

# Q4 2019 Market ChartBook

Baird Private Wealth Management

December 31, 2019

Wealth Management | Capital Markets – Investment Banking | Private Equity | Asset Management

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## Table of Contents

 03
 15
 22
 30

#### **Economy & Markets**

Market Highlights
Markets at a Glance
Returns by Asset Class
S&P 500 Index
Economic Growth
Inflation Watch
Jobs Market
Corporate Profitability
Market Volatility
Commodity Markets
Mutual Fund and ETF Flows

#### **Domestic Equity**

Equity Snapshot
Asset Class Performance
Sector Performance
Investment Style Leadership
Historical Market Valuations
Mutual Fund Performance

#### **International Equity**

Global Performance Map Equity Snapshot Country Performance Sector Performance Investment Style Leadership Global Market Valuations Historical Market Valuations

#### **Fixed Income**

Bond Market Snapshot
Maturity/Credit Performance
Yield and Volatility
U.S. Treasury Bonds
Municipal Bonds
Corporate Bond Yields
Bonds Spreads
Sector Yields & Returns
Mutual Fund Performance



# Economy and Markets

Q4 2019 Market ChartBook

# Q4 2019 Market Highlights

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#### **Economy and Market**

At a Glance: Equity markets rocketed higher in Q4 thanks to an improved economic picture, alleviated trade tensions, and a dovish Fed. The S&P 500 rose 9% during the quarter and 31.5% for the year. This was the best annual performance for the index since 2013. The dominance of growth over value characterized equity markets for most of 2019, but a couple interesting shifts occurred in the quarter. Investors increased their appetite for risk, favoring emerging markets (+12%) over the US for the first time all year. Additionally, the US Treasury Yield Curve steepened after the Fed's third rate hike and is no longer inverted, therefore relieving recession fears for now. The 10-Yr Treasury yield ended the year at 1.92%

**Economy:** Optimism about the economy improved following potential trade developments. The US economy grew just above 2% in Q3, driven by healthy consumer spending. The employment situation continued to impress with an average addition of 205k jobs/month over the past 3 months. Unemployment dipped back down to a historic low of 3.5% with limited wage pressure. However, businesses have been reluctant to invest this year and manufacturing contracted in December to its lowest level since 2009. Even with progress on trade negotiations, parts of the economy have already felt the effects of the prolonged uncertainty.

Fed Speak: The US Federal Reserve cut interest rates for the third time this year in October, with the target federal funds range currently between 1.5-1.75%. Federal Reserve Chair Jerome Powell indicated that the Committee was comfortable with a pause in rate cuts unless a material deterioration occurred in the economy. Inflation also remains manageable around the Fed's target of 2%, meaning it's unlikely the Fed would hike rates anytime soon.

#### **Domestic Equity**

Market Cap and Style: Growth continued to triumph over value in Q4, but for a change of pace, smaller companies outperformed larger companies. Microcaps and small-cap growth rallied 13.5% and 11.4% respectively, while mid-cap and large-cap value were up only 7%. On the year, large-cap growth continued its reign as the top performing equity style with its 36.4% rise and mid-cap growth (+35.5%) following as a close second. The laggards were micro-cap and small-cap value, which rose 22% for the year.

**Sector:** Info Tech and Health Care were the best performing sectors in Q4 returning 14.4%. Bond proxy sectors, Real Estate (-0.5%) and Utilities (+0.8%), lagged as yields rose and risk taking increased. This year, the big winner was Technology with a whopping 50% return, driven by behemoths Microsoft (+58%) and Apple (+89%). The notable YTD underperformer was Energy, which returned only 11.8% despite a 34% surge in the price of WTI Crude Oil.

#### **International Equity**

At a Glance: The improved global economic data and advancement in trade negotiations sparked a rally in international equities and a weakening of the dollar. Emerging markets rose 11.8%, outperforming the US (+9%) and developed international (+8.2%). Within EM, tech-heavy Taiwan rallied nearly 18% and Russia rallied 17% in Q4 and over 50% for the year as the central bank eased. India rose just 5% as the country faced economic and political turmoil. In developed markets, the UK rallied 10% on more certainty surrounding Brexit and Germany was up 10% on improved economic data. On the year, international growth outpaced international value by over 11%, the largest calendar year deficit for value ever.

#### **Fixed Income**

At a Glance: The broad US bond market, as measured by the Bloomberg Barclays Agg Index, had delivered 0.2% as rates bounced off their Labor Day lows and credit continued to outperform. Following the Fed's actions to calm markets with 3 rate cuts earlier this year, injections of additional liquidity measures served as an effective backstop for financial markets. During the quarter, investors saw the impact of easy monetary policy as global growth expectations and economic data bottomed and reversed course, increasing optimism and market sentiment. The improving economic and inflation picture lifted rates and steepened the US Treasury curve. Demand for US Treasuries waned during the quarter, pushing the 10-Yr Treasury yield to 1.92%. Concerns regarding an inverted yield curve were put to rest during the quarter as increased growth and inflation expectations lifted long dated interest rates.

**Taxable Bonds:** Reduced recessionary fears and increased optimism around prospects for a "Phase 1" trade deal with China drove demand for riskier bonds. High yield corporates, emerging market debt, and leveraged loans outperformed in Q4. Non-investment grade issuers rated CCC and lower reversed its YTD course in Q4, clawing back relative performance as speculative investors embraced tighter spreads and stronger fundamentals vs. expectations. Laggards for the quarter included US Treasuries, US government-related debt and Asian fixed income, returning -0.8%, -0.8% and -0.4% respectively.

**Municipal Bonds:** Municipal bonds returned 0.7% in Q4, outperforming its taxable peers by 56bps. Strong technicals and encouraging fundamentals continued to support positive performance during the quarter. High yield municipal bonds was the best performing sector returning 0.9%, while Taxable Municipals suffered, returning -0.9% in Q4.

## Markets at a Glance



## As of December 31, 2019

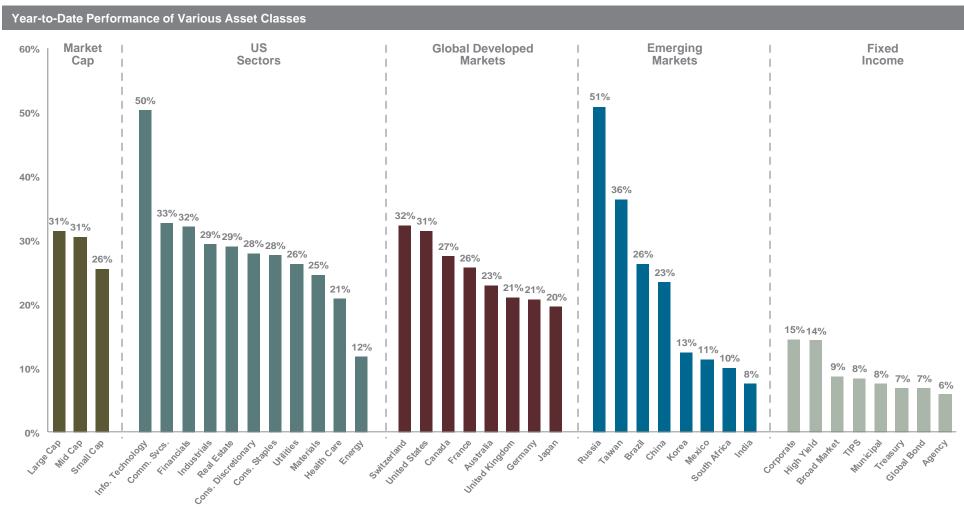
Trailing Returns (%							Annual Returns (%)			
Asset Class	QTD	YTD	1-Year	3-Year	5-Year	10-Year	2018	2017	2016	Benchmark
U.S. Stocks										
Large Cap	9.0	31.4	31.4	15.0	11.5	13.5	(4.8)	21.7	12.1	Russell 1000®
Large Cap Value	7.4	26.5	26.5	9.7	8.3	11.8	(8.3)	13.7	17.3	Russell 1000® Value
Large Cap Growth	10.6	36.4	36.4	20.5	14.6	15.2	(1.5)	30.2	7.1	Russell 1000® Growth
Mid Cap	7.1	30.5	30.5	12.1	9.3	13.2	(9.1)	18.5	13.8	Russell Midcap®
Small Cap	9.9	25.5	25.5	8.6	8.2	11.8	(11.0)	14.6	21.3	Russell 2000®
International Stocks										
Developed Markets	8.2	22.0	22.0	9.6	5.7	5.5	(13.8)	25.0	1.0	MSCI EAFE (Net)
Emerging Markets	11.8	18.4	18.4	11.6	5.6	3.7	(14.6)	37.3	11.2	MSCI Emerging Mkts (Net)
Bonds										
Short-Term Taxable	0.6	4.0	4.0	2.1	1.7	1.5	1.6	0.8	1.3	BBgBarc 1-3 Yr Govt/Credit
Intermediate-Term Taxable	0.4	6.8	6.8	3.2	2.6	3.1	0.9	2.1	2.1	BBgBarc Intermed. Govt/Credit
Short-Term Municipal	0.7	2.8	2.8	1.9	1.3	1.3	1.8	1.1	0.2	BBgBarc 1-3 Yr Municipal
Intermediate-Term Municipal	1.0	6.7	6.7	4.3	3.1	3.9	1.7	4.5	(0.5)	BBgBarc 7 Yr Municipal
Cash										
Cash/Cash Equivalents	0.5	2.3	2.3	1.7	1.0	0.6	1.9	0.8	0.3	FTSE 3 Month T-bills
Satellite										
High Yield	2.6	14.3	14.3	6.4	6.1	7.6	(2.1)	7.5	17.1	BBgBarc US Corporate High Yield
Real Estate	0.8	28.9	28.9	10.8	8.3	12.0	(4.0)	9.8	7.6	DJ US REIT
Commodities	4.4	7.7	7.7	(0.9)	(3.9)	(4.7)	(11.2)	1.7	11.8	Bloomberg Commodity

Source: Morningstar Direct; Russell, MSCl, Bloomberg, Barclays, FTSE, and Dow Jones benchmarks. Performance greater than one year is annualized. Performance is represented by the benchmark listed in the "representative benchmark" column. See important disclosures and definitions included with this publication.

