US ECONOMICS ANALYST

The Impact of AI Demand on Inflation

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- Fed officials have highlighted surging demand from the AI boom as a key source of inflationary pressure during their recent hawkish pivot. In this *Analyst,* we reassess the impact of AI demand on consumer price inflation, distinguishing genuine effects from the effect of mismeasurement.
- We consider four channels of impact. First, AI has raised software and accessories inflation sharply by boosting prices for memory and other accessories and by contributing to large price increases for software products that now have AI features. But we estimate that most of the roughly 20bp contribution to core PCE inflation from this category reflects mismeasurement that exaggerates the impact of surging accessories prices, a problem that was reduced but not resolved by the recent methodological changes. The failure to adjust software prices for quality improvement also appears to account for some of the category's contribution.
- Second, AI-related cost pressures for electronic inputs have led to price increases for computers and other consumer electronics. We estimate that the cost pressures will rise modestly further, contributing roughly 15bp in total to core PCE inflation until late next year.
- Third, demand for power from data centers has boosted electricity prices. We estimate that this has contributed 5-10bp to core inflation by raising energy costs for companies and an additional 5-10bp to headline inflation through the direct impact on household electricity bills.
- Fourth, prices for industrial metals used for data center construction have risen substantially, which we estimate has boosted core inflation by about 5bp. However, we see little evidence of meaningful spillovers via wage growth for construction workers, which is only slightly elevated overall and is not particularly high in the states where the most data centers are being built.
- In total, we estimate that AI price pressures are currently boosting core PCE inflation by about 45bp, of which about half reflects a genuine impact rather than mismeasurement, and we expect this to peak at 50bp by end-2026 before declining to 10bp by end-2027. Our estimate of the impact on headline PCE inflation is about 5-10bp higher over that time horizon. We expect the impact to decline next year mainly because our sector analysts expect memory and computer prices to grow at a significantly slower pace, which should reduce both

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genuine cost pressures and the impact of mismeasurement in the software and accessories category.

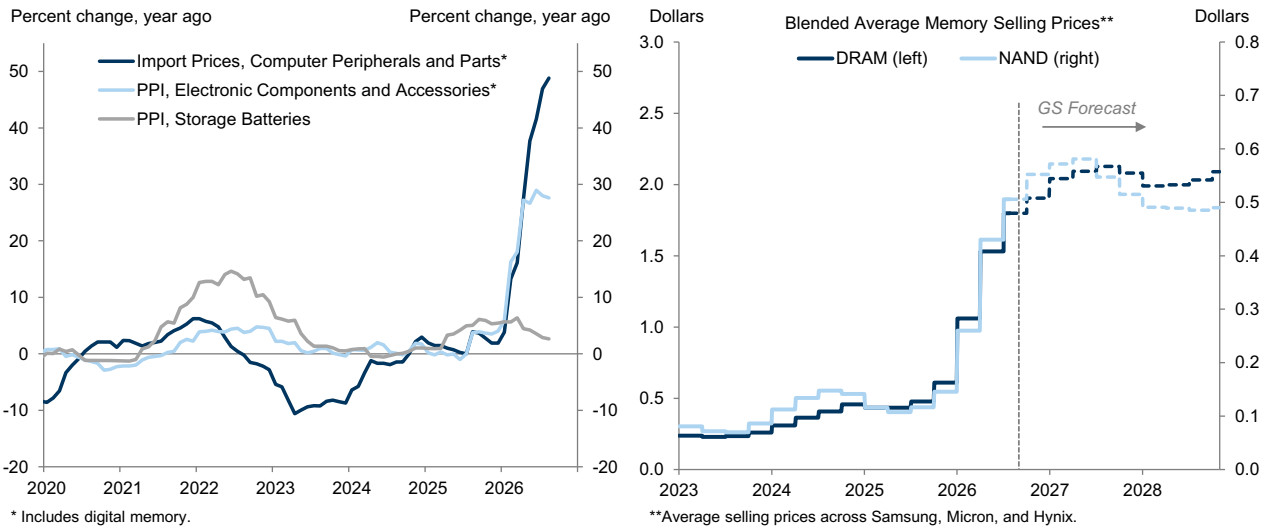
- In short, the impact of AI demand on inflation is meaningful but moderate, still comes in large part from mismeasurement, and is likely near its peak. And even if we took all of the AI impact at face value and assumed instead that it would persist next year, we would still expect core PCE inflation to fall meaningfully toward the 2% target next year because we estimate that tariffs and the Iran energy shock account for 0.9pp of the remaining 1pp overshoot.

The Impact of AI Demand on Inflation

Some Fed officials and foreign central bankers have highlighted surging demand from the AI boom as a key source of inflationary pressure during their recent hawkish pivot. Last week, for example, Governor Waller said that one of the reasons he became less confident that inflation is set to return to 2% is that "evidence mounted that the artificial intelligence buildout was significantly driving up high-tech consumer prices, and projections for the size of that buildout ballooned."

