Presentation on February 7, 2019 by:
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Has the Fed just delivered easing equivalent to two rate cuts?

Paul Tudor Jones

February 5th, 2018

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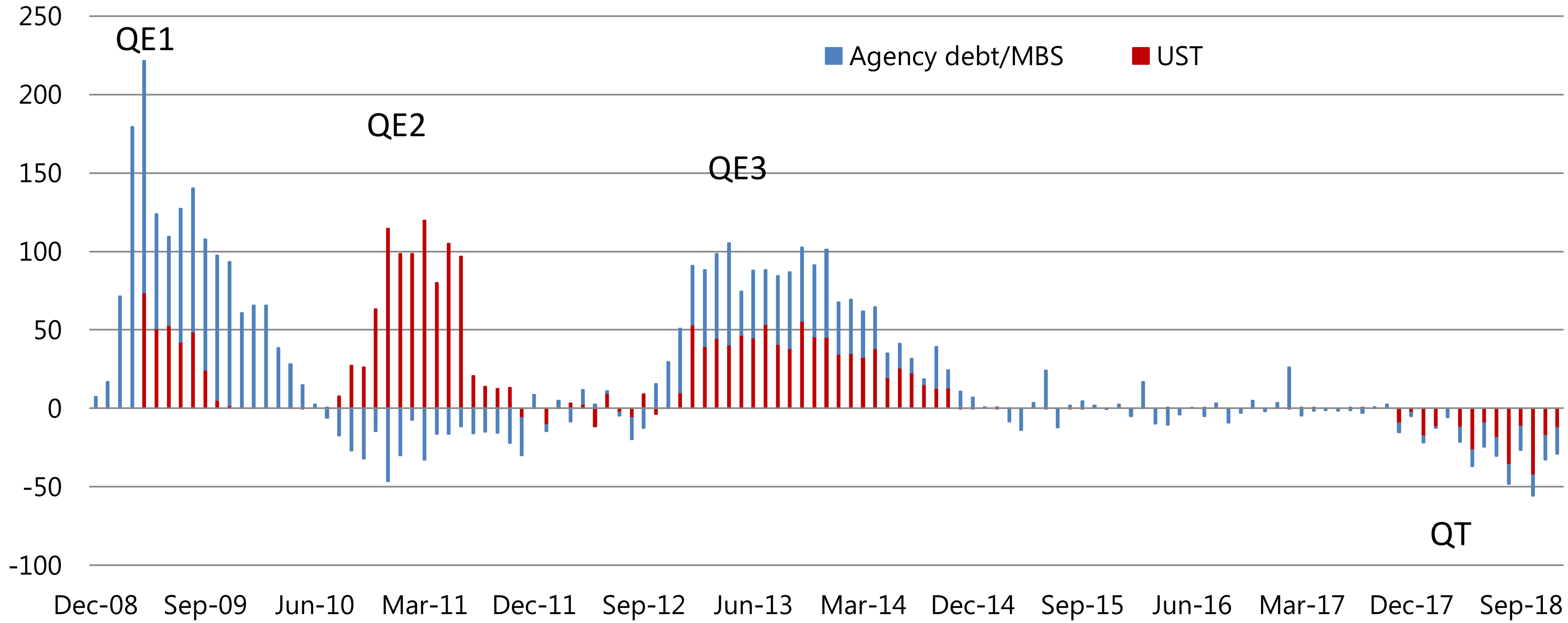
Key points

- At the last FOMC meeting, Chairman Powell has opened the door to reassess balance sheet policy
- This is potentially a game-changer for asset prices as we view the market impact of an early ending of quantitative tightening akin to a policy easing
- There is no precise equivalence between balance sheet policy and changes in the policy rate, let alone other asset prices
- In fact, no one knows how the unwinding of a decade-long experiment of extraordinary central bank policies will eventually play out in markets. We are all learning by doing
- Our view is that the balance sheet tightening in the pipeline for 2019 is equivalent to around two Fed funds rate hikes
- If these are now off the table, the current feel-good mood in markets will persist, eventually opening the door for more Fed hikes down the line
- Alleviating market stress today comes at the cost of increased asset overvaluation and leverage, exposing next downturn to a severe b/s sheet recession. There is no free lunch

A contained hiking cycle relative to history: shallow and gradual rate hikes accompanied by deliberate and well-telegraphed quantitative tightening (QT). Bus is this a correct view?

Figure 1
Fed net purchases of securities
Monthly flows; USD billions. Source: Haver

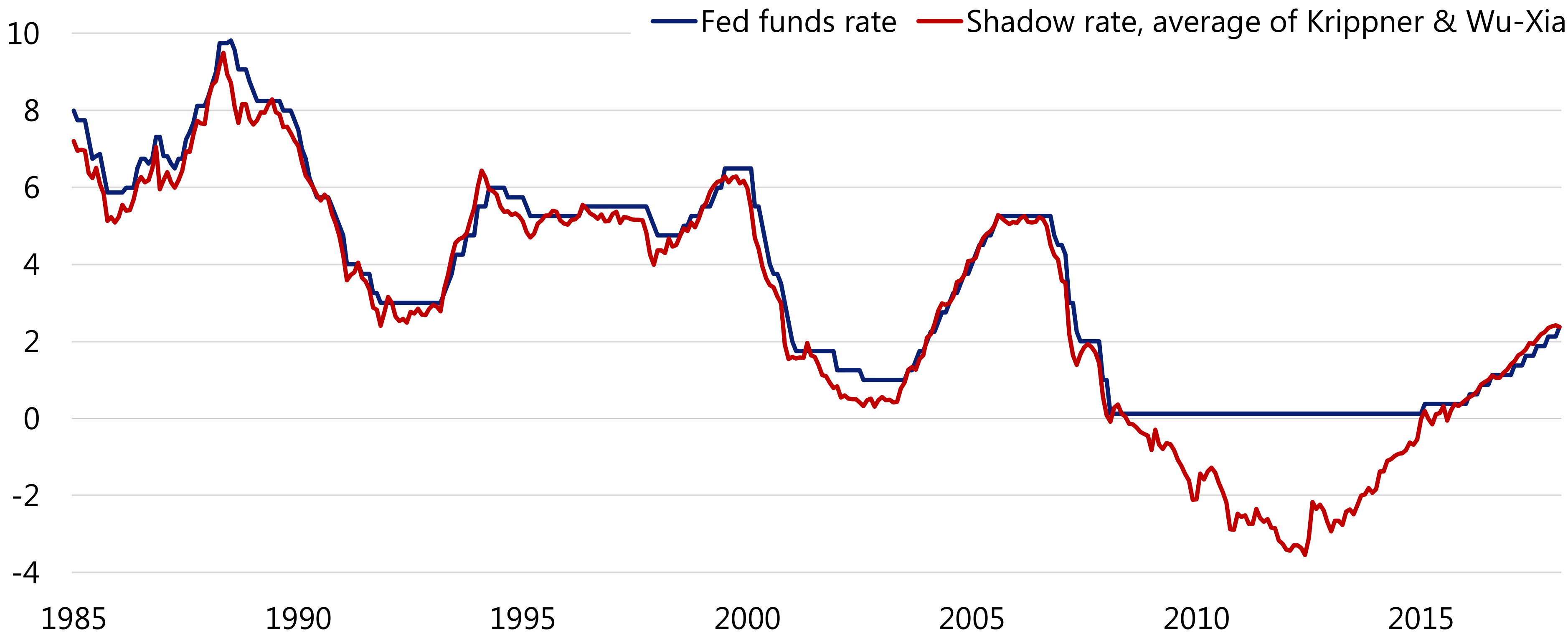


Interaction between rate hikes and QT delivers a more powerful tightening than the sums of the two parts. How much combined Fed tightening to date? Shadow rate shows significant tightening by the time of the first outright hike

Figure 2

Shadow Fed policy rate

%; Source: Haver

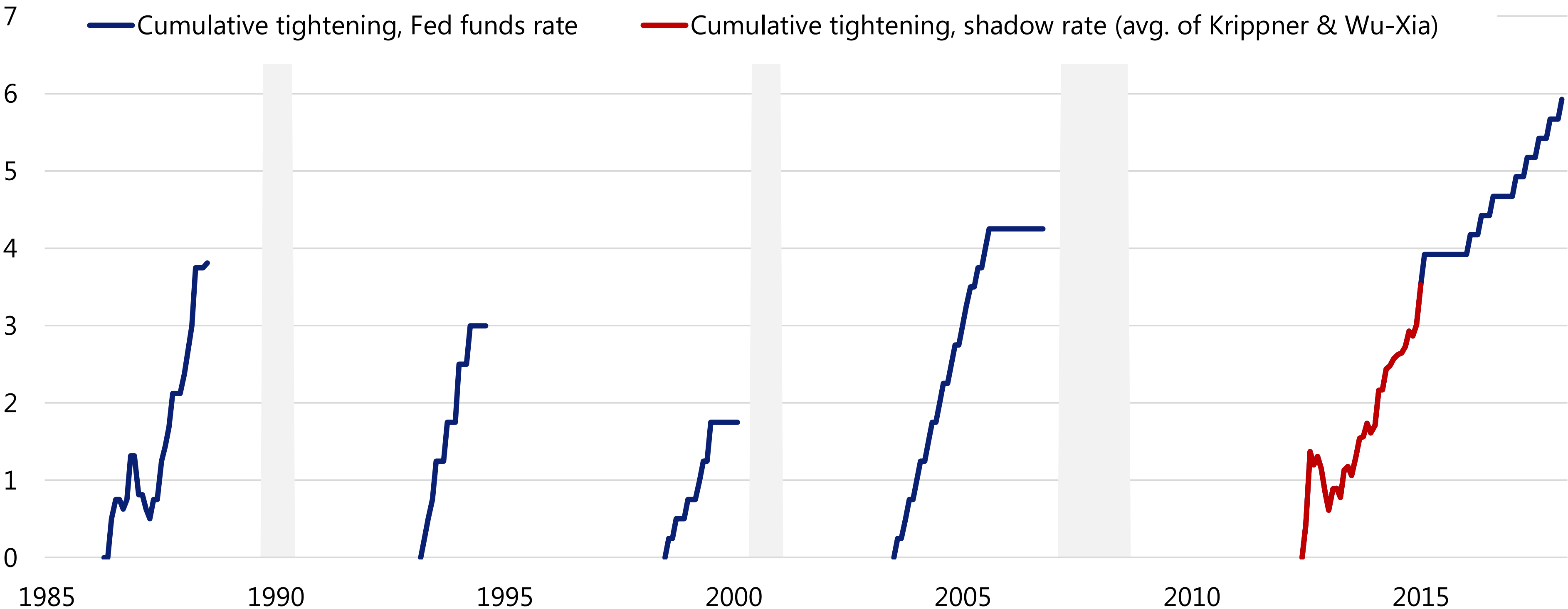


Combination of shadow rate tightening and subsequent outright policy rate hikes amounts to a bigger swing in rates than in the last five Fed hiking cycles

Figure 3

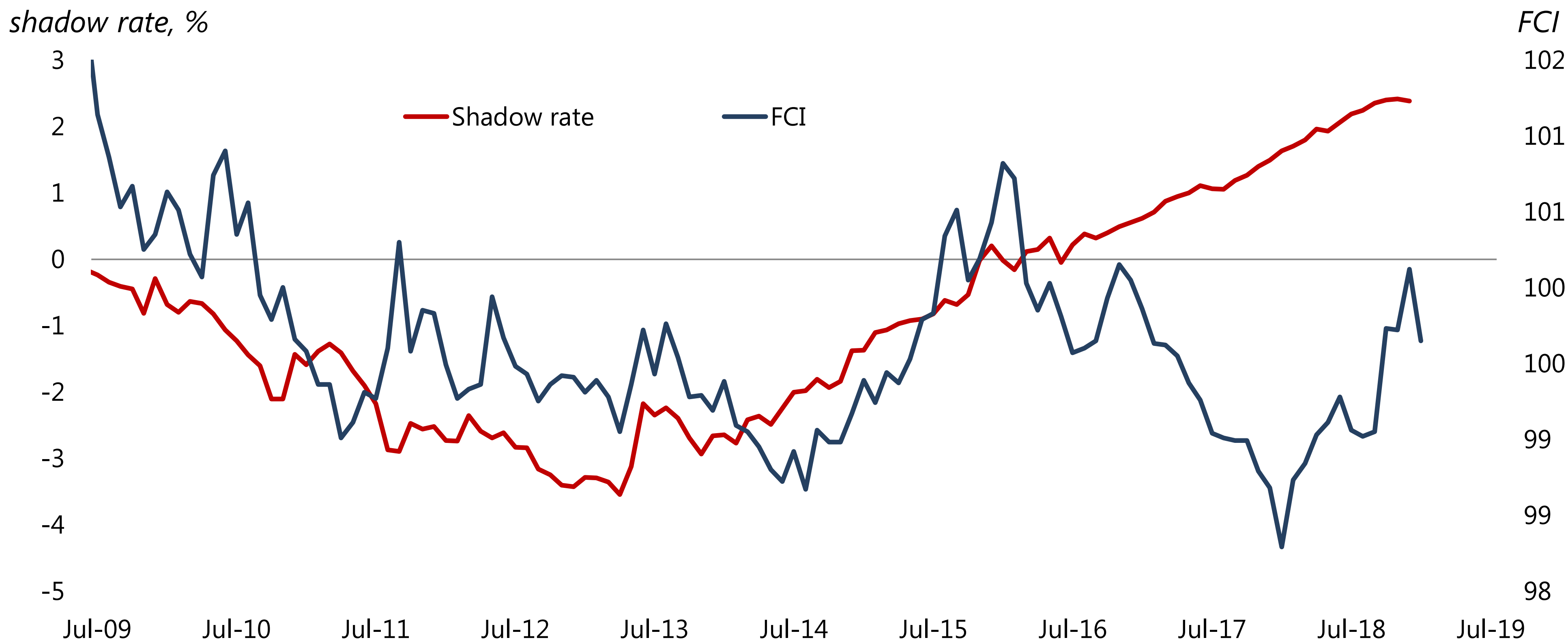
Monetary policy tightening cycles: 1983 - 2018

%; Source: Haver



FCI better way to track tightening in real time, but influenced by factors other than the Fed. Swings in FCI suggest (i) policy tightening builds over time; (ii) markets react non-linearly; (iii) QT uncertainty like a Sword of Damocles