## Returns by Asset Class

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#### As of December 31, 2019

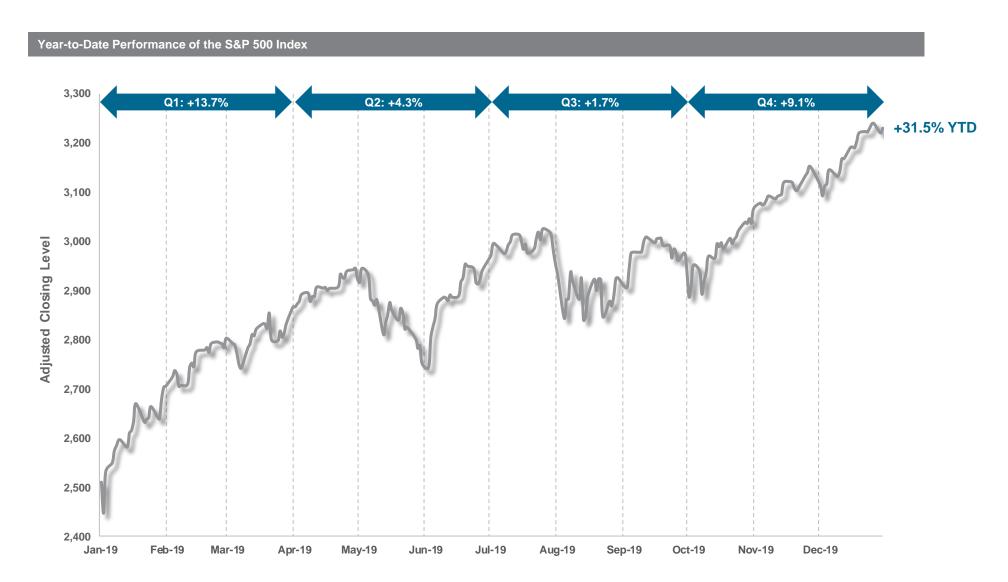


Source: Morningstar Direct. Asset classes are represented by the following benchmarks: Large Cap (S&P 500), Mid Cap (Russell Mid Cap), Small Cap (Russell 2000), Cons. Discretionary (S&P 500 Sectors/Consumer Discretionary), Cons. Staples (S&P 500 Sectors/Consumer Staples), Energy (S&P 500 Sectors/Energy), Financials (S&P 500 Sectors/Financials), Health Care (S&P 500 Sectors/Health Care), Industrials (S&P 500 Sectors/Industrials), Long Sectors/Industrials), Long Sectors/Industrials), Info. Technology (S&P 500 Sectors/Industrials), Communications Services. (S&P 500 Sectors/Communications Services), Utilities (S&P 500 Sectors/Communications Services), Utilities (S&P 500 Sectors/Communications Services), Utilities), Real Estate (S&P 500 Sectors/Real Estate), Australia ((MSCI Australia), Canada (MSCI Canada), France (MSCI France), Germany (MSCI Germany), Japan ((MSCI Japan), Switzerland) ((MSCI Switzerland), United Kingdom), United Kingdom), United States (S&P 500), Brazil (MSCI Brazil), China (MSCI China), India (MSCI India), Korea (MSCI Mexico), Russia (MSCI Russia), South Africa (MSCI South Africa), Taiwan (MSCI Taiwan), Agency (BBgBarc US Agency), Broad Market (BBgBarc US Agg. Bond), Corporate (BBgBarc US Corporate HY), Municipal (BBgBarc US Treasury)

## S&P 500 Index



### As of December 31, 2019

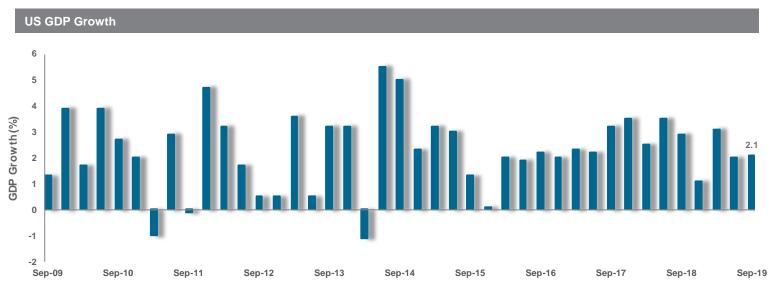


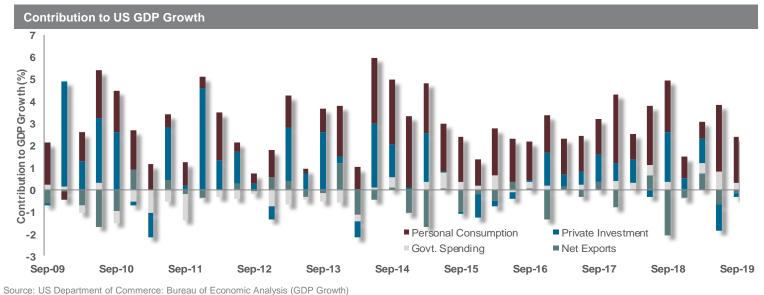
Source: Standard and Poor's. The S&P 500 Index, computed by the Standard & Poor's Corporation, is a well known gauge of stock market movements determined by the weighted capitalization of the 500 leading U.S. common stocks. Indices are unmanaged and it is not possible to invest directly in an index.

## Economic Growth



#### As of September 30, 2019





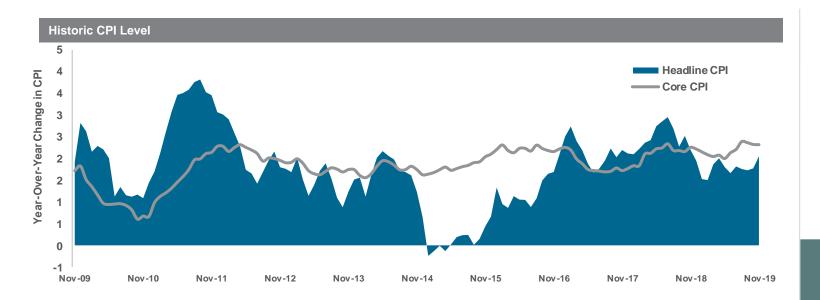
# Gross Domestic Product (GDP)

GDP is a basic measure of U.S. economic output. Alternatively, it can be thought of as the final value of all goods and services produced within the U.S. Positive GDP growth signals an expanding economy. GDP is comprised of four major categories: personal consumption, private investment, government spending and net exports.

## Inflation Watch

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### As of November 30, 2019



	Headline CPI									
Components	Weight (%)	12-mo Change (%								
Headline CPI	100	2.1								
Housing	42	2.9								
Transportation	16	(0.1)								
Food & Beverage	14	1.9								
Medical Care	9	4.2								
Education/Communication	7	1.4								
Recreation	6	1.9								
Apparel/Clothing	2	(2.5)								
Other	3	2.4								

Core CPI: Headline less Food and Energy									
Components	Weight (%)	12-mo Change (%)							
Core CPI	79	2.3							
Food	13	2.0							
Energy	8	(0.6)							

Source: Bureau of Labor Statistics; Baird Analysis. CPI figures lag one month.

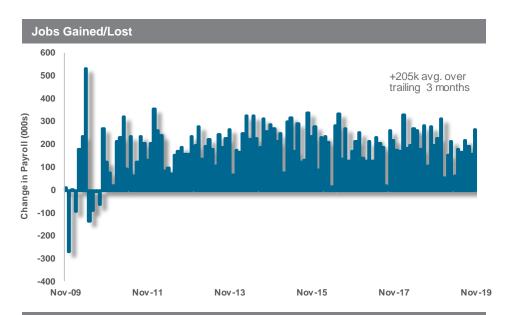
# Consumer Price Index (CPI)

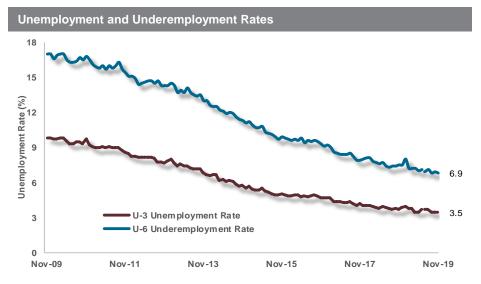
A common measure of inflation, Headline CPI tracks a broad basket of goods and services relatable to most consumers. Core CPI excludes Food and Energy due to the volatile nature of those categories and the distortive effect it can have on the broader inflation measure.

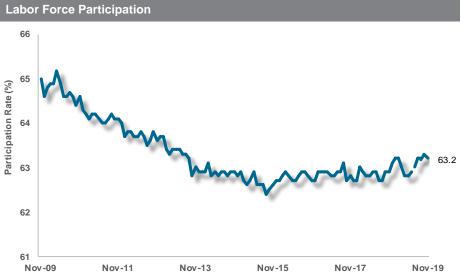
# Jobs Market

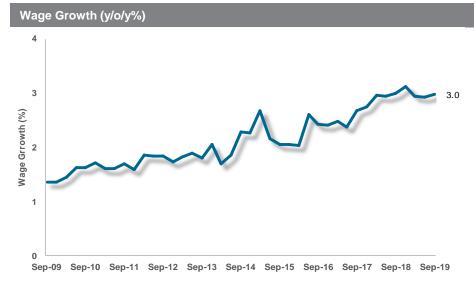
# BAIRD

### As of November 30, 2019







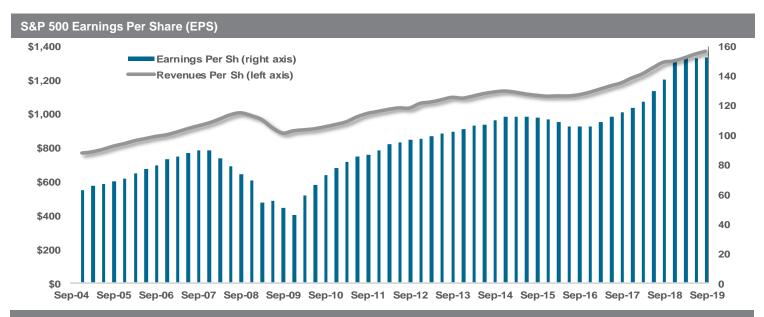


Source: US Department of Labor: Bureau of Labor Statistics. Data will lag one month and is subject to revision. Wage growth is calculated quarterly and will lag one quarter.

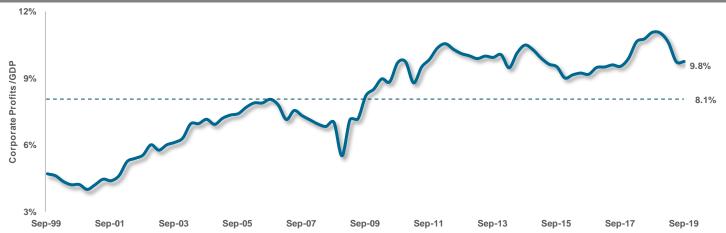
# Corporate Profitability

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### As of September 30, 2019



#### Corporate Profits (% of GDP)



Source: BEA, Bloomberg, Standard & Poor's, Baird analysis. Past performance is not a guarantee of future results.

