

# Executive Summary

Fourth Quarter 2022



Despite broad-based rallies in both stocks and fixed income during the fourth quarter, investor portfolios took a beating in 2022, as stocks spent the year mired in a painful and volatile bear market and bonds suffered through their worst performance year on record. After three strong years of double-digit returns, the S&P 500 Index needed a Q4 return of 7.6% to pare its full-year loss to 18.1%, while a Q4 gain of 9.8% in the MSCI ACWI Index helped to cap the annual losses for global equities at 18.4%. Fixed income, which typically provides ballast to portfolios during periods of financial market stress, offered little to no protection this time around, with many bond sectors serving up equity-like losses. The Bloomberg U.S. Aggregate Bond Index logged a full-year decline of 13.0%, a loss 4x greater than its prior worst year on record (1994). Against this backdrop, a 60/40 balanced investor logged a 2022 loss of 17%, worst since 1937.

In many ways investors, including us, were blindsided by 2022's market collapse. The prevailing wisdom entering the year was that, while the Fed would undoubtedly begin to unwind the extraordinary Covid-era policies during the year, such a policy normalization would unfold gradually and incrementally. The hotter-than-normal inflation readings of late 2021 were expected to prove transitory, and the post-pandemic economic and corporate fundamentals were widely considered strong enough to justify lofty market valuations in a low interest rate environment. Investors failed to appreciate the real inflation risk and failed to anticipate the scope of the reaction by Fed and other central banks to get prices back under control.

We think J.P. Morgan framed it best when it described 2022 as the year of The Great Repricing. Valuations have come down significantly in virtually all corners of financial markets, and the speculative froth that accompanied an era of historically easy financial conditions has largely disappeared. The forward P/E multiple on the S&P 500 is down from nearly 22x a year ago to 16x today, bringing valuations back in line with long term averages, while the multiple on high flying technology stocks has fallen from 28x to 20x. On the bond market side, a 200-300 basis point surge in global bond yields has brought an end to the experiment with negative yielding debt and paved the way to positive real returns for bond investors. Cap rates on commercial real estate have doubled, while home prices and rents are falling after double digit increases during Covid.

While it is far too early to ring the all-clear bell, we think there are a number of reasons for investors to be optimistic. Inflation appears to have peaked as higher rates and tighter monetary conditions have taken effect, and the Fed appears closer to slowing or stopping its rate hiking cycle in coming months. The retreat of the U.S. dollar from 20-year highs and the re-opening of the Chinese economy are helping international markets log their first notable period of outperformance in a decade. While we believe a recession is still likely during 2023, we have higher confidence that any downturn would be mild, short-lived, and largely priced in the market today. Most importantly, last year's market correction, as painful as it was, has reset valuations and significantly improved the outlook for future long-term returns. Bonds are an investable asset class for the first time in ten years, which means they can play a more important role in portfolios by helping investors meet return objectives while taking less risk.

Sector	Recent Change	BEC Sentiment			Rationale
		Negative	Neutral	Positive	
Primary Asset Classes	Equities	↑		●	Hawkish Fed policy, higher rates weigh on stock valuations
	Fixed Income	↑	●		Yields highest since Financial Crisis, now viable alternative to stocks
	Liquid Alternatives		●		Commodity prices in retreat on expected demand destruction
	Cash	↓		●	4-5% cash position both defensive and safer alternative to bonds
Equities	Growth		●		P/E contraction in growth stocks main driver of 2022 index declines
	Value	↑		● ●	Value has performed better during rising rates and inflation
	Cyclicals			●	Cyclicals offer attractive valuations versus growth and defensives
	Defensives		●		Neutral position given historically high market valuations
	U.S. Large Caps	↑		● ● ●	Remains our largest overweight across BEC portfolios, tilt to value
	U.S. Small/Mid Caps		●		Despite attractive valuations, small caps vulnerable to recession
	Developed Europe		● ●		Energy shortfall averted, valuations attractive, but recession looms
	Developed Asia		● ●		China reopening a positive, but de-globalization trends a headwind
Emerging Markets	↑	●		Valuations near 20-year lows, but debt default risks rising	
Fixed Income	Duration/Rate Risk	↑	●		Gradually unwinding short duration bet on higher bond yields
	Credit Risk			●	Default risk and credit spreads rising on recession fear
	U.S. Treasuries/TIPS	↑		● ●	Increased exposure to Treasuries and extended duration
	IG Credit/Preferred	↑		● ●	Prefer short duration corporate credit, underweight preferreds
	High Yield		● ●		Underweight with bias to higher quality, "fallen angel" bonds
	Developed Market		● ● ●		No current exposure
	Emerging Market		● ●		Swapped EM bond ETF to a lower cost, better performing fund
Alternatives	REITs		● ●		REITs among worst performers in 2022 amid surging interest rates
	Commodity/Resources			●	Exposure biased to energy producers
	MLPs / Infrastructure			● ●	Attractive yields, low equity duration, and global energy shortages
FX	U.S. Dollar			● ●	Dollar rally stalled in Q4 after surging early in 2022

