

US Monthly Inflation Monitor: December 2021: Durable Goods Prices Still Have Room to Run (Walker)

■ Inflation trends:

- **The core PCE price index rose 0.46% month-over-month in November to a new three-decade high of 4.68% year-on-year**, and core CPI inflation rose to 4.96%.
- Core inflation was again boosted by **rapid shelter inflation**—which has run at the highest level since 1990 over the last three months—and another jump in the prices of **durable goods impacted by temporary shortages**.
- The role of **outliers** over the last year is illustrated by the gap between core PCE inflation at 4.68% year-on-year and our **GS trimmed core PCE at just 2.58% year-on-year**. However, the breadth of inflation has continued to increase and our GS trimmed core PCE has run at an annualized pace of 3.84% over the last three months (vs. 4.82% for core PCE).

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■ Component-level trends:

- **Used cars, hotels, nonprofit services, new cars, furniture, and transportation services** are much stronger than usual on a year-on-year basis, boosted by supply constraints and base effects.
- **Used car auction prices increased 3% to 57% above the pre-pandemic level in the first half of December**, which could push consumer prices — which are 56% above the pre-pandemic level — even higher.
- Our **GS shelter inflation tracker increased to +5.5%**, pointing to a pickup in the official shelter series from its current +3.4% year-over-year rate.
- Our high-frequency tracker of **hotel prices and airfares has increased to 5% above the 2019 level despite increased virus spread**.

■ Key inflation drivers:

- Our **GS composition-corrected wage tracker increased to +4.0%** year-on-year and our **GS wage survey leading indicator stands at +3.7%**—each series' highest level since 2007. Our **GS low-wage wage tracker increased to +6.8%** year-on-year, its highest level in at least three decades.
- Industrial metals prices ticked up to 151% of the pre-pandemic level and energy prices declined to 124% of the pre-pandemic level. We expect the

boost from commodity prices to year-on-year core PCE inflation to decline from a peak of 80bp in 2021Q4 to 35bp by 2022Q4.

■ **Supply chain disruptions:**

- **Supply chain disruptions** measured by supplier delivery times and indicators of port congestion remained near record-high levels in December.
- **Supply-constrained categories are boosting core PCE inflation by 135bp**, and we expect that contribution to **grow to 145bp by Jan. 2022 before shrinking to -50bp by end-2022.**

■ **Inflation expectations:**

- Our monthly version of the Fed's **Index of Common Inflation Expectations remained unchanged at 2.09%** in December, just below the roughly 2.10% pre-2014 level.
- **Household inflation expectations declined but remain near multi-year highs.** The University of Michigan's 5-10y measure edged down to 2.9% in December and the NY Fed's 3y measure declined to 4.0% in November. One-year expectations in both surveys remain above 4.5%.
- **Financial market-implied CPI inflation expectations increased by 35bp on average between 2022 and 2025.**
- Our composite of seven **business inflation expectations series remained near the highest level in its two-decade history.**
- **Our index of company price announcements is at the highest level since our series began in 2010**, and mentions of the word "inflation" in last quarter's Russell 3000 earnings calls were the most frequent since at least 2010.

■ **GS inflation forecast:**

- **We expect that ongoing supply chain disruptions will raise the prices of some goods further above the pre-pandemic trend and boost core inflation through early 2022. However, declines in durable goods prices are likely to drive inflation lower by end-2022, more than offsetting a sharp acceleration in shelter inflation.**
- We forecast core PCE inflation of 2.50% at end-2022, 2.15% at end-2023, and 2.25% at end-2024 based on our bottom-up inflation model.
- A top-down model projects that inflation will rise modestly above 2% in 2023-2024.

New inflation research from US Economics:

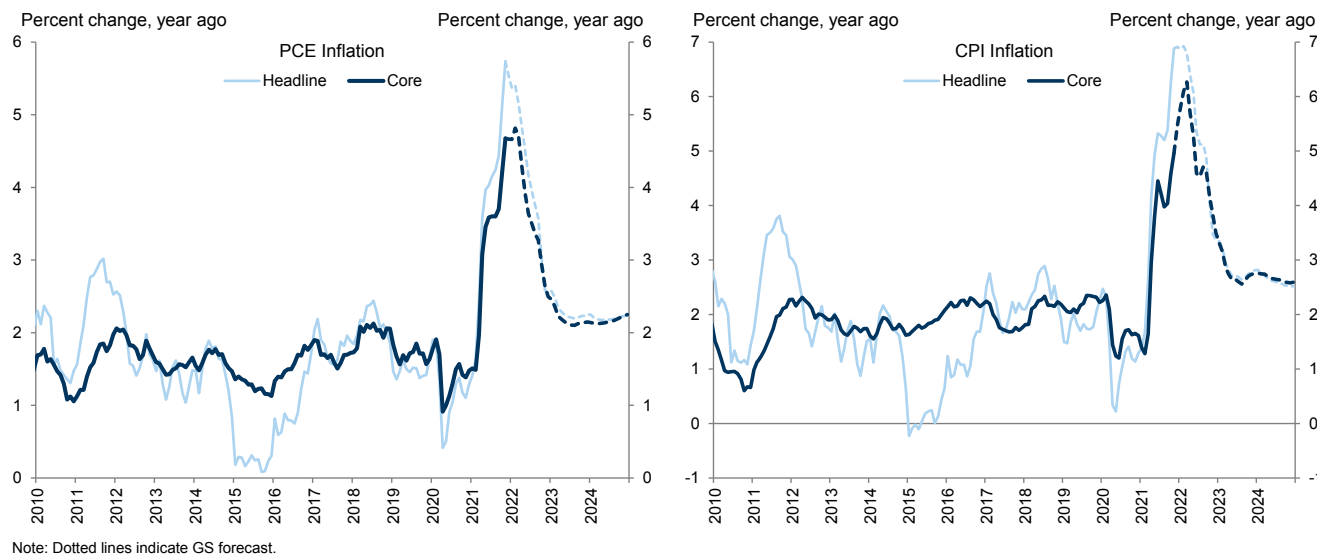
- *US Economics Analyst: Could the Inflation Surge Unanchor Inflation Expectations?, December 21*
- *US Daily: What's Next for Auto Prices?, December 17*
- *US Daily: A Higher Peak for Shelter Inflation, December 13*
- *US Economics Analyst: Who Pays for Input Cost Increases? Evaluating the Impact*

