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Global Economics Analyst

DM Inflation – Soft Signal vs. Loud Noise (Bhushan/Milo/Struyven)

- The pandemic caused unusually large swings in inflation, especially within individual goods and services categories. Assessing the inflation trend is particularly challenging this year because base effects and a normalization of both the outsized price weakness in face-to-face services and the strength in certain goods will distort the signal from standard year-on-year core readings.
- To obtain a better signal, we construct a trimmed core inflation measure for the US, Euro Area, Japan, UK, and Canada with three advantages. First, it provides clean cross-country comparisons of the inflation trend by consistently trimming the one third most extreme price changes for the individual core components. Second, it is easily compared to inflation targets because we ensure that its long-run average matches central banks' preferred measures. Third, by trimming month-over-month inflation, it also identifies the sequential trend.
- We find that our trimmed core measures are less volatile than standard core measures. Currently, our trimmed core measures signal somewhat lower year-over-year inflation than standard core measures, and this gap will likely grow in coming months as positive base effects inflate standard core measures. While we expect US core PCE to peak at 2.3% yoy in April, our US trimmed core is likely to run at only around 1.5% yoy in April.
- We next construct trimmed core measures for goods and services separately. DM trimmed goods inflation has declined to just below its modern historical average at -0.2% yoy. DM trimmed services inflation has firmed somewhat in sequential terms but remains at a historical low of +1.2% in year-on-year terms.
- To analyze the drivers of these aggregate trends, we construct consistent category inflation rates for three goods and four service categories. On the goods side, DM auto inflation is firm while apparel inflation remains soft. DM services inflation is generally weak, especially in face-to-face services, although healthcare inflation remains resilient after a secular downward trend.
- Our trimmed core inflation measures support our dovish inflation and monetary policy views. Underlying inflation is, and will likely remain, below central bank targets, consistent with our forecasts of slow QE exits and no rate hikes until 2024 in the US, 2025 in the Euro Area and UK, and mid-2023 in Canada.

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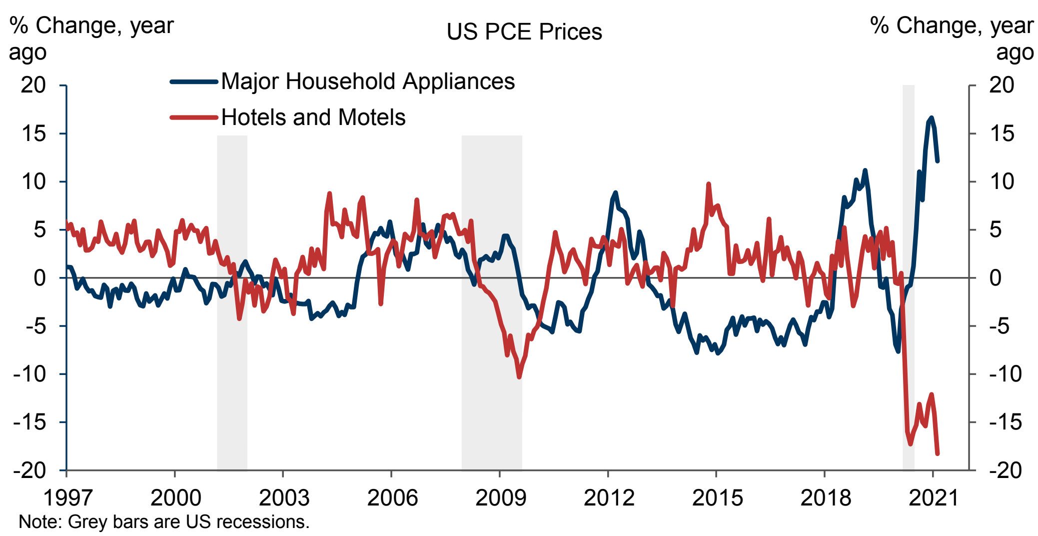
DM Inflation – Soft Signal vs. Loud Noise

The pandemic caused unusually large swings in inflation, especially within individual goods and services categories. In the US, for instance, inflation collapsed for hotels but surged for household appliances as consumer demand switched from face-to-face services to home-related goods (Exhibit 1). Assessing the underlying inflation trend will be particularly challenging in coming months because normalization of both the outsized price weakness in face-to-face services and the strength in certain goods categories as well as positive base effects will distort the signal from the standard year-on-year core readings.

