The University of Texas/Texas A&M Investment Management Company

Federal Reserve Bank of New York
Investor Advisory Committee on Financial Markets

October 2019

Britt Harris
President, CEO and Chief Investment Officer
The Length and Strength of Expansions

**Length of economic expansions and recessions**

- **Average length (months):**
  - Expansions: 48 months
  - Recessions: 15 months

![Graph showing length of economic expansions and recessions from 1900 to 2001.](image)

**Strength of economic expansions**

- Cumulative real GDP growth since prior peak, percent

![Graph showing strength of economic expansions with various data points labeled from Q48 to Q73.](image)

US Bear Market Indicators
Periods Ending July 31, 2019

July 2019

Percentage of Bear Market Indicators On

Threshold Level: 50%
Current Level: 17%

Type | Indicator | On/Off | Indicator Level | Last 36 Months | % On Last 36 Months
--- | --- | --- | --- | --- | ---
Credit | US HY Yield > Long-term Avg. | On | 1.9% | 10.0% | 0%
 | Non-Mortgage Delinquency Rate > 3.5% | Off | 2.4% | 3.5% | 0%
 | Real Rates < 0% | Off | 0.3% | 0.0% | 75%
Market | YTD Equity Markets < -5% | Off | 7.6% | -5.0% | 2%
 | Investment Banks < 12m Moving Avg - 1.5% | Off | 10.9% | 0.0% | 14%
 | Cons. Discretionary < 12m Moving Avg - 1.5% | Off | 13.2% | 0.0% | 3%
 | US Dollar 24m Change > 10% | Off | 6.3% | 10.0% | 8%

4/22 Indicators “On”
Global ex. US Bear Market Indicators
Periods Ending July 31, 2019

July 2019

Percentage of Global ex. US Bear Market Indicators On

Blue: Current Level
Orange: Threshold indicating Bear Market

Threshold Level: 50%
Current Level: 20%

Type | Indicator | On/Off | Indicator Level | Last 36 Months | % On Last 36 Months
--- | --- | --- | --- | --- | ---
Inflation | SY Breakeven Inflation < 1.25% | OFF | 1.5% 1.3% | - | 0%
 | YoY Inflation > 12m MA | OFF | 2.0% 2.2% | - | 69%
 | Oil Prices > 20% | OFF | -14.8% 20.0% | - | 39%
Employment | Employment Growth < 0% | OFF | 0.3% 0.0% | - | 0%
 | Consumer Confidence < -20% | OFF | -0.9% -20.0% | - | 0%
Growth | YoY Leading Economic Indicator < 0% | ON | -1.0% 0.0% | - | 47%
 | Recession Probability > 10% | ON | 25.4% 10.0% | - | 100%
Credit | HY Yield > Long Term Average | OFF | 5.2% 9.0% | - | 0%
Market | ACWI ex. US YoY < -5% | OFF | -5.0% -5.0% | - | 22%
 | ACWI ex. US Cons Discretionary < 12MA - 1 SD | OFF | 8.4% 0.0% | - | 17%

2/10 Indicators “On”
Pros
1. Moving Averages Trending Higher
2. Breadth is Solid
3. Investor Sentiment Subdued
4. Analyst Sentiment Subdued
5. Claims Continue to Amaze
6. Leading Index Still Not Recessionary
7. Strong Consumer
8. Surprise Indices Surprise Higher
9. Fed Easing
10. Inversion – Not the Scary Type
11. Housing Boosted by Low Rates
12. Dividends Over Treasuries
13. High Yield Spreads
14. Healthy Financial Conditions
15. Positive Q4 Seasonals

Cons
1. Trade Uncertainty Remains
2. Washington (Impeachment, 2020 Election)
3. IPO Boom Going Bust
4. Momentum Unwinds in September
5. Defensives Leading
6. Technicals Not Great
7. Strong Dollar
8. Yield Curve Not Optimal
9. Global Manufacturing Still Weak
10. Consumer Confidence Warning Sign

Neutral
1. Valuations
The job market remains strong, and both weekly initial and continuing jobless claims continue to impress on a regular basis. Continuing claims this week were just 1k above the multi-decade low seen a year ago. Since this reading isn’t adjusted for massive population growth over the years, it’s not a stretch to say that claims are at their healthiest levels in history.