Figure 4
Financial conditions and shadow policy rate



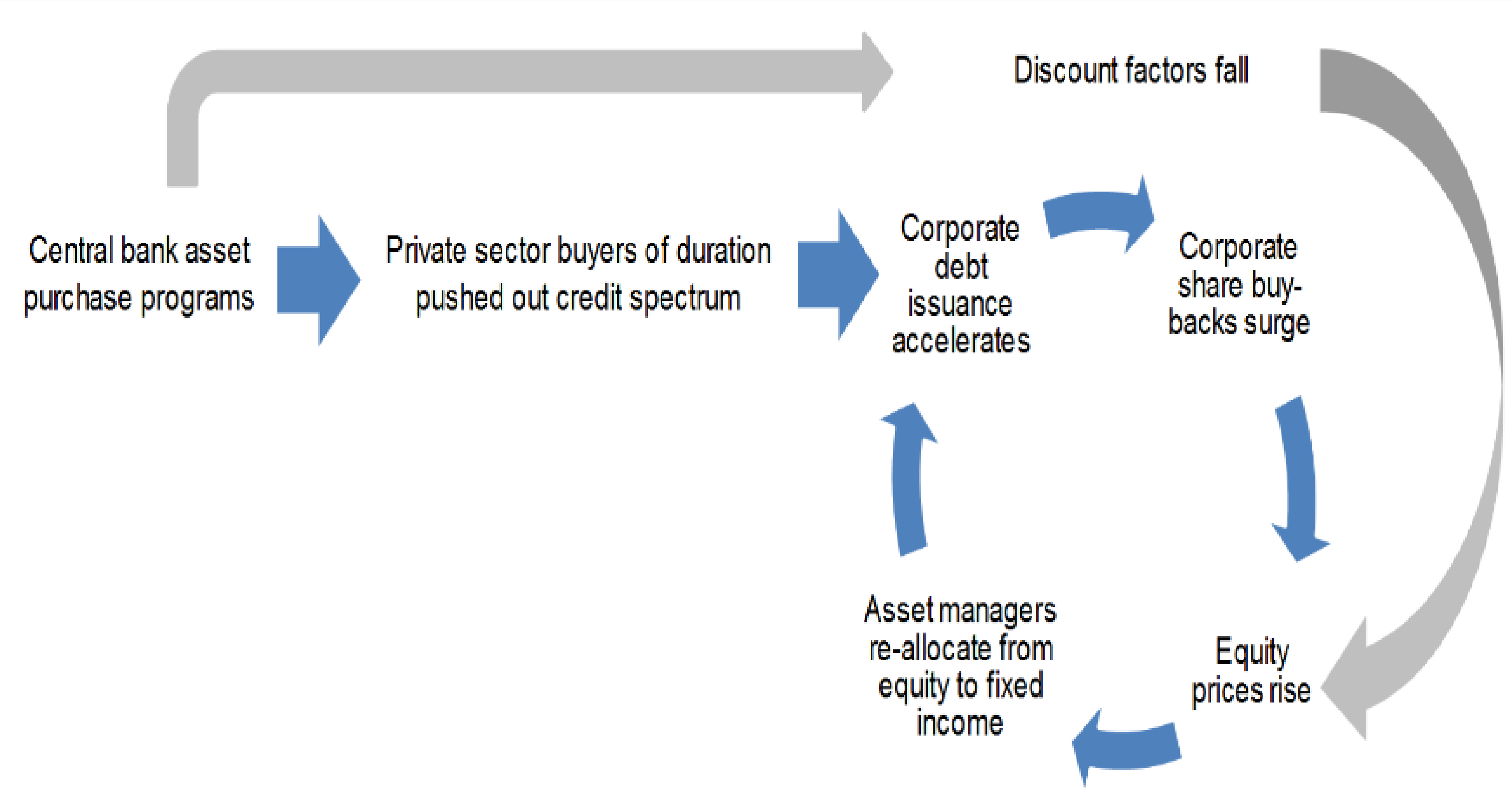
Literature on QE helps gauge impact of QT. $500bn QE = -20bp 10y yields = -3¼ Fed funds rate cuts. If QT = -QE, then QT in the pipeline for 2019 (ca. $445bn) is equivalent to almost 3 rate hikes (upper bound estimate). Other research points to lower bound of 1 rate hike. So, QT in 2019 = ca. 2 rate hikes

Table. How much QE equates to a drop in interest rates 1/

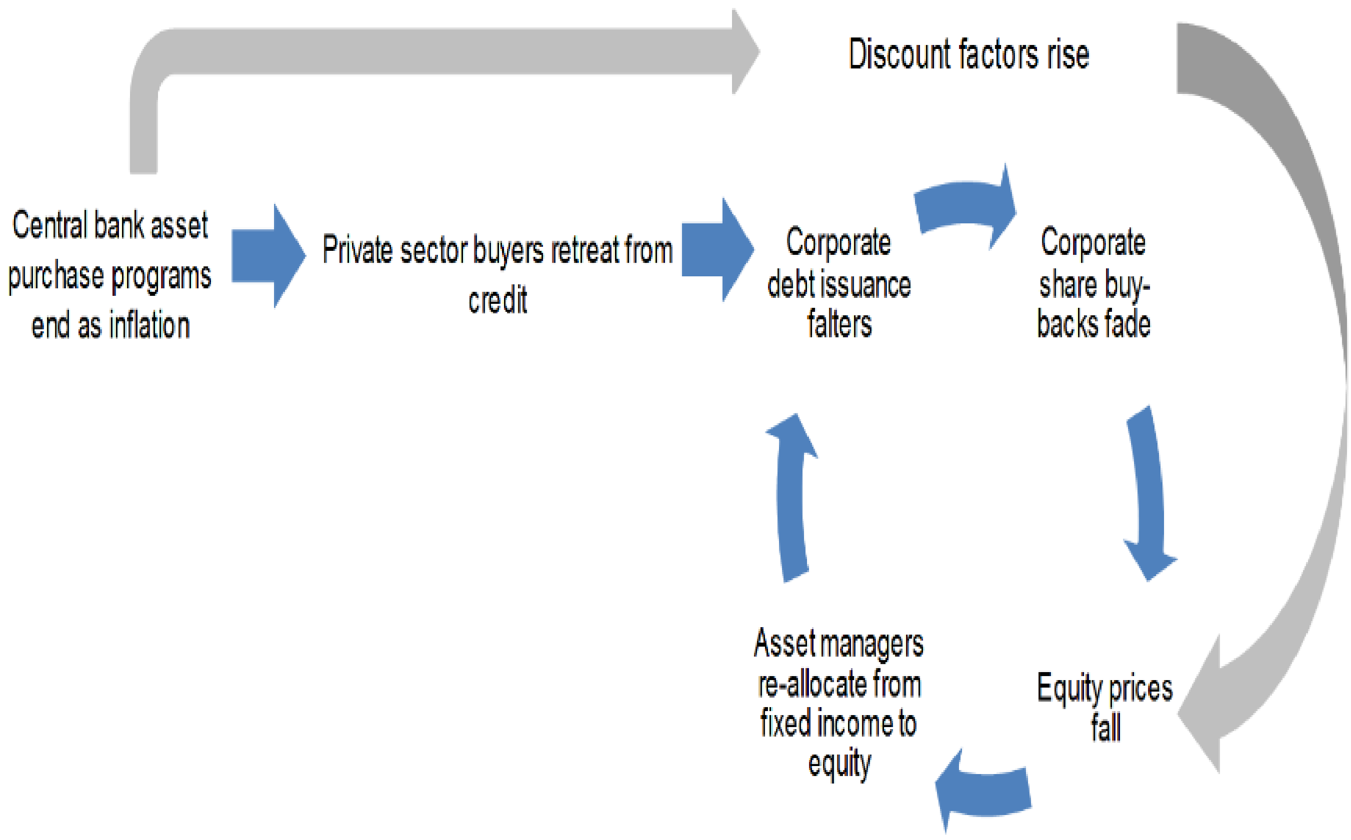
QE in bn.	100	250	445	500	1500
10y yield, in bp	-5	-11	-20	-23	-68
Fed Funds rate, in bp	-16	-41	-72	-81	-244
QE equates to this number of 25bp rate cuts	*-0.7*	*-1.6*	*-2.9*	*-3.3*	*-9.8*

1/ Results constructed by averaging the rules of thumb extrapolated from Gagnon and Sack (2108) and Kiley (2018).

Flow & liquidity channels amplify effect of Fed balance sheet policies beyond the interest rate channel alone. QE accelerator: QE ➔ increases corporate issuance ➔ increase share buybacks ➔ EQ rebalancing into FI ➔ falling yields



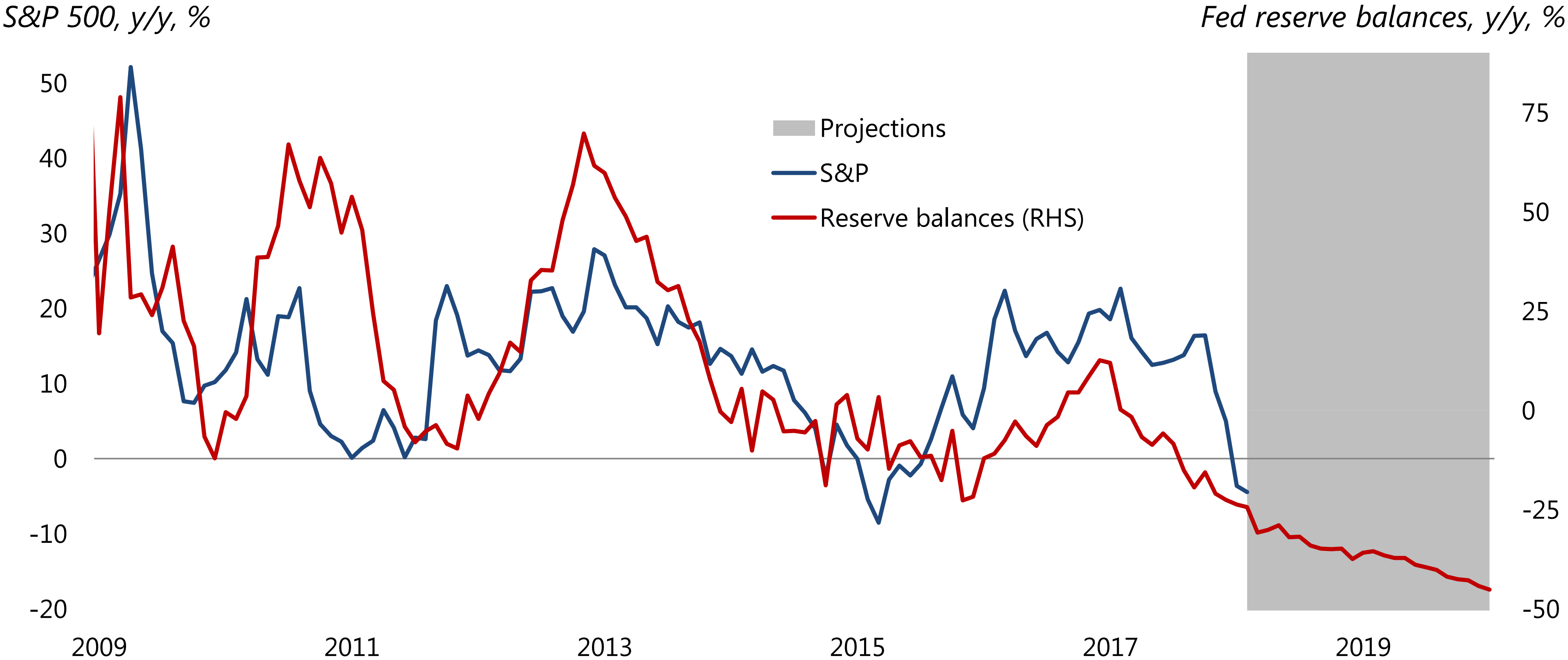
QT works like QE accelerator in reverse thrust: QT ➔ lowers corporate issuance ➔ lowers share buybacks ➔ FI rebalancing into EQ ➔ rising yields



Flow-induced effects of QE and QT show up in relationship between reserve balances (electronic cash issued by Fed to fund QE purchases) and equity prices. Correlation post-crisis is 45%. A heuristic, but troubling, implication

Figure 5

Fed reserve balances and stock prices



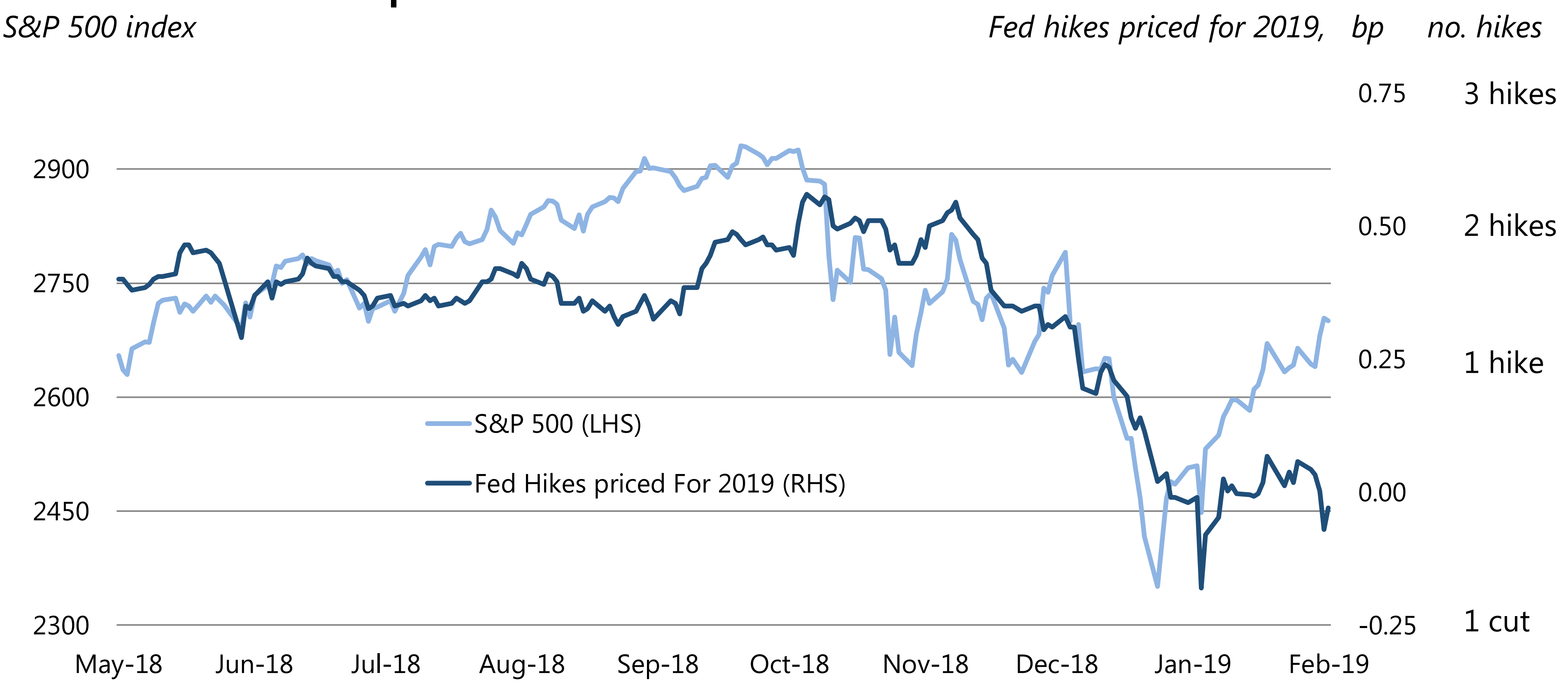
Summing-up

- The impact of QT on asset prices appears sizable, all the more so when seen in the context of the self-reinforcing flows it induces and the associated shrinking of liquidity.
- QT and rate hikes are also self-reinforcing. For example, policy rate hikes have made cash a much more attractive asset than at any point in the cycle—its real return has recently turned positive the first time in 10 years, while the real return on stocks, bonds and gold has turned negative.
- Ironically, the acceleration of QT in the fourth quarter of 2018, when the maximum monthly roll-off was increased from $40bn to $50bn, meant that the Fed was accelerating the pace at which it was liquidating securities and raising cash from the markets right when the demand for that very same cash exploded as private investors scrambled to de-risk their portfolios and invest in more attractive short-term term money market funds

Fed reconsidering QT likely to induce a feel-good mood in markets, opening room for the Fed to restart hiking down the line (stock market tends to lead how the market prices in rate moves)

Figure 6

S&P 500 and Fed hikes priced



Presentation on February 7, 2019 by:
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Q1 2019 IACFM Meeting
Discussion Materials

February 2019

PERSHING SQUARE

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Discussion Topic

What are your views on recent developments related to:

1) ***U.S. trade***
2) ***current fiscal policies***
3) ***the recent government shutdown***

What are the implications for financial markets?