Exhibit 1: Appliance Prices Surged While Hotel Prices Plummeted in the US



Source: Haver Analytics, Goldman Sachs Global Investment Research

Trimming Into the Core

To obtain a better signal, we construct consistent GS trimmed core mean inflation rates for the US, the Euro Area, Japan, UK, and Canada in three steps.

First, we gather detailed component-level inflation data but exclude the more volatile and more mean-reverting energy and food related components, which are also dropped from the central banks' preferred core measures. Specifically, we exclude food and energy in the US and Canada, food, energy, alcohol, and tobacco in the Euro Area and the UK, and fresh food and energy in Japan.

Second, we consistently trim the one third most extreme month-over-month price changes for the core components but select the proportion of the lower and upper trim separately in each country such that the long-run average of our trimmed core measure matches the long-run average of the core measure each central bank focuses on. For instance, trimming the 20.9% most elevated and the 12.4% lowest inflation rates in the US vs. 18.7% and 14.6%, respectively, in Japan, allows matching the long-run averages of core PCE in the US and core CPI in Japan, because component-level inflation is more

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left-skewed in the US than in Japan.

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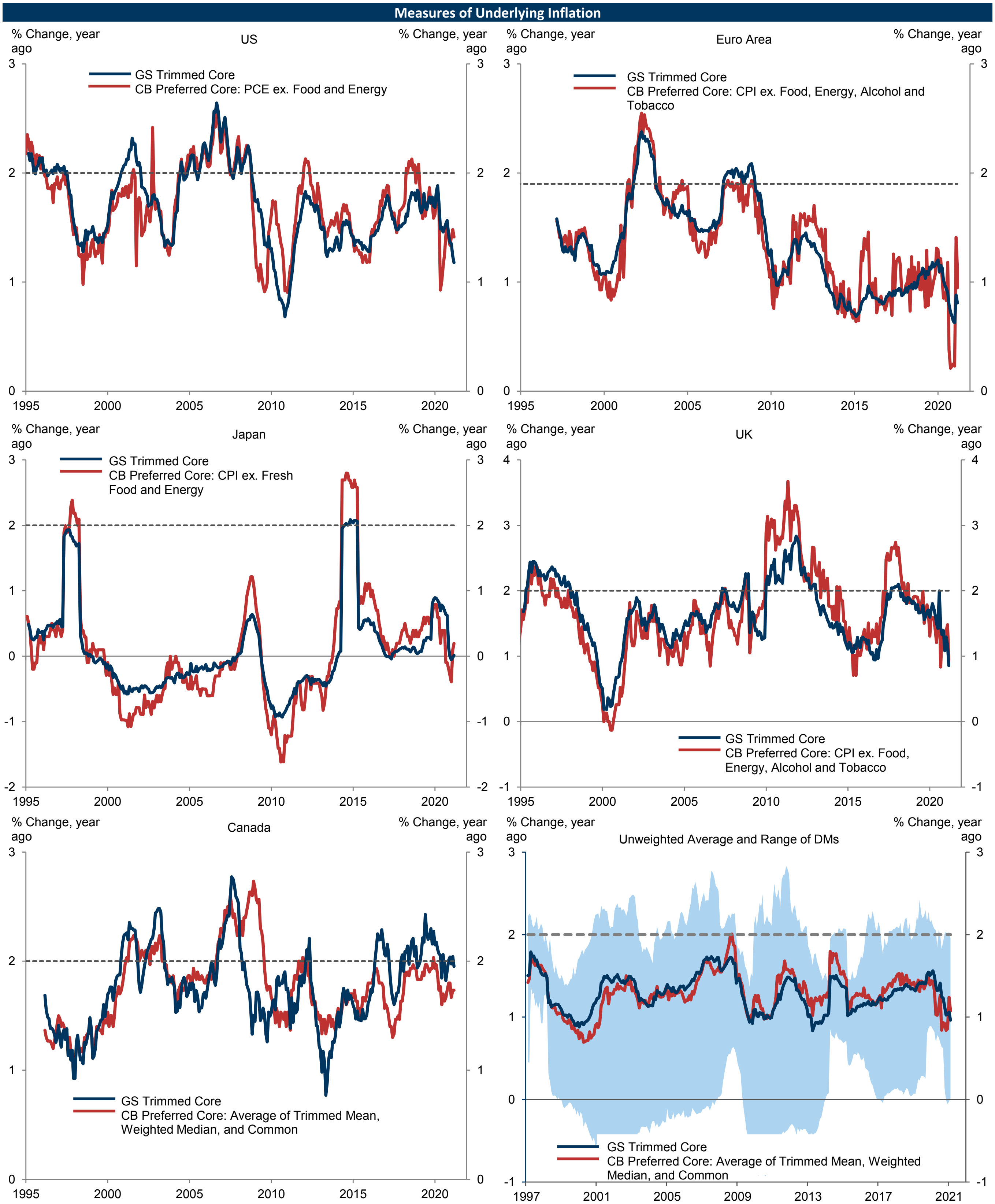
Exhibit 2: Our GS Trimmed Core Inflation Measures Are Generally Less Noisy Than Central Bank Preferred Core Measures



