

Inflation with all the trimmings – using trimmed means to compare underlying inflation in major OECD economies

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A major challenge for policy makers is understanding whether, in the absence of a faster tightening of monetary policy, recent consumer price inflation pressures are likely to dissipate or to persist and even intensify. Looking at statistical measures of underlying inflation is one way to help answer that crucial question.

Headline inflation is the aggregation of price changes for hundreds of components of household consumption expenditure. One approach to estimating underlying inflation is to exclude some subset of price changes so as to come up with a measure that is less volatile than headline inflation, unbiased (neither over- nor underestimating headline inflation over the cycle), and indicative of the trend, so that headline will tend to adjust towards underlying inflation (Roberts, 2005).

One widely used estimate of underlying inflation is **core inflation**, which removes energy and food-related items. This works well when commodity prices are the main source of volatility in inflation, but can give a flawed picture if extreme price movements are coming from other items. **Trimmed-mean inflation** is an alternative statistical measure of underlying inflation pressures which addresses this drawback by removing the most extreme price changes on both sides of

the distribution each month and then computing mean inflation from the remaining items. This means that the items excluded can vary over time. An extreme form of the trimmed-mean approach is **median inflation**, which excludes all price movements other than the median.

There are trade-offs in deciding how much to trim: removing too few items could leave excessive volatility, while removing too many could push trimmed-mean inflation away from the (unobserved) trend in inflation (Dolmas and Koenig, 2019). Trimmed-mean measures are used widely, but there is no consensus on the optimal degree of trimming. For example, the Federal Reserve Bank of Dallas (2021) trims US price changes extensively and asymmetrically, removing 24% from the lower tail and 31% from the upper tail, while the European Central Bank (ECB) has recently used a measure trimming just 7.5% from each end of the euro area distribution of price changes (ECB, 2021).

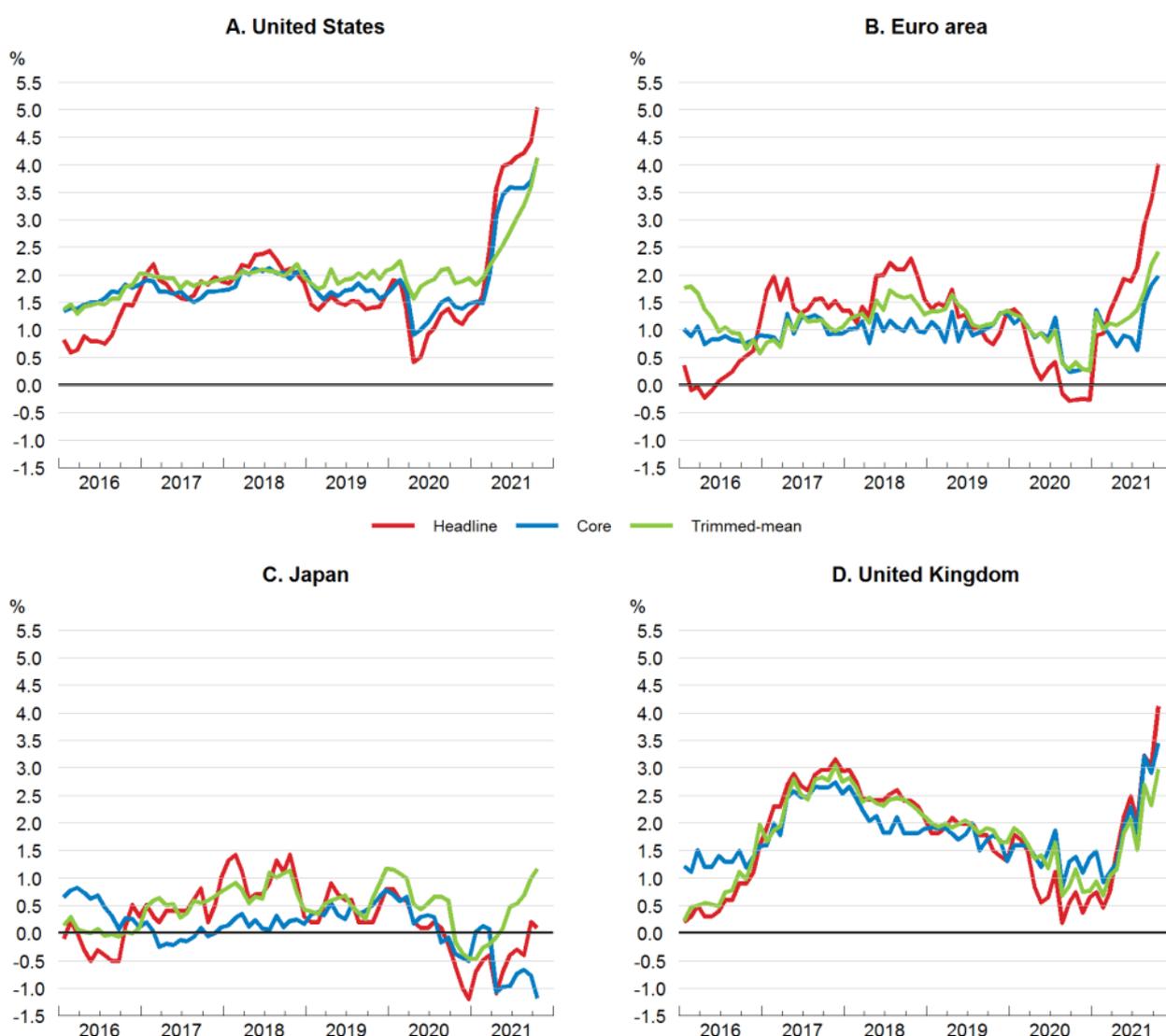
The latest OECD Economic Outlook (OECD, 2021, Box 1.4) reports on an exercise to facilitate comparisons across countries by constructing, for four major OECD economies, a measure involving a symmetric 10% trimming. This tracks 36-month average inflation (a proxy for trend inflation) reasonably well across a range of countries, although it is not necessarily the optimal trimming for any of the countries individually. The results are compared with headline and core inflation.