Exhibit 1 shows that the prices of some key electronic inputs, especially memory, have indeed risen sharply this year. In this *Analyst,* we reassess the impact of AI demand on consumer price inflation, distinguishing genuine effects from the effect of statistical mismeasurement.

Exhibit 1: AI Demand Has Put Upward Pressure on Prices of Key Electronic Inputs, Especially Memory



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

We consider four channels through which AI spending is likely affecting consumer prices.

Channel 1: Software and Accessories

AI has raised software and accessories inflation sharply by boosting demand for memory and other accessories and by contributing to price increases for software products that now have AI features.

Exhibit 2 shows that year-over-year software and accessories inflation has risen to 15.6%, roughly 21pp above its 2010s average. But as we noted in May, this largely reflects two forms of mismeasurement.

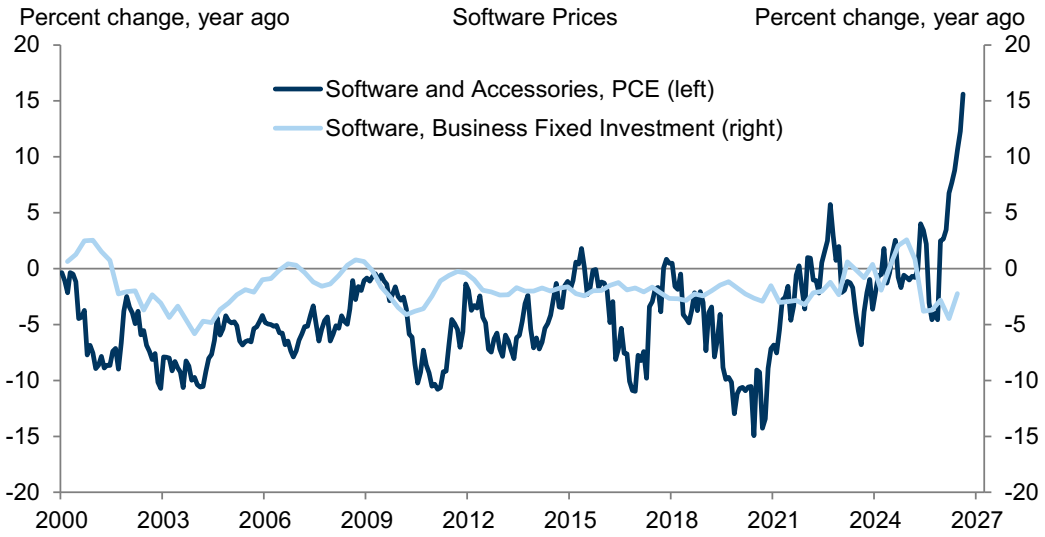
First, PCE borrows the composite software and accessories price deflator used in the CPI despite putting much greater relative weight on software than the CPI (likely because it captures some small business purchases). This causes the surge in memory prices to erroneously influence the additional weight put on software in the PCE index and greatly exaggerates its impact on overall inflation.

Second, many companies have connected recent price increases on software products to the addition of new AI features. This implies that the price increases partly reflect

quality improvement, but PCE and CPI do not adjust software prices for quality.

Exhibit 2 illustrates the impact of mismeasurement by comparing PCE software and accessories inflation with software inflation measured by the business investment price deflator. The latter series does not include accessories prices and is adjusted for quality, and it is currently running at a moderately negative pace in line with its historical average. This suggests that the weight in the PCE category connected to software rather than accessories is being applied to a very exaggerated rate of inflation.

Exhibit 2: PCE Software and Accessories Inflation, Which Is Overstated Because It Overweights Accessories (Including Memory) Prices and Does Not Adjust for Software Quality Improvements, Is Far Above Business Investment Software Inflation, Which Does Not Face Either Problem



Source: Goldman Sachs Global Investment Research, Department of Commerce

Exhibit 3 decomposes the contribution of this category to core PCE inflation into a genuine effect and the effect of the first form of mismeasurement above. We estimate mismeasurement by multiplying the gap between the inflation rate of the CPI deflator and overall inflation by the excess weight applied to the CPI deflator in the PCE index compared to its weight in the CPI index.[1] This calculation implies that 16bp of the 19bp contribution to core PCE inflation from software and accessories reflects mismeasurement.

