



Global Investment Research

The Goldman Sachs Group, Inc.

Economic Outlook

Tug of War

October 2019

Jan Hatzius

Goldman, Sachs & Co.
Chief Economist

+1 212-902-0394

jan.hatzius@gs.com

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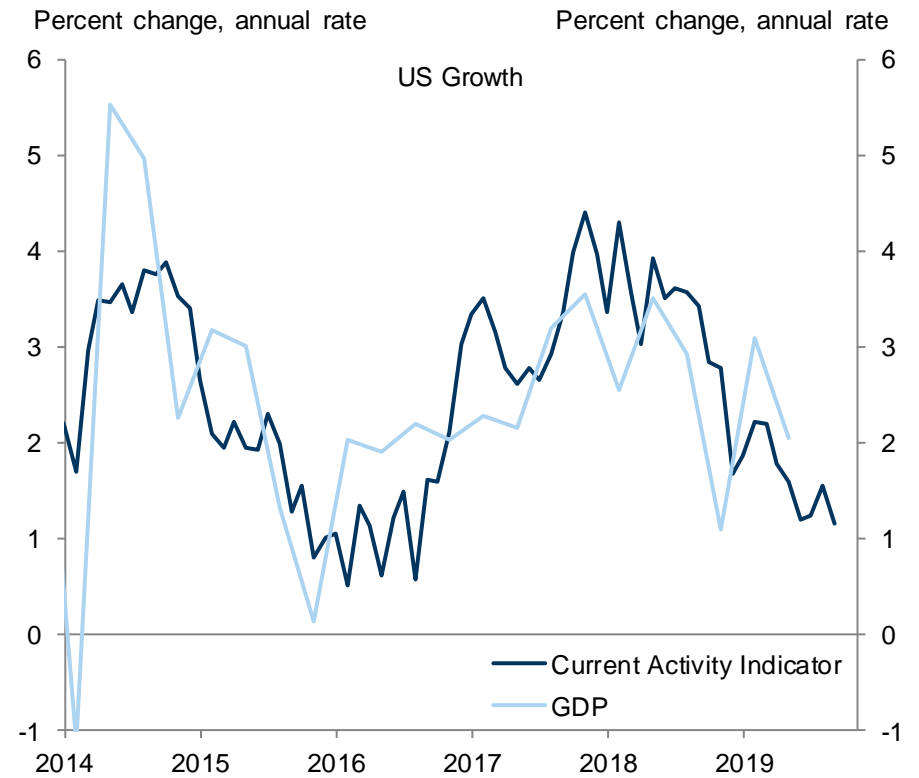
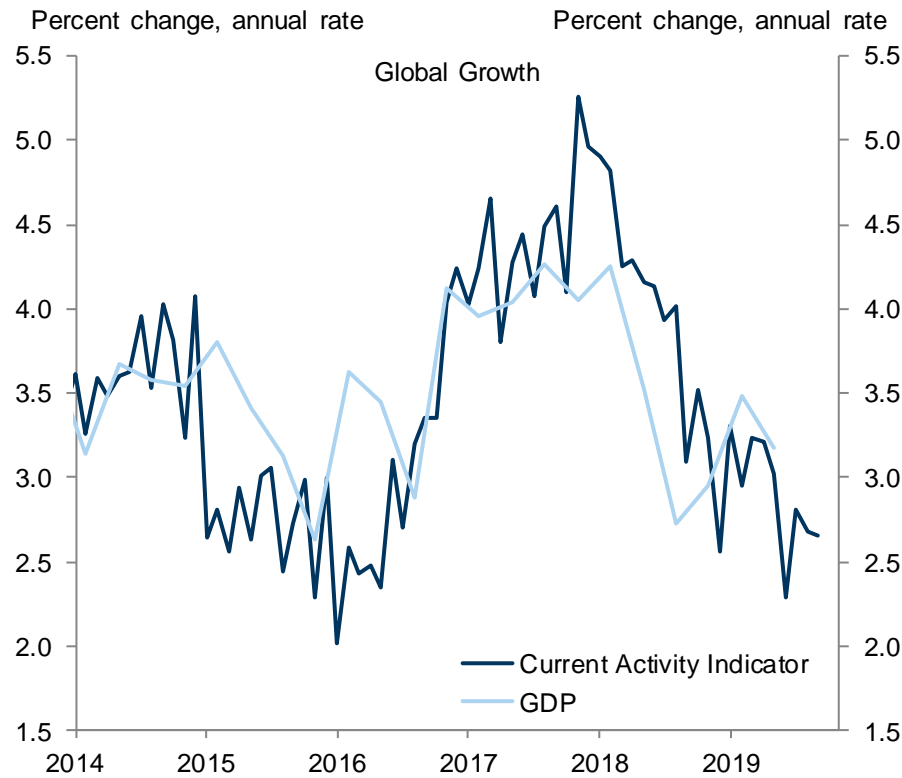
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Highlights of Economic Outlook

1. **Trade war:** announced tariffs take effect eventually; no deal before 2020 election.
2. **US growth:** Modest reacceleration from 1.8% in 19H2 to 2.1% in 2020.
3. **Recession:** Lack of inflationary and financial overheating limit traditional risks.
4. **Inflation:** Tariffs on consumer goods push core PCE to 2.3% by 2020.
5. **Fed:** One more cut in October for total of 75bp; market pricing too much easing.
6. **China/Europe:** Growth stabilizes following easier policy and Brexit resolution.

1. How Much Is the Economy Slowing?

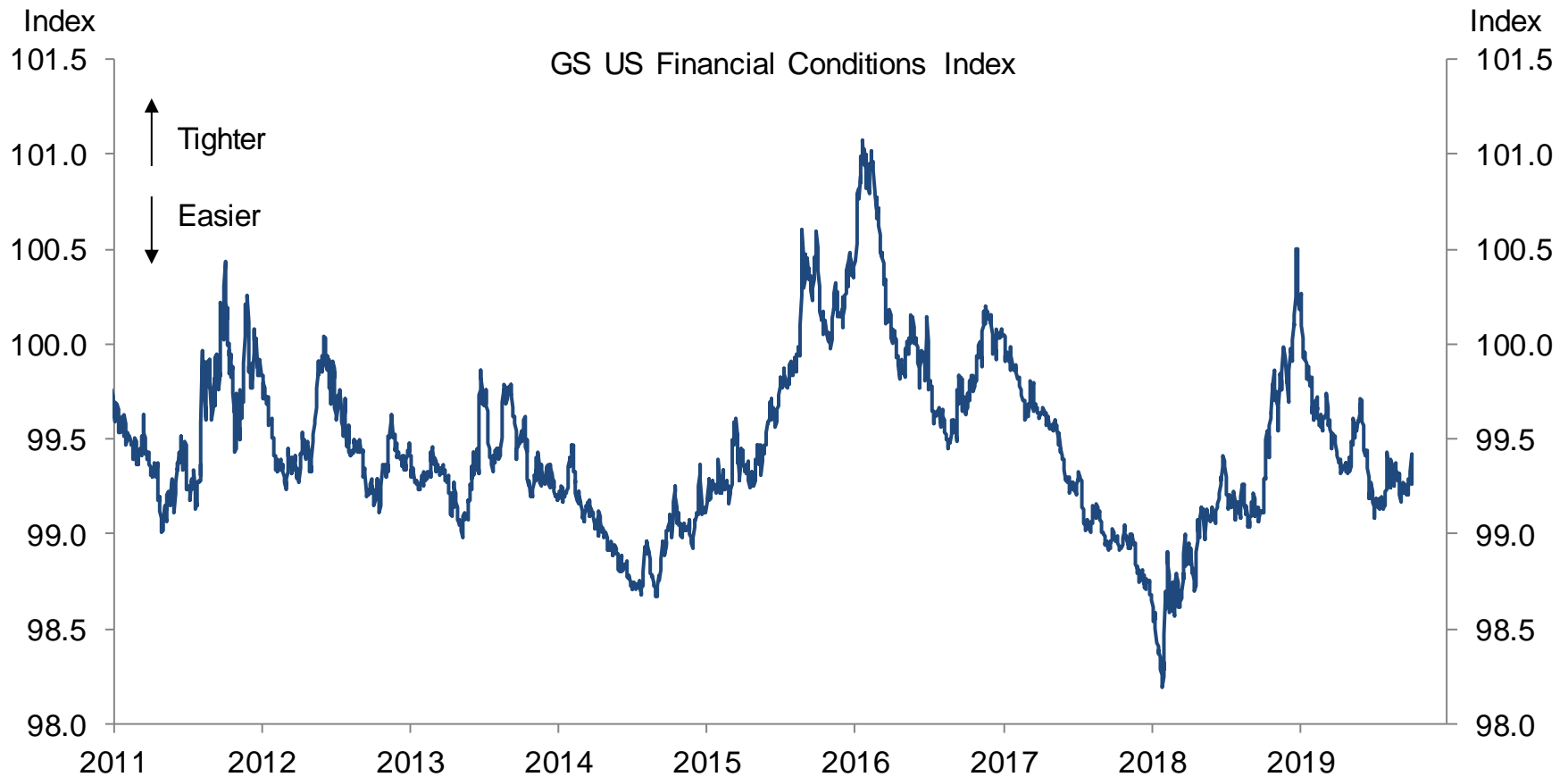
Growth Has Slowed to a Trend Pace, both Globally and in the US



Source: Goldman Sachs Global Investment Research.

1. How Much Is the Economy Slowing?

Financial Conditions Have Eased...

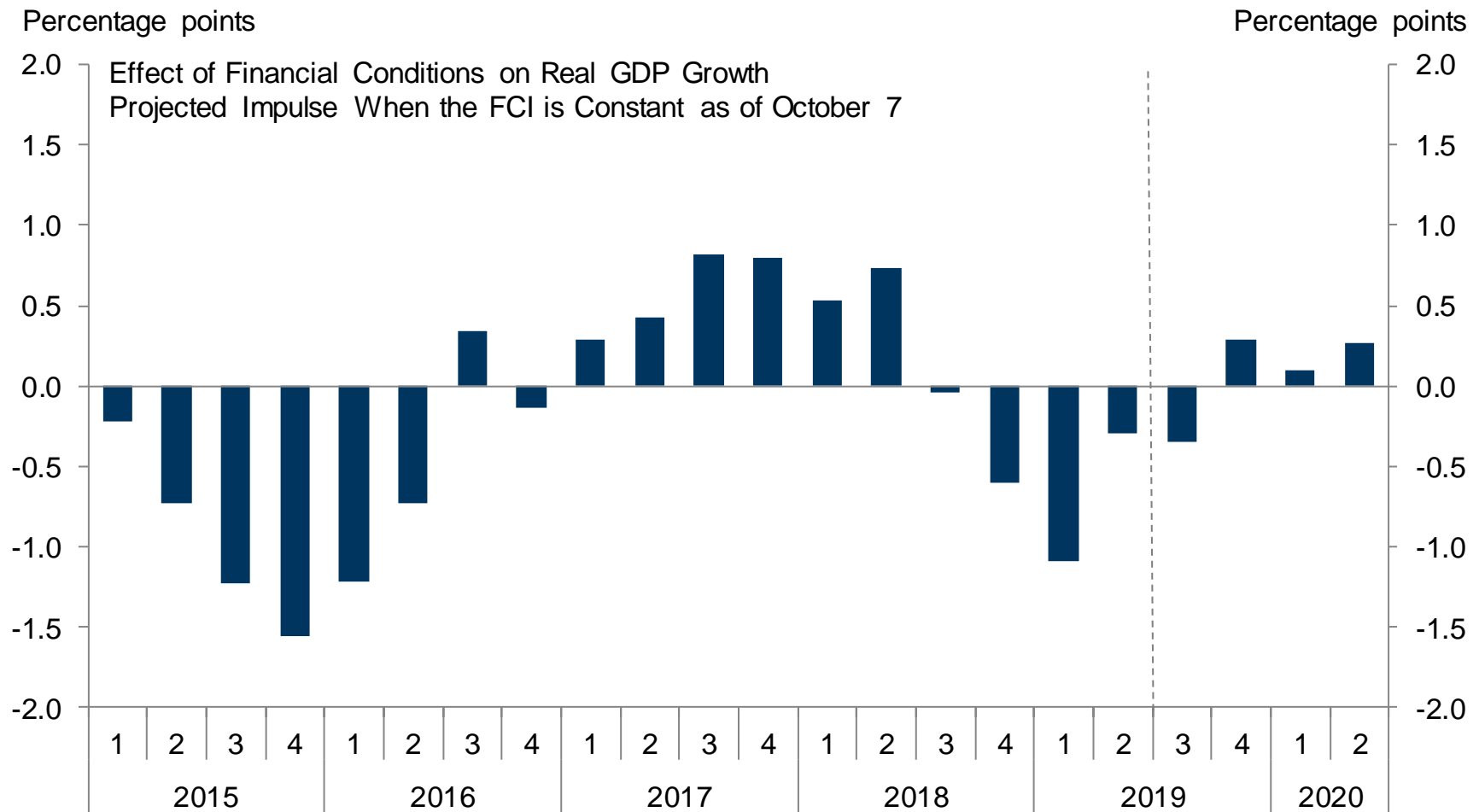


Note: Weights of FCI components are as follows: Fed eral Funds Rate: 4.4%, 10-Year Treasury Rate: 45.1%, BBB Credit Spread: 39.6%, Equity Prices: 4.9%, Trade-Weighted Dollar: 6.0%

Source: Goldman Sachs Global Investment Research.

1. How Much Is the Economy Slowing?

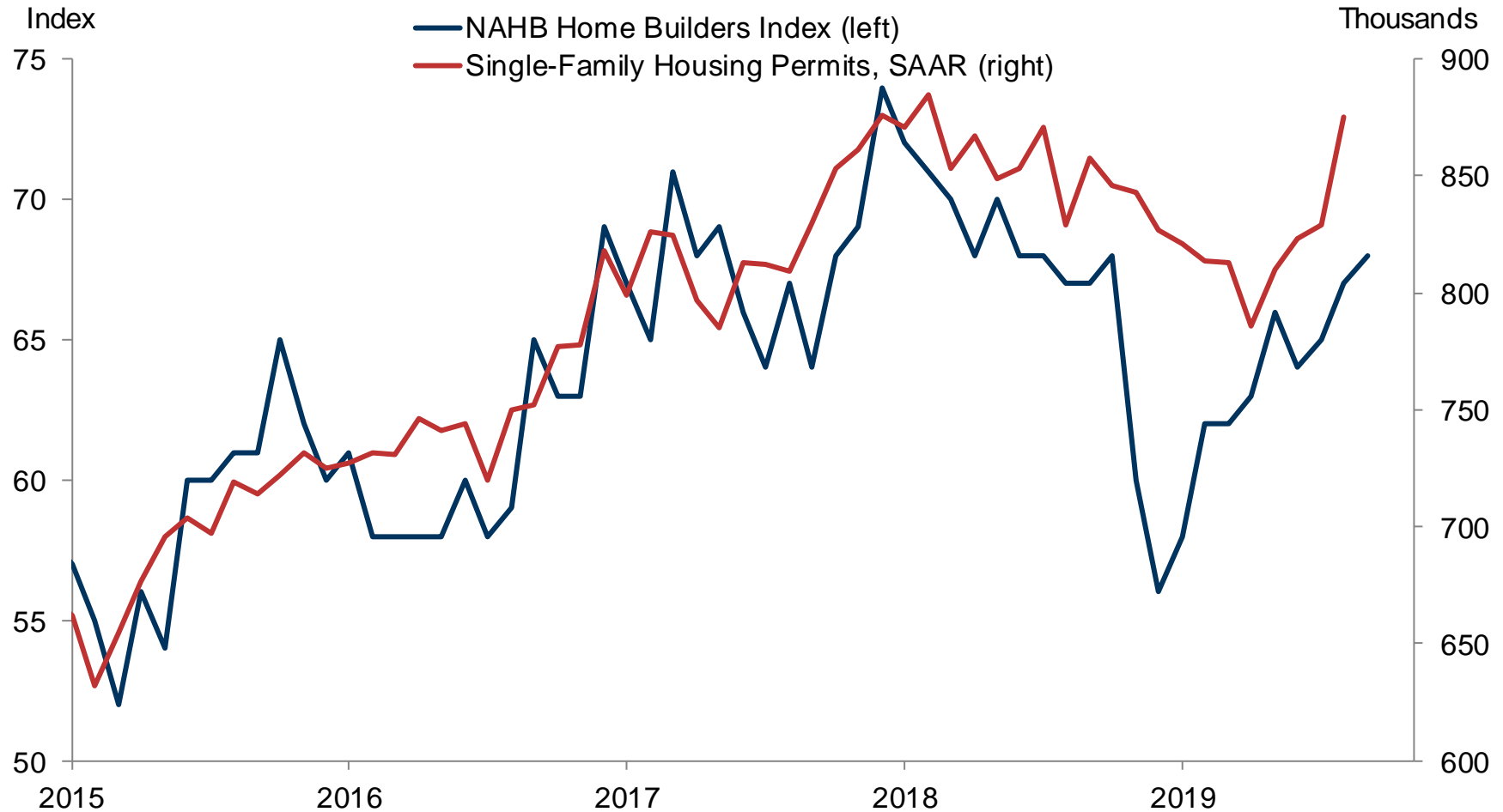
...And the Growth Impulse Should Turn Positive...