Trade

Trade Policy: “Putting America First”

- **The Trump administration has launched a “new era” in trade policy, based on five major pillars aimed at “Putting America First”: (1)**
  - “Supporting our national security”
  - “Strengthening the U.S. economy”
  - “Negotiating better trade deals”
  - “Aggressive enforcement of U.S. trade laws”
  - “Reforming the multilateral trading system”
- **First administration in decades to aggressively pursue these principles**
- **In line with these objectives, the U.S. has amended major trade agreements, including withdrawing from the TPP, renegotiating NAFTA, and beginning to update KORUS**
  - The U.S. initiated a Section 301 investigation into China’s trading practices (2)

(1): Office of the United States Trade Representative. 2018 Trade Policy Agenda and 2017Annual Report of the President of the United States on the Trade Agreements Program.
(2): Section 301 of the Trade Act of 1974 (Trade Act) is designed to address foreign unfair trade practices. Section 301 may be used to enforce U.S. rights under bilateral and multilateral trade agreements and also may be used to respond to unreasonable, unjustifiable, or discriminatory foreign government practices that burden or restrict U.S. commerce.

Trade Policy: "Putting America First"

- **The administration has committed to staying in the WTO but is now taking action against China in response to longstanding WTO violations. [1,2] Major grievances include: [2]**
  - Forced technology transfer
  - State sponsored cyber-intrusions and cyber-theft
  - Market access prohibitions which protect Chinese manufacturers from competition
  - China's promotion of state-owned enterprises, to the detriment of foreign companies
  - Other various systemic trade distortions caused by China's non-market economic system

China continues to embrace a state-led, "mercantilist" economy while realizing the many benefits of WTO inclusion [2]

  - Despite WTO members' expectations – and China's representations – China never pursued open, market-oriented policies as endorsed by the WTO [2]

- **Legitimate need to protect U.S. technology and intellectual property**

(1): Office of the United States Trade Representative. 2018 Trade Policy Agenda and 2017Annual Report of the President of the United States on the Trade Agreements Program.
(2): United States Trade Representative. Report to Congress On China's WTO Compliance. February 2019.

Trade Policy: "Putting America First"

- **In 2018, the United States imposed new tariffs on 12% of goods imported into the country,[1] ~80% related to Chinese goods**
  - Disproportionate impact on certain sectors (e.g., steel, aluminum, solar, autos, etc.)
- **Initial tariff rate established at 10%, set to increase to 25% absent a deal**

U.S. Imports Affected by Tariffs Imposed by the United States (Source: CBO)

Dollars in Billions

Category of Goods	2017 Trade Value	Value of Imports Affected by Tariffs: Tariff on Solar Panels	Tariff on Washing Machines	Tariff on Steel	Tariff on Aluminum	Tariffs on Chinese Goods	All Recent Tariffs	Share of Category Affected by Tariffs (Percent)
Food, Feed, and Beverages	138	0	0	0	0	5	5	3.6
Industrial Supplies and Materials	507	0	0	24	17	34	75	14.7
Capital Goods, Except Automotive	641	6	*	5	*	116	128	19.9
Automotive Vehicles, Parts, and Engines	359	1	0	0	0	19	19	5.4
Consumer Goods	602	0	2	0	*	55	57	9.5
Other Goods	95	0	0	0	0	*	*	**
Total	**$ 2,342**	**$ 7**	**$ 2**	**$ 29**	**$ 17**	**$ 229**	**$ 284**	**12.1**
Affected Imports' Share of Total Imports (Percent)	n.a.	0.3	0.1	1.2	0.7	9.8	12.1	n.a.

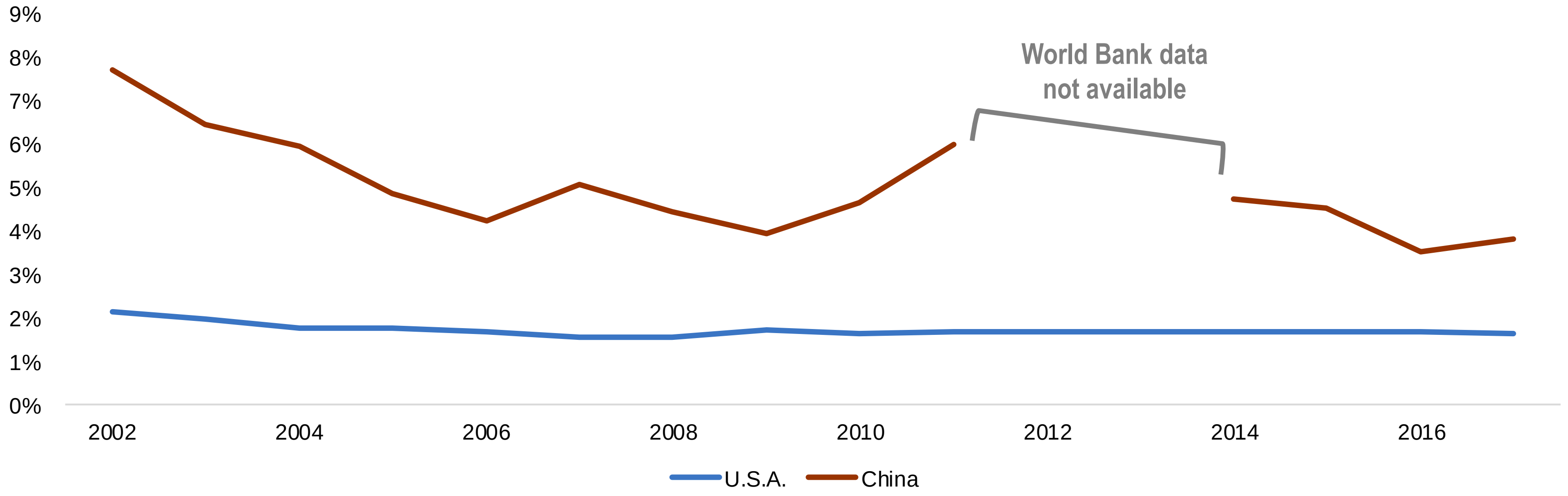
- **Tariffs imposed are estimated to modestly reduce GDP growth while stimulating inflation**
  - CBO estimates that trade barriers will reduce real GDP by ~0.1%, on average, through 2029 while increasing personal consumption expenditure by a similar amount [1]

(1): CBO. The Budget and Economic Outlook: 2019 to 2029. January 2019.

Trade Policy: “Putting America First”

China has charged a 5% trade-weighted average tariff rate since WTO inclusion vs. the U.S. at 1.7% (1)

World Bank Realized Tariff Rate, Weighted Mean, All Products (%)



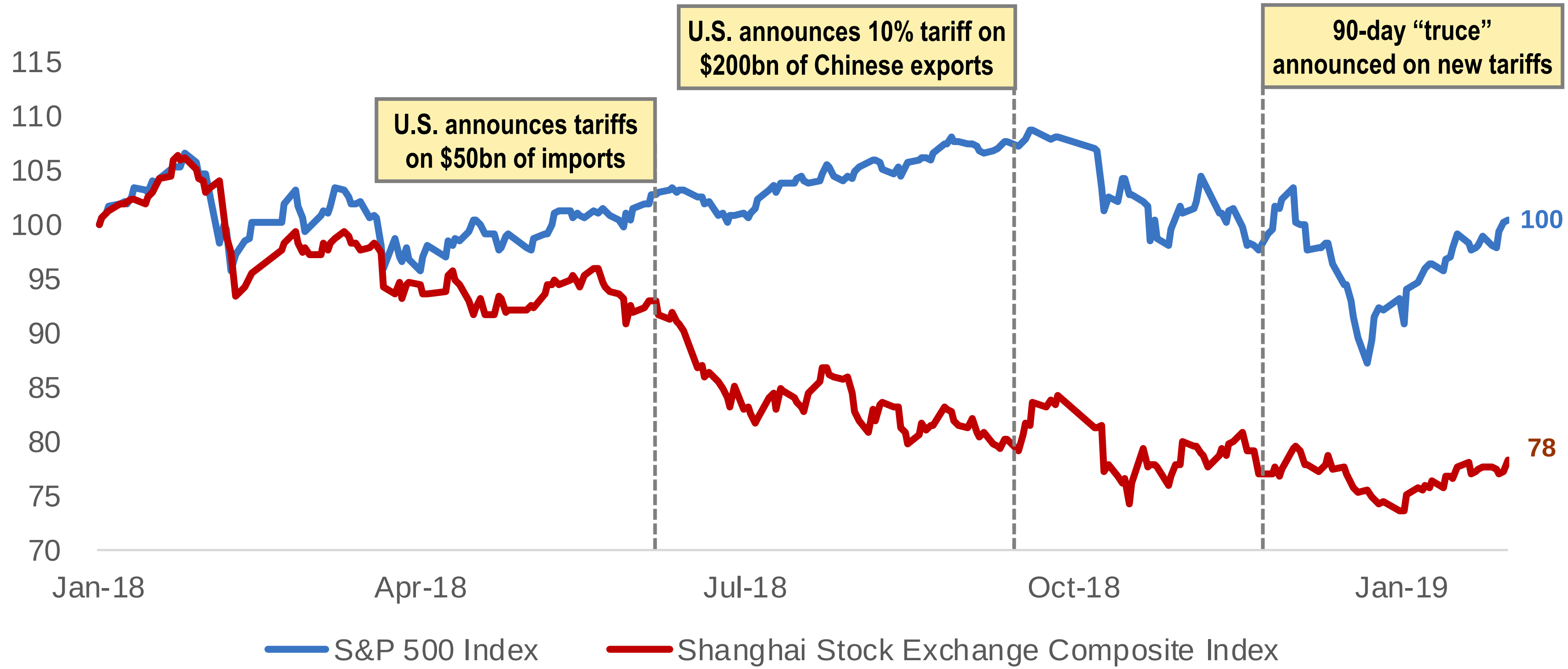
Recent policy actions represent a correction to imbalances tolerated by prior administrations

(1): World Bank. World Integrated Trade Solution System. Based on the trade-weighted mean tariff of all products. Average from 2002-2017.

The Chinese Stock Market Has Been Disproportionately Impacted by the Trade Dispute

- **Since the start of 2018, China's benchmark index is down ~22% vs. the S&P 500 which is approximately flat**

Indexed Stock Index Performance (Jan 1, 2018 = 100)



Source: Bloomberg.

Both Parties Are Incentivized To Resolve the Ongoing Trade Dispute

China is incentivized to reach an equitable trade deal

- **Economic growth is important for political stability and social cohesion**
  - Potential additional negative stock market ramifications if no trade deal reached
  - Policy steps to mitigate U.S. trade actions are not proving effective
- **Trade uncertainty is causing multinational corporations to restructure their supply chains today. The longer the trade-war drags on, the more uncertainty it introduces and the more likely multinationals are to pull away from China**
- **This is not just a U.S. vs China issue; other countries are becoming increasingly critical of China's "mercantilist" policies**

The U.S. is also incentivized to resolve the ongoing trade dispute

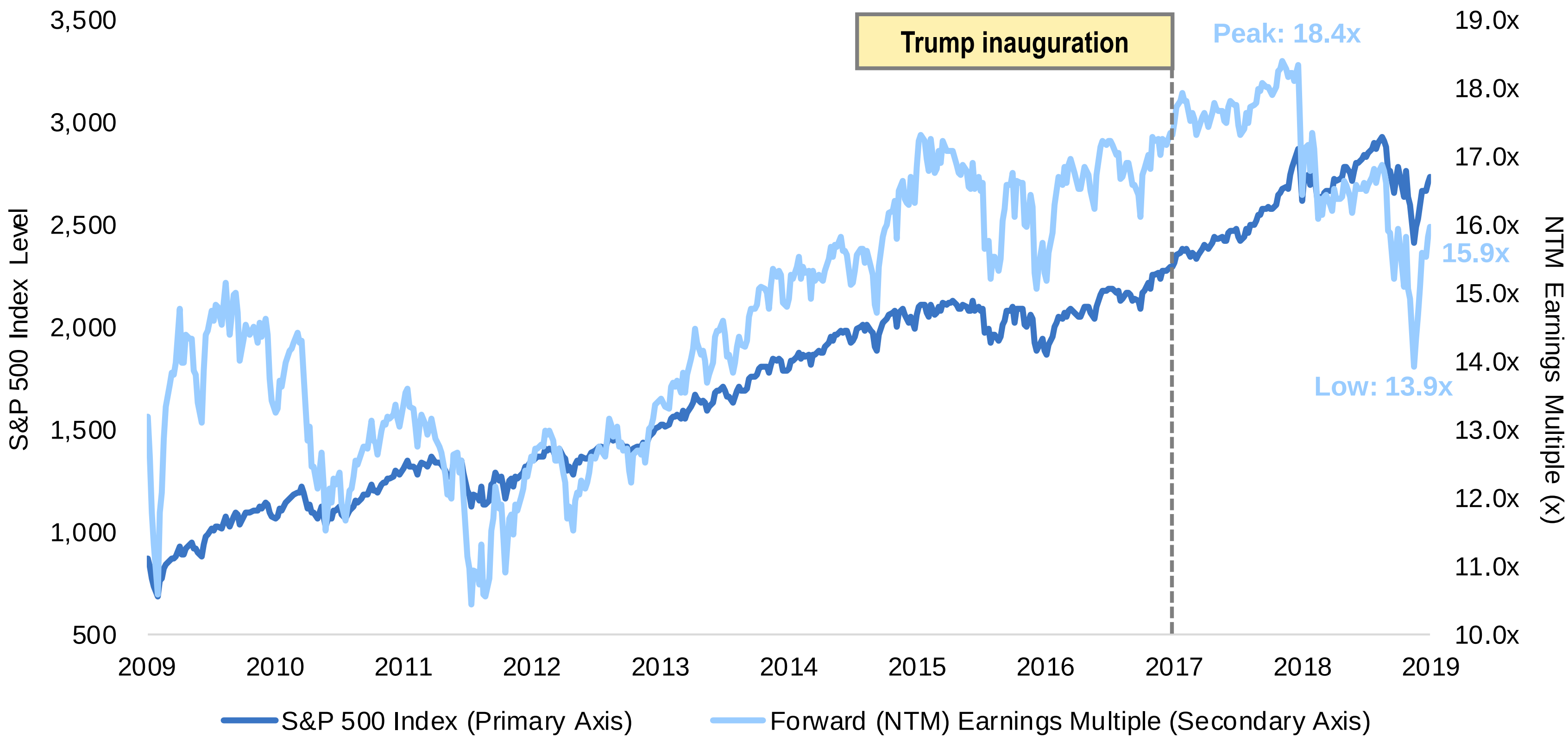
- **Unsuccessful resolution on trade risks tipping the economy towards a recession ahead of the 2020 election cycle**
- **President Trump and others view the performance of the stock market as a barometer for his administration's success**

In light of the above, we believe a near-term resolution is likely. If no resolution is reached, there is downside risk to equity markets

Equity Valuations Seem Reasonable Absent Significant Trade-War Escalation

- **Current market valuation is above December lows due to market appreciation and a downward S&P earnings revision**
  - Revised consensus forecasts project ~6% S&P earnings growth for 2019 and double-digit earnings growth for 2020

S&P 500 Forward Earnings Multiple



Source: Bloomberg.

