Capital Markets Review

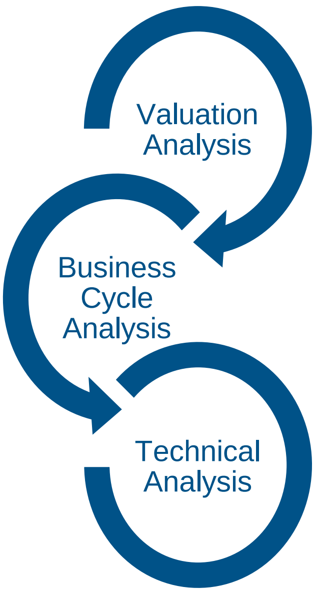
Fourth Quarter 2019

PNC
INSTITUTIONAL
ASSET MANAGEMENT

Capital Markets Review
Introduction

PNC INSTITUTIONAL ASSET MANAGEMENT

Key Themes as They Relate to Our Investment Process



What potential investment opportunities look attractive or unattractive? *Long term*

- Identifies investment opportunities while maintaining a long-term view;
- Is imperative for longer-term return expectations, but not as useful for near-term market forecasts; and
- Is an asset over/undervalued relative to history/other assets?

Where have we been, where are we going? *Medium term*

- Business cycle growth underpins corporate earnings cycle;
- Helps calibrate current valuation level; and
- Stages of the business cycle and their impact on asset class, sector, and industry performance: *slowing expansion, contraction, recovery,* and *accelerating expansion.*

When should we implement? *Short term*

- Supports shorter-term execution; and
- What are price trends telling us about near-term market behavior?

Valuation Analysis

- The S&P 500® price-to-earnings (P/E) multiple expanded throughout the fourth quarter, aided by increasingly accommodative monetary policy and relief from ongoing geopolitical tensions. At 18.2 times (x), the S&P 500 forward P/E is not overly expensive in our view, with the 30-year average just 16.0x. We believe current valuations remain reasonable/supportive and could expand if earnings estimates accelerate. The divergence between US and international market valuations remains wide (18.2x versus 14.6x).

Business Cycle Analysis

- We believe the current backdrop is consistent with a slowing expansion phase of the business cycle, accompanied by equity market gains, higher volatility, and a more defensive leadership profile. Our Recession Risk Indicator reads 69.0, suggesting the probability of a recession occurring over the next two years is elevated but not imminent. From a fundamental perspective, we see the potential for a short-term cyclical acceleration in early 2020, which also could further alleviate some pressure on the indicator.

- In our view, it is common for multiple short-term cycles to occur within broader economic expansions. The current expansion has experienced multiple periods of growth acceleration/deceleration without falling into an economic recession.

- Despite recent improvements, most soft data suggest geopolitical uncertainties have taken a toll on business sentiment. The cumulative impact on corporate confidence is curbing the capital investment necessary to boost productivity and extend the expansion. Although growth abroad has slowed, the global economy is growing closer to the long-run average and could see a bit of reacceleration into 2020, in our view.

Technical Analysis

- Most major markets are well above long-term moving averages, suggesting overbought conditions; however, long-term trends appear positively intact. Correlations and breadth are at healthy, supportive levels.

PNC INSTITUTIONAL ASSET MANAGEMENT

Investment Philosophy

We believe markets can be inefficient and investment opportunities are ever-changing. A thorough understanding of the past, combined with rigorous analysis of the present, gives us insight into the most probable future outcomes.

How We Invest

Focused on Goals

Our process begins by understanding each client's needs and objectives.

Flexible

We build portfolios tailored to each client's unique investment needs, restrictions, and values.

Deep Analysis

Robust quantitative analyses combined with strong qualitative research can help generate meaningful insight not attainable by either method on its own, so we use both to help derive the most optimal portfolio solutions for clients.

Our Approach to Markets

Dynamic

Markets evolve and portfolios need to adjust accordingly to generate superior returns.

Long-Term View

While markets are ever-changing, we believe patient investors can capitalize on persistent long-term trends.

Value Oriented

We seek to identify investment opportunities that are undervalued and/or mispriced by the market.

How We Construct Portfolios

Integrated

Our strategy, manager research, and portfolio management teams work together so that our best thinking is reflected in each investment decision.

Open Architecture

We believe skilled active managers exist and can be identified, but there are sectors and times when passive implementations are optimal.

Transparent

Investors who know what they own, and why, typically have greater conviction in their portfolios and may get better results because they stay the course when markets are stressed.

We strive to be clear and set expectations up front to help investors have confidence in what they own.

Always with an Eye on Risk

There are many risks to worry about when investing, including shortfall, volatility, unintended exposure, liquidity, and operational risks.

We use a rigorous risk management framework monitoring all of these risks to help maximize the probability of investors reaching their goals.

Executive Summary

Topic	Commentary
US Economy	▪ Third-quarter GDP expanded by an annualized rate of 2.1%, a sequential improvement. The consumer remains the workhorse of the US economy. ▪ PNC forecasts full-year 2019 growth of 2.3%, with 2020 coming in at 1.8%, consistent with a slowing expansion phase of the business cycle.
International Economy	▪ Global growth continues to moderate, but accommodative monetary policy, a reprieve from escalating trade tensions, and easier financial conditions are key positives. ▪ We continue to believe the stabilization of the Chinese economy is critical to alleviating concerns about global growth and extending the current cycle.
Global Monetary Policy	▪ Major central banks have now completely pivoted away from the global rate-hiking cycle. The Federal Reserve (Fed), European Central Bank, and Bank of Japan responded deliberately to weakening soft economic data and market expectations by cutting interest rates and lowering growth forecasts. ▪ After three 25 basis point (bps) rate cuts in 2019, the Fed reported it would only adjust policy if there is a “material” change to the US economic outlook. A Fed “on hold” should be a positive for asset prices, in our view, and help preserve policy ammunition if economic fundamentals deteriorate.
Corporate Earnings	▪ While S&P 500® constituents posted slightly negative earnings growth for the third quarter, revenue growth remained positive on a per-share basis. Earnings growth contracted 2.2% and sales growth ticked up 3.1%. ▪ Notable downside surprises from a few larger companies skewed overall earnings metrics lower. In fact, the median earnings growth rate for the S&P 500 was actually positive.
US Equity Markets	▪ US equity markets rose throughout the quarter along with accommodative monetary policy, better-than-feared earnings growth, and a reprieve from trade tensions. ▪ Merger and acquisition activity has proven to be a popular strategy; at this stage in the economic cycle, it seems buy-versus-build decisions are turning to buy.
International Equity Markets	▪ International equities trailed domestic markets but posted strong returns over the quarter. Despite these increases, the MSCI World ex-US Index continues to trade at a more than three-turn valuation discount (three multiple points lower) to US equities. ▪ We believe short- and long-term catalysts, such as demographic and societal improvements, help support a path higher for emerging market equities.
Fixed Income Markets	▪ The Bloomberg Barclays Aggregate Index posted its best performing year of the business cycle on the back of the Fed’s dovish monetary policy pivot. ▪ Investment-grade and high-yield corporate spreads tightened throughout 2019, making it a challenge, in our view, to repeat that level of performance in 2020.
Alternative Assets	▪ We believe asset classes that are historically less correlated to traditional stocks and bonds have the potential to add value, with volatility remaining elevated at this later stage in the cycle.
Foreign Exchange	▪ The dollar depreciated in the fourth quarter as global manufacturing contracted and most major central banks cut interest rates. The PNC Economics team expects global economic growth to stabilize in 2020, which may allow the dollar to depreciate.

