Economic Outlook
Tug of War

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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.


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: Federal 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…

Effect of Financial Conditions on Real GDP Growth
Projected Impulse When the FCI is Constant as of October 7

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.

Source: Goldman Sachs Global Investment Research.
2. How Big a Hit from the Trade War?
Further Tariff Escalation Would Have Larger (but Temporary) Inflation Effects

Estimated Tariff Impact* on Core Inflation

*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

Effect of The Trade War on Real GDP Growth, Under Trade Policy Baseline*

*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.

Source: Goldman Sachs Global Investment Research.
2. How Big a Hit from the Trade War?
President Trump’s Trade Policy Is Not Popular

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

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

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<tr>
<th>Recession</th>
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Key Contributors to NBER-Dated US Recessions

Source: Goldman Sachs Global Investment Research.
4. Are We Headed for Recession?
Private Sector Runs a Large Surplus…

* Total income minus total spending or, alternatively, total saving minus total investment, all households and businesses

4. Are We Headed for Recession?
…With Both Households and Firms in Good Shape

5. Does the Fed Have Enough Firepower?
Little Room on the Funds Rate, Somewhat More on 10-Year Yields

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

Source: Goldman Sachs Global Investment Research.
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

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

Source: Goldman Sachs Global Investment Research.

Note: Shaded areas refer to periods when China CAI growth was below 6%.
7. How Much Risk from Global Factors?

The Euro Area Has Slowed Sharply Since Early 2018

7. How Much Risk from Global Factors?

Avoiding a “No Deal” Brexit Would Boost European Growth

GDP Effect of Brexit Scenarios After 3 years

Source: Goldman Sachs Global Investment Research.
## Global Growth Forecasts

<table>
<thead>
<tr>
<th>Real GDP Growth</th>
<th>Percent Change yoy</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019 (f)</th>
<th>2020 (f)</th>
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* Bloomberg consensus forecasts as of September.

** Bloomberg consensus fiscal year basis.

Source: Bloomberg, Goldman Sachs Global Investment Research.
## US Forecasts

**THE US ECONOMIC AND FINANCIAL OUTLOOK**

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

<table>
<thead>
<tr>
<th>OUTPUT AND SPENDING</th>
<th>2017</th>
<th>2018</th>
<th>2019 (f)</th>
<th>2020 (f)</th>
<th>2021 (f)</th>
<th>2022 (f)</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>2020</th>
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<td>1.9</td>
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### 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 | 1,376 |
| 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 | 1.8 | 2.1  | 2.0  | 2.1  |
| 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  |
| 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  | 2.2  |

### 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  |
| 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  |
| Payrolls (thous, monthly rate) | 180 | 221  | 161   | 140   | 100   | 100   | 206  | 146 | 154 | 140 | 150  | 150  | 135  |

### 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 | 2.25-2.5 | 1.75-2.0 | 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.

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Source: Goldman Sachs Global Investment Research.
Disclosure Appendix

September 24, 2019

Investors should consider this report as only a single factor in making their investment decision. For Reg AC certification and other important disclosures, see the Disclosure Appendix, or go to www.gs.com/research/hedge.html.
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