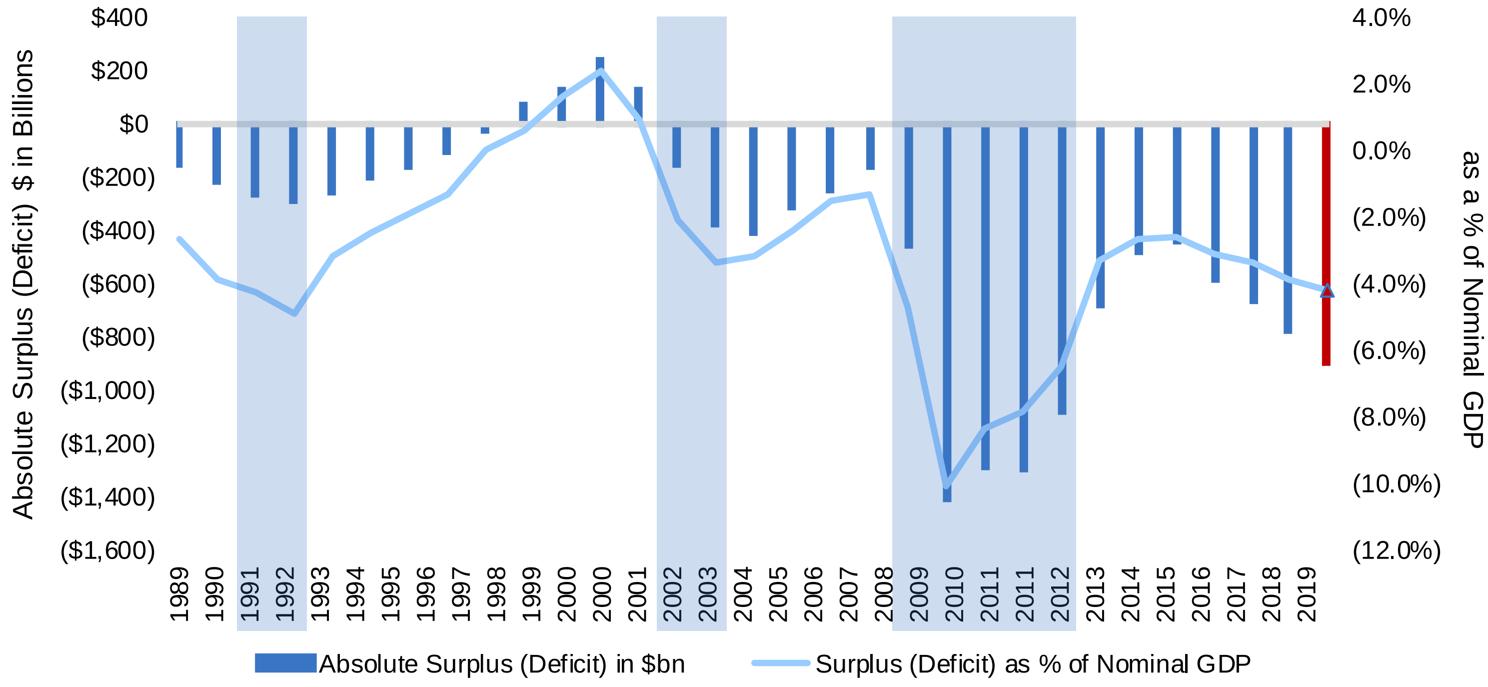
Fiscal Policy

The Current Federal Deficit in Context

The U.S. Deficit as % of GDP is greater than the 50-year average (~2.9%), which is particularly notable as we are in an economic expansion

- **The CBO projects the deficit to exceed ~$1 trillion per year by 2022**
  - Deficits in CBO's baseline average 4.4% of GDP between 2020 and 2029

U.S. Federal Deficit (1989-2019), ***Blue Shading Represents Prior Recessions***



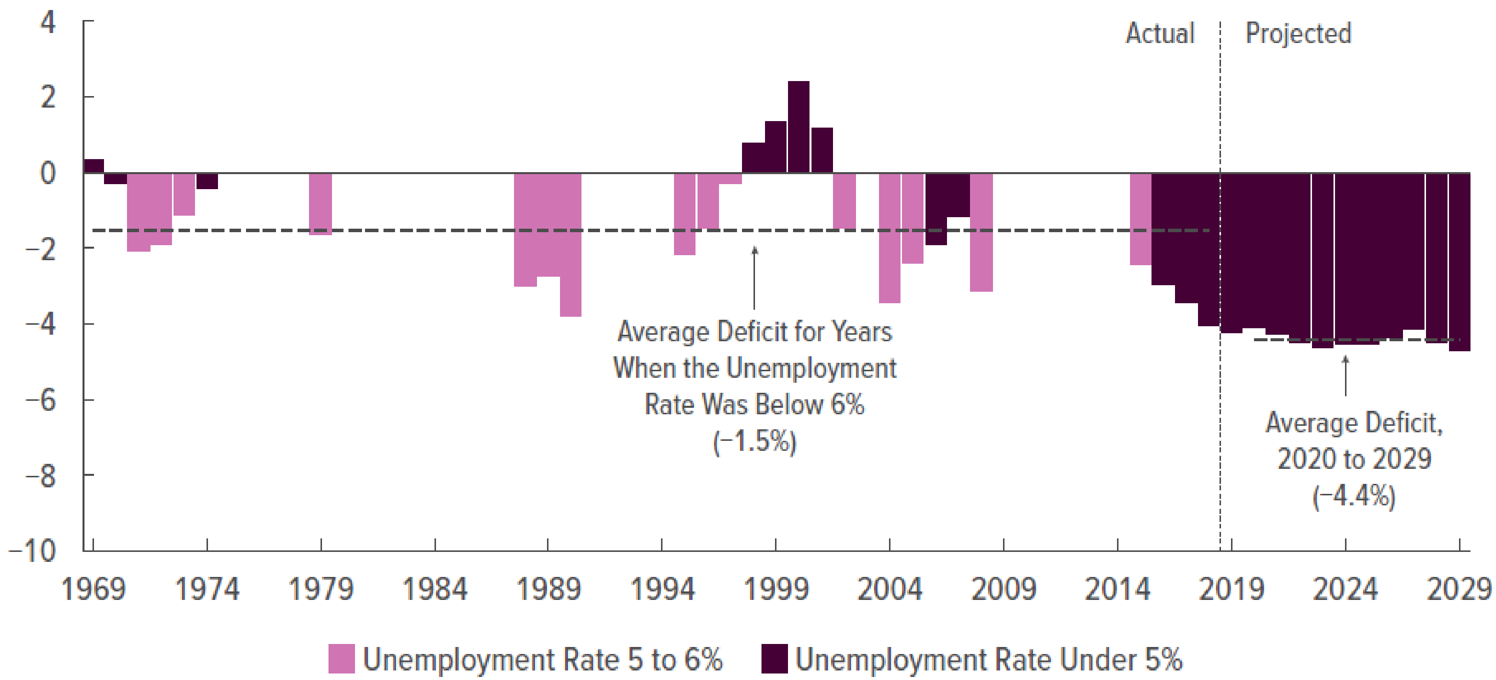
Source: CBO Budget Outlook, Bloomberg.

The Current Federal Deficit in Context

The projected deficit is unprecedented in the context of currently low unemployment levels

- **In 27 of the past 50 years, the unemployment rate has been <6%. Deficits in those years averaged 1.5% of GDP (vs. current CBO projections of 4.4%)**

U.S. Federal Deficit Highlighting Periods of Low Unemployment (1969 – 2029E)

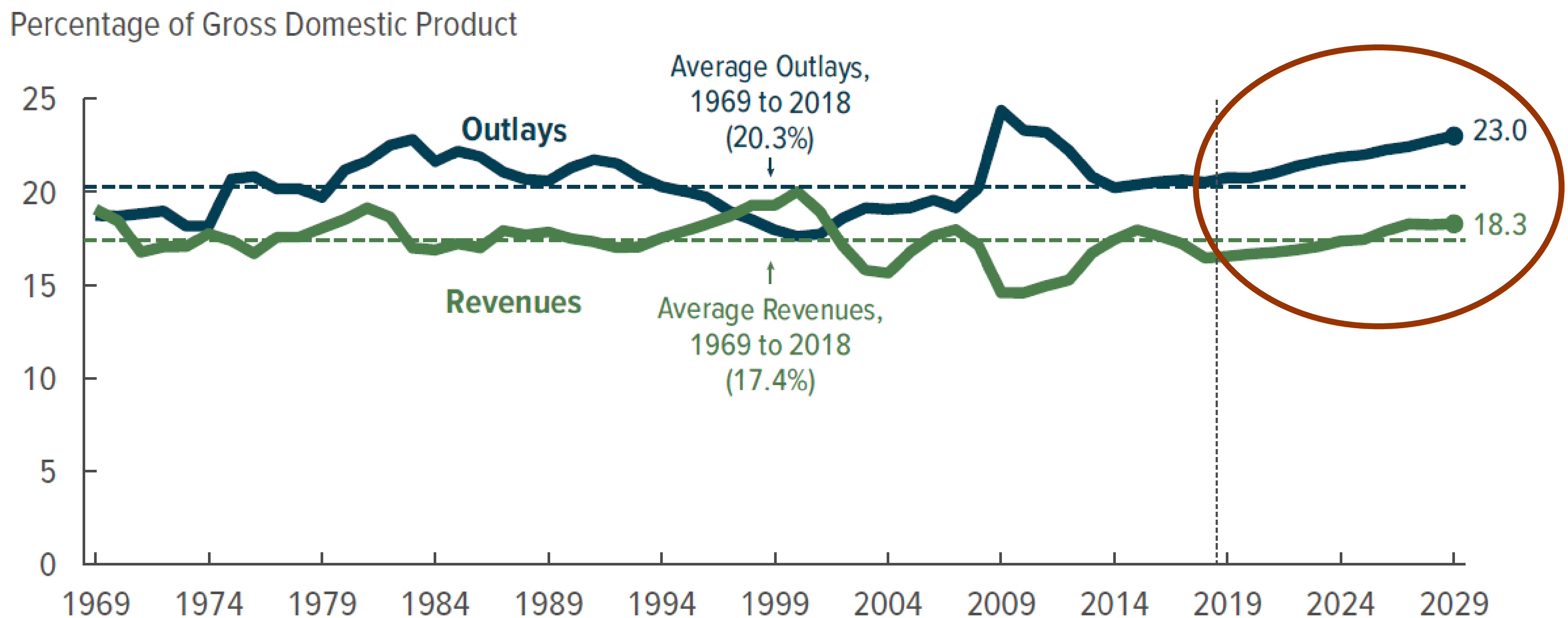


Source: CBO. The Budget and Economic Outlook: 2019 to 2029. January 2019.

CBO Baseline Projections: Deficit Projected to Widen

On balance, outlays are expected to rise more than revenues, resulting in expanding deficits

Revenue vs. Outlays



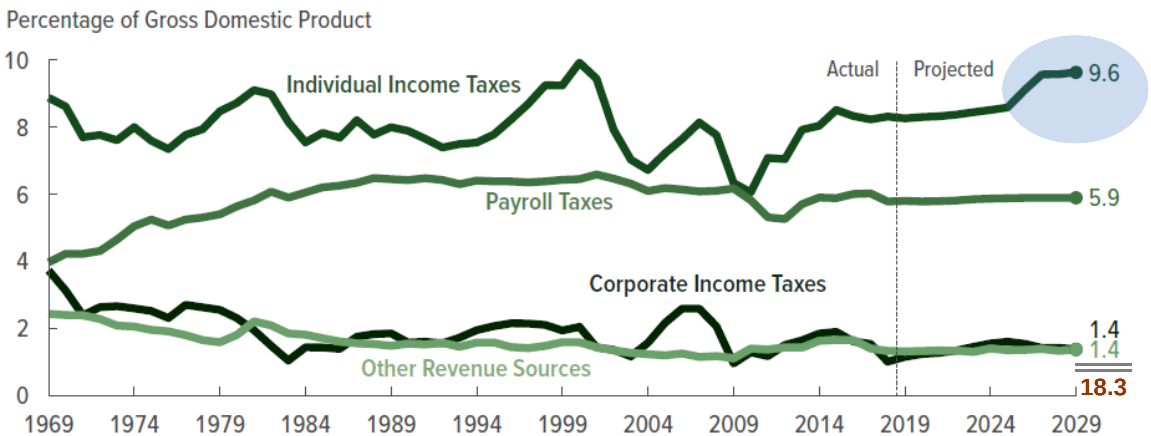
Current bipartisan bills likely to be considered by Congress may exacerbate the deficit (i.e. an infrastructure bill)

Source: CBO. The Budget and Economic Outlook: 2019 to 2029. January 2019.