on Prices and Profit Margins, November 29

US Monthly Inflation Monitor: December 2021

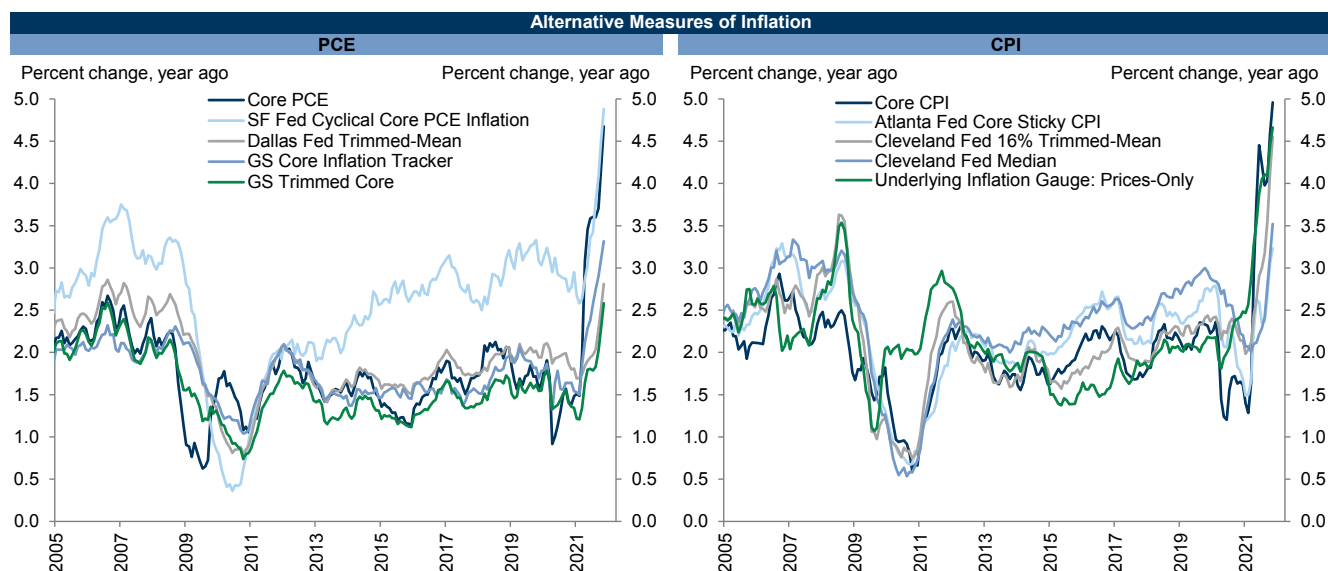
Latest Inflation Trends

Exhibit 1: Core PCE (+4.68% YoY) and Core CPI (+4.96% YoY) Inflation Jumped to New Multi-Decade Highs in November



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

Exhibit 2: Measures of the Underlying Inflation Trend Have Increased Substantially, but Remain Below Core Inflation on Average

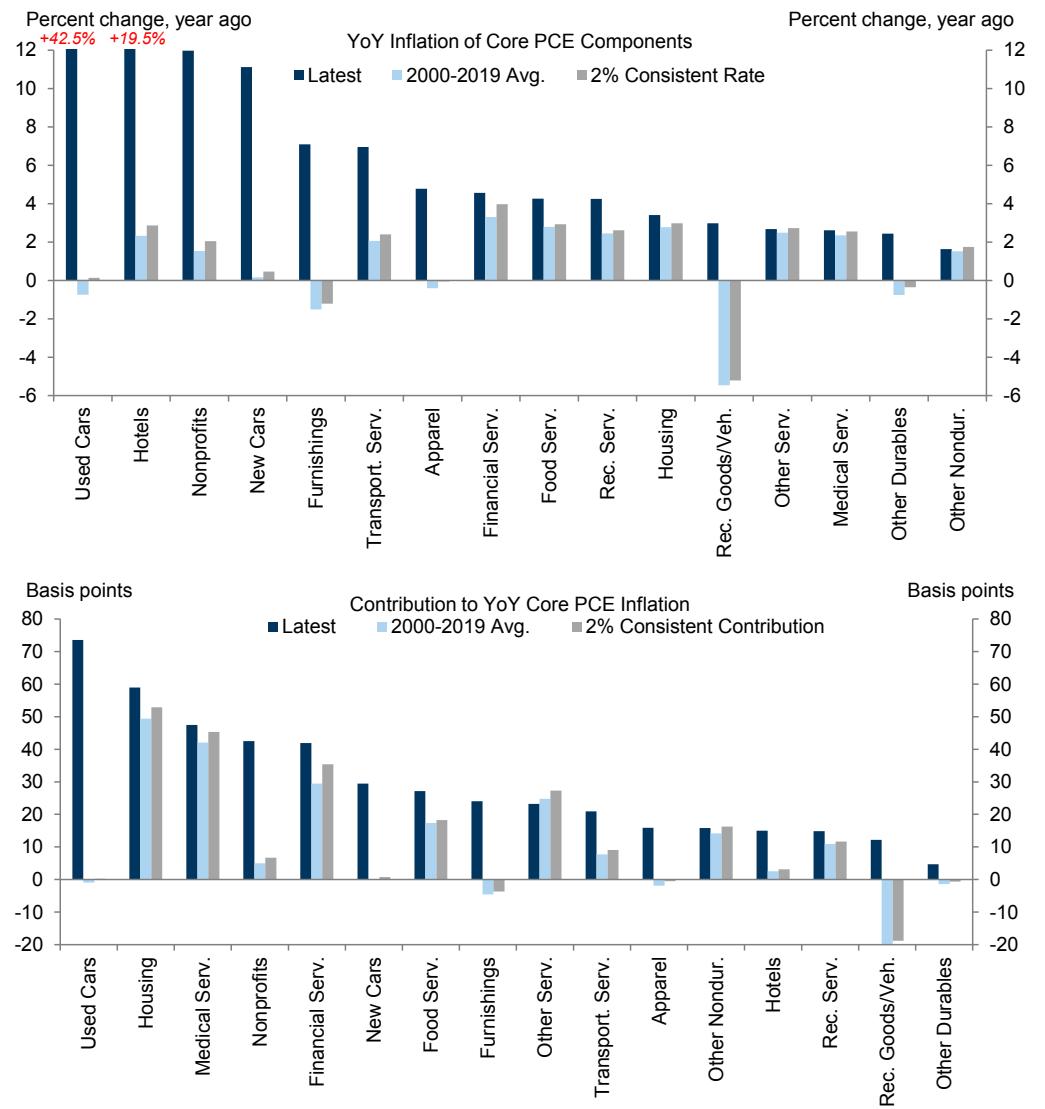


Latest Readings					
Indicator	Month	Value	Indicator	Month	Value
Core PCE	Nov	4.68	Core CPI	Nov	4.96
SF Fed Cyclical Core PCE Inflation	Nov	4.88	Atlanta Fed Core Sticky CPI	Nov	3.23
Dallas Fed Trimmed-Mean	Nov	2.81	Cleveland Fed 16% Trimmed-Mean	Nov	4.55
GS Core Inflation Tracker	Nov	3.32	Cleveland Fed Median	Nov	3.52
GS Trimmed Core	Nov	2.58	Underlying Inflation Gauge: Prices-Only	Nov	4.66

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

Component-Level Trends

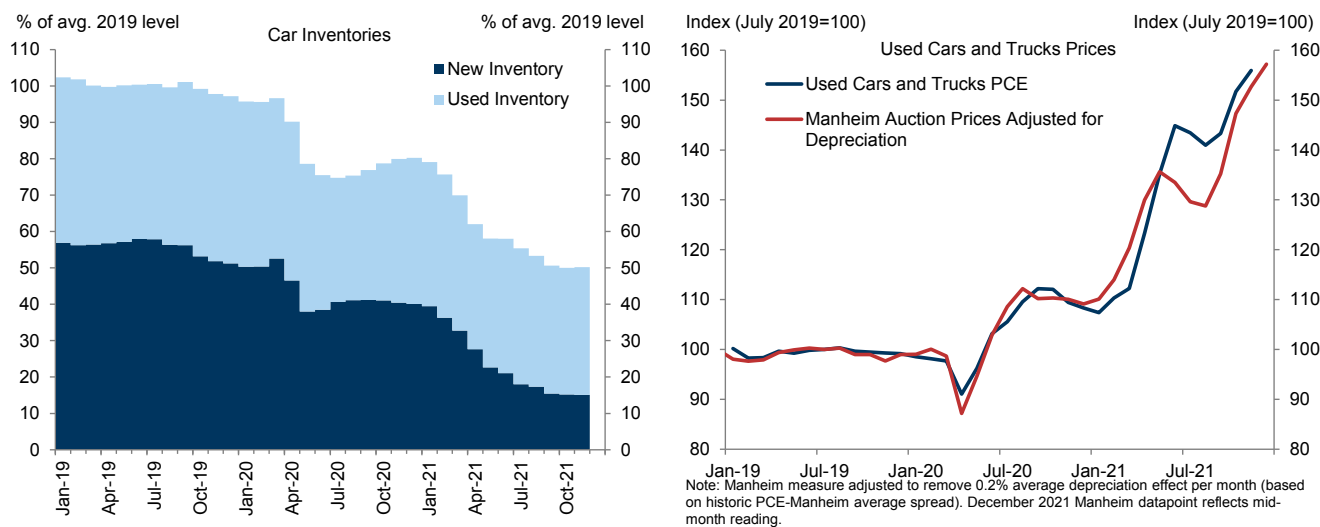
Exhibit 3: Motor Vehicles, Nonprofit Services, and Furniture Are Running Stronger Than Usual, Boosted by Pandemic Special Factors; Several Other Categories Are Running Stronger Than Usual Due to Pandemic Base Effects



Note: The 2% consistent contribution takes the average contribution for each component between 2000-2019, then calculates the minimum necessary increase in standardized component inflation rates required to reach 2% core PCE inflation.

