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Q1 ▪ 2019 Outlook

As of December 31, 2018

Market Intelligence

THE LATEST THINKING FROM OUR ASSET MANAGEMENT NETWORK

John Hancock® INVESTMENTS

INTERNET ADVERTISING COMPETITION

Best Financial Services Interactive Application and Best Financial Services Mobile Application Awards 2018

STAR awards

Mutual Fund Education Alliance STAR Awards 2015, 2017, and 2018

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- Stay current with automatic updates and notifications
- Take a deeper dive with related articles and portfolio manager videos

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A trusted brand

John Hancock Investments is a premier asset manager representing one of America's most trusted brands, with a heritage of financial stewardship dating back to 1862. Helping our shareholders pursue their financial goals is at the core of everything we do. It's why we support the role of professional financial advice and operate with the highest standards of conduct and integrity.

150 years of promises kept

From our earliest days as a four-person operation on Boston's State Street, John Hancock has grown to include a diversified global investment firm.

The *New York Times* named John Hancock one of the most powerful brands of the 20th century.[1]

Diverse capabilities to help serve our clients

Nearly $132 billion in assets under management across asset classes[2]

- 46% U.S. equity
- 28% Fixed income
- 21% International equity
- 3% Alternative
- 1% Other[3]

Mutual funds · ETFs · Closed-end funds · Education savings · Managed accounts · Retirement portfolios · UCITS funds[4] · ESG funds

Data is as of 12/31/18.

1 The *New York Times*, 1999. **2** $89 billion in retail mutual fund and ETF assets and $43 billion in retirement assets, including seed capital. **3** Includes money market funds, hybrid funds, and fund-of-fund allocations to unaffiliated products.
4 Not all funds are available to all investors. Funds domiciled outside the United States are not available to U.S. persons.

A better way to invest

We serve investors globally through a unique multimanager approach: We search the world to find proven portfolio teams with specialized expertise for every strategy we offer, then we apply robust investment oversight to ensure they continue to meet our uncompromising standards and serve the best interests of our shareholders.

74 proven portfolio teams | **28 elite asset managers** | **111 investment strategies**

Closed-end funds
Introduced multimanager approach
Managed accounts
Target-risk portfolios
Education savings
Target-date portfolios
Alternative Asset Allocation Fund
UCITS funds
ETFs
ESG funds

1969 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018

Our team of 200+ professionals who specialize in manager research and oversight vets more than 225 new strategies and holds over 100 in-person oversight meetings with managers annually.

Representative list of asset managers shows managers of stand-alone funds only. All data is as of 12/31/18. All logos are the property of their respective owners.

Results for investors

Our unique approach to asset management enables us to provide a diverse set of investments backed by some of the world's best managers, along with strong risk-adjusted returns across asset classes.

50 funds rated 4 or 5 stars by Morningstar at the highest-rated share class[1]

MORNINGSTAR®

77% of funds outperformed their Morningstar category averages over the past 10 years[2]

MORNINGSTAR®

Our performance is the result of our multimanager approach and our focus on finding and overseeing the best portfolio teams.

1 As of 12/31/18. Includes mutual fund and ETF rankings/ratings only, excluding UCITS funds. Out of 89 funds rated by Morningstar, 4 funds received a 5-star overall rating and 46 funds received a 4-star overall rating. Ratings are counted at the highest-rated share class. For each managed product, including mutual funds, variable annuity and variable life subaccounts, exchange-traded funds, closed-end funds, and separate accounts, with at least a 3-year history, Morningstar calculates a Morningstar Rating™ based on a Morningstar Risk-Adjusted Return that accounts for variation in a fund's monthly excess performance, placing more emphasis on downward variations and rewarding consistent performance. Exchange-traded funds and open-end mutual funds are considered a single population for comparative purposes. The top 10.0% of funds in each category, the next 22.5%, 35.0%, 22.5%, and bottom 10.0% receive 5, 4, 3, 2, or 1 star(s), respectively. The overall Morningstar Rating for a managed product is derived from a weighted average of the performance figures associated with its 3-, 5-, and 10-year (if applicable) Morningstar Rating metrics. The rating formula most heavily weights the 3-year rating, using the following calculation: 100% 3-year rating for 36 to 59 months of total returns, 60% 5-year rating/40% 3-year rating for 60 to 119 months of total returns, and 50% 10-year rating/30% 5-year rating/20% 3-year rating for 120 or more months of total returns. Star ratings do not reflect the effect of any applicable sales load. **2** Morningstar, as of 12/31/18. 33 out of 43 funds outperformed their Morningstar category averages for the 10-year period ended 12/31/18. Results for other periods will vary. Investing involves risks, including the potential loss of principal. There is no guarantee that a fund's investment strategy will be successful. Please see the funds' prospectuses for additional risks. For complete performance information, visit jhinvestments.com. Past performance does not guarantee future results.

Insight that leverages the best of our diverse asset management network

Our multimanager approach to investing provides our dedicated in-house research team with a unique advantage: We leverage the very best market insight from our global network of specialized asset managers and investment partners.

More than 75 asset managers, independent research firms, broker-dealers, and banks make up our network.

A **dedicated 60+ person investment research team**—part of 200+ professionals specializing in manager research and oversight—evaluates the views from our network.

Research is vetted and debated to develop our 12- to 18-month outlook on a range of asset classes.

The result is *Market Intelligence*, the latest thinking and timely investment ideas from John Hancock Investments.

Aberdeen, Ameriprise, Bain Capital Credit, Barclays, Barrow Hanley, BCA Research, BlackRock, Boston Common, Boston Partners, Brandywine Global, Breckinridge, Capital Economics, Capital Group, Citi, Credit Suisse, Deutsche Asset & Wealth Management, Dodge & Cox, DoubleLine, Eaton Vance, Edward Jones, Empirical Research Partners, Epoch, Evercore ISI, Federated, Fidelity, First Quadrant, Gavekal, Goldman Sachs, GW&K, ICE BofA Merrill Lynch, Ivy, Janney, Janus, John Hancock Asset Management, J.P. Morgan, Lazard, Legg Mason, Leuthold, Loomis Sayles, Lord Abbett, LPL, Macquarie, Macro Research Board, Matthews Asia, Mercer, MetWest, MFS, Morgan Stanley, Ned Davis Research, NEPC, Neuberger Berman, Nuveen, Oppenheimer Funds, Pictet, PIMCO, Pzena, Raymond James, Redwood, Research Affiliates, Roubini Global Economics, Royce, Russell, SSGA, Stone Harbor, Strategas Research Partners, Sustainable Growth Advisers, T. Rowe Price, Templeton, Trillium, UBS, Vanguard, Wellington, Wells Capital, Wells Fargo

What we're hearing from our network

Key macro themes

Global growth moderating

The U.S. economy remains relatively strong, but growth rates elsewhere have shifted down a gear as challenges mount in Asia and Europe.

See pages 10, 13, 15

Earnings growth peaking

The fundamental backdrop had been supporting equity markets, but earnings growth may have peaked as the impact of U.S. fiscal stimulus fades.

See pages 11, 16, 19

Monetary policy tightening nearing its limits

The U.S. Federal Reserve is approaching the end of its rate hiking cycle, and the withdrawal of liquidity from the global financial system has weighed on a range of asset classes.

See pages 21, 22, 26

U.S. equity: peaking fundamentals

Underlying fundamentals lose momentum, increasing market volatility.

Key macro themes

Global growth moderating

The U.S. economy remains relatively strong, but growth rates elsewhere have slowed, prompting greater market volatility.

Earnings growth peaking

The fundamental backdrop had been supportive of equities, but earnings growth may have peaked with U.S. fiscal stimulus measures.

Monetary policy tightening nearing its limits

The Fed is approaching the end of its rate hiking cycle, and the withdrawal of liquidity has weighed on stocks.

What's inside

- Leading economic indicators remain robust for now
- Corporate earnings growth may be past its peak
- A barbell approach: two sectors for offense and two for defense
- Not all bear markets behave the same

Range of views from our network

Darker shading indicates a greater concentration of views within our network.

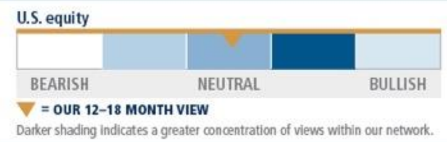
John Hancock INVESTMENTS

Our 12–18 month view: NEUTRAL

Market volatility may continue to increase as investors adjust to slower growth, protectionist measures, and continued political turmoil. An extended market cycle may have run its course.

The value of a company's securities is subject to change with the company's financial condition and overall market and economic conditions. See pages 10–13 for complete information. Past performance does not guarantee future results.