Global equities lost a combined \$18 trillion of market value during 2022, as stocks absorbed sharply higher interest rates, surging inflation, materially tighter financial conditions, and a panoply of risks and uncertainties. Despite three mid-year bear market rallies in March (+11%), June (+18%), and November (+14%), the trajectory was mostly downward for U.S. stocks, which hit their annual high on January 3<sup>rd</sup> and bottomed out in mid October down 25% before rallying modestly into year end. The silver lining is that stocks finished the year trading at much more attractive valuations, which should bode well for future equity returns.

- S&P 500 Index snapped a three-quarter losing streak by posting a total return of 7.6% during Q4, paring its full year loss to 18.1%. This was the worst performance for U.S. large caps since 2008, the onset of the Great Financial Crisis.
- The six largest tech stocks (Apple, Microsoft, Google, Amazon, Facebook, and NVIDIA) lost a combined \$4 trillion (or 37%) of their market value during the year.
- U.S. mid caps (+10.8%) and small caps (+9.2%) fared a bit better than large caps during the quarter, while value outperformed growth across all size segments all year.
- 9 of 11 S&P 500 sectors posted Q4 gains, led by energy (+22.8%), industrials (+19.2%), materials (+15.1%), and financials (+13.6%), while consumer discretionary (-10.2%) and communication services (-1.4%) added to their year-long underperformance.
- Volatility remained elevated all year and investors became numb to big selloffs, with the S&P experiencing 63 days in which losses exceeded 1%, or roughly 25% of all trading days.

### International Equity Market Highlights (MSCI indices, all returns in US\$):

- Fueled in large part by a rebound in the U.S. dollar, returns for international stocks trounced those of U.S. stocks for the quarter. The MSCI All Country World Index (ex U.S.) posted a Q4 total return of 14.3%, which allowed foreign stocks to modestly outperform for the year.
- Among regional indices, MSCI Europe (+19.4%), MSCI Pacific (+14.1%), and MSCI EM (+9.7%) all outpaced the U.S. (+7.6%) for the quarter.
- All 20 MSCI developed market country indices posted Q4 gains, led by Denmark (+31.6%), Austria (+31.1%), Italy (+26.4%), Germany (+24.6%), and New Zealand (+24.5%).
- 23 of 24 EM countries posted Q4 gains, led by Poland (+47.8%), Hungary (+36.3%), Greece (+29.1%), Egypt (+28.5%), and the Philippines (+21.1%).

### Liquid Alternatives:

- After a rocky Q3, the Bloomberg Commodity Index rallied 2.2% during the fourth quarter to cap off a 16.1% total return for the full year, as a weaker U.S. dollar helped spur rebounds in the prices of gold, copper, and a host of other commodities traded in dollars.
- On the heels of a 40.2% return in 2021, MLPs posted a return of 30.9% in 2022, reflecting a continued resurgence in one of the most unloved asset classes of the preceding decade.