CBO Baseline Projections: Deficit Projected to Widen

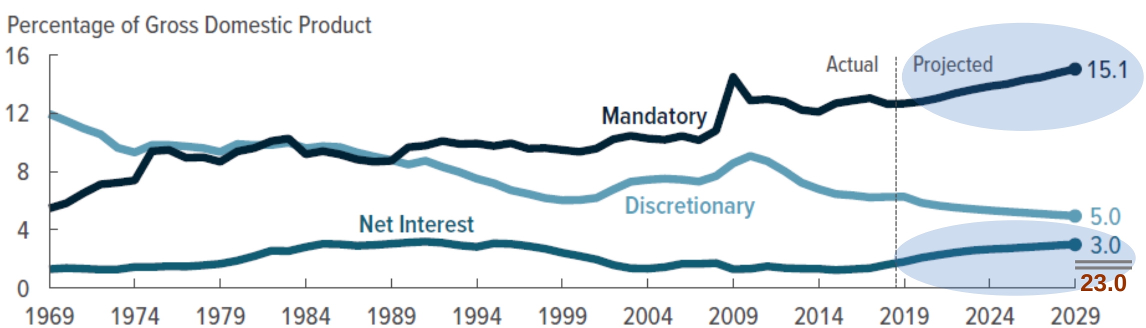
Spending to rise over the coming decade driven by mandatory outlays (Social Security, Medicare). Rising net interest a long-term concern

Revenues



- Individual income taxes are projected to rise at the end 2025 following the expiration of temporary provisions from the 2017 tax act

Spending



- Social Security and health care drive the largest increase in outlays
- Discretionary outlays (including defense) expected to decline
- Net interest costs will become more meaningful, driven by higher debt balances and rising rates

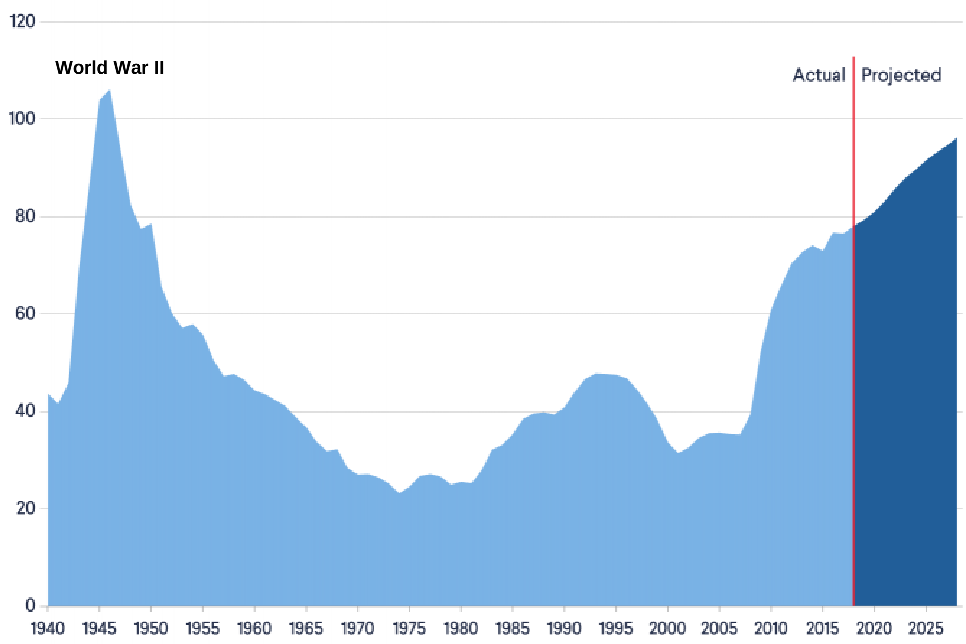
Source: CBO. The Budget and Economic Outlook: 2019 to 2029. January 2019.

The Federal Debt Balance is Large and Growing

U.S. debt levels are at generational highs, reducing long-term flexibility

- **CBO projections have debt increasing by more than $12.5 trillion under current law over the next decade – from $16.1 trillion today to $28.7 trillion by 2029**
  - Excludes "off-balance sheet" entitlements and commitments
- **40% of Treasury debt held by foreign governments, of which China is the largest holder at ~7% of total debt (1)**
  - China is effectively subsidizing U.S. interest rates. Risk that China pulls back from purchasing U.S. debt
- **High debt balances aided by low interest rates… for now**

CBO Projected Federal Debt Balance Held by the Public (as a % of GDP)

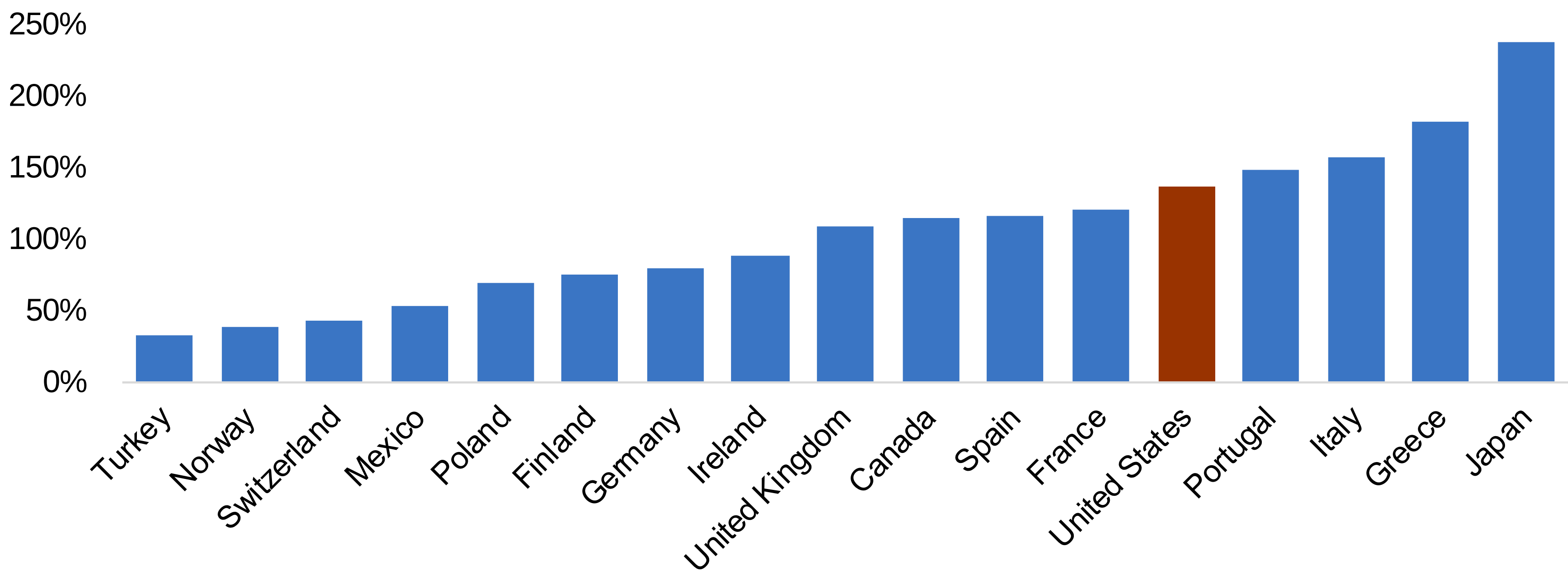


(1): CBO. The Budget and Economic Outlook: 2019 to 2029. January 2019.
Source: CBO, Council on Foreign Relations.

The Federal Debt Balance is Large and Growing

U.S. debt-to-GDP is amongst the highest of developed nations

General Government Debt (as % of GDP) Amongst Select OECD Countries



Inaction in tackling the federal debt will eventually lead to negative consequences, including higher interest rates & debt service, less fiscal flexibility, crowding out of private investment and greater risk of a fiscal crisis (1)

(1): CBO. The Budget and Economic Outlook: 2019 to 2029. January 2019.
Source: OECD National Accounts Statistics. General government debt-to-GDP ratio is the amount of a country's total gross government debt as a % of its GDP.

No One Seems to Care

Republicans seem less focused on the federal debt than they have been in prior years

- **<u>Bloomberg</u>:** "*National Debt Under Trump Is Surging at Its Fastest Pace Since 2012*" (December 2018)
- **<u>The Economist:</u>** *"America's Treasury ramps up borrowing to finance the Republican tax cuts"* (May 2018)
- **<u>WSJ</u>:** "*The Republicans' Debt Amnesia: Remember when the GOP was the party of fiscal discipline? Congress doesn't.*" (November 2017)

2020 Democratic candidates pushing for taxation… and significantly expanded spending

- **<u>New York Times</u>:** "*Medicare for All Emerges as Early Policy Test for 2020 Democrats*" (February 2019)
- **<u>NBC News</u>:** "*Progressive bandwagon: Warren proposes a 'wealth tax' on the ultra-rich*" (February 2019)
- **<u>Politico</u>:** "*Soak the rich? Americans say go for it. Surveys are showing overwhelming support for raising taxes on top earners.*" (February 2019)

Widening social inequality and an increasingly divergent political environment could become a larger risk to U.S. capital markets

The Government Shutdown

The U.S. Government Shutdown

The U.S. Government shutdown appears to be a casualty of partisan political tactics

- **Direct repercussions in the form of lower GDP growth**
  - CBO estimates the shutdown to be a 40bp headwind to growth (1)
- **Short-term delay in IPO filings and select merger approvals (CFIUS, etc.)**
- **Potential longer-term negative repercussions**
  - Damages business confidence
  - Creates disaffection with the political system among everyday Americans
    - Mid-shutdown Trump / Congress approval rating of 37% and 20%, respectively (2)
  - Negative precedent, a stain on the U.S. political system

Heightened voter disaffection likely to lead to an increasingly divergent electorate, or might advance a more centrist agenda (lower probability)

(1): CBO. The Budget and Economic Outlook: 2019 to 2029. January 2019.
(2): Based on a January 2-10 Gallup poll. *Trump, Congress Job Approval Mostly Steady Amid Shutdown*. January 15, 2019.

Conclusion

U.S. Trade Policy

- **Both the U.S. and China are incentivized to resolve the current trade dispute. An equitable resolution is therefore likely**

Fiscal Policy

- **Imbalances pose a longer-term threat to the U.S. economy, yet equity markets (and the bond market) seem unconcerned**
- **Growing debt risks crowding out private investment and higher interest rates**

The Government Shutdown

- **Symbolic of the dysfunction present in the U.S. political system**
  - Negative for the economy, business confidence and voter sentiment
- **Voter dissatisfaction risks increased polarization of the electorate**
  - Potential to pave the way for a far-left candidate which (based on current policies being discussed) would be a negative for the U.S. economy
  - Blue sky opportunity for a more centrist presidential candidate to get elected

Source: Bloomberg next twelve month blended forward earnings.

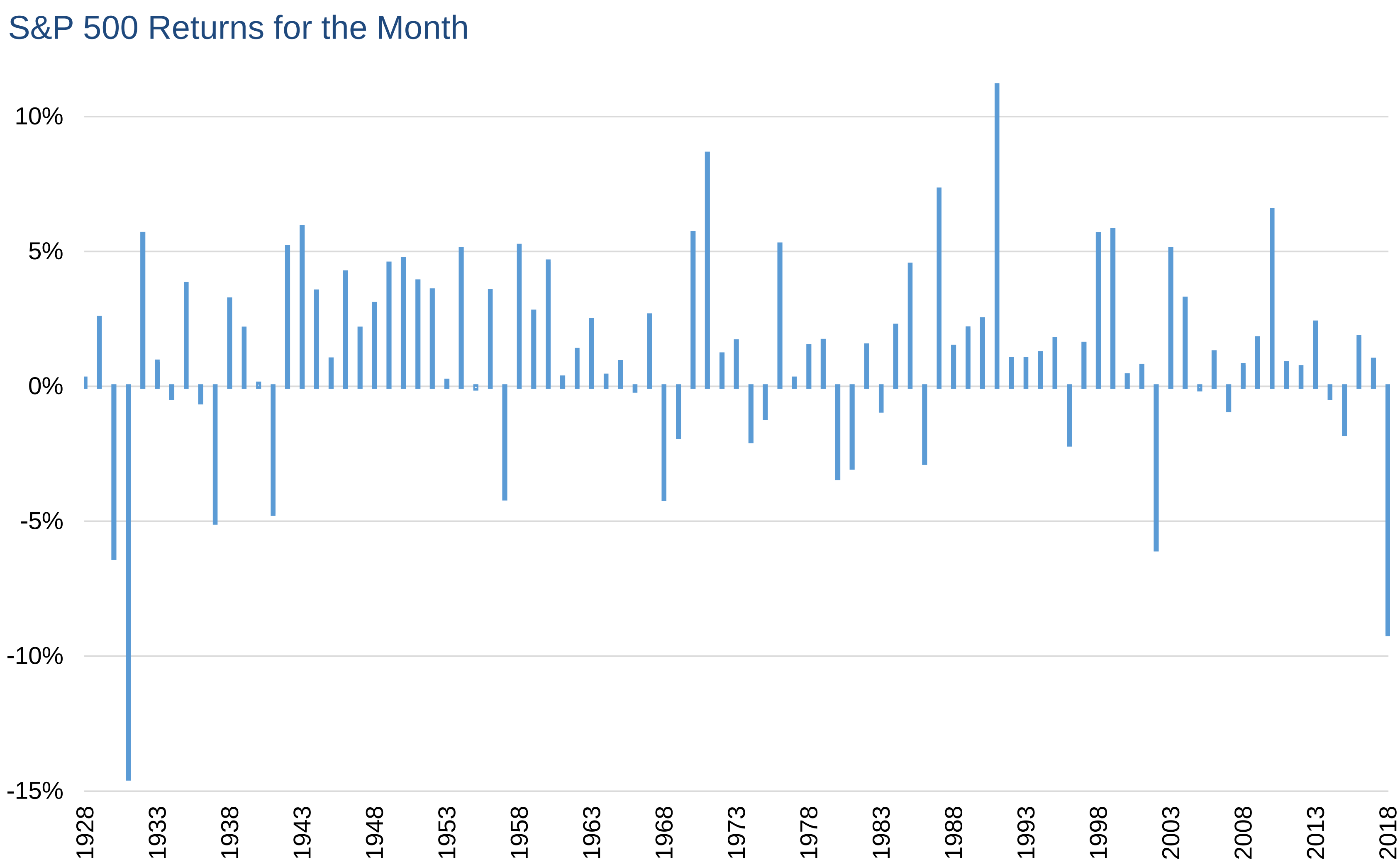
Presentation on February 7, 2019 by:
Dawn Fitzpatrick