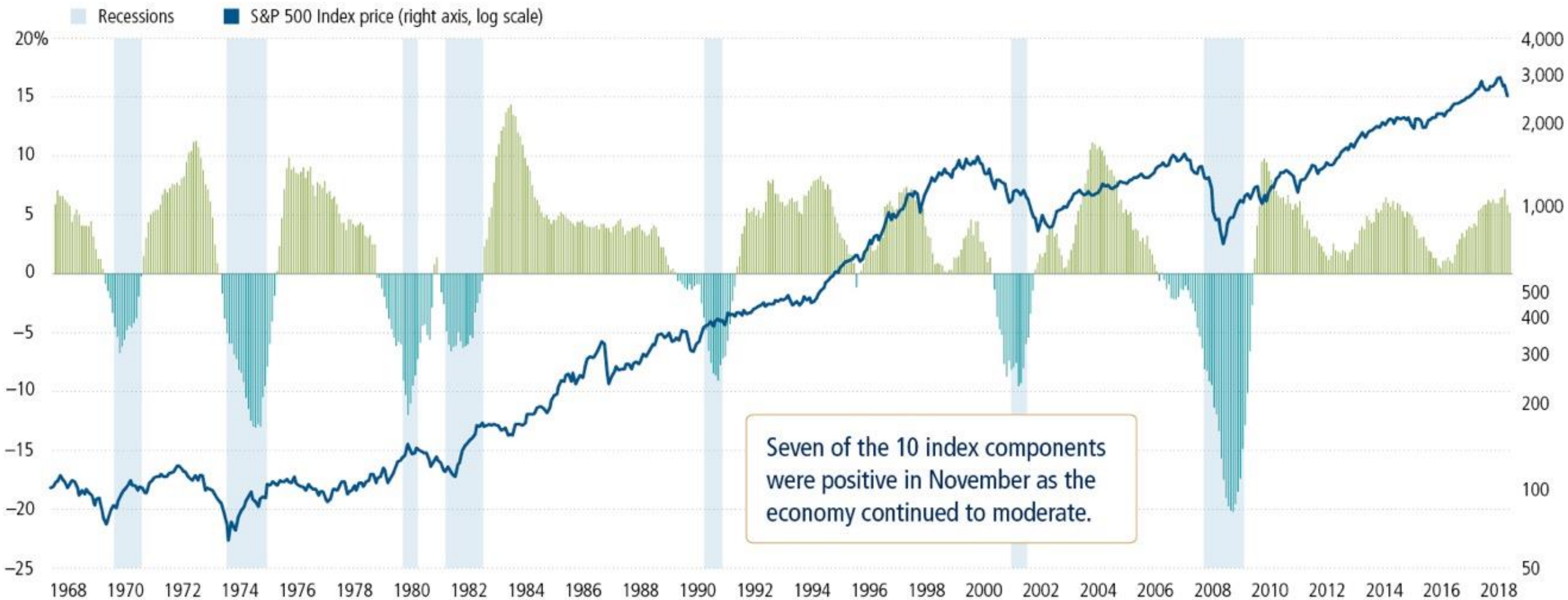
Leading economic indicators remain robust for now



"Solid GDP growth at about 2.8 percent should continue in early 2019, but the LEI suggests the economy is likely to moderate further in the second half of 2019."

THE CONFERENCE BOARD
Trusted Insights for Business Worldwide

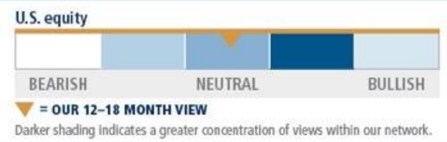
Year-over-year change in the Composite Index of Leading Indicators



Composite Index of Leading Indicators (ranked by weighting in the index)									
Weekly manufacturing hours worked	▼	ISM Index of New Orders	▲	Consumer expectations	▲	Yield spread	▲	New orders of consumer goods and materials	▲
Leading Credit Index	▲	New orders of nondefense capital goods	▲	Stock prices	▼	Weekly unemployment claims	▼	Building permits	▲

Source: The Conference Board, as of 11/30/18; Standard and Poor's, as of 12/31/18. The Composite Index of Leading Indicators is an index published monthly by The Conference Board, used to predict the direction of the economy's movements in the months to come. The index is made up of 10 economic components whose changes tend to precede changes in the overall economy. The S&P 500 Index tracks the performance of 500 of the largest publicly traded companies in the United States. It is not possible to invest directly in an index. Past performance does not guarantee future results.

Corporate earnings growth may be past its peak



"U.S. earnings will likely remain supportive for the market unless economic growth is much weaker than we expect."[1]

BCA RESEARCH

Earnings growth forecasts for U.S. companies have begun to level off

2019 EPS growth estimates year over year (%)

Industrials	10.84
Consumer discretionary	9.93
Financials	9.39
S&P 500 Index	**7.64**
Healthcare	7.36
Energy	7.26
Information technology	7.07
Communication services	6.00
Materials	5.71
Utilities	5.18
Consumer staples	4.35
Real estate	3.68

Source: FactSet, as of 12/31/18. The S&P 500 Index tracks the performance of 500 of the largest publicly traded companies in the United States. It is not possible to invest directly in an index. Earnings per share (EPS) is a measure of how much profit a company has generated calculated by dividing the company's net income by its total number of outstanding shares. Past performance does not guarantee future results.

1 bcaresearch.com, 2019.

A barbell approach: two sectors for offense and two for defense

"Investors should position with a moderately pro-growth stance, emphasizing high-quality cyclical exposure, balanced by some defensiveness."

MacroResearchBoard mrb partners Independent Investment Strategy

Emphasis on select sectors balances return potential and risk management

Sectors for offense

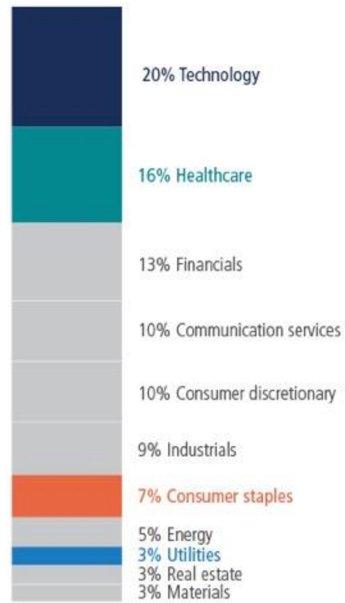
Healthcare and technology offer above-average betas for upside capture

Technology: margins	
2019 earnings revisions	9.95%→7.07%
Return on equity	28.58%
3-year beta	1.09

Healthcare: earnings growth	
2019 earnings revisions	7.08%→7.36%
Return on equity	16.35%
3-year beta	1.05

S&P 500 Index

Market capitalization



S&P 500 Index 2019 earnings revisions: 10.04%→7.64% Return on equity: 17.00%

Sectors for defense

Staples and utilities offer defensive characteristics for downside management

Utilities: low beta	
2019 earnings revisions	4.19%→5.18%
Return on equity	12.31%
3-year beta	0.17

Consumer staples: quality	
2019 earnings revisions	5.76%→4.35%
Return on equity	29.35%
3-year beta	0.51

Source: FactSet, as of 12/31/18. The S&P 500 Index tracks the performance of 500 of the largest publicly traded companies in the United States. It is not possible to invest directly in an index. Beta measures the sensitivity of a sector or asset relative to the market. The beta of the market is 1.00. Accordingly, an asset with a 1.10 beta is expected to have 10% more volatility than the market. Return on equity is a measure of profitability that calculates how many dollars of profit a company generates with each dollar of shareholders' equity. Past performance does not guarantee future results.

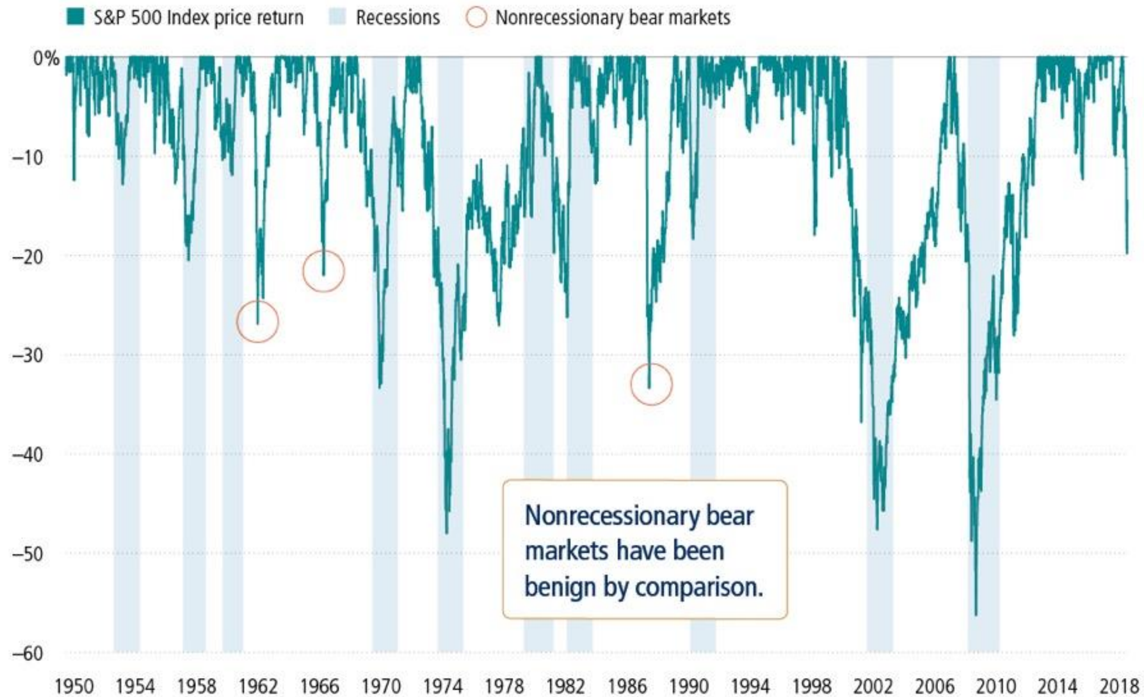
Not all bear markets behave the same

"We believe the decline in stocks witnessed in the last quarter was more akin to the corrections in 1962, 1987, and 1998."

