Strategy review
28 March 2019

Howard County Retirement Plan

Winner of a 2017 Greenwich Quality Leader Award for Overall U.S. Institutional Investment Management Service Quality

Morningstar's U.S. Fixed-Income Fund Manager of the Year three of the last seven years:
2012 | 2013 | 2015

Disclosures

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The Morningstar Fixed-Income Fund Manager of the Year award [PIMCO Short-Duration (2015) awarded to Jerome Schneider and Team; PIMCO Income (2013) awarded to Dan Ivascyn and Alfred Murata; PIMCO Investment Grade Corporate (2012) awarded to Mark Kiesel] is based on the strength of the manager, performance, strategy and firm's stewardship.

Greenwich Associates accolade is based on interviews conducted by Greenwich Associates, between July and October 2017, with 1,059 senior professionals at 884 of the largest tax-exempt funds in the United States, including corporate and union funds, public funds, endowments and foundations, insurance general accounts, and healthcare organizations with either pension or investment pool assets greater than $150 million. Study participants were asked to provide quantitative and qualitative evaluations of their asset management and investment consulting providers, including qualitative assessments of those firms soliciting their business and detailed information on important market trends. The Greenwich Quality Leader℠ is determined entirely by the results of the interviews described above and do not represent opinions or endorsements by Greenwich Associates or its staff. Such designations are a product of numerical scores in Greenwich Associates' proprietary studies that are generated from the study interviews and are based on a statistical significance confidence level of at least 80%.

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Biographical information

Kevin W. Dunne, CFA, CAIA

Mr. Dunne is a senior vice president and account manager in the New York office, focusing on institutional client servicing. Prior to joining PIMCO in 2012, he was an investment consultant with both Callan Associates and Alan Biller and Associates, working with a variety of institutional fund sponsor clients on strategic planning and implementation, investment manager review, performance evaluation, continuing education and special projects. Previously, he was a strategic management consultant with BearingPoint, and he also served as an officer in the U.S. Navy, achieving the rank of lieutenant. He has 14 years of investment experience and holds an MBA from Cameron University and an undergraduate degree from Villanova University.

Ignacio Galaz, CFA

Mr. Galaz is an executive vice president and account manager in the New York office, focusing on client servicing for public institutions. He is also responsible for leading PIMCO's minority broker outreach program to provide opportunities to small minority- and women-owned business enterprises. He joined PIMCO in 2000 and worked most recently as a senior associate in account management in New York and previously as a trading assistant on the short-term bond desk in Newport Beach. He has 17 years of investment experience and holds an MBA from the MIT Sloan School of Management and an undergraduate degree from Chapman University. In 2009 he received a Toigo fellowship, which is awarded to MBA candidates who demonstrate leadership within the finance industry.

Agenda

1/Market review

2/Howard CorePLUS portfolio

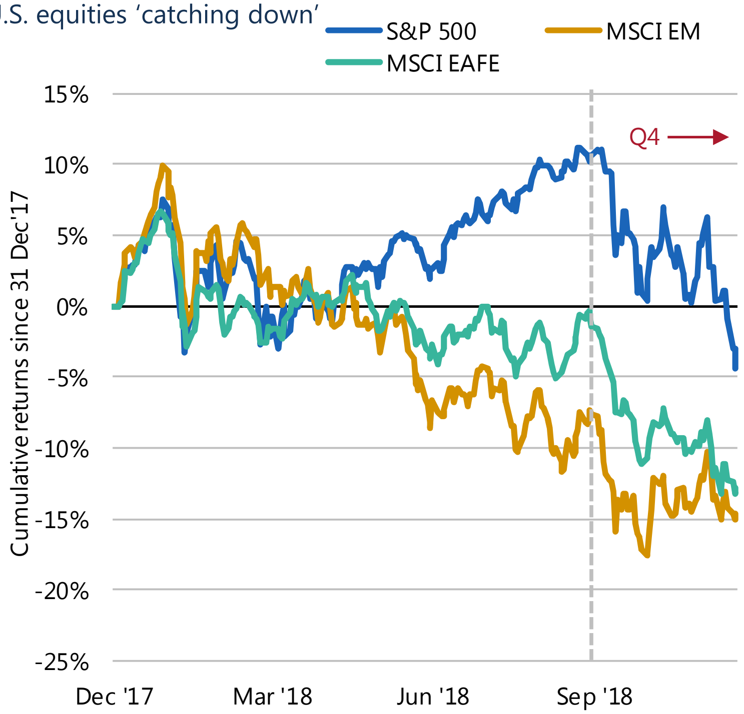
3/Economic outlook

4/PIMCO update

Market review

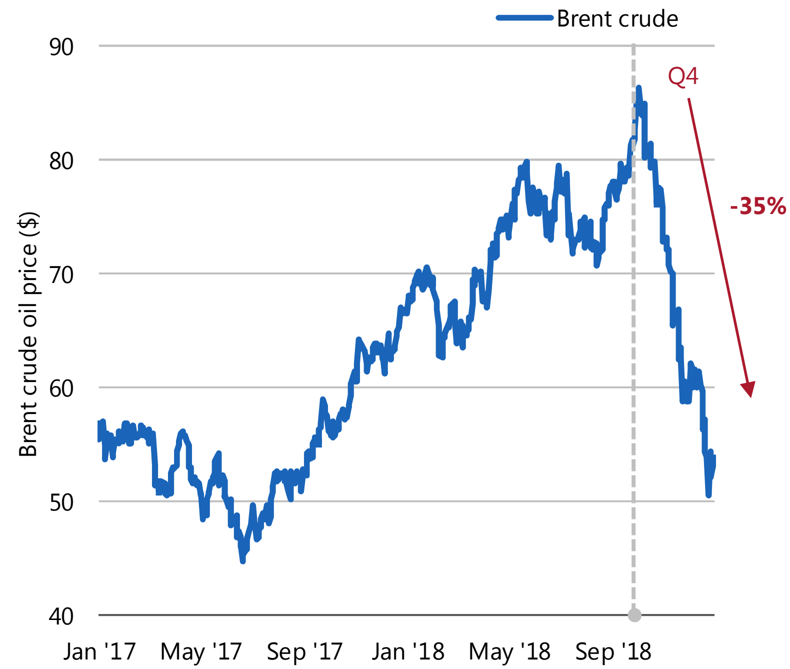
Risk aversion and volatility marked the end of 2018

U.S. equities 'catching down'



U.S. stocks led a global equity sell-off over the quarter, "catching down" to global peers after outperforming earlier in the year

The plunge



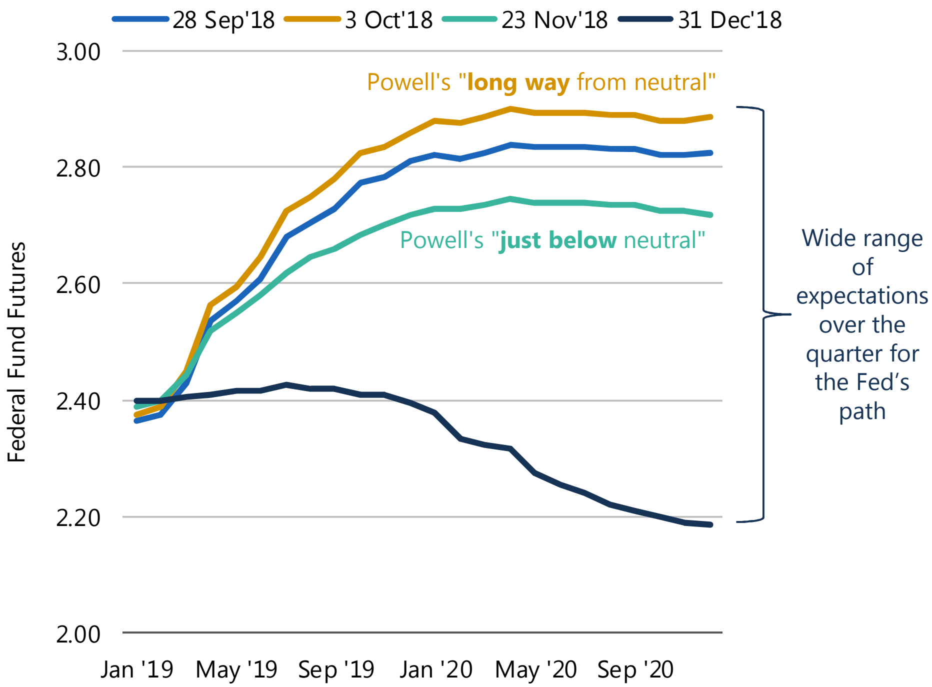
Oil prices were in steep decline this quarter over concerns of weakened demand and an influx of supply