Soros Fund Management

Investor Advisory Committee on Financial Markets

February 7, 2019

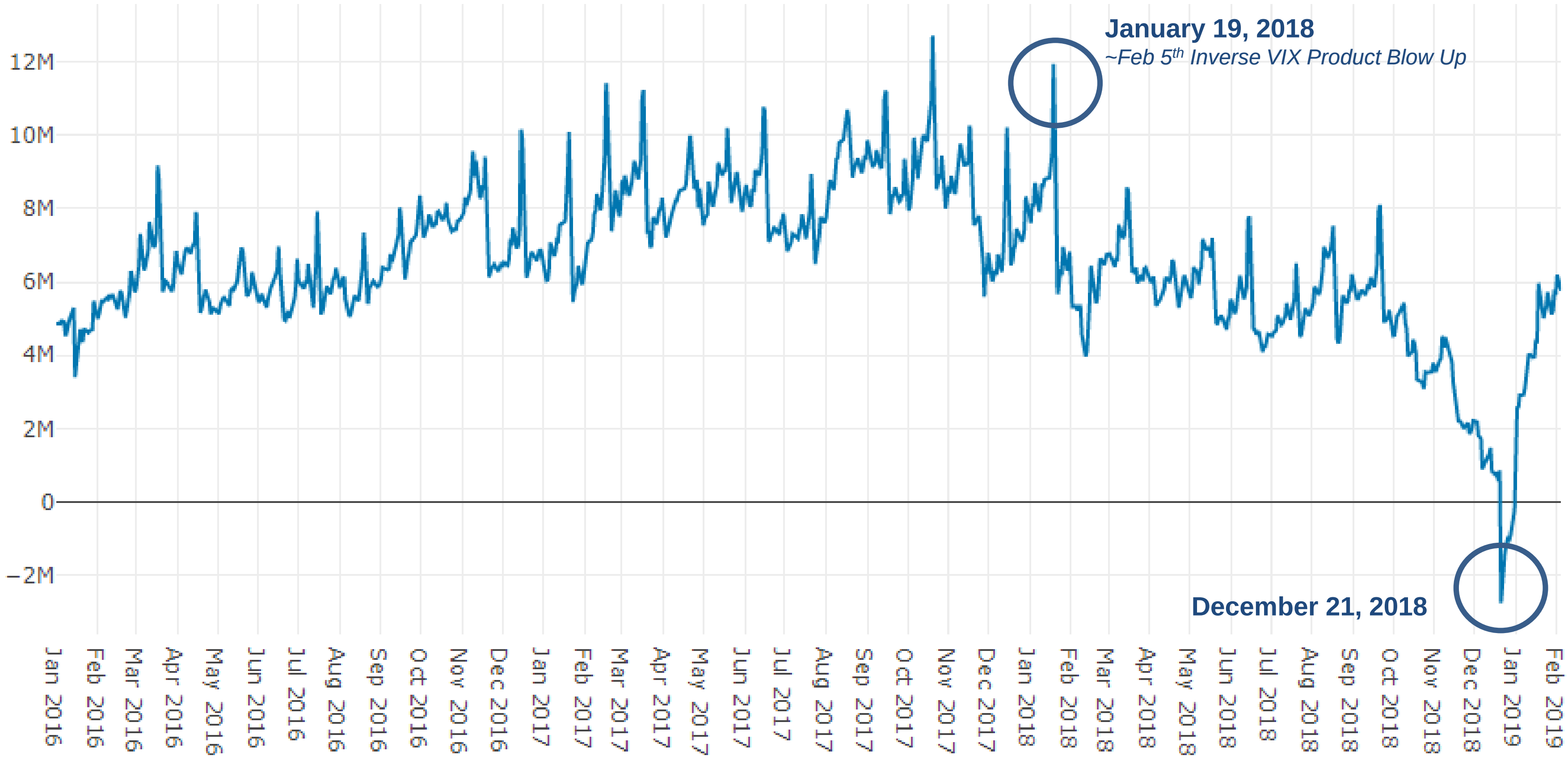
Worst December Since 1931



Source: Bloomberg

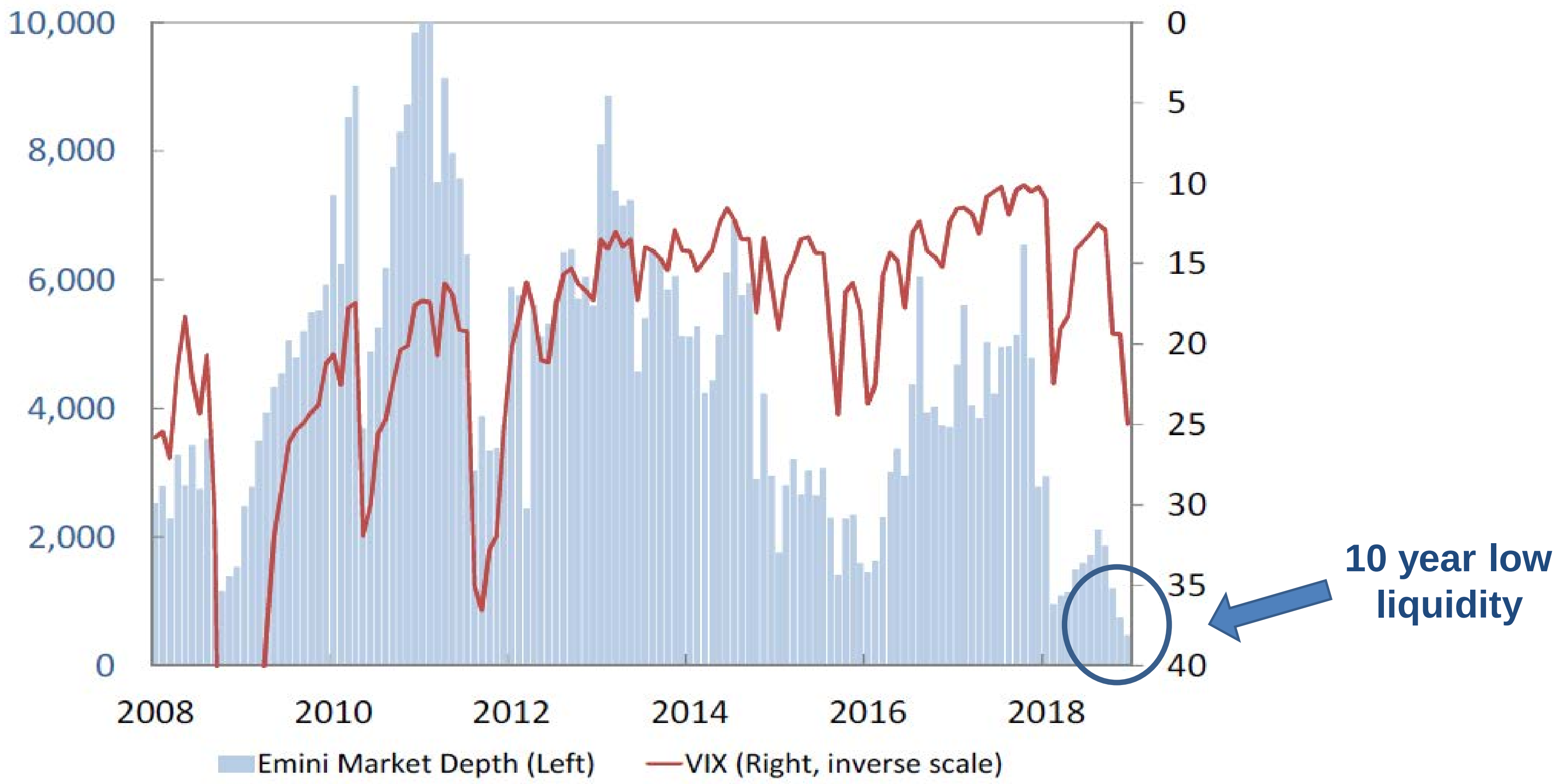
VIX Spike in Early '18 Caused Loss of a 'Natural' Seller of Volatility

Open Interest of Puts - Calls



Source: Bloomberg

Feb 5th Events also Contributed to a Sharp Drop in S&P 500 Futures Trading, which Further was Exacerbated by Q4 Pick Up in Volatility

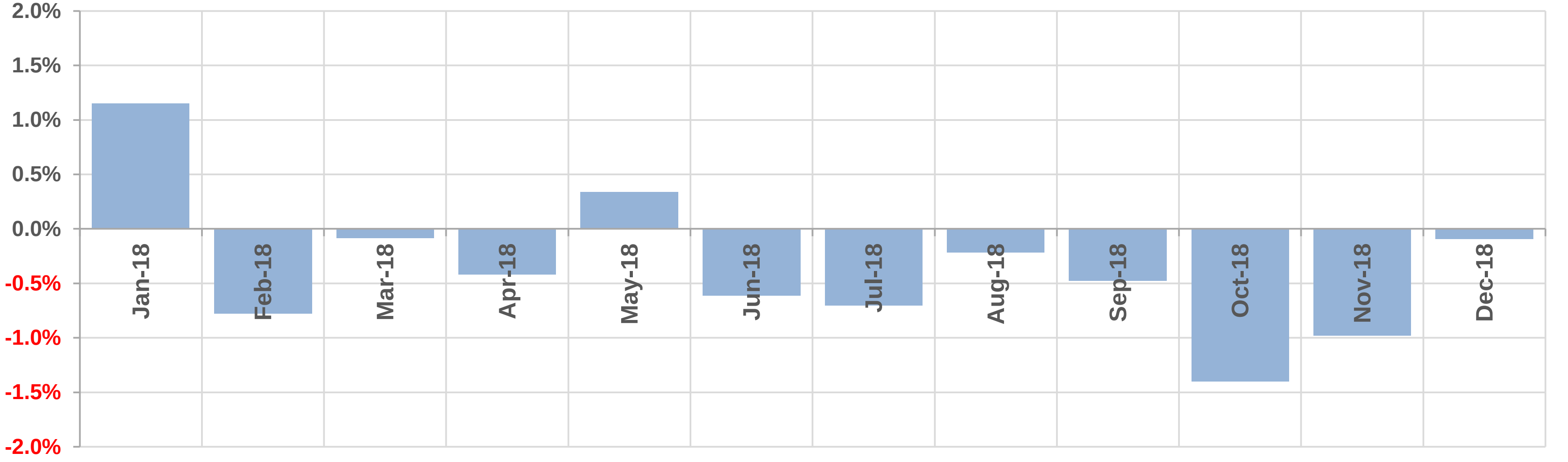


Monthly average # of ES futures contracts within 1 index of the top of the order book

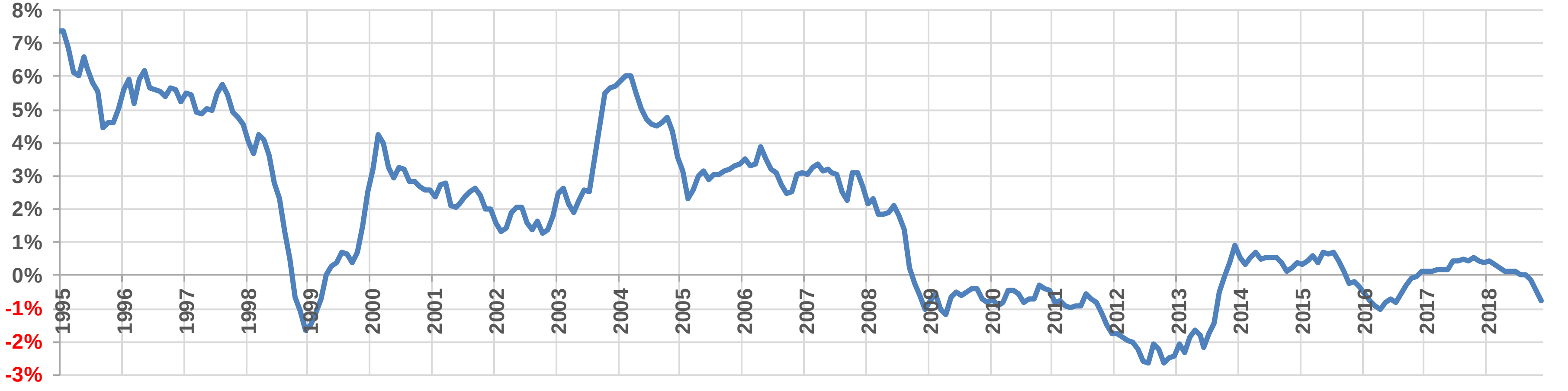
Source: J.P. Morgan

Hedge Funds De-risked in October and November

Monthly Excess Return for 2018 – HFRI Composite



5Y Rolling Excess Return (ann.) – HFRI Composite



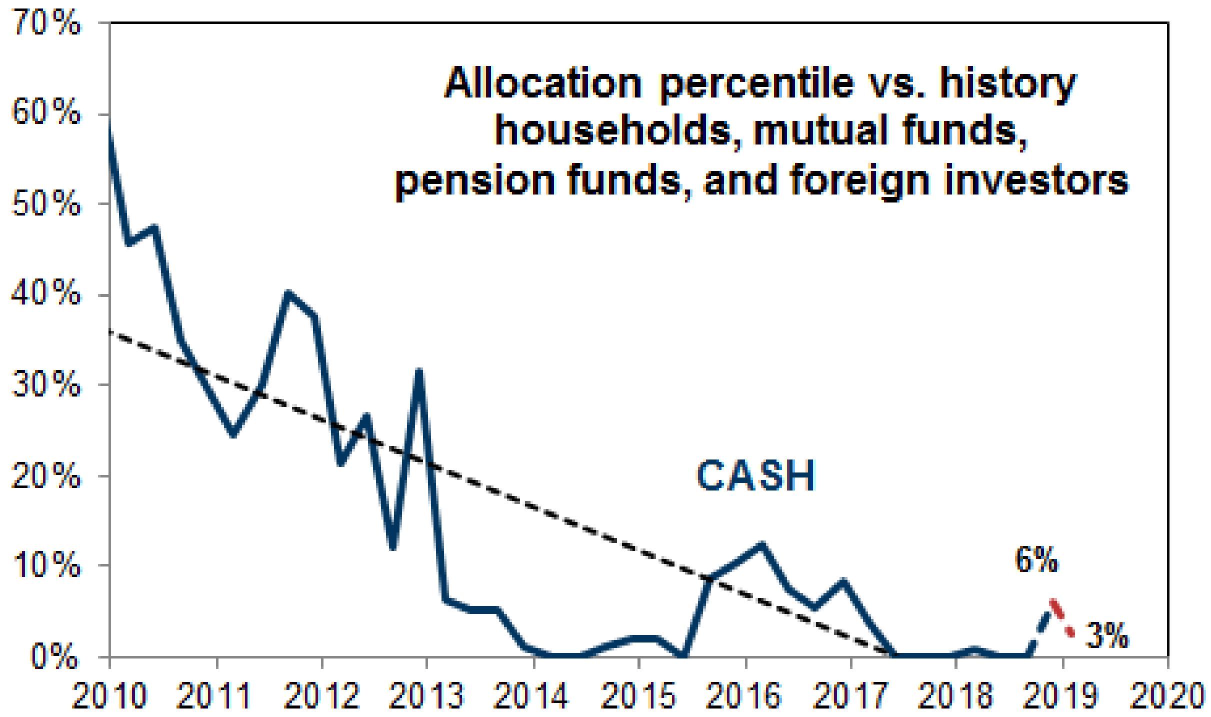
Return calculated in excess of benchmark: 25% MSCI ACWI + 75% 3M US Libor

Cash Positions Were Low By Historical Standards

Start of 4Q18: CASH % of Rank = 0%

1 / 4 / 2019: CASH % of Rank = 6%

2 / 4 / 2019: CASH % Rank = 3%**



Source: Goldman Sachs

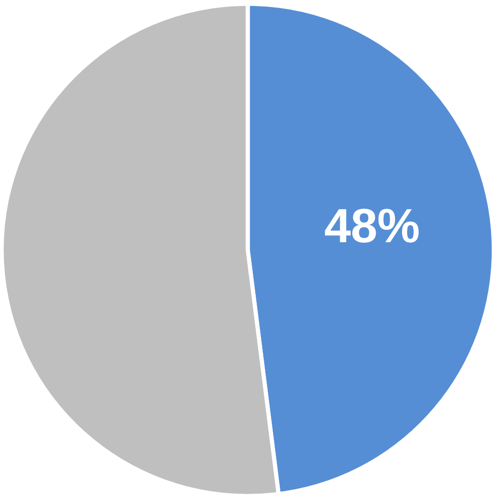
* Uses Federal Reserve Z1 data since 1990