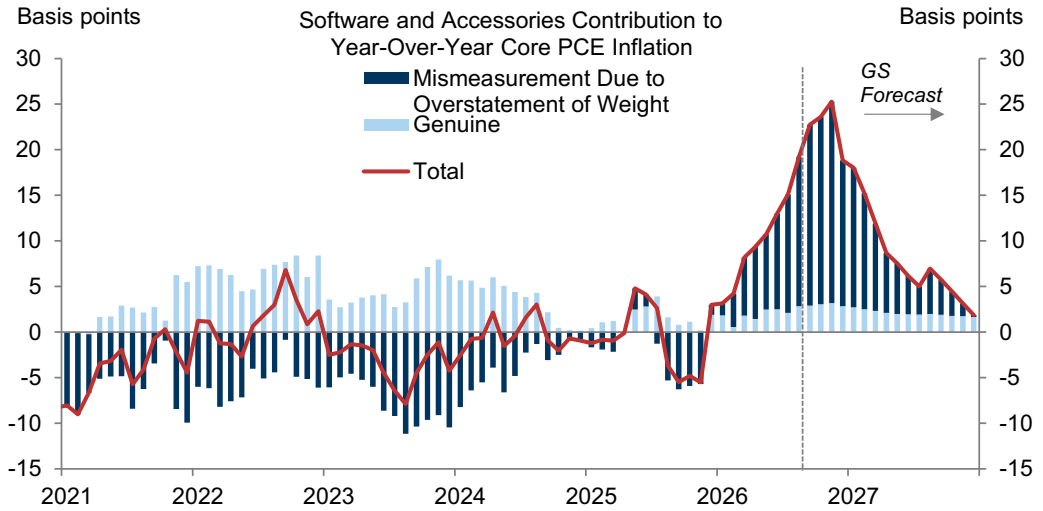
This measurement problem was reduced but not resolved by the recent methodological changes to PCE prices, which carved out some weight where the CPI index had been applied and used software-specific price deflators instead, but left intact the root of the problem—constructing a composite price index for two different types of items and then applying it to an index where those two items have different relative weights.

[1] Following methodological changes implemented with the 2026 update to the National
the PCE software and accessories price index is now calculated as a weighted average of CI
accessories, PPI game software publishing, and PPI hosting, ASP, and other IT infrastructure
The BEA does not reveal the weights applied to each component, so we estimate the weigh
mismeasurement shown in Exhibit 3, we multiply the gap between the inflation rate of the C
overall inflation by the excess weight applied to just the CPI deflator under the updated me
to its weight in the CPI index.

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The impact of the failure to adjust software prices for quality improvement is harder to estimate, but Exhibit 2 suggests that it likely accounts for some of the category's contribution too.

Exhibit 3: Even After the Recent Methodological Changes, Software and Accessories Inflation Is Still Overstated and the Category Is Still Overweighted; This Mismeasurement Will Boost Core PCE Inflation by 15-20bp Through Year-End but Should Fade Next Year If Memory Price Growth Slows as We Expect

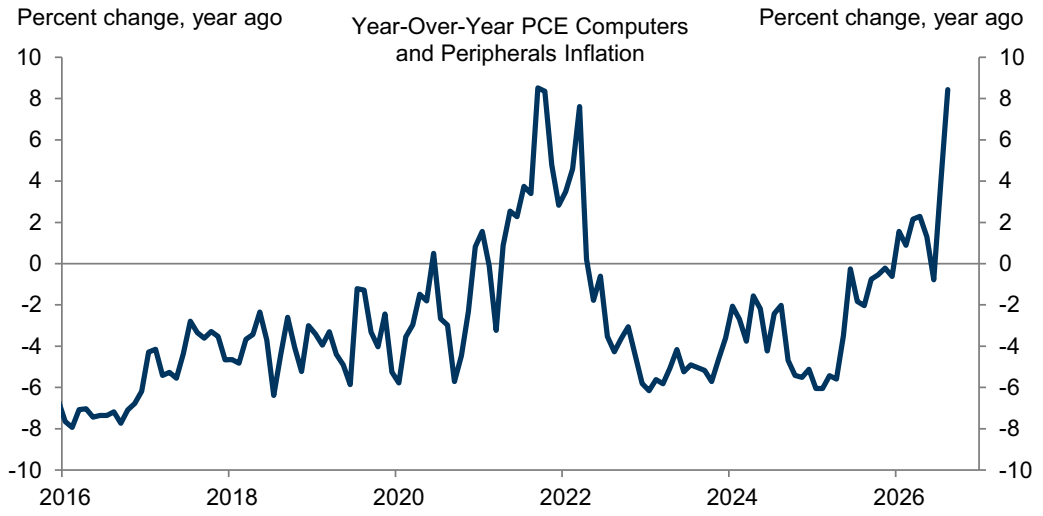


Source: Goldman Sachs Global Investment Research

Channel 2: Consumer Electronics

Cost increases for electronic inputs have also led to price increases for computers and other consumer electronics. For example, computer and peripherals prices increased by 8% year-over-year in August, a sharp departure from their usual roughly -5% rate of deflation (Exhibit 4).