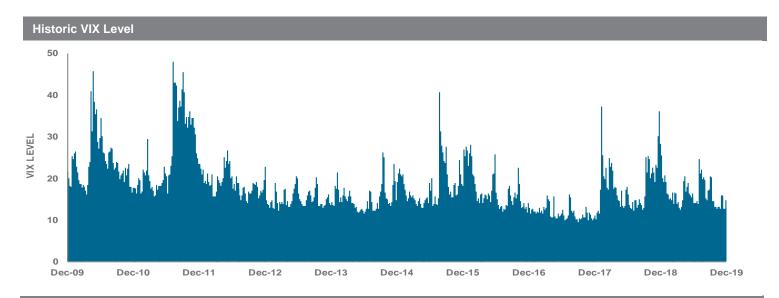
#### Corporate Profitability

Earnings power ultimately drives long-term changes to stock prices. These two charts display how profitable US corporations are. The top chart measures earnings (top line growth) and revenue (bottom line growth) of the companies within the S&P 500 Index. The bottom chart displays corporate profitability (after taxes) in terms of total US GDP growth.

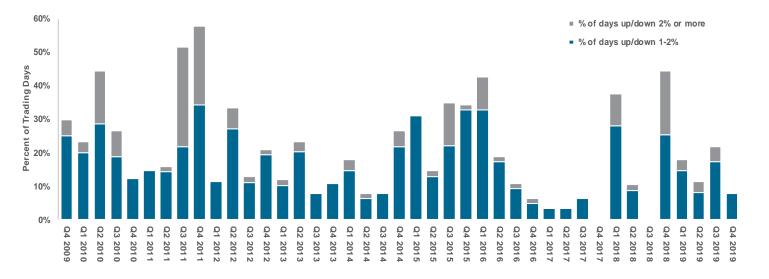
## Market Volatility

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### As of December 31, 2019



#### Quarterly S&P 500 Trading Volatility



Source: Standard & Poor's; CBOE; Baird Analysis.

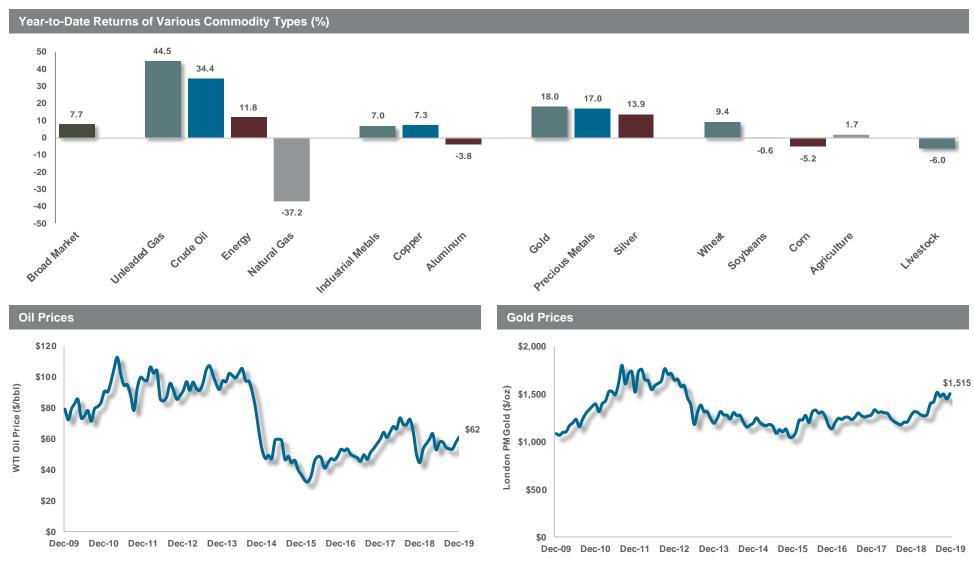
#### VIX (CBOE Volatility Index)

The VIX measures the implied volatility of S&P 500 future options. Simply put, it measures the expected volatility of the S&P 500 Index over the next 30 days. The higher the index, the higher the expected volatility. It is also commonly referred to as the "fear index."

## Commodity Markets



### As of December 31, 2019



Source: U.S. Dept of Energy; London PM Gold Fix Index; Baird Analysis. "Broad Market" is represented by the Bloomberg Commodity Index, specific commodity types are reported segments of that index. See important disclosures and definitions included with this publication.

## Mutual Fund and ETF Flows



### As of November 30, 2019

#### **Annual Mutual Fund and ETF Flows (\$ millions)**

Asset Class	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD
Money Market	(290,490)	(431,604)	(60,745)	23,827	40,622	24,080	52,648	84,147	110,049	23,563	483,487
Municipal Bond	75,969	16,043	(8,574)	54,251	(56,361)	32,748	21,822	33,533	34,663	11,535	95,183
Taxable Bond	333,826	246,664	190,178	329,181	34,920	110,193	29,820	199,509	393,331	112,118	364,043
Allocation	6,453	18,527	19,307	29,553	61,961	51,267	(20,669)	(51,899)	(19,726)	(40,796)	(33,337)
US Equity	(33,563)	(21,054)	(45,395)	(41,163)	175,444	127,309	(60,053)	(8,997)	28,196	(88,256)	(39,968)
International Equity	63,246	91,729	19,051	61,056	200,740	153,487	209,444	12,420	246,847	60,604	(8,935)
Alternative	28,434	24,006	23,172	17,902	49,512	20,076	20,516	(296)	7,097	(6,986)	(7,812)
Commodities	36,636	24,972	8,171	11,928	(32,890)	(3,317)	(1,526)	14,456	2,354	2,373	7,866

Biggest % Gainers/Losers k	y Asset Class		
Top 10 In-Flows (as a % of assets)	Trailing 1-Year Growth Rate	Top 10 Out-Flows (as a % of assets)	Trailing 1-Year Growth Rate
Prime Money Market	31.5%	Bank Loan	-34.1%
Intermediate Government	26.9%	Long-Short Equity	-30.2%
Commodities Precious Metals	26.1%	TradingLeveraged Equity	-27.5%
Long Government	21.7%	Japan Stock	-21.2%
Muni National Interm	19.7%	Financial	-17.7%
High Yield Muni	19.3%	Europe Stock	-17.1%
Ultrashort Bond	18.8%	Equity Energy	-16.1%
Preferred Stock	18.7%	Natural Resources	-15.5%
Muni California Intermediate	18.1%	Global Real Estate	-12.6%
Options-based	18.0%	Industrials	-9.9%

#### Annual Fund Flows

The examination of annual mutual fund and ETF flows shows the investment pattern of the average investor by broad asset class. For example, in 2008 investors exited stocks when the markets fell. In 2009, large amounts of capital went to fixed income, but little flowed back to stocks.

Source: Morningstar Direct; Baird Analysis. Asset classes with less than \$25 billion invested were excluded from the analysis.



# Domestic Equity

Q4 2019 Market ChartBook

# US Stock Market Snapshot



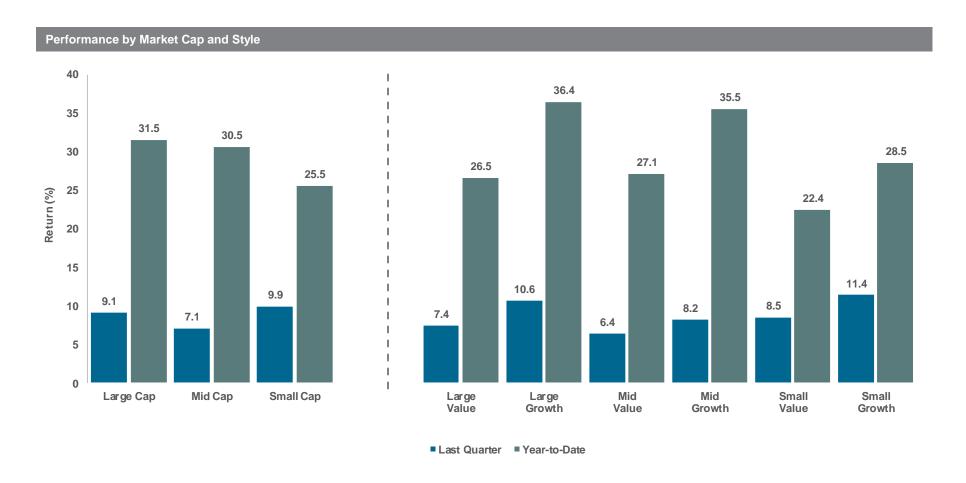
### As of December 31, 2019

			Trailing Re	eturns (%)			5-Year R	Risk Stats	0	ther Metri	cs	Representative
	Last Qtr	YTD	1-Year	3-Year	5-Year	10-Year	Std. Dev.	Max. Loss	FW P/E	EPS Gr.	Div. Yld.	Benchmark
Bellwethers												
S&P 500	9.1	31.5	31.5	15.3	11.7	13.6	12.0	(13.5)	18.7	9.3	1.9	S&P 500
Russell 1000	9.0	31.4	31.4	15.0	11.5	13.5	12.1	(13.8)	18.8	9.4	1.8	Russell 1000
DJIA	6.7	25.3	25.3	15.7	12.6	13.4	12.2	(11.3)	17.1	7.7	2.2	Dow Jones Industrial Avg
Market Cap												
Mega	10.5	32.9	32.9	16.5	12.8	13.3	12.3	(13.2)	20.0	9.8	1.8	Russell Top 50
Large	9.8	31.8	31.8	16.2	12.3	13.7	12.0	(13.2)	18.9	9.3	1.9	Russell Top 200
Mid	7.1	30.5	30.5	12.1	9.3	13.2	12.8	(15.9)	18.5	9.7	1.7	Russell Midcap
Small	9.9	25.5	25.5	8.6	8.2	11.8	16.0	(22.1)	16.6	11.3	1.5	Russell 2000
Micro	13.4	22.4	22.4	6.4	6.6	11.3	17.0	(24.7)	13.4	13.3	1.4	Russell Micro Cap
Style												
Value	7.5	26.3	26.3	9.3	8.2	11.7	12.1	(12.2)	15.4	7.8	2.5	Russell 3000 Value
Core	9.1	31.0	31.0	14.6	11.2	13.4	12.2	(14.3)	18.6	9.5	1.8	Russell 3000
Grow th	10.7	35.8	35.8	19.9	14.2	15.1	13.1	(16.3)	23.3	11.9	1.1	Russell 3000 Growth
S&P 500 Sectors												
Communication Services	9.0	32.7	32.7	4.7	7.9	9.7	15.2	(15.4)	18.8	10.6	1.3	S&P 500/Comm. Svcs.
Consumer Discretionary	4.5	27.9	27.9	16.6	13.1	17.2	14.4	(16.4)	22.8	11.9	1.3	S&P 500/Cons. Disc.
Consumer Staples	3.5	27.6	27.6	9.9	8.3	12.1	11.1	(13.9)	20.5	5.8	2.8	S&P 500/Cons. Staples
Energy	5.5	11.8	11.8	(3.2)	(1.9)	3.3	20.0	(27.5)	17.5	7.7	3.8	S&P 500/Energy
Financials	10.5	32.1	32.1	12.0	11.2	12.3	16.3	(18.3)	13.4	8.3	2.0	S&P 500/Financials
Health Care	14.4	20.8	20.8	16.2	10.3	14.8	13.3	(13.1)	16.2	9.6	1.7	S&P 500/Health Care
Industrials	5.5	29.4	29.4	10.7	9.5	13.4	15.1	(17.7)	17.0	9.7	1.9	S&P 500/Industrials
Information Technology	14.4	50.3	50.3	27.7	20.2	17.5	16.1	(17.6)	22.7	10.9	1.4	S&P 500/Info. Tech.
Real Estate	(0.5)	29.0	29.0	11.8	8.6	13.5	13.1	(12.8)	44.2	6.3	3.1	S&P 500/Real Estate
Materials	6.4	24.6	24.6	9.6	7.1	9.1	16.4	(22.7)	18.4	8.5	2.0	S&P 500/Materials
Utilities	0.8	26.3	26.3	13.8	10.3	11.8	11.9	(12.7)	19.9	5.8	3.1	S&P 500/Utilities

## Domestic Asset Class Performance



#### As of December 31, 2019



Source: Morningstar Direct. Asset classes are represented by the following benchmarks: S&P 500 (Large Cap), Russell Midcap® (Mid Cap), Russell 2000® (Small Cap), Russell 1000 Value® (Large Value), Russell 1000 Growth® (Large Growth), Russell Midcap Value® (Mid Value), Russell Midcap Growth® (Mid Growth), Russell 2000 Value® (Small Value), and Russell 2000 Growth® (Small Growth). See important disclosures and definitions included with this publication.