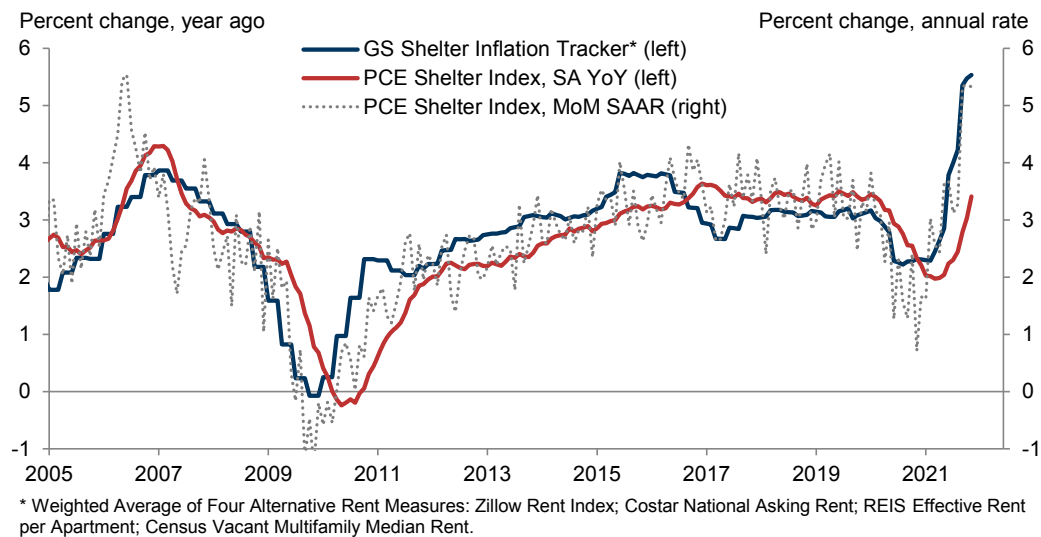
Source: Department of Commerce, Goldman Sachs Global Investment Research

Exhibit 4: Used and New Car Inventories Remained at 50% of the Average 2019 Level in November; Used Car Auction Prices, Which Lead Consumer Prices, Increased 3% in Early December



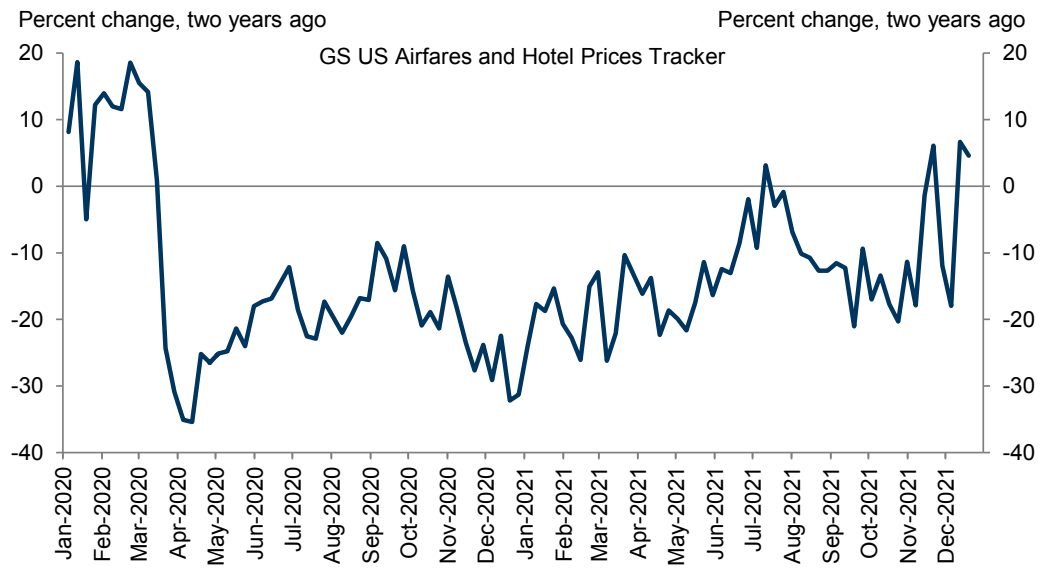
Source: Department of Commerce, Manheim, Cox Automotive, Goldman Sachs Global Investment Research

Exhibit 5: Our Shelter Inflation Tracker Increased to +5.5% YoY in a Preliminary November Reading



Source: Department of Commerce, Census Bureau, Costar, Zillow, REIS, Goldman Sachs Global Investment Research

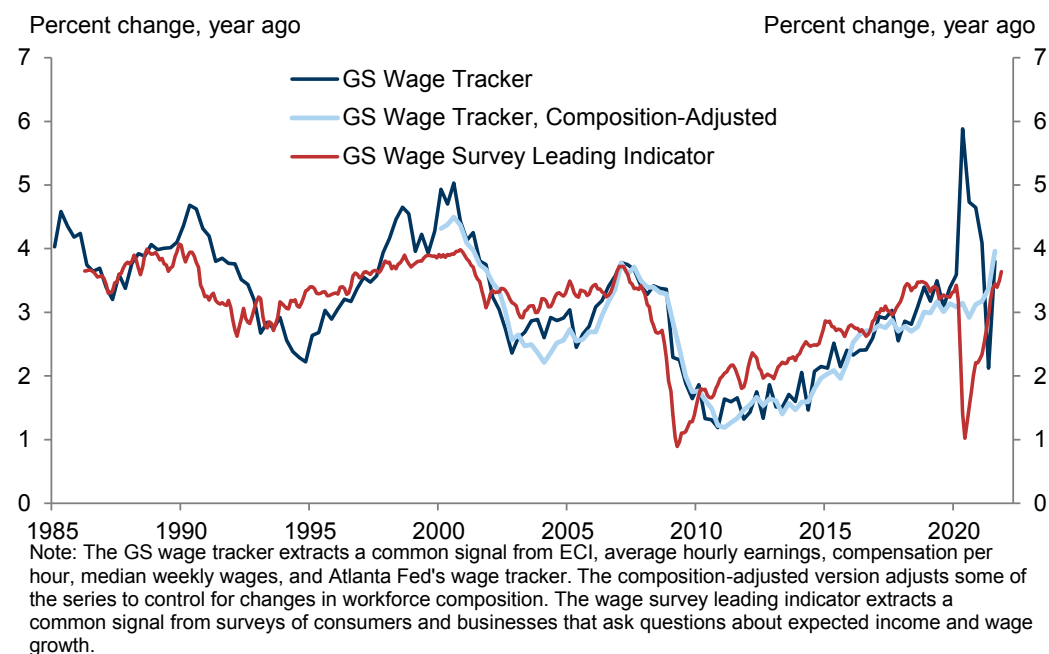
Exhibit 6: Airfares and Hotel Prices Remained 5% Above Their 2019 Levels in Late December