Exhibit 4: AI Demand Has Raised the Cost of Some Inputs to Computers and Peripherals and Other Consumer Electronics



Source: Goldman Sachs Global Investment Research, Department of Commerce

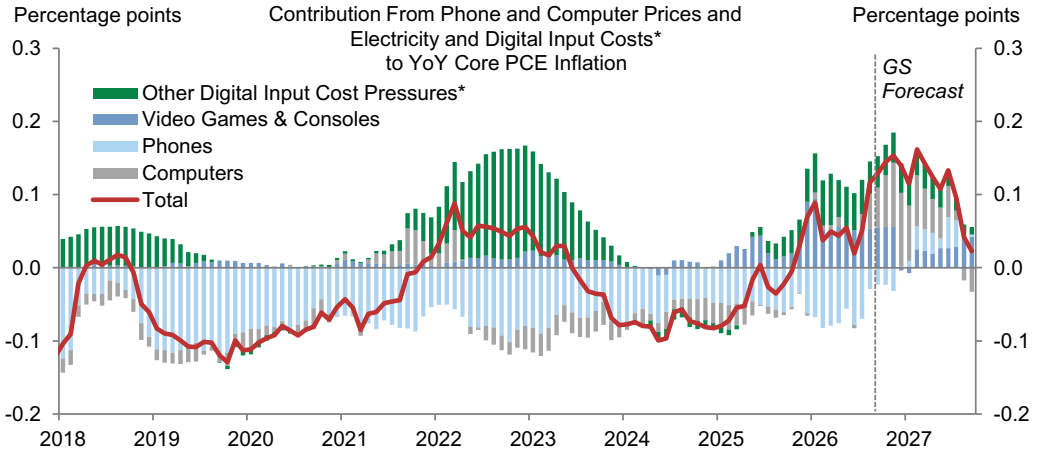
Exhibit 5 shows our estimate of the contribution to core inflation from AI-related cost pressures on consumer electronics prices. We base our assumptions about video game and console, phone, and computer prices over the next year on our equity analysts' forecasts. We also account for the impact of higher memory and other digital input costs on other categories.

Many of these products incorporate memory, making them sensitive to the recent increase in memory prices. As shown in Exhibit 1 above, our equity analysts expect average selling prices for memory to grow at a much slower pace over the next year and in 2028. Their forecasts reflect a moderation in the growth rate of server and AI infrastructure demand and capex spending by the memory suppliers in 2026 to boost production capacity over the next few years. While they expect the memory supply shortage to persist, they expect this slowdown in demand growth and additional production capacity to bring average price growth rates down from the nearly 300% pace in 2026 to roughly 30% in 2027, before stabilizing into 2028.

Incorporating these forecasts, our hardware equity analysts expect prices for computers, phones, and video game consoles to grow at a slower pace or even decline slightly next year. Our analysts' forecast for stable to slightly lower computer prices in 2027 reflects the combination of softer input price pressures as memory price growth slows and promotional activity to boost demand after the sharp increase in computer prices in 2026 led to demand destruction and weak shipments.

In total, we estimate that AI-related cost pressures on consumer electronics prices will rise modestly further, contributing roughly 15bp in total to core PCE inflation until late next year, when computer price inflation is likely to slow more materially.

Exhibit 5: We Expect AI Cost Pressures on Consumer Electronics Prices to Contribute Roughly 15bp to Core PCE Inflation



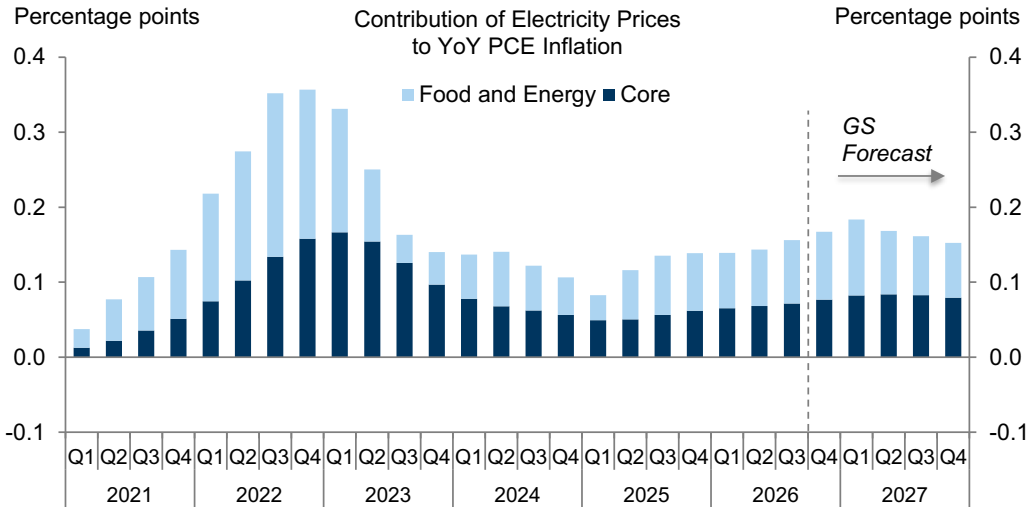
Source: Goldman Sachs Group Inc.

Channel 3: Electricity Prices

Demand for power from data centers has boosted electricity prices and is likely to provide a further boost next year. Exhibit 6 shows our estimates of the impact of higher electricity costs for companies on core inflation and the additional impact of higher

household electricity bills on headline inflation. We estimate that each effect has been 5-10bp recently and that both will hold roughly steady next year.