STRATEGAS

Bear markets accompanied by recessions have been the most traumatic

S&P 500 Index price drawdowns since 1950



Market declines breaching 20% since 1950

Start	Years*	% decline	Recession?
7/56	2.17	–20.47	Y
12/61	**1.75**	**–26.87**	**N**
2/66	**1.23**	**–21.97**	**N**
11/68	3.31	–33.33	Y
1/73	7.58	–47.99	Y
11/80	1.96	–23.79	Y
8/87	**1.94**	**–33.34**	**N**
3/00	7.23	–47.59	Y
10/07	5.50	–56.24	Y
Recessions	**4.63**	**–38.24**	**6**
Nonrecessions	**1.60**	**–27.39**	**3**

Source: FactSet, as of 12/31/18. The S&P 500 Index tracks the performance of 500 of the largest publicly traded companies in the United States. It is not possible to invest directly in an index. Drawdown is a measure of market declines from a peak to a subsequent trough. Past performance does not guarantee future results.
* Represents time to recover to the prior market peak.

International equity: opportunities narrow

Economic growth has slowed outside the United States, reflected in recent declines across Asian and European equity markets.

Key macro themes

Global growth moderating

Global growth has slowed and certain international equity segments have fallen into bear market territory.

Earnings growth peaking

Corporate fundamentals have begun to deteriorate in multiple regions across the world.

Monetary policy tightening nearing its limits

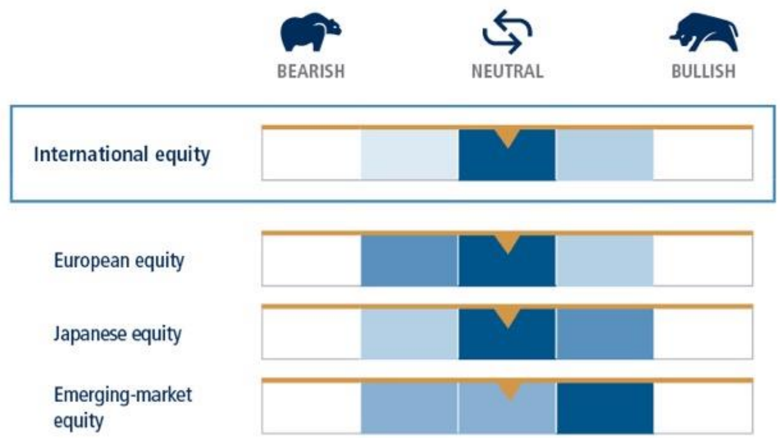
The Fed is approaching the end of its rate hiking cycle, and the withdrawal of liquidity has weighed on emerging markets.

What's inside

- Economic momentum abroad has reversed
- Earnings forecasts have flattened
- International equities have underperformed, partly because of sector composition
- When the U.S. dollar strengthens, international equities tend to lag U.S. equities
- EM has reached bear market territory

Range of views from our network

Darker shading indicates a greater concentration of views within our network.



Our 12–18 month view: NEUTRAL

We maintain a neutral weighting in international equities within a global diversified portfolio. Relative value opportunities within the asset class have also faded over the last year.

See pages 15–19 for complete information. Past performance does not guarantee future results.

Economic momentum abroad has reversed

International equity

BEARISH | NEUTRAL | BULLISH

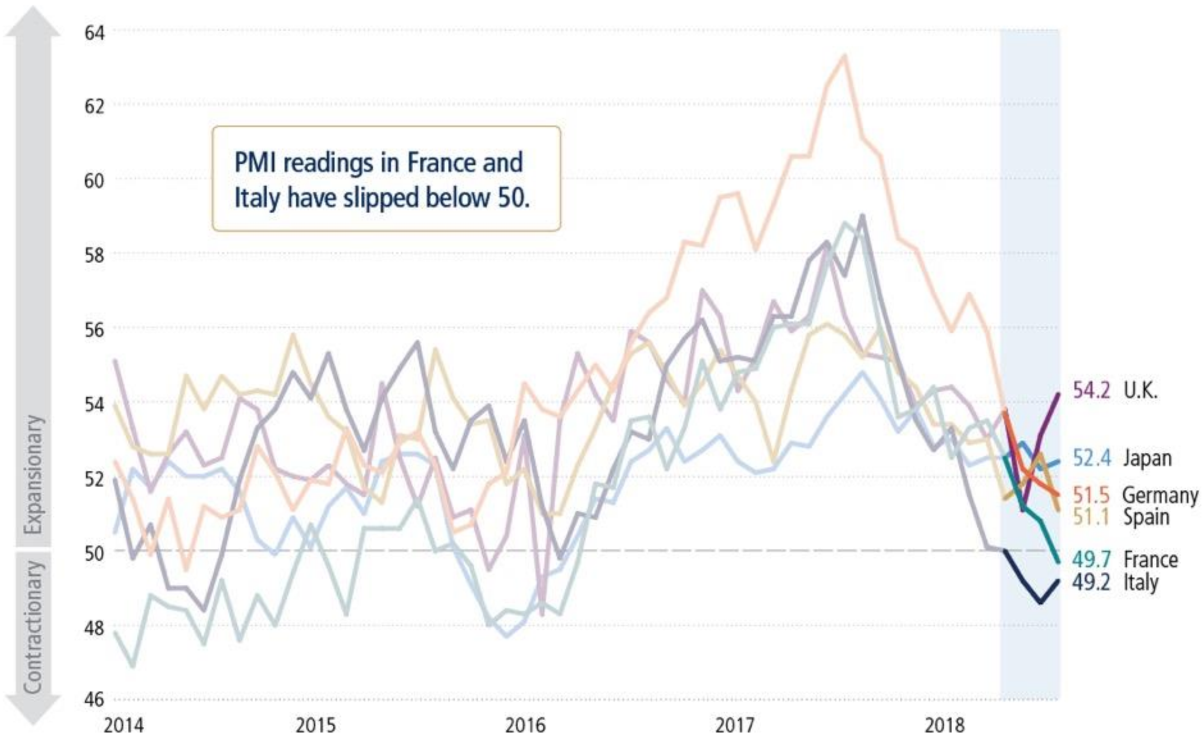
= OUR 12–18 MONTH VIEW

Darker shading indicates a greater concentration of views within our network.

"Global manufacturing growth has slowed significantly since peaking in late 2017, further confirming our narrative that the global economic cycle is maturing and peak growth is likely behind us."

Ned Davis Research Group

Growth has continued to slow in Japan and Continental Europe



Lead quotes from eurozone PMI surveys

1 "The last three months of 2018 saw **manufacturers report the worst quarterly performance in terms of production** since 2013."

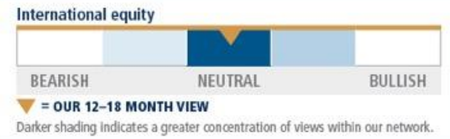
2 "Production levels were achieved only by firms eating into backlogs of orders received in prior months … **December saw a third consecutive monthly drop in new orders.**"

3 "Some of the recent weakness could prove temporary, being the result of **protests in France and the auto sector struggling** to adjust to new emissions regulations."

4 "Weak demand and growing risk aversion … suggests that any rebound could prove modest … **with Brexit representing a particularly worrying unknown for the outlook.**"

Source: Markit, World Bank, FactSet, as of 12/31/18. The Purchasing Managers' Index (PMI) is an indicator of the economic health of the manufacturing sector based on five major indicators: new orders, inventory levels, production, supplier deliveries, and the employment environment. It is not possible to invest directly in an index. Past performance does not guarantee future results.

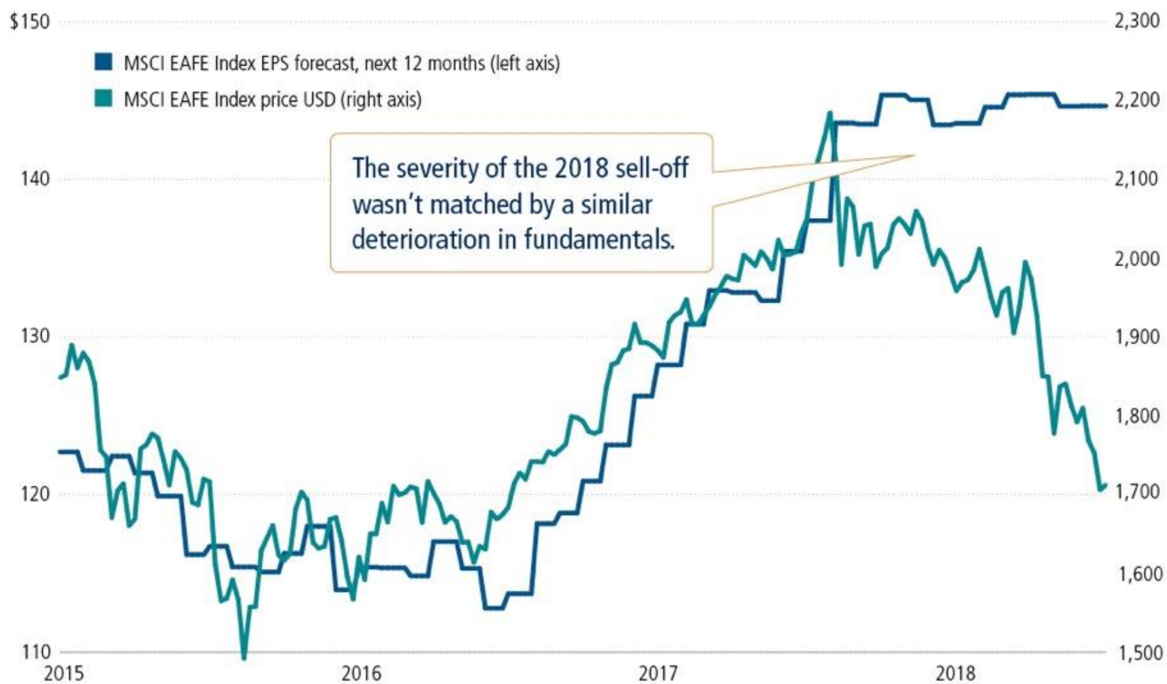
Earnings forecasts have flattened



"The euro area economy has been weakening vs. the U.S. as seen by the relative performance of PMIs in the two regions; this bodes ill for the euro area's relative profitability."[1]