PNC INSTITUTIONAL ASSET MANAGEMENT

“The Good, the Bad, and the Ugly”

The “Good”

- Global economic growth
- Strong US consumer
- Corporate earnings revisions
- Absolute valuations
- Share buyback activity
- M&A uptick
- Federal Reserve *hold*
- China stimulus efforts
- Tight labor market
- 5G technology innovation
- Fewer regulations (energy, etc.)
- Well-behaved credit spreads
- Return of alpha

The “Bad”

- Protectionist/currency policies
- Corporate confidence
- Slowdown in net-new capex
- European Central Bank policy
- Weak German manufacturing outlook
- Yield curve compression
- Dollar “strength?”
- Rising Brexit uncertainty
- Crowded factor trades
- Bank of Japan
- Unicorn IPO disappointments*
- Stakeholders over shareholders?
- Rising geopolitical tensions

“Ugly”

- Political polarization/global populism
- US-China power struggle
- Widespread policy accommodation
- Turkey/Venezuela/S. Africa
- “Nonbank” lending
- Global deficits/debt levels
- Entitlement spending
- Potential pension underfunding

**Initial public offerings valued at >$1 billion in market capitalization*

Orange bullets denote changes relative to the prior version

2017
“Investment Nirvana”

2018
“Heavy Mettle” Needed
(Led Zeppelin)

2019
“Don’t Stop Believing”

Capital Markets Review

Introduction

PNC INSTITUTIONAL ASSET MANAGEMENT

Major Asset Class Returns

As of : 12/31/2019		Trailing Total Returns				
Asset Class	Market/Style Index	Quarter to Date	Twelve Months	Three Years	Five Years	Ten Years
U.S. Equity	Russell 3000	9.10%	31.02%	14.57%	11.24%	13.42%
Large Cap	S&P 500	9.07%	31.49%	15.27%	11.70%	13.56%
Value	S&P 500 Value	9.93%	31.93%	11.49%	9.52%	12.16%
Growth	S&P 500 Growth	8.32%	31.13%	18.66%	13.52%	14.78%
Mid Cap	S&P 400	7.06%	26.20%	9.26%	9.03%	12.72%
Value	S&P 400 Value	7.41%	26.08%	7.66%	8.07%	12.16%
Growth	S&P 400 Growth	6.73%	26.29%	10.74%	9.72%	13.16%
Small Cap	Russell 2000	9.94%	25.52%	8.59%	8.23%	11.83%
Value	Russell 2000 Value	8.49%	22.39%	4.77%	6.99%	10.56%
Growth	Russell 2000 Growth	11.39%	28.48%	12.49%	9.34%	13.01%
REITs	FTSE NAREIT All-Equity REITs	0.13%	28.66%	10.29%	8.43%	12.59%
Infrastructure	S&P Global Infrastructure	5.12%	26.99%	11.35%	6.57%	7.73%
International Equity***	MSCI ACWI Ex USA IMI (USD)	9.20%	21.63%	9.84%	5.71%	5.21%
Intl. Large/Mid Cap	MSCI World Ex USA	7.86%	22.49%	9.34%	5.42%	5.32%
Value	MSCI World Ex USA Value	7.56%	17.02%	6.36%	3.59%	4.05%
Growth	MSCI World Ex USA Growth	8.09%	27.92%	12.34%	7.18%	6.51%
Intl. Small Cap	MSCI World Ex USA Small Cap	11.40%	25.41%	10.42%	8.17%	8.04%
Value	MSCI World Ex USA Small Value	11.19%	22.83%	8.65%	6.93%	7.27%
Growth	MSCI World Ex USA Small Growth	11.59%	28.04%	12.23%	9.40%	8.80%
Emerging Market	MSCI Emerging Market	11.84%	18.42%	11.57%	5.61%	3.68%
Fixed Income						
Municipal Short-Term	Barclays Municipal 1-3 Yr	0.70%	2.85%	1.91%	1.34%	1.32%
Municipal	Barclays Municipal	0.74%	7.54%	4.72%	3.53%	4.34%
Core Short-Term	Barclays U.S. Aggregate 1-3 Yr	0.57%	4.04%	2.16%	1.69%	1.56%
U.S. Core	Barclays U.S. Aggregate	0.18%	8.72%	4.03%	3.05%	3.75%
Taxable Intermediate	Barclays U.S. Govt/Credit Interm.	0.37%	6.80%	3.24%	2.57%	3.05%
Taxable Long	Barclays U.S. Govt/Credit Long	-1.12%	19.59%	8.07%	5.42%	7.59%
U.S. High Yield	Barclays U.S. Corporate High Yield	2.61%	14.32%	6.37%	6.13%	7.57%
U.S. Leveraged Loans	S&P/LSTA U.S. Leveraged Loans	2.25%	10.65%	4.35%	4.14%	4.71%
Intl. Developed Bond	Barclays Global Agg. Ex-USA	0.67%	5.77%	4.45%	1.90%	1.80%
Emerging Market Bond	Barclays EM Debt USD Aggregate	2.09%	13.11%	6.07%	5.84%	6.62%
Inflation-Linked Bonds	Barclays U.S. Treasury TIPS	0.79%	8.43%	3.32%	2.62%	3.36%
Cash	Barclays U.S. Treasury Bill 1-3 M	0.44%	2.21%	1.61%	1.02%	0.55%
Alternative Assets						
Hedge Funds	HFRX Global Hedge Fund*	2.57%	8.62%	2.41%	1.19%	1.11%
Equity Hedge	HFRX Equity Hedge*	2.63%	10.71%	3.32%	1.52%	1.16%
Event Driven	HFRX Event Driven*	5.45%	9.96%	1.13%	1.34%	1.84%
Macro-CTA	HFRX Macro*	-0.20%	4.84%	1.31%	-0.21%	-0.55%
Relative Value	HFRX Relative Value*	1.63%	6.55%	3.01%	1.37%	1.34%
Private Equity	Cambridge U.S. Private Equity**	3.44%	10.49%	15.55%	11.71%	14.75%
Private Debt	Barclays U.S. High Yield (Caa-Rated)	3.74%	9.52%	5.15%	6.08%	7.74%
Private Real Estate	NCREIF Property Index**	1.41%	6.25%	6.77%	8.57%	9.77%
Timber	NCREIF Timber**	0.11%	2.38%	3.27%	4.62%	3.74%
Commodities	Bloomberg Commodity	4.42%	7.69%	-0.94%	-3.92%	-4.73%
Master Limited Partnerships	Alerian MLP	-4.08%	6.56%	-4.45%	-7.00%	4.19%

Source: PNC, Standard & Poor's, FTSE Russell, MSCI, Bloomberg Barclays, HFR indexes, Cambridge Associates, NCREIF

*HFR indexes subject to multiple revisions: Flash-Estimate - 5th business day, Mid-Estimate -15th of Month; End-Estimate 1st of following month
**Private Alternative Investments subject to reporting lag; Data are available as of most recent reported data. 2nd Quarter 2019
***All International Equity Returns dollar-denominated; net basis

PNC INSTITUTIONAL ASSET MANAGEMENT

Major Asset Class Returns Quilt

Constant rotation in asset class leadership calls for thoughtful diversification.