Exhibit 6: Power Demand from Data Centers Will Continue to Boost Electricity Prices, Contributing 5-10bp to Core Inflation Via Energy Input Costs and Another 5-10bp to Headline Via Household Electricity Bills



Source: Goldman Sachs Global Investment Research

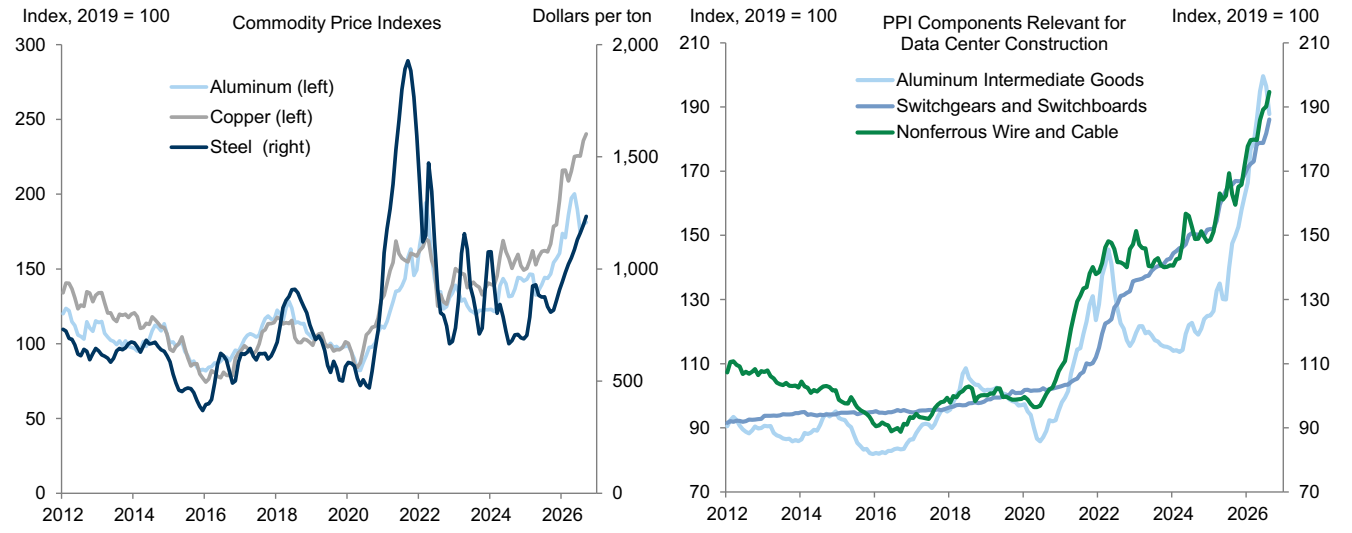
Channel 4: Other Cost Spillovers

AI demand could also have more indirect spillover effects on prices in the rest of the economy.

Prices for industrial metals used for data center construction have risen substantially in recent years, though not solely because of data center demand.[2] Exhibit 7 shows that prices have risen sharply for copper, which is used for power distribution infrastructure and wiring; for steel, which is used in power transformers and for structural framing; and for aluminum, which is used for server racks and cooling systems. Producer prices for a variety of intermediate goods used in data center construction have risen too. Using our commodity passthrough model and our commodity strategists' forecasts for industrial metals prices over the next year, we estimate that these price increases have boosted core PCE inflation by about 5bp over the last year and will provide a similar or slightly smaller boost next year.

[2] Tariffs have also contributed to price increase for some construction raw materials.

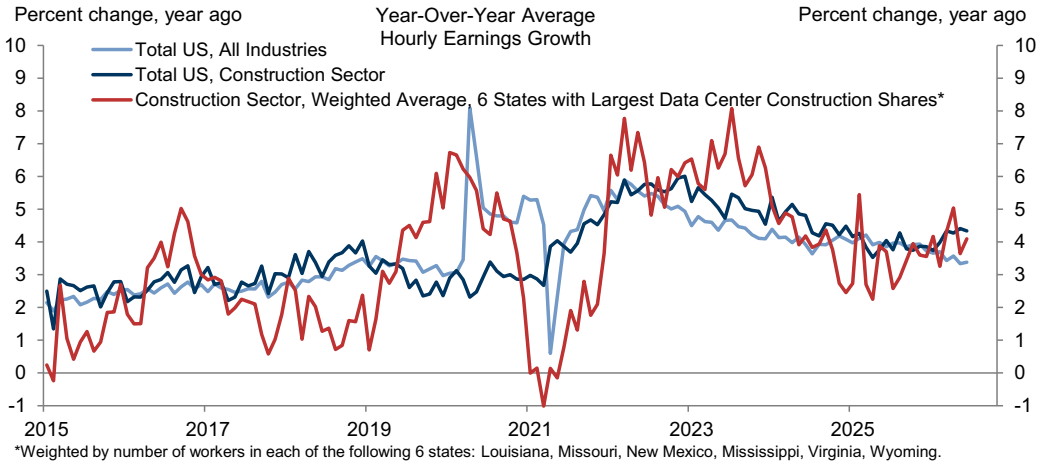
Exhibit 7: Prices for Industrial Metals Used for Data Center Construction Have Risen in Recent Years



Source: Goldman Sachs Global Investment Research, CME, Standard and Poor's, Department of Labor

We see little evidence of meaningful spillovers via wage growth for construction workers. While wage growth has been higher in the segments of the construction sector that are most exposed to data center construction, overall construction wage growth has run only 1pp higher than the economywide average rate over the last year and is not particularly elevated in the states where the most data centers are being built (Exhibit 8).