Note: Grey dotted line shows inflation target, which is 2% in all countries, apart from the Euro Area where it is close to but below 2%. Euro Area inflation series is adjusted for temporary German VAT reduction in late 2020.

Source: Haver Analytics, Goldman Sachs Global Investment Research

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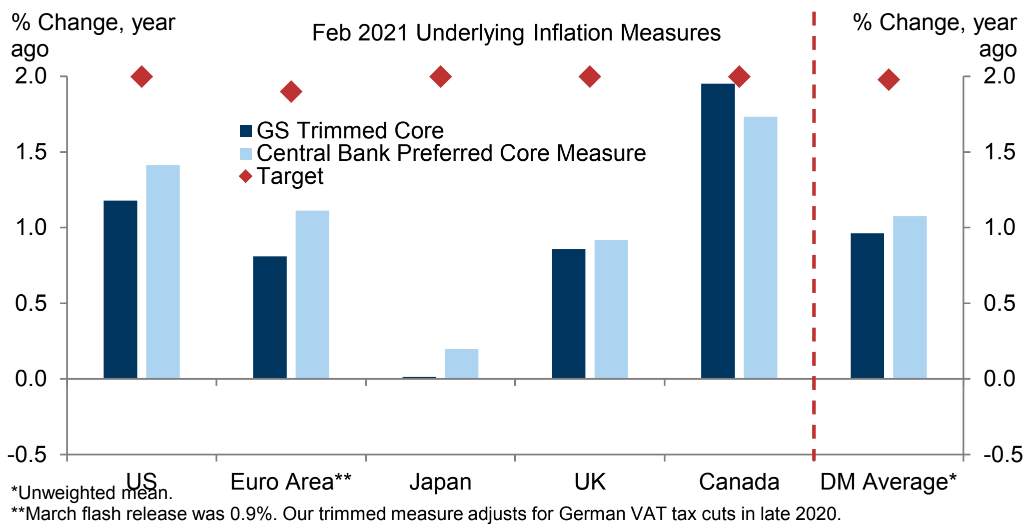
While our trimmed core measures historically track core inflation over the long run, they currently are mostly signaling somewhat lower year-over-year inflation than standard core measures.[1] Exhibit 3 shows February 2021 year-over-year estimates for our GS trimmed core measures (dark blue bars) and central bank preferred core measures (light blue). In the US, the Euro Area, and Japan, our trimmed mean measures are running 0.2-0.3pp below standard core measures and by 0.1pp in the UK. Canada is the outlier again, with our trimmed measure running at 1.95%, or 0.2pp above the average of the three BoC preferred measures.

Exhibit 3: Our Trimmed Mean Measures Signal Somewhat Weaker Year-over-Year Inflation Than Standard Core Measures, Except for Canada…