## Domestic Sector Performance



#### As of December 31, 2019



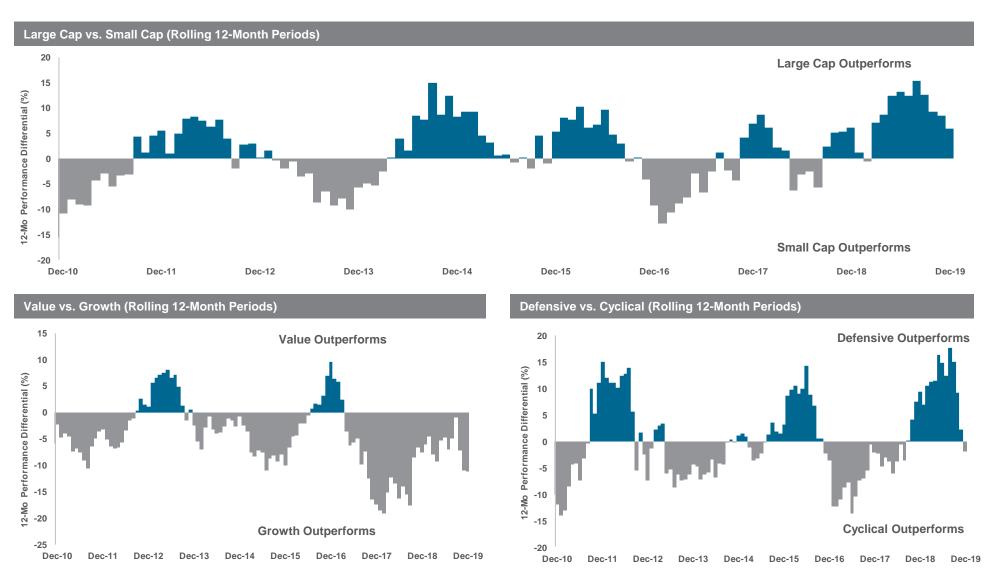


	S&P 500 Sec	ctor Statistics		
	P/E Ratio (TTM)	P/E Ratio (NTM)	Dividend Yield (%)	EPS Growth (%)
S&P 500 Index	22.6	18.7	1.9	9.3
Communications Services	23.1	18.8	1.3	10.6
Consumer Discretionary	26.0	22.8	1.3	11.9
Consumer Staples	26.0	20.5	2.8	5.8
Energy	16.6	17.5	3.8	7.7
Financials	14.7	13.4	2.0	8.3
Health Care	25.5	16.2	1.7	9.6
Industrials	21.7	17.0	1.9	9.7
Info. Tech.	27.4	22.7	1.4	10.9
Materials	20.5	18.4	2.0	8.5
Real Estate	32.6	44.2	3.1	6.3
Utilities	23.5	19.9	3.1	5.8

## Investment Style Leadership



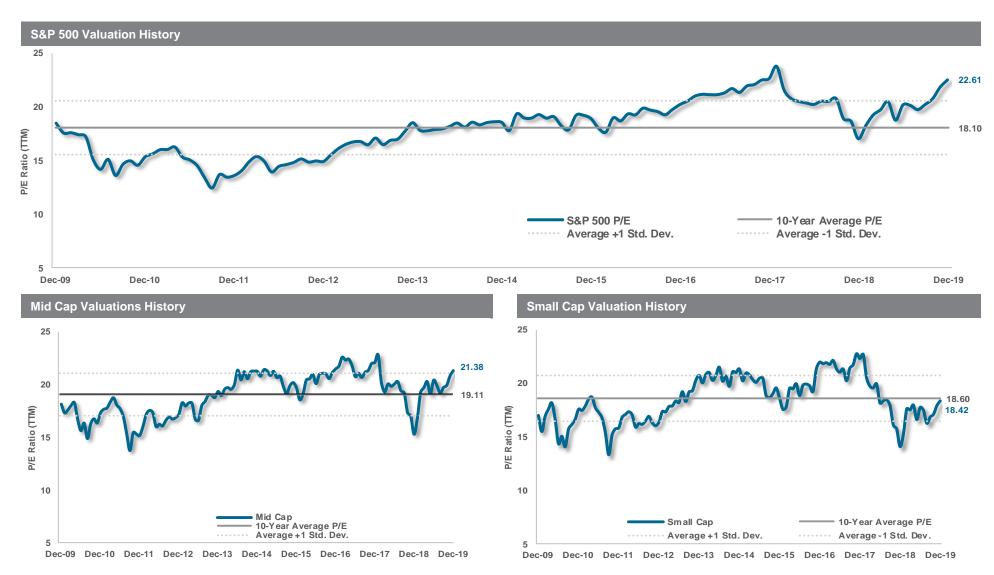
As of December 31, 2019



## Historical Market Cap Valuations



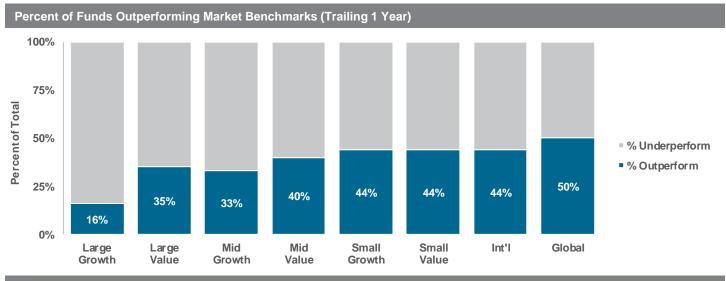
As of December 31, 2019

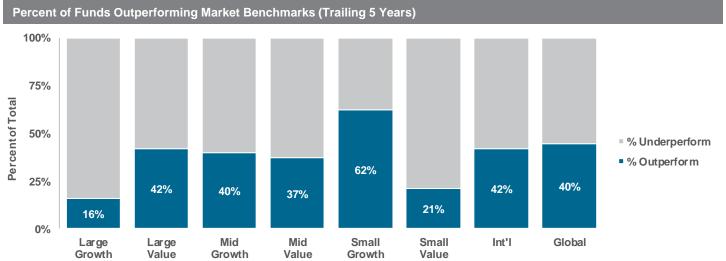


# Mutual Fund Over/Underperformance (Equity Funds)



#### As of December 31, 2019





Mutual Fund Style Universe: Style-specific universe of mutual funds as categorized by Morningstar. Number of funds in each category as of September 2019 (5 Year Stats): 313 for Large Growth, 261 for Large Value, 144 for Mid Growth, 86 for Mid Value, 163 for Small Growth, 101 for Small Value, 115 for International, and 163 for Global. Source: Morningstar Direct; S&P 500, MSCI, and Russell benchmarks; Baird Analysis. See important disclosures and definitions included with this publication.

#### Mutual Fund Performance

Active investment managers often have a primary objective of outperforming a relevant market benchmark based on the fund's investment style. In certain periods, active managers can find it easier or more difficult to outperform.

This chart examines seven main assets classes, detailing what percentage of mutual fund managers overor under-performed in a given period. This provides useful context when assessing mutual funds that you may own.



# International Equity

Q42019 Market ChartBook

## Global Market Performance



As of December 31, 2019



Source: Standards & Poor's (S&P 500); MSCI benchmarks (country returns). All performance is measured in USD. See important disclosures and definitions included with this publication.