Exhibit 8: Construction Wage Growth Is Only Modestly Elevated and Is Not Particularly High in the States with the Most Data Centers Being Built



Source: Goldman Sachs Global Investment Research, Department of Labor

Cost spillovers via semiconductor prices are also likely modest because the chips used in cars, for example, are very different from those used to train AI models, both in their physical architecture and in their manufacturing process.

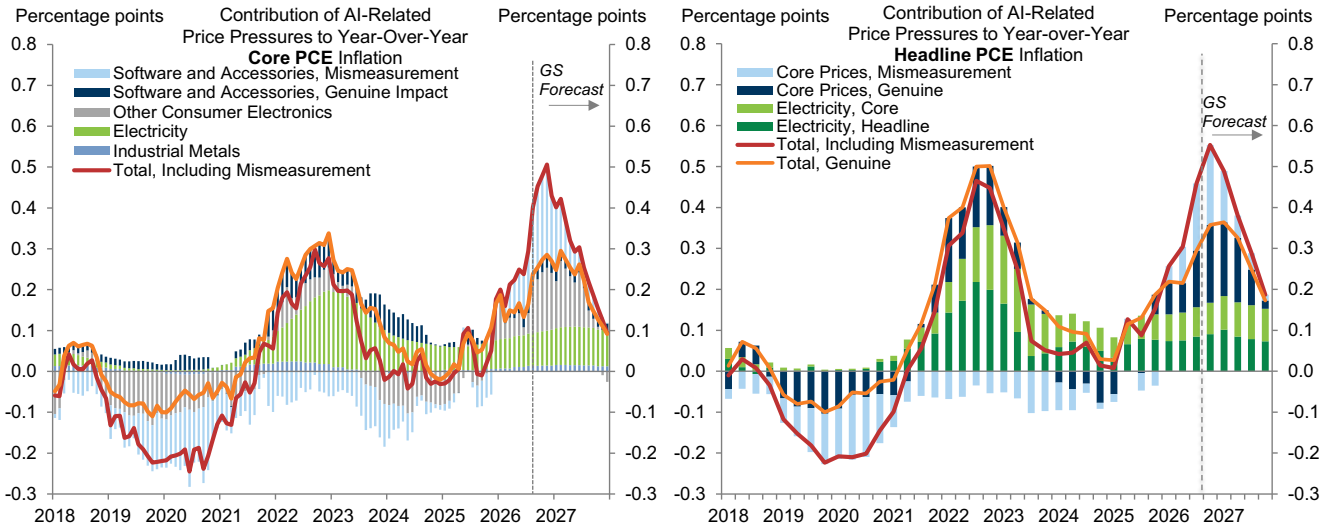
Adding Up the Impact

Exhibit 9 shows that we estimate that AI price pressures are currently boosting core PCE inflation by 45bp in total, of which about half reflects a genuine impact rather than mismeasurement, and that we expect this to peak at 50bp by end-2026 before declining

to 10bp by end-2027. Our estimate of the impact on headline PCE inflation is about 5-10bp higher over that time horizon. We expect the impact to decline mainly because our sector analysts expect memory[3] and computer prices to grow at a significantly slower pace, as mentioned above, and this should reduce both genuine cost pressures and the impact of mismeasurement in the software and accessories category.

While there could be other channels through which AI demand has affected consumer prices beyond those we analyzed, we think our estimates are more likely a bit overstated than understated because they might pick up the effect of tariffs that have also contributed to higher inflation in goods categories.

Exhibit 9: We Expect the Impact of AI Price Pressures on Core PCE Inflation to Rise from 45bp Today to 50bp at End-2026 Before Falling to 10bp by End-2027 as Memory and Computer Price Growth Slows

