 13-week (3-month) U.S. Treasury bills.

The Bloomberg US Asset Backed Securities (ABS) Index measures the performance of ABS with the following collateral types: credit and charge card, auto and utility loans. All securities have an average life of at least one year.

The Bloomberg Global Aggregate Index is an unmanaged market-capitalization-weighted benchmark, tracks the performance of investment-grade fixed-income securities denominated in 13 currencies. The Index reflects reinvestment of all distributions and changes in market prices.

The Bloomberg Global Aggregate ex-Treasury Index is an unmanaged market index representative of the total-return performance of ex-Treasury major world bond markets.

The Bloomberg Global Treasury Index is composed of those securities included in the Bloomberg Global Aggregate Bond Index that are Treasury securities.

The Bloomberg US Corporate Bond Index is a broad-based benchmark that measures the investment-grade, fixed-rate, taxable corporate bond market.

The Bloomberg US Mortgage Backed Securities (MBS) Index measures the performance of investment-grade, fixed-rate, mortgage-backed, pass-through securities of Government National Mortgage Association (GNMA), Federal National Mortgage Association (FNMA) and Freddie Mac (FHLMC).

The Bloomberg US Treasury Index is an unmanaged index composed of U.S. Treasurys.

The Bloomberg Commodity Index is composed of futures contracts and reflects the returns on a fully collateralized investment in the Index. This combines the returns of the Index with the returns on cash collateral invested in 13-week (3-month) U.S. Treasury bills.

The Employment Cost Index is a quarterly economic series published by the U.S. Bureau of Labor Statistics that details the growth of total employee compensation. The index tracks movement in the cost of labor, as measured by wages and benefits, at all levels of a company.

The Chicago Board Options Exchange Volatility Index (VIX) tracks the expected volatility in the S&P 500 Index over the next 30 days. A higher number indicates greater volatility.

CBOE Volatility Index (VIX Index): The VIX Index tracks the expected volatility in the S&P 500 Index over the next 30 days. A higher number indicates greater volatility.

Consumer Price Indexes measure changes in the price level of a weighted-average market basket of consumer goods and services purchased by households. A consumer price index is a statistical estimate constructed using the prices of a sample of representative items whose prices are collected periodically.

The Dow Jones Industrial Average is a widely followed market indicator based on a price-weighted average of 30 blue-chip New York Stock Exchange stocks that are selected by editors of *The Wall Street Journal*.

The Employment Cost Index is a quarterly economic series published by the U.S. Bureau of Labor Statistics that details the growth of total employee compensation. The index tracks movement in the cost of labor, as measured by wages and benefits, at all levels of a company.

The FTSE All-Share Index represents 98% to 99% of U.K. equity market capitalization. The Index aggregates the FTSE 100, FTSE 250 and FTSE Small Cap Indexes.

The ICE BofA U.S. High Yield Constrained Index contains all securities in The ICE BofA U.S. High Yield Index but caps exposure to individual issuers at 2%.

The ICE BofA U.S. High Yield Index tracks the performance of below-investment-grade, U.S. dollar-denominated corporate bonds publicly issued in the U.S. domestic market.

The JPMorgan EMBI Global Diversified Index tracks the performance of external debt instruments (including U.S. dollar-denominated and other external-currency-denominated Brady bonds, loans, eurobonds and local-market instruments) in the emerging markets.

JPMorgan GBI-EM Global Diversified Index tracks the performance of debt instruments issued in domestic currencies by emerging-market governments.

The MSCI ACWI Index is a market-capitalization-weighted index composed of over 2,000 companies, representing the market structure of 48 developed- and emerging-market countries in North and South America, Europe, Africa and the Pacific Rim. The Index is calculated with net dividends reinvested in U.S. dollars.

The MSCI ACWI ex-USA Index includes both developed- and emerging-market countries, excluding the U.S.

The MSCI Emerging Markets Index is a free float-adjusted market-capitalization-weighted index designed to measure the performance of global emerging-market equities.

The MSCI Emerging Markets Latin America Index captures large- and mid-cap representation across five emerging-market countries in Latin America.

The MSCI EMU (European Economic and Monetary Union) Index is a free float-adjusted market-capitalization-weighted index that is designed to measure the equity market performance of countries within EMU. The Index consists of the following 10 developed-market country indexes: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal and Spain.