Both this trimmed-mean measure and core inflation are less volatile than headline inflation (Figure 1). When, as is often the case, food and energy products exhibit the most price volatility, they behave similarly. At times, however, they are found to diverge, for example during the first phase of the pandemic in the United States, when substantial price declines for a limited number of non-food, non-energy items meant that core inflation fell along with headline while trimmed-mean inflation (which excluded these items) barely moved.

Similarly, in Japan all three measures have remained low, but trimmed-mean inflation has diverged more from core inflation than elsewhere, reflecting the fact that price declines for a few components outside of food and energy – above all, mobile phone charges – have held down core (as well as headline) inflation.

Figure 1. Indicators of underlying inflation pressures are now rising

Year-on-year percentage changes



Note: Data are for the personal consumption expenditures deflator for the United States; consumer price inflation for Japan; and harmonised consumer price inflation for the euro area and the United Kingdom. Trimmed-mean inflation trims 10% in terms of weights at the top and bottom of the distribution

of the year-on-year growth of prices. Core inflation excludes energy and food-related products.

Source: Bureau of Economic Analysis; Japan Statistics Bureau; Eurostat; Office for National Statistics; OECD Economic Outlook 110 database; and OECD calculations.

Trimmed-mean measures suggest that underlying inflation pressures are now rising in all four economies, but to varying degrees. Underlying inflation, on the measure shown, has risen particularly sharply in the United States to around 4% at present, and in the United Kingdom. In contrast underlying inflation, although increasing, remains low in Japan and close to 2% in the euro area (especially taking into account known one-off factors such as the reversal of the 2020 VAT cut in Germany).

The trimmed-mean and core inflation measures both point to stronger inflation pressures, but this does not necessarily mean that inflation will continue to rise. If, as argued in the Economic Outlook, a large part of upward price pressures has reflected supply restrictions associated with the pandemic, those pressures can be expected to ease when pandemic-related effects fade. On the other hand, whatever the uncertainty about the duration of inflationary pressures, the broadening of price increases, even in Japan and the euro area, is at least indicating that such pressures are not just a matter of spikes in a few consumer prices.

References

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