Source: Bespoke
Pros – Housing Boosted by Low Rates

- Housing market activity in the post-crisis period hit a peak in 2017 before declining in 2018. Since the start of this year, though, all manner of housing data points have come charging back. Over the last couple of months, new home sales have made expansion highs, permits have surged, and sales of existing homes have ramped up.

- Housing can’t always be predicted with the evolution of interest rates, but it seems clear that this time the decline in interest rates is proving to be stimulative. As shown at left, the plunge in interest rates over the past year has been followed by rebounding housing data points. This is one example of how the current backdrop of an easing Fed is helping to ward off economic malaise rather than the other way around.

Source: Bespoke
Pros – Fed Easing

- After tightening dramatically in 2018, the Fed is easing rates in 2019, despite little sign from macro data that a recession is underway or about to start.

- Historically, Fed easing when the economy is already deteriorating is *bad* news for markets, as it means the Fed has already over-tightened and induced recession.

- Like the late-1990s, though, the current setup has the Fed easing *preemptively*, which is a very different story.

- When the Fed starts to cut rates before proximate signs of recession, the economy and markets are likely to benefit as we saw in the late-1990s economy and labor market.

Source: Bespoke
Yield Curve

Yield curve
U.S. Treasury yield curve

Pros – Leading Index Still Not Recessionary

- We like to look at the ratio between the Conference Board's Leading and Coincident indices as a leading indicator of recession. As shown in the first chart at right, this ratio tends to plunge sharply ahead of recession.

- Currently, the ratio is basically moving sideways within a range. That sounds bad, because it’s not improving, but it’s not: there are precedents in the current expansion for this sort of pause.

- If the ratio was to turn down sharply, we would be worried. As it currently stands, this looks like another mid-cycle slowdown that does not result in recession, as we’ve seen twice before already.
Cons – Trade Uncertainty Remains

- The trade war has continued to drag along with no concrete progress or end in sight. While equities had managed to trend higher over the past couple of weeks because China and the US seemed to be saying the right things lately, on Friday investors got a reminder that negative trade headlines can pop up at any moment. Rumors that the White House is contemplating some form of regulation on Chinese companies listed on US stock exchanges sent major indices lower, especially the Nasdaq which contains quite a bit of market cap from Chinese Tech companies.

- The Global Economic Policy Uncertainty Index from Baker, Bloom, and Davis is a way to highlight the impact that trade concerns are having on markets. Uncertainty is kryptonite for stocks, and this indicator has spiked significantly over the last year to all-time highs.

Source: Bespoke
Cons – Washington (Impeachment, 2020 Election)

- Given the stock market’s rally following President Trump’s election victory in 2016, we are working under the assumption that the market would prefer Trump over a Democratic candidate in 2020. When it comes to the current Democratic candidates for President, Biden is preferable to Warren when it comes to the stock market. As shown below, Warren has opened up a very big lead in the odds to win the Democratic nomination, and she’s neck and neck against Trump to win the general if she wins the nomination.

- The market should already be starting to price in the odds of a Democrat winning back the White House, but expect it to do so even more as the 2020 election gets closer. Oh, and it goes without saying that impeachment talk that re-emerged this week only adds to uncertainty that the market hates.

IMPEACHMENT 2019
TRANSCRIPT RELEASED
HILL ROCKED
REPUBLICAN CRACKS EMERGE
DRUDGE REPORT

**Chance of winning...**

<table>
<thead>
<tr>
<th>Democratic Primary</th>
<th>US Presidency 2020</th>
<th>Republican Primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warren 48.8%</td>
<td>Trump 42.2%</td>
<td>Trump 82.0%</td>
</tr>
<tr>
<td>Biden 18.2%</td>
<td>Warren 23.6%</td>
<td>Pence 3.5%</td>
</tr>
<tr>
<td>Sanders 7.8%</td>
<td>Sanders 10.1%</td>
<td>Rubio 0.5%</td>
</tr>
<tr>
<td>Clinton 4.9%</td>
<td>Sanders -0.1%</td>
<td>Kasich 0.5%</td>
</tr>
</tbody>
</table>
Cons – Global Manufacturing Still Weak