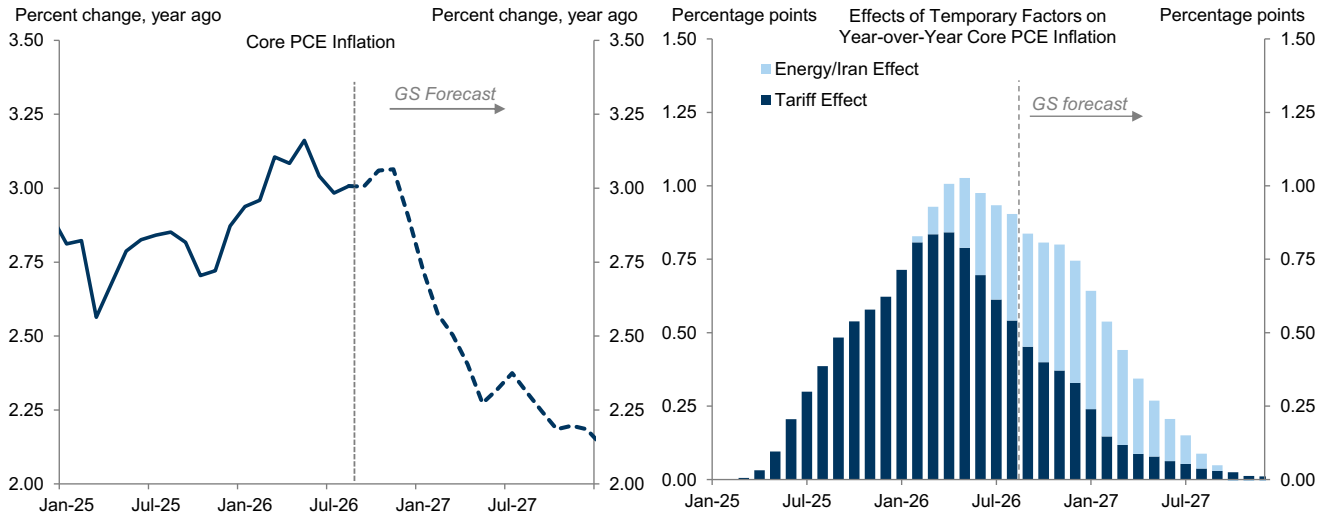


Source: Goldman Sachs Global Investment Research

In short, the impact of AI demand on inflation is meaningful but moderate, still comes in large part from mismeasurement even after the methodological revisions, and is likely near its peak. And even if we took all of the AI impact at face value and assumed instead that it would persist next year, we would still expect core PCE inflation to fall meaningfully toward the 2% target next year because we estimate that tariffs and the Iran energy shock account for 0.9pp of the remaining 1pp overshoot.

[3] Our semiconductors analysts expect prices to remain at elevated levels but expect price growth to slow substantially over the next two years from the 2025-2026 pace.

Exhibit 10: Even If AI Price Pressures Instead Persisted, We Would Still Expect Core PCE Inflation to Fall Meaningfully Toward the 2% Target Next Year Because We Estimate That Tariffs and the Iran Energy Shock Account for 0.9pp of the Remaining 1pp Overshoot



Source: Goldman Sachs Global Investment Research, Department of Commerce

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The US Economic and Financial Outlook

THE US ECONOMIC AND FINANCIAL OUTLOOK
(% change on previous period, annualized, except where noted)