# International Equity Snapshot



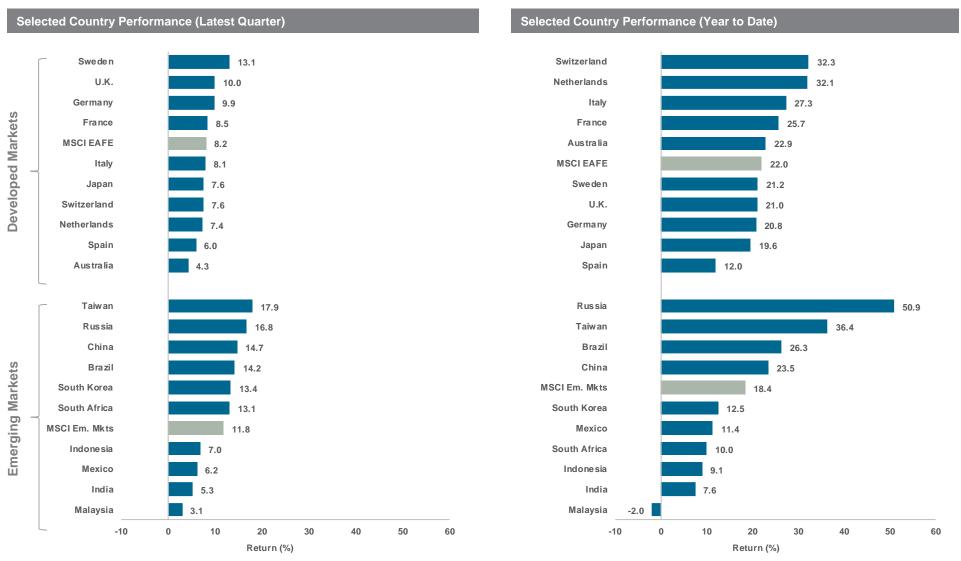
### As of December 31, 2019

	Trailing Returns (%)							ual Returns	s (%)	
Asset Class/Region	Last Qtr	YTD	1-Year	3-Year	5-Year	10-Year	2018	2017	2016	Benchmark
Broad Developed Markets										
Developed Markets (USD)	8.2	22.0	22.0	9.6	5.7	5.5	(13.8)	25.0	1.0	MSCI EAFE (Net) USD
Developed Markets (Local Currency)	5.2	21.7	21.7	7.7	6.7	7.2	(11.0)	15.2	5.3	MSCI EAFE (Net) Local
Currency Effect (USD - Local Returns)	3.0	0.3	0.3	1.9	(1.1)	(1.7)	(2.8)	9.8	(4.3)	
Broad Emerging Markets		•						•		
Emerging Markets	11.8	18.4	18.4	11.6	5.6	3.7	(14.6)	37.3	11.2	MSCI Emerging Markets (Net)
Emerging Markets (Local Currency	9.5	18.1	18.1	11.5	7.5	6.1	(10.1)	30.6	9.7	MSCI Emerging Markets (Net) Local
Currency Effect (USD - Local Returns)	2.3	0.4	0.4	0.1	(1.8)	(2.5)	(4.5)	6.7	1.5	
Returns by Style										
Value	7.8	16.1	16.1	6.3	3.5	4.0	(14.8)	21.4	5.0	MSCI EAFE Value
Grow th	8.4	27.9	27.9	12.8	7.7	6.9	(12.8)	28.9	(3.0)	MSCI EAFE Growth
Large Cap	7.8	21.5	21.5	9.4	5.3	5.1	(13.1)	24.0	1.1	MSCI EAFE Large Cap
Mid Cap	9.7	23.9	23.9	10.2	7.1	7.1	(16.2)	29.0	0.7	MSCI EAFE Mid Cap
Small Cap	11.5	25.0	25.0	10.9	8.9	8.7	(17.9)	33.0	2.2	MSCI EAFE Small Cap
Returns by Region										
Europe	8.8	23.8	23.8	9.8	5.1	5.2	(14.9)	25.5	(0.4)	MSCI Europe
Japan	7.6	19.6	19.6	8.9	7.7	6.6	(12.9)	24.0	2.4	MSCI Japan

# International Country Performance



#### As of December 31, 2019

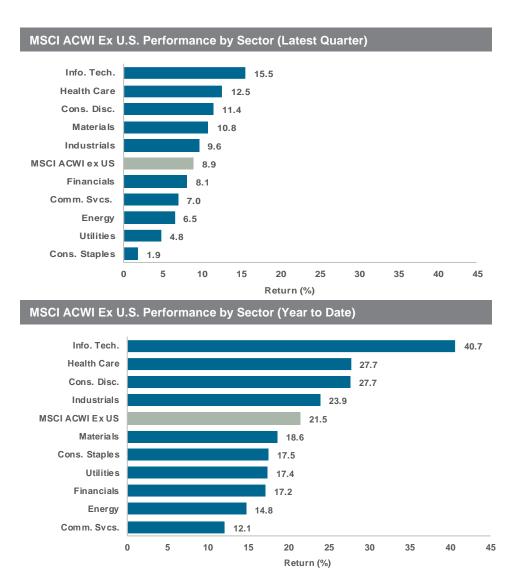


Source: Morningstar Direct.; MSCI Indices; Baird Analysis. All returns are reported in USD. MSCI EAFE (Developed markets) and MSCI EM (Emerging markets) are broad benchmarks representing many countries. Includes the 10 largest countries by weighting in the benchmark. See important disclosures and definitions included with this publication.

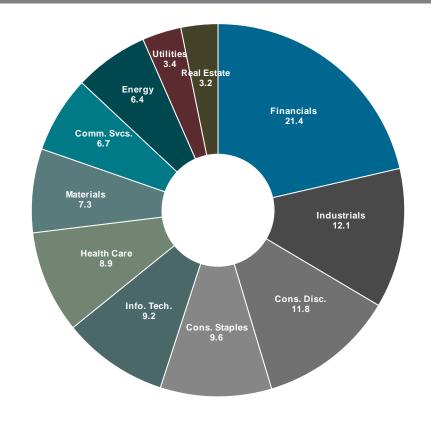
## International Sector Performance



#### As of December 31, 2019



#### Sector Weighting (%) of the MSCI ACWI Ex U.S. Index

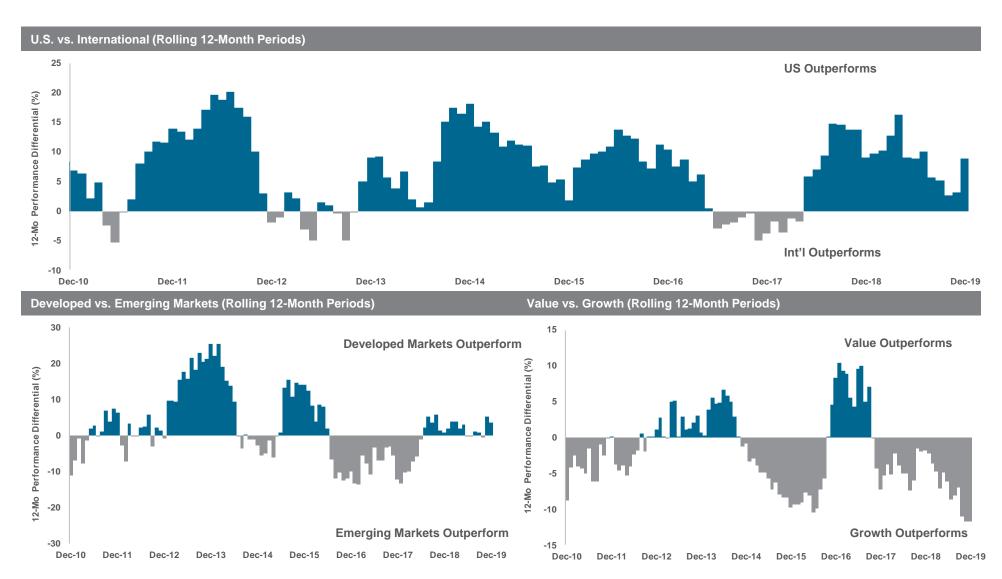


Source: Morningstar Direct; Baird Analysis. Sectors based on global industry classification standards (GICS). The MSCI ACWI Ex US Index is a benchmark designed to measure developed market and emerging market performance excluding the U.S. See important disclosures in appendix.

## Investment Style Leadership



As of December 31, 2019

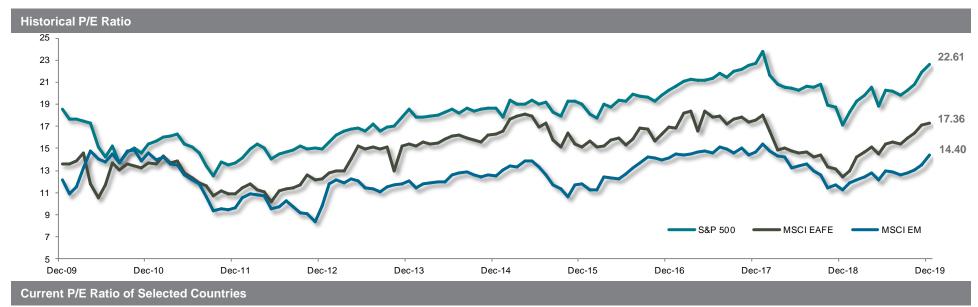


Source: Morningstar Direct. Returns based on 12-month performance, calculated monthly over the most recent 10-year period. Benchmark proxies are as follows: S&P 500 (U.S.), MSCI EAFE (Int'I), MSCI EAFE Value (Value) and MSCI EAFE Growth (Growth), MSCI EAFE (Developed markets), and MSCI EM (Emerging markets). See important disclosures and definitions included with this publication.

## Global Stock Market Valuations



#### As of December 31, 2019



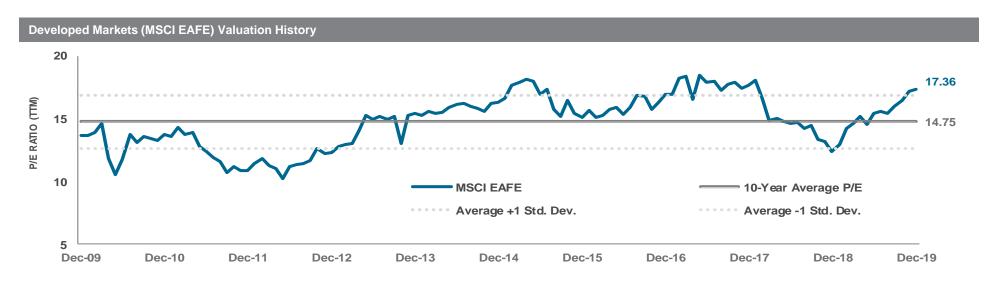


Source: Standards & Poor's (S&P 500); MSCI benchmarks (country returns). All performance is measured in USD. US is measured by the S&P 500 Index, Developed International is measured by the MSCI EAFE Index, Emerging International is measured by the MSCI EM Index. P/E ratios are based on trailing 12 month earnings. See important disclosures and definitions included with this publication.

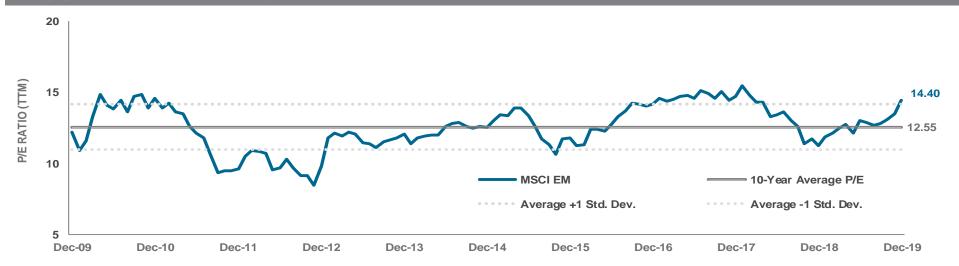
# Historical Market Cap Valuations – International Equities



#### As of December 31, 2019



#### **Emerging Market (MSCI EM) Valuation History**



Source: MSCI benchmarks (country returns). All performance is measured in USD. Developed International is measured by the MSCI EAFE Index, Emerging International is measured by the MSCI EM Index. P/E ratios are based on trailing 12 month earnings. See important disclosures and definitions included with this publication.