Source: Goldman Sachs Global Investment Research.

1. How Much Is the Economy Slowing?

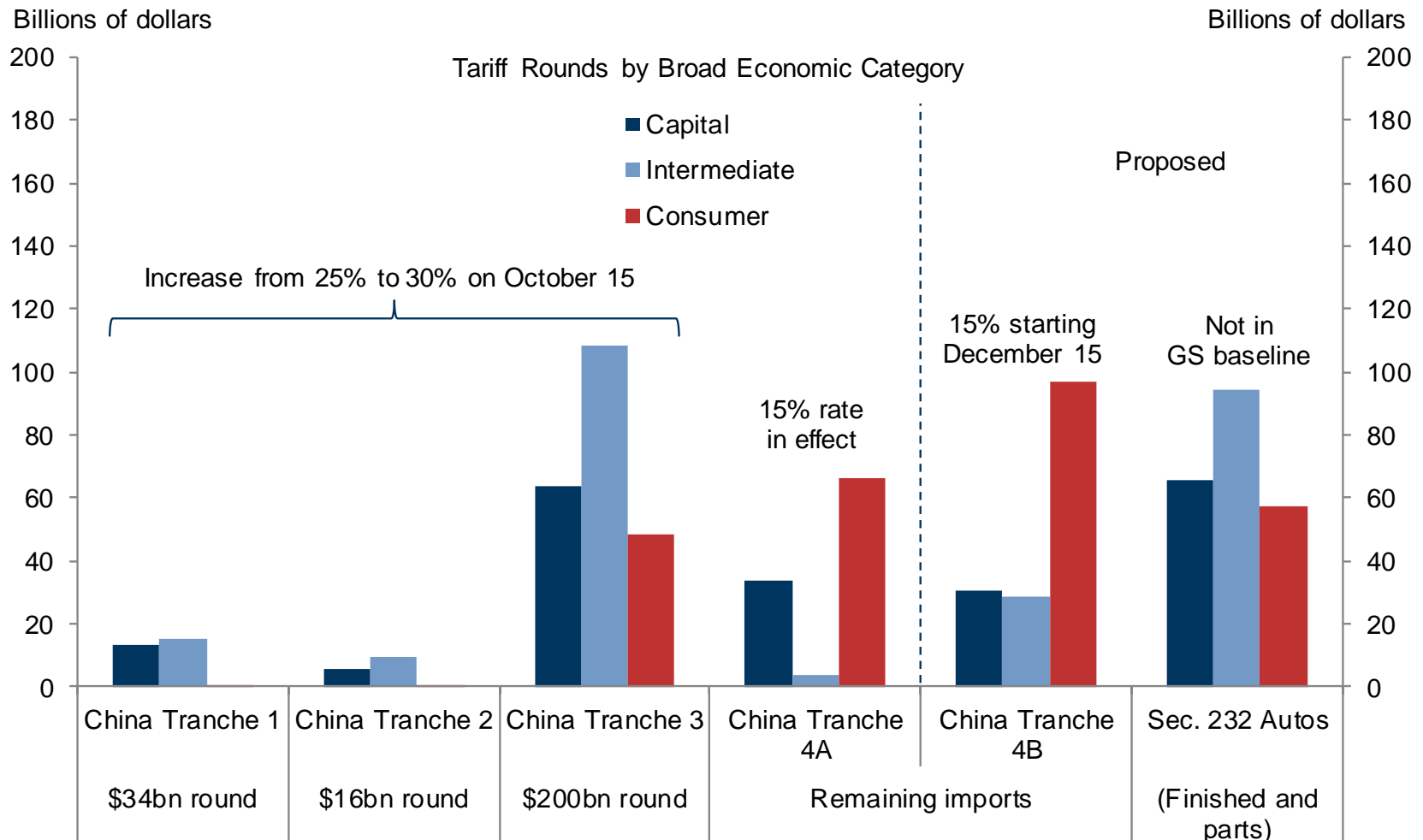
...Which Is Already Visible in the Housing Sector



Source: NAHB, Commerce Department, Goldman Sachs Global Investment Research.

2. How Big a Hit from the Trade War?

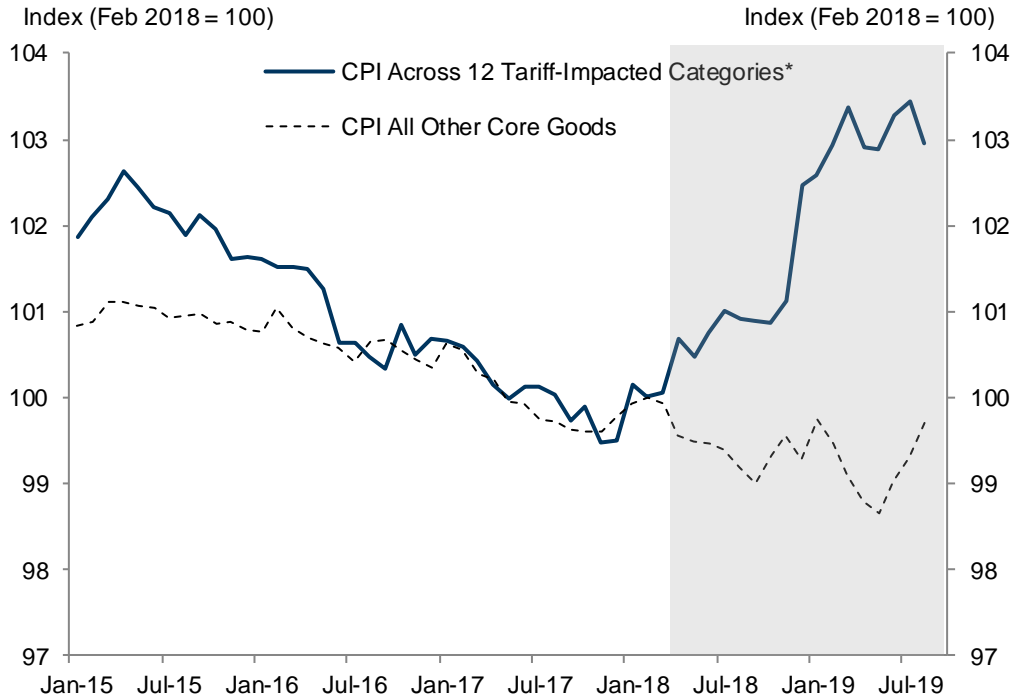
Tariffs Are Starting to Hit Consumer Goods



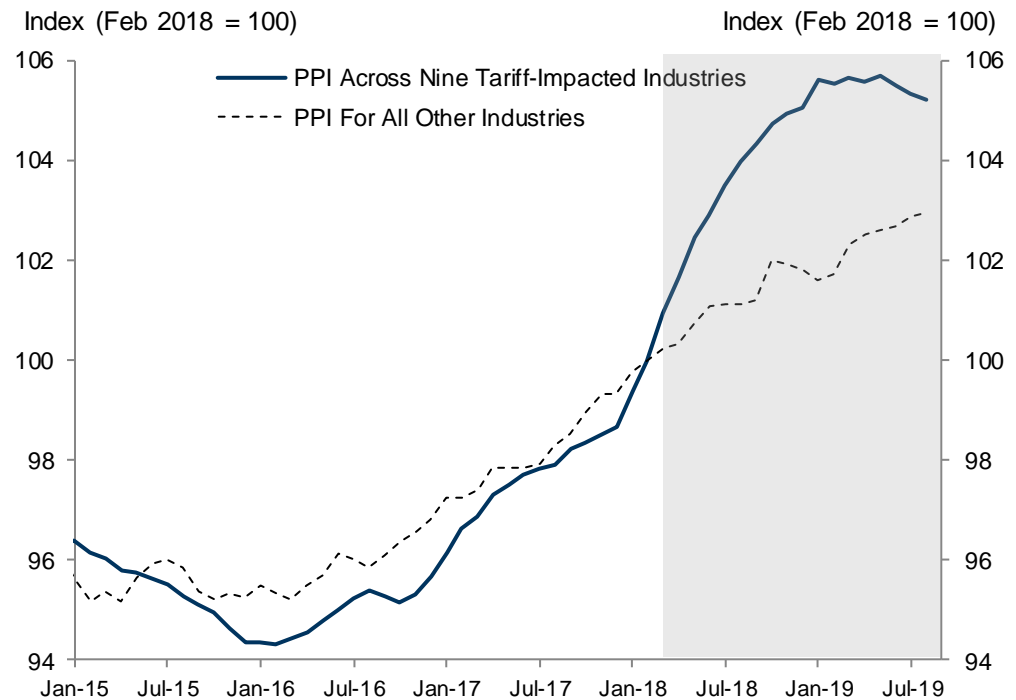
Source: Goldman Sachs Global Investment Research.

2. How Big a Hit from the Trade War?

Both Direct and Indirect Tariff Effects on Inflation Have Been Sizable



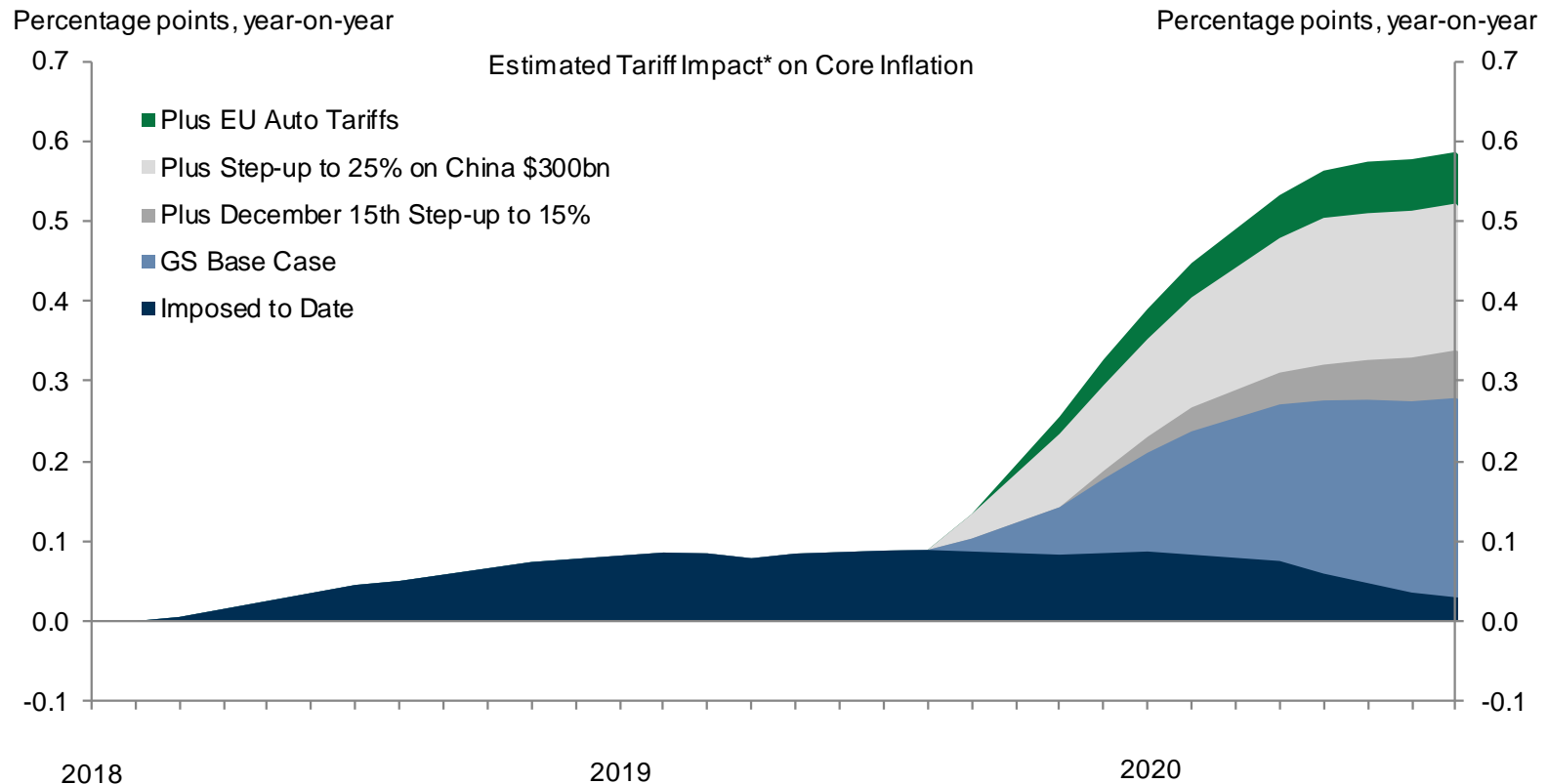
*Includes laundry equipment and other appliances; furniture, bedding, and floor coverings; auto parts, motorcycles, and sport vehicles; housekeeping supplies; sewing equipment and material; clocks, decor, and lighting; outdoor equipment; and dishes and flatware. Weighted by CPI relative importance.



*Includes textile mills, paper mfg, plastic s and rubber mfg, non-metallic mineral mfg, primary metal mfg, fabricated metal mfg, machinery mfg, electrical equip and component mfg, and furniture mfg.