Source: Goldman Sachs Global Investment Research

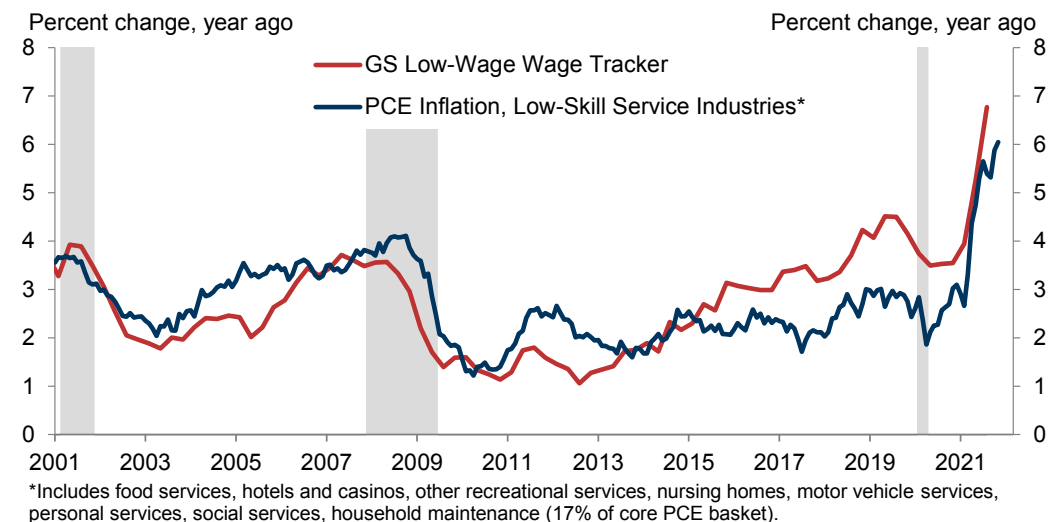
Key Inflation Drivers

Exhibit 7: Our Composition-Adjusted Wage Tracker Increased to +4.0% YoY in Q3, Above Its Pre-Pandemic Pace; Our Wage Survey Leading Indicator Increased to +3.7% in December



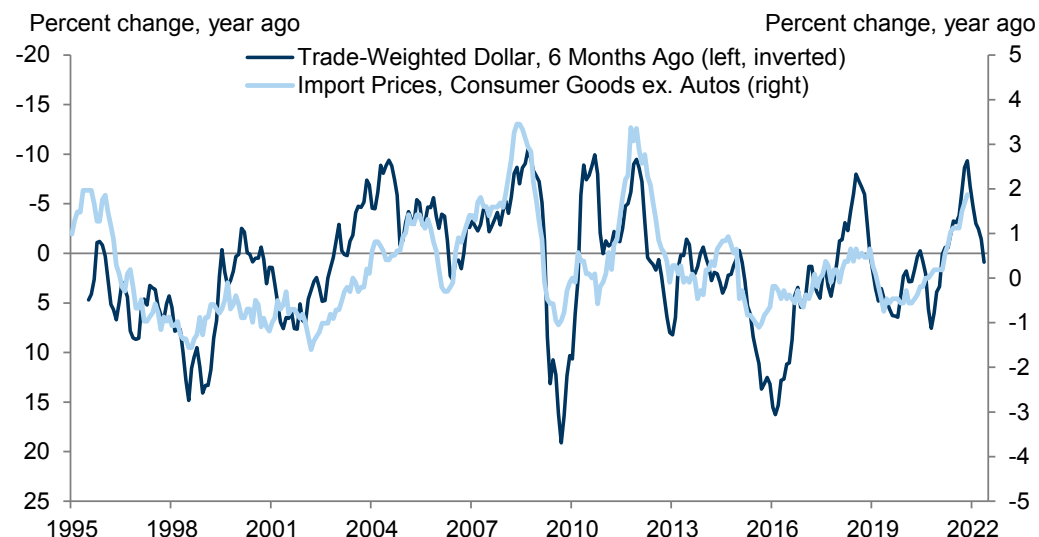
Source: Goldman Sachs Global Investment Research

Exhibit 8: Our Low-Wage Wage Growth Tracker Jumped to 6.8% YoY in Q3

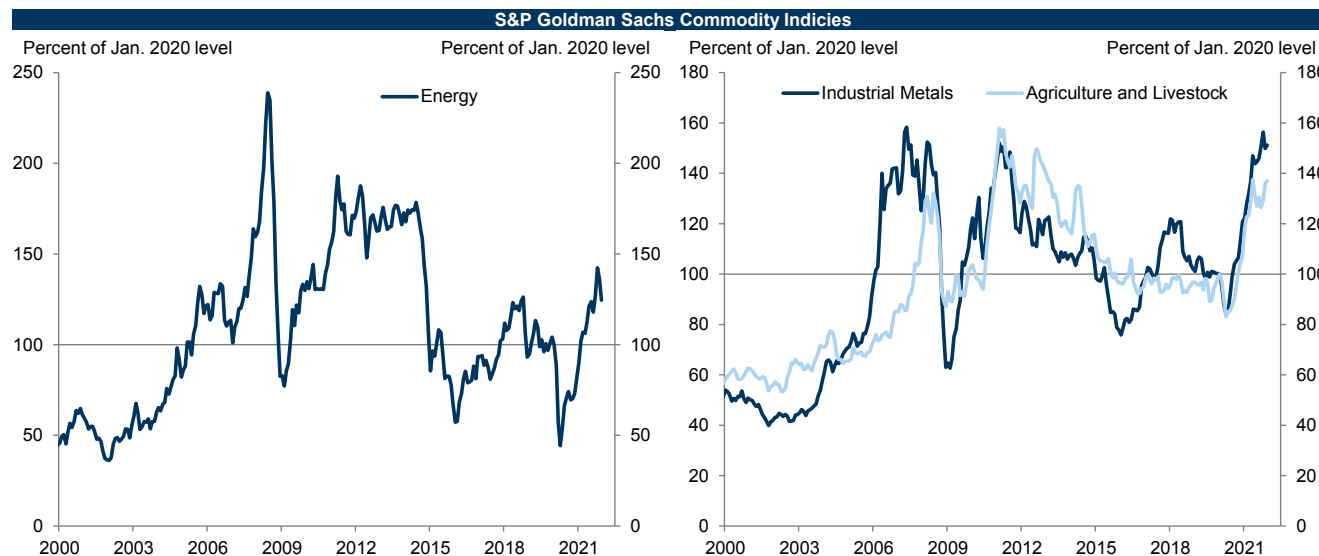


For more information on the low-wage wage tracker, see Spencer Hill, "US Daily: How High Is Low-End Wage Growth?," 2021.