# Fixed Income

Q42019 Market ChartBook

# Bond Market Snapshot



## As of December 31, 2019

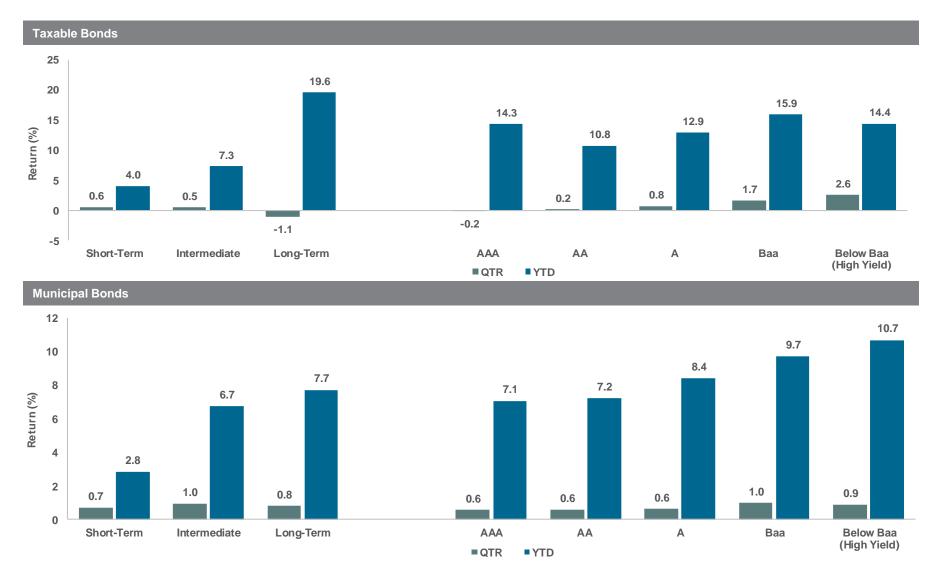
	Characteristics Trailing Returns (%) Annual Returns (%)											
Bond Types	Yield (%)	Duration	Last Qtr	YTD	1-Year	3-Year	5-Year	10-Year	2018	2017	2016	Benchmark
Broad Developed Markets												
U.S. Taxable Bonds	2.3	6.2	0.2	8.7	8.7	4.0	3.0	3.7	0.0	3.5	2.6	BBgBarc US Aggregate Bond
U.S. Municipal Bonds	1.8	4.9	0.7	7.5	7.5	4.7	3.5	4.3	1.3	5.4	0.2	BBgBarc Municipal Bond
Global Bonds	0.7	8.1	0.5	6.8	6.8	4.3	2.3	2.5	(1.2)	7.4	2.1	BBgBarc Glbl Agg. Bond
Broad Emerging Markets												
Emerging Market Bonds	4.9	6.3	2.1	13.1	13.1	6.1	5.8	6.6	(2.5)	8.2	9.9	BBgBarc Emerging Markets
Taxable Bond Categories												
Treasuries	1.8	6.5	(0.8)	6.9	6.9	3.3	2.4	3.1	0.9	2.3	1.0	BBgBarc US Treasury
Agencies	1.8	6.4	(0.8)	6.8	6.8	3.3	2.4	3.0	0.9	2.3	1.0	BBgBarc US Government
Mortgage-Backed	2.5	4.3	0.7	6.4	6.4	3.2	2.6	3.2	1.0	2.5	1.7	BBgBarc US MBS
Inv-Grade Corporate	2.8	7.9	1.2	14.5	14.5	5.9	4.6	5.5	(2.5)	6.4	6.1	BBgBarc US Corporate IG
High Yield Corporate	5.2	3.1	2.6	14.3	14.3	6.4	6.1	7.6	(2.1)	7.5	17.1	BBgBarc US Corporate HY
Municipal Bond Categories												
State GO	1.5	4.5	0.8	6.8	6.8	4.3	3.1	3.9	1.4	4.7	(0.4)	BBgBarc Municipal State GO
Local GO	1.7	5.2	0.8	7.9	7.9	4.9	3.6	4.3	1.2	5.9	(0.1)	BBgBarc Municipal Local GO
Revenue	1.9	5.2	0.7	7.9	7.9	5.0	3.8	4.7	1.2	6.0	0.4	BBgBarc Municipal Revenue
High Yield	4.0	5.9	0.9	10.7	10.7	8.3	5.9	7.2	4.8	9.7	3.0	BBgBarc High Yield Muni

Source: Morningstar Direct; Barclays benchmarks. Individual security types are subsets of either the Barclays U.S. Aggregate or Municipal Bond benchmarks. Duration, measured in years, is a relative term that expresses the price sensitivity of an investment/benchmark to changes in interest rates. All else equal, the lower the duration, the less price sensitivity to interest rate changes. See important disclosures and definitions included with this publication.

# Performance by Maturity and Credit Quality



As of December 31, 2019



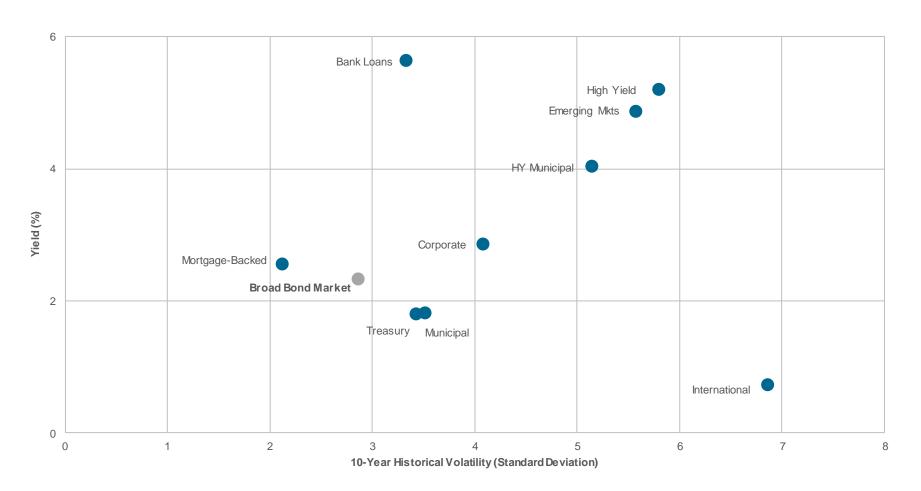
Source: Bloomberg; Baird Analysis. Ratings are as defined by Bloomberg and represent bonds in the Barclays Aggregate Bond index (taxable bonds) and Barclays Municipal Index (municipal bonds). Short-term maturity is defined as 1-3 years, intermediate is 5-7 years for taxable and 6-8 for municipal, long-term is 10+ years for taxable and 8-12 years for municipal. See important disclosures and definitions included with this publication.

# Yield and Volatility Characteristics of Various Bond Types



As of December 31, 2019

#### The Relationship Between Yield and Volatility

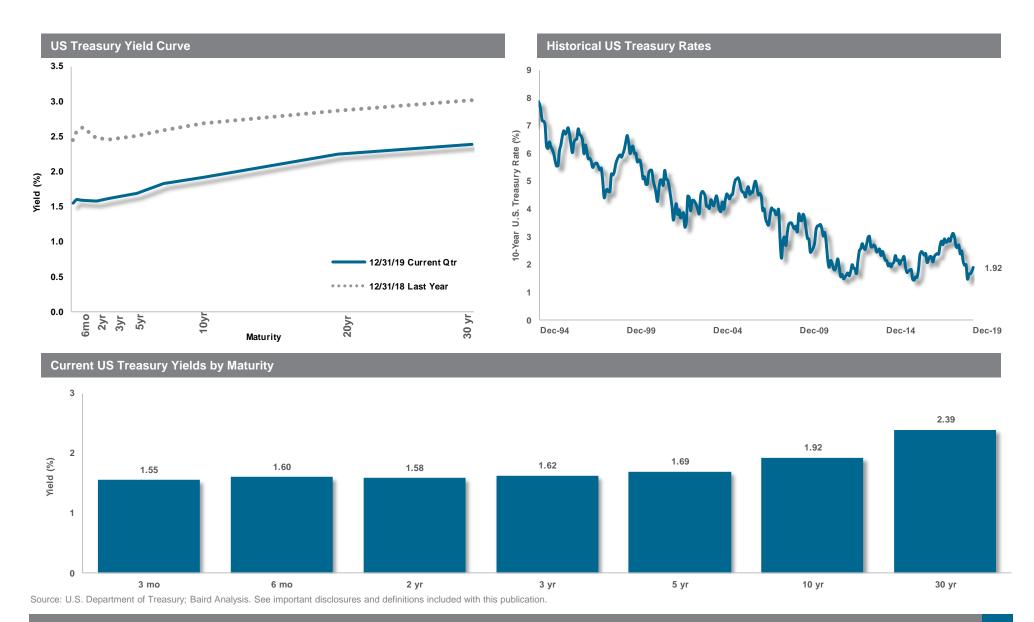


Source: Morningstar Direct; Barclays benchmarks. Individual security types are subsets of either the Barclays U.S. Aggregate or Municipal Bond benchmarks. Bond types are represented by the following indices: Barclays Aggregate Bond (Broad Bond Market), Barclays US MBS (Mortgage-Backed), Merrill Lynch High Yield), Barclays IG Corporate (Corporate), Barclays Municipal (Municipal), Barclays US Treasury (U.S. Treasury), Barclays Global Aggregate ex USD (International), and S&P/LSTA Leveraged Loan (Bank Loans). Indices are unmanaged and are used to measure and report performance of various sectors of the market. Past performance is no guarantee of future results and diversification does not ensure against loss. Direct investment in indices is not available. See important disclosures and definitions included with this publication.

# US Treasury Bonds



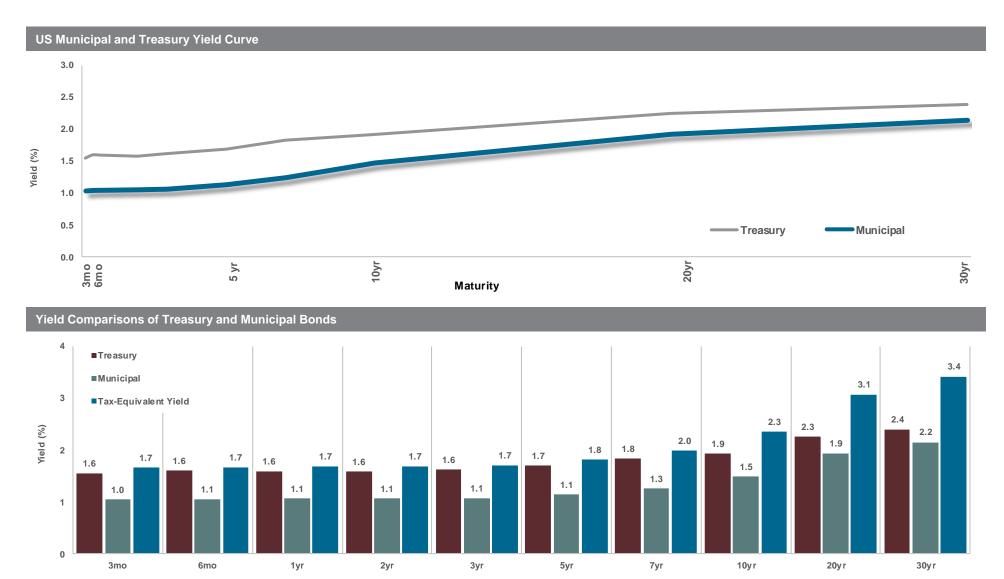
### As of December 31, 2019



# Municipal Bonds



## As of December 31, 2019

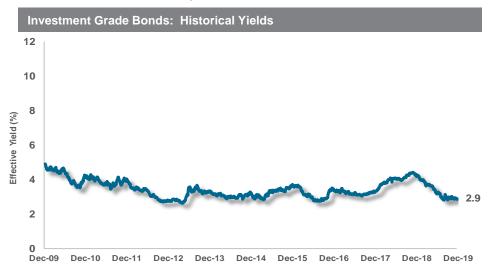


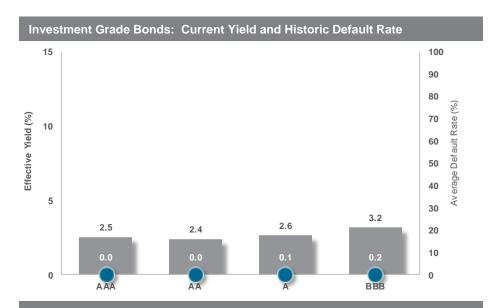
Source: U.S. Department of Treasury; Bloomberg. Municipal yields are based on the Barclays AAA GO Bond Index. The Tax-Equivalent Yields assumes a 39.6% federal tax rate and full exemption of those taxes. See important disclosures and definitions included with this publication.