- Hard data on global manufacturing has continued to weaken, with global trade volumes declining on a YoY basis consistently and weak at higher frequencies. Global industrial production is still growing YoY but is shrinking at higher frequencies. Markit PMIs tell the story well: Germany’s manufacturing collapse is ongoing, dragging down the Eurozone with it. Indices for China and the US look healthier and may turn higher but haven’t done so yet.
Global Inflation

Year-over-year headline inflation by country and region, quarterly


Global
DM
EM
U.S.
Canada
Japan
UK
EuroArea
Germany
France
Italy
Spain
Greece
China
Indonesia
Korea
Taiwan
India
Brazil
Mexico
Russia


Heatmap is based on quarterly averages, with the exception of the two most recent figures, which are single month readings. Colors determined by percentiles of inflation values over the last 10 years. Deep blue = lowest value, light blue = median, deep red = highest value. DM and EM represent developed markets and emerging markets, respectively.

Guide to the Markets – U.S. Data are as of September 30, 2019.
China GDP Growth: Composite Sales

Chinese GDP Growth Appears to Have Stabilized around 5.5 – 6.0% Annual Rate

Source: Carlyle Analysis of Portfolio Company Data; National Bureau of Statistics
Portfolio-Implied Demand for Industrial Inputs Remains Strong While Official Index Marks Decline

Source: Carlyle Analysis of Portfolio Company Data; National Bureau of Statistics
Euro Area GDP: Composite Business Orders

Total Order Books Remain Consistent with ~1.0-1.5% Annualized Growth

Source: Carlyle Analysis of Portfolio Company Data; EuroStat
Euro Area Industrial Production: Industrial Composite

Industrial Orders Continue to Decline

- Carlyle Indicator
- Eurostat Indust. Prod. (YoY)
- Forward Estimate

Annualized Growth Rate

Source: Carlyle Analysis of Portfolio Company Data; EuroStat
Germany Factory Orders: Tungsten Volumes (Industrial Equipment)

Portfolio-Implied Orders Decline on Waning Trade Volumes; Official Decline Stabilizes around -3%

Source: Carlyle Analysis of Portfolio Company Data; EuroStat
What caused the spike in funding rates?

*Reduced supply of short term liquidity.*
The Decline in Excess Reserves Has Pushed Funding Rates Higher

Excess Reserves vs Funding Rate Spreads Over IOER

Source: Guggenheim Investments, Haver Analytics. Data as of 09/30/2019.
Excess Reserves Have Fallen Below the Equilibrium Level

Spread of Fed Funds Effective Rate Over IOER
In Basis Points (Monthly Avg of Daily Data Since Jan 2009)

Spread of SOFR Over IOER
In Basis Points (Monthly Avg of Daily Data Since Jan 2009*)

Source: Guggenheim Investments, Haver Analytics. Data as of 09/30/2019. Note: excess reserves peaked at $2.7 trillion in August 2014. Primary dealer survey repo rate is used prior to August 22, 2014 due to SOFR data limitations.

Please see Disclosures and Legal Notice at end of document.
Why did funding rates spike now?

A surge in the demand for credit at tax date and increasing Treasury financing.
We’ve Seen Large Increases in the Treasury Cash Balance Before…
But the Recent Spike in Rates Suggests Reserve Scarcity is a Problem

EFFR-IOER Spread vs Change in Treasury Cash Balance
Weekly Average of Daily Data Since January 2009

SOFR-IOER Spread vs Change in Treasury Cash Balance
Weekly Average of Daily Data Since January 2009*

Source: Guggenheim Investments, Haver Analytics. Data as of 09/27/2019. Note: primary dealer survey repo rate is used prior to August 22, 2014 due to SOFR data limitations.

GUGGENHEIM

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Rising Demand for Funding Has Also Played a Role

Repo Activity Has Begun to Rise Again...
Dealer Repo (Securities Out), in USD Billions

[Graph showing customer positions (matched book) and dealer positions over time]

...Driven by a Pickup in Treasury and Agency Financing
Primary Dealer Repo (Securities Out), in USD Billions*

[Graph showing treasury collateral (LHS) and agency collateral (RHS) with annotations]

Large federal financing needs and Fed portfolio runoff are key drivers

Source: Guggenheim Investments, Haver Analytics, Federal Reserve. Data in left chart as of 06/30/2019; data in right chart as of 09/18/2019 (4-week moving average).