### Global Equity & Liquid Alternatives Market Recap

Region/Asset Class	Index	Total Return (in U.S. Dollars)				
		Q4	YTD	3-Year	5-Year	10-Year
<b>Domestic Equity</b>						
U.S. Large Cap Core	S&P 500	7.6%	(18.1%)	7.7%	9.4%	12.6%
U.S. Mid Cap Core	S&P 400	10.8%	(13.1%)	7.2%	6.7%	10.8%
U.S. Small Cap Core	S&P 600	9.2%	(16.1%)	5.8%	5.9%	10.8%
U.S. Total Stock Market	S&P 1500	7.8%	(17.8%)	7.6%	9.2%	12.4%
<b>Domestic Equity - Size &amp; Style</b>						
Large Cap Growth	S&P 500 Growth	1.5%	(29.4%)	7.6%	10.3%	13.6%
Large Cap Value	S&P 500 Value	13.6%	(5.2%)	6.3%	7.6%	10.9%
Mid Cap Growth	S&P 400 Growth	8.8%	(19.0%)	5.8%	6.0%	10.4%
Mid Cap Value	S&P 400 Value	12.8%	(6.9%)	8.1%	7.0%	10.8%
Small Cap Growth	S&P 600 Growth	7.0%	(21.1%)	5.0%	6.1%	11.1%
Small Cap Value	S&P 600 Value	11.2%	(11.0%)	6.1%	5.4%	10.3%
<b>Domestic Equity - Sector</b>						
Information Technology	S&P 500 Technology	4.7%	(28.2%)	11.6%	15.8%	18.3%
Real Estate	S&P 500 Real Estate	3.8%	(26.1%)	1.9%	5.9%	7.8%
Industrials	S&P 500 Industrials	19.2%	(5.5%)	8.3%	7.4%	12.0%
Energy	S&P 500 Energy	22.8%	65.7%	19.4%	9.3%	6.0%
Consumer Discretionary	S&P 500 Cons. Discr.	(10.2%)	(37.0%)	1.5%	6.2%	11.8%
Communication Services	S&P 500 Telecom	(1.4%)	(39.9%)	(3.3%)	1.0%	4.3%
Consumer Staples	S&P 500 Cons. Staples	12.7%	(0.6%)	9.3%	8.8%	11.0%
Utilities	S&P 500 Utilities	8.6%	1.6%	6.3%	9.6%	11.1%
Materials	S&P 500 Materials	15.1%	(12.3%)	10.5%	7.5%	9.8%
Financials	S&P 500 Financials	13.6%	(10.5%)	5.9%	6.4%	12.2%
Healthcare	S&P 500 Healthcare	12.8%	(2.0%)	12.0%	12.5%	15.1%
<b>International Equity</b>						
Developed Market	MSCI EAFE	17.3%	(14.5%)	0.9%	1.5%	4.7%
Emerging Market	MSCI Emerging Market	9.7%	(20.1%)	(2.7%)	(1.4%)	1.4%
Frontier Markets	MSCI Frontier Market	(0.8%)	(26.3%)	(3.7%)	(2.5%)	3.2%
International Total Market	MSCI ACWI (ex. U.S.)	14.3%	(16.0%)	0.1%	0.9%	3.8%
International Small Cap	MSCI EAFE Small Cap	15.8%	(21.4%)	(0.9%)	(0.1%)	6.2%
Europe	MSCI Europe	19.4%	(15.1%)	1.4%	1.9%	4.6%
Pacific	MSCI Pacific	14.1%	(13.0%)	(0.0%)	1.0%	4.9%
<b>Liquid Alternatives</b>						
U.S. Real Estate	DJ U.S. Select REIT	4.8%	(26.0%)	(1.4%)	2.5%	5.8%
International Real Estate	S&P Global X-U.S. RET	11.6%	(21.9%)	(7.0%)	(1.3%)	2.5%
TIPS	Barcap U.S. TIPS	2.0%	(11.9%)	1.2%	2.1%	1.1%
Master Limited Partnerships	Alerian Energy MLP	10.1%	30.9%	9.4%	4.1%	2.0%
Commodities (Broad)	Bloomberg Commodity	2.2%	16.1%	12.7%	6.5%	(1.3%)
Gold	Spot Price	9.9%	(0.2%)	20.2%	27.4%	9.2%
Crude Oil (WTI)	Spot Price	2.0%	7.2%	32.1%	30.3%	(18.4%)
Copper	Spot Price	10.9%	(14.7%)	36.1%	4.6%	24.8%

Despite a rally in most fixed income market segments during Q4, 2022 still ranked as the worst year on record for global bond markets by a wide margin. In response to runaway inflation spurred by years of ultra low interest rates, an unprecedented expansion of the money supply, and unbridled fiscal spending, the Federal Reserve raised the Fed Funds Rate from 0-0.25% to a range of 4.25%-4.50% over the course of the year, the fastest pace of hikes in 40 years. Central bankers around the globe followed suit in a coordinated effort to fight surging prices in their own countries, effectively ending the experimental monetary policies that have largely defined the post Great Financial Crisis era in developed markets. The net effect of these policy actions was a major repricing of global fixed income markets that left bond investors bloodied, but at least the ripping off of the Bandaid was mercifully quick.

On the good news front, economic growth is slowing, and inflationary pressures are waning, which should both allow the Fed to slow or end its rate hike regime in the first half of this year and provide stability to financial markets. Second, with the dramatic increase in yields and an expected return to positive real interest rates, bonds become a viable investment alternative again, which should help investors to meet return objectives while taking less market risk.