BCA RESEARCH

Earnings growth leveled off in 2018 after accelerating in 2017



2019 EPS growth estimates year over year (%)

Information technology	14.94
Consumer staples	10.34
Communication services	10.19
Energy	9.05
MSCI EAFE Index	**6.35**
Financials	5.54
Healthcare	5.52
Consumer discretionary	5.50
Industrials	4.46
Utilities	3.64
Materials	2.86
Real estate	–1.76

Source: FactSet, as of 12/31/18. Earnings per share (EPS) is a measure of how much profit a company has generated calculated by dividing the company's net income by its total number of outstanding shares. USD refers to U.S. dollars. The MSCI Europe, Australasia, and Far East (EAFE) Index tracks the performance of publicly traded large- and mid-cap stocks of companies in those regions. It is not possible to invest directly in an index. Past performance does not guarantee future results.

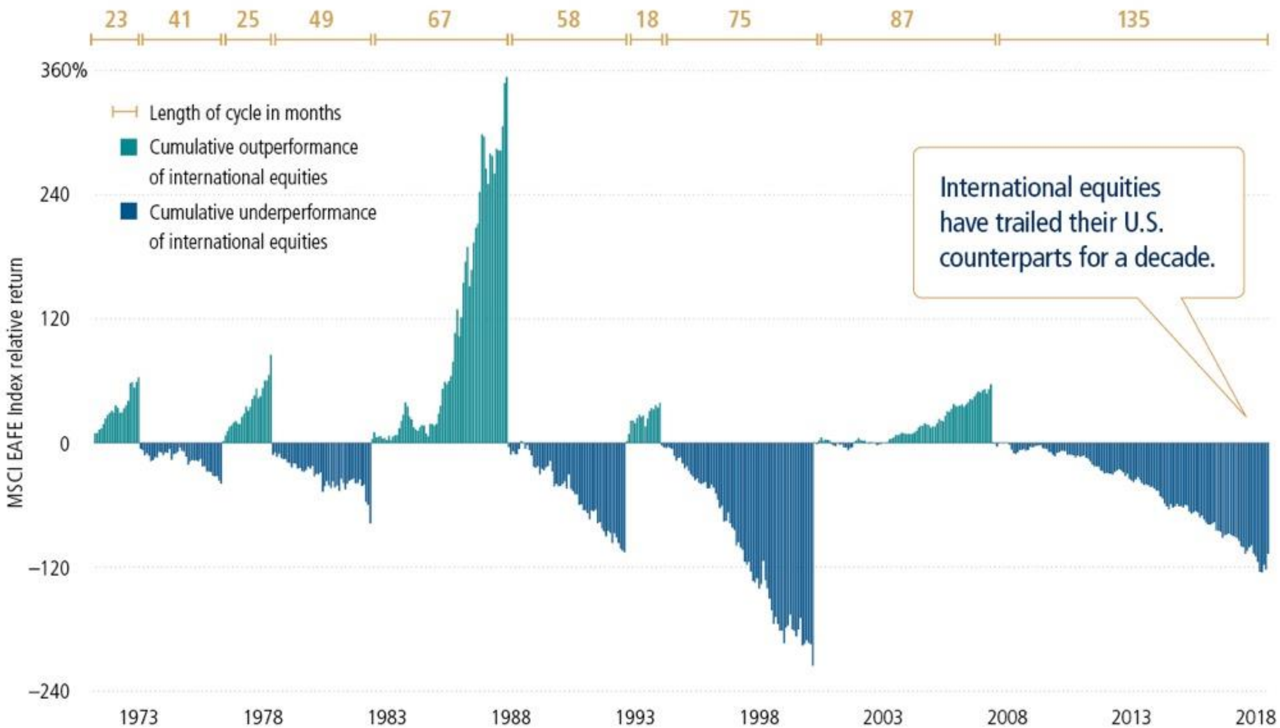
1 bcaresearch.com, 2018.

International equities have underperformed partly because of sector composition

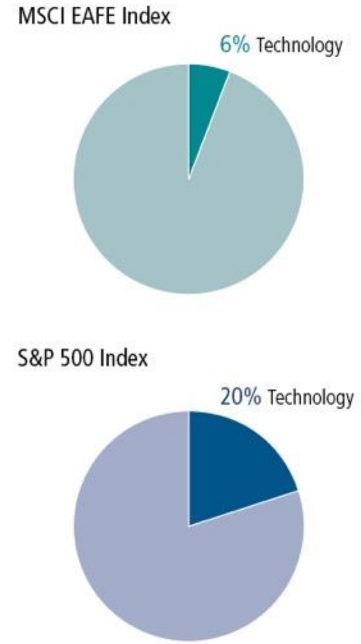
"Overall, relative performance among major regional equity markets is being driven by tech and financials."

MacroResearchBoard mrb partners Independent Investment Strategy

Cumulative relative performance of the MSCI EAFE Index vs. the S&P 500 Index

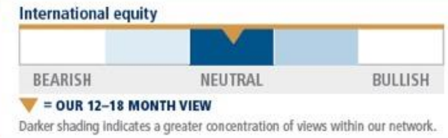


One factor driving performance is sector composition



Source: Bloomberg, FactSet, as of 12/31/18. International equities are represented by the MSCI Europe, Australasia, and Far East (EAFE) Index, which tracks the performance of publicly traded large- and mid-cap stocks of companies in those regions. U.S. equities are represented by the S&P 500 Index, which tracks the performance of 500 of the largest publicly traded companies in the United States. It is not possible to invest directly in an index. Past performance does not guarantee future results.

When the U.S. dollar strengthens, international equities tend to lag U.S. equities



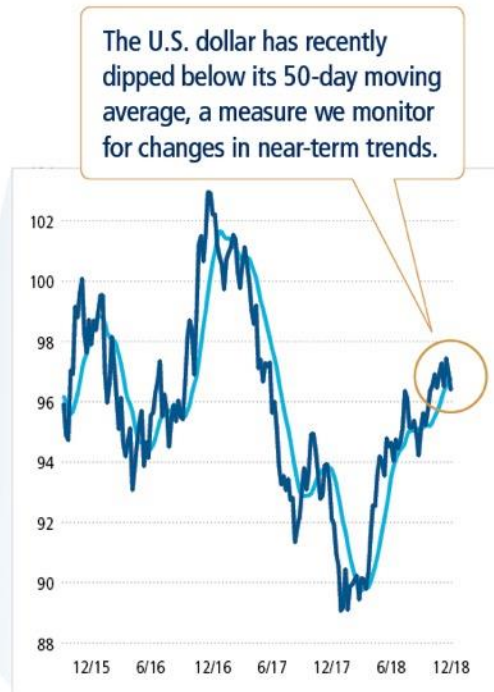
"At some point, a dovish turn from the Fed will lead to some depreciation of the dollar and global growth will stage a rebound."

BCA RESEARCH

International stocks have been comparatively weak when the U.S. dollar rises—and comparatively strong when the U.S. dollar falls

DXY daily   DXY 50-day moving average

	Cumulative returns (%)				
MSCI EAFE Index	49.38	**436.83**	13.79	**103.49**	13.49
S&P 500 Index	**106.31**	341.69	**130.52**	29.00	**137.63**



Source: FactSet, 12/31/18. The U.S. Dollar Index (DXY) is a measure of the value of the U.S. dollar relative to the value of a basket of currencies of the majority of the United States' most significant trading partners. International equities are represented by the MSCI Europe, Australasia, and Far East (EAFE) Index, which tracks the performance of publicly traded large- and mid-cap stocks of companies in those regions. U.S. equities are represented by the S&P 500 Index, which tracks the performance of 500 of the largest publicly traded companies in the United States. It is not possible to invest directly in an index. Past performance does not guarantee future results.

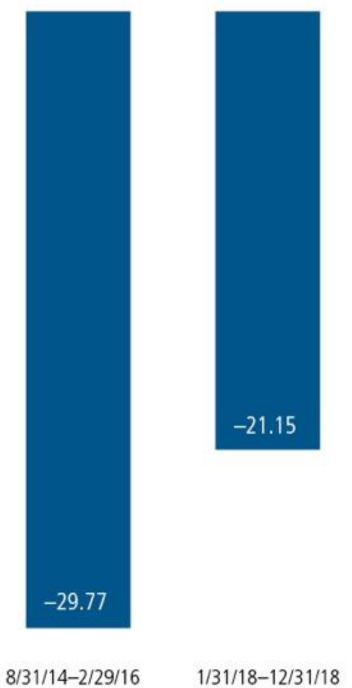
EM has reached bear market territory

"Emerging market equities have been buffeted by a strengthening U.S. dollar, global trade tensions, weaker growth in China, and tightening financial conditions."