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Why didn’t the market pick up on imbalances sooner?

*Interest rate targeting policy resulted in an unstable equilibrium which did not allow market rates to signal increasing liquidity shortfalls.*
Volatility in Effective Fed Funds Was Higher Pre-Crisis

Rolling 30 Day Standard Deviation of Changes in the Effective Fed Funds Rate (bps)

140 bps

Why don’t banks lend excess reserves to cover the liquidity shortfall?

*Macropu* 

Macroprudential policy constraints discourage the elasticity of balance sheets of large financial institutions to meet surges in credit demand.
Reserves Are Unevenly Distributed...  
And May Not Be Circulating Due to Binding Intraday Liquidity Constraints

**Top 20 Holders of Reserve Balances at the Fed**
USD Billions

<table>
<thead>
<tr>
<th>Bank</th>
<th>$0</th>
<th>$25</th>
<th>$50</th>
<th>$75</th>
<th>$100</th>
<th>$125</th>
<th>$150</th>
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<tbody>
<tr>
<td>Wells Fargo</td>
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<td>JPMorgan Chase</td>
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<tr>
<td>Bank of America</td>
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<td>Deutsche Bank</td>
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<td>Citibank</td>
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<td>Bank of China</td>
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<td>MUFG Bank</td>
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<td>Goldman Sachs</td>
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<td>Barclays</td>
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<td>Sumitomo Mitsui</td>
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<td>Societe Generale</td>
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<td>Nordea</td>
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<td>State Street</td>
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<td>American Express</td>
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<td>BNY Mellon</td>
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<td>Standard Chartered</td>
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<td>Deutsche Bank Trust</td>
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<tr>
<td>Royal Bank of Canada</td>
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<td>HSBC USA</td>
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</tbody>
</table>

**Intraday Liquidity Needs May be Binding as Reserves Fall**
USD Billions

- Reserves (Q2 2019)
- Reserves (Q3 2014)
- Estimated Day 1 Stressed Outflows (Q2 2018)

**Source:** Guggenheim Investments, Wrightson, New York Fed. Data as of 06/30/2019. Estimated stressed outflows as of Q2 2018, per Liberty Street Economics Blog.
## Regulations Limit Large Banks’ Ability to Intermediate Liquidity

<table>
<thead>
<tr>
<th>Rule</th>
<th>Full Name</th>
<th>Type</th>
<th>U.S. Rule Finalized</th>
<th>Description</th>
<th>Implications for Funding Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLAR</td>
<td>Comprehensive Liquidity Analysis and Review</td>
<td>Liquidity</td>
<td>December 2012</td>
<td>Reviews the liquidity positions and liquidity risk management of large, complex banks, and requires them to conduct internal liquidity stress tests, <em>which for some banks may be more binding than the LCR</em>.</td>
<td>Substantially increases the quantity of liquid assets (especially reserves at the Fed) that banks must hold</td>
</tr>
<tr>
<td>LCR</td>
<td>Liquidity Coverage Ratio</td>
<td>Liquidity</td>
<td>September 2014</td>
<td>Requires that banks hold a sufficient reserve of high-quality liquid assets (HQLA) to allow them to survive a period of significant liquidity stress lasting 30 days.</td>
<td>Substantially increases the quantity of liquid assets (including reserves at the Fed) that banks must hold</td>
</tr>
<tr>
<td>eSLR</td>
<td>Enhanced Supplementary Leverage Ratio</td>
<td>Capital</td>
<td>April 2014</td>
<td>Requires that banks hold Tier 1 capital against all assets (both on- and off-balance sheet), without regard to risk weighting, with higher requirements for the largest and most complex U.S. banks.</td>
<td>Dramatically reduces the return on equity of lending in short-term funding markets when the SLR is the binding capital constraint</td>
</tr>
<tr>
<td>G-SIB Surcharge</td>
<td>Risk-Based Capital Surcharge for Global Systemically Important Banks</td>
<td>Capital</td>
<td>July 2015</td>
<td>Requires that large banks hold extra risk-weighted capital based on their size, interconnectedness, cross-jurisdictional activity, substitutability, complexity, and reliance of short-term wholesale funding.</td>
<td>Creates incentives for large banks to reduce their participation in funding markets, especially as the year-end balance sheet snapshot approaches, to avoid higher capital surcharges</td>
</tr>
</tbody>
</table>

Source: Guggenheim Investments, Federal Reserve.