** Using market appreciation and EPFR Fund Flows

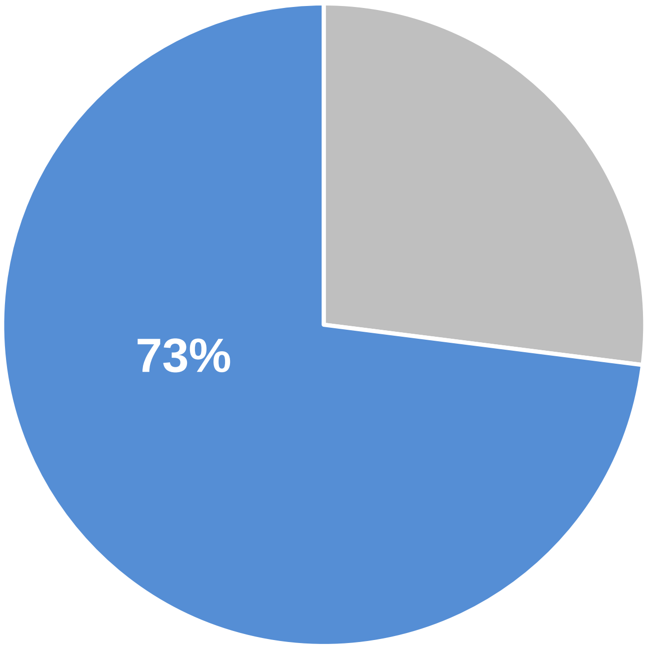
There Has Been A Large Decline in Direct Retail Investing. Among Institutional Investors, the Big Are Getting Bigger in Winner Take All Asset Management Industry

Institutional Holdings of S&P 500 Securities

2000



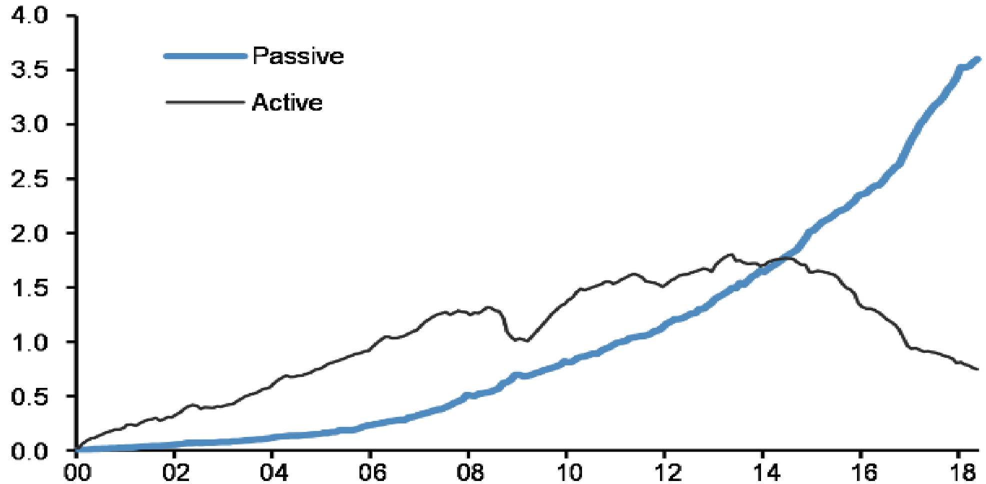
2017



Source: Morgan Stanley

Institutional Assets Are Increasingly Dominated By Passive & Momentum Strategies

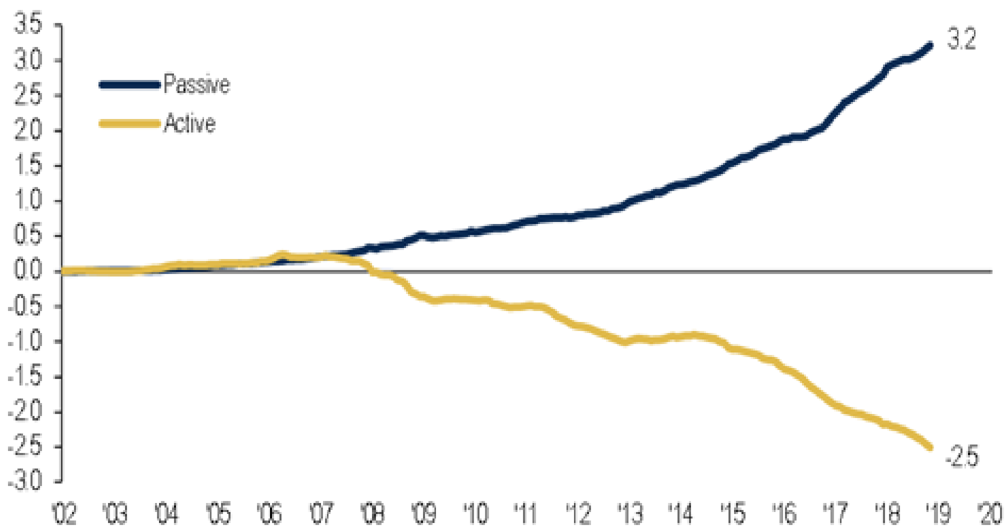
Cumulative Flows Into Active and Passive Funds ($tn) *~Across Asset Classes*



Source: ICI, J.P. Morgan

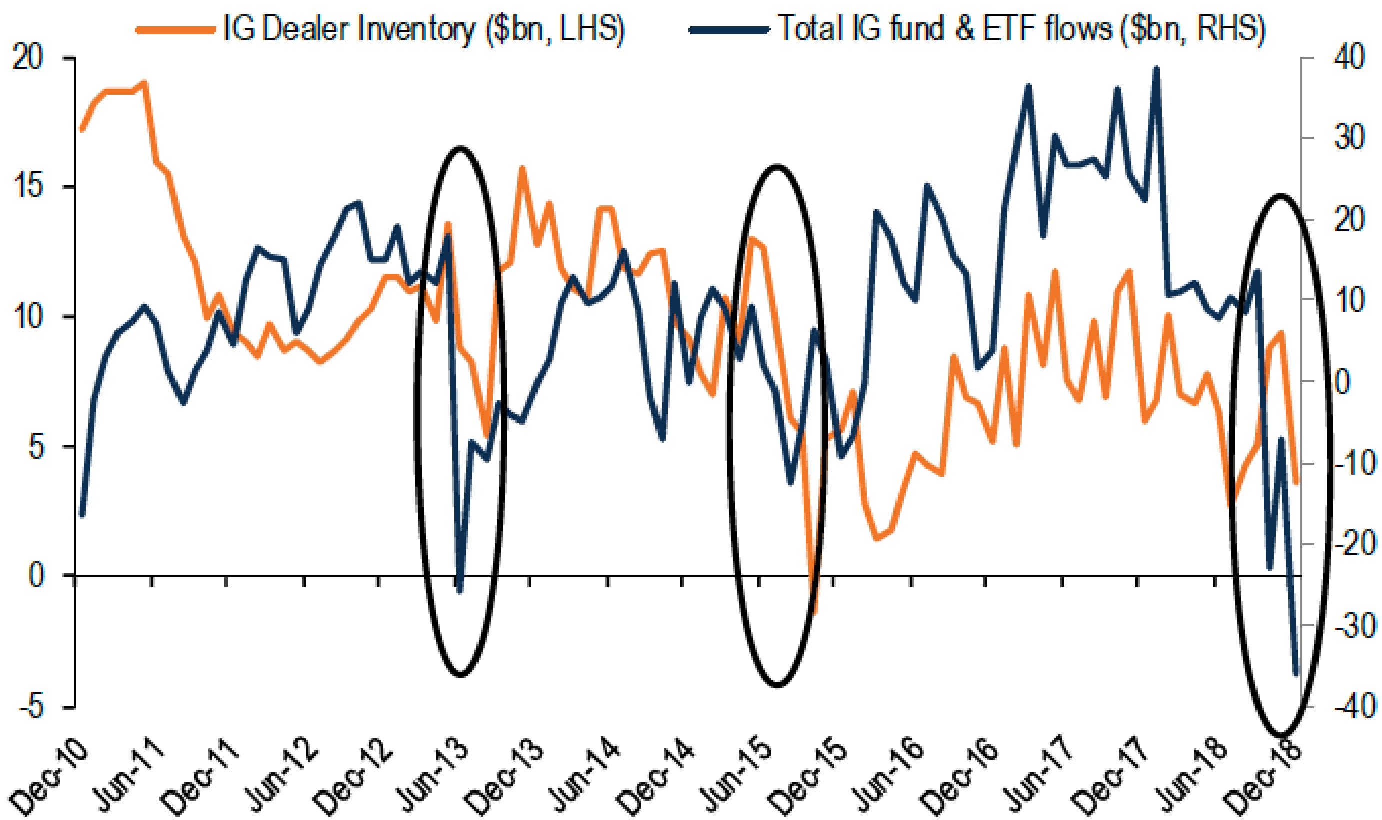
Turnover per year:
~Active mutual fund 38%
~Passive 3%

Cumulative Flows to Equity Funds ($tn)



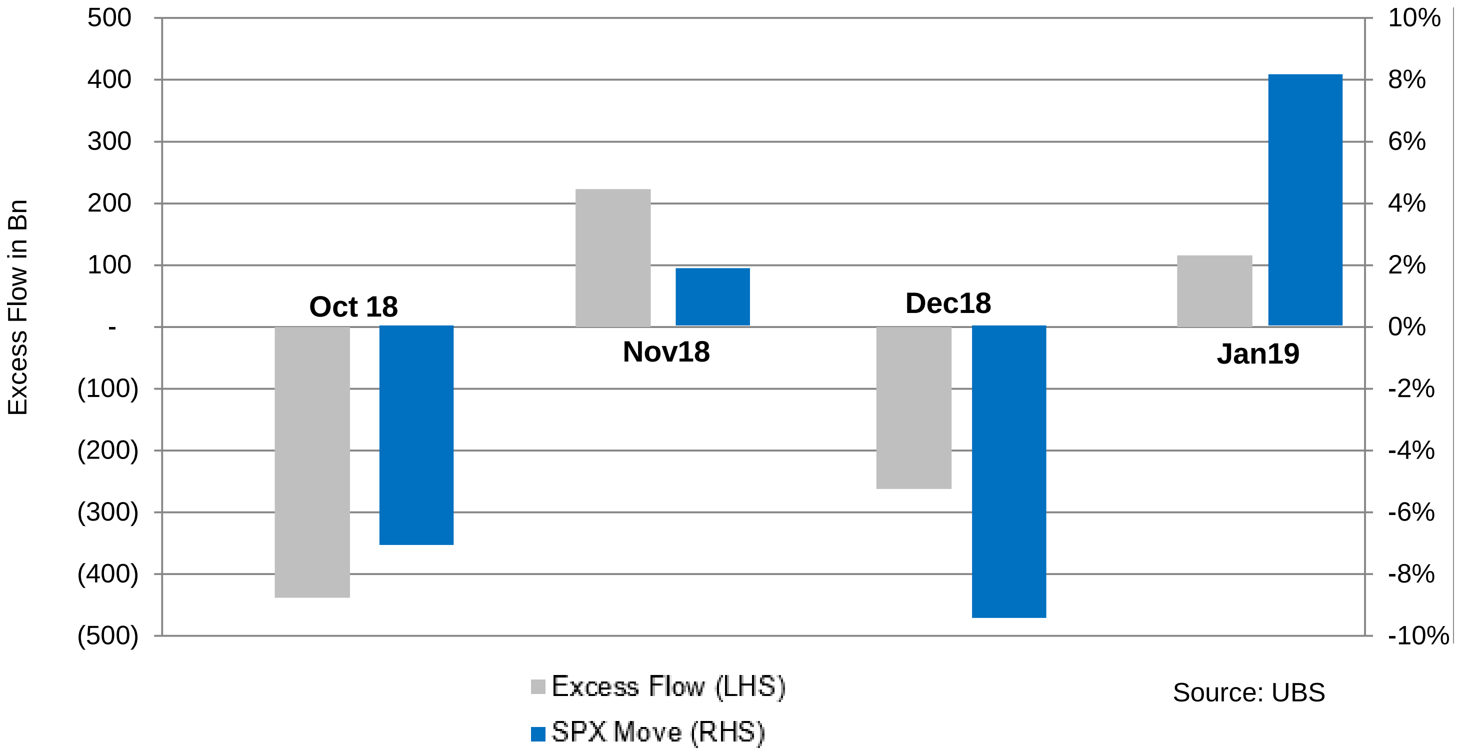
Source: EPFR Global

Dealers Have Become Risk-Averse



Source: EPFR Global, FINRA, TRACE, BAML

Relative to Flows, December and January Saw Outsized Moves



The excess flow monitor captures above-average asset volume per 15-minute interval and uses associated market move to identify flow direction (buy or sell)