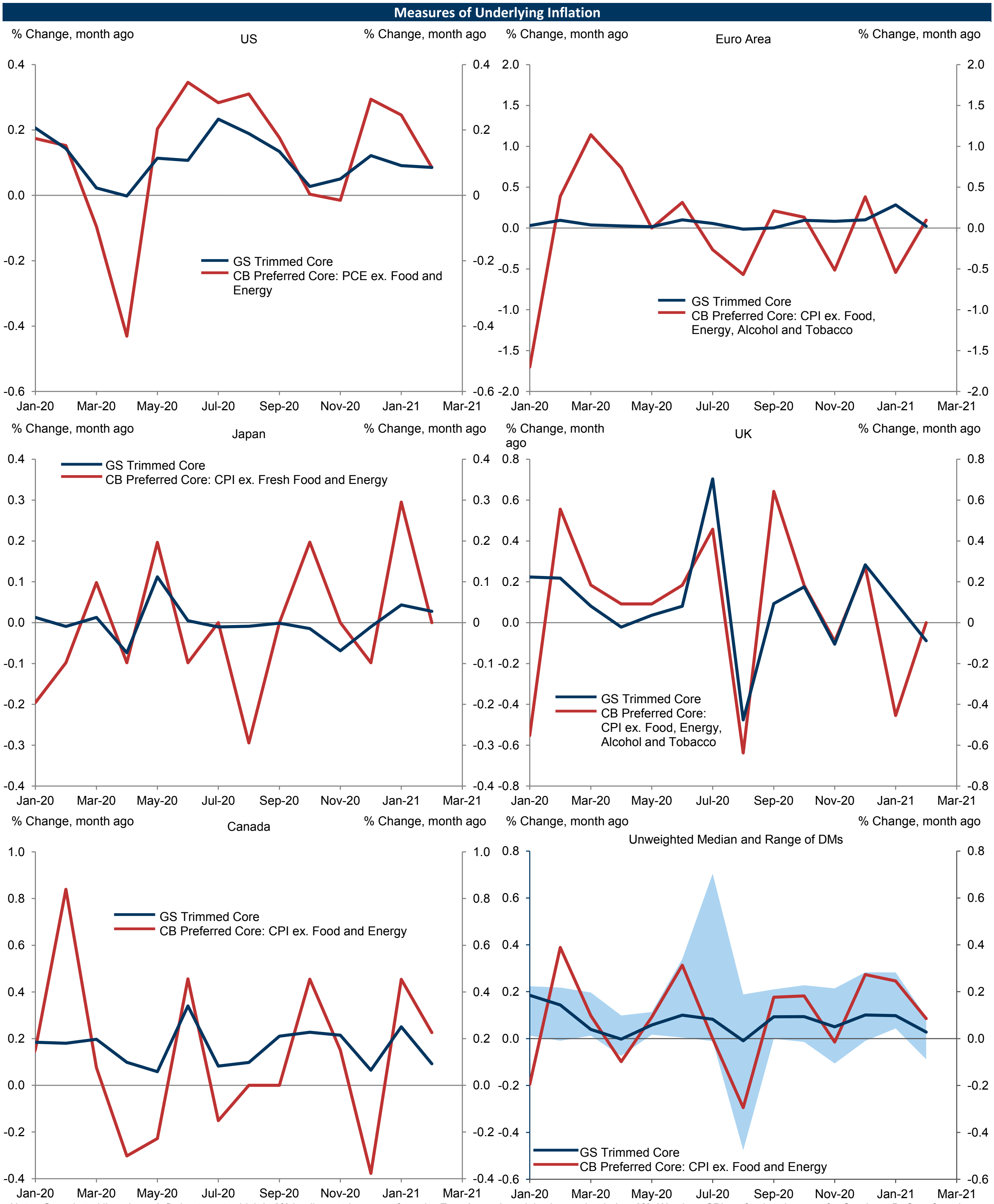
Central bank preferred core measure is PCE ex. food and energy in the US, CPI ex. food, energy, alcohol and tobacco in the Euro Area and UK, CPI ex. fresh food and energy in Japan, and average of three BoC measures in Canada. Grey dotted line shows inflation target, which is 2% in all countries, apart from the Euro Area where it is close to but below 2%.

Source: Haver Analytics, Goldman Sachs Global Investment Research

We expect the gap between our trimmed core measure and standard core measures to grow in coming months as positive base effects inflate the latter. Exhibit 4 plots sequential monthly inflation for our trimmed core measures (dark blue) and central banks' preferred core measures (red). In most countries, our trimmed core measure remained relatively stable on a sequential basis in 2020, for example only reaching a minimum of 0.0% month-over-month in the US and the Euro Area, compared to -0.4% and -0.6%, respectively, for the standard core measure. While we expect US core PCE inflation to peak at 2.3% in April, our GS US core trimmed measure would run at only 1.5% in April, assuming identical sequential inflation in March and April for our trimmed core measure and the standard core (Exhibit 5).