Source: Department of Commerce, Goldman Sachs Global Investment Research

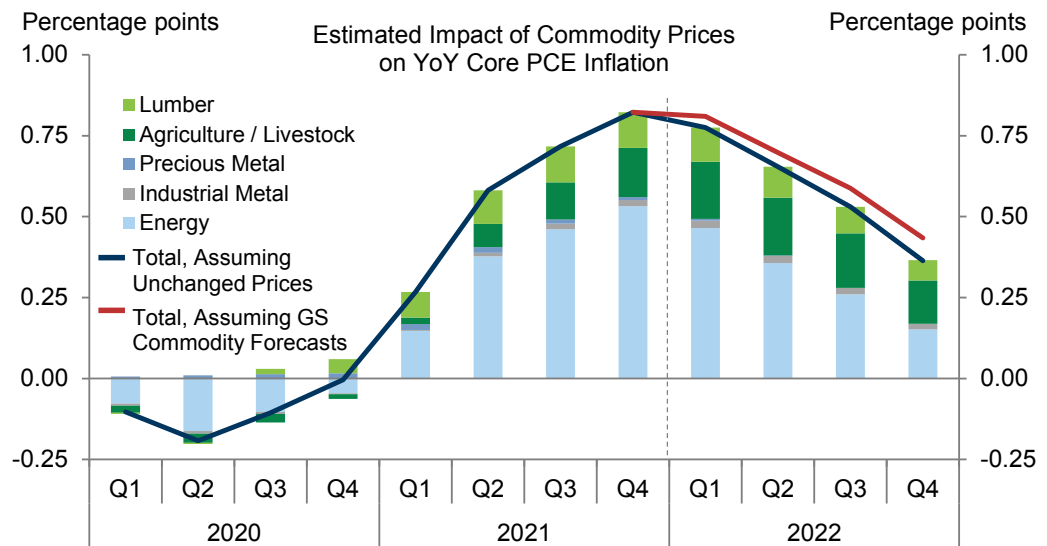
Exhibit 9: Lagged Dollar Weakness Points to a Bit of Further Upward Pressure on Import Prices

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

Exhibit 10: Energy Prices Declined to 124% of the Pre-Pandemic Level; Metal Prices Ticked Up to 151% of the Pre-Pandemic Level

Source: Standard and Poor's, Goldman Sachs Global Investment Research

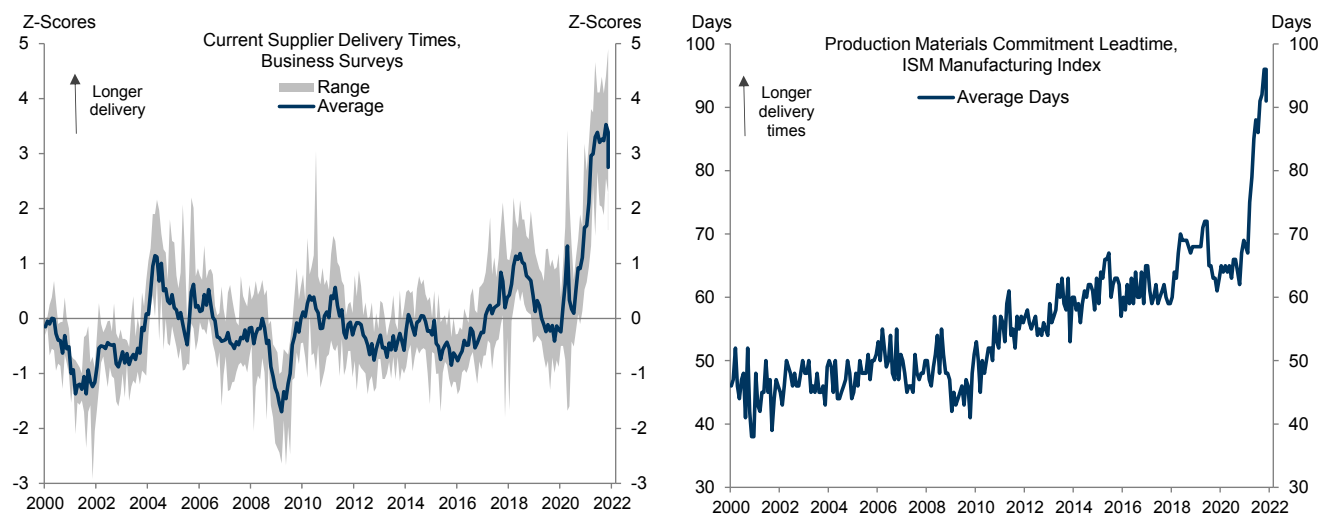
Exhibit 11: We Estimate That the Boost From Commodity Price Increases to Year-on-Year Core PCE Inflation Will Decline From 80bp in 2021Q4 to 35bp in 2022Q4



Source: Goldman Sachs Global Investment Research

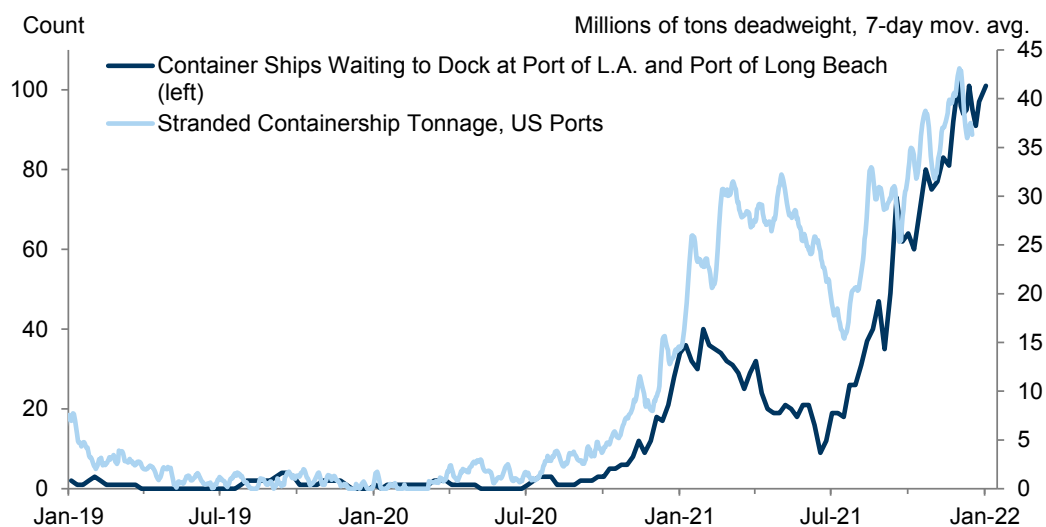
Supply Chain Disruptions

Exhibit 12: Production Bottlenecks and Supply Chain Disruptions Remain at Extreme Levels

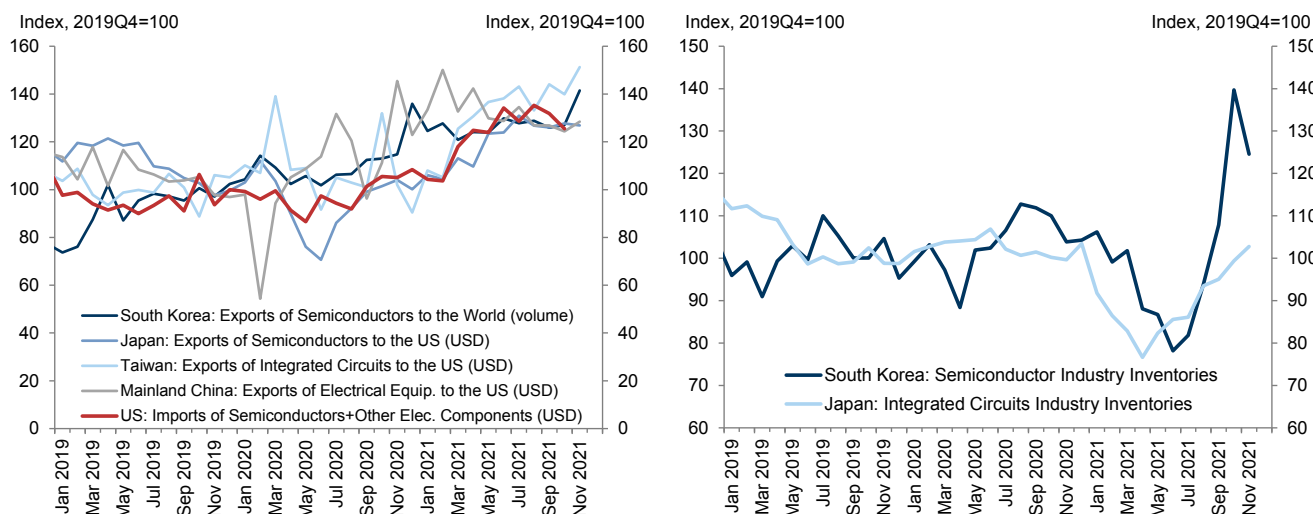


Source: Federal Reserve, Institute for Supply Management, Markit, Goldman Sachs Global Investment Research