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Please see Disclosures and Legal Notice at end of document.
The G-SIB Surcharge Step Function is a Constraint to Marginal Liquidity

Exhibit 7: As of 2Q19, four US G-SIBs are currently operating in a higher G-SIB surcharge band relative to 4Q18.

US G-SIBs' scores (unitless) and surcharge buckets, as of 2Q19 (%)

Exhibit 8: Over the past two years, US G-SIBs reduced their footprint in the secured lending and OTC derivatives markets—an action that materially reduced their G-SIB scores but which raised the costs of USD funding.

Changes in G-SIB subcomponent scores in 2H17 and 2H18, by US G-SIB (unitless).

Source: FR Y-15, J.P. Morgan

Source: Guggenheim Investments, Federal Reserve
Are there other sources of liquidity?

Yes, there are a number of liquidity providers in the shadow banking system, but they are insufficient to provide adequate funding.
Funding Stress Would Be More Acute if Not for Money Fund AUM Growth

Cumulative Annual Change in Money Fund Assets Under Management, in Billions

Money Fund Holdings of Treasury and Agency Repo in Billions and as a % of AUM

Source: Guggenheim Investments, Haver Analytics. Data in left chart as of 10/02/2019; data in right chart as of 07/31/2019.

Please see Disclosures and Legal Notice at end of document.
Other Sources of Liquidity: Non-bank Dealers

<table>
<thead>
<tr>
<th>Non-Bank Dealer</th>
<th>Assets ($mm)</th>
<th>Liabilities ($mm)</th>
<th>Equity ($mm)</th>
<th>Debt / Assets</th>
<th>Debt / Equity</th>
<th>as of (year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactive Brokers LLC</td>
<td>$50,852</td>
<td>$45,591</td>
<td>$5,261</td>
<td>90%</td>
<td>9x</td>
<td>2018</td>
</tr>
<tr>
<td>Curvature Securities</td>
<td>$35,680</td>
<td>$35,650</td>
<td>$31</td>
<td>100%</td>
<td>1166x</td>
<td>2018</td>
</tr>
<tr>
<td>South Street Securities</td>
<td>$35,316</td>
<td>$35,140</td>
<td>$176</td>
<td>100%</td>
<td>200x</td>
<td>2018</td>
</tr>
<tr>
<td>Ronin Capital</td>
<td>$15,016</td>
<td>$14,759</td>
<td>$232</td>
<td>98%</td>
<td>64x</td>
<td>2014</td>
</tr>
<tr>
<td>ASL Capital Markets</td>
<td>$7,068</td>
<td>$6,929</td>
<td>$138</td>
<td>98%</td>
<td>50x</td>
<td>2018</td>
</tr>
<tr>
<td>Aardvark Securities</td>
<td>$517</td>
<td>$483</td>
<td>$34</td>
<td>93%</td>
<td>14x</td>
<td>2018</td>
</tr>
<tr>
<td>Mirae Asset Securities</td>
<td>$250</td>
<td>$2</td>
<td>$248</td>
<td>1%</td>
<td>0x</td>
<td>2016</td>
</tr>
<tr>
<td>Becker Securities</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>$20,871</strong></td>
<td><strong>$19,793</strong></td>
<td><strong>$874</strong></td>
<td><strong>83%</strong></td>
<td><strong>215x</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td><strong>$15,016</strong></td>
<td><strong>$14,759</strong></td>
<td><strong>$176</strong></td>
<td><strong>98%</strong></td>
<td><strong>50x</strong></td>
<td></td>
</tr>
</tbody>
</table>

Other Market Participant Estimates of Non-Bank Dealer Statistics

- Balance sheet leverage of up to 300x
- Balance sheet size: $5 billion - $50 billion
- Intermediate at least $300-400bn of net financing in the financial markets