[1] The spikes in Japan's inflation in 1997, 2014 and 2019 were all due to VAT hikes.

Exhibit 4: ... And We Expect This Distinction to Grow in Coming Months as Deeply Negative 2020 Monthly Readings Drop Out of the Standard Core Year-Over-Year Calculations



Note: Grey dotted line shows inflation target, which is 2% in all countries, apart from the Euro Area where it is close to but below 2%. We show CPI ex. food and energy for Canda as BoC preferred core measures are not available on a sequential basis. We show a median aggregate compared to mean in other exhibits because of outliers.

Source: Haver Analytics, Goldman Sachs Global Investment Research

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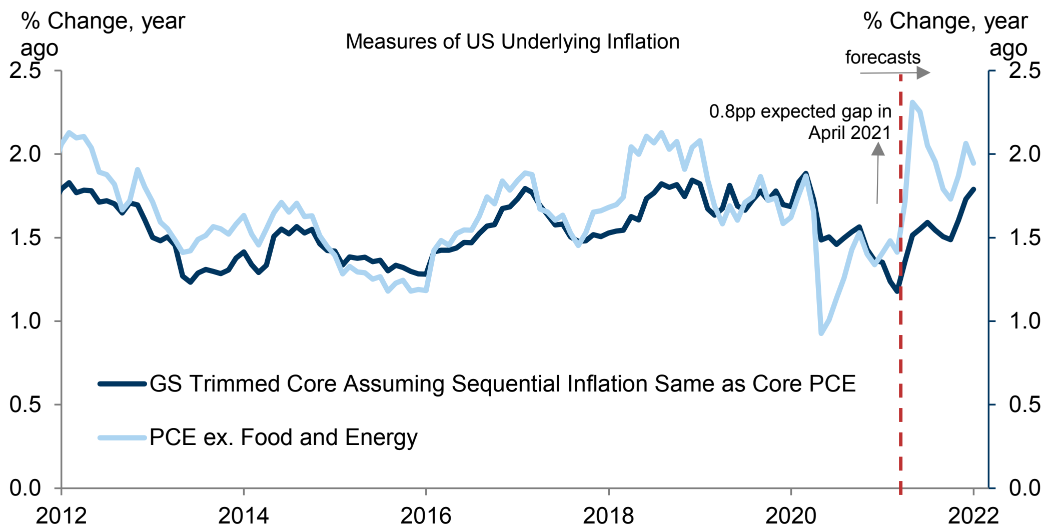
Exhibit 5: Our US Trimmed Core Measure Is Likely to Be Around 0.8pp Weaker than Core PCE Inflation in April



Source: Haver Analytics, Goldman Sachs Global Investment Research

Soft Services Inflation vs. Normal Goods Inflation

To better understand the drivers of underlying inflation, we next construct trimmed core measures for goods and services separately. We follow the same methodology as for our overall trimmed core measure, first excluding non-core categories and then trimming the one third most extreme monthly price changes for the individual core components but keeping the proportion of the trims the same as for the aggregate measure.

Exhibit 6 compares our trimmed core measures against core goods (left panel) and services (right panel) inflation. DM trimmed goods inflation has declined from relatively high levels in 2018-2019 to just below its modern historical average at -0.2%. In comparison, DM trimmed services inflation has firmed somewhat on a sequential basis (see Appendix) but remains at a historical low of around +1.2% on a year-over-year basis.