### Domestic Fixed Income Market Highlights:

- The Bloomberg U.S. Aggregate Bond Index posted a total return of 1.9% during Q4, helping to pare full year loss to 13.0%, more than 4x the next largest loss for the broad investment grade bond index in its 50-year history (-2.9% in 1994). The yield on the AGG finished the year at 4.7%, up from 1.7% at the end of 2021.
- The yield on the 10-year Treasury ended Q4 at 3.88%, an increase of 5 bps for the quarter and 236 bps year to date resulting in a total return loss of 16.3% for the year. The 2-year Treasury yield has fared even worse, soaring 369 bps from 0.73% at year end 2021 to 4.42% at the end 2022 as the markets priced in aggressive fed policy and higher inflation.
- Credit spreads on investment grade corporate bond indices ended Q4 at 130 bps, down 29 bps during Q4, up 39 bps YTD, and well below the long-term average spread of 151 bps.
- Credit spreads on HY bond indices finished Q4 at 469 bps, down 84 bps for the quarter, an increase of 186 bps YTD, and still well below the 20-year average spread of 505 bps.
- Q4 corporate credit issuance of \$214 billion is down 44% versus last year, with investment grade issuance down 35% and high yield issuance down 79% for the quarter.
- The yield curve (10-year minus 2-year Treasury) has remained heavily inverted since July, and the scale of the inversion reached levels not seen since 1981 during Q4.

### International Fixed Income Market Highlights (all returns in USD, unless noted):

- The Bloomberg Barclays Global Aggregate (ex. U.S.) Bond Index posted a total return of 6.8% for the quarter but a total return loss of 18.7% for the full year.
- After peaking near \$17 trillion in 2020, negative yielding sovereign debt has been virtually eliminated across the globe due to a normalization of monetary policy by central banks.

## Global Bond Market Recap

Region/Sector	Index	Total Return				
		Period		Annualized		
		Q4	YTD	3-Year	5-Year	10-Year
<b>Domestic Fixed Income</b>						
Treasuries-Short	Bloomberg Treasury 1-3	0.7%	(3.8%)	(0.5%)	0.7%	0.7%
Treasuries-Interm.	Bloomberg Treasury 7-10	1.0%	(14.9%)	(3.2%)	(0.1%)	0.7%
Treasuries-Long	Bloomberg Treasury 20+	(1.4%)	(31.1%)	(8.0%)	(2.6%)	0.5%
U.S. Broad	Bloomberg U.S. Aggr.	1.9%	(13.0%)	(2.7%)	0.0%	1.1%
MBS	Bloomberg MBS	2.1%	(11.8%)	(3.2%)	(0.5%)	0.7%
IG Credit	Bloomberg Credit	3.4%	(15.3%)	(2.9%)	0.4%	1.8%
High Yield	Bloomberg Corp HY	4.2%	(11.2%)	0.1%	2.3%	4.0%
Leveraged Loans	S&P US Lvqd. Loans	2.7%	(0.6%)	2.5%	3.3%	3.7%
Preferred Stock	S&P Preferred Stock	(2.1%)	(18.9%)	(2.3%)	1.0%	3.5%
TIPS	Bloomberg U.S. TIPS	2.0%	(11.9%)	1.2%	2.1%	1.1%

### International Fixed Income

Global Broad	Bloomberg Global Aggr.	4.6%	(16.3%)	(4.5%)	(1.7%)	(0.4%)
Int'l. Broad	Bloom. Gbl. Aggr. xUS	6.8%	(18.7%)	(6.0%)	(3.1%)	(1.7%)
Global Treasuries	Bloomberg Global Tsy.	4.8%	(17.5%)	(5.5%)	(2.4%)	(1.2%)
Global Credit	Bloomberg Global Credit	5.7%	(16.3%)	(3.7%)	(0.8%)	1.0%
Global High Yield	Bloomberg Global HY	8.0%	(12.7%)	(1.9%)	0.4%	3.0%
Emerging Market	Bloomberg EM	6.6%	(15.3%)	(3.9%)	(0.4%)	1.7%

## Current Yields & Duration

Bond/Index	Yield			Current Modified Duration
	12/31/22	12/31/21	12/31/20	
2-Year Treasury	4.42%	0.73%	0.13%	--
5-Year Treasury	3.99%	1.26%	0.36%	--
10-Year Treasury	3.88%	1.52%	0.93%	--
30-Year Treasury	3.97%	1.90%	1.65%	--
Bloomberg U.S. Aggregate Bond	4.68%	1.75%	1.12%	6.3
Bloomberg Investment Grade Credit	5.42%	2.33%	1.74%	7.2
Bloomberg Corporate High Yield	8.96%	4.21%	4.18%	4.0
Bloomberg Global Aggregate (xUS)	3.13%	1.07%	0.68%	7.0
JPM EMBI Global Diversified (local currency)	6.86%	5.72%	5.22%	4.9
JPM EM Diversified (US\$ denominated)	8.55%	5.27%	4.91%	6.0