2. How Big a Hit from the Trade War?

Further Tariff Escalation Would Have Larger (but Temporary) Inflation Effects

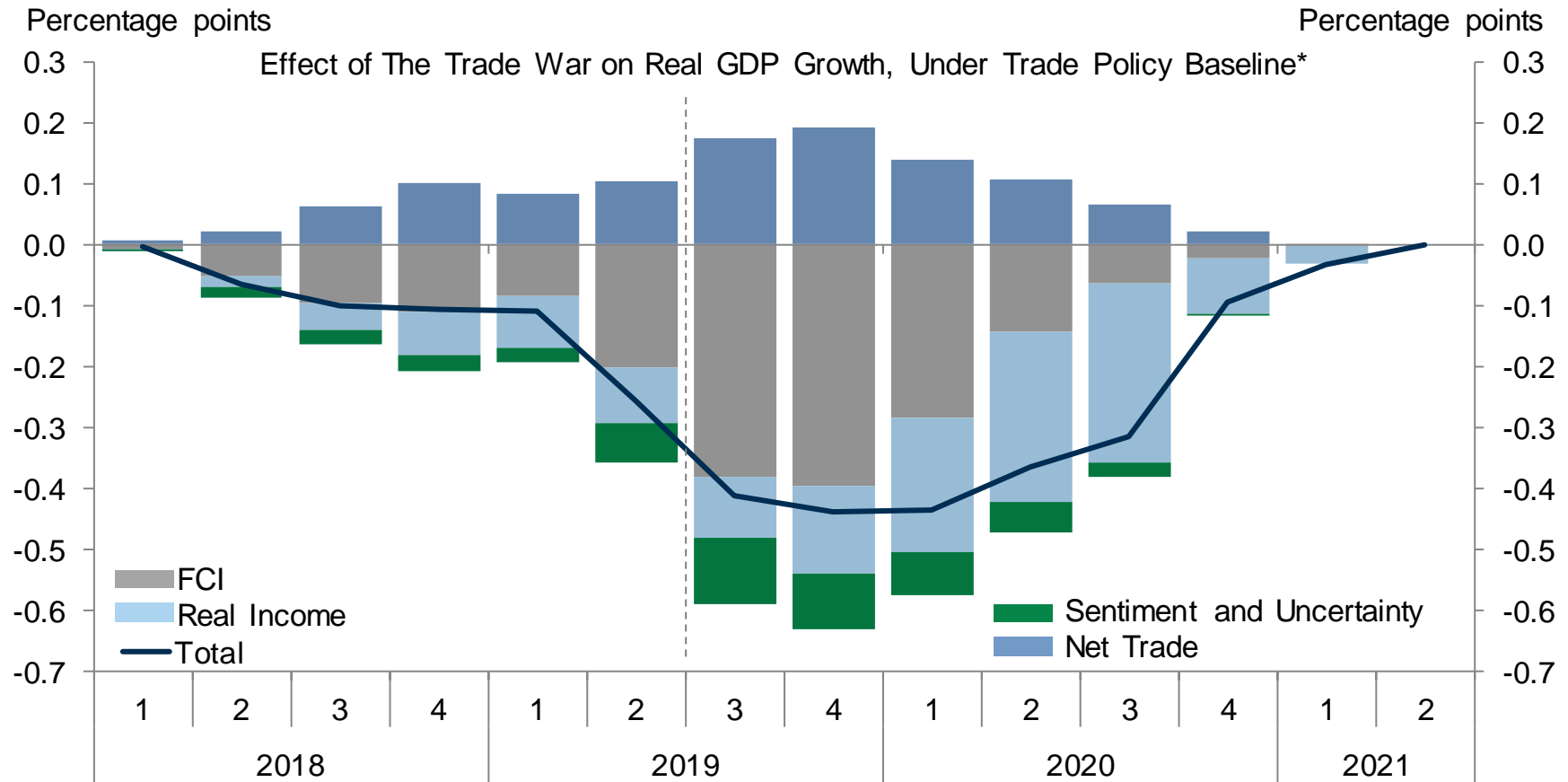


*Tariffs already imposed include those on solar panels, washing machines, steel, aluminum, and \$250bn of Chinese imports (at 25%); our base case involves a step up to 30% on these imports as well as a 10-15% tariff on the remaining \$300bn of Chinese imports, itself implemented in stages (a third in September at a 15% rate, and remaining two thirds in December at a 10% rate). While not our base case, an increase in the tariff rate to 25% on the remaining \$300bn of Chinese imports and tariffs on EU auto-sector imports is also possible.

Note: Chart shows estimated impact on core PCE inflation; however, we estimate an impact of a similar magnitude on the core CPI measure.

2. How Big a Hit from the Trade War?

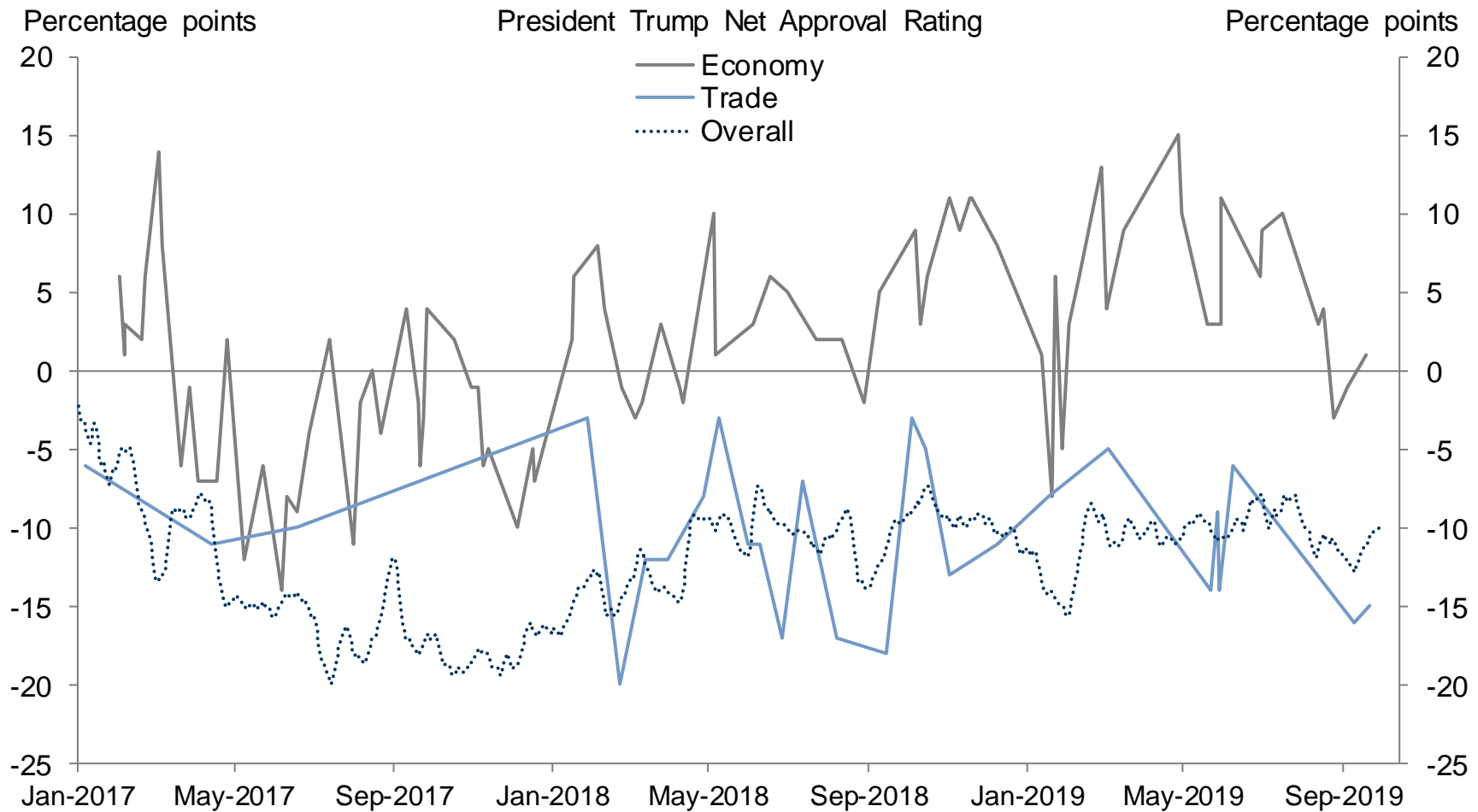
The Trade War Is Weighing on US Growth More Heavily



*Assumes a 5pp hike on approx. \$270bn of Chinese imports to 30%, a 15% tariff on \$105bn of remaining Chinese imports from list 4A and a 10% tariff on \$155bn of remaining Chinese imports from list 4B, but no further escalation.

2. How Big a Hit from the Trade War?

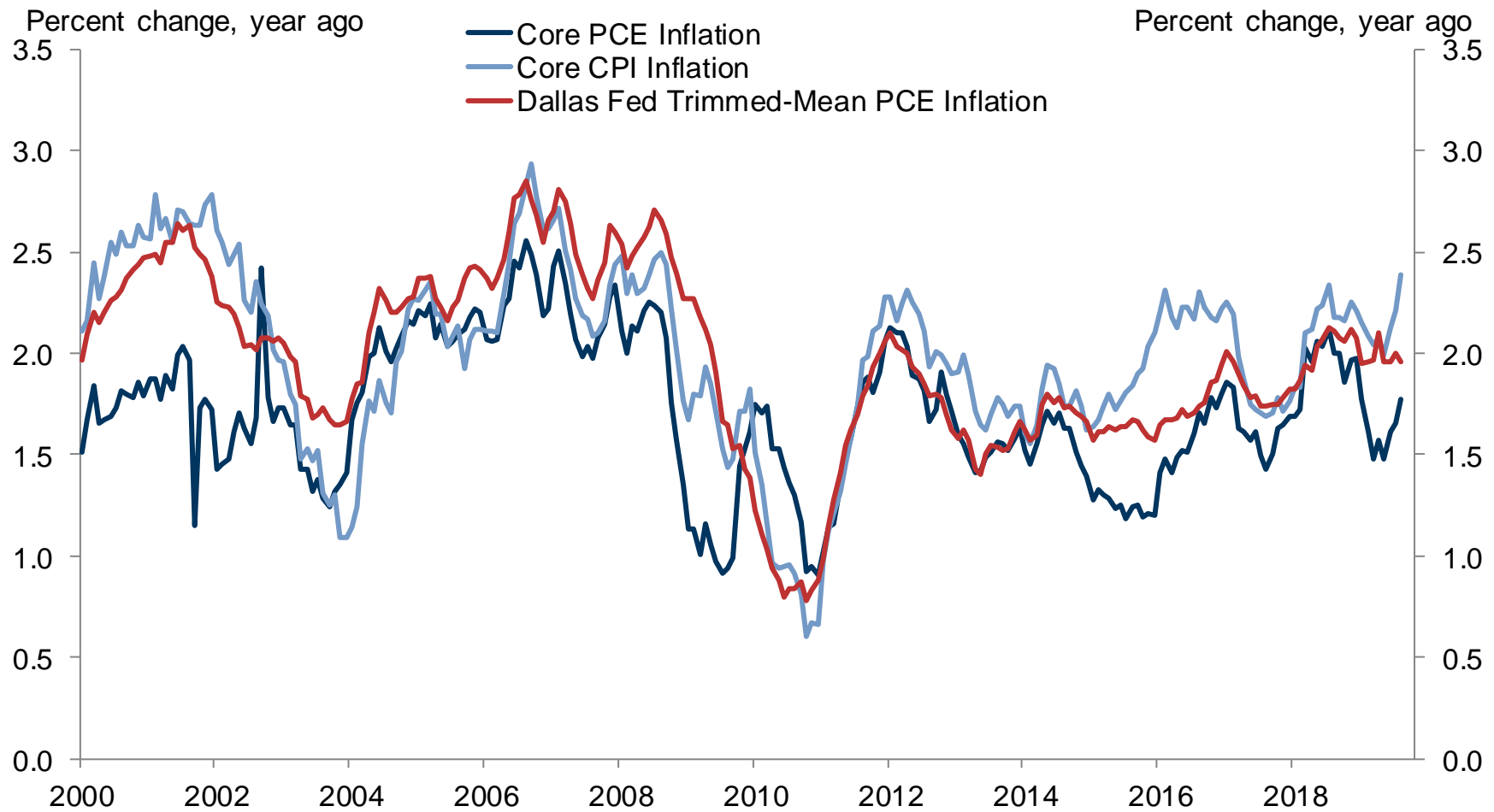
President Trump's Trade Policy Is Not Popular



Source: *PollingReport.com, RealClearPolitics, Goldman Sachs Global Investment Research.*

3. Why Is Inflation So Low?

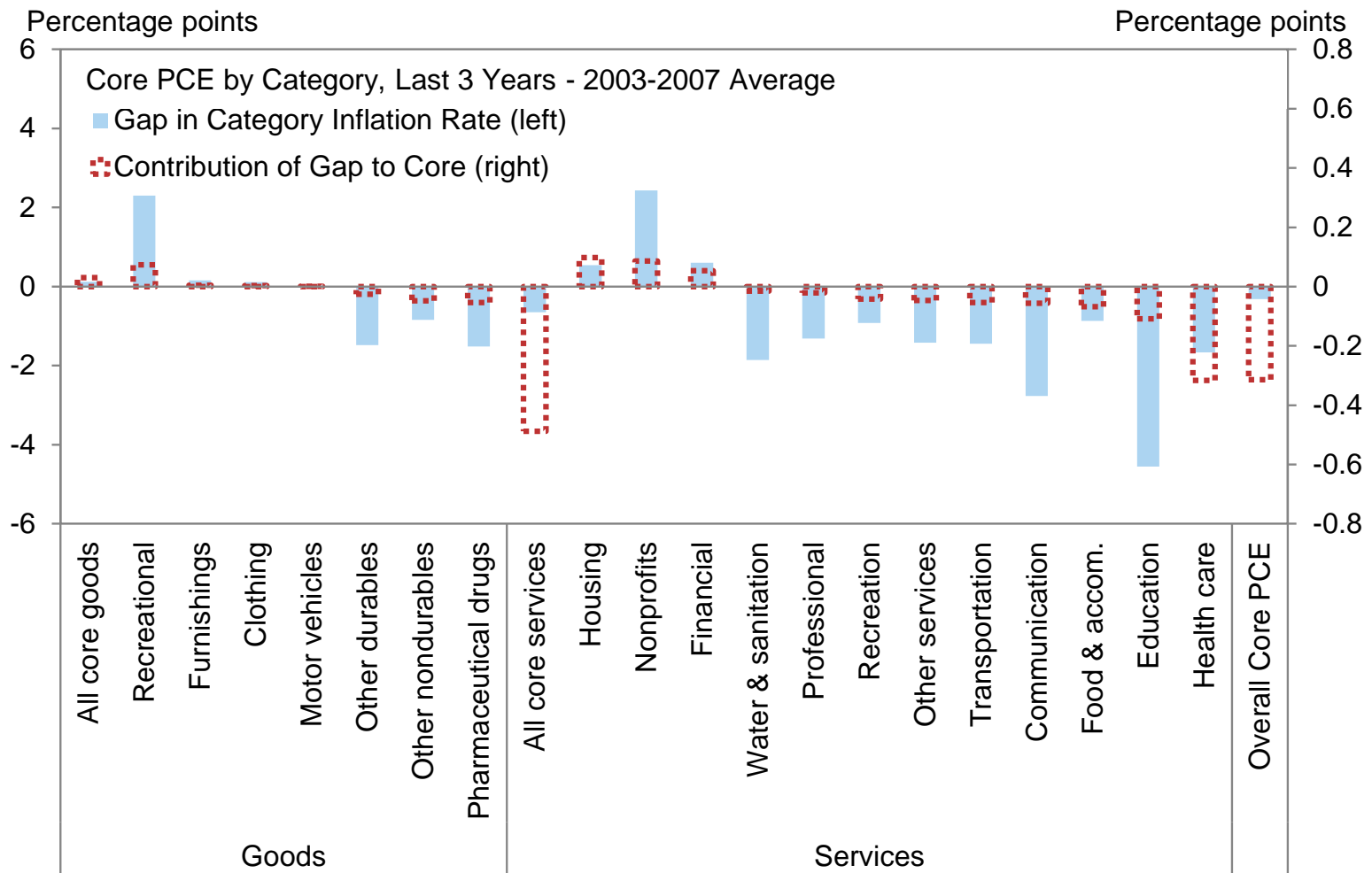
Actually, It's Not that Low Relative to the Past 20 Years



Source: Federal Reserve, Commerce Department, Goldman Sachs Global Investment Research.