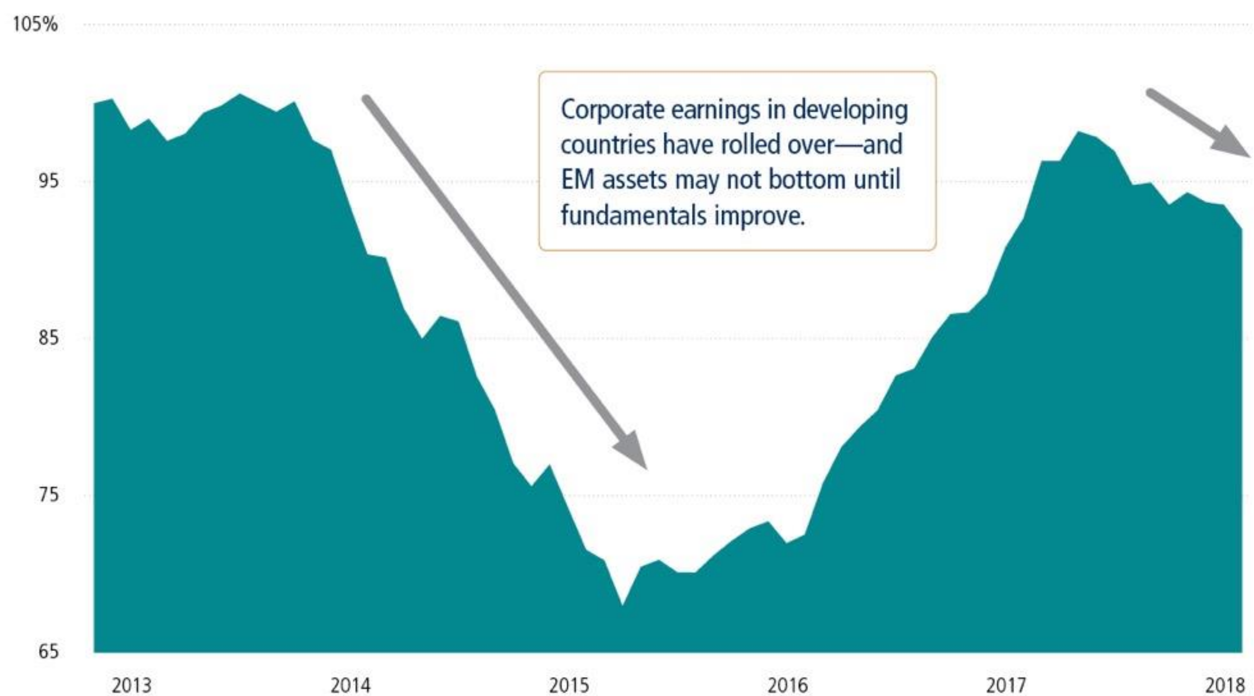
WELLINGTON MANAGEMENT®

The steepest EM correction in recent years coincided with the 2016 trough in earnings expectations

Recent MSCI EM Index drawdowns (%)



MSCI EM Index 12-month earnings estimates



Source: Bloomberg, FactSet, as of 12/31/18. The MSCI Emerging Markets (EM) Index tracks the performance of publicly traded large- and mid-cap emerging-market stocks. It is not possible to invest directly in an index. Earnings per share (EPS) is a measure of how much profit a company has generated calculated by dividing the company's net income by its total number of outstanding shares. Past performance does not guarantee future results.

Fixed income: increasing higher-quality opportunities

Investment-grade corporate and government bonds may be poised for a rebound following last year's rising rates.

Key macro themes

Global growth moderating

The rise in yields may have run its course, increasing the attractiveness of duration.

Earnings growth peaking

The fundamental backdrop now favors a more defensive approach to portfolio construction.

Monetary policy tightening nearing its limits

The Fed is approaching the end of its rate hiking cycle, and the withdrawal of liquidity has weighed on credit.

What's inside

- The Fed may slow the pace of rate hikes as inflation moderates
- Competing forces continue to shape the yield curve
- Look for bonds to outperform cash in 2019
- Investment-grade corporates represent an attractive balance of risk and return
- Investment grade has done better than high yield when economic growth has slowed

Range of views from our network

Darker shading indicates a greater concentration of views within our network.

Our 12–18 month view: NEUTRAL

Within the asset class, we now favor duration over credit risk. We believe investment-grade corporates still offer upside.

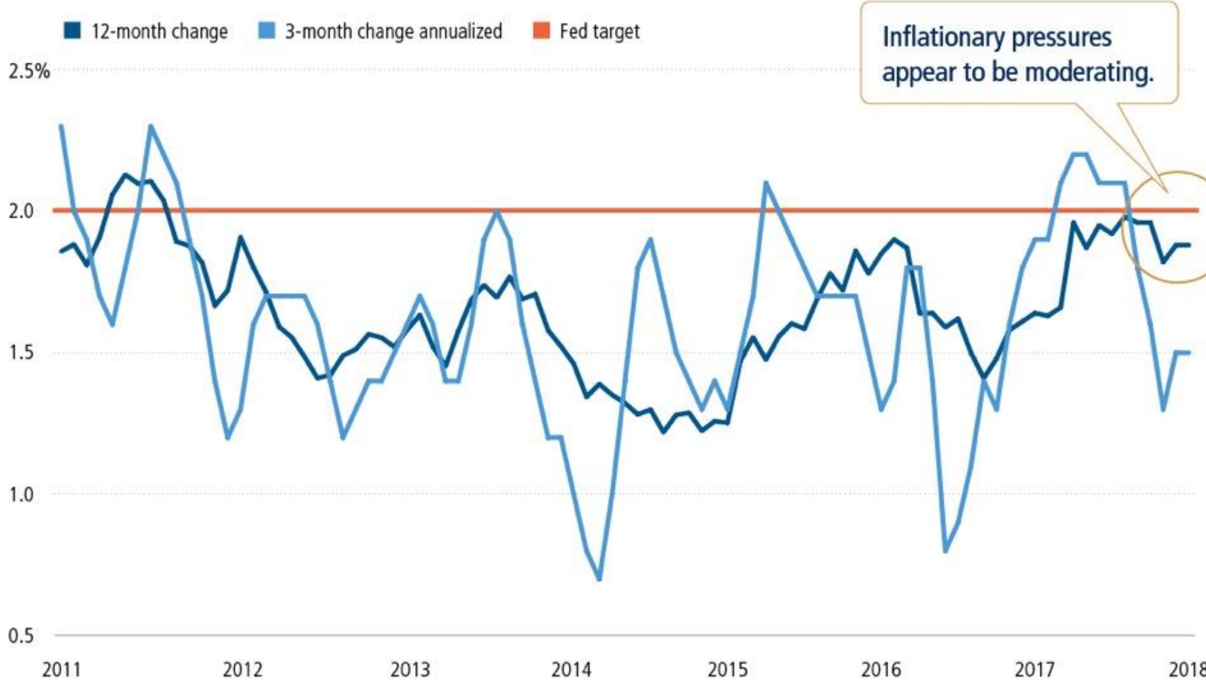
See pages 21–25 for complete information. Past performance does not guarantee future results.

The Fed may slow the pace of rate hikes as inflation moderates

"Core inflation looks to have peaked in the U.S." CAPITAL ECONOMICS

Inflation briefly climbed to the Fed's target before retreating more recently

PCE Price Index changes over time



FOMC median year-end fed funds rate projections (%)

Source: U.S. Federal Reserve (Fed), Chicago Fed, as of 12/31/18. Interest-rate projections are based on the median for the federal funds rate projections of the The Federal Open Market Committee (FOMC), the body responsible for setting the federal funds rate, which meets eight times a year. FOMC members anonymously report interest-rate projections four times a year, in March, June, September, and December. The Core Personal Consumption Expenditure (PCE) Price Index measures the prices paid by consumers for goods and services, excluding more volatile food and energy prices. It is not possible to invest directly in an index. Past performance does not guarantee future results.

Competing forces continue to shape the yield curve

U.S. government

BEARISH NEUTRAL BULLISH

▼ = OUR 12–18 MONTH VIEW

Darker shading indicates a greater concentration of views within our network.

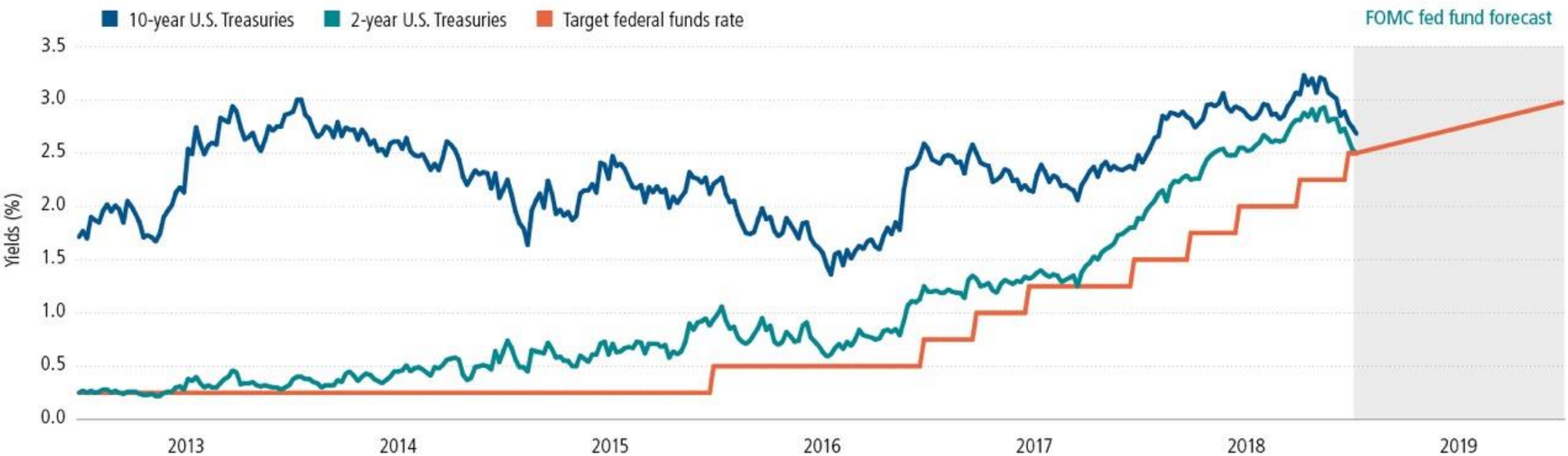
"With the Fed raising short-term rates and long-run inflation expectations still moderate, we'd expect to see a flattening yield curve."