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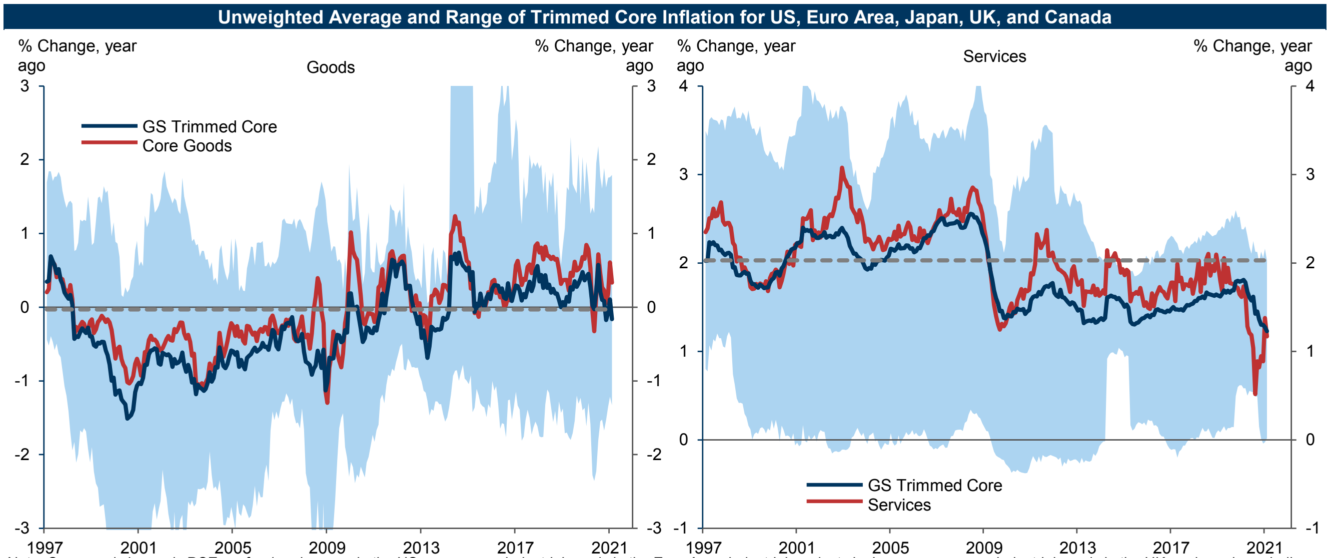
Exhibit 6: Underlying Year-Over-Year Goods Inflation Is Roughly at Its Historical Average While Underlying Services Inflation Is at Historical Lows



Note: Core goods is goods PCE ex. food and energy in the US, non-energy industrial goods in the Euro Area, industrial products in Japan, non-energy industrial goods in the UK, and goods excluding food purchased from stores and energy in Canada. Services inflation is PCE in the US and CPI elsewhere. Grey dotted line shows average core goods and services DM aggregates.

Source: Haver Analytics, Goldman Sachs Global Investment Research

Soft Face-to-Face Services

To analyze the drivers of these aggregate trends, we construct consistent category-level inflation rates across each economy for three goods and four service categories (Exhibit 7). On the goods side, DM auto inflation is firm while apparel inflation remains soft. DM services inflation, however, is generally weak across the board, especially in face-to-face services, but also to some extent in the large and often cyclical housing services category. The notable exception is healthcare inflation which remains resilient after a secular downward trend over the fifteen years before the pandemic.

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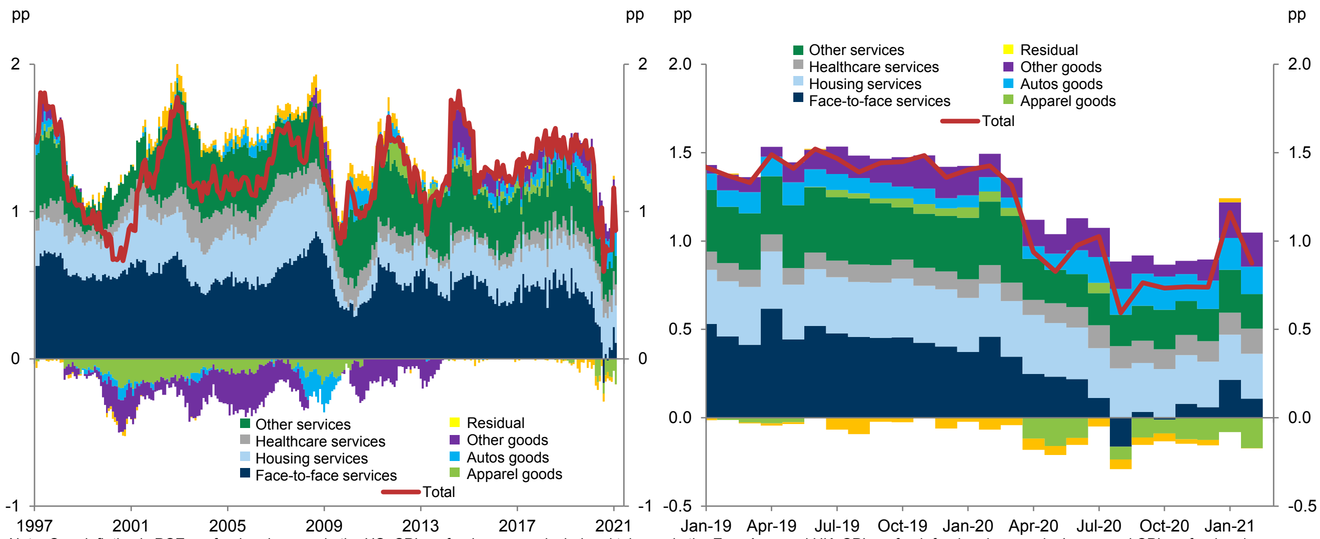
Exhibit 7: Strength in Autos, Softness in Apparel, Generally Weak Services, Especially in Face-to-Face Services