3. Why Is Inflation So Low?

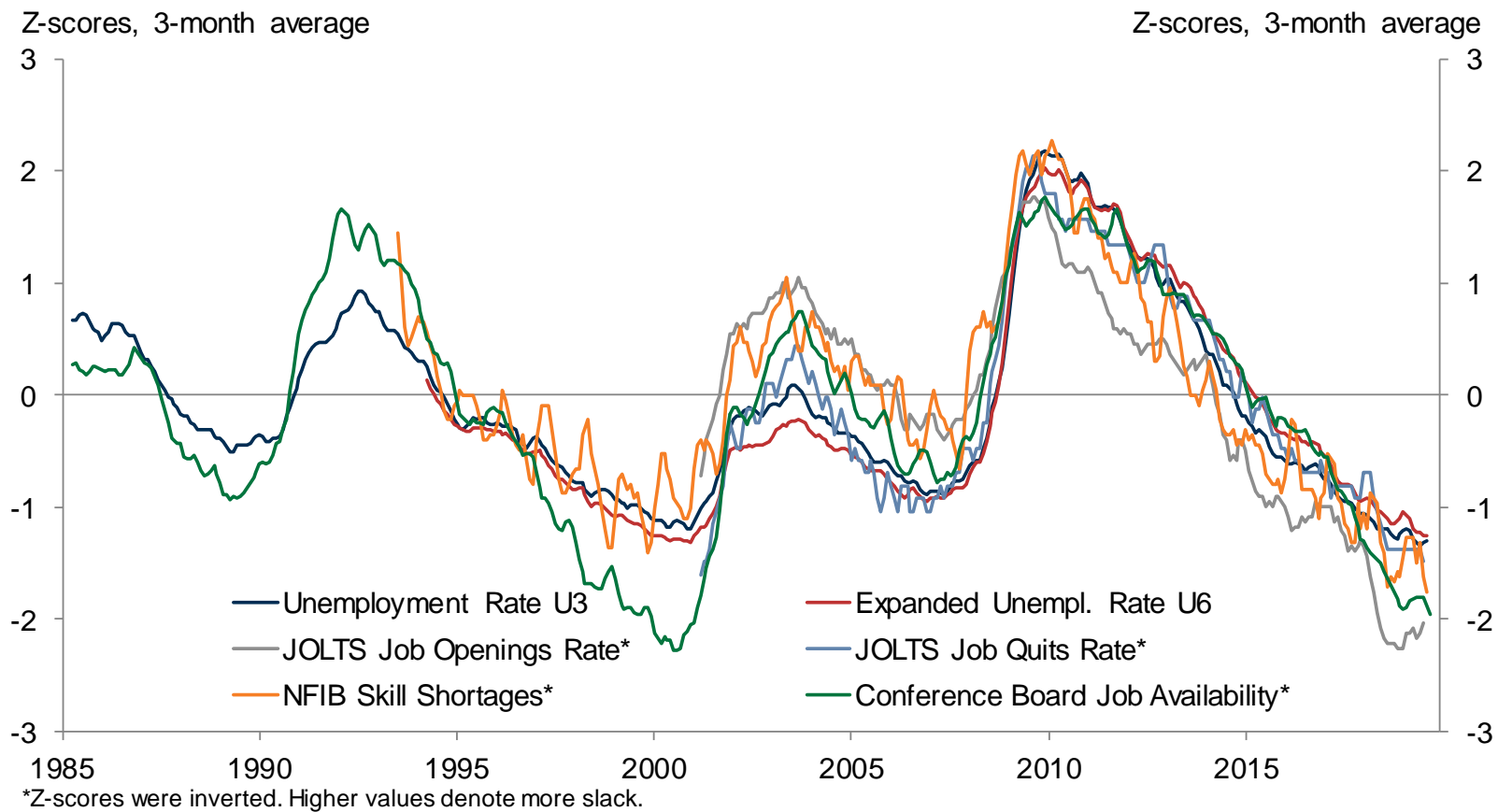
Health Care Has Weighed Heavily on Inflation (Especially the PCE Index)



Source: Department of Commerce, Goldman Sachs Global Investment Research.

3. Why Is Inflation So Low?

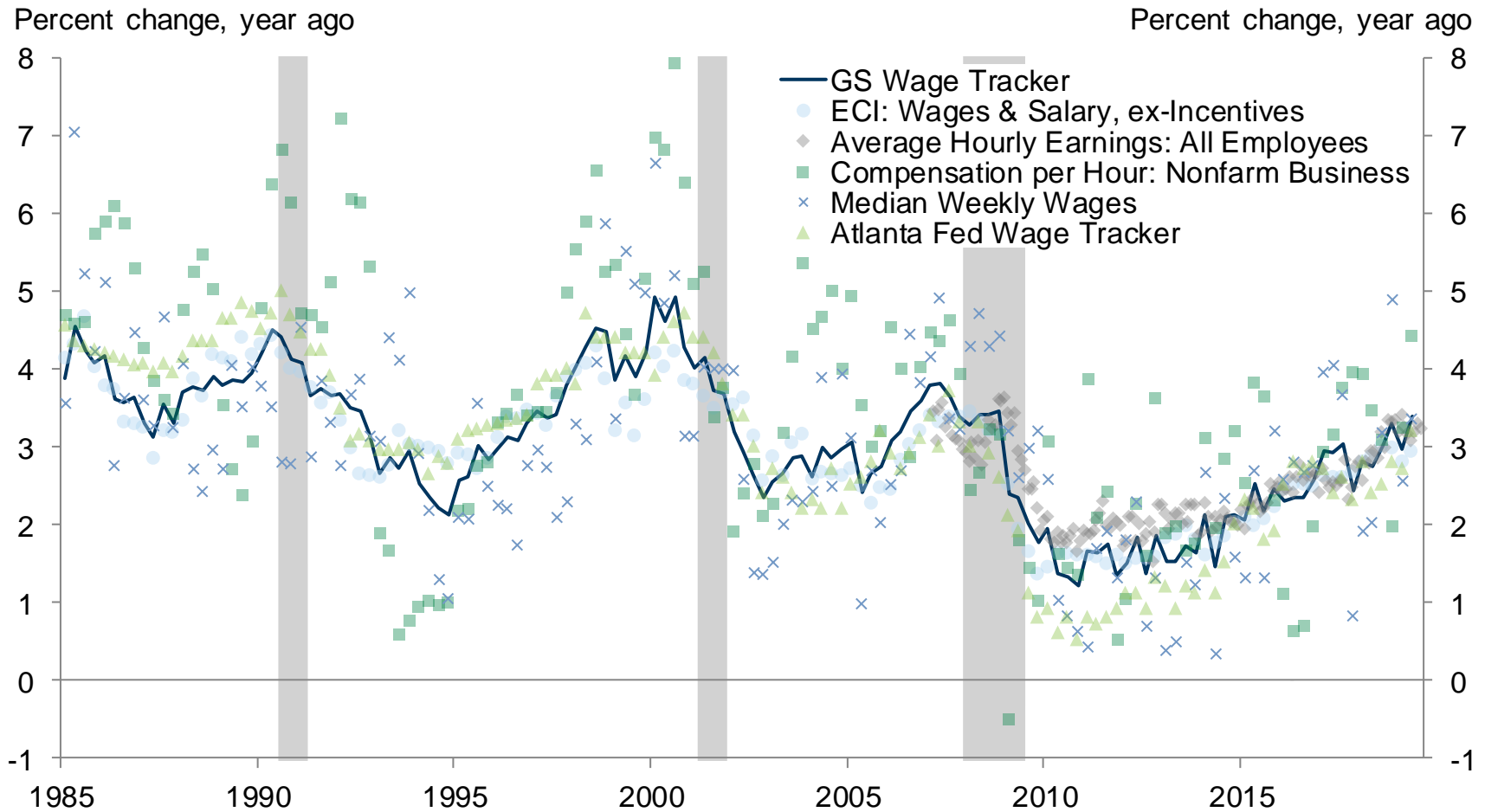
Labor Market Continues to Tighten



Source: Department of Labor. Conference Board. JOLTS. NFIB. Goldman Sachs Global Investment Research.

3. Why Is Inflation So Low?

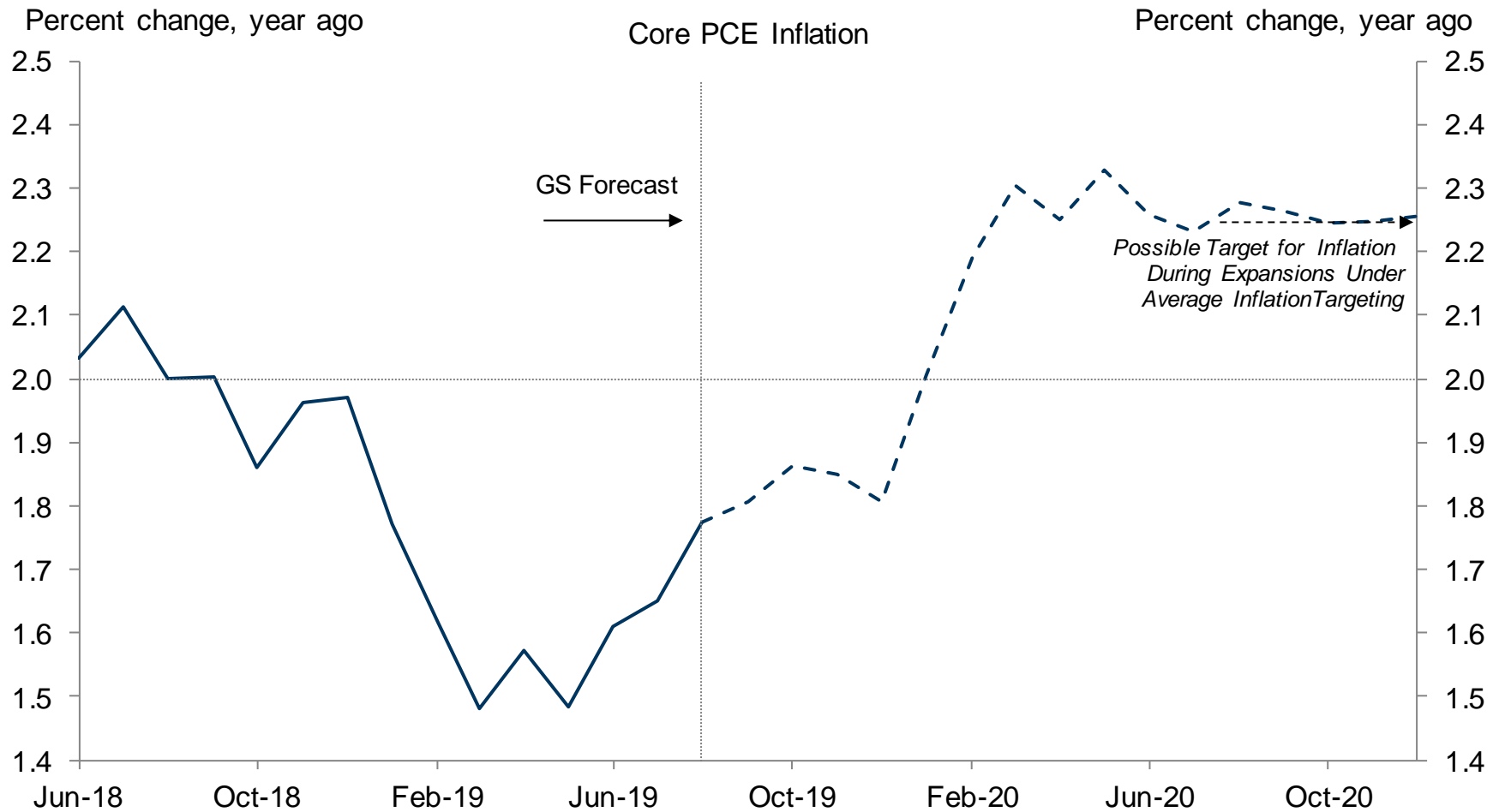
Wage Growth Gradually Trends Higher



Source: Department of Labor. Federal Reserve. Goldman Sachs Global Investment Research.

3. Why Is Inflation So Low?

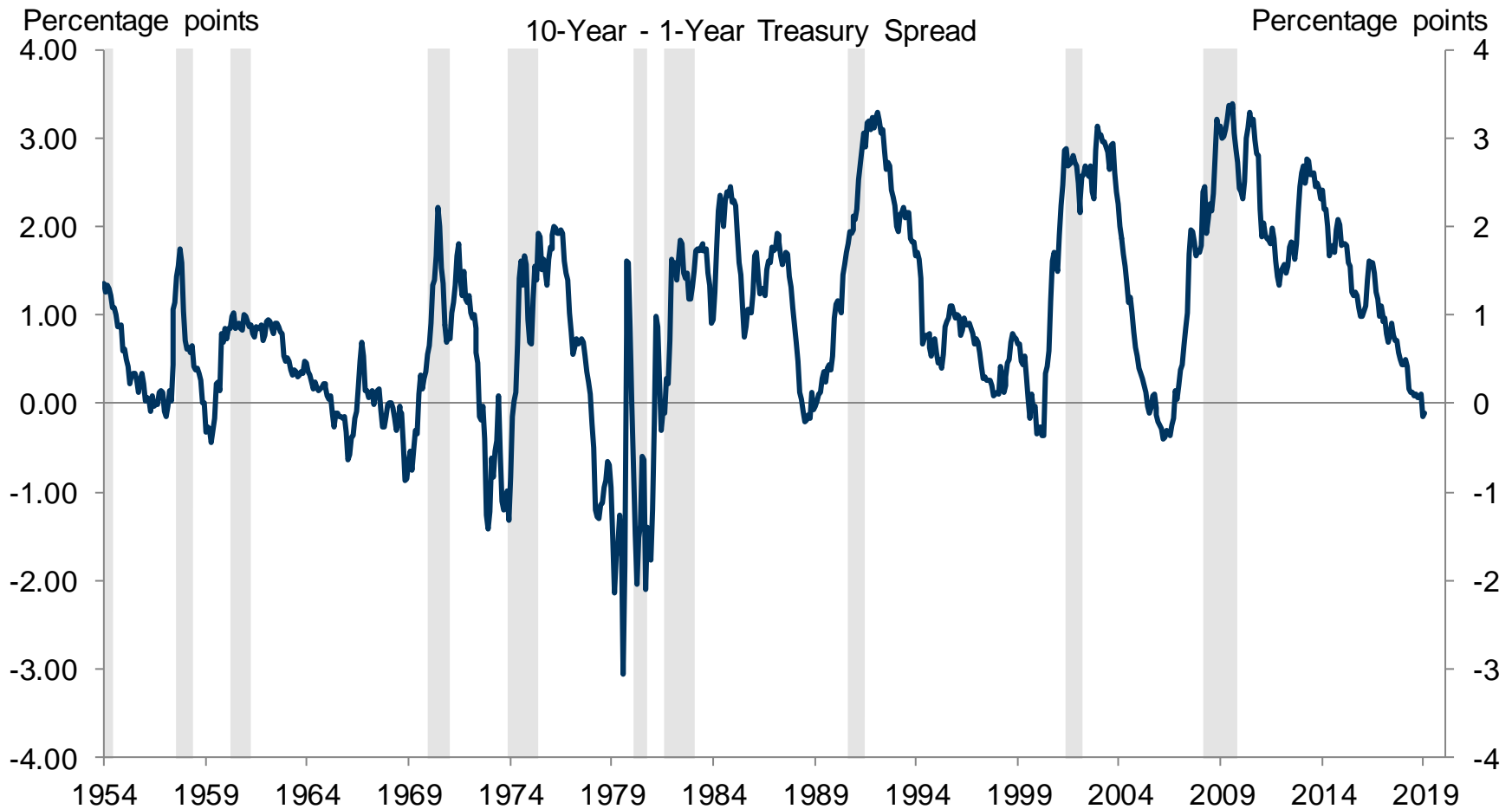
A Gradual Upward Move, With Tariff Effects Concentrated in Late 19/Early 20



Source: Department of Commerce, Goldman Sachs Global Investment Research.