The MSCI Europe ex-UK Index is a free float-adjusted market-capitalization-weighted index that captures large- and mid-cap representation across developed-market countries in Europe excluding the UK.

The MSCI Frontier Emerging Markets Index is a free float-adjusted market capitalization index designed to serve as a benchmark covering all countries from the MSCI Frontier Markets Index and the lower size spectrum of the MSCI Emerging Markets Index.

The MSCI Japan Index is designed to measure the performance of the large- and mid-capitalization stocks in Japan.

The MSCI Pacific ex Japan Index captures large- and mid-cap representation across four of five developed-market countries in the Pacific region (excluding Japan).

The MSCI Russia Index is designed to measure the performance of the large- and mid-cap segments of the Russian market. With 26 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Russia.

MSCI United Kingdom Index is designed to measure the performance of the large- and mid-cap segments of the U.K. market.

MSCI USA Index measures the performance of the large- and mid-cap segments of the U.S. market.

The MSCI World Index is a free float-adjusted market-capitalization-weighted index designed to measure the equity market performance of developed markets. The Index consists of the following 23 developed-market country indexes: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the U.K. and the U.S.

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

The NASDAQ Composite Index is a market-value-weighted index of all common stocks listed on the National Association of Securities Dealers Automated Quotations (NASDAQ) system.

Russell 1000 Growth Index measures the performance of the large-cap growth segment of the U.S. equity universe. It includes those Russell 1000 Index companies with higher price-to-book ratios and higher forecasted growth values.

The Russell 2000 Growth Index measures the performance of the small-cap growth segment of the U.S. equity universe. It includes those Russell 2000 Index companies with higher price-to-value ratios and higher forecasted growth values.

The Russell 1000 Value Index measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 1000 Index companies with lower price-to-book ratios and lower expected growth values.

The Russell 2000 Value Index measures the performance of small-cap value segment of the U.S. equity universe. It includes those Russell 2000 Index companies with lower price-to-book ratios and lower forecasted growth values.

The Shenzhen Stock Exchange Composite Index tracks performance of A share stocks (which are denominated in renminbi, the local currency) and B share stocks (which are denominated in Hong Kong dollars, an offshore currency) on China's Shenzhen Stock Exchange.

The S&P 500 Index is a market-capitalization-weighted index that consists of 500 publicly-traded large U.S. companies that are considered representative of the broad U.S. stock market.

The TOPIX, also known as the Tokyo Stock Price Index, is a capitalization-weighted index of all companies listed on the First Section of the Tokyo Stock Exchange. The Index is supplemented by the subindexes of the 33 industry sectors. The Index calculation excludes temporary issues and preferred stocks, and has a base value of 100 as of January 4, 1968.

The U.S. Dollar Index (DXY Index) measures the value of the U.S. dollar relative to a basket of other currencies, including the currencies of some of the US's major trading partners: the euro, Swiss franc, Japanese yen, Canadian dollar, British pound, and Swedish krona.

The U.S. Personal Consumption Expenditures (PCE) Price Index is the primary inflation index used by the Federal Reserve when making monetary-policy decisions

Corresponding Indexes for Fixed-Income Performance Exhibit

U.S. High Yield	ICE BofA U.S. High Yield Constrained Index
Global Sovereigns	Bloomberg Global Treasury Index
Global Non-Government	Bloomberg Global Aggregate ex-Treasury Index
Emerging Markets (Local)	JPMorgan GBI-EM Global Diversified Index
Emerging Markets (External)	JPMorgan EMBI Global Diversified Index
U.S. Mortgage-Backed Securities (MBS)	Bloomberg US Mortgage Backed Securities Index
U.S. Asset-Backed Securities (ABS)	Bloomberg US Asset Backed Securities Index
U.S. Treasurys	Bloomberg US Treasury Index
U.S. Treasury Inflation-Protected Securities (TIPS)	Bloomberg 1-10 Year US TIPS Index
U.S. Investment-Grade Corporates	Bloomberg US Corporate Bond Index

Corresponding Indexes for Regional Equity Performance Exhibit

United States	S&P 500 Index
United Kingdom	FTSE All-Share Index
Pacific ex Japan	MSCI Pacific ex Japan Index (Net)
Japan	TOPIX, also known as the Tokyo Stock Price Index
Europe ex U.K.	MSCI Europe ex UK Index (Net)
EM Latin America	MSCI Emerging Markets Latin America Index (Net)

Disclosures

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220204.18 IMU US (10/22)