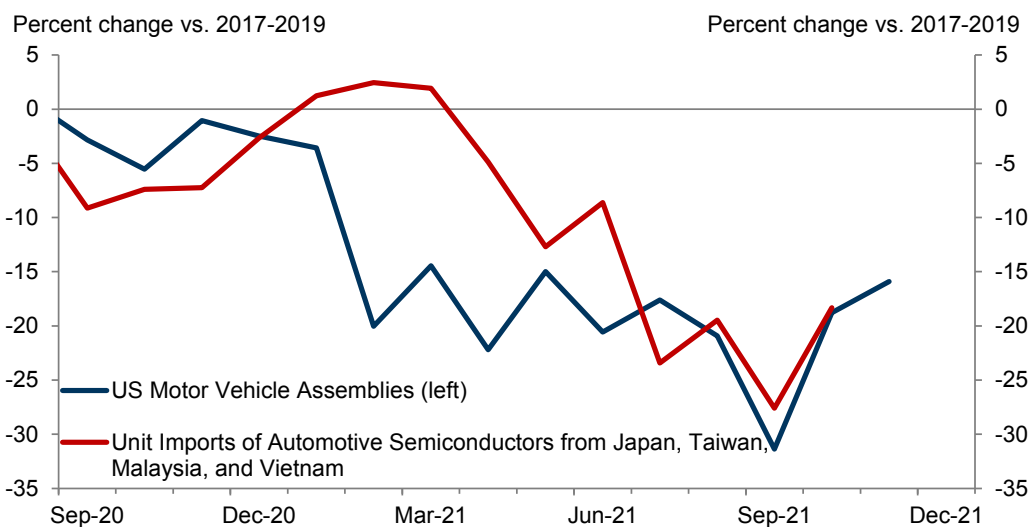
Exhibit 13: The Backlog of Ships at the Ports of Los Angeles and Long Beach Has Grown Over the Last Couple Months



Source: Marine Exchange of Southern California, GS Dataworks, Goldman Sachs Global Investment Research

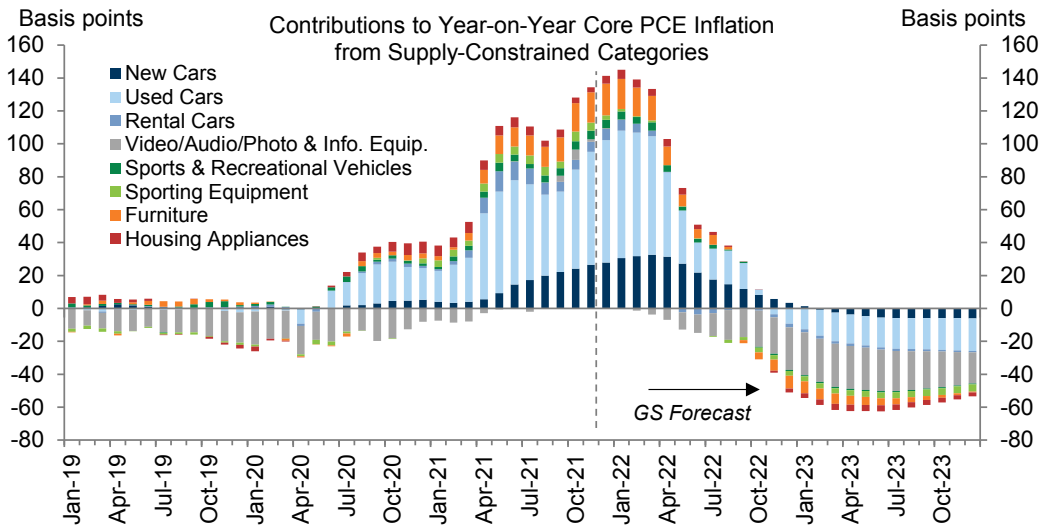
Exhibit 14: US Imports of Semiconductors Are 125% of the Pre-Pandemic Level; Inventories of International Semiconductor Producers Have Increased Recently


Source: Bank of Korea, Ministry of Finance, Ministry of Economy Trade and Industry, Statistics Korea, Goldman Sachs Global Investment Research

Exhibit 15: However, Imports of Auto-Specific Semiconductors Were 18% Below Pre-Pandemic Levels in October, Limiting Domestic Automotive Production


Source: Federal Reserve, Census Bureau, Goldman Sachs Global Investment Research

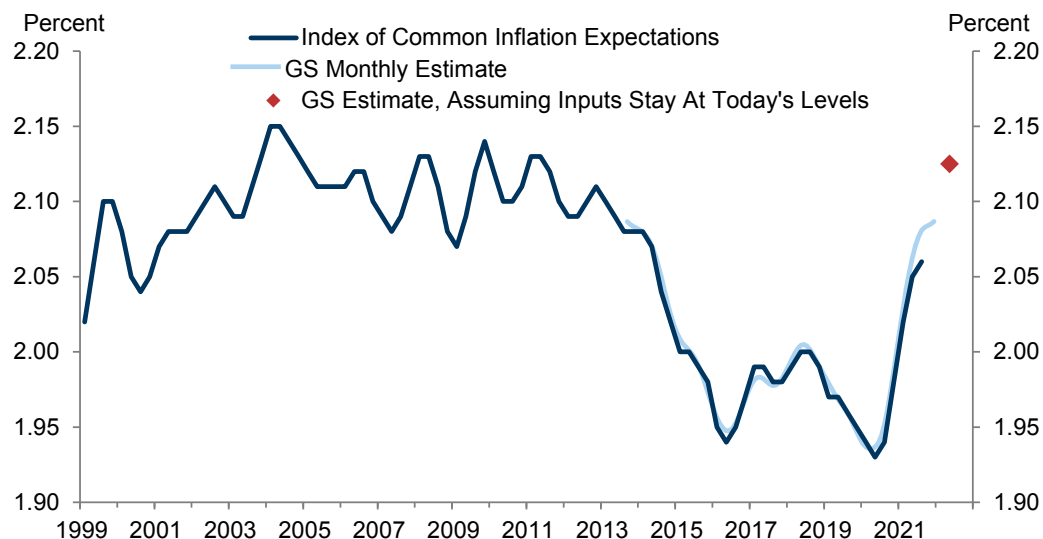
Exhibit 16: We Estimate That the Contribution to Year-on-Year Inflation from Supply-Constrained Categories Will Swing from +135bp Now to +145bp in Jan. 2022 and -50bp at End-2022