4. Are We Headed for Recession?

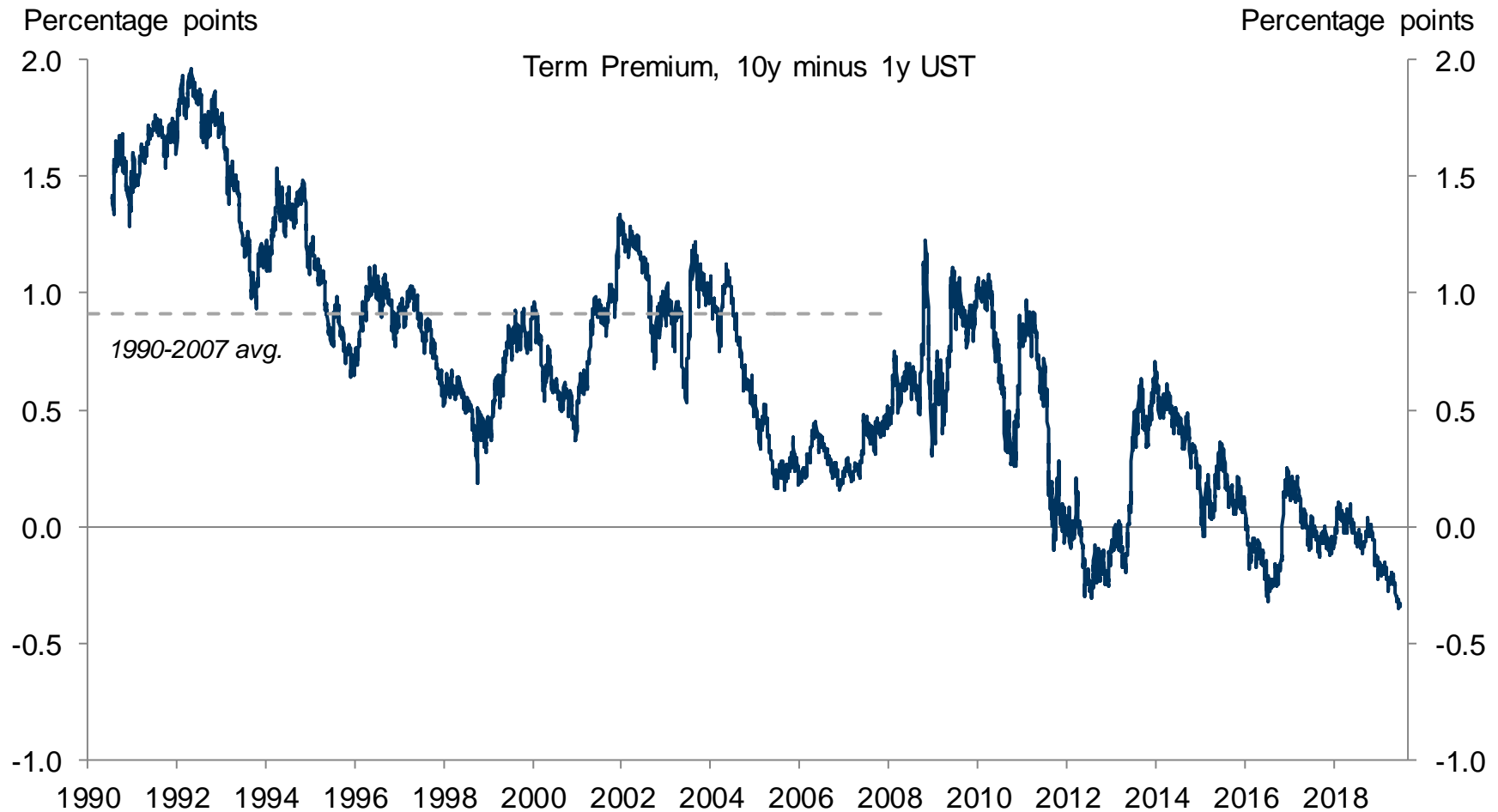
The Yield Curve Would Say Yes



Source: Federal Reserve, Goldman Sachs Global Investment Research.

4. Are We Headed for Recession?

Lower Term Premium Distorts Yield Curve Signal



Source: Goldman Sachs Global Investment Research.

4. Are We Headed for Recession?

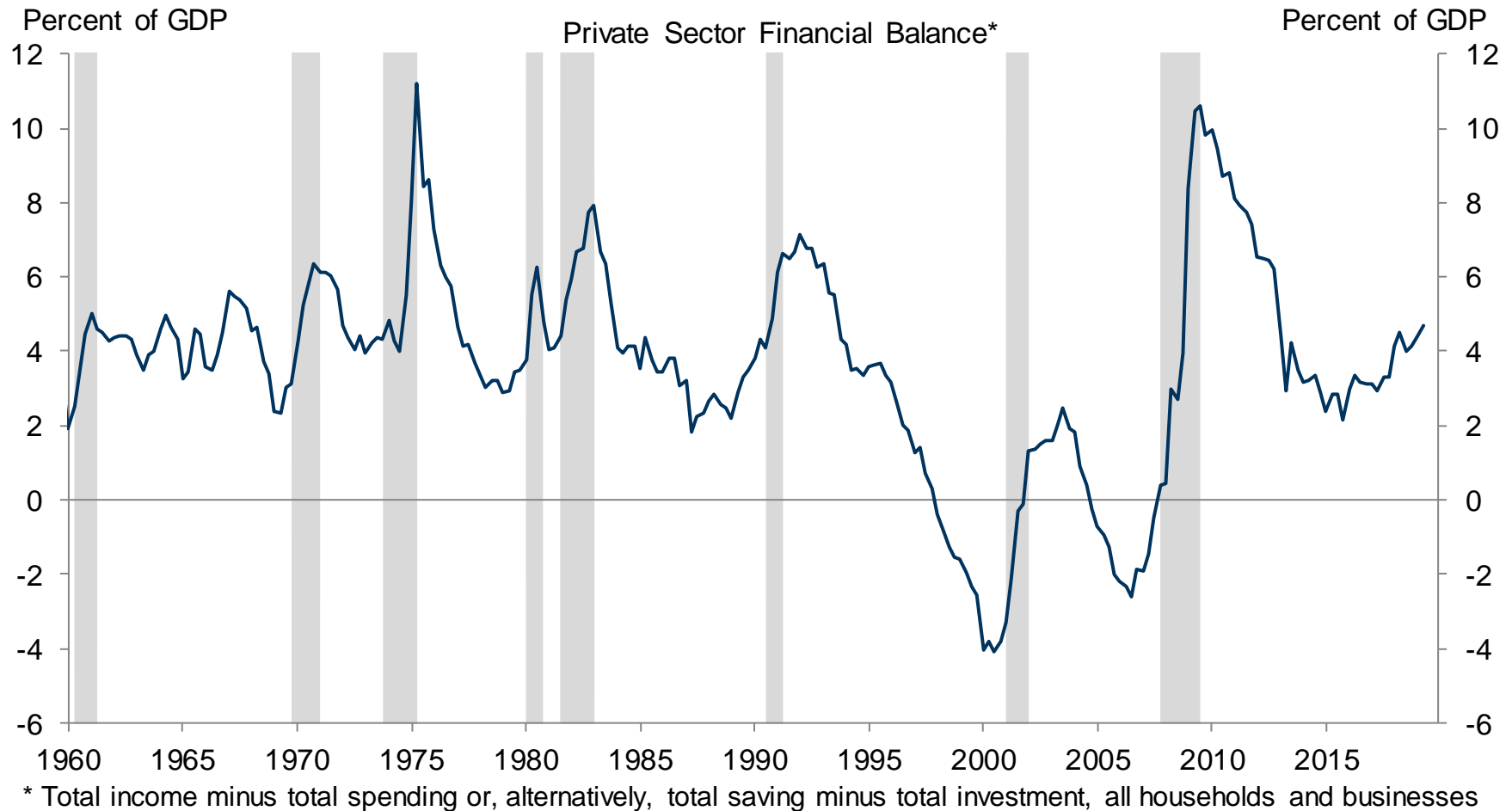
A Century of US Recessions

Key Contributors to NBER-Dated US Recessions					
Recession	Industrial	Oil	Monetary	Financial	Fiscal
Aug 1918					■
Jan 1920			■		■
May 1923	■				
Oct 1926					
Aug 1929				■	
May 1937			■		■
Feb 1945					■
Nov 1948	■				
Jul 1953					■
Aug 1957			■		
Apr 1960			■		
Dec 1969					■
Nov 1973		■	■		
Jan 1980		■	■		
Jul 1981			■		
Jul 1990		■	■	■	
Mar 2001				■	
Dec 2007				■	

Source: Goldman Sachs Global Investment Research.

4. Are We Headed for Recession?

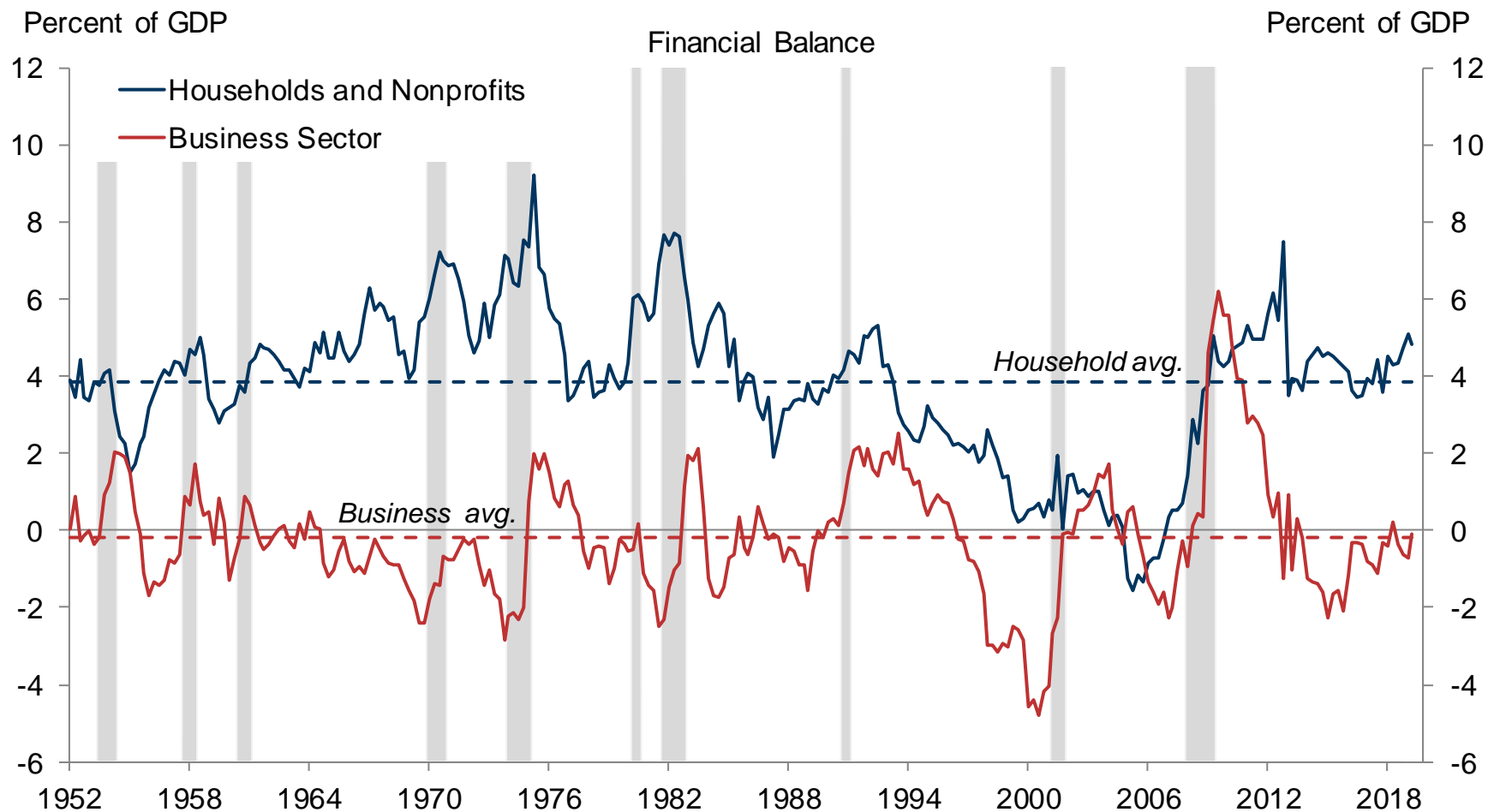
Private Sector Runs a Large Surplus...



Source: Federal Reserve. Goldman Sachs Global Investment Research.

4. Are We Headed for Recession?

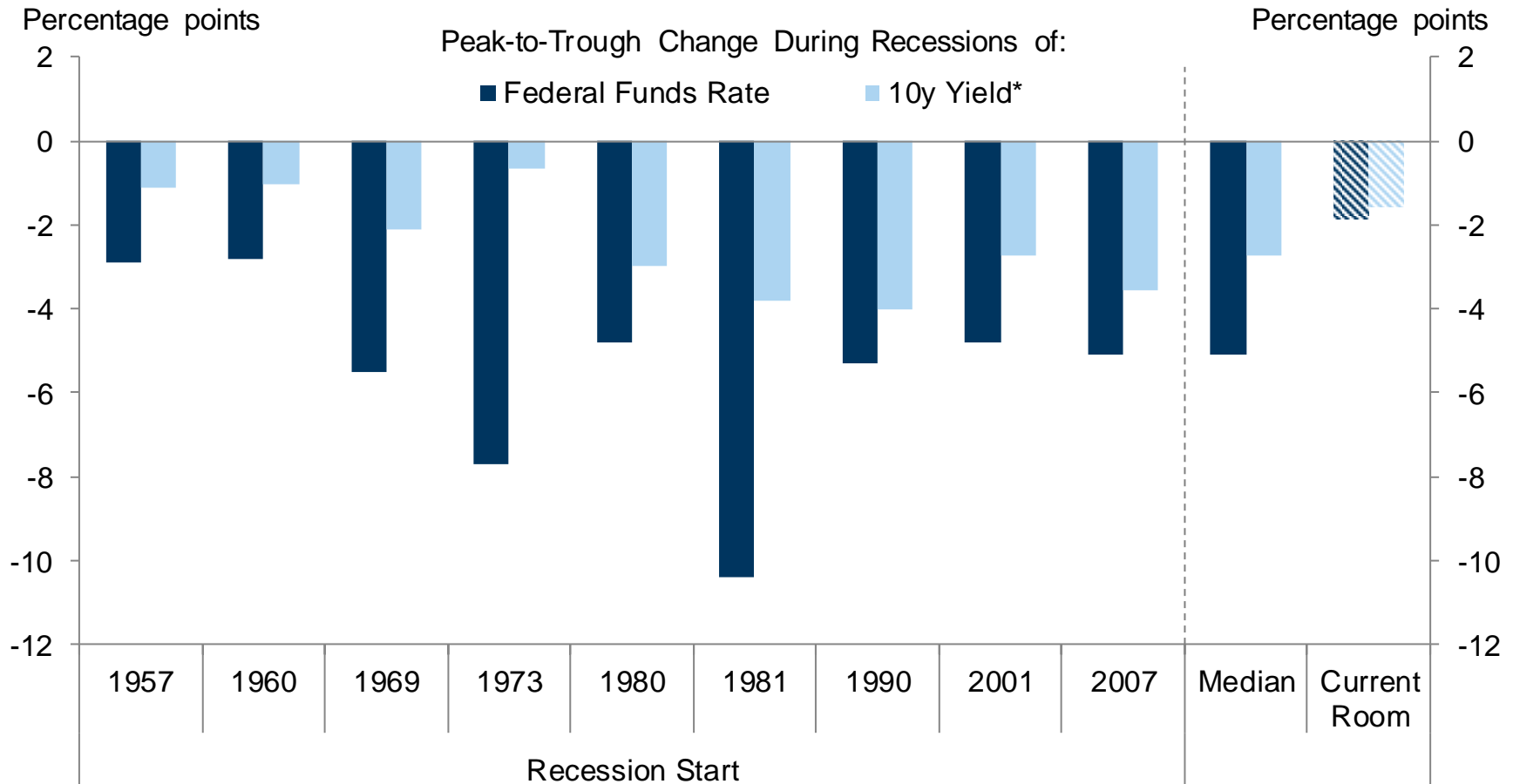
...With Both Households and Firms in Good Shape



Source: Federal Reserve. Goldman Sachs Global Investment Research.