Source: Guggenheim Investments, SEC. Based on statement of financial condition as required by the SEC.
# The American Financial Exchange (AFX) Continues to Grow

<table>
<thead>
<tr>
<th></th>
<th>December 2015 (AFX opened on Dec. 11, 2015)</th>
<th>September 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong># of members</strong></td>
<td>4 member banks</td>
<td>133 banks + 30 non-banks (insurance companies, broker-dealers, private equity firms, corporates) = 163 members (plus over 1,000 downstream banks in its correspondent program)</td>
</tr>
<tr>
<td><strong>Geographic presence</strong></td>
<td>4 states</td>
<td>50 states</td>
</tr>
<tr>
<td><strong>Credit lines</strong></td>
<td>4 lines</td>
<td>Over 1,250 new lines representing $50B in bilateral credit lines created between banks that would have never met each other otherwise</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>13 M</td>
<td>1.86 Billion average daily volume – September experienced a record day (3B) and a record week (13B)</td>
</tr>
</tbody>
</table>

**AFX: Average Daily Volume Outstanding and Membership**

- **Average Daily Volume**
- **AFX Members**

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Transaction Records
Daily: $3.04 bln
Weekly: $13.02 bln
Monthly: $43.41 bln

Source: Guggenheim Investments. AFX. Data as of 9/30/2019.
What are the potential solutions to provide the necessary short-term liquidity?

1. Continue the current repo programs
2. Begin a protracted series of coupon passes
3. Establish a permanent repo facility
4. Resume large scale asset purchases
5. Do nothing and allow the market to establish an equilibrium level of interest rates
History of Coupon Passes

Permanent Open Market Operations: Daily Amounts of Treasury Security Purchases by Calendar Year

- Interquartile Range
- Min
- Max
- Average

Largest Monthly Sum = $114.7B (Jan. 2011)

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Equity Thoughts and Scenarios into 2020

--What have been the primary drivers of equity markets in recent months?
--Do returns across sectors or "factors" reveal anything about these underlying drivers?
--What signal do you take from the recent sector rotations and what does this say about the outlook for equities and any risks around that outlook?

October 2019

Rebecca Patterson
Chief Investment Officer
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U.S. Equities Have Outperformed Most of This Cycle

**MSCI ACWI Index**

- Jan. 2016 - Jan. 2018: +38%
- Peak to early October 2019: -6.25%

**S&P 500**

- Jan. 2016 - Jan. 2018: +42%
- Peak to early October 2019: +0.5%

**Why U.S. Strength?**

- Relatively stronger underlying growth
- Major fiscal stimulus late 2017/early 2018
- Less sensitivity to trade war
- Share buybacks
- Equity sector composition

As of October 2, 2019.
Source: Bloomberg
This Year: Trade and Monetary Policy (i.e. Growth Sentiment) Dominating

Global Equities

Jan: Fed signals a rate hike pause
Feb-Mar: U.S.-China trade talks progress
Mar: ECB announces more TLTROs to support growth
May: U.S. raises tariff rate from 10% to 25% on $200B worth of Chinese imports; China announces retaliatory measures
Jun: Fed and ECB allude to monetary easing this year
Jun: China-U.S. agree to temporary truce at G20 meeting
Jul: Fed lowers rates by 0.25%, disappoints investors with future easing indications
Aug: U.S. delays 10% tariff on many consumer items
Aug: China announces additional tariffs; U.S. announces higher future tariff rates
Aug-Sep: Fed officials allude to additional rate cuts
Sep: ECB lowers policy rates and plans to resume asset purchases
Aug: U.S. announces 10% tariffs on another $300B worth of Chinese imports; China reduces agricultural imports; CNY weakens
Aug: U.S. 2s10s curve inverts
Aug: China and U.S. announce certain items to be excluded from tariffs
Sep: WTO grants permission to U.S. to impose tariffs on $7.5B worth of EU exports
Sep: Fed lowers rates by 0.25% but suggests no future easing

As of October 3, 2019. Global equities measured using MSCI ACWI IMI and reflect the price level. Source: Bloomberg, MSCI
Tying Factors to Market Narratives

10-Year Treasury Yield

- Size
- Momentum
- Growth
- Low Vol.