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Core Bonds 5.2%	Emerging Markets 78.9%	Real Estate 27.9%	Municipal Bonds 10.7%	Real Estate 19.7%	Small-Cap 38.8%	Real Estate 28.0%	Large-Cap Growth 5.5%	Small-Cap 21.3%	Emerging Markets 37.8%	Municipal Bonds 1.3%	Large Cap Value 31.9%
Municipal Bonds -2.5%	High Yield 58.2%	Small-Cap 26.8%	Real Estate 8.3%	Emerging Markets 18.6%	Mid-Cap 33.5%	Large-Cap Growth 14.9%	Municipal Bonds 3.3%	Mid-Cap 20.7%	Large-Cap Growth 27.4%	Core Bonds 0.0%	Large-Cap 31.5%
Hedge Funds -23.3%	Mid-Cap 37.3%	Mid-Cap 26.6%	Core Bonds 7.8%	International Developed 18.0%	Large-Cap Growth 32.7%	Large-Cap 13.7%	Real Estate 2.8%	Large-Cap Value 17.4%	International Developed 25.7%	Large-Cap Growth 0.0%	Large Cap Growth 31.1%
High Yield -26.2%	International Developed 32.6%	Emerging Markets 19.2%	High Yield 5.0%	Mid-Cap 17.8%	Large-Cap 32.4%	Large-Cap Value 12.3%	Large-Cap 1.4%	High Yield 17.1%	Large-Cap 21.8%	High Yield -2.1%	Real Estate 28.7%
Small-Cap -33.8%	Large-Cap Growth 31.5%	High Yield 15.1%	Large-Cap Growth 4.6%	Large-Cap Value 17.7%	Large-Cap Value 32.0%	Mid-Cap 9.7%	Core Bonds 0.5%	Large-Cap 12.0%	Mid-Cap 16.2%	Real Estate -4.0%	Mid-Cap 26.2%
Large-Cap Growth -34.9%	Real Estate 28.0%	Large-Cap Value 15.1%	Large-Cap 2.11%	Small-Cap 16.4%	International Developed 23.4%	Municipal Bonds 9.1%	International Developed -0.3%	Emerging Markets 11.8%	Large-Cap Value 15.4%	Large-Cap -4.4%	Small Cap 25.5%
Mid-Cap -36.2%	Small-Cap 27.1%	Large-Cap 15.1%	Large-Cap Value -0.1%	Large-Cap 16.0%	High Yield 7.4%	Core Bonds 6.0%	Mid-Cap -2.2%	Real Estate 8.6%	Small-Cap 14.6%	Hedge Funds -6.7%	International Developed 21.6%
Large-Cap -37.0%	Large-Cap 26.4%	Large-Cap Growth 15%	Mid-Cap -1.7%	High Yield 15.8%	Hedge Funds 6.7%	Small-Cap 4.9%	Large-Cap Value -3.1%	Large-Cap Growth 6.9%	Real Estate 8.7%	Large-Cap Value -9.0%	Emerging Markets 18.4%
Real Estate -37.7%	Large-Cap Value 21.2%	International Developed 8.3%	Small-Cap -4.2%	Large-Cap Growth 14.6%	Real Estate 2.9%	High Yield 2.5%	Hedge Funds -3.6%	Core Bonds 2.6%	High Yield 7.5%	Small-Cap -11%	High Yield 14.3%
Large-Cap Value -39.2%	Hedge Funds 13.4%	Core Bonds 6.5%	Hedge Funds -8.9%	Municipal Bonds 6.8%	Core Bonds -2.0%	Hedge Funds -0.6%	Small-Cap -4.4%	Hedge Funds 2.5%	Hedge Funds 6.0%	Mid-Cap -11.1%	Core Bonds 8.7%
International Developed -43.0%	Municipal Bonds 12.9%	Hedge Funds 5.2%	International Developed -11.7%	Core Bonds 4.2%	Emerging Markets -2.3%	Emerging Markets -2.0%	High Yield -4.5%	International Developed 1.6%	Municipal Bonds 5.4%	International Developed -13.3%	Hedge Funds 8.6%
Emerging Markets -53.2%	Core Bonds 5.9%	Municipal Bonds 2.4%	Emerging Markets -18.2%	Hedge Funds 3.5%	Municipal Bonds -2.6%	International Developed -4.3%	Emerging Markets -14.6%	Municipal Bonds 0.2%	Core Bonds 3.5%	Emerging Markets -14.5%	Municipal Bonds 7.5%

Source: Bloomberg L.P., PNC

- Large-Cap…………………… S&P 500®
- Large-Cap Growth…………… S&P 500® Growth
- Large-Cap Value……………… S&P 500® Value
- Mid-Cap………………………… S&P 400
- Small-Cap……………………… Russell 2000®
- International Developed……… MSCI ACWI-ex-US
- Emerging Markets…………… MSCI EM
- Core Bonds…………………… Bloomberg Barclays U.S. Aggregate
- High Yield……………………… Bloomberg Barclays U.S. Corporate High Yield
- Municipal Bonds……………… Bloomberg Barclays Municipal Bond
- Hedge Funds…………………… HFRX Global Hedge Fund
- Real Estates…………………… FTSE NAREIT

Indexes are unmanaged, not available for direct investment, and not subject to management fees, transaction costs or other types of expenses that an account may incur.

Capital Markets Review
Market Commentary

PNC INSTITUTIONAL ASSET MANAGEMENT

US Economic Review

The US economy is moderating, but underlying fundamentals remain stable. We believe a short-term reacceleration is possible as trade tensions fade.

Economic Growth

- GDP (quarter-over-quarter annualized) grew 2.1% in the third quarter. Although growth is expected to moderate in the coming quarters, the economy remains in stable condition; the current backdrop is consistent with a slowing expansion phase of the cycle, in our view. PNC forecasts 2019 growth of 2.3%, down 0.6% from 2018, and 1.8% in 2020.

Trade

- The United States and China reached a "phase one" trade agreement that averted the December 15 tariffs on $160 billion of Chinese consumer goods and rolls back some existing tariffs in return for China's pledge to purchase more US agricultural products, combat intellectual property theft, and not manipulate the yuan.
- We believe a meaningful reprieve from trade tensions could help improve corporate confidence, net-new capital expenditures, productivity gains, and, thus, upward revisions to global economic growth in the coming year.