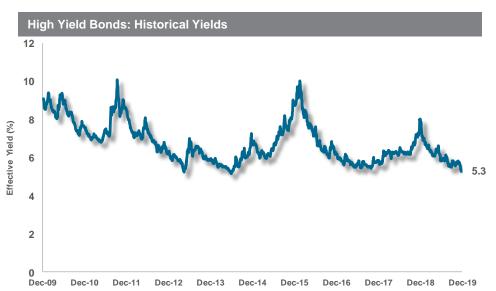
## Corporate Bond Yields

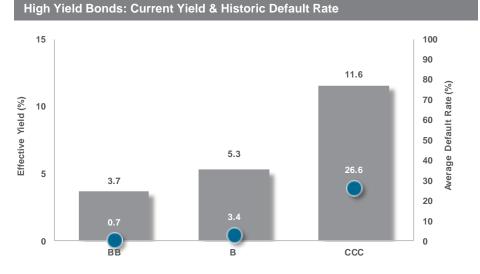
# BAIRD

#### As of December 31, 2019







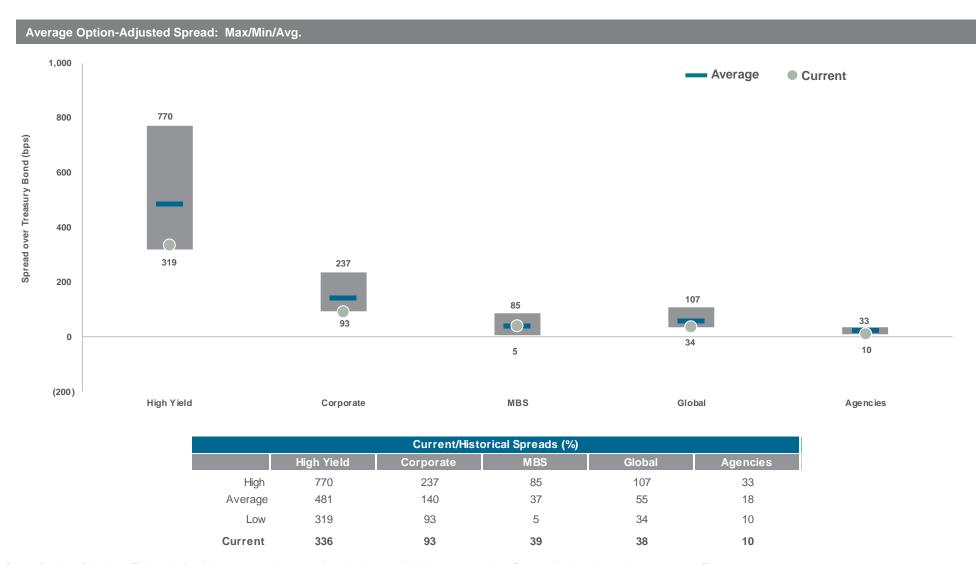


Source: BofA/Merrill Lynch, Standard & Poor's. Investment Grade Bonds are represented by the BofA/ML US Corporate Bond Index; High Yield Bonds are represented by the BofA/ML High Yield Master II Index. Historic default rates provided by Standard & Poor's and encompass the period from 1/1/81 to 12/31/18. See important disclosures and definitions included with this publication.

# Bond Spreads



### As of December 31, 2019



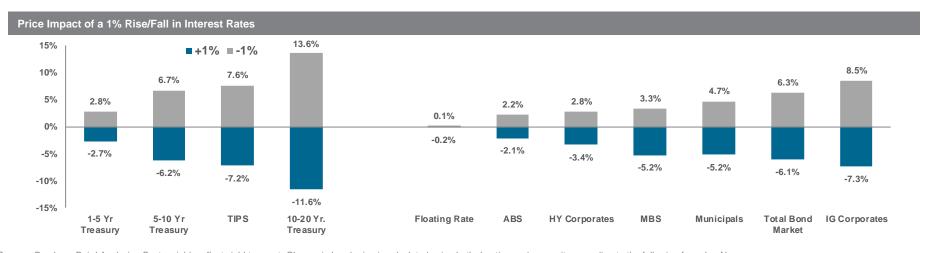
Source: Barclays, Bloomberg. The length of each bar represents the range of a particular spread relative to an appropriate Treasury benchmark over the past 10 years. The maximum and minimum spreads are capped at the 99th and 1st percentiles to account for outliers. The data point marked 'current' represents the most recent quarter. Past performance is not a guarantee of future results and this chart is not intended to be a valuation tool.

## Bond Sector Yields and Returns



#### As of December 31, 2019

		Sector Statistics		Reti	urns	
Bond Sector	Avg. Maturity	Avg. Yield	Credit Quality	YTD	1-Year	Benchmark
U.S. Treasuries						
Short-Term	2.8	1.6	AA+	4.25%	4.25%	BBgBarc US Treasury 1-5 Yr
Intermediate-Term	7.0	1.8	AA+	7.48%	7.48%	BBgBarc US Treasury 5-10 Yr
Long-Term	17.0	2.1	AA+	10.95%	10.95%	BBgBarc US Treasury 10-20 Yr
TIPS	8.0	2.0	AA+	8.43%	8.43%	BBgBarc US Treasury US TIPS
Broad Market						
Aggregate Bond	8.1	2.3	AA	8.72%	8.72%	BBgBarc U.S. Aggregate Bond
IG Corporates	11.5	2.9	AA+	14.54%	14.54%	BBgBarc U.S. Corporate IG
HY Corporates	5.9	6.0	В	14.32%	14.32%	BBgBarc U.S. High Yield - 2% Issuer Cap
Floating Rates	1.9	2.3	A+	4.28%	4.28%	BBgBarc U.S. Floating Rate Notes
MBS	5.1	2.5	AAA	6.35%	6.35%	BBgBarc U.S. Mortgage Backed Securities
ABS	2.3	2.0	AA+	4.53%	4.53%	BBgBarc Asset-Backed Securities

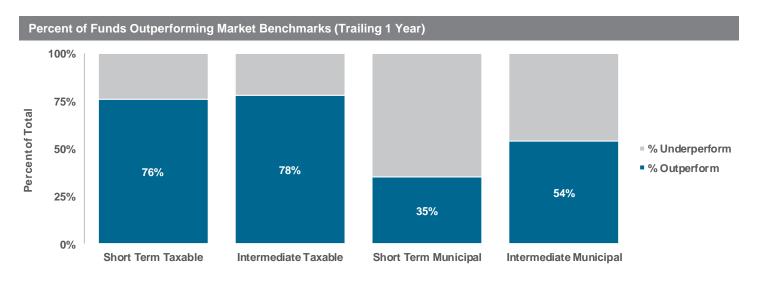


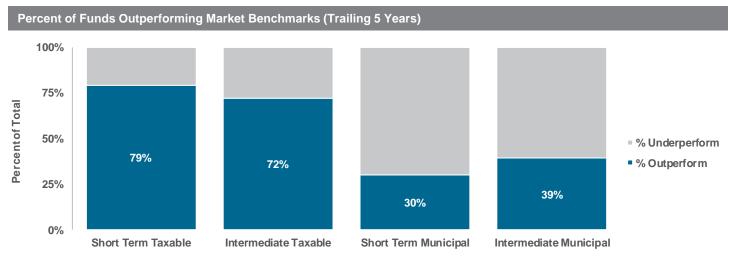
Source: Barclays, Baird Analysis. Sector yields reflect yield to worst. Change in bond price is calculated using both duration and convexity according to the following formula: New Price = (Price + (Price \* -Duration \* Change in Interest Rates)) + (0.5 \* Price \* Convexity \* (Change in Interest Rates)^2). Chart is for illustrative purposes only. Past performance is not indicative of future results.

## Mutual Fund Over/Underperformance (Bond Funds)



#### As of December 31, 2019





Mutual Fund Style Universe: Style-specific universe of mutual funds as categorized by Morningstar. Number of funds in each category as of September 2019 (5 Year Stats): 109 for Short-Term Taxable, 89 for Intermediate Term Taxable, 51 for Short-Term Municipal, and 78 for Intermediate Municipal. Source: Morningstar Direct; Barclays benchmarks; Baird Analysis. See important disclosures and definitions included with this publication.

#### Mutual Fund Performance

Active investment managers often have a primary objective of outperforming a relevant market benchmark based on the fund's investment style. In certain periods, active managers can find it easier or more difficult to outperform.

This chart examines four main assets classes, detailing what percentage of mutual fund managers overor under-performed in a given period. This provides useful context when assessing mutual funds that you may own.



# Appendix and Important Disclosures

## Disclosures



#### **Disclaimers**

This is not a complete analysis of every material fact regarding any company, industry or security. The information has been obtained from sources we consider to be reliable, but we cannot guarantee the accuracy. Past performance is not a guarantee of future results.