5. Does the Fed Have Enough Firepower?

Little Room on the Funds Rate, Somewhat More on 10-Year Yields

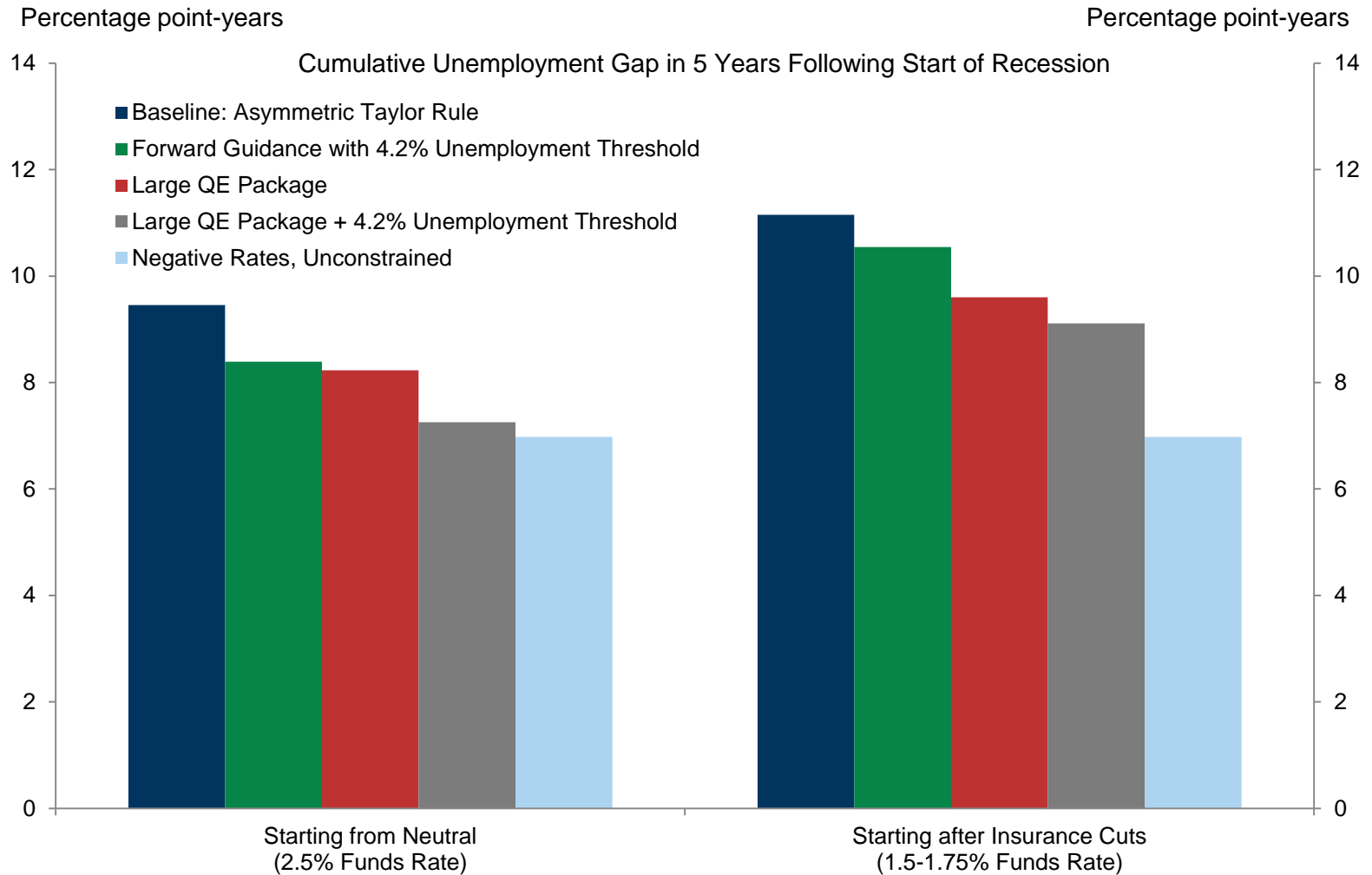


*Peak 10 year yield in the 6 months prior to the first rate cut minus the lowest yield reached before the first rate hike.

Source: Goldman Sachs Global Investment Research.

5. Does the Fed Have Enough Firepower?

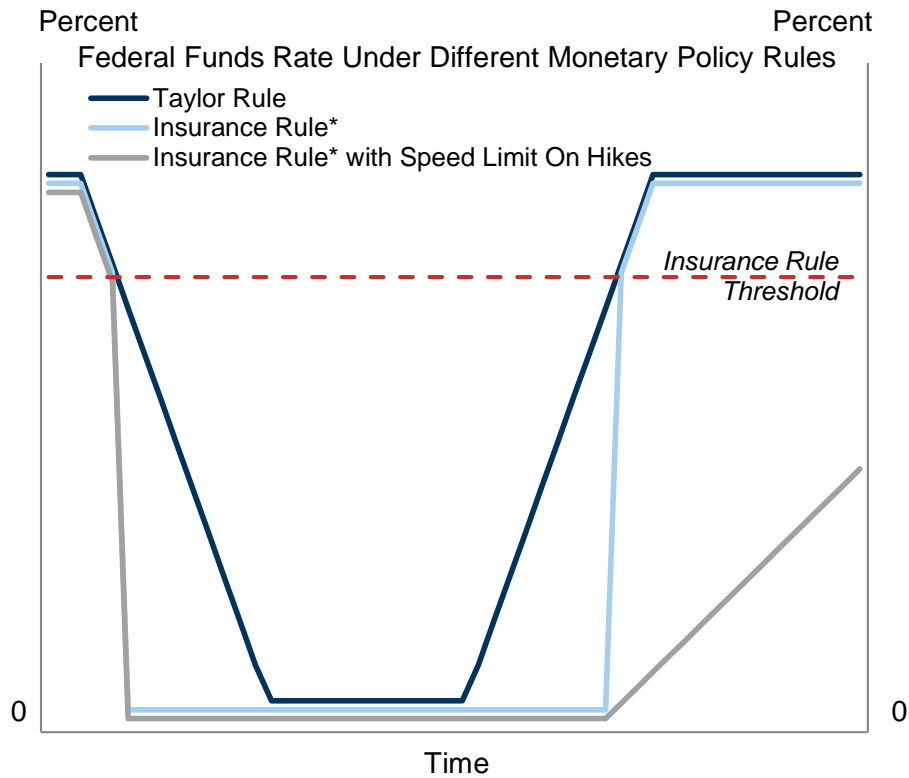
Aggressive QE/Guidance Can Mostly Overcome ZLB—If Fed Starts from 2.5%



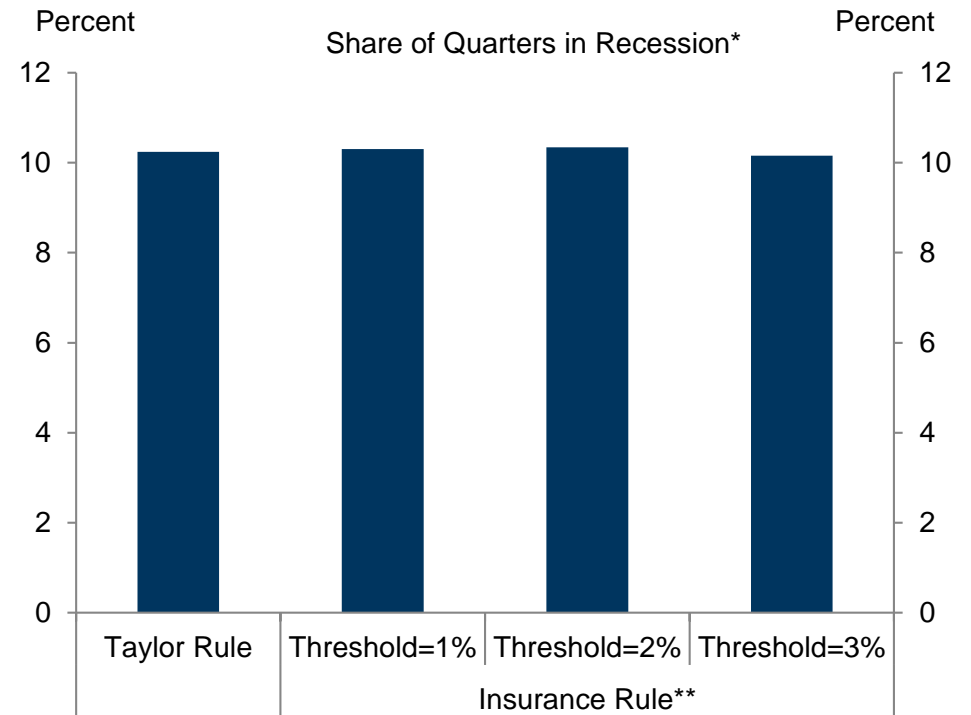
Source: Goldman Sachs Global Investment Research.

5. Does the Fed Have Enough Firepower?

“Insurance” Policy Rules Don’t Lower Recession Risk



* Rate drops to zero if Taylor rule wants rate below threshold.



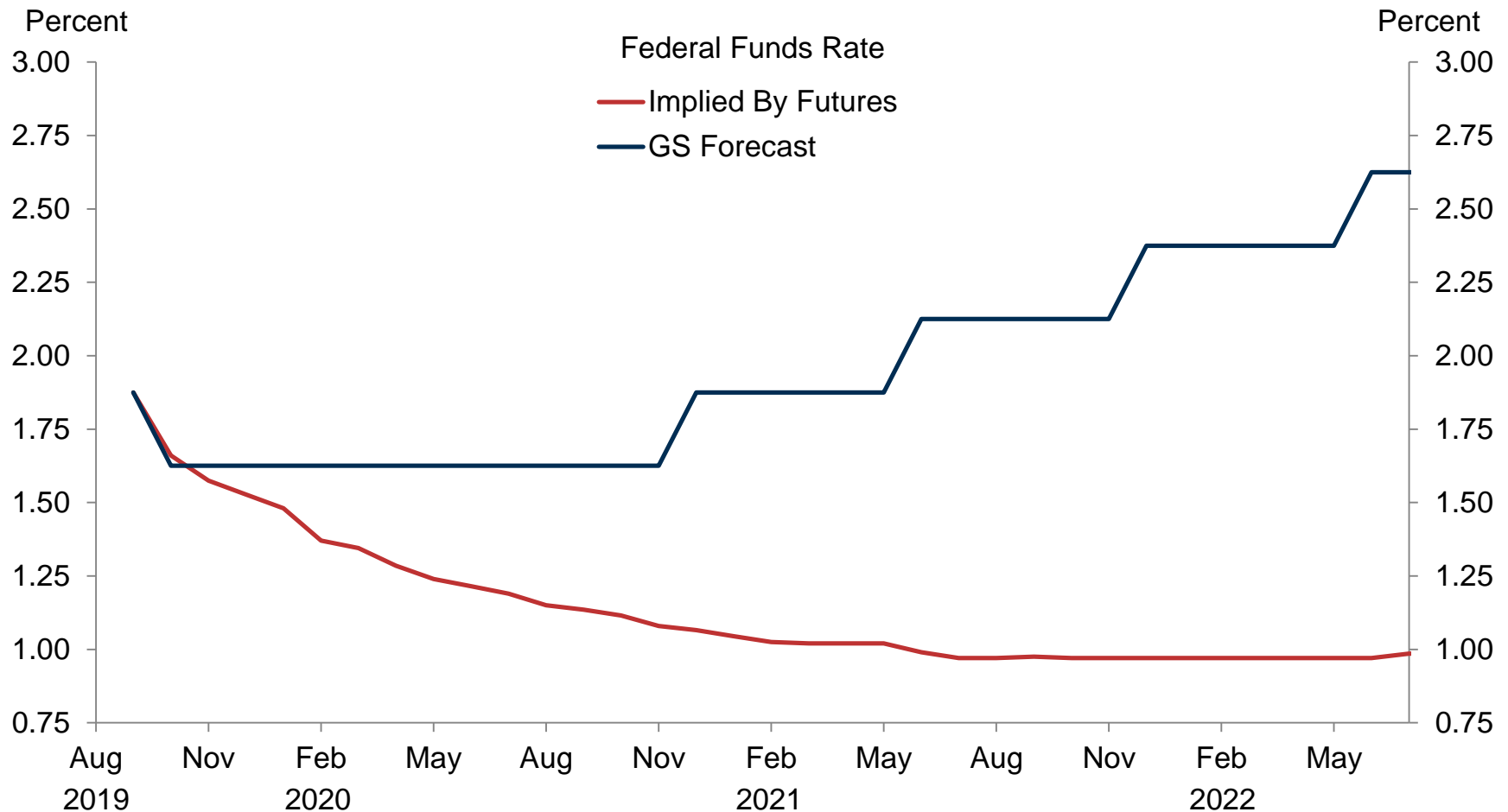
* Episodes with at least two consecutive quarters of negative quarterly GDP growth.

** Rate drops to zero if Taylor rule wants rate below threshold.

Note: We assume a speed limit on hikes of 25bp per quarter.

5. Does the Fed Have Enough Firepower?

One More Insurance Cut in October, But the Bond Market Is Priced Too Low



Source: Goldman Sachs Global Investment Research.

6. Is Productivity Growth Mismeasured?

A Smartphone Does More Than *All* of these 1991 Devices Together

Radio Shack
AMERICA'S TECHNOLOGY STORE

PRESIDENTS' BIRTHDAY SALE!
DON'T DELAY!

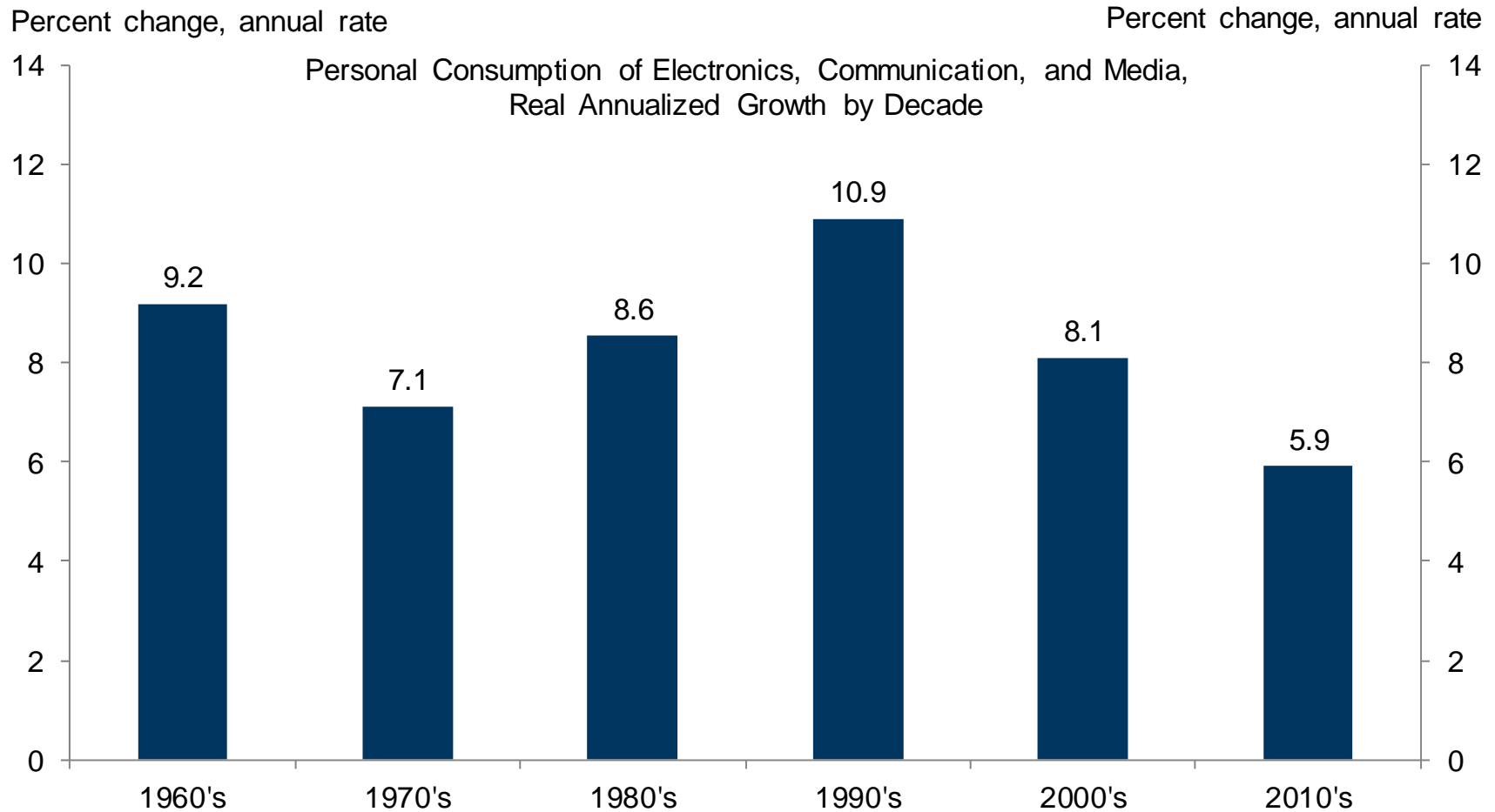
3-DAY SPECIALS ABOVE GOOD SATURDAY THRU MONDAY ONLY!