Source: Goldman Sachs Global Investment Research

Exhibit 8 plots the contributions to the DM average of standard core inflation from each category with a long history in the left panel and a focus on the last two years in the right panel. Even before the pandemic, the contribution from services inflation never fully recovered from the global financial crisis, and the pandemic has exacerbated this move for now, with the contribution from face-to-face services at historical lows. In contrast, goods inflation has been contributing more to inflation in the five years before the pandemic than before the financial crisis.

Exhibit 8: Weakness in Face-to-Face Services Should Abate as the Economy Reopens, Boosting DM Standard Core Inflation by ½pp

Unweighted Average of Contributions to YoY Core Inflation for US, Euro Area, Japan, UK and Canada



Note: Core inflation is PCE ex. food and energy in the US, CPI ex. food, energy, alcohol and tobacco in the Euro Area and UK, CPI ex. fresh food and energy in Japan, and CPI ex. food and energy in Canada.

Source: Haver Analytics, Goldman Sachs Global Investment Research

Our analysis supports our dovish DM inflation and monetary policy forecasts. The weakness concentrated in face-to-face services should abate as the economy reopens, adding up to ½pp to the DM average of standard core inflation measures. However, our core trimmed measures show that underlying DM inflation remains softer and this gap is set to grow further this year given the resilience of our core trimmed measure to positive base effect distortions. Underlying inflation is, and will likely remain, below central bank targets in the medium term given currently very large output gaps and persistent softness in certain less cyclical categories. This is consistent with our forecasts of slow and cautious removal of balance sheet accommodation and no rate hikes until 2024 in the US, 2025 in the Euro Area and UK, and mid-2023 in Canada.

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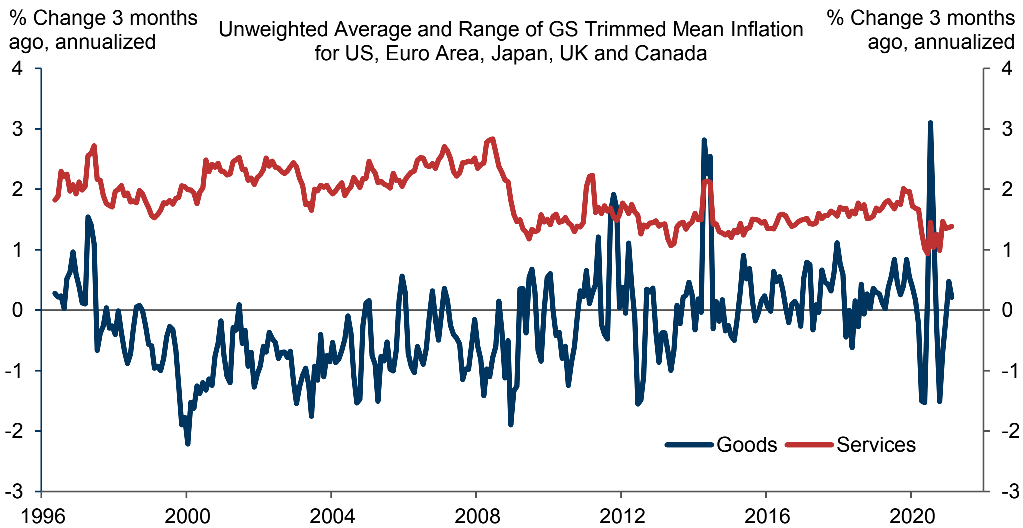
Appendix

Sequential Underlying Inflation Is Running Just Below 1% Annualized for Goods and Just Above 1% Annualized for Services Over the Past Three Months



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