In a reversal from previous quarters, equity volatility and a sharp decline in oil prices reflected waning risk sentiment

As of 31 December 2018
SOURCE: PIMCO, Bloomberg

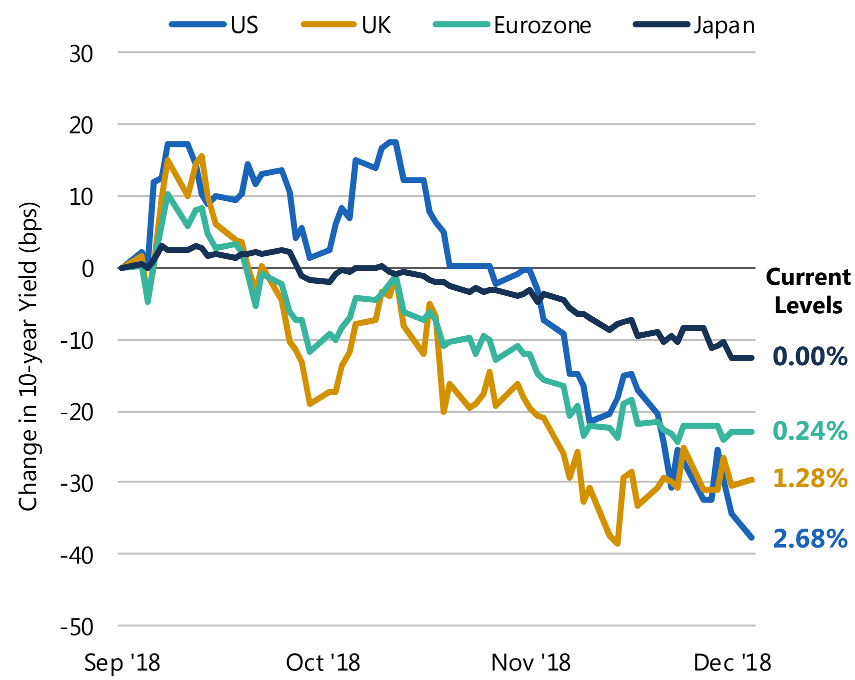
Anticipation of Fed actions contributed to uncertainty while global rates fell

An uncertain path



Expectations for future Fed hikes fluctuated through the quarter, with Fed rhetoric adding to uncertainty

Falling yield



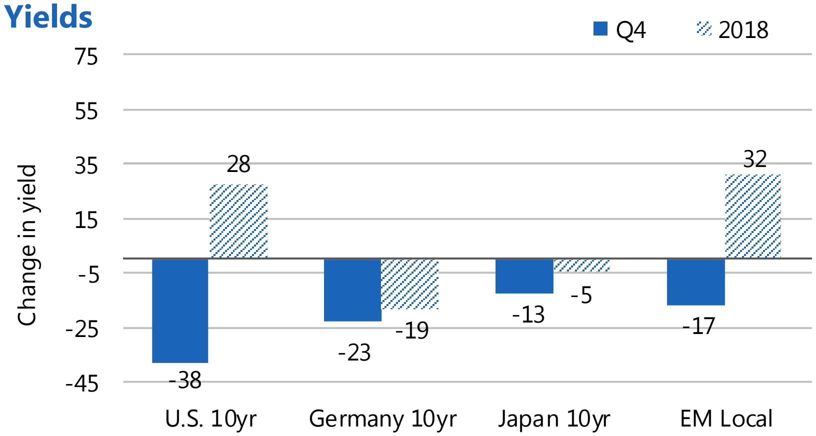
Major DM yields fell – in contrast to earlier in the year - and curves flattened amid declining growth expectations and risk aversion

The Fed continued to normalize policy even as uncertainty about its path rose and rates broadly fell

As of 31 December 2018. SOURCE: PIMCO, Bloomberg.
For illustrative purposes only.

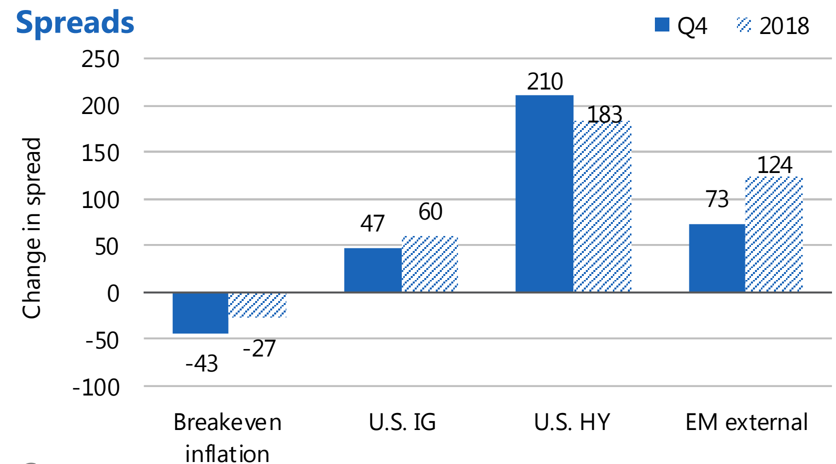
Q4'18: U.S. stocks led a global risk asset sell-off and interest rates declined

Yields



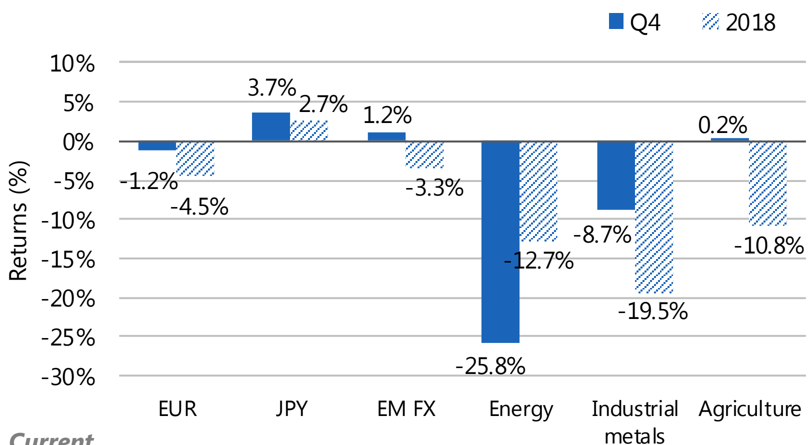
Current levels (%)	U.S. 10yr	Germany 10yr	Japan 10yr	EM Local
	2.68	0.24	0.00	6.46

Spreads



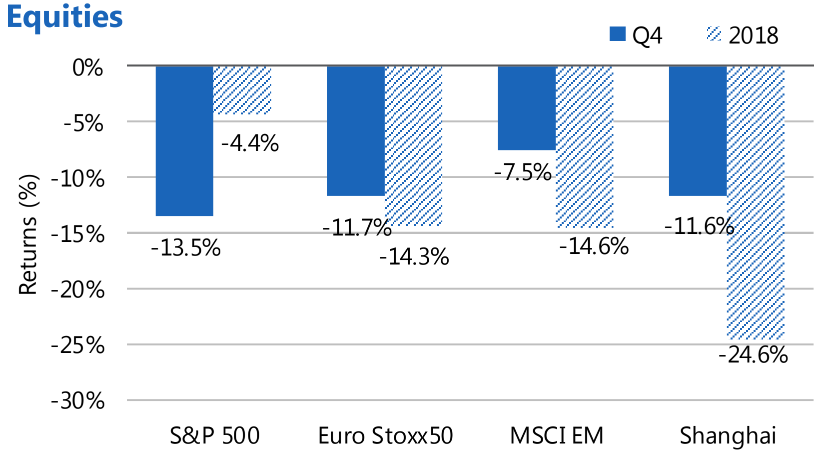
Current levels (bps)	Breakeven inflation	U.S. IG	U.S. HY	EM external
	171	153	526	435

Currencies and commodities



Current levels	EUR	JPY	EM FX	Energy	Industrial metals	Agriculture
	1.15	109.69	364.76	67.75	227.69	86.52