John Hancock ASSET MANAGEMENT

Are FOMC fed fund forecasts calling for an inverted yield curve?

Factors pushing longer-term rates lower

- 10-year U.S. Treasuries are now offering higher yields than 96% of other developed-market government debt
- At only 3.2% year over year, meaningful wage growth remains elusive
- Nearly $200 billion net has gone into taxable bonds through November



Factors pushing longer-term rates higher

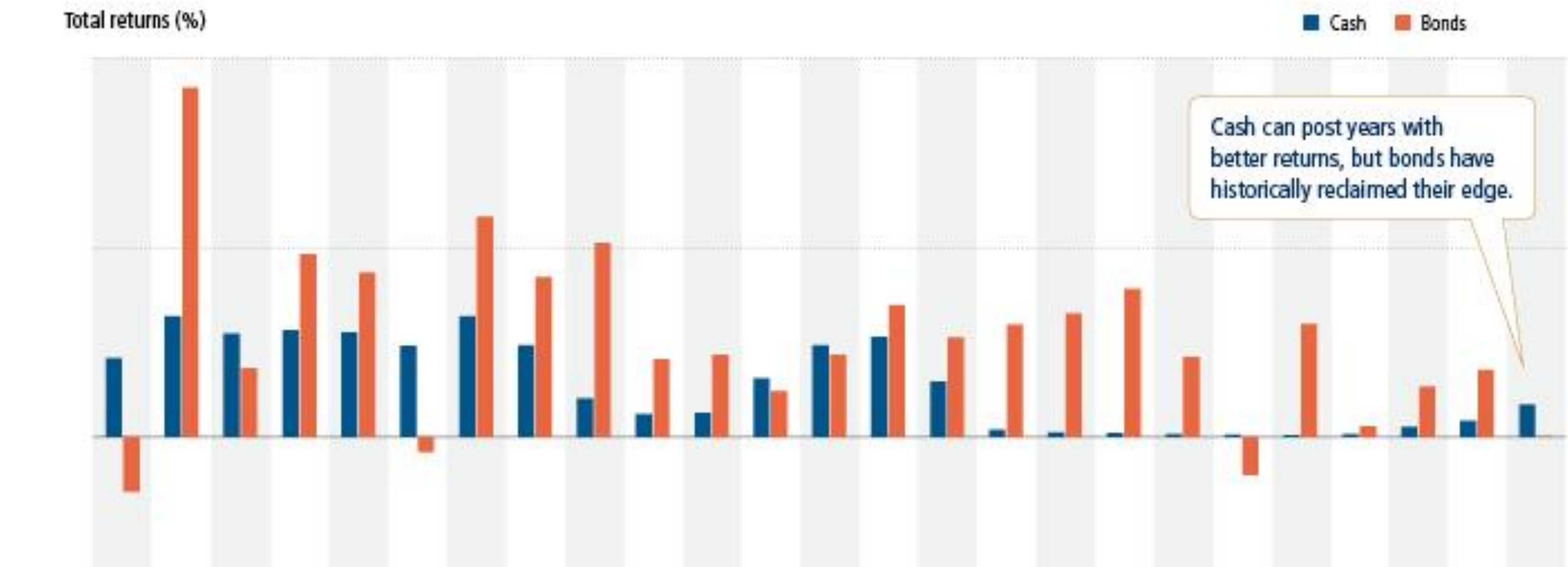
- Federal income-tax refunds, projected to increase, may support GDP in 2019
- Unemployment is at a multidecade low, and the supply of skilled workers remains extremely tight
- The reduction in the Fed's balance sheet is expected to remain on track into 2019

Source: FactSet, New York Fed, U.S. Bureau of Labor Statistics, Morningstar, Treasury International Capital System, as of 12/31/18. Federal Open Market Committee (FOMC) fed fund forecast is are based on the median projections made by the FOMC.

Look for bonds to outperform cash in 2019

"Treasury yields in general don't have much upside room left to rise; in fact, the long end of the curve may have already peaked."

Cash outperformed bonds six times over the quarter century ended 2017—and bonds regained the lead in each subsequent year but one

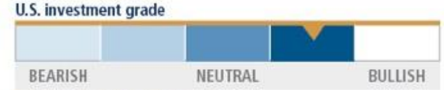


Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Cash (%)	**4.17**	6.38	**5.45**	5.64	5.52	**4.80**	6.38	4.84	2.02	1.21	1.27	**3.10**	**4.84**	5.27	2.92	0.37	0.24	0.19	0.15	**0.12**	0.09	0.14	0.51	0.86	**1.92**	?
Bonds (%)	–2.92	18.47	3.63	9.65	8.69	–0.82	11.63	8.44	10.25	4.10	4.34	2.43	4.33	6.97	5.24	5.93	6.54	7.84	4.21	–2.02	5.97	0.55	2.65	3.54	0.01	?

Source: FactSet, as of 12/31/18. Cash is represented by the Bloomberg Barclays U.S. Short Treasury (3–6 Month) Index, which tracks U.S. Treasury bills, notes, and bonds with less than a year to maturity. Bonds are represented by the Bloomberg Barclays U.S. Aggregate Bond Index, which tracks the performance of U.S. investment-grade bonds in government, asset-backed, and corporate debt markets. It is not possible to invest directly in an index. Past performance does not guarantee future results.

Investment-grade corporates represent an attractive balance of risk and return

U.S. investment grade



= OUR 12–18 MONTH VIEW

Darker shading indicates a greater concentration of views within our network.

"Bonds play a valuable role in overall portfolios by serving as a stabilizing force when riskier assets, such as equities, are weak."

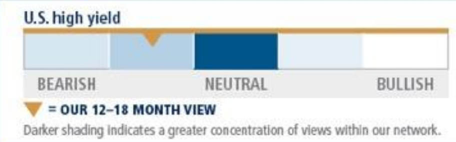
T.Rowe Price
INVEST WITH CONFIDENCE

Today's fixed-income opportunities entail trade-offs

Fixed-income categories arranged by yield and correlation to U.S. equities

Source: Barclays Live, FactSet, Western Asset Management Company, as of 12/31/18. The five-year quarterly return correlation is relative to the S&P 500 Index, which tracks the performance of 500 of the largest publicly traded companies in the United States. It is not possible to invest directly in an index. Yield to worst is the lowest potential yield calculated by taking into account an issue's optionality, such as prepayments or calls. Correlation is a statistical measure that describes how investments move in relation to each other, which ranges from –1.0 to 1.0. The closer the number is to 1.0 or –1.0, the more closely the two investments are related. Past performance does not guarantee future results.