#### Style Definitions

Large Growth: equity securities of large capitalization companies having growth stock characteristics (high price to earnings, high return on equity and low dividend yield. Based upon the Russell 1000® Growth Index. Large Value: equity securities of large capitalization companies having value stock characteristics (low forecasted price-to-earnings ratio, low price-to-book ratio, high dividend yield). Based upon the Russell 1000® Value Index. Mid Growth: equity securities of middle capitalization companies having growth stock characteristics (high price to earnings, high return on equity and low dividend yield). Based upon the Russell Midcap® Growth Index. Mid Value: equity securities of middle capitalization companies having growth stock characteristics (high price to earnings, high return on equity and low dividend yield). Based upon the Russell Midcap® Value Index. Small Growth: equity securities of small capitalization companies having growth stock characteristics (high price to earnings, high return on equity and low dividend yield). Small capitalization stock may be subject to additional risks including illiquidity. Based upon the Russell 2000® Growth Index. Small Value: equity securities of small capitalization companies having value stock characteristics (low price-toearnings ratio, low price-to-book ratio, high dividend yield). Small capitalization stocks may be subject to additional risks including illiquidity. Based upon the Russell 2000® Value Index. International: a free floatadjusted market capitalization index that is designed to measure developed market equity performance, excluding the US & Canada, consisting of 21 developed market country indices. Based upon the MSCI EAFE Index. Satellite: these asset classes, as defined by Baird, include commodities, real estate, high yield bonds and emerging markets. Representative benchmarks are as follows: Dow Jones UBS Commodity (commodities), Dow Jones US REIT (real estate), BofA High Yield Master II (high yield), and MSCI Emerging Markets (emerging markets). Short Term Taxable: Short-term bond portfolios invest primarily in corporate and other investment-grade U.S. fixed-income issues and have durations of one to 3.5 years. Based upon the Barclays 1-3 Year Govt/Credit Index. Intermediate Taxable: Intermediate-term bond portfolios invest primarily in corporate and other investment-grade U.S. fixed-income issues and have durations of 3.5 to six years. Based upon the Barclays Intermediate Gov't/Credit Index. Short Term Municipal: Muni national short portfolios invest in bonds issued by various state and local governments to fund public projects. These portfolios have durations of less than 4.5 years. Based upon the Barclays 3 Year Municipal Index. Intermediate Term Municipal: Muni national short portfolios invest in bonds issued by various state and local governments to fund public projects. These portfolios have durations of 4.5 to 7 years. Based upon the Barclays 7 Year Municipal Index.

#### **GICS**

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#### **Domestic Equity Benchmarks**

**S&P 500® Index:** A representative sample of 500 leading companies in leading industries of the U.S. economy. Considered a large-cap index.

Russell 3000® Growth Index: Measures the performance of those Russell 3000® Index companies with higher price-to-book ratios and higher forecasted growth values. An all-cap index.

Russell 3000® Value Index: Measures the performance of those Russell 3000® Index companies with lower price to-book ratios and lower forecasted growth values. An all-cap index.

Russell Top 50® Index: Measures the performance of the 50 largest companies in the Russell 1000® Index, which represents approximately 40% of the total market capitalization of the Russell 1000® Index. A mega-cap index.

Russell Top 200® Index: Measures the performance of the 200 largest companies in the Russell 1000® Index, which represents approximately 68% of the total market capitalization of the Russell 1000® Index. A large-cap index.

**Russell 1000® Growth Index:** Measures the performance of those Russell 1000® Index companies with higher price-to-book ratios and higher forecasted growth values. A large-cap index.

Russell 1000® Value Index: Measures the performance of those Russell 1000® Index companies with lower price to- book ratios and lower forecasted growth values. A large-cap index.

Russell 1000® Defensive/Dynamic Index: Measures the performance of those Russell 1000® Index companies based in terms of volatility of price and earnings, leverage and return on assets. The Russell 1000® Defensive Index includes those with relative stability and less sensitivity to economic cycles. The Russell 1000® Dynamics Index includes those with less stability and greater sensitivity to economic cycles.

Russell Midcap® Index: Measures the performance of the 800 smallest companies of the Russell 1000® Index, which represents approximately 36% of the total capitalization of the Russell 1000® Index. A mid-cap index.

Russell Midcap® Growth Index: Measures the performance of those Russell Midcap® Index companies with higher price-to-book and higher forecasted growth values. A midcap index.

Russell Midcap® Value Index: Measures the performance of those Russell Midcap companies with lower price-to book and lower forecasted growth values. A mid-cap index.

Russell 2000® Index: Measures the performance of the 2,000 smallest companies in the Russell 3000® Index, which represent approximately 10% of the total market capitalization of the Russell 3000® Index. A small-cap index.

Russell 2000® Growth Index: Measures the performance of those Russell 2000® Index companies with higher price-to-book ratios and higher forecasted growth values. A small-cap index.

Russell 2000® Value Index: Measures the performance of those Russell 2000® Index companies with lower price-to-book ratios and lower forecasted growth values. A small-cap index.

**Russell Microcap Index:** Measures the performance of smallest 1000 companies in the Russell 2000® Index, which represents less than 3% of the total market capitalization. A micro-cap index.

**Dow Jones U.S. Real Estate:** Measures the performance of Real Estate Investment Trusts (REIT) and other companies that invest directly or indirectly through development, management or ownership, including properties.

Dow Jones Industrial Average: A price-weighted index composed of 30 actively-traded large cap stocks.

**Bloomberg Commodity:** Aims to provide broadly diversified representation of commodity markets and represents 20 commodities, weighted based on economic significance and market liquidity.

**S&P 500® High/Low Quality Index:** The S&P Quality Rankings System measures growth and stability of earnings and dividends within the S&P 500 Index. The S&P 500 High Quality Index tracks stocks identified by Standard & Poor's as high quality (ranked A and above); The S&P 500 Low Quality Index tracks stocks identified by Standard & Poor's as low quality (ranked B and below).

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Investors should consider the investment objectives, risks, charges and expenses of a fund carefully before investing. This and other information is found in the prospectus or summary prospectus. For a prospectus or summary prospectus, contact your Baird Financial Advisor. Please read the prospectus carefully before investing.

## Disclosures



#### **MSCI International Equity Benchmarks**

**MSCI EAFE Index:** A free float-adjusted market capitalization index that is designed to measure developed market equity performance, excluding the US & Canada. The MSCI EAFE Index consists of 21 developed market country indices in Europe, Australasia, and the Far East. An international index.

**MSCI EAFE Large Cap:** The MSCI EAFE Large Cap Index is an unmanaged, market-weighted index of large companies in developed markets, excluding the U.S and Canada. An international large cap index.

**MSCI EAFE Mid Cap:** The MSCI EAFE Mid Cap Index is a free float-adjusted market capitalization index that is designed to measure the performance of mid capitalization equities in the developed markets excluding the US & Canada. An international mid cap index.

**MSCI EAFE Small Cap:** The MSCI EAFE Small Cap Index represents the small cap segment in 21 developed equity markets outside of North America. It targets 40% of the eligible small cap universe in each country. An international small cap index.

**MSCI EAFE Growth:** A sub-set of the MSCI EAFE Index, this benchmark is generally considered to be representative of the international growth stock market activity and often used as a benchmark for international growth equity portfolios. An international growth index.

**MSCI EAFE Value:** A sub-set of the MSCI EAFE Index, this benchmark is generally considered to be representative of international value stock market activity and often used as a benchmark for international value equity portfolios. An international value index.

MSCI Europe Index: A free float-adjusted market capitalization index that is designed to measure developed market equity performance in Europe. As of September 2006, the MSCI Europe Index consisted of the following 16 developed market country indices: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK. An international index.

MSCI Pacific ex Japan Index: A free float-adjusted market capitalization index designed to measure equity market performance in the Pacific region, minus Japan. As of September 2006, the MSCI Pacific ex Japan Index consisted of the following 5 Developed Market countries: Australia, Hong Kong, New Zealand, and Singapore. An international index.

**MSCI BRIC:** A free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of the following four emerging market country indices: Brazil, Russia, India and China.

**MSCI Emerging Markets Index:** A free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. As of December 2003 the MSCI Emerging Markets Index consisted of 26 emerging market country indices. An emerging markets index.

**MSCI Country Indices:** To construct an MSCI Country Index, every listed security in the market is identified. Securities are free float adjusted, classified in accordance with the Global Industry Classification Standard (GICS®), and screened by size and liquidity. MSCI then constructs its indices by targeting for index inclusion 85% of the free float adjusted market capitalization in each industry group, within each country. By targeting 85% of each industry group, the MSCI Country Index captures 85% of the total country market capitalization while it accurately reflects the economic diversity of the market. International indices.

#### **Fixed Income Benchmarks**

Barclays Aggregate Bond Index: is an unmanaged index that tracks domestic investment-grade bonds, including corporate, government, and mortgage-backed securities.

Barclays 1-3 Yr Government/Credit Bond Index: Includes bonds covered by the Barclays Government/Credit Index, with maturities from 1 up to (but not including) 3 years.

**Barclays Intermediate Government/Credit Bond Index**: Composed of approximately 3,500 publicly issued corporate and U.S. government debt issues rated Baa or better, with at least one year to maturity and at least \$1 million par outstanding. The index is weighted by the market value of the issues included in the index. The Index has duration of a little over 3 years and a maturity equal to slightly more than 4 years.

**Barclays Muni Bond Index**: Bonds must have a minimum credit rating of at least Baa, an outstanding par value of at least \$3 million, part of a transaction of at least \$50 million, issued after December 31, 1990 and have a year or longer remaining maturity.

**Barclays 3 Year Muni Bond Index:** Includes bonds that have a minimum credit rating of BAA3, are issued as part of a deal of at least \$50 million, have a minimum maturity of 2 years and a maximum maturity of 4 years, and have been issued after December 31, 1990.

Barclays 7 Year Muni Bond Index: This index is a subset of the BC Municipal Bond Index. It includes maturities of six to eight years.

**Barclays Global Aggregate ex USD Index:** Tracks investment-grade government, corporate, agency, and mortgage-related bonds in markets outside the U.S. An international bond index.

**BofA/ML US High Yield Master II Index:** The US High Yield Master II Index tracks the performance of below investment grade US dollar-denominated corporate bonds publicly issued in the US domestic market, subject to various qualifications. A high yield taxable bond index.

**Barclays US Treasury Bond Index:** Measures the performance of public obligations of the US Treasury with a remaining maturity of one year or more.

Barclays US MBS Index: Measures the performance of investment grade mortgage-backed pass-through securities of GNMA. FNMA and FHLMC.

Barclays IG Corporate: Measures the performance of investment grade corporate bonds with a remaining maturity of one year or more.

FTSE 3 Month T-Bills: An unmanaged index of three-month Treasury bills. Representative of short-term money market deposits, or "cash".

**S&P/LTSA Leveraged Loan:** A broad index designed to reflect the performance of U.S. dollar facilities in the leverage loan market.

#### Other Benchmarks

**Dow Jones CSFB Managed Futures:** Designed to provide transparent representation of managed futures hedge fund performance. Funds are selected by Credit Suisse based on eligibility standards, rebalanced semi-annually and performance is calculated quarterly.

**Dow Jones CSFB Multi-Strategy:** Designed to provide transparent representation of fund of hedge fund performance. Funds are selected by Credit Suisse based on eligibility standards, rebalanced semi-annually and performance is calculated quarterly.

**Dow Jones CSFB Long/Short:** Designed to provide transparent representation of long/short equity hedge fund performance. Funds are selected by Credit Suisse based on eligibility standards, rebalanced semi-annually and performance is calculated quarterly.

Investors should consider the investment objectives, risks, charges and expenses of a fund carefully before investing. This and other information is found in the prospectus or summary prospectus. For a prospectus or summary prospectus, contact your Baird Financial Advisor. Please read the prospectus carefully before investing.