Equities

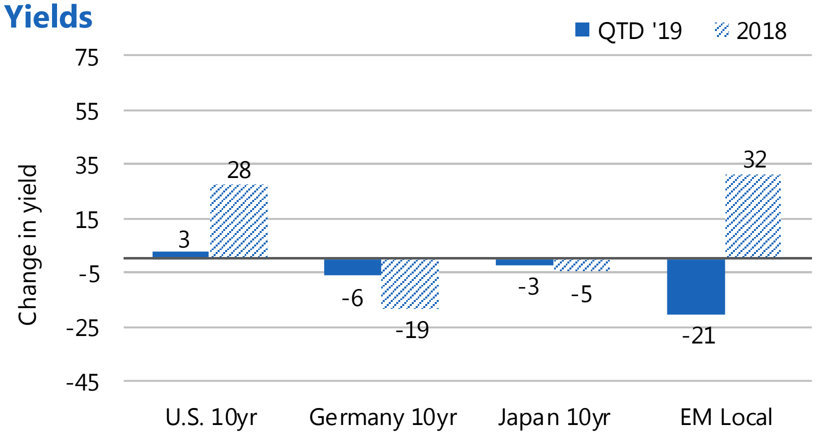


Current levels	S&P 500	Euro Stoxx50	MSCI EM	Shanghai
	2,507	3,001	966	2,494

As of 31 December 2018; SOURCE: PIMCO, Bloomberg. *price levels
Sovereign yields reflect the generic 10yr benchmarks for each country. EM Local is represented by JPMorgan GBI-EM Global Diversified Composite YTM. U.S. TIPS: generic 10yr breakeven rate. U.S. IG: Barclays U.S. Agg Corporate Avg. OAS; U.S. HY: Barclays U.S. Corporate High Yield Average OAS. EM External: JPMorgan EMBI Global Sovereign Spread. EUR and JPY reflect spot returns against the U.S. dollar. EM FX: JPMorgan Emerging Local Markets ELMI+ Composite Total Return. Energy, Industrial Metals, and Agriculture reflect total return sub-indices of the Bloomberg Commodity Index. Equity percent changes capture total returns for S&P 500; Euro Stoxx 50 (cap-weighted index of 50 of the largest stocks from 12 Eurozone countries); MSCI EM; Shanghai Composite Index

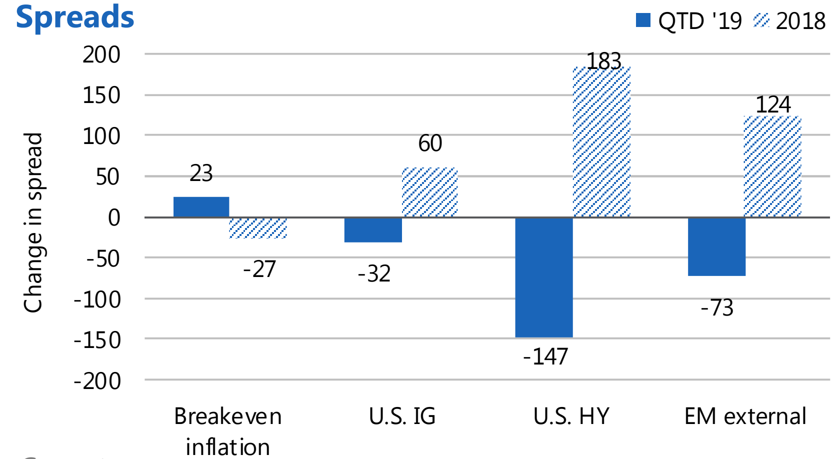
Intra-quarter market update

Yields



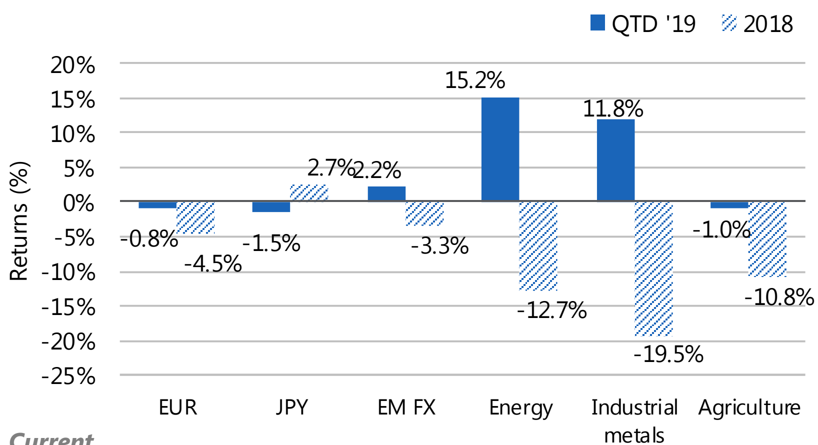
Current levels (%)	2.72	0.18	-0.02	6.25

Spreads



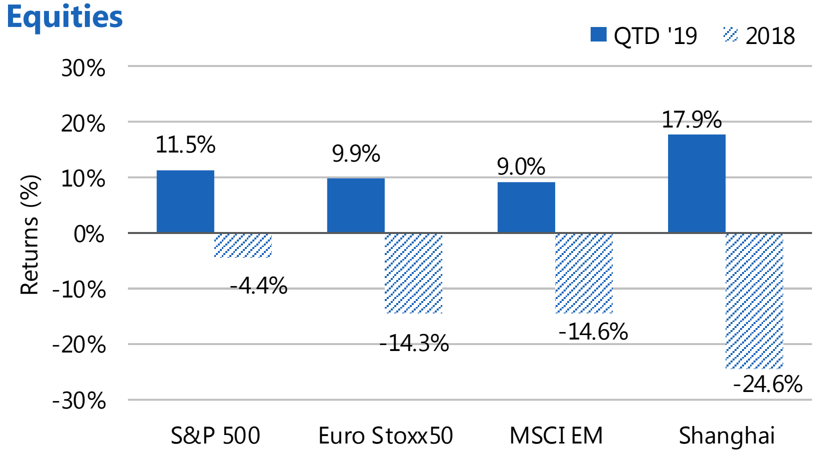
Current levels (bps)	194	121	379	361

Currencies and commodities



Current levels	1.14	111.39	372.84	78.02	254.65	85.67

Equities



Current levels	2,784	3,298	1,051	2,941

As of 28 February 2019; SOURCE: PIMCO, Bloomberg. *price levels
Sovereign yields reflect the generic 10yr benchmarks for each country. EM Local is represented by JPMorgan GBI-EM Global Diversified Composite YTM. U.S. TIPS: generic 10yr breakeven rate. U.S. IG: Barclays U.S. Agg Corporate Avg. OAS; U.S. HY: Barclays U.S. Corporate High Yield Average OAS. EM External: JPMorgan EMBI Global Sovereign Spread. EUR and JPY reflect spot returns against the U.S. dollar. EM FX: JPMorgan Emerging Local Markets ELMI+ Composite Total Return. Energy, Industrial Metals, and Agriculture reflect total return sub-indices of the Bloomberg Commodity Index. Equity percent changes capture total returns for S&P 500; Euro Stoxx 50 (cap-weighted index of 50 of the largest stocks from 12 Eurozone countries); MSCI EM; Shanghai Composite Index

Howard CorePLUS portfolio

Executive Summary YTD Feb ‘19
Howard County, Maryland

WHAT WE THOUGHT

- We expected the U.S. to grow at a moderate pace, keeping the Fed on track for policy normalization
- We expected intermediate U.S. interest rates to be relatively range bound, with any increases outpaced by those abroad
- We believed that housing market strength would be supportive of mortgage-related credit

WHAT HAPPENED

- Most risk assets experienced challenging performance as volatility rose in the quarter. Equities globally ended both the quarter and year lower, while credit spreads widened and developed market yields fell.
- Concerns about slowing growth, along with a slew of other sources of uncertainty – including the Fed’s path of rate increases, turmoil in Washington, Brexit headlines, and the unresolved US-China trade dispute – contributed to diminished investor risk appetites.
- Central banks remained on course for diminished monetary support as the fundamental backdrop remained solid. The Fed hiked for the 4th time in Q4, though lowered its expectations for rate increases in 2019. Meanwhile, the ECB reiterated its intention to end its QE program and to leave rates unchanged until later in 2019.

PORTFOLIO PERFORMANCE

- The Portfolio returned 1.47% YTD (before fees). Its benchmark returned 1.00% YTD.