After peaking at a 20-year high in late September, the U.S. dollar weakened notably in the fourth quarter, snapping a string of five straight quarterly gains which had driven the strongest run for the Greenback in two decades. The ICE U.S. Dollar Index fell 7.7% during Q4 to pare full-year gains to 8.2%, while a comparable 6.8% decline in the broader Bloomberg Dollar Spot Index brought full-year 2022 gains to 6.2%. This was the sharpest quarterly loss for the dollar since 2010. Among major currency pairs, the dollar slid 8.8% versus the euro, 8.0% versus the British pound, 9.5% versus the Japanese yen, and 5.5% versus the Australian dollar during Q4, although the world's reserve currency still recorded double digit gains against the yen, the pound, and the Indian rupee for the year.

Several factors contributed to this rapid shift in market sentiment, including:

- Mounting evidence that price pressures are moderating in several key areas that drive inflation, including housing, automotive, energy, transportation, and labor
- Growing optimism that future Fed rate hikes will be smaller and that we are nearing an end to this rate hiking cycle
- A narrowing of interest rate differentials between the U.S. and the rest of the world resulting from coordinated effort by central bankers to end zero interest rate policies
- The easing of Covid-related global supply chain stress
- The rapid re-opening of the Chinese economy after the unwind of Covid Zero policies
- The rising perception among investors and market strategists that any economic slowdown triggered by tighter financial conditions will be mild or even a "soft landing"

Our BEC portfolios experienced a significantly positive impact from foreign currency during Q4, partially offsetting the significant negative impact from earlier in the year. Our primary benchmark for international equities, the MSCI All-Country World Index (ex. U.S.), posted total returns of 7.8% for the quarter and negative 9.6% year to date in local currency terms, while returns were 14.3% and negative 16.0%, respectively, in U.S. dollar terms. On a regional basis, our full-year returns were negatively impacted by currency across all geographies, as developed Asia, developed Europe, and emerging markets experienced performance drags from currency of 9.3%, 6.6%, and 4.6% respectively.

We remain unhedged to currency within our BEC portfolios, but given our overweight allocations to U.S. investments and underweights to foreign assets across all BEC strategies, we still carry significantly less foreign currency risk than our benchmarks.

### Global Currency Market Recap

U.S. Dollar Appreciation/(Depreciation)	Q4	YTD	2021	2020	2019
vs. Euro	(8.8%)	6.0%	7.5%	(8.2%)	2.0%
vs. British Pound	(8.0%)	11.1%	1.6%	(2.9%)	(3.8%)
vs. Japanese Yen	(9.5%)	13.8%	11.6%	(5.0%)	(0.9%)
vs. Canadian Dollar	(1.5%)	7.0%	(0.8%)	(1.6%)	(5.0%)
vs. Australian Dollar	(5.5%)	6.7%	6.1%	(8.8%)	0.2%
vs. Brazilian Real	(2.1%)	(5.2%)	7.3%	29.2%	3.6%
vs. Indian Rupee	1.7%	11.0%	2.0%	2.4%	2.4%
vs. Chinese Yuan Renminbi	(2.9%)	8.7%	(2.7%)	(6.2%)	1.2%

### Currency Indices

U.S. Dollar Index	(7.7%)	8.2%	6.4%	(6.6%)	0.1%
Bloomberg Dollar Spot Index	(6.8%)	6.2%	4.7%	(5.4%)	(0.9%)
Fed Nominal Broad U.S. Dollar Index	(4.8%)	5.4%	3.4%	(2.7%)	(0.8%)
MSCI Emerging Market Currency Index	4.3%	(4.3%)	0.9%	3.3%	3.1%