Investment grade has done better than high yield when economic growth has slowed

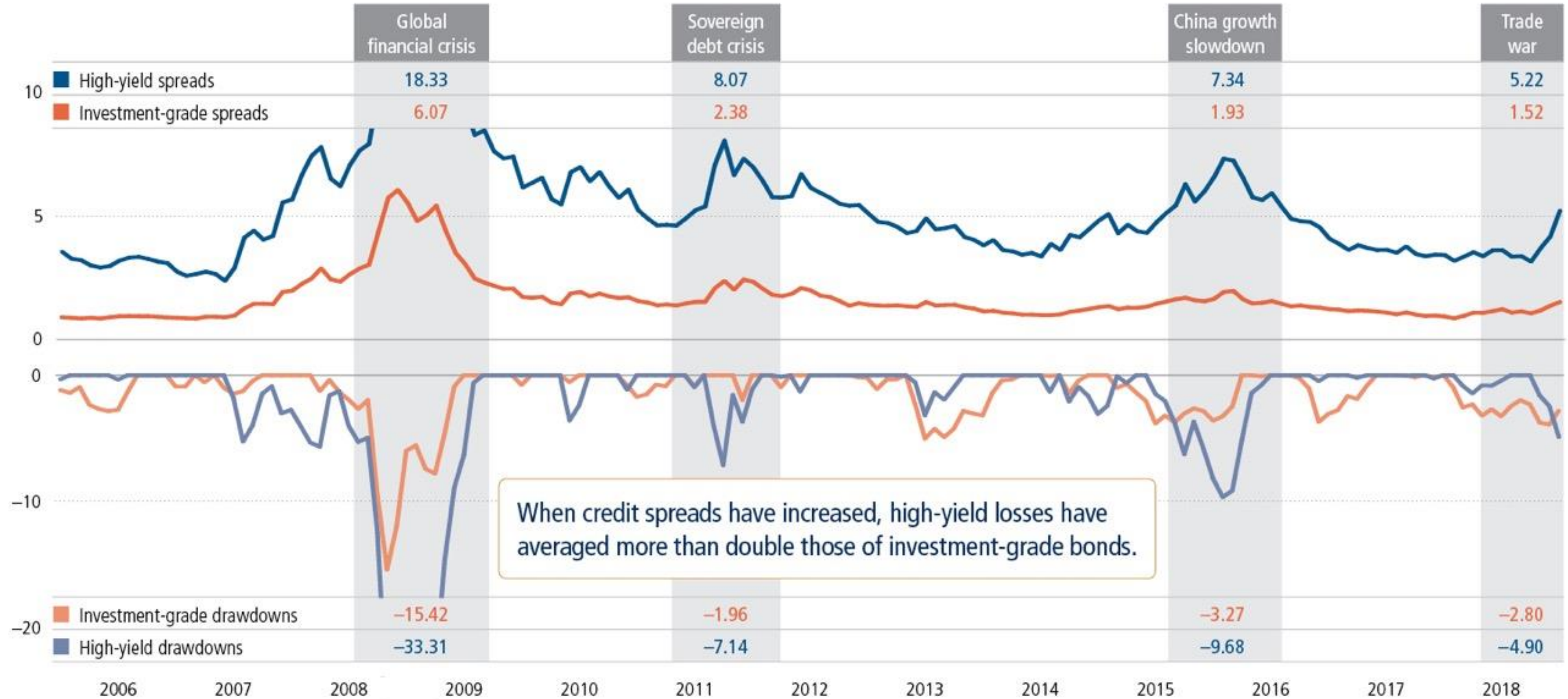


"We expect weakening credit fundamentals to drive high yield spreads higher as monetary conditions continue to tighten."

STRATEGAS

The income advantage of higher-yielding bonds can quickly become overwhelmed by capital losses as credit spreads widen

High-yield and investment-grade bond credit spreads and price drawdowns (%)

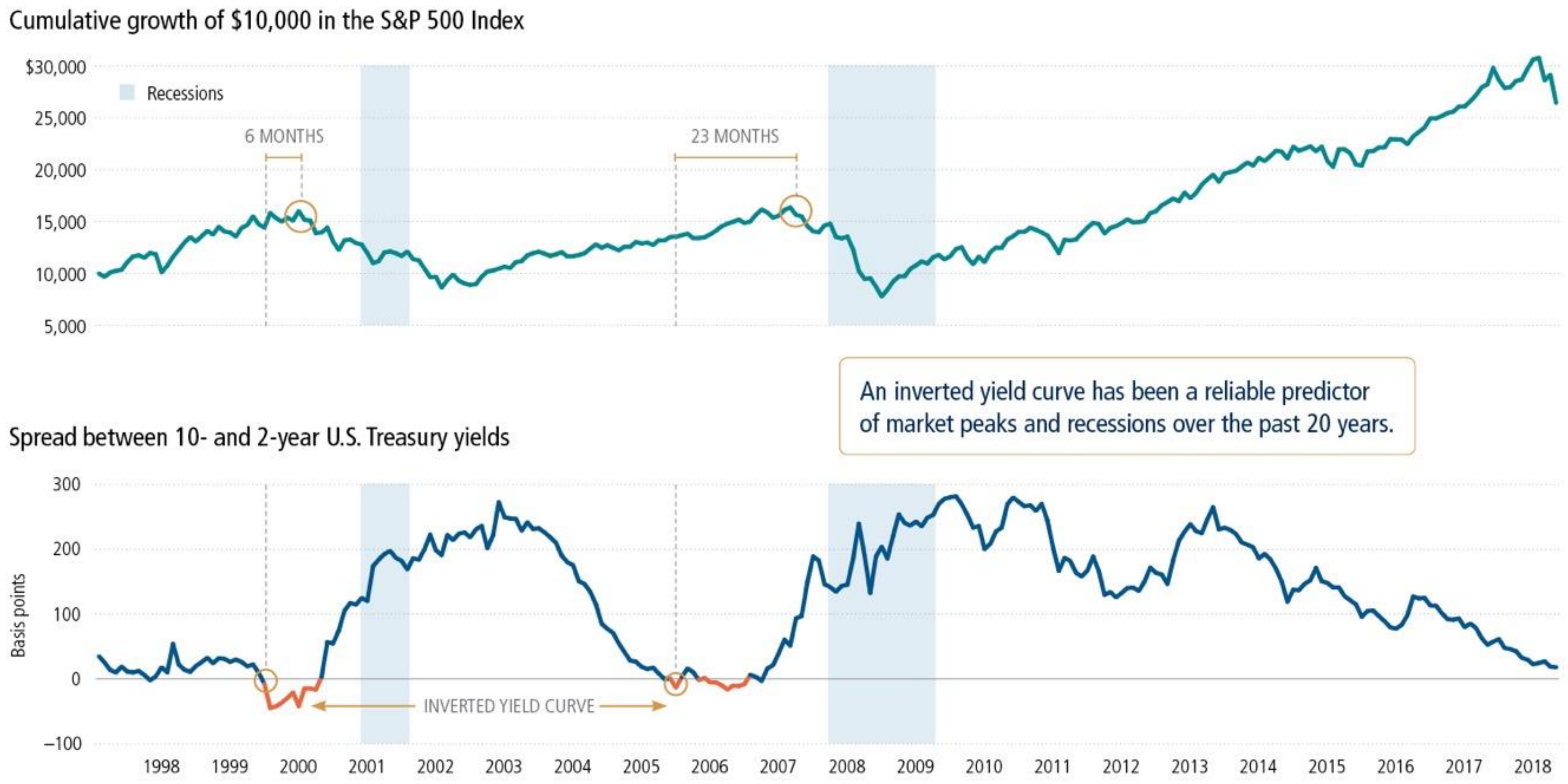


Source: FactSet, as of 12/31/18. High-yield is represented by the Bloomberg Barclays U.S. Corporate High Yield Bond Index, which tracks the performance of the U.S. dollar-denominated, high-yield, fixed-rate corporate bond market. Investment- grade is represented by the Bloomberg Barclays U.S. Corporate Bond Index, which tracks the investment grade, fixed-rate, taxable corporate bond market. It is not possible to invest directly in an index. Past performance does not guarantee future results.

The yield curve may hold clues to the timing of the cycle

"The trick is to know when there is a preponderance of risks and to adjust investments accordingly, just as a tornado warning says we should seek shelter or the all-clear says that the danger has passed."

FIRST QUADRANT



Source: FactSet, as of 12/31/18. The S&P 500 Index tracks the performance of 500 of the largest publicly traded companies in the United States. It is not possible to invest directly in an index. Past performance does not guarantee future results.

What to do now

Our 12–18 month view

Strategies to consider

U.S. equity: peaking fundamentals

NEUTRAL

- Decrease U.S. equities from overweight to neutral within a globally diversified portfolio
- Tilt portfolios toward sectors with a combination of growth and defense
- Be mindful that nonrecessionary bear markets tend to be milder than those accompanied by a recession

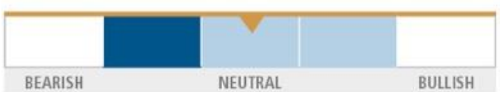
International equity: opportunities narrow

NEUTRAL

- Maintain a neutral weighting in international equities within a global diversified portfolio
- Be aware of how sector composition and the U.S. dollar can affect the performance of international positions
- Maintain a neutral weight to emerging-market equities and use earnings estimates as a key input

Fixed income: increasing higher-quality opportunities

NEUTRAL



- Increase fixed income from underweight to neutral within a globally diversified portfolio
- Increase duration as the recent rise of U.S. Treasury yields reverses course
- Leverage investment-grade corporates to balance risk and return

Overall portfolio considerations

Look to the changing slope of the U.S. Treasury yield curve for an indicator of a market peak in U.S. equities and the continued need for risk management

Opinions are those of John Hancock Investments and are provided for informational purposes only. They are subject to change and are not an endorsement of any security, mutual fund, sector, or index. No forecasts are guaranteed. Diversification does not guarantee a profit or eliminate the risk of a loss.

Darker shading indicates a greater concentration of views within our network. ▼ Represents our 12–18 month view.