Contributors	Detractors
• U.S. rate strategies, including duration, curve positioning, and instrument selection • Positions in high-yield corporates • Exposure to the British pound • Positions in Agency and non-Agency MBS	• Non-U.S. duration strategies, including country selection in the eurozone and short duration exposure in select markets • Underweight investment-grade corporate credit

As of 28 February 2019

Our Positioning and Outlook

Underweight overall duration
Favor U.S. interest rate exposure relative to other developed markets

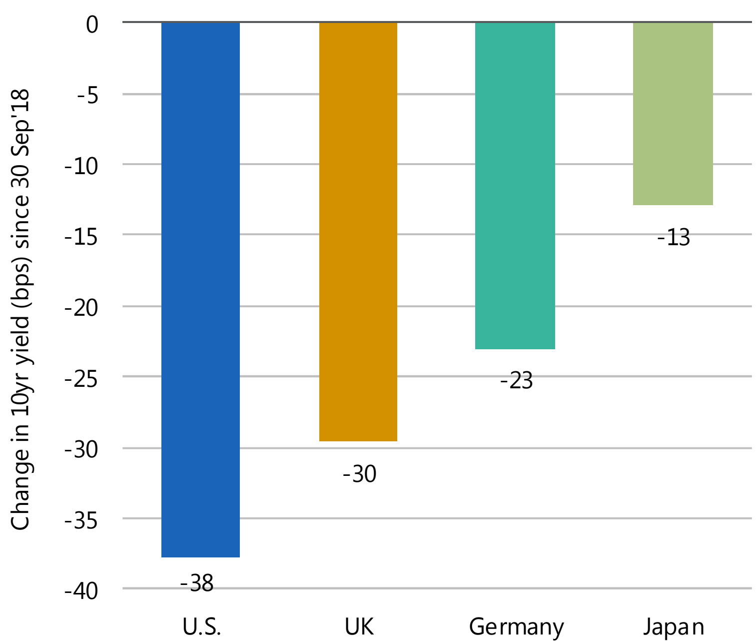
Focus on intermediate maturities
Prefer intermediate portion of the curve against long-end exposure

Selective credit holdings
Opportunistic in corporate credit, favoring housing-related credits and financials

Tactical currency positioning
Less conviction in the overall direction of the dollar

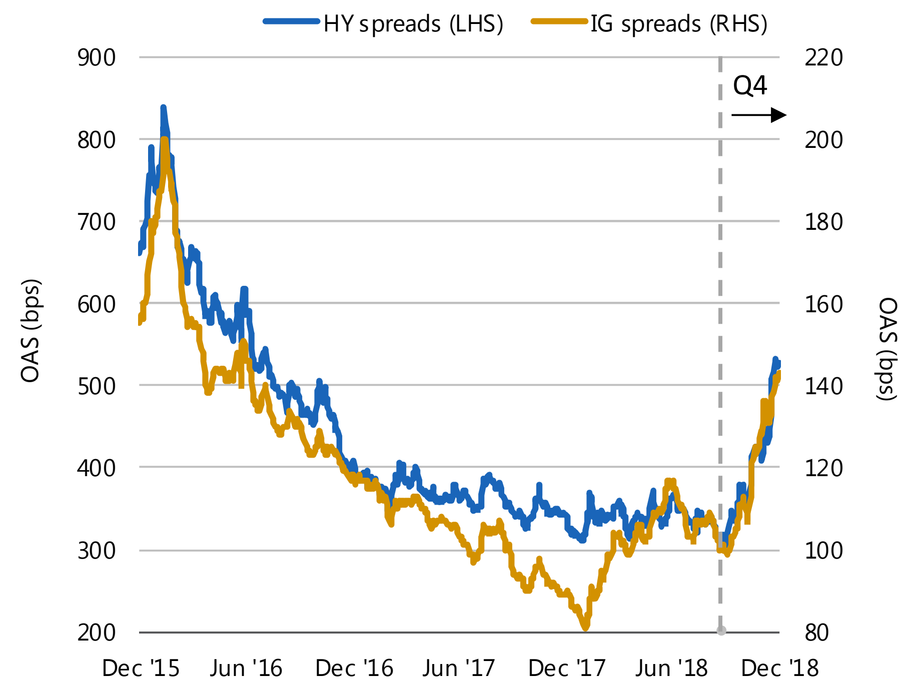
Q4'18: Developed market yields fell while risk sentiment diminished

'Safe-havens' rally



- Volatility in markets contributed to developed market yields falling as risk aversion helped push a 'safe-haven' bid for government bonds
- U.S. yields fell more than those of its counterparts, reflecting in part its higher starting point

Spreads widen



- Credit spreads, both investment-grade and high yield, widened in Q4 in tandem with the broader sell-off in many risk assets
- Mortgage credit, specifically non-agency mortgage-backed securities, also underperformed despite still strong housing fundamentals

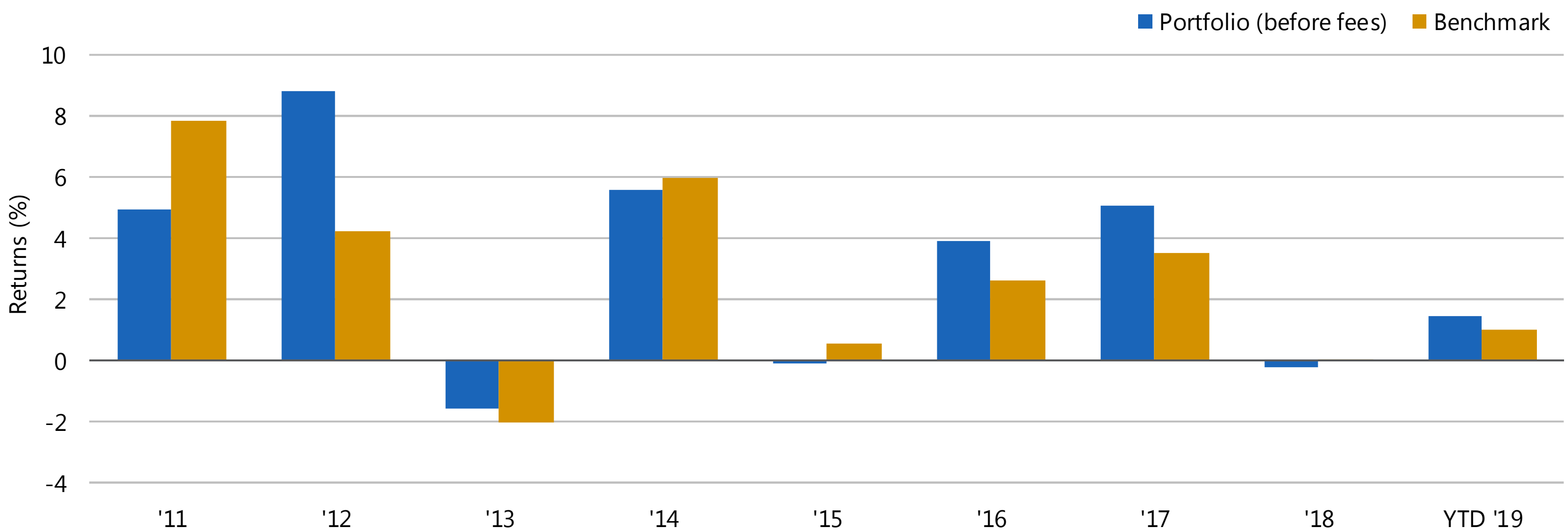
As of 31 December 2018
SOURCE: Bloomberg. "HY spreads" are represented by Bloomberg Barclays US High Yield Avg OAS index. "IG spreads" are represented by Bloomberg Barclays US Agg Credit Avg OAS index.

