GMV – Inflation-Consistent Output Gaps

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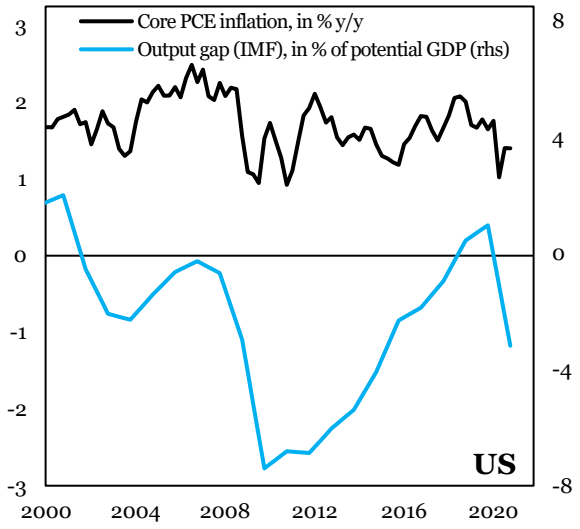
- There's plenty of evidence that output gaps are difficult to estimate, …
- especially in real time when they matter most for fiscal and monetary policy.
- IMF output gaps were -3.2 and -5.1 percent for the US and Euro zone in 2020.
- We use Phillips curves to compare these gap estimates to levels of core inflation.
- Depressed Euro zone core inflation points to an output gap closer to -8.0 percent, …
- while relatively robust core PCE inflation supports the narrower US gap estimate.

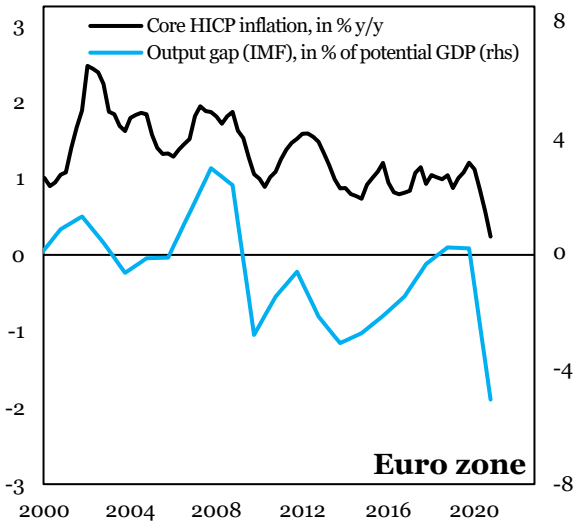
Output gaps are difficult to estimate, especially in real time when they are most needed for policy. In 2019 we introduced inflation-consistent output gaps, where we used Phillips curve regressions to compare gap estimates from the OECD, IMF and European Commission to core inflation. If those regressions revealed systematic residuals towards the end of the sample – when output gaps are difficult to estimate – we used the size of the residuals and the Phillips curve slope coefficient to calculate an inflation-consistent output gap. The COVID-19 shock and the severe economic dislocation it has caused are an opportunity to test our framework in real time. We compare IMF output gaps for the US and Euro zone to core inflation in 2020. Our analysis suggests that the Euro zone output gap is wider than the IMF estimate of -5.1 percent (GDP < potential) and – given depressed core HICP inflation – closer to -8.0 percent. In contrast, the IMF output gap of -3.2 percent for the United States is roughly in line with robust core PCE inflation. The larger Euro zone output gap stems from the periphery, where slack remains large. We will zero in on Italy and Spain in next week's ***Global Macro Views***.

Exhibit 1. We compare IMF output gap estimates, …



Source: Haver, IIF

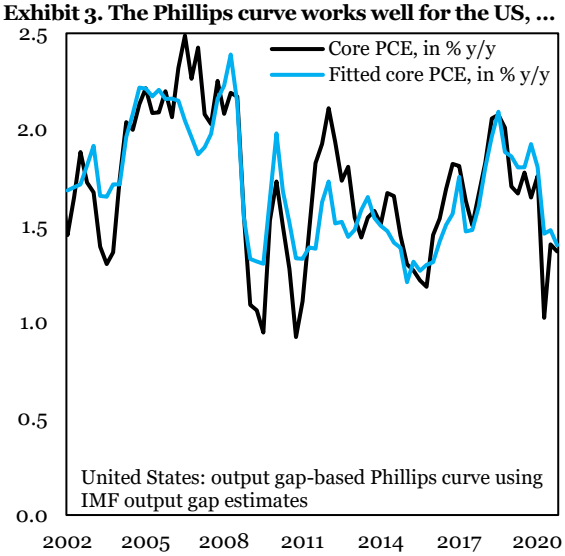
Exhibit 2. … to the path of inflation in the US and Euro zone.