### Impact of Currency on International Equity Returns

Regional Indices	Total Return					
	Fourth Quarter		Year to Date		One Year	
	Local Currency	U.S. Dollar	Local Currency	U.S. Dollar	Local Currency	U.S. Dollar
S&P 500	--	7.6%	--	(18.1%)	--	(18.1%)
S&P 1500	--	7.8%	--	(17.8%)	--	(17.8%)
MSCI EAFE	8.7%	17.3%	(7.0%)	(14.5%)	(7.0%)	(14.5%)
MSCI ACWI	7.4%	9.8%	(16.0%)	(18.4%)	(16.0%)	(18.4%)
MSCI ACWI (ex. U.S.)	7.8%	14.3%	(9.6%)	(16.0%)	(9.6%)	(16.0%)
MSCI Europe	10.4%	19.4%	(8.5%)	(15.1%)	(8.5%)	(15.1%)
MSCI Pacific	5.9%	14.1%	(3.7%)	(13.0%)	(3.7%)	(13.0%)
MSCI EAFE Small Cap	7.3%	15.8%	(13.6%)	(21.4%)	(13.6%)	(21.4%)
MSCI Emerging Market	6.6%	9.7%	(15.5%)	(20.1%)	(15.5%)	(20.1%)

ETF market highlights for the fourth quarter and full year included:

- U.S. listed ETFs attracted inflows of \$189 billion during Q4 and \$589 billion for the full year, while mutual funds posted outflows of \$357 billion and \$958 billion, respectively.
- With total AUM of \$6.4 trillion, ETFs now account for 28% of the U.S. listed fund market.
- Index funds (including mutual funds and ETFs) account for \$10.8 trillion (or 48%) of the \$23 trillion U.S. listed fund market. 95% of all ETF assets are passively rather than actively managed compared to just 29% of mutual fund assets.
- Including both mutual funds and ETFs, passive index funds generated \$557 billion of net inflows this year, while actively-managed funds experienced \$925 billion of outflows.
- For the full year, ETFs logged positive inflows into U.S. equity (\$244 billion), international equity (\$94 billion), and fixed income (\$194 billion), while mutual funds experienced corresponding outflows of \$243 billion, \$121 billion, and \$531 billion, respectively.
- ETF categories with the strongest net inflows for Q4 included large cap blend (\$24 billion), large cap value (\$14 billion), foreign large cap blend (\$12 billion), high yield bonds (\$11 billion), intermediate municipal bonds (\$11 billion), and large cap growth (\$11 billion).
- ETF categories with highest outflows in Q4 included focused commodities (-\$4 billion), broad commodities (-\$2 billion), utilities (-\$1 billion), and preferred stock (-\$1 billion).

### % of Active Mutual Fund Managers Outperforming Their S&P or Barclays Index

For the periods ending 6/30/2022

Equity Fund Category	Relevant Index	1-year	3-Year	5-Year	10-Year	20-Year
<b>Domestic Equity:</b>						
Large Cap	S&P 500	45%	14%	16%	10%	5%
Mid Cap	S&P 400	46%	31%	42%	20%	6%
Small Cap	S&P 600	45%	20%	26%	9%	6%
Real Estate	S&P U.S. REITs	32%	54%	48%	27%	18%
<b>International Equity:</b>						
Intl. Equity	S&P 700	34%	21%	19%	11%	6%
Intl. Small Cap	S&P Developed Small Cap	40%	45%	38%	29%	13%
Emerging Market	S&P/IFCI Composite	23%	27%	17%	16%	4%
<b>Fixed Income Fund Category</b>						
Gov't Long	Barclays Long Gov't	32%	21%	13%	20%	22%
Gov't Intermediate	Barclays Interm. Gov't	11%	20%	0%	12%	22%
Investment Grade Long	Barclays Long Gov't/Credit	80%	60%	10%	11%	5%
High Yield	Barclays High Yield	59%	64%	37%	30%	18%
Global Income	Barclays Global Aggregate	53%	52%	40%	40%	42%
Emerging Market	Barclays Emerging Market	24%	18%	15%	2%	5%

Source: Standard & Poors Index Versus Active (SPIVA) Report, September 2022.

### Growth of the U.S. Listed Exchange Traded Fund (ETF) Market

	2016	2017	2018	2019	2020	2021	2022	CAGR
<b># of U.S. Listed ETFs</b>	<b>1,975</b>	<b>2,120</b>	<b>2,272</b>	<b>2,393</b>	<b>2,425</b>	<b>2,832</b>	<b>2,977</b>	<b>7%</b>
<b>U.S. Listed ETF AUM by Asset Class (\$B)</b>								
U.S. Stock	\$1,191	\$1,569	\$1,575	\$2,143	\$2,641	\$3,717	\$3,230	18%
Sector Stock	346	433	386	481	618	844	651	11%
International Stock	457	731	666	808	895	1,104	988	14%
Allocation/Balanced	10	12	12	14	20	27	23	15%
Taxable Bond	423	548	616	794	1,021	1,170	1,147	18%
Municipal Bond	24	30	36	48	64	82	104	28%
Alternatives	43	51	44	56	92	165	139	22%
Commodity/Other	61	67	64	83	144	137	132	14%
<b>ETF AUM</b>	<b>\$2,555</b>	<b>\$3,440</b>	<b>\$3,400</b>	<b>\$4,427</b>	<b>\$5,495</b>	<b>\$7,246</b>	<b>\$6,414</b>	<b>17%</b>