Howard County, Maryland performance review

Howard County, Maryland

Market value as of Dec '18	$	109,680,175

Performance



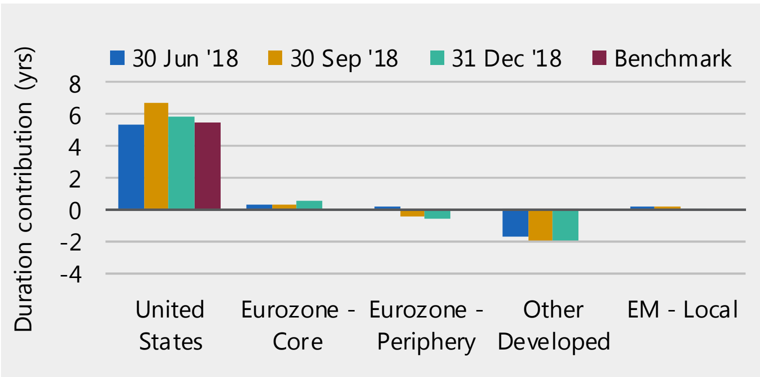
	S.I. 27 Apr '10	5 yrs.	3 yrs.	1 yr.	6 mos.	3 mos.	YTD 28 Feb '19
Before fees (%)	3.6	2.8	2.9	-0.2	1.5	1.4	1.5
After fees (%)	3.2	2.5	2.5	-0.5	1.3	1.3	1.4
Benchmark (%)	3.0	2.5	2.1	0.0	1.7	1.6	1.0

As of 31 December 2018
All periods longer than one year are annualized
Benchmark: Bloomberg Barclays U.S. Aggregate Index

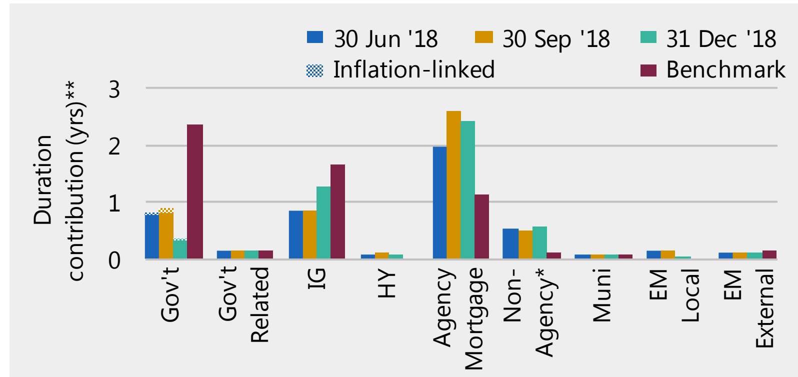
Howard County, Maryland portfolio positioning

Howard County, Maryland		30 Jun '18	30 Sep '18	31 Dec '18
Effective duration (yrs.)	Portfolio	4.0	4.8	3.9
	Index	5.7	5.7	5.5
Total Carry (bps)		481	509	388

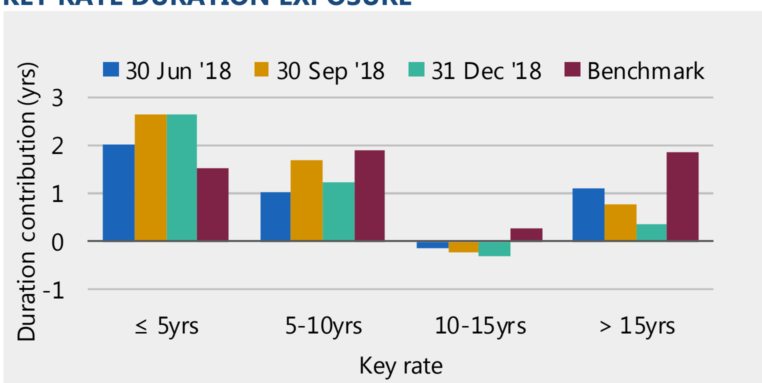
REGIONAL EXPOSURE



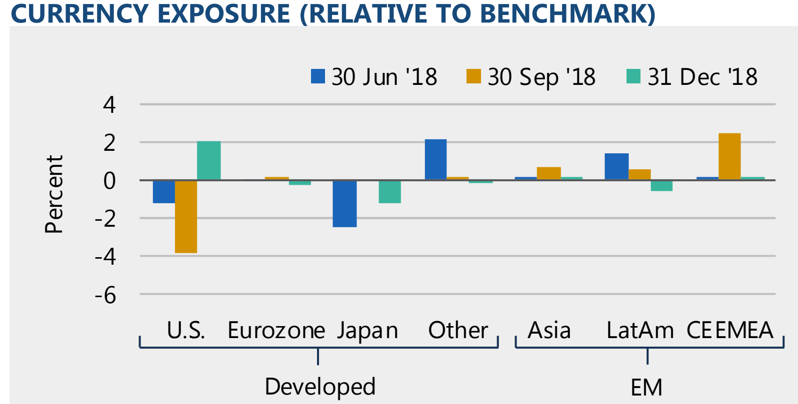
SECTOR EXPOSURE



KEY RATE DURATION EXPOSURE



CURRENCY EXPOSURE (RELATIVE TO BENCHMARK)



As of 31 December 2018
Benchmark: Bloomberg Barclays U.S. Aggregate Index
Benchmark interest rate and spread durations calculated using PIMCO proprietary analytics and risk models
*Non-agency may include non-agency mortgage backed securities, asset backed securities, and commercial mortgage backed securities
**For spread sectors, the relevant spread duration contribution is used

Howard County, Maryland performance attribution – YTD Feb '19

Key Strategies (*bullets reflect Q4'18 attribution*) **Impact**

Interest Rate Strategies

Interest rate strategies detracted from performance • Contributions from U.S. interest rate strategies were more than offset by detractions from non-U.S. duration strategies – including country selection in the eurozone and short duration exposure in select markets – as developed market yields broadly fell YTD	**YTD**	**Negative**
	2018	**Negative**

Spread Sector Strategies

Spread sector strategies contributed to performance • Credit strategies overall contributed to performance: gains from positions in high –yield corporates more than offset detractions from the Portfolio's underweight to investment-grade corporates • Mortgage strategies were positive: both holdings of Agency and non-Agency mortgage-backed securities added to performance	**YTD**	**Positive**
	2018	**Positive**

Currency Strategies

Currency strategies contributed to performance • Tactical positions in select high-carry EM currencies, including the Argentine peso and Russian ruble, contributed to performance • Exposure to the British pound also contributed as the currency strengthened against the U.S. dollar	**YTD**	**Positive**
	2018	**Negative**

As of 28 February 2019

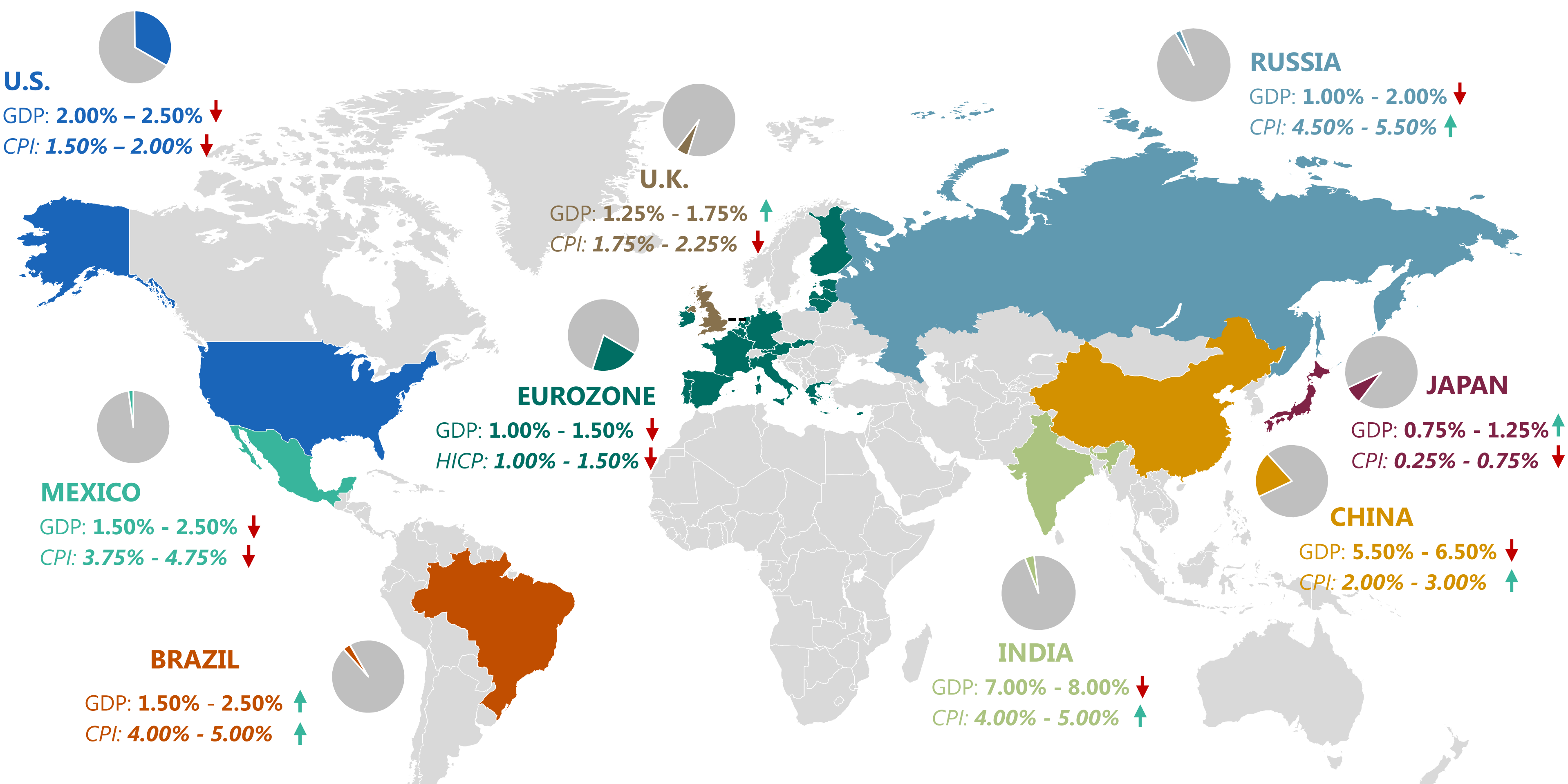
Strategic outlook – select investment themes in Total Return

