

# Does the global output gap matter for inflation?

Category: Inflation

written by oecdecoscope | January 16, 2020

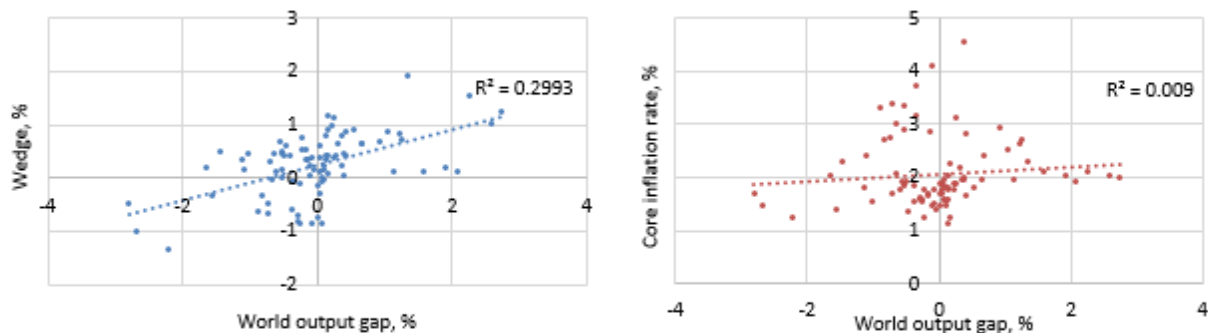
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There is a recurring controversy, as to the role of global demand pressures in driving domestic inflationary pressures, which matters because such an effect would undermine the control which domestic central banks have in achieving their inflation objectives. Economists from the Bank for International Settlements have presented evidence that global demand pressures, proxied by a measure of the global output gap, are important in explaining inflationary pressure in advanced economies (Borio and Filardo, 2007 and Jasova et al., 2018). On the other hand, other distinguished economists have failed to replicate this result, finding little or no influence of the global output gap on domestic inflation, once other more standard explanations, including domestic unemployment and imported inflation, have been accounted for (Ihrig et al., 2010; Calza, 2008; Gerlach, 2004; Pain et al., 2006; Yellen, 2017; Mikolajun and Lodge, 2016). This blogpost suggests a way in which these apparently contradictory findings can be reconciled and demonstrates that this explanation is borne out with surprising clarity when tested across all OECD economies (for more details see Turner et al., 2019).

The studies that have found important effects from global demand pressures have focused on headline measures of inflation, whereas most of the studies that find contrary results have been explaining 'core' inflation, where core inflation typically excludes energy and food prices because they can be very volatile. Global demand pressures might be

expected to have stronger effects on energy, food and commodity prices that feed more directly and immediately into headline inflation than core inflation. A simple look at the correlation between the global output gap and aggregate OECD measures of core inflation and of the 'wedge' between headline and core inflation, tends to confirm this (Figure 1).

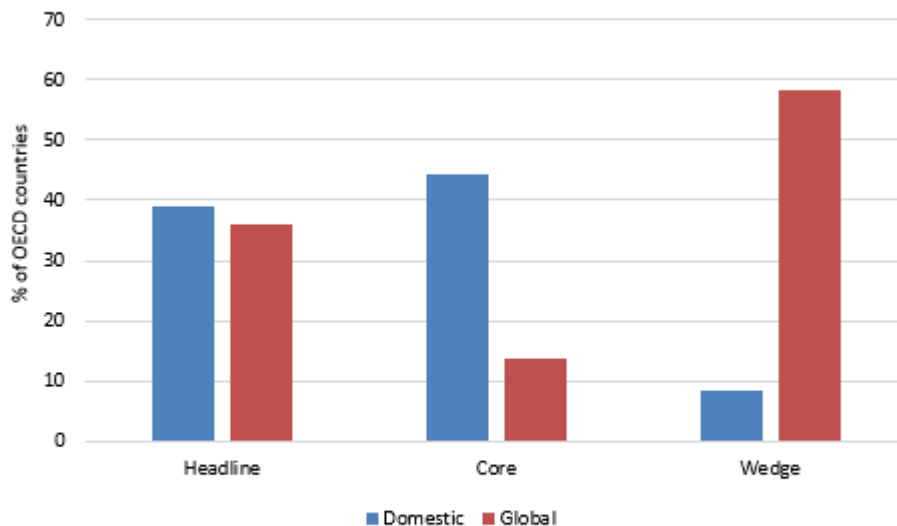
Figure 1. The correlation between global output gap and aggregate OECD inflation.



Note: The global output gap is derived from a Hodrick-Prescott filter of the world real GDP. The OECD wedge variable is the difference between annual headline and core consumer price inflation in OECD countries, aggregated using consumption weights. The period shown is 1998Q1 to 2019Q3.

Similar results are found when looking at OECD countries individually: the choice between using the global or the domestic output gap is unclear when explaining headline inflation, while the domestic output gap is clearly favoured when explaining core inflation. Conversely, the global output gap is overwhelmingly preferred when explaining wedge inflation (Figure 2).

Figure 2. Importance of the domestic and global output gap.



Note: The charts shows the percentage of the 36 OECD countries where the domestic or global output gap measure is significant at the 10% level and correctly signed in the simple regression:  $Y_t = \alpha * Y_{t-1} + \beta * domgap_t + \gamma * worldgap_t + \theta * exch_t + c$ , where  $Y$  is the headline, core inflation or the wedge between the two,  $domgap$  the domestic output gap,  $worldgap$  the world output gap and  $exch$  the logged difference of the nominal effective exchange rate. The sample is 1998Q1 to 2019Q3.

The strong relation found between global capacity measures and the wedge between headline and core inflation suggests policymakers should be wary of headline inflation picking up sharply when many countries overheat simultaneously. It might also raise questions as to the appropriate price index to target: if this wedge is strongly influenced by global, rather than domestic, conditions then targeting core might be more attractive than headline inflation because it relates more closely to domestic monetary policy. Moreover, the experience of recent decades suggests that the difference between headline and core inflation can be very persistent and should not be dismissed as short-term noise. On the other hand, excluding important components of the consumer basket from the official target is open to objections about the diminished relevance of a narrower policy objective, less closely related to living standards and so less relevant to agents in the wider economy.

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# Can we improve real-time estimates of the output gap for policy purposes?

Category: Uncategorized

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The output gap ought to be a key input in short-term policy-making because it provides a summary measure of economic slack, so allowing policy-makers to anticipate inflationary pressures. It can also be used to estimate cyclically-adjusted measures of the fiscal balance, to provide a better assessment of fiscal sustainability. Unfortunately, estimating output gaps is far from an exact science, and estimates are often revised leading some to question their usefulness.