Source: Department of Commerce, Goldman Sachs Global Investment Research

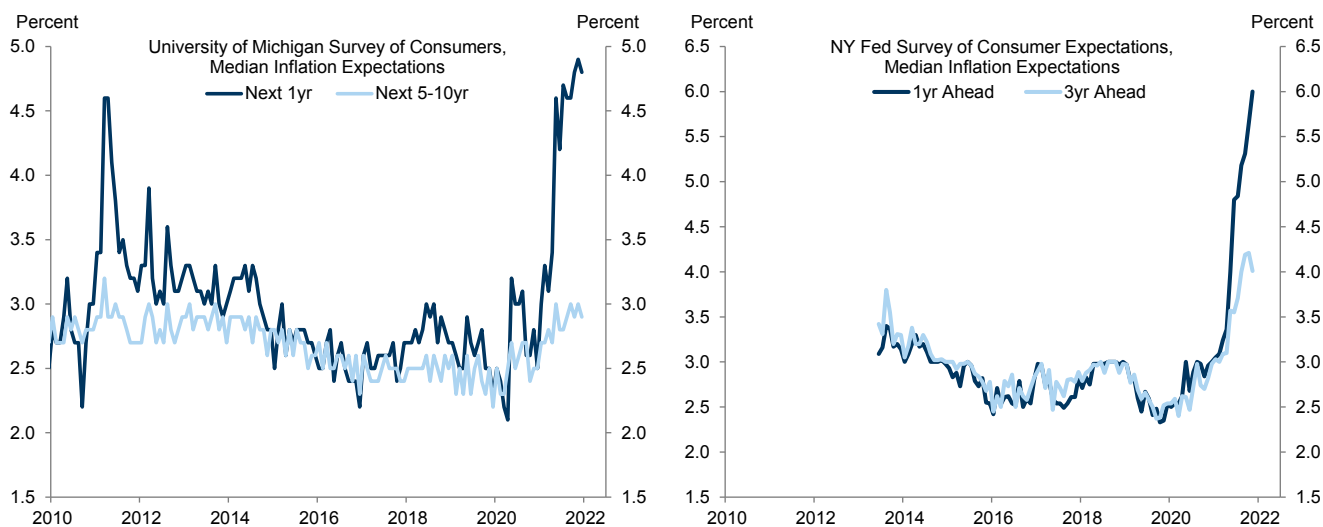
Inflation Expectations

Exhibit 17: Our Monthly Version of the Fed's Index of Common Inflation Expectations Remained Unchanged at 2.09% in December

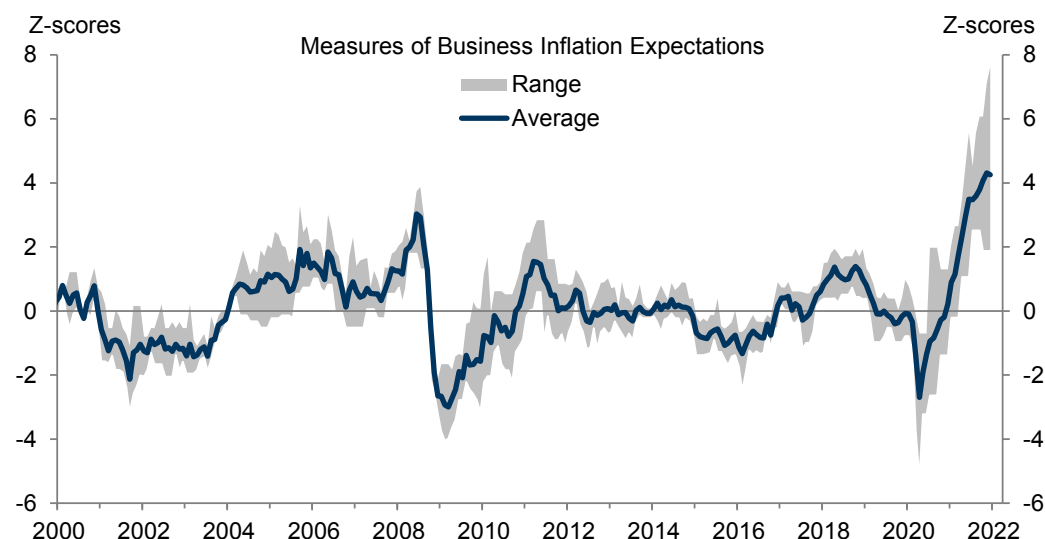


Source: Federal Reserve, Goldman Sachs Global Investment Research

Exhibit 18: Long-Term Household Inflation Expectations Are Near Multi-Year Highs in Both the UMich (+2.9%, Next 5-10yr) and NY Fed Surveys (+4.0%, 3yr Ahead)

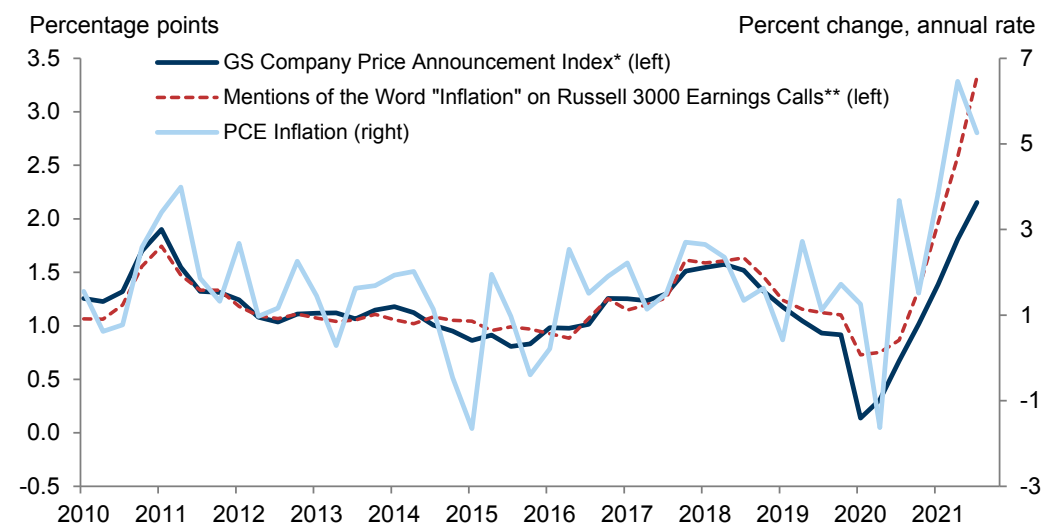


Source: University of Michigan, Federal Reserve

Exhibit 19: Business Inflation Expectations Have Increased to the Highest Level in at Least Two Decades

For more information on these series, see Ronnie Walker, "US Daily: Higher Business Inflation Expectations Are Mostly a Short-Term Signal," 2021.

Source: Goldman Sachs Global Investment Research

Exhibit 20: Our Company Price Announcement Index Based on Russell 3000 Earnings Calls Is at the Highest Level Since at Least 2010

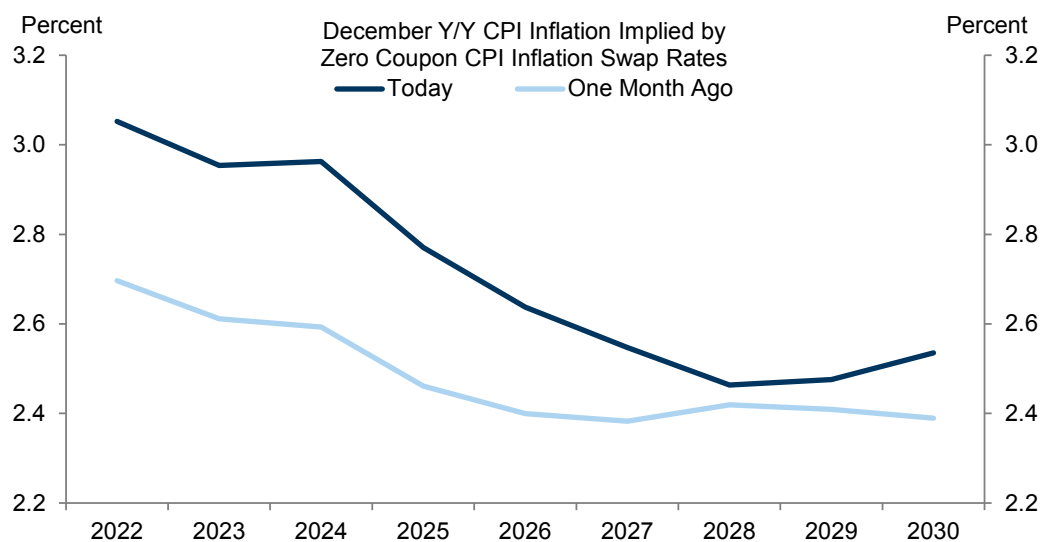
* Share of sentences mentioning higher prices less share of sentences mentioning lower prices.