The US Consumer

- The consumer remains the workhorse of the economy. Accounting for nearly 70% of GDP, consumption has been stable supported by solid income growth, an elevated saving rate, and a historically low debt service ratio.
- Labor markets are tight. Job openings have exceeded the number of unemployed persons for 20 straight months, and wages are gradually ticking higher.

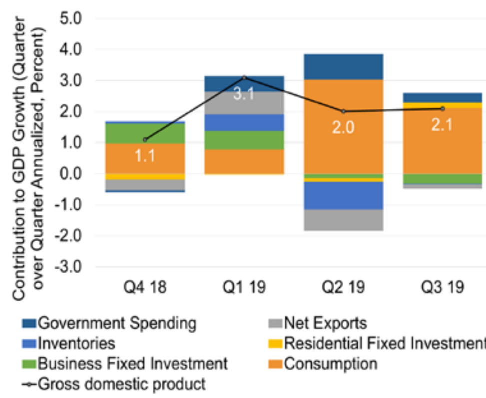
Inflation

- Inflation remains in check on modest wage gains and still-low oil prices by historical standards. Central banks from around the world have cited persistently below-target inflation as a key reason for cutting policy rates.

Capital Expenditures/Productivity

- Despite the recent reprieve, the cumulative impact of trade and global growth uncertainty on corporate confidence has helped curb the capital investment necessary to boost productivity and extend the expansion. Instead, firms have turned to mergers and acquisitions to create value via capital deployment.

Contributions to US GDP



Source: Federal Reserve Bank of St. Louis, PNC

U.S. Economic Indicators	
Real GDP (3Q Final, q/q annualized)	2.1%
Unemployment Rate	3.5%
Average Hourly Earnings	2.9%
Headline CPI	2.1%
Retail Sales	3.3%
Existing Home Sales	5.4M
Housing Starts	1.4M
Case Shiller 20-City	2.2%
Industrial Production	-0.75%
ISM Manufacturing	47.2
ISM Non-Manufacturing	55.0

All % are year over year; as of 12/19
Source: FactSet Research Systems Inc.

International Economic Review

Though growth remains slow, green shoots are starting to peek through as macro headwinds subside and monetary policy remains accommodative.

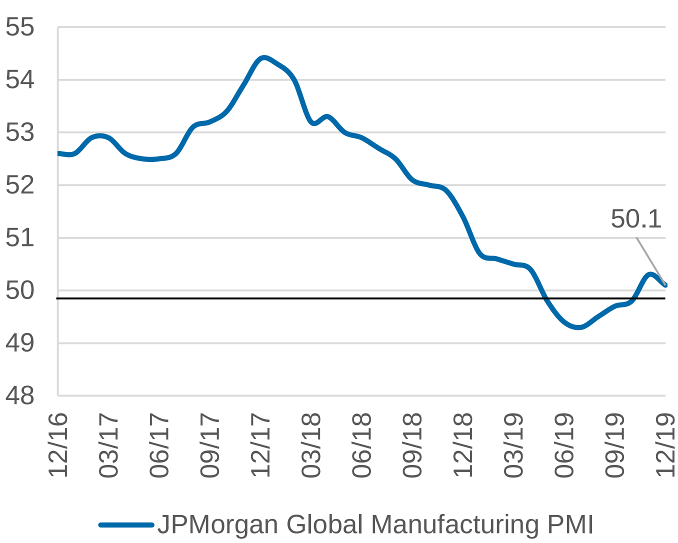
Developed Markets

- Investor confidence in major developed economies has improved in recent months thanks to a reprieve in trade tensions, accommodative monetary policy, and hopes for stabilizing global economic fundamentals. Survey data indicate improving economic expectations in the Eurozone, Japan, and especially Germany, where confidence jumped to a six-month high. Also notable, the JPMorgan Global Manufacturing PMI rose for the fourth straight month and climbed above 50 for the first time since April.
- Prime Minister Boris Johnson's Conservative party won a significant majority in the UK parliament, paving the way for the United Kingdom to finally exit the European Union as scheduled on January 31, 2020, and decreasing the likelihood of a no-deal "hard" Brexit.
- While numerous risks remain, the near-term global growth outlook appears to be stabilizing, in our view, judging by the green shoots forming in both survey and hard data.

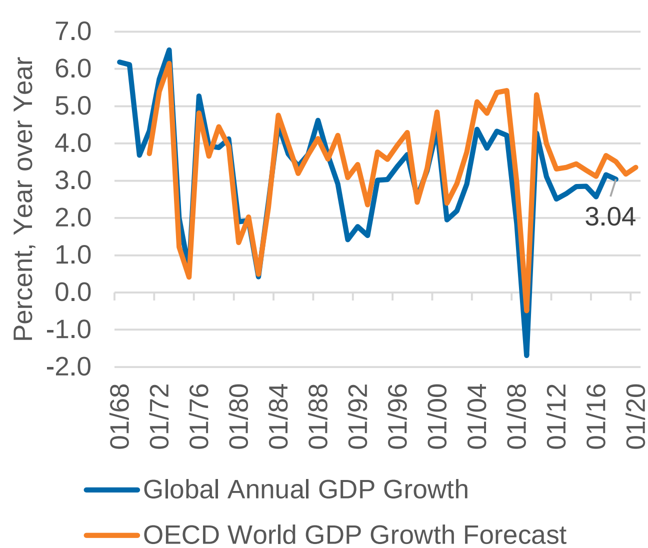
Emerging Markets

- Emerging market economies were pressured in 2019, but accommodative monetary policy and a reprieve from trade tensions should help improve financial conditions and growth prospects in 2020.
- The People's Bank of China has been providing numerous stimulus measures over the last 18 months, ranging from lowering the required reserve ratio for banks to stimulate lending, lowering short-term interest rates to provide ample liquidity in financial markets, and the subtle weakening of the yuan.

Global Manufacturing Sentiment



Global Growth Moderating



Source: Bloomberg L.P., PNC

Global Monetary Policy

Major central banks have shifted toward more accommodative monetary policy to help combat geopolitical tensions and moderating global growth prospects.

US Federal Reserve (Fed)

- The Fed lowered its federal funds target range by 25 bps for a third time this year to a range of 1.50-1.75%. However, the Fed noted it would only adjust policy if there is a “material” change to the US economic outlook.
- The Fed’s “dot plot” suggests no more rate cuts in 2019 or 2020. This is based on its expectations of a robust employment outlook. The PNC Economics team expects the Fed to remain on hold in 2020.