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<p>INTRODUCTORY SPECIAL! Save \$670 \$1599 Reg. 2269 TANDY™ 1000 TL/3 Computer System • 286-Based PC Compatible • Color Monitor • 20MB SmartDrive™ Hard Drive • Easy-to-Use 10-in-1 Desktop™ Software • 400-KHz SuperTurbo™ CPU BONUS PACKAGE • Lotus Spreadsheet For DeskMate • DeskMate G.A. Write • QuickKey • 3-Button Mouse</p>	<p>Mobile Cellular Telephone Save \$100 \$199 Reg. 299 See us for details. Reg. 299.99</p>	<p>Deluxe Portable CD Player Save \$40 15995 Reg. 199.95 See us for details. Realistic CD-3000 has 10-processor memory, head-phones, auto, and 2000.</p>	<p>Tiny Dual-Superhet Radar Detector Save \$60 7995 Reg. 8595 Road Patrol™ XX™ detector lets you drive with confidence. Separate 3 and 9. Super turbo. See store.</p>	<p>Compact 10-Channel Desktop Scanner Save \$30 9995 Reg. 13295 See us for details. Realistic PRQ-57 lets you catch the news as it happens near police, fire, tax, military, lots more. See store.</p>	
<p>VHS Camcorder Save \$100 \$799 Reg. 899 See us for details. Reg. 899.99 Realistic Model 182 includes color light, 90 minutes recording, 2 1/2" Hi-Fi stereo, 2000 auto-reverse, etc.</p>	<p>Mobile CB With Channel Controls on Mike HALF PRICE! 4995 Reg. 9995 Realistic TRC-420 lets you get highway info or help. Plus 5 channel remote to driver. See store.</p>	<p>Our Easiest-to-Use Phone Answerer Cut 17% 4995 Reg. 5995 See us for details. DORFINGER™ ASD-287 answerer is ready to use - just plug it in. See store at announcements. See store.</p>	<p>3-Way Speaker With Massive 15" Woofer Save \$110 14995 Reg. 16095 See us for details. Reg. 16095.99 Capstone™ Main™ 3-way system pumps out bass you can feel. 4" twin tweeters, 5" midrange, and 15"</p>	<p>20-Memory Speed-Dial Phone Cut 33% 2995 Reg. 4495 See us for details. Reg. 4495.99 Radio Shack F3-292 has 20 numbers to speed dial. Includes home or office, Transceiver, etc. See store.</p>	<p>Handheld Voice-Activated Cassette Tape Recorder 40% Off 2995 Reg. 4995 See us for details. Reg. 4995.99 Realistic CTR-85 records 60 minutes. Features "Listen" or playback, automatic stop, etc.</p>

Source: Radio Shack, Goldman Sachs Global Investment Research.

6. Is Productivity Growth Mismeasured?

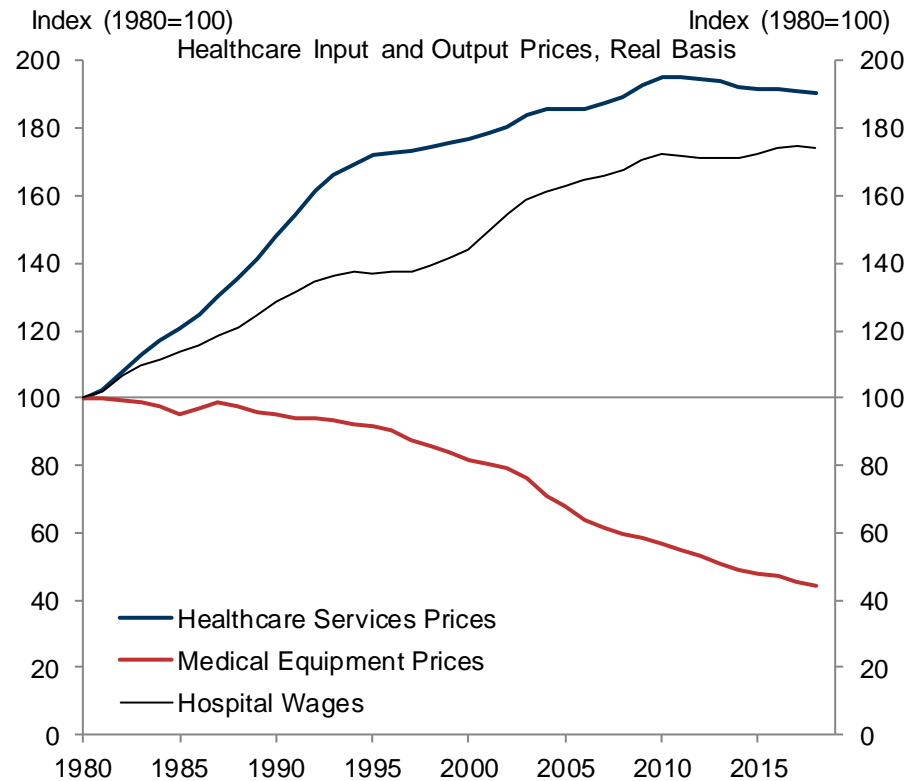
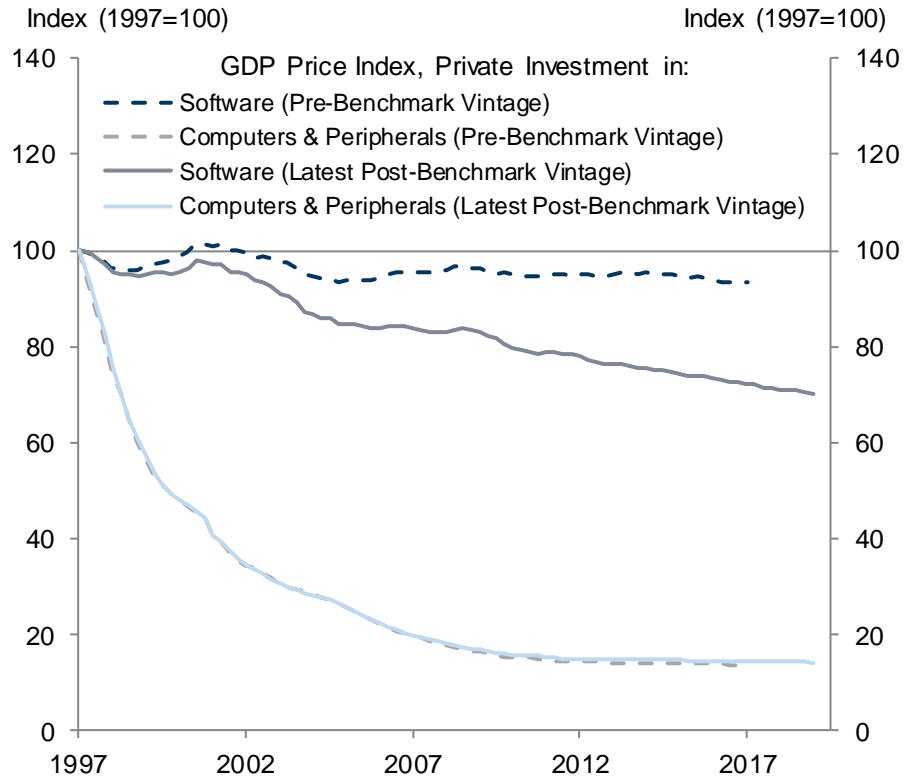
Nevertheless, the Official Data Show Slower Growth in Real Media Consumption



Source: Goldman Sachs Global Investment Research.

6. Is Productivity Growth Mismeasured?

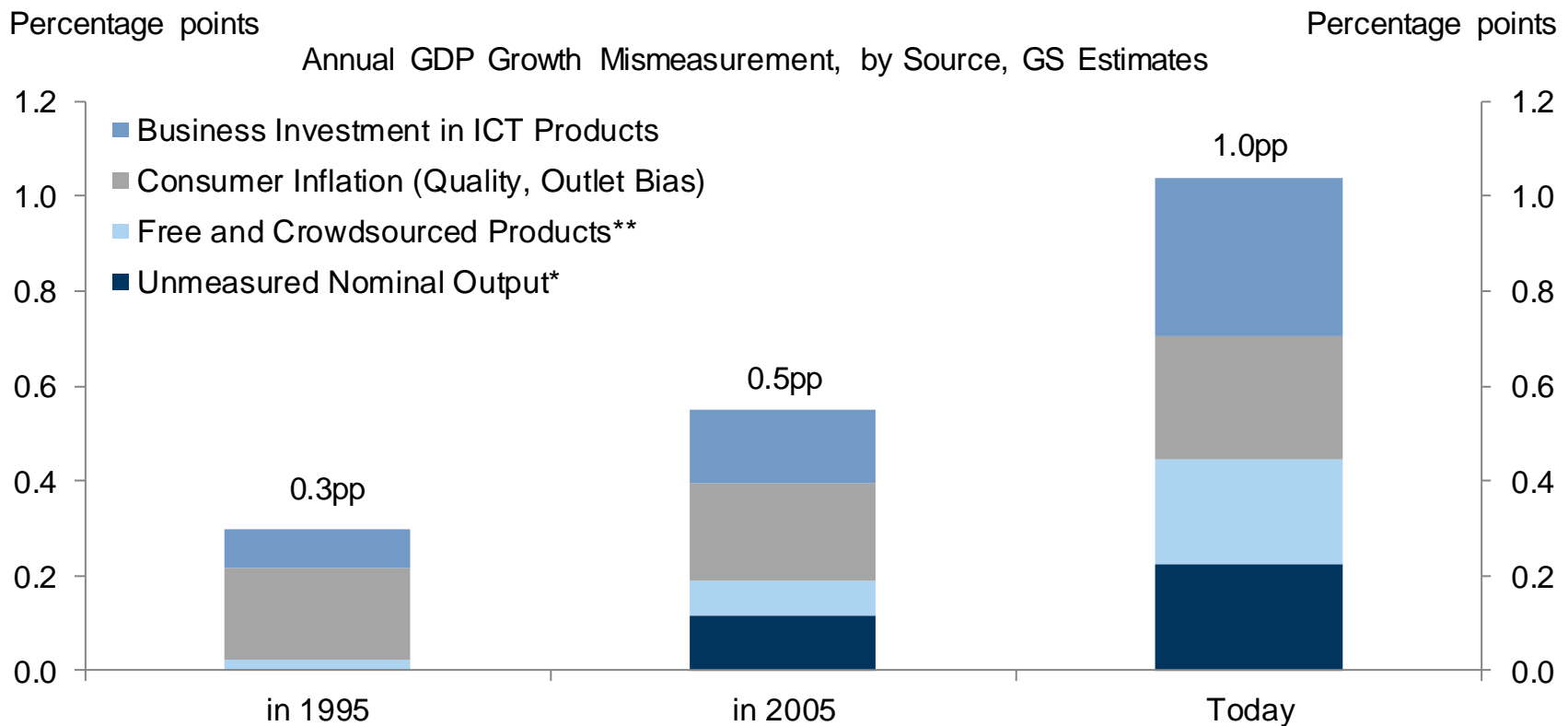
Despite Some Progress, Software and Healthcare Prices Look Badly Mismeasured



Source: Goldman Sachs Global Investment Research.

6. Is Productivity Growth Mismeasured?

A Sizable Increase in Mismeasurement Since the 1990s



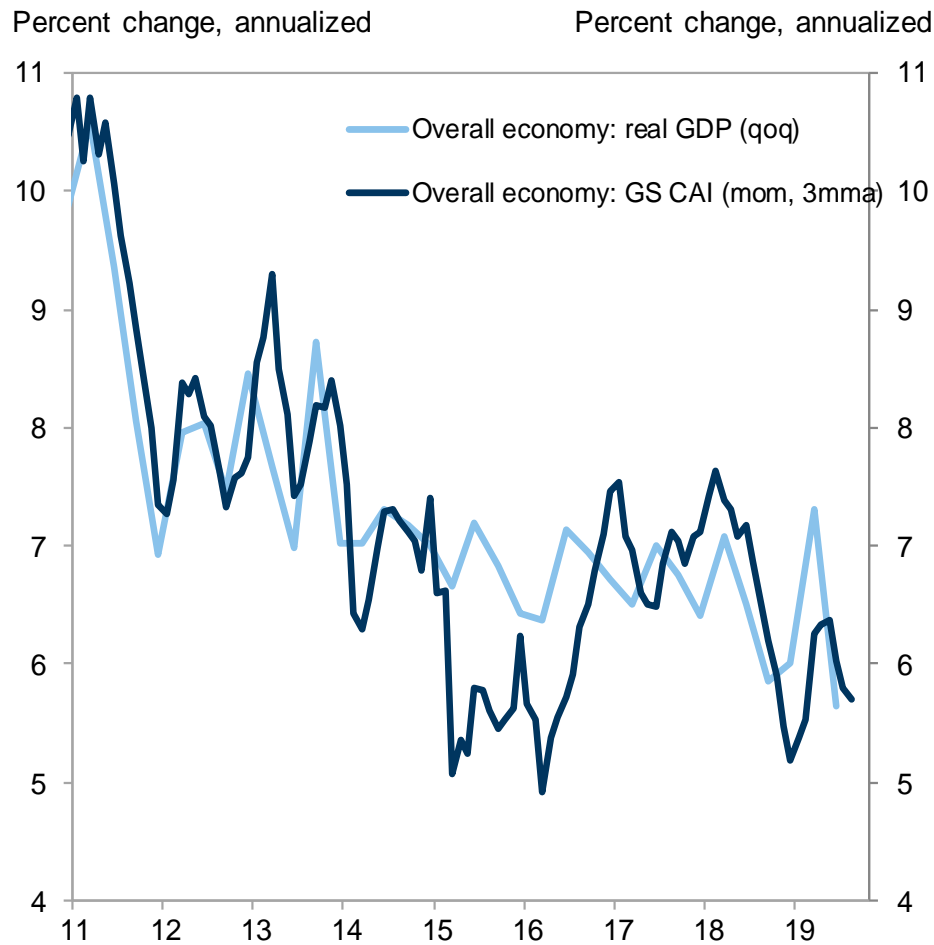
*As implied by GDI-GDP gap, tax-haven profit shifting, and US consumption dollars not counted in either GDP or GDI (e.g. home-sharing, online third party marketplaces)

**Excludes ad-supported content, which is already reflected in GDI (e.g. Google corporate profits) and is represented here within unmeasured nominal output

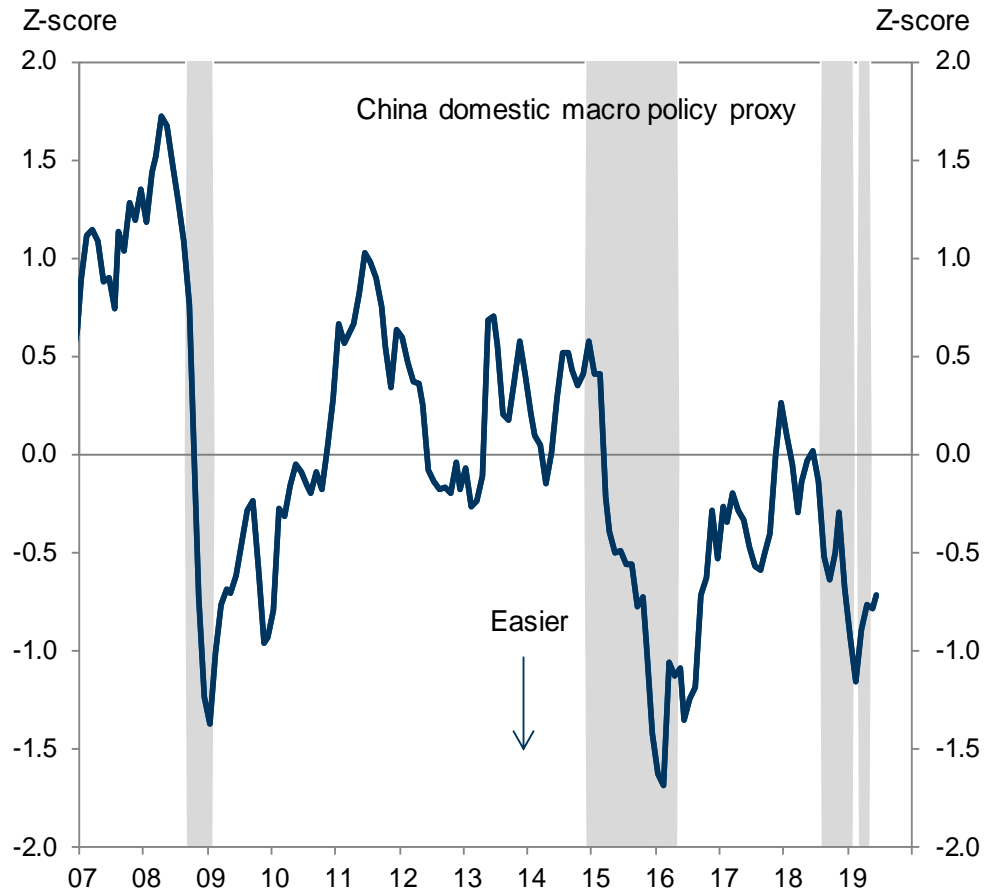
7. How Much Risk from Global Factors?