	Position	Rationale
Duration	**Favor U.S. over international**	• We are underweight duration overall. We have a preference for U.S. duration against exposure in other developed regions, including the U.K. and Japan. • We expect rates in the U.S. to be relatively range bound but positioning in Japan serves as a cheap hedge against global rates moving higher. U.K. rates may also face pressure as its central bank shifts toward reducing accommodation.
Curve positioning	**Prefer intermediate portion of the yield curve**	• We prefer the intermediate portion of the curve as we believe rates are likely to be range bound in the near-term. • We see less value in the long end of the yield curve as less accommodation from global central banks and the possibility of rising inflation expectations could cause the yield curve to steepen
Credit Selection	**Opportunistic in IG corporates, favoring other types of credit**	• We are underweight IG corporate credit and instead maintain a more diversified, broader credit mix. • We find attractive opportunities in specific credits that benefit from U.S. growth and a resurgent housing sector, and we remain opportunistic by looking to add exposure during market dislocations. • We see value in banks and select financial companies and housing-related credits • We have modestly increased our position in TIPS given the recent move lower in breakevens. They are compelling as an alpha source, as well as a hedge against upside surprises in inflation.
Currency positioning	**Tactical currency exposure**	• We remain tactical with currency positioning, particularly given less conviction in the overall direction of the dollar. • We have some modest tactical positioning in select DM currencies and will continue to seek opportunities from overshoots and undershoots that provide attractive risk-reward profiles and the ability to diversify sources of return.

As of 28 February 2019
SOURCE: PIMCO

Economic outlook

PIMCO's 2019 Cyclical Outlook
Synching lower



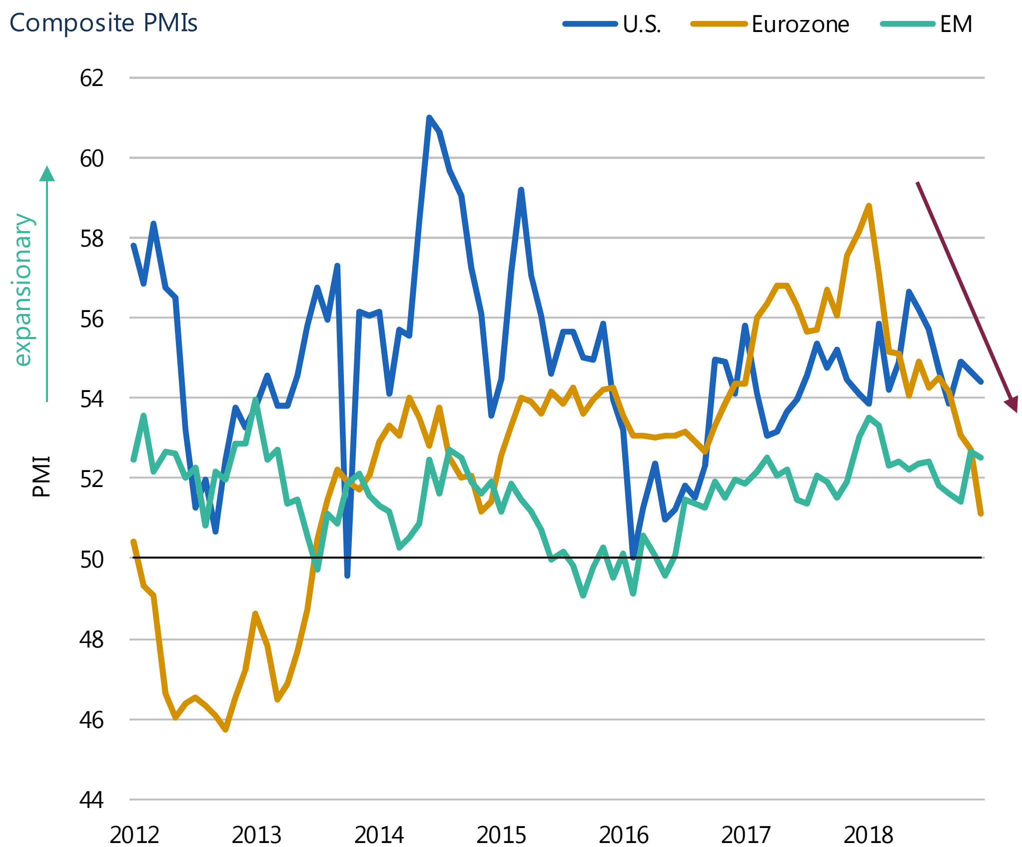
% of world GDP

Change relative to 2018 data

Forecasts	GDP		Inflation	
	2018	2019	2018	2019
Developed Markets	2.20	1.50-2.00	2.00	1.25-1.75
Emerging Markets	5.40	4.75-5.75	2.90	2.75-3.75
World	3.30	2.75-3.25	2.30	1.75-2.25

For illustrative purposes only.
PIMCO forecast ranges as of December 2018
Real GDP and inflation projections reflect the midpoints of PIMCO's forecast ranges.
Refer to Appendix for additional forecast, outlook and risk information.

2019 Cyclical Outlook: *Synching Lower*



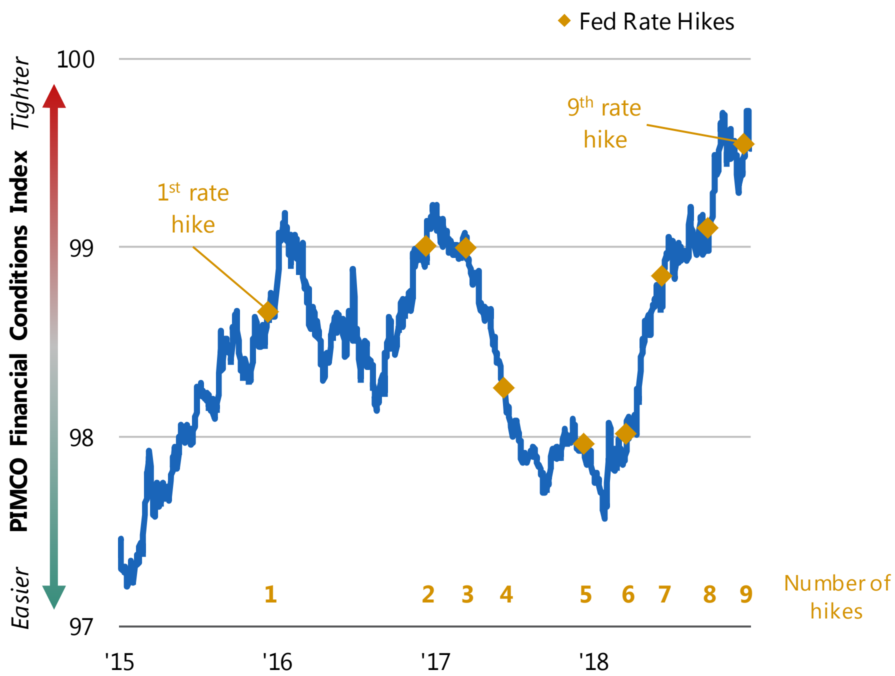
Debates shaping the outlook for 2019:

1. *How late is it in the cycle?*
2. *The end of U.S. economic exceptionalism?*
3. *Will inflation ever return?*
4. *The Fed pauses, then what?*
5. *U.S. versus China: truce or peace?*

As of 31 December 2018
SOURCE: Haver Analytics
Refer to Appendix for additional outlook information.