Relative U.S. Equity Returns

Value vs. Growth

Small vs. Large

Sector Market Cap Weightings

S&P 500 Pure Growth: 16% Cyclicals

- Cons Staples 3%
- Financials 3%
- Industrials 9%
- Com Disc 16%
- Utilities 2%
- Energy 2%
- Materials 1%
- REITs 1%

Comm 24%
Technology 21%

S&P 500 Pure Value: 47% Cyclicals

- Health Care 5%
- Technology 3%
- Industrials 3%
- Financials 25%
- Utilities 15%
- Materials 12%
- Cons Staples 9%

Left as of October 3, 2019. Right as of September 13, 2019. Equites reflect the price return and are measured using the following indices: small cap (Russell 2000), large cap (S&P 500), growth (Russell 1000 Growth), value (Russell 1000 Value). Cyclicals are defined as the financials, industrials, materials and energy sectors. Source: Bloomberg, FactSet, Standard & Poor's, Russell, UBS
Positioning and Valuations Supported Equity Rotation

Cumulative Fund Flows of Equity and Bond ETFs and Long-Term Mutual Funds

Price to Earnings (NTM) Growth and Value Relative to the S&P 500

Factor Performance Indexed to 100 on September 30, 2018

Source: Bloomberg, Investment Company Institute, FactSet, Goldman Sachs
Underlying Drivers and Sector/Factor Performance

U.S. 2-Year Yield and Policy Uncertainty

Global Policy Uncertainty Index (Î, inverted)

Yield, %
7%
6%
5%
4%
3%
2%
1%
0%

Index
0
50
100
150
200
250
300
350


Easier Monetary Policy
Policy Uncertainty
Lower bond yields
Cap on growth sentiment
Cap on volatility; search for yield
Rising expectations for monetary easing
Flows into Large-Cap & Growth Equities
Flows into Lo-Vol Strategies
Flows into Lo-Vol Strategies

As of October 7, 2019.
Source: Bloomberg, Baker, Bloom & Davis
# Investment Scenarios into 2020: Extrapolating from Recent Trends

## Macro Scenario into 2020

- Trade tensions diminish; capex improves
- Central banks ease despite better growth as insurance against deflation – in line or more than consensus
- Populist pressures fade as labor recovery broadens

- Trade tensions and tech “cold war” linger even if U.S.-China deal announced
- Central banks ease as insurance against deflation – in line or less than consensus
- Lingering business uncertainty starts to feed into service sector and broader labor markets

## Potential Market Reactions

- Equities higher on better growth sentiment
- ACWI outperforms US; USD lower
- Value outperforms defensives & growth
- Bond yields higher; curves steepen
- Commodities higher; industrials outperform precious metals

- Equities range-bound with risks skewed lower on “muddle through” global growth outlook
- Growth and defensives outperform value
- Bond yields lower; curves flat
- Precious metals outperform among commodities

## Considerations

- Positioning (long bonds and growth equities) could reinforce rotation should growth sentiment improve

- 2020 election a two-way risk, both to broader growth sentiment as well as specific equity sectors
Appendix
U.S. Equities Have Sizeable Tilt Toward Tech and Health Care

Sector Weightings

<table>
<thead>
<tr>
<th>Sector</th>
<th>U.S. Equities</th>
<th>Global Equities ex. U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm. Serv.</td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td>Cons. Disc.</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Cons. Stap.</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Energy</td>
<td>10</td>
<td>8</td>
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<tr>
<td>Financials</td>
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<td>20</td>
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<td>Health Care</td>
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<td>6</td>
</tr>
<tr>
<td>Industrials</td>
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<td>10</td>
</tr>
<tr>
<td>Info. Tech.</td>
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<td>12</td>
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<tr>
<td>Materials</td>
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<td>7</td>
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</tr>
<tr>
<td>Utilities</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

September 30, 2019. Equities are measured using: MSCI AC World IMI ex. USA and MSCI USA IMI. Source: FactSet, MSCI
Technology Sector the Greatest Driver of Recent U.S. Outperformance

2019 Year-to-Date Performance Contribution by Sector

As of October 4, 2019. Equities are measured using MSCI AC World IMI ex USA and MSCI USA IMI.
Source: FactSet, MSCI