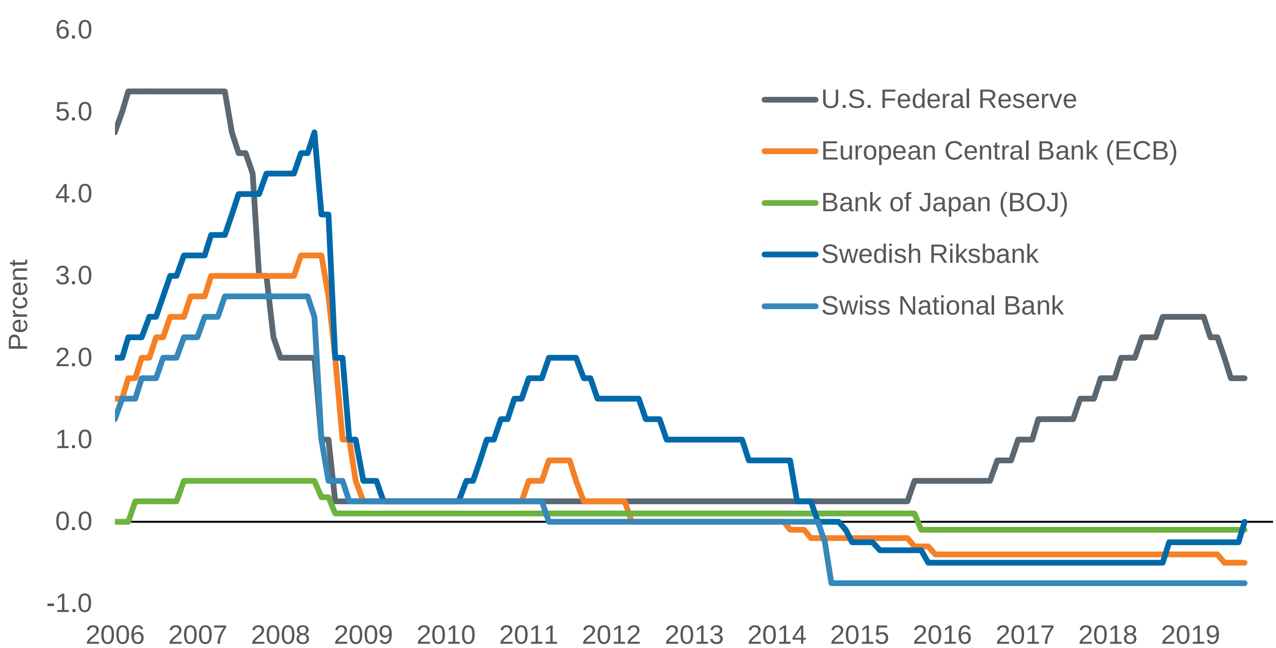
European Central Bank (ECB)

- The ECB, which has been the primary driver of negative interest rate policies, left its policy rate unchanged at -0.5% and maintained bond purchase plans of 20 billion euros per month in Christine Largarde’s debut as ECB president. Most importantly, Ms. Lagarde acknowledged the Eurozone economy is showing signs of bottoming out and noted further rate cuts are unlikely for now.

Bank of Japan (BOJ)

- Persistently low inflation remains far from the BOJ’s 2% target, suggesting to us that monetary policy will remain accommodative.

Policy Rates of Major Central Banks



Source: Bloomberg L.P., PNC

Corporate Earnings and Expectations

Better-than-feared third-quarter earnings have aided the 2019 stock market rally, while company-specific issues weighed on estimates for the second half of the year.

Third-Quarter Earnings Season Recap

- While S&P 500® constituents posted slightly negative earnings growth for the third quarter, revenue growth remained positive on a per-share basis.
- Third-quarter 2018 saw the strongest quarterly growth rate since 2010, making third-quarter 2019 a difficult quarter from a year-over-year comparison perspective.
- Notable downside surprises from larger companies skewed overall earnings metrics lower. In fact, the median earnings growth rate for the S&P 500 was actually positive. The Utilities and Health Care sectors led the index.
- Revenue growth was skewed by a few company-specific issues; however, the overall upside surprise was above average. Health Care and Comm. Services led the index.
- In a given quarter, the top 50 earners typically generate 50% of all earnings growth. While they may not be the fastest growers, any abrupt change to their earnings stability could have a material impact on the entire index.

Fourth-Quarter 2019 Expectations

- Consensus earnings growth estimates for the fourth quarter have entered negative territory almost entirely because of negative revisions from General Motors Company and ongoing struggles in the Energy sector. Despite this, we remain confident that earnings growth on a per-share basis will remain positive for 2019.
- Consensus estimates remain constructive on 2020 earnings growth; based on historical revisions, we estimate the yearly growth rate should be in the mid-single digits.

Bottom-Up Consensus Revenue and Earnings Growth Estimates for S&P 500 Sectors

	Third-Quarter 2019			Fourth-Quarter 2019E*		2018	2019E
GICS Sector	EPS % Beat	Revenue Growth %	EPS Growth %	Revenue Growth %	EPS Growth %	EPS Growth %	EPS Growth %
S&P 500	**74.4**	**3.1**	**-2.2**	**2.4**	**-1.8**	**20.1**	**0.3**
Comm. Services	74.1	6.8	0.1	8.9	4.4	24.9	5.1
Consumer Disc.	71.4	5.6	-1.0	2.5	-13.6	17.5	-1.7
Consumer Staples	84.9	3.2	2.3	3.3	-0.1	8.9	0.1
Energy	57.1	-8.1	-39.7	-9.2	-34.6	112.5	-28.9
Financials	76.1	0.9	-3.2	0.9	7.3	21.8	4.5
Health Care	87.1	15.1	8.8	10.6	5.2	15.1	8.4
Industrials	76.5	-1.3	1.8	-2.6	-7.1	17.0	-3.4
Info. Tech.	80.9	1.6	-5.0	3.9	-2.1	14.3	-0.1
Materials	53.6	-14.7	-9.6	-16.8	-10.7	31.2	-16.1
Real Estate	62.5	5.7	5.9	3.2	0.3	8.9	3.4
Utilities	67.9	0.4	10.0	8.9	19.1	12.8	8.5

Source: FactSet Research Systems Inc., PNC; *Estimate

US Equity Markets

Domestic equities continue to grind higher, aided by solid fundamentals, a shift toward accommodative monetary policy, and a reprieve from ongoing geopolitical tensions.

Summary

- Boosted by a better-than-expected third-quarter earnings season, accommodative monetary policy, signs of an improving economic backdrop, and a reprieve from geopolitical tensions, domestic large- and mid-cap stocks notched new all-time highs during the fourth quarter.

Market Capitalization

- Large- and small-cap stocks ticked up in tandem over the quarter, but small caps have underperformed their larger counterparts for the third straight year.
- This trend has been less about the size factor and more about sector weightings (small-cap Tech is underweight large-cap by 9%). We believe a sustainable uptick in cyclical sectors such as Financials and Industrials could bode well for small-cap relative performance.