### U.S. Listed ETF Net Fund Flows by Asset Class, Year to Date (\$B)

U.S. Stock	\$140	\$143	\$147	\$135	\$126	\$385	\$257
Sector Stock	30	39	6	(2)	71	105	(13)
International Stock	11	149	60	28	28	169	94
Allocation/Balanced	1	2	1	0	2	5	1
Taxable Bond	86	121	91	145	195	188	164
Municipal Bond	6	6	7	10	14	21	30
Alternatives	3	4	5	3	14	33	60
Commodity	10	2	1	7	40	(5)	(4)
<b>ETF Net Fund Flows</b>	<b>\$289</b>	<b>\$466</b>	<b>\$318</b>	<b>\$326</b>	<b>\$492</b>	<b>\$900</b>	<b>\$589</b>

### U.S. Listed Fund AUM by Type (\$B)

US Listed ETFs	\$2,555	\$3,440	\$3,400	\$4,427	\$5,495	\$7,246	\$6,413	17%
US Listed Mutual Funds	12,396	14,654	13,571	16,325	18,137	20,818	16,234	5%
<b>Total Fund Assets</b>	<b>\$14,951</b>	<b>\$18,094</b>	<b>\$16,971</b>	<b>\$20,752</b>	<b>\$23,632</b>	<b>\$28,064</b>	<b>\$22,647</b>	<b>7%</b>
<b>ETF Market Share</b>	<b>17.1%</b>	<b>19.0%</b>	<b>20.0%</b>	<b>21.3%</b>	<b>23.3%</b>	<b>25.8%</b>	<b>28.3%</b>	

### Top U.S. Listed ETF Sponsors by AUM (\$B)

Blackrock/iShares	\$983	\$1,351	\$1,345	\$1,718	\$2,025	\$2,471	\$2,201	14%
Vanguard	612	855	856	1,148	1,509	2,069	1,874	21%
State Street/SPDRs	502	622	572	718	845	1,109	981	12%
Invesco/PowerShares	110	139	169	226	296	408	329	20%
Schwab	60	99	115	164	199	272	259	28%

Source: Morningstar Direct and Blue Edge Capital. ETF data includes ETFs and ETNs.

(1) Blue Edge Capital, LLC (BEC) is an independent investment management firm, registered under the Investment Advisers Act of 1940, serving private investors, family offices, foundations, and institutional investors. BEC employees own 100% of the firm.

(2) Investing in BEC Portfolios involves risks, including the potential for loss of capital. BEC's investment strategies are focused on investment in exchange traded funds (ETFs) that hold domestic and international equities, fixed income, real estate, commodities, precious metals, currencies, cash, and other instruments. BEC's investment strategy includes making tactical asset allocation decisions among asset classes with the goals of improving investment performance and managing risk through the economic cycle. Asset classes and proportional weighting in the BEC Portfolios may change at any time without notification based on the discretion of the BEC Investment Committee, which is responsible for all tactical asset allocation decisions for BEC's investment Portfolios.

(3) The returns generated by the BEC Portfolios are subject to numerous risks, including economic, social, and political uncertainty, market volatility, foreign currency exchange rate volatility, and tracking error versus an underlying index. ETFs that hold fixed income securities are also subject to default risk and interest rate risk of their underlying holdings. Investments in ETFs that own foreign assets may incur greater risks than domestic investments. The actual return performance of any ETF may deviate from the returns of the underlying index it is intended to replicate. There can be no assurance that the investment objectives of any Portfolio managed by BEC will be achieved. A complete list of returns for all BEC ETF holdings is available upon request.