China Eases Modestly in Response to Trade War and Slower Growth

Chinese growth slowdown in 2018 comparable to 2015-16 episode



Policy has eased, but more modestly in this downturn than in 2015-16



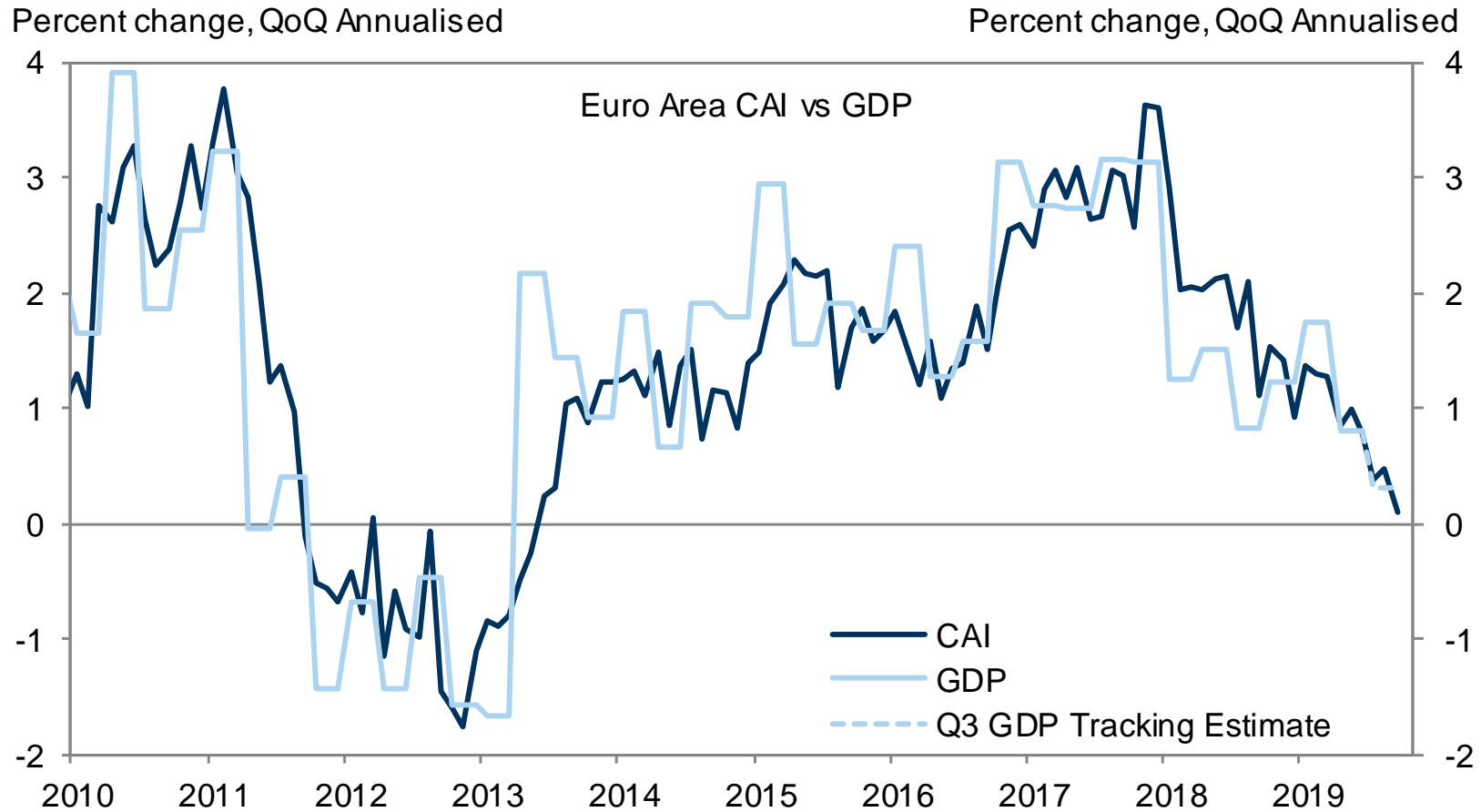
Note: Shaded areas refer to periods when China CAI growth was below 6%.

Source: Goldman Sachs Global Investment Research.

Source: CEIC, Haver, Goldman Sachs Global Investment Research.

7. How Much Risk from Global Factors?

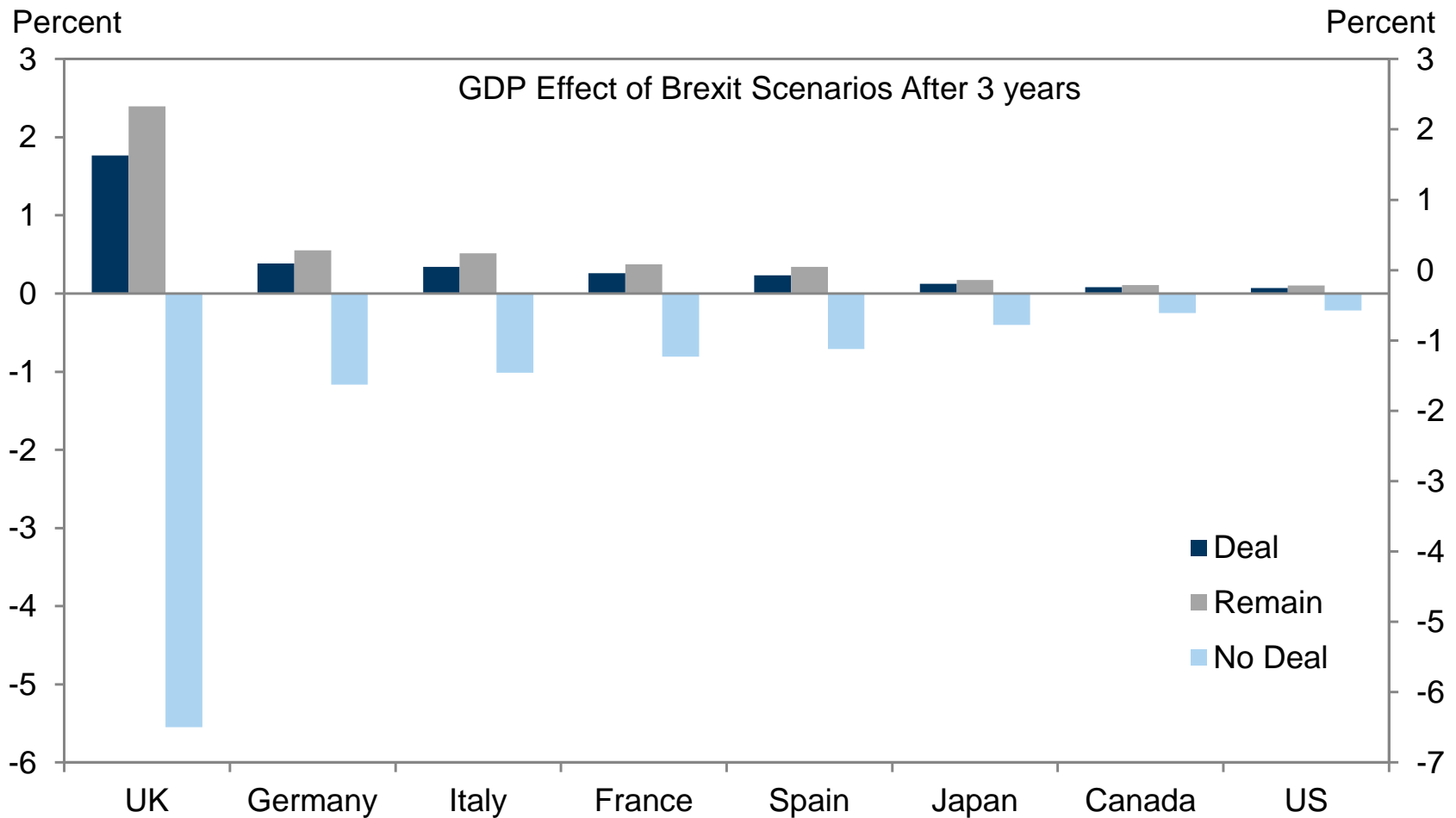
The Euro Area Has Slowed Sharply Since Early 2018



Source: Haver Analytics. Goldman Sachs Global Investment Research.

7. How Much Risk from Global Factors?

Avoiding a “No Deal” Brexit Would Boost European Growth



Source: Goldman Sachs Global Investment Research.

Global Growth Forecasts

Real GDP Growth							
Percent Change yoy	2016	2017	2018	2019 (f)		2020 (f)	
				GS	Cons*	GS	Cons*
US	1.6	2.4	2.9	2.3	2.3	2.1	1.7
Japan	1.0	1.9	0.8	1.0	0.9	0.4	0.3
Euro Area	1.9	2.6	1.9	1.0	1.1	0.9	1.0
Germany	2.2	2.8	1.5	0.5	0.5	0.6	0.8
France	1.1	2.4	1.7	1.3	1.3	1.2	1.2
Italy	1.0	1.8	0.7	0.1	0.1	0.5	0.4
Spain	3.3	3.0	2.6	2.2	2.2	1.9	1.8
UK	1.8	1.8	1.4	1.3	1.2	1.3	1.1
China	6.7	6.8	6.6	6.1	6.2	5.9	6.0
India**	7.9	6.9	7.4	5.6	6.4	7.3	6.3
Russia	-0.2	1.6	2.3	1.3	1.1	2.6	1.6
Brazil	-3.5	1.1	1.1	1.0	1.0	2.1	2.0
Developed Markets	1.7	2.4	2.3	1.7	1.7	1.6	1.4
Emerging Markets	4.5	5.1	5.1	4.3	4.4	5.0	4.6
World	3.1	3.8	3.8	3.1	3.2	3.5	3.2

* Bloomberg consensus forecasts as of September.

** Bloomberg consensus fiscal year basis.

US Forecasts

THE US ECONOMIC AND FINANCIAL OUTLOOK

(% change on previous period, annualized, except where noted)

	2017	2018	2019	2020	2021	2022	2019				2020			
			(f)	(f)	(f)	(f)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
OUTPUT AND SPENDING														
Real GDP	2.4	2.9	2.3	2.1	2.1	1.7	3.1	2.0	2.0	1.7	2.2	2.5	2.3	2.0
Real GDP (Q4/Q4)	2.8	2.5	2.2	2.2	2.0	1.6	--	--	--	--	--	--	--	--
Consumer Expenditure	2.6	3.0	2.6	2.6	2.3	1.9	1.1	4.6	2.8	1.9	2.5	2.8	2.6	2.3
Residential Fixed Investment	3.5	-1.5	-1.9	3.6	3.6	3.0	-1.1	-2.9	2.0	5.0	5.0	4.0	4.0	2.0
Business Fixed Investment	4.4	6.4	2.4	2.1	3.4	3.2	4.4	-1.0	-2.2	2.6	2.7	3.6	3.4	3.4
Structures	4.7	4.1	-3.8	-0.5	2.0	2.0	4.0	-11.1	-10.4	2.0	2.0	2.0	2.0	2.0
Equipment	4.7	6.8	1.3	1.2	4.0	3.4	-0.1	0.8	-5.3	-1.0	2.0	4.0	4.0	4.0
Intellectual Property Products	3.6	7.4	8.2	5.0	3.5	3.8	10.9	3.6	7.5	7.5	4.0	4.0	3.5	3.5
Federal Government	0.8	2.9	3.4	2.4	0.2	0.0	2.2	8.3	2.5	2.5	2.5	2.5	0.0	0.0
State & Local Government	0.6	1.0	1.6	0.5	0.0	0.0	3.4	2.7	1.1	1.0	0.0	0.0	0.0	0.0
Net Exports (\$bn, '09)	-850	-920	-970	-1,014	-1,058	-1,098	-944	-981	-983	-974	-992	-1009	-1022	-1034
Inventory Investment (\$bn, '09)	32	48	71	48	55	55	116	69	65	35	40	45	50	55
Industrial Production, Mfg.	2.0	2.3	-0.3	0.2	1.3	1.0	-1.9	-3.0	-0.8	-0.8	0.6	1.2	1.5	1.3
HOUSING MARKET														
Housing Starts (units, thous)	1,209	1,250	1,284	1,381	1,391	--	1,213	1,256	1,308	1,360	1,358	1,400	1,380	1,387
New Home Sales (units, thous)	617	615	663	707	735	--	669	661	649	674	688	708	714	720
Existing Home Sales (units, thous)	5,531	5,341	5,276	5,342	5,394	--	5,207	5,287	5,298	5,310	5,323	5,336	5,348	5,361
Case-Shiller Home Prices (%yoy)*	6.2	4.1	3.2	2.8	2.7	3.0	3.0	3.1	3.1	3.2	3.3	3.1	3.0	2.8
INFLATION (% ch, yr/yr)														
Consumer Price Index (CPI)	2.1	2.4	1.8	2.1	2.2	2.4	1.6	1.8	1.8	1.9	2.1	2.0	2.1	2.2
Core CPI	1.8	2.1	2.2	2.6	2.4	2.5	2.1	2.1	2.3	2.4	2.5	2.7	2.5	2.5
Core PCE**	1.6	2.0	1.7	2.2	2.2	2.3	1.6	1.6	1.7	1.8	2.2	2.3	2.3	2.2
LABOR MARKET														
Unemployment Rate (%)	4.4	3.9	3.7	3.3	3.3	3.3	3.9	3.6	3.6	3.5	3.4	3.2	3.3	3.3
U6 Underemployment Rate (%)	8.5	7.7	7.2	6.6	6.6	6.6	7.5	7.2	7.0	7.0	6.8	6.6	6.6	6.6
Payrolls (thous, monthly rate)	180	221	161	140	100	90	206	146	154	140	150	150	135	125
GOVERNMENT FINANCE														
Federal Budget (FY, \$bn)	-666	-779	-950	-1,025	-1,050	-1,200	--	--	--	--	--	--	--	--
FINANCIAL INDICATORS														
FF Target Range (Bottom-Top, %)^	1.25-1.5	2.25-2.5	1.5-1.75	1.75-2.0	2.25-2.5	2.5-2.75	2.25-2.5	2.25-2.5	1.75-2.0	1.5-1.75	1.5-1.75	1.5-1.75	1.5-1.75	1.75-2.0
10-Year Treasury Note^	2.40	2.69	1.75	2.10	2.40	2.40	2.41	2.00	1.85	1.75	1.80	1.90	2.00	2.10
Euro (€/€)^	1.20	1.15	1.10	1.20	1.25	1.30	1.12	1.14	1.09	1.10	1.12	1.14	1.15	1.20
Yen (\$/¥)^	113	110	103	100	97	95	111	108	108	103	101	101	100	100

* Weighted average of metro-level HPIs for 381 metro cities where the weights are dollar values of housing stock reported in the American Community Survey.

** PCE = Personal consumption expenditures. ^ Denotes end of period.

Note: Published figures in bold.

Source: Goldman Sachs Global Investment Research.

Disclosure Appendix

September 24, 2019

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