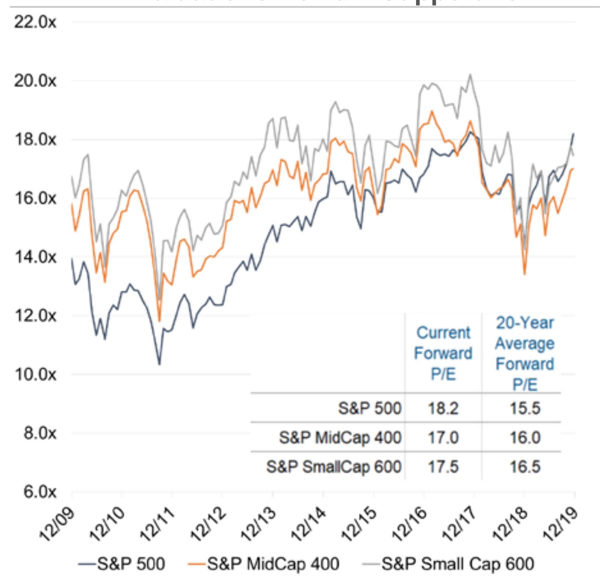
Valuations

- Despite the S&P 500® reaching new highs, we continue to see valuation as supportive of further appreciation potential for the market. The current forward price-to-earnings (P/E) ratio sits at 18.2 times (x). This is above the 5-year (16.6x) and 10-year (14.9x) averages but below the cycle high of 18.5x reached in early 2018. While significant multiple *expansion* may be unlikely in 2020, a favorable earnings outlook, an accommodative Federal Reserve, and a reprieve from trade tensions are also unlikely to drive material multiple *compression* from current levels, in our view.

Breadth

- Over 80% of the S&P 500 stocks are above their 200-day moving average; breadth expanded significantly during the 2019 market rally. Levels north of 50% are typically considered a healthy level for market breadth.

Valuations Remain Supportive



Source: FactSet Research Systems Inc., PNC

Domestic Equity Total Returns

As of 12/31/19	3 Month	1 Year
Russell 3000®	**9.10%**	**31.02%**
S&P 500®	**9.07%**	**31.49%**
Value	9.93%	31.93%
Growth	8.32%	31.13%
Comm. Services	9.00%	32.69%
Cons. Discretionary	4.47%	27.94%
Cons. Staples	3.51%	27.61%
Energy	5.49%	11.81%
Financials	10.47%	32.13%
Health Care	14.37%	20.82%
Industrial	5.53%	29.37%
Info. Tech.	14.40%	50.29%
Materials	6.38%	24.58%
Real Estate	-0.54%	29.01%
Utilities	0.75%	26.35%
S&P 400	**7.06%**	**26.20%**
Value	7.41%	26.08%
Growth	6.73%	26.29%
Russell 2000	**9.94%**	**25.52%**
Value	8.49%	22.39%
Growth	11.39%	28.48%

Source: Standard & Poor's, FTSE Russell

PNC INSTITUTIONAL ASSET MANAGEMENT

International Equity Markets

International equities moved higher over the quarter but underperformed their domestic counterparts. Valuations remain attractive for long-term investors.

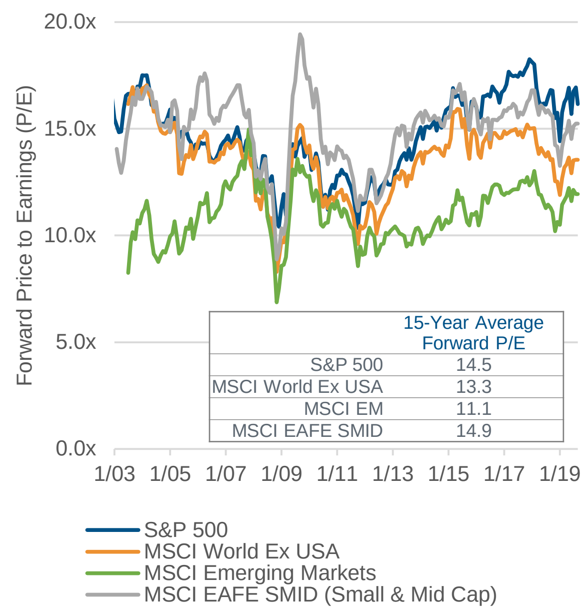
Developed Markets

- A dovish global monetary policy pivot and a reprieve from geopolitical tensions have helped drive strong returns over the fourth quarter and in full-year 2019 in developed markets.
- Third-quarter earnings season saw 52% of MSCI ACWI World ex-USA Index constituents beat earnings expectations, with a blended growth rate of -10%. Similar to earnings in the United States, a few big names have had an outsized impact on the headline growth figure.
- Despite the decline in third-quarter earnings growth, European equities have focused on positive macro developments such as trade détente and hopes for a favorable resolution to Brexit. The STOXX® Europe 600 was up 6.2% over the quarter and is now trading near four-year highs. Similarly, the Nikkei 225 was up more than 9% for the quarter and is within 3% of the US business cycle high reached in fourth-quarter 2018.
- Despite these increases, the MSCI World ex-USA Index continues to trade at a more than three-multiple-point valuation discount to US equities (14.6x versus 18.2x).

Emerging Markets (EMs)

- EM equities outperformed their developed market peers, especially toward the end of the quarter, supported in large part by positive trade headlines.
- We believe demographics and societal improvements in EMs can support a higher level of economic growth compared to developed markets.

Valuation Discount Remains Wide



Source: FactSet Research Systems Inc., PNC

International Equity Total Returns

As of 12/31/19	3 Month	1 Year
MSCI ACWI	8.95%	26.60%
MSCI ACWI ex USA IMI	**9.20%**	**21.63%**
MSCI EAFE	8.17%	22.01%
MSCI World Ex USA	**7.86%**	**22.49%**
Value	7.56%	17.02%
Growth	8.09%	27.92%
MSCI World Ex USA Small Cap	**11.40%**	**25.41%**
Value	11.19%	22.83%
Growth	11.59%	28.04%
MSCI Emerging Market	**11.84%**	**18.42%**
Value	9.94%	11.94%
Growth	13.68%	25.10%
EM Latin America	10.48%	17.46%
EM EMEA	9.88%	15.52%
EM Asia	12.51%	19.24%

Source: MSCI; Returns reported in USD terms, on a net basis

Indexes are unmanaged, not available for direct investment, and not subject to management fees, transaction costs or other types of expenses that an account may incur.

Taxable Fixed Income Markets

Investment-grade fixed income markets posted their strongest annual returns of the cycle as interest rates declined over the course of 2019.

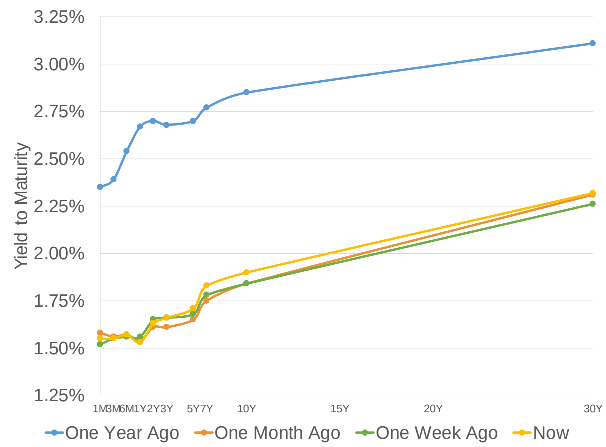
Taxable Fixed Income Performance

- Investment-grade fixed income markets (Treasuries, corporates, and securitized fixed income) posted their best performing year of the business cycle on the back of the Federal Reserve's dovish monetary policy pivot and declining interest rates. The 10-year US Treasury fell 76 basis points throughout the year.
- Beneath the surface, the current was much more volatile, with issues including an inverted yield curve, an interest rate spike in the repurchase agreement market, and the most negative term premium on record.
- We expect structural forces to remain, effectively capping interest rates from moving significantly higher from current levels. Long-term factors such as elevated global government debt burdens, aging demographics, and technological advancements should continue to help exert downward pressure on interest rates.