Average (base case) intraday profile = a x b x c x d:

a) Last 12M average volume

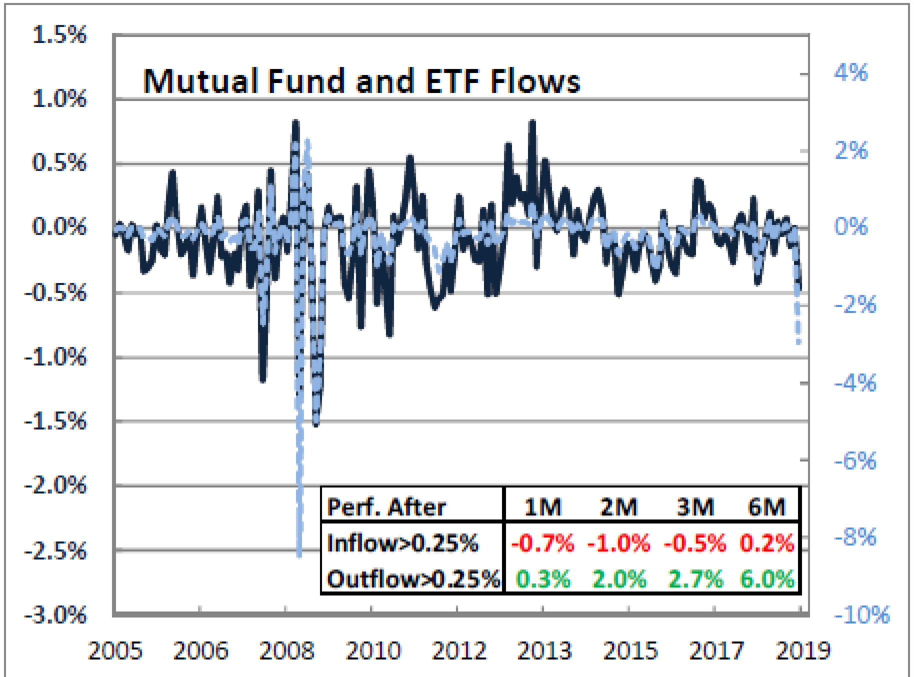
b) Monthly seasonal % of last 12M avg volume

c) Market hour volume % of reported volume

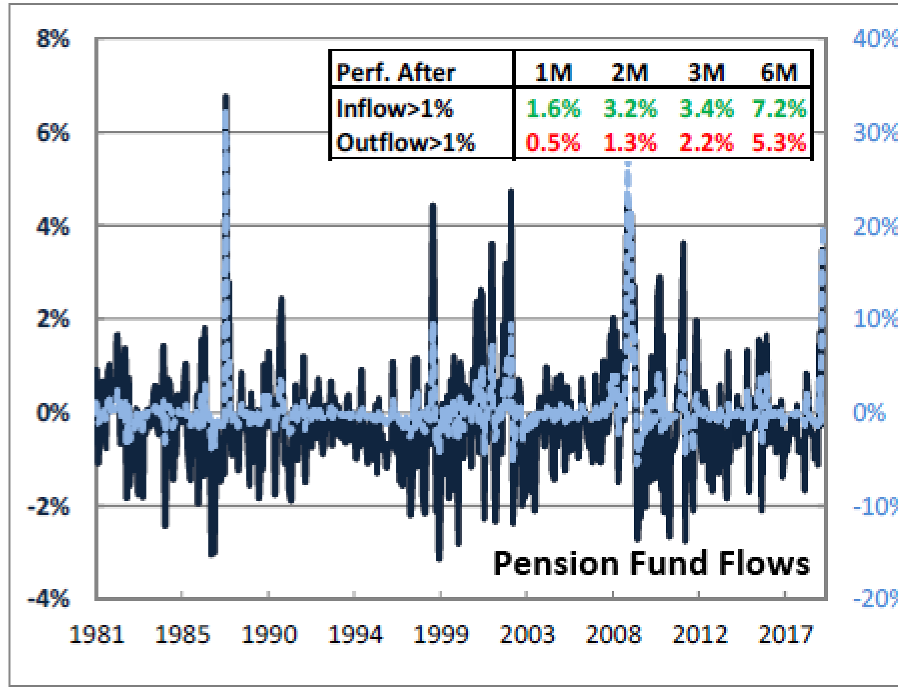
d) Time of day profile per 15-min

Equity Mutual Funds & ETFs Saw Outflows With Magnitude Amplified by Illiquidity – Pension Rebalancing Bailed the Market Out

Monthly fund flows as % of AUM un-adjusted (solid line) and adjusted for prevailing liquidity (dashed line)

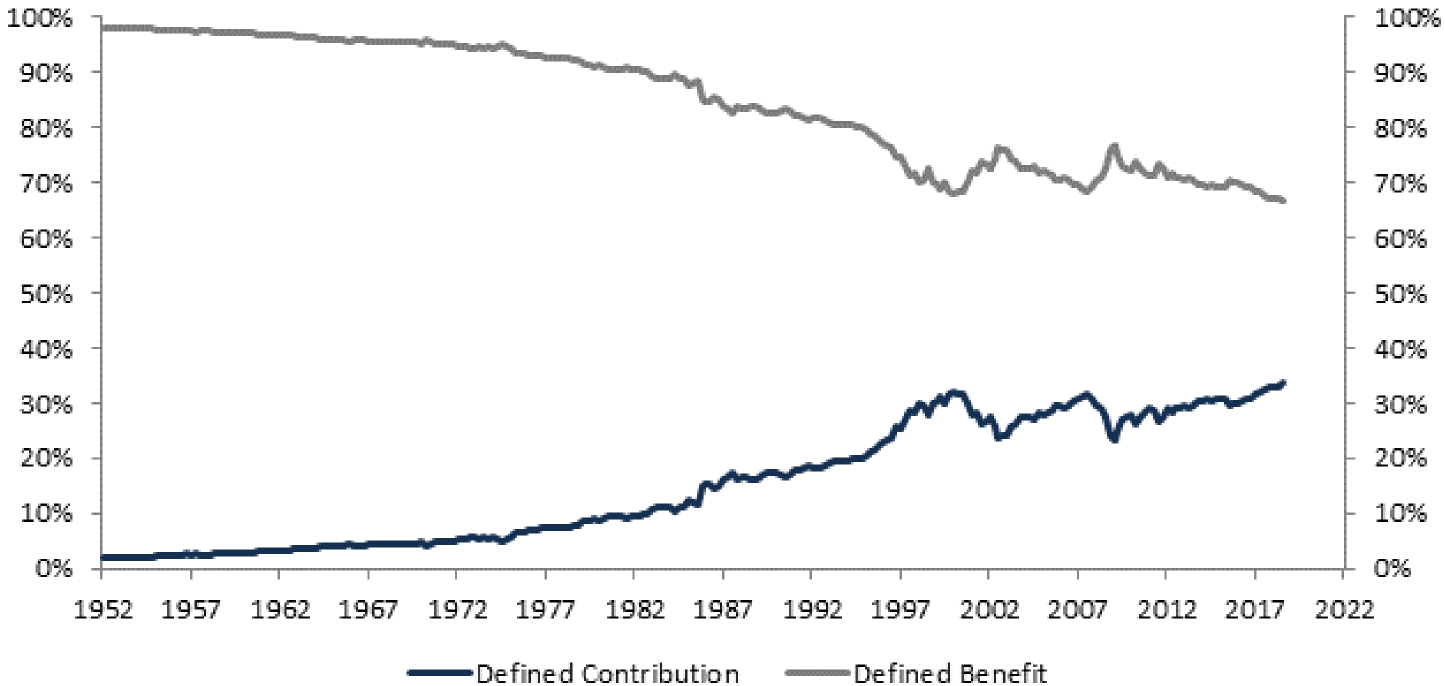


Estimated fixed asset allocation pension equity rebalance flows



Source: J.P. Morgan, EPFR

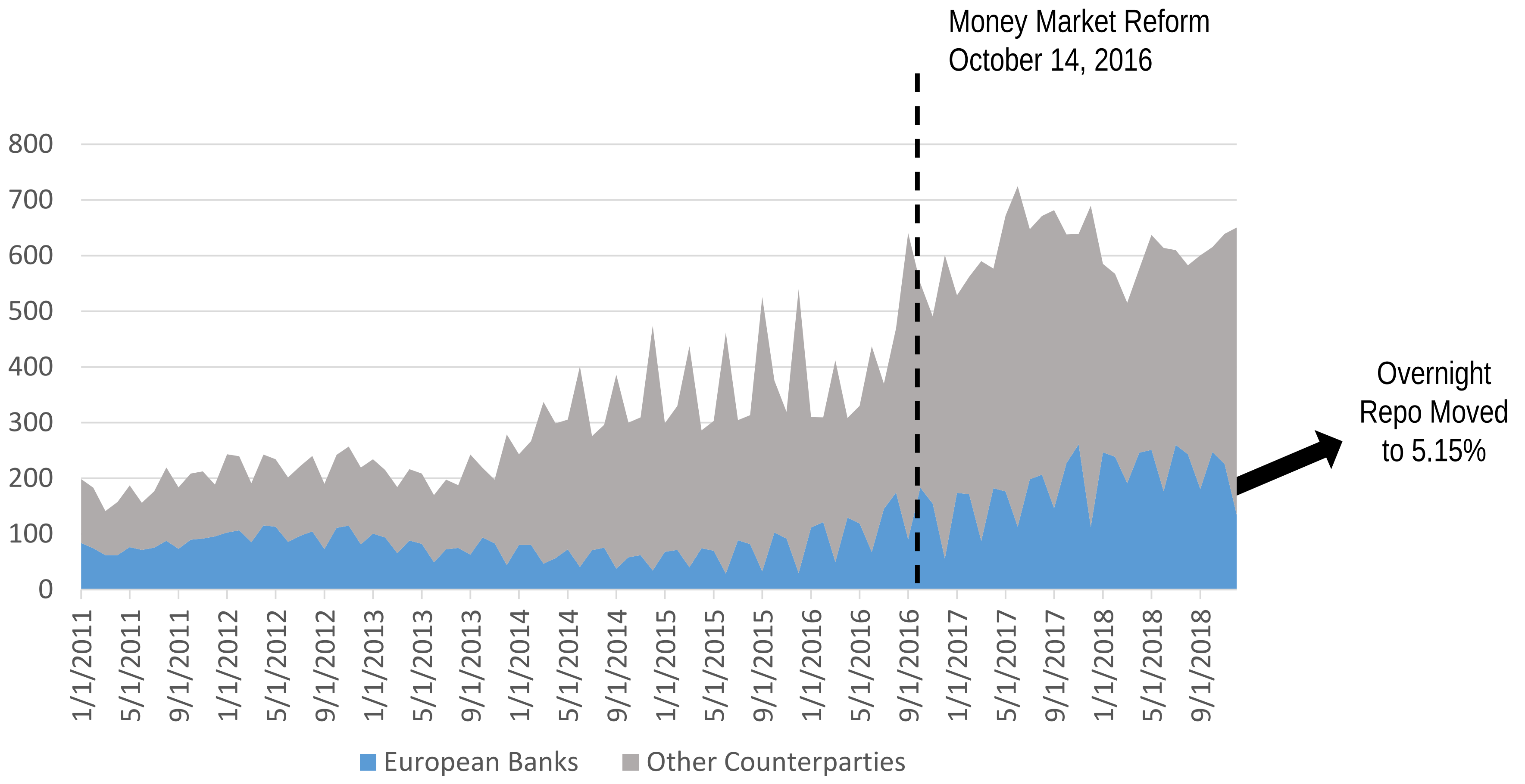
Pension Fund Rebalance Shock Absorber is Diminishing Over Time



Source: Evercore ISI

Quarterly data from the U.S. national accounts. The share of defined contribution is the summation of the money in private, federal, and state and local defined contribution plans divided by the total money in both defined contribution and defined benefit plans. The defined benefit plan is the same, but with defined benefit data instead of defined contribution data.

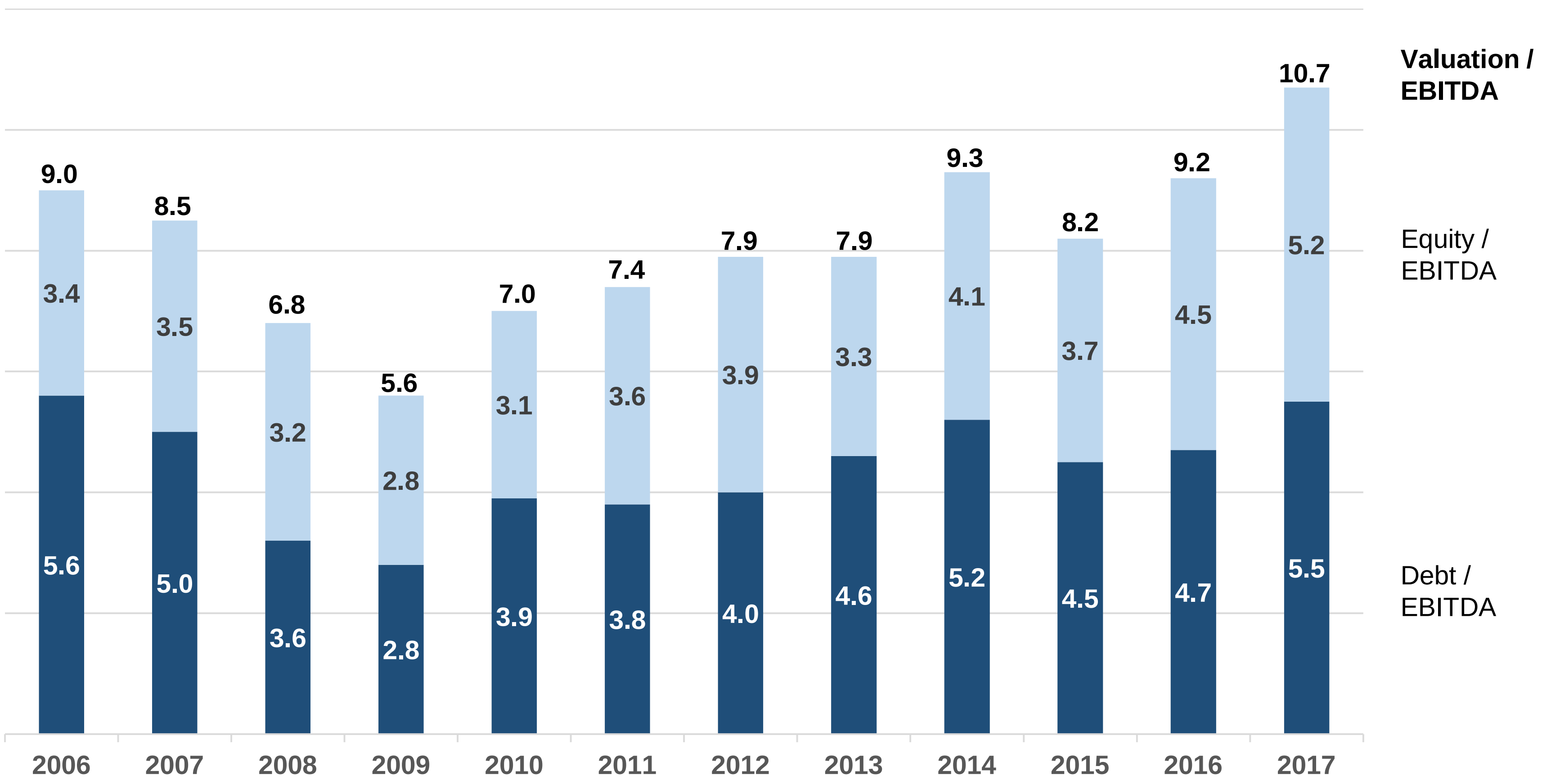
European Banks are Reducing Balance Sheet to an Increasing Extent at Quarter End



Source: OFR US MMF Monitor

Private Capital Growth Could Add to Economic Vulnerability As Excesses Will Take Longer to Work Their Way Through The System When A Correction Occurs

Global median private equity EBITDA multiples, 2006 - 17



Source: Pitchbook

Takeaways

- Market structure exhibited **significant fragility in December** - with the same fundamentals it **could have been worse** if dealers were not long skew and HF's had not de-risked in Oct/Nov
- **MIFID II and best execution** requirements are likely **adding to dislocations**, given they reduce the probability of matching and make discretionary execution open to greater scrutiny
- **Maker/taker system** coupled with bank regulatory capital requirements have created a system where **~40-60% of daily volume is dependent on high frequency 'day traders,'** whose models are substantially similar to one another and negatively link liquidity provided to market volatility. Technology requirements have increasingly concentrated the **market's dependence** on fewer and fewer of these **largely unregulated firms**
- Complexity of options markets and CCAR measures of stress events **further adds to tail risk of current market structure** and leaves significant vulnerability to a bad actor
- The number of **active value investors** who act as shock absorbers in dislocations has **declined** and will continue to decline
- There has **not been enough planning** for an **abrupt market closure event** other than a trading curb
- Given equity ownership of US consumers, a **crisis of confidence** in capital markets would have a **tangible impact on the real economy**

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