Family of funds As of December 31, 2018

		Managed by	Morningstar category	A	C	I	R6
U.S. EQUITY	Blue Chip Growth	T. Rowe Price	Large growth	JBGAX	JBGCX		
	Classic Value	Pzena	Large value	PZFVX	JCVCX	JCVIX	JCVWX
	Disciplined Value	Boston Partners	Large value	JVLAX	JVLCX	JVLIX	JDVWX
	Disciplined Value Mid Cap[1]	Boston Partners	Mid-cap blend	JVMAX	JVMCX	JVMIX	JVMRX
	Equity Income	T. Rowe Price	Large value	JHEIX	JHERX		
	Financial Industries	JHAM	Financial	FIDAX	FIDCX	JFIFX	JFDRX
	Fundamental All Cap Core	JHAM	Large growth	JFCAX	JFCCX	JFCIX	JFAIX
	Fundamental Large Cap Core	JHAM	Large blend	TAGRX	JHLVX	JLVIX	JLCWX
	Fundamental Large Cap Value	JHAM	Large value	JFVAX	JFVCX	JFVIX	JFLVX
	New Opportunities	BW/DFA/GWK	Small blend	JASOX	JBSOX	JHSOX	JWSOX
	Regional Bank	JHAM	Financial	FRBAX	FRBCX	JRBFX	JRGRX
	Small Cap Core	JHAM	Small blend	JCCAX		JCCIX	JORSX
	Small Cap Growth	Redwood	Small growth	JSJAX	JSJCX	JSJIX	JSJFX
	Small Cap Value	Wellington	Small blend	JSCAX		JSCBX	JSCCX
	U.S. Global Leaders Growth	SGA	Large growth	USGLX	USLCX	USLIX	UGLSX
	U.S. Growth[2]	Wellington	Large growth	JHUAX	JHUCX	JHUIX	JUSEX
	U.S. Quality Growth[3]	Wellington	Large growth	JSGAX	JSGCX	JSGIX	JSGTX
	Value Equity	Barrow Hanley	Large value	JVEAX	JVECX	JVEIX	JVERX
INTERNATIONAL EQUITY	Disciplined Value International	Boston Partners	Foreign large blend	JDIBX	JDICX	JDVIX	JDIUX
	Emerging Markets	Dimensional	Diversified emerging markets	JEVAX	JEVCX	JEVIX	JEVRX
	Emerging Markets Equity	JHAM	Diversified emerging markets	JEMQX	JEMZX	JEMMX	JEMGX
	Fundamental Global Franchise	JHAM	World large stock	JFGAX		JFGIX	JFGFX
	Global Equity	JHAM	World large stock	JHGEX	JGECX	JGEFX	JGEMX
	Global Shareholder Yield	Epoch	World large stock	JGYAX	JGYCX	JGYIX	JGRSX
	Global Thematic Opportunities	Pictet	World large stock	JTKAX	JTKCX	JTKIX	JTKRX
	Greater China Opportunities	JHAM	China region	JCOAX	JCOCX	JCOIX	
	International Growth[4]	Wellington	Foreign large growth	GOIGX	GONCX	GOGIX	JIGTX
	International Small Company	Dimensional	Foreign small/mid blend	JISAX	JISDX	JSCIX	JHSMX
FIXED INCOME	Bond	JHAM	Intermediate-term bond	JHNBX	JHCBX	JHBIX	JHBSX
	California Tax-Free Income	JHAM	Muni California long	TACAX	TCCAX	JCAFX	JCSRX
	Emerging Markets Debt	JHAM	Emerging markets bond	JMKAX	JMKCX	JMKIX	JEMIX
	Floating Rate Income[5]	Bain	Bank loan	JFIAX	JFIGX	JFIIX	JFIRX
	Government Income	JHAM	Intermediate government	JHGIX	TCGIX	JGIFX	JTSRX
	High Yield	JHAM	High yield bond	JHHBX	JHYCX	JYHIX	JFHYX
	High Yield Municipal Bond	JHAM	High yield muni	JHTFX	JCTFX	JHYMX	JCTRX
	Income	JHAM	Multisector bond	JHFIX	JSTCX	JSTIX	JSNWX
	Investment Grade Bond	JHAM	Intermediate-term bond	TAUSX	TCUSX	TIUSX	JIGEX
	Money Market	JHAM	Taxable money market	JHMXX	JMCXX		
	Short Duration Credit Opportunities	Stone Harbor	Multisector bond	JMBAX	JMBCX	JMBIX	JSDEX
	Spectrum Income	T. Rowe Price	Multisector bond	JHSIX	JHSRX		
	Strategic Income Opportunities	JHAM	Multisector bond	JIPAX	JIPCX	JIPIX	JIPRX
	Tax-Free Bond	JHAM	Muni national long	TAMBX	TBMBX	JTBDX	JTMRX
ALTERNATIVE	Absolute Return Currency	First Quadrant	Multicurrency	JCUAX	JCUCX	JCUIX	JCURX
	Alternative Asset Allocation	JHAM	Multialternative	JAAAX	JAACX	JAAIX	JAARX
	Enduring Assets[6]	Wellington	Infrastructure	JEEBX	JEEFX	JEEIX	JEEDX
	Global Absolute Return Strategies[7]	Aberdeen	Multialternative	JHAAX	JHACX	JHAIX	JHASX
	Global Conservative Absolute Return[7]	Aberdeen	Multialternative	JHRAX	JHRCX	JHRIX	JHRRX
	Global Focused Strategies[7]	Aberdeen	Multialternative	JGFOX	JGFEX	JGFGX	JGFDX
	Redwood[8]	Boston Partners	Options-based	JTRAX	JTRCX	JTRIX	JTRRX
	Seaport Long/Short[9]	Wellington	Long/short equity	JSFBX	JSFTX	JSFDX	JSFRX
	Technical Opportunities[10]	Wellington	Large growth	JTCAX	JTCDX	JTCIX	JTOPX
ASSET ALLOC	Balanced Fund	JHAM	Allocation—50% to 70% equity	SVBAX	SVBCX	SVBIX	JBAWX
	Income Allocation Fund	JHAM	Allocation—15% to 30% equity	JIAFX	JIAGX	JIAIX	JIASX
	Multimanager Lifestyle Portfolios	JHAM					
TARGET DATE	Multi-Index Lifetime Portfolios	JHAM					
	Multi-Index Preservation Portfolios	JHAM					
	Multimanager Lifetime Portfolios	JHAM					
ESG	ESG All Cap Core	Trillium	Large growth	JHKAX	JHKCX	JHKIX	JHKRX
	ESG Core Bond	Breckinridge	Intermediate-term bond	JBOAX		JBOIX	JBORX
	ESG International Equity	Boston Common	Foreign large growth	JTQAX		JTQIX	JTQRX
	ESG Large Cap Core	Trillium	Large blend	JHJAX	JHJCX	JHJIX	JHJRX

		Index provider	Morningstar category	Ticker
ETF	John Hancock Multifactor Consumer Discretionary ETF	Dimensional	Consumer cyclical	JHMC
	John Hancock Multifactor Consumer Staples ETF	Dimensional	Consumer defensive	JHMS
	John Hancock Multifactor Developed International ETF	Dimensional	Foreign large blend	JHMD
	John Hancock Multifactor Emerging Markets ETF	Dimensional	Diversified emerging markets	JHEM
	John Hancock Multifactor Energy ETF	Dimensional	Equity energy	JHME
	John Hancock Multifactor Financials ETF	Dimensional	Financial	JHMF
	John Hancock Multifactor Healthcare ETF	Dimensional	Health	JHMH
	John Hancock Multifactor Industrials ETF	Dimensional	Industrials	JHMI
	John Hancock Multifactor Large Cap ETF	Dimensional	Large blend	JHML
	John Hancock Multifactor Materials ETF	Dimensional	Natural resources	JHMA
	John Hancock Multifactor Mid Cap ETF	Dimensional	Mid-cap blend	JHMM
	John Hancock Multifactor Small Cap ETF	Dimensional	Small blend	JHSC
	John Hancock Multifactor Technology ETF	Dimensional	Technology	JHMT
	John Hancock Multifactor Utilities ETF	Dimensional	Utilities	JHMU

1 As of 1/31/14, the fund is closed to new investors. **2** As of 10/31/18, the fund is closed to new investors. **3** As of 9/28/18, Wellington Management Company replaced John Hancock Asset Management as the fund's manager. Prior to 11/12/18, the fund was named John Hancock Strategic Growth Fund. **4** As of 3/23/18, the fund is closed to new investors. **5** As of 8/30/18, Bain Capital Credit replaced Western Asset Management Company as the fund's manager. **6** As of 3/1/19, the fund will be named John Hancock Infrastructure Fund. **7** As of 1/1/19, Standard Life Investments (USA) Limited was replaced by Aberdeen Standard Investments Inc. **8** As of 1/22/19, John Hancock Redwood Fund is named John Hancock Disciplined Alternative Yield Fund. **9** Prior to 4/20/18, the fund was named John Hancock Seaport Fund. **10** As of 1/14/19, the fund is closed to all investors and will liquidate on or about 4/12/19.

Not all funds are available for sale at all firms. The funds listed above have associated risks. John Hancock Multifactor ETF shares are bought and sold at market price (not NAV), and are not individually redeemed from the fund. Brokerage commissions will reduce returns.

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Request a prospectus or summary prospectus from your financial advisor, by visiting jhinvestments.com, or by calling us at 800-225-5291. The prospectus includes investment objectives, risks, fees, expenses, and other information that you should consider carefully before investing.

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Asset manager views are compiled throughout the preceding calendar quarter through in-person discussions, reviewed research, and on-site visits. These inputs are complemented by third-party research collected during the calendar quarter. Our views reflect John Hancock Investments' proprietary weighting of these inputs.

A bearish reading indicates the potential for an asset to underperform its class or subclass on a risk-adjusted basis. A bullish reading indicates the potential for an asset to outperform its class or subclass on a risk-adjusted basis. A neutral reading indicates the potential for performance in line with the asset's historical averages.

Stocks and bonds can decline due to adverse issuer, market, regulatory, or economic developments; foreign investing, especially in emerging markets, has additional risks, such as currency and market volatility and political and social instability; value stocks may decline in price; growth stocks may be more susceptible to earnings disappointments; the securities of small companies are subject to higher volatility than those of larger, more established companies; and high-yield bonds are subject to additional risks, such as increased risk of default. Fixed-income investments are subject to interest-rate and credit risk; their value will normally decline as interest rates rise or if an issuer is unable or unwilling to make principal or interest payments. Liquidity—the extent to which a security may be sold or a derivative position closed without negatively affecting its market value, if at all—may be impaired by reduced trading volume, heightened volatility, rising interest rates, and other market conditions. Hedging and other strategic transactions may increase volatility and result in losses if not successful. Currency transactions are affected by fluctuations in exchange rates. This material is not intended to be, nor shall it be interpreted or construed as, a recommendation or providing advice, impartial or otherwise. John Hancock Investments and its representatives and affiliates may receive compensation derived from the sale of and/or from any investment made in its products and services.