** Scaled to Price Announcement Index.

For more information on this index, see Ronnie Walker, "US Daily: Company Pricing Announcements and the Inflation Outlook," 2021.

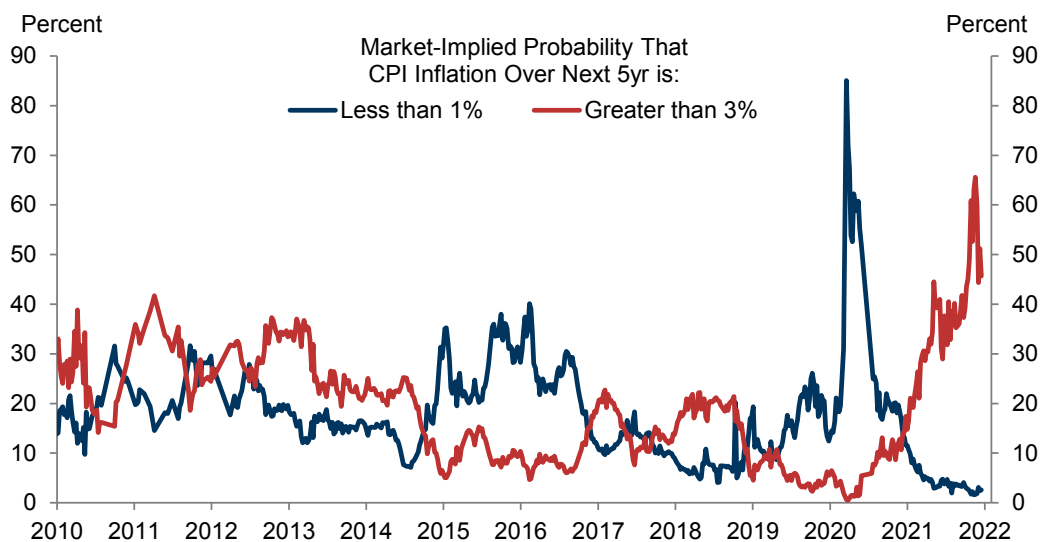
Source: Department of Commerce, Goldman Sachs Global Investment Research

Exhibit 21: Market-Implied Inflation Expectations Have Increased by 35bp on Average Between 2022 and 2025



Source: Goldman Sachs Global Investment Research

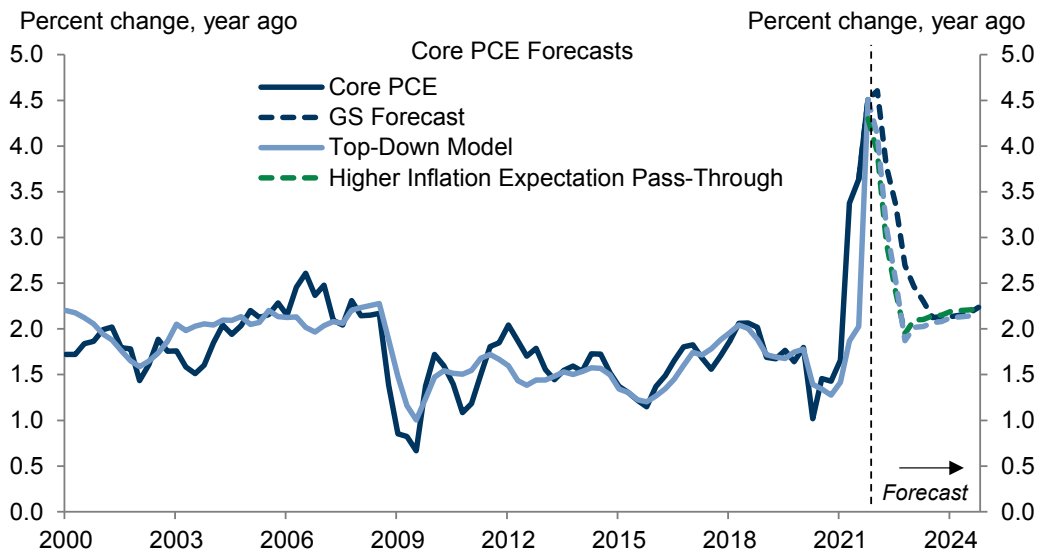
Exhibit 22: Market Pricing Implies a 46% Chance of Headline CPI Inflation Exceeding 3% Over the Next 5 Years



Source: Federal Reserve

GS Inflation Forecast

Exhibit 23: Our Top-Down Model Predicts Inflation Will Rise Modestly Above 2% In 2023 and 2024 and to Just Below Our Official Forecast



For more information on the top-down model, see Joseph Briggs, "US Daily: A Top-Down Checkup On Our Inflation Forecast," 2021.

Source: Department of Commerce, Goldman Sachs Global Investment Research

Exhibit 24: We Expect Softer Goods Inflation to Drive Core PCE Down to 2.5% at End-2022

	Nov. 2021	End 2021		End 2022		End 2023	
	YoY	YoY	Contribution to Change	YoY	Contribution to Change	YoY	Contribution to Change
Core PCE	4.68	4.66	0.0	2.50	-2.2	2.15	-2.5
Core Goods	6.1	6.4	0.1	-1.1	-2.0	-2.4	-2.1
New Vehicles	11.1	11.8	0.0	1.5	-0.2	-2.7	-0.3
Used Vehicles	42.5	47.4	0.1	-8.1	-0.9	-15.6	-0.7
Household Appliances	5.4	9.0	0.0	-5.1	-0.1	-5.2	0.0
Video, Audio, Computers	0.7	0.1	0.0	-11.9	-0.3	-9.0	-0.2
Recreational Vehicles	7.6	7.8	0.0	-1.2	-0.1	-1.2	0.0
Jewelry, Watches	5.6	4.9	0.0	-1.0	-0.1	-0.2	0.0
Clothing & Footwear	4.8	4.3	0.0	1.4	-0.1	0.8	-0.1
Pharma & Medical	-0.1	-0.1	0.0	1.9	0.1	-1.5	-0.1
Pets Products	2.8	2.6	0.0	2.0	0.0	1.4	0.0
Expenditures Abroad	4.7	3.9	0.0	-0.1	0.0	2.8	0.0
Residual Core Goods	4.2	4.5	0.0	-0.5	-0.5	-0.8	-0.5
Core Services	4.1	4.0	-0.1	3.7	-0.3	3.6	-0.4
Housing	3.4	3.8	0.1	5.1	0.3	4.5	0.2
Ground Transportation	3.7	3.2	0.0	1.5	0.0	2.3	0.0
Air Transportation	13.5	16.1	0.0	7.1	0.0	6.0	-0.1
Food Services & Accommodation	5.8	6.0	0.0	4.7	-0.1	3.7	-0.2
Financial Services & Insurance	4.6	3.4	-0.1	4.4	0.0	3.3	-0.1
Medical Services	2.6	2.7	0.0	2.1	-0.1	3.2	0.1
Foreign Travel	2.7	3.8	0.0	2.6	0.0	2.1	0.0
Residual Core Services	5.1	4.6	-0.1	3.3	-0.3	3.3	-0.3

Source: Goldman Sachs Global Investment Research

Exhibit 25: GS Inflation Forecasts, 2021-2024

	PCE		CPI	
	Core	Headline	Core	Headline
Dec. 2021	4.66	5.54	5.45	6.91
Dec. 2022	2.50	2.54	3.50	3.37
Dec. 2023	2.15	2.26	2.75	2.81
Dec. 2024	2.25	2.25	2.59	2.52

Source: Goldman Sachs Global Investment Research

Ronnie Walker

Disclosure Appendix

Reg AC

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