US Treasury Yield Curve

- Since inverting and hitting a cycle low in August of -0.05%, the spread between 2-year and 10-year Treasuries has quickly reverted back into positive territory over the past quarter. Back in August, we believed the inversion was due to key structural forces, like the growing level of global negative yielding bonds, which compressed US term premiums to their lowest recorded levels in history. We argued that these idiosyncratic measures could make curve inversions a less reliable indicator of future economic growth, rendering the prevailing fears of imminent recession overblown.

Yields Lower, but Yield Curve Normally Shaped



Source: FactSet Research Systems Inc.

Fixed Income Total Returns

As of 12/31/19	3 Month	1 Year
B.Barclays U.S. Aggregate	**0.18%**	**8.72%**
Short	0.57%	4.04%
U.S. Treasury	-0.79%	6.86%
U.S. TIPS	0.79%	8.43%
U.S. Credit	1.05%	13.80%
Securitized	0.63%	6.44%
B.Barclays U.S. Govt./Credit	**-0.01%**	**9.71%**
Intermediate	0.37%	6.80%
Long	-1.12%	19.59%
U.S. Corporate Invest. Grade	**1.18%**	**14.54%**
Industrials	1.20%	15.48%
Financial Institutions	1.43%	12.84%
Utilities	0.03%	14.38%
AAA-Rated	-0.18%	14.75%
AA-Rated	0.20%	10.53%
A-Rated	0.81%	13.18%
BAA-Rated	1.68%	16.26%
U.S. Corporate High Yield	**2.61%**	**14.32%**
Ba-Rated	2.45%	15.51%
B-Rated	2.61%	14.80%
CAA-Rated	3.74%	9.52%
B.Barclays EM Debt USD Agg.	**2.09%**	**13.11%**

Source: Bloomberg Barclays Indexes

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PNC INSTITUTIONAL ASSET MANAGEMENT

Other Asset Classes

Alternative assets continue to provide value by typically offering the advantage of diversification without sacrificing meaningful potential for return.

Real Estate Investment Trusts (REITs)

- REIT performance over most of 2019 was strong as interest rates declined. However, the factor rotation to minimum volatility drove valuations to fairly expensive levels. As the rotation out of the minimum volatility occurred in the fourth quarter, REITs significantly lagged equity markets by nearly 9%.

Global Infrastructure

- Our allocation to global infrastructure has proven dependable across numerous market environments. While modestly underperforming during the recent momentum-value rotation, it has outperformed the broader stock market in periods of rising volatility.
- In addition to the benefits of global diversification and lower correlation to traditional asset classes, global infrastructure can offer attractive cash flows relative to most fixed income asset classes and relatively less volatility than broader equity markets.

Hedge Funds

- Limited partnership hedge funds, especially those in the event-driven and equity hedge spaces, outperformed their liquid counterparts. Hedge funds trailed the broader equity market's strong rally over the quarter.
- A transition from a primarily macro-driven environment to a more fundamentally driven one should help serve as a tailwind for alpha-generating strategies.

Real Asset Total Returns

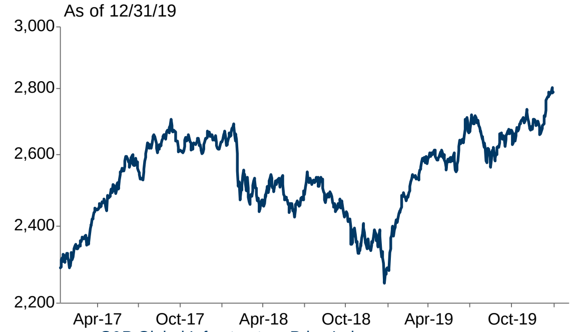
As of 12/31/19	3 Month	1 Year	3Y (Ann)
All Equity REITs	**0.1%**	**28.7%**	**0.1%**
All Equity Infrastructure	**3.4%**	**42.0%**	**3.4%**
All Timber	**10.8%**	**42.0%**	**10.8%**
Equity REITs	**-0.8%**	**26.0%**	**-0.8%**
Data Centers	-2.9%	44.2%	-2.9%
Diversified	-1.8%	24.1%	-1.8%
Health Care	-6.1%	21.2%	-6.1%
Industrial	4.9%	48.7%	4.9%
Lodging/Resorts	4.6%	15.6%	4.6%
Office	7.0%	31.4%	7.0%
Residential	-1.7%	30.9%	-1.7%
Retail	-2.2%	10.6%	-2.2%
Self Storage	-9.5%	13.7%	-9.5%
S&P Global Infrastructure	**5.1%**	**27.0%**	**5.1%**

Source: FTSE NAREIT, Standard & Poor's

FTSE NAREIT All Equity REITs Index
As of 12/31/19

Source: FTSE NAREIT, FactSet Research Systems Inc.

S&P Global Infrastructure Index
As of 12/31/19



Source: S&P, FactSet Research Systems Inc.

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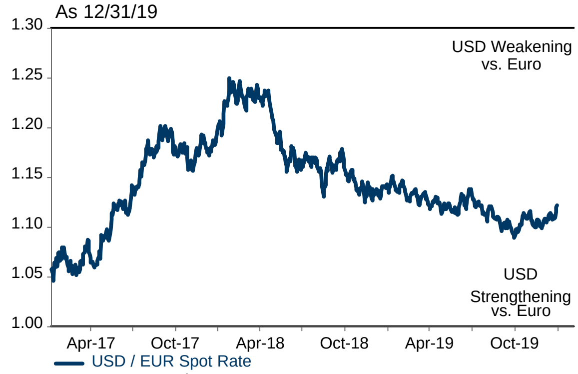
PNC INSTITUTIONAL ASSET MANAGEMENT

Foreign Exchange Rates

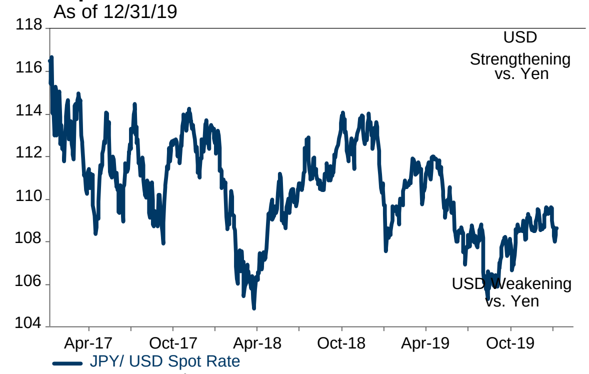
The dollar depreciated in the fourth quarter as global manufacturing contracted and most central banks cut interest rates.