(4) BEC began formally tracking the performance of its Global Portfolios as of January 1, 2011, its Traditional Portfolios as of January 1, 2017, and its ESG Portfolios as of July 1, 2018 (Equity and Balanced) and July 1, 2021 (Growth and Growth & Income). Portfolio composite returns for each portfolio are presented on a time-weighted, size-weighted total return basis using monthly portfolio valuations. The composite returns for each Portfolio presented herein include all eligible BEC accounts. To be eligible for inclusion in the BEC composite, an account must be fee paying, fully discretionary, and not part of a broker wrap program. All returns are expressed in U.S. Dollars and are presented net of all fees and expenses, including the fees of the underlying ETF sponsors. The returns reflect the reinvestment of all dividends and interest. As a result of technological enhancements to our performance reporting system, BEC began accruing dividends as of September 1, 2018, and accrued dividends are included in our portfolio composite performance as of that date. The return information presented herein is preliminary and has not been audited or otherwise verified by an independent accounting firm, and past performance of any BEC portfolio does not guarantee future results. For the launch date of the ESG portfolios (June 30, 2018), we used NAV pricing for the following ESG Portfolio holdings (tickers ESGU, JUST, ESML, ESGD, ESGE, and SUSB) to provide more accurate performance measurement.

(5) The data for portfolio turnover, current portfolio positioning, and return performance of individual asset classes within each BEC portfolio are based on a representative composite account that remained invested since inception. Asset class returns are presented net of the underlying ETF fees and all trading costs but before any BEC management fee, which is deducted from accumulated cash in the portfolio. The asset class benchmark for BEC global fixed income is a blended benchmark comprised of 80% Bloomberg U.S. Aggregate Bond Index and 20% Bloomberg Global Aggregate Bond Index (ex-U.S.), rebalanced monthly.

(6) The performance of each BEC Portfolio is tracked against one or more performance benchmarks, which have been selected as reasonable proxies for the investment strategy of that portfolio and which are provided for informational purposes only. These benchmarks are rebalanced on a monthly basis, and the actual tactical asset allocation of any BEC portfolio may differ significantly from the composition of its respective benchmark indices at any given time. These benchmarks, which are summarized in the following data table, are not directly investable and do not reflect the deduction of any investment management fee or transaction costs.

### Benchmark Component Weighting

	MSCI ACWI	Russell 3000	MSCI ACWI (xUS)	Bloomberg U.S. Aggr. Bond	Bloomberg Global (xU.S.) Aggr. Bond	Bloomberg Commodity
<b>Global Passive Benchmarks</b>						
Global Equity	100.0%	--	--	0.0%	--	--
Global Growth	80.0%	--	--	20.0%	--	--
Global Balanced	65.0%	--	--	35.0%	--	--
Global Growth & Income	45.0%	--	--	55.0%	--	--
<b>Global Style Benchmarks</b>						
Global Equity	--	45.0%	45.0%	--	--	10.0%
Global Growth	--	37.0%	37.0%	13.0%	3.0%	10.0%
Global Balanced	--	30.0%	30.0%	24.0%	6.0%	10.0%
Global Growth & Income	--	20.0%	20.0%	40.0%	10.0%	10.0%
<b>Traditional Benchmarks</b>						
Traditional Equity	--	80.0%	20.0%	--	--	--
Traditional Growth	--	64.0%	16.0%	20.0%	--	--
Traditional Balanced	--	52.0%	13.0%	35.0%	--	--
Traditional Growth & Income	--	40.0%	10.0%	50.0%	--	--
<b>ESG Benchmarks</b>						
ESG Equity	--	70.0%	30.0%	--	--	--
ESG Growth	--	56.0%	24.0%	20.0%	--	--
ESG Balanced	--	50.0%	20.0%	30.0%	--	--
ESG Growth & Income	--	35.0%	15.0%	50.0%	--	--

(7) BEC charges an annual investment management fee on all managed accounts, and the firm's standard fee schedule is as follows: 0.75% on the first \$5,000,000 of assets, 0.65% on the next \$5,000,000, and 0.50% on assets over \$10,000,000. Fees and minimums are negotiable, and some clients may pay less than the standard fee.

(8) The material provided herein is presented for informational purposes only and is based on information from a variety of sources that we consider reliable, including Standard & Poors, MSCI Barra, Morningstar, Alerion, Russell Investments, Goldman Sachs, J.P. Morgan, Deutsche Bank, Merrill Lynch, Charles Schwab, X-Rates.com, CNBC, Dow Jones, Tamarac, and Portfolio Center. BEC does not represent that the information is reliable or complete.

(9) The opinions expressed herein are current opinions as of the date appearing on this material only. All portfolio holdings are as of December 31, 2022.

(10) This report is neither an offer to sell nor a solicitation of an offer to buy any securities. Blue Edge Capital, LLC's most recent Forms ADV I, II, and III are available upon request to BEC or directly at the SEC website [www.sec.gov](http://www.sec.gov).

(11) For more information, please visit our website ([www.blueedgecap.com](http://www.blueedgecap.com)) or call us directly at (804) 673-7401.

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January 2023