Source: Haver, IIF

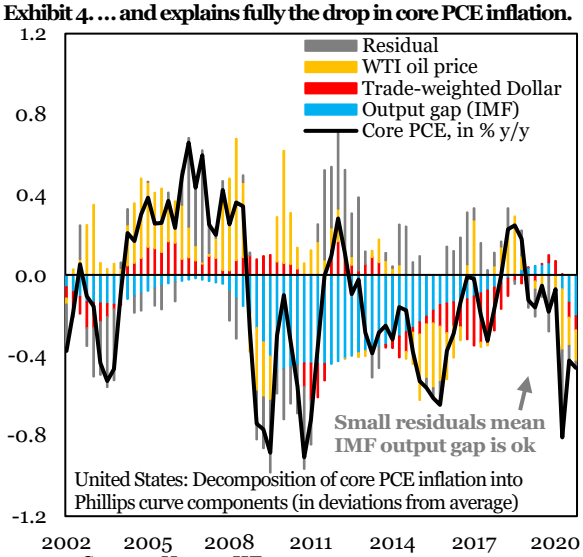
We compare IMF output gap estimates for 2020 to the level of core inflation in the US (Exhibit 1) and the Euro zone (Exhibit 2). The IMF has an output gap of -3.2 percent of potential GDP for the former, while its gap estimate is -5.1 percent for the Euro zone. The Phillips curve is a framework that allows us to compare these gap estimates to core inflation, where we also control for oil prices and the Dollar, given that both have seen big moves in recent years. We regress core inflation in year-over-year terms on the output gap and year-over-year changes in the Dollar and oil prices. We include contemporaneous changes for the Dollar and oil prices as well as one- and two-year lags. For the US we use core PCE inflation, while we use core HICP inflation for the Euro zone. The US Phillips curve has an R^2 of 67 percent from 1999 to 2020. The R^2 for the Euro zone is 58 percent. Exhibit 3 shows that this simple model explains much of the recent drop in core PCE inflation, with the widening output gap (Exhibit 4, blue) pulling down core inflation. There is no systematic, one-sided residual that might point to measurement error in the IMF gap. The situation looks quite different for Euro zone core inflation.

Exhibit 3. The Phillips curve works well for the US, …



Source: Haver, IIF

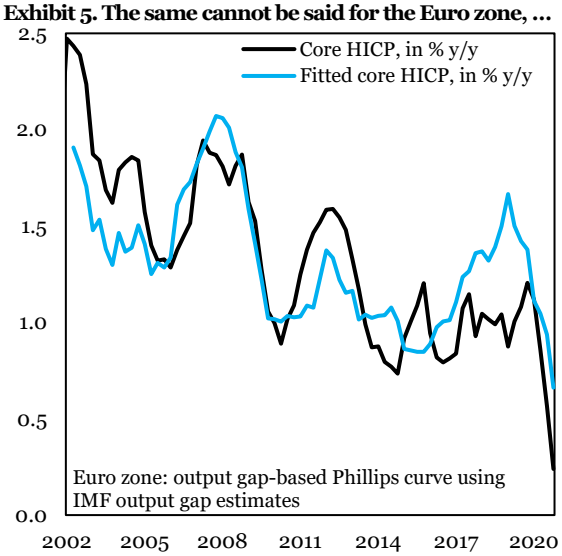
Exhibit 4. … and explains fully the drop in core PCE inflation.



Source: Haver, IIF

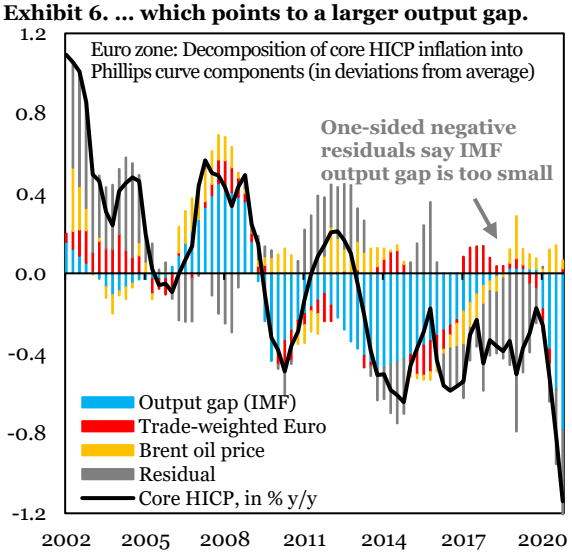
Euro zone core inflation has fallen more sharply than the Phillips curve regression can explain (Exhibit 5) and a large residual remains, even controlling for the widening in the IMF's output gap (Exhibit 6, blue). If we divide the residual in the regression by the Phillips curve slope coefficient on the output gap – which assumes that the residual is entirely related to output gap mis-measurement – this yields a Euro zone gap near -8.0 percent, wider than the IMF's -5.1 percent. This wider gap reflects depressed core HICP inflation and stems primarily from Italy and Spain, where the same approach yields substantially more slack than IMF estimates allow. We will discuss our estimates for Italy and Spain in next week's ***Global Macro Views***.

Exhibit 5. The same cannot be said for the Euro zone, …



Source: Haver, IIF

Exhibit 6. … which points to a larger output gap.



Source: Haver, IIF