U.S. Dollar vs. Euro
As 12/31/19



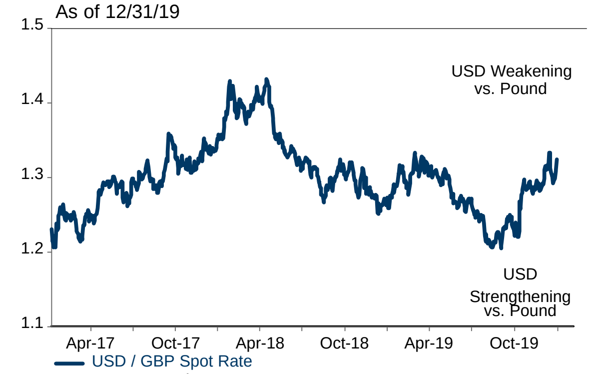
Source: FactSet Research Systems Inc.

Japanese Yen vs. U.S. Dollar
As of 12/31/19



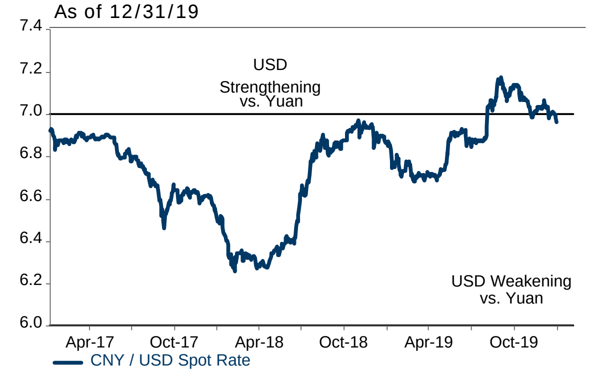
Source: FactSet Research Systems Inc.

U.S. Dollar vs. U.K. Pound
As of 12/31/19



Source: FactSet Research Systems Inc.

Chinese Yuan vs. U.S. Dollar
As of 12/31/19



Source: FactSet Research Systems Inc.

Foreign Exchange Rates					**% Change in USD Perspective**	
As of 12/31/19		**12/31/18**	**9/30/19**	**12/31/19**	**3 Month**	**YTD**
Trade-Weighted USD						
Broad	**Nominal**	**116.26**	**117.37**	**115.95**	**-1.2%**	**-0.3%**
Major Currency	Nominal	110.13	111.04	109.86	-1.1%	-0.2%
OITP	Nominal	123.89	125.23	123.54	-1.3%	-0.3%
Currency Pairs	**Country**					
USD / EUR	Eurozone	1.14	1.09	1.12	-2.7%	2.1%
USD / GBP	United Kingdom	1.27	1.23	1.32	-6.8%	-3.5%
JPY / USD	Japan	109.72	108.08	108.68	0.6%	-0.9%
USD / AUD	Australia	0.70	0.67	0.70	-4.3%	0.6%
CAD / USD	Canada	1.37	1.32	1.30	-1.5%	-4.8%
MXN / USD	Mexico	19.69	19.74	18.88	-4.4%	-4.1%
CNY / USD	China	6.87	7.14	6.97	-2.4%	1.5%
INR / USD	India	69.82	70.87	71.38	0.7%	2.2%
BRL / USD	Brazil	3.88	4.17	4.02	-3.6%	3.7%
RUB / USD	Russia	69.37	64.88	62.11	-4.3%	-10.5%

Source: Factset Research Systems Inc.

Commodities

An improving global economic outlook and a slightly weaker dollar supported commodity returns during the fourth quarter.

Commodity Index

- The Bloomberg Commodity Index had a volatile quarter, but in terms of performance finished higher, affected by a confluence of macro factors and a "phase one" trade deal between the United States and China.
- Expectations for a weaker dollar could give commodities a boost given their -0.6 historical correlation.

Energy

- Stronger demand prospects and tighter supply helped boost West Texas Intermediate (WTI) oil prices above $61 per barrel for the first time since mid-September. The outlook for oil demand improved as outlooks for trade and manufacturing brightened, while American crude stockpiles shrank and OPEC+ agreed on deeper-than-expected output cuts.
- After a few false starts, Aramco finally listed on the Saudi exchange in December. Although it has already reached a $2 trillion market cap, we do not believe it will have much of an impact for the portfolios of emerging market investors because:
  - There is no ADR. The company is only listed on the Saudi exchange.
  - It will likely not have a material impact on MSCI index weightings (float is just 5% of its market cap).
  - It will likely have minimal impact on emerging market sector and country weightings.

Other Commodities

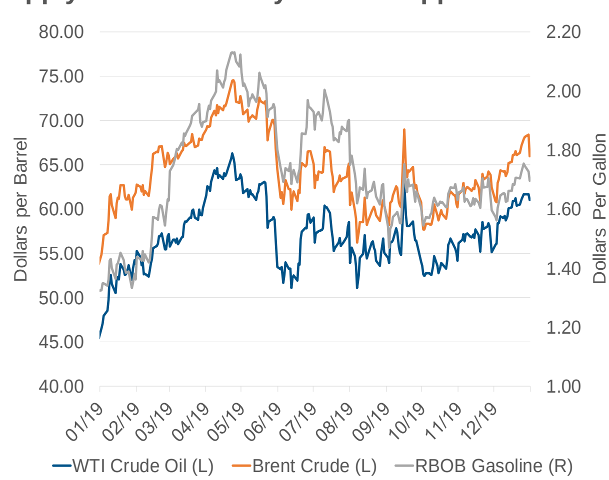
- Copper prices climbed toward the highest level in seven months following the US-China trade agreement and in response to potential supply disruptions in Chile, the world's largest copper producer. Agricultural commodities rose as China pledged to import $32 billion more in agriculture products as part of the "phase one" trade deal.

Commodity Spot Rate Total Returns

As of 12/31/2019	3 Month	1 Year
Bloomberg Cmmodity Index	**4.4%**	**7.7%**
GS Commodity Index	**8.3%**	**17.6%**
Energy	**11.5%**	**29.7%**
Crude Oil	13.5%	34.1%
Natural Gas	-16.3%	-32.3%
Heating Oil	8.4%	23.9%
Gasoline	12.1%	44.2%
Industrial Metals	**1.8%**	**2.6%**
Aluminum	5.2%	-3.2%
Copper	7.9%	4.7%
Lead	-9.9%	-3.9%
Nickel	-17.8%	32.8%
Zinc	-4.0%	-1.3%
Precious Metals	**3.5%**	**17.6%**
Gold	3.3%	18.0%
Silver	5.0%	13.9%
Agriculture	**5.8%**	**-0.3%**
Wheat	12.2%	9.4%
Corn	-2.0%	-5.2%
Soybeans	2.6%	-0.6%
Cotton	10.9%	-6.5%
Livestock	**0.8%**	**-5.6%**
Cattle	9.3%	1.2%
Hogs	-15.0%	-19.2%

Source: Bloomberg L.P., S&P Goldman Sachs Commodity Index

Supply and Demand Dynamics Support Oil Prices



Source: Bloomberg L.P., PNC

Disclosure

For definitions of indexes used in this publication, please refer to pnc.com/indexdefinitions.

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