	2023	2024	2025	2026	2027	2026 Q1	2026 Q2	2026 Q3	2026 Q4	2027 Q1	2027 Q2	2027 Q3	2027 Q4
OUTPUT AND SPENDING													
Real GDP	**2.9**	**3.0**	**2.3**	*2.3*	*2.1*	**2.5**	**2.2**	*3.1*	*1.4*	*2.1*	*2.1*	*2.1*	*2.3*
Real GDP (annual=Q4/Q4, quarterly=yoy)	**3.4**	**2.6**	**2.0**	*2.3*	*2.2*	**2.6**	**2.2**	*2.0*	*2.3*	*2.2*	*2.2*	*1.9*	*2.2*
Consumer Expenditures	**2.3**	**2.9**	**2.6**	*2.3*	*2.1*	**0.7**	**3.8**	*2.9*	*1.5*	*1.9*	*2.0*	*2.1*	*2.2*
Residential Fixed Investment	**-8.1**	**3.2**	**-2.7**	*-2.4*	*2.1*	**-7.6**	**2.8**	*3.2*	*1.5*	*2.0*	*2.0*	*2.0*	*2.3*
Business Fixed Investment	**7.7**	**3.9**	**5.4**	*7.2*	*6.3*	**9.9**	**9.0**	*10.1*	*6.8*	*5.1*	*5.1*	*5.1*	*5.1*
Structures	**16.1**	**3.8**	**-2.2**	*-3.9*	*3.9*	**-9.4**	**0.1**	*15.1*	*-0.2*	*3.5*	*3.5*	*3.5*	*3.5*
Equipment	**4.9**	**3.3**	**8.8**	*11.0*	*7.2*	**15.5**	**13.4**	*9.7*	*9.5*	*5.5*	*5.5*	*5.5*	*5.5*
Intellectual Property Products	**5.6**	**4.6**	**6.8**	*9.6*	*6.5*	**15.6**	**9.2**	*8.0*	*7.8*	*5.5*	*5.5*	*5.5*	*5.5*
Federal Government	**3.5**	**3.6**	**-1.3**	*-1.2*	*0.4*	**10.9**	**-2.4**	*-2.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
State & Local Government	**5.1**	**5.0**	**3.3**	*1.3*	*0.9*	**1.4**	**1.2**	*0.3*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
Net Exports ($bn, '17)	**-910**	**-1,024**	**-1,101**	*-1,185*	*-1,365*	**-1,020**	**-1,099**	*-1,300*	*-1,323*	*-1,340*	*-1,357*	*-1,374*	*-1,391*
Inventory Investment ($bn, '17)	**38**	**28**	**7**	*23*	*78*	**-35**	**-63**	*108*	*80*	*80*	*80*	*75*	*75*
Nominal GDP	**6.8**	**5.6**	**5.0**	*6.0*	*5.0*	**5.8**	**8.5**	*5.3*	*5.1*	*4.5*	*4.7*	*4.5*	*4.4*
Industrial Production, Mfg.	**-1.0**	**-1.0**	**0.8**	*2.2*	*3.8*	**1.8**	**5.5**	*6.0*	*3.7*	*3.3*	*3.3*	*3.2*	*3.3*
HOUSING MARKET													
Housing Starts (units, thous)	**1,421**	**1,370**	**1,356**	*1,347*	*1,372*	**1,418**	**1,299**	*1,323*	*1,348*	*1,362*	*1,365*	*1,375*	*1,385*
New Home Sales (units, thous)	**666**	**684**	**679**	*630*	*649*	**622**	**590**	*649*	*661*	*636*	*642*	*649*	*670*
Existing Home Sales (units, thous)	**4,103**	**4,067**	**4,076**	*4,168*	*4,255*	**4,053**	**4,160**	*4,226*	*4,234*	*4,243*	*4,251*	*4,260*	*4,268*
Case-Shiller Home Prices (%yoy)*	**5.3**	**3.8**	**1.3**	*1.1*	*2.4*	**0.8**	**1.1**	*1.6*	*1.1*	*1.1*	*2.0*	*2.2*	*2.4*
INFLATION (% ch, yr/yr)													
Consumer Price Index (CPI)**	**3.3**	**2.9**	**2.7**	*3.6*	*1.9*	**2.7**	**3.8**	*3.4*	*3.8*	*3.3*	*2.3*	*2.3*	*1.8*
Core CPI **	**3.9**	**3.2**	**2.6**	*2.5*	*1.9*	**2.5**	**2.7**	*2.5*	*2.6*	*2.3*	*2.0*	*2.0*	*1.9*
Core PCE** †	**3.2**	**2.9**	**2.9**	*2.9*	*2.2*	**3.0**	**3.1**	*3.0*	*3.0*	*2.6*	*2.3*	*2.3*	*2.2*
LABOR MARKET													
Unemployment Rate (%)^	**3.8**	**4.1**	**4.4**	*4.2*	*4.2*	**4.3**	**4.2**	**4.2**	*4.2*	*4.2*	*4.2*	*4.2*	*4.2*
U6 Underemployment Rate (%)^	**7.2**	**7.6**	**8.4**	*7.6*	*7.6*	**8.0**	**7.9**	**7.8**	*7.6*	*7.6*	*7.6*	*7.6*	*7.6*
Payrolls (thous, monthly rate)	**210**	**122**	**10**	*72*	*55*	**73**	**81**	**79**	*55*	*55*	*55*	*55*	*55*
Employment-Population Ratio (%)^	**60.1**	**59.9**	**59.7**	*59.1*	*58.9*	**59.2**	**59.0**	**59.1**	*59.1*	*59.0*	*59.0*	*59.0*	*58.9*
Labor Force Participation Rate (%)^	**62.5**	**62.5**	**62.4**	*61.7*	*61.5*	**61.9**	**61.5**	**61.7**	*61.7*	*61.6*	*61.6*	*61.6*	*61.5*
Average Hourly Earnings (%yoy)	**5.1**	**4.4**	**4.0**	*3.0*	*3.5*	**3.6**	**3.2**	**3.2**	*3.0*	*3.1*	*3.3*	*3.5*	*3.5*
GOVERNMENT FINANCE													
Federal Budget (FY, $bn)	**-1,694**	**-1,833**	**-1,775**	*-2,100*	*-2,100*	--	--	--	--	--	--	--	--
FINANCIAL INDICATORS													
FF Target Range (Bottom-Top, %)^	**5.25-5.5**	**4.25-4.5**	**3.5-3.75**	*4-4.25*	*3.5-3.75*	**3.5-3.75**	**3.5-3.75**	**3.75-4**	*4-4.25*	*4-4.25*	*4-4.25*	*3.75-4*	*3.5-3.75*
10-Year Treasury Note^	**3.88**	**4.58**	**4.18**	*4.75*	*4.40*	**4.30**	**4.44**	**5.29**	*4.75*	*4.65*	*4.55*	*4.45*	*4.40*
Euro (€/$)^	**1.11**	**1.04**	**1.17**	*1.12*	*1.14*	**1.15**	**1.14**	**1.12**	*1.12*	*1.12*	*1.12*	*1.12*	*1.14*
Yen ($/¥)^	**141**	**157**	**157**	*163*	*160*	**159**	**163**	**158**	*163*	*165*	*165*	*165*	*160*

* 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. Annual numbers are Q4/Q4.
** Annual inflation numbers are December year-on-year values. Quarterly values are Q4/Q4.
† PCE = Personal consumption expenditures. ^ Denotes end of period.
Note: Published figures in bold.

Source: Goldman Sachs Global Investment Research

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