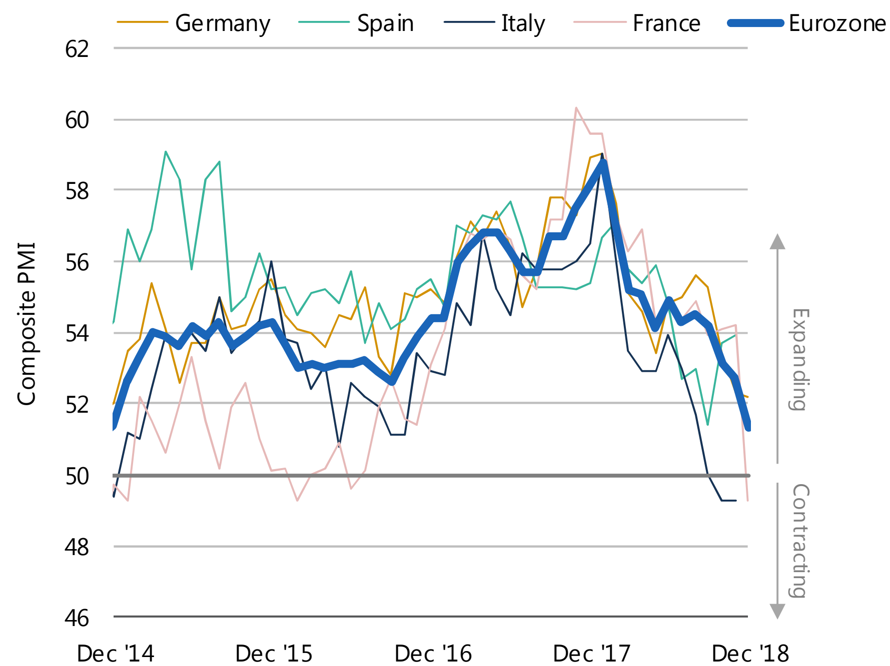
Developed Markets: Growth momentum slowing

Tightening now



Tighter financial conditions as the Fed has continued to raise rates will likely weigh on growth momentum in the U.S. in 2019

Europe takes a plunge



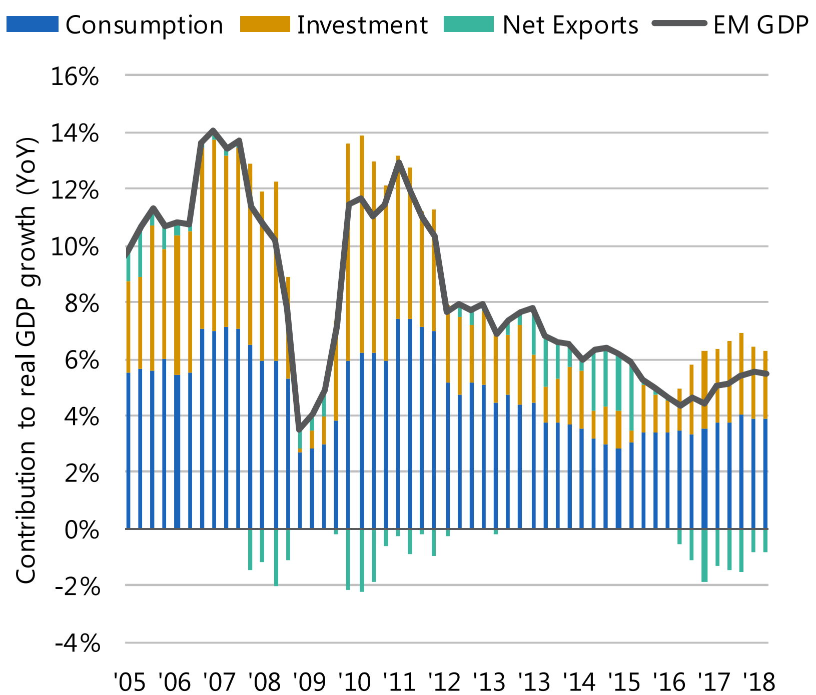
Eurozone PMIs continue to sink lower, with some entering contraction territory amid political turmoil in Italy and France

Tighter financial conditions in the U.S. suggest dampened momentum as global growth also slows

As of 31 December 2018
SOURCE: PIMCO, Bloomberg
*8 November 2018 marked a high point for U.S. interest rates, with the 10yr reaching a 7yr high

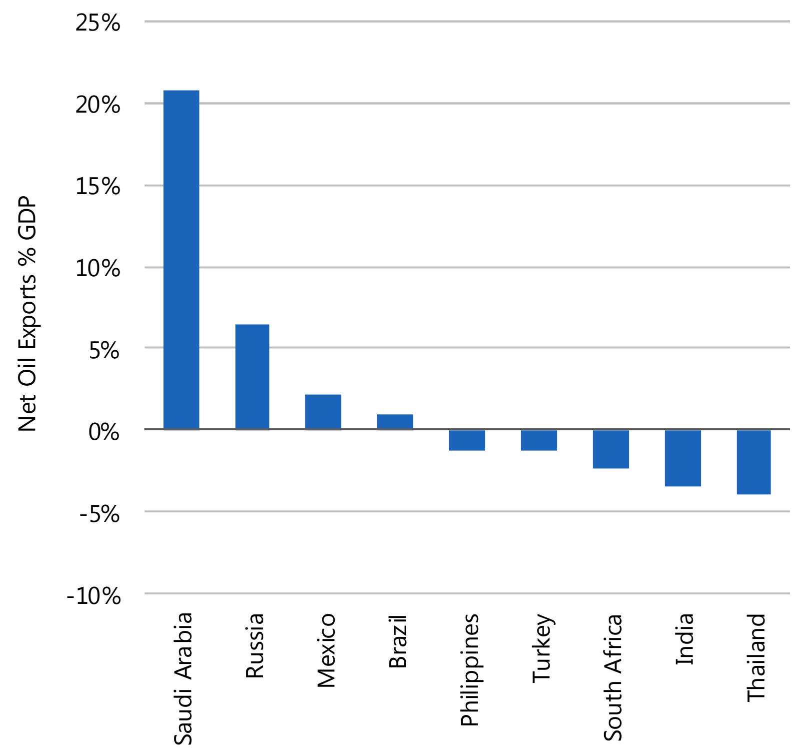
Emerging Markets: Generally supportive domestic fundamentals alongside differentiated impact of oil prices

A touch of consumption



EM growth is supported by investment and domestic consumption, indicating more resiliency even as global growth slows

Mixed barrel

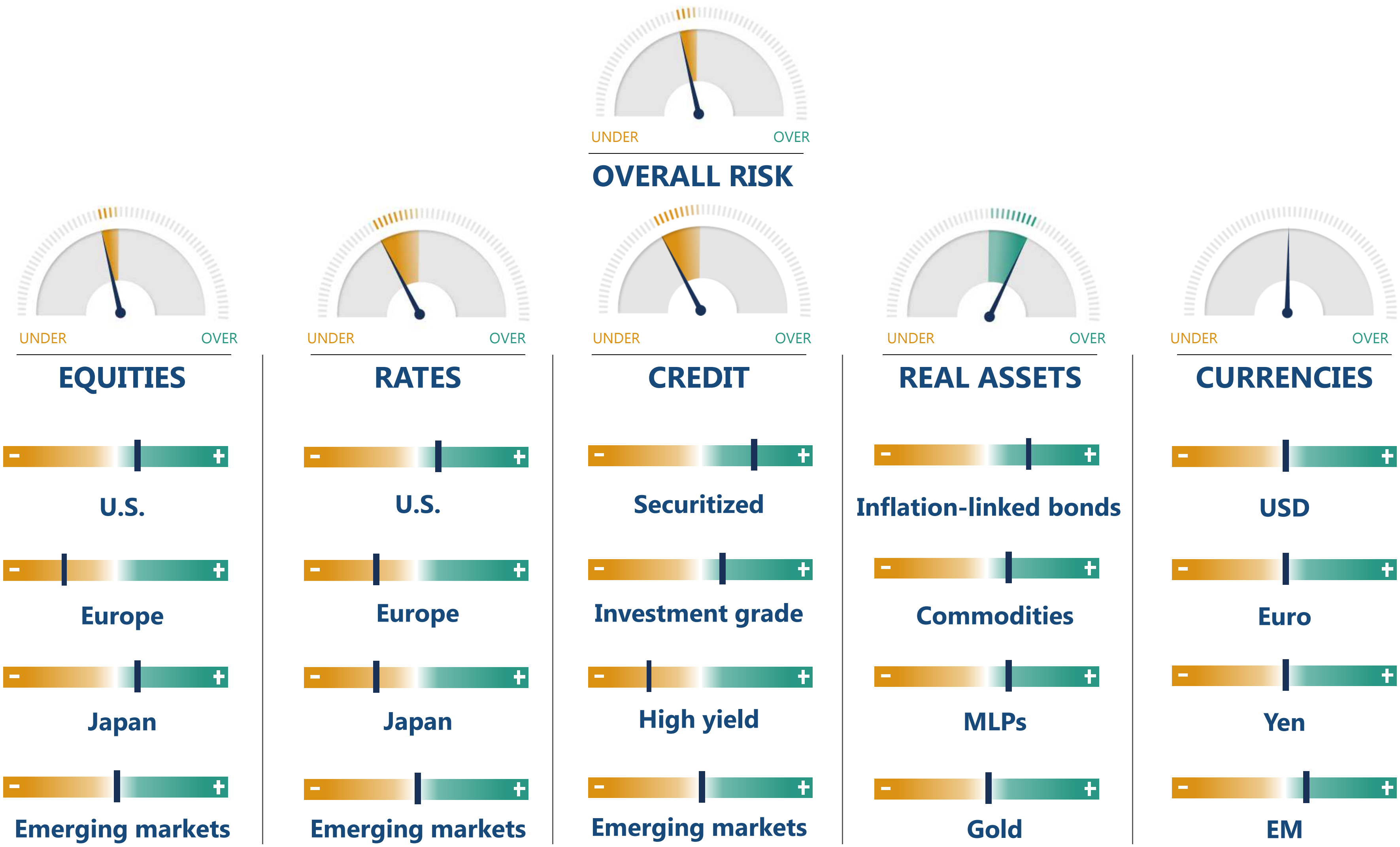


A lower oil price environment will put pressure on certain non-diversified exporters while helping oil importers

Diversified sources of growth provide some resiliency against a more uncertain external backdrop

As of 31 December 2018 or latest available
SOURCE: PIMCO, Haver, IMF WEO
Left chart is based on aggregated data from the following countries: Brazil, Russia, India, Mexico, Korea, Indonesia, Turkey, Poland, Taiwan, Colombia, Thailand, South Africa, Malaysia, Singapore, Hong Kong, Philippines, Chile, Peru, Czech Republic, Hungary.

Overall views across multi-asset portfolios



As of 31 December 2018.
SOURCE: PIMCO

PIMCO update

PIMCO: Focused on preserving and enhancing assets

PIMCO Today

Assets under management

- $1.66 trillion[1]

Deep global resources and expertise

- Over 2,500 total employees
  - 797 investment professionals
  - 255 portfolio managers with 16 years average investment experience
  - 50+ countries in which clients are based*
- PIMCO Global Advisory Board

Time-tested investment philosophy

- Diversified set of alpha engines
  - Top Down
  - Bottom Up
  - Structural tilts

Looking Ahead

What We Stand For

- PIMCO is committed to being the world's premier fixed income investment manager

Client objectives driving focus

- Expanding expertise and growing our capabilities across fixed income, quantitative investing and alternative strategies
  - Acquisition of Gurtin Municipal Bond Management to offer clients a more extensive and enhanced suite of municipal strategies and services
- Investing in technology to bolster capabilities
  - Announced partnership with The Center for Decision Research at the University of Chicago Booth School

Industry leading and community minded

- Greenwich Quality Leader 2017 in Overall U.S. Investment Management Service Quality
- In 2018, PIMCO employees, friends and family volunteered more than 14,000 hours across 262 events and projects globally
- UNPRI Assessment Report 2018 recently upgraded PIMCO from A to A+ rating across all categories

December Cyclical Forum – Synching Lower

- While the expansion has been aging gracefully, we believe the global economy is past peak growth in the cycle.
- In this environment, we see substantial option value in leaving room in our risk budget to respond either to specific opportunities or to a broad spread widening and rise in volatility.

As of 31 December 2018. *Based on client account tax domicile
[1] Effective 31 March 2012, PIMCO began reporting the assets managed on behalf of its parent's affiliated companies as part of its assets under management.
Greenwich Associates accolade is based on interviews conducted by Greenwich Associates, between July and October 2017, with 1,059 senior professionals at 884 of the largest tax-exempt funds in the United States, including corporate and union funds, public funds, endowments and foundations, insurance general accounts, and healthcare organizations with either pension or investment pool assets greater than $150 million. Study participants were asked to provide quantitative and qualitative evaluations of their asset management and investment consulting providers, including qualitative assessments of those firms soliciting their business and detailed information on important market trends. The Greenwich Quality LeaderSM is determined entirely by the results of the interviews described above and do not represent opinions or endorsements by Greenwich Associates or its staff. Such designations are a product of numerical scores in Greenwich Associates' proprietary studies that are generated from the study interviews and are based on a statistical significance confidence level of at least 80%. © 2018 Greenwich Associates, LLC.
UNPRI assessment report limited to asset managers signed up to the Principles for Responsible Investment (PRI) and based on how well ESG metrics are incorporated into their investment processes. UNPRI Transparency Reports 2018 are available at https://www.unpri.org/signatories/transparency-reports-2018/3350.article. For methodology, please refer to About PRI Assessment: https://www.unpri.org/signatories/about-pri-assessment.

Assets under management by strategy

PIMCO manages $1.66 trillion in assets, including $1.28 trillion in third-party client assets

		Billions ($)
Alternatives		
Hedge Funds	Global macro, long/short credit, multi-asset volatility arbitrage strategies, relative value commodities	20.12
Liquid Absolute Return	Dynamic Bond strategies, Credit Opportunities Bond, other absolute return strategies	19.34
Opportunistic/Distressed	Opportunistic strategies focusing on real estate related assets (residential, commercial), corporate credit	10.54
Asset Allocation		
Asset Allocation Strategies	Global Multi Asset, All Asset, EM Multi Asset, RealPath, Inflation-Response Multi Asset, DRA	32.17
Equities		
Equity Strategies	Enhanced equities and active equities	25.66
Real Return		
Real Return Strategies	Inflation linked strategies, actively managed commodities, and real-estate linked exposure	53.88
Fixed Income		
Total Return[1-2]	Total Return	82.15
Intermediate[2]	Core Strategies, Moderate Duration	101.41
Credit	Investment Grade Credits, Bank Loans, High Yield	192.07
Long Duration	Focus on long-term bonds; asset liability management	162.79
Income	Income-oriented, insurance income	234.73
Global	International and global multiple currency formats	107.50
Cash Management[2]	Money Market, Short-Term, Low Duration	119.44
Emerging Markets	Local debt, external debt, currency	33.94
Mortgages	Agency MBS, structured credit (non-Agency MBS, CMBS, and ABS)	35.91
Diversified Income	Global credit combining corporate and emerging markets debt	19.58
Municipals	Tax-efficient total return management	16.11
Other	Custom mandates	9.56
Total assets under management		**$ 1,276.89 B**
Stable Value[2]	Stable income with emphasis on principal stability	21.24
Tail-Risk Hedging[3]	Pooled and customized portfolios of actively managed tail-risk hedges	29.27

As of 31 December 2018. SOURCE: PIMCO. **Past performance is not a guarantee or a reliable indicator of future results.**

Assets reflect those managed on behalf of third-party clients and exclude affiliated assets. Fund of funds assets have been netted from each strategy Potential differences in asset totals are due to rounding.

[1] Total Return has been segregated to isolate the assets of PIMCO sponsored U.S. Total Return 1940-act fund and foreign pool fund accounts. All other U.S. Total Return portfolios are included in the Intermediate category

[2] Stable value assets have not been netted from U.S. Total Return, U.S. Moderate Duration and U.S. Low Duration assets

[3] Tail-risk hedging assets reflect total notional value of dedicated mandates and are not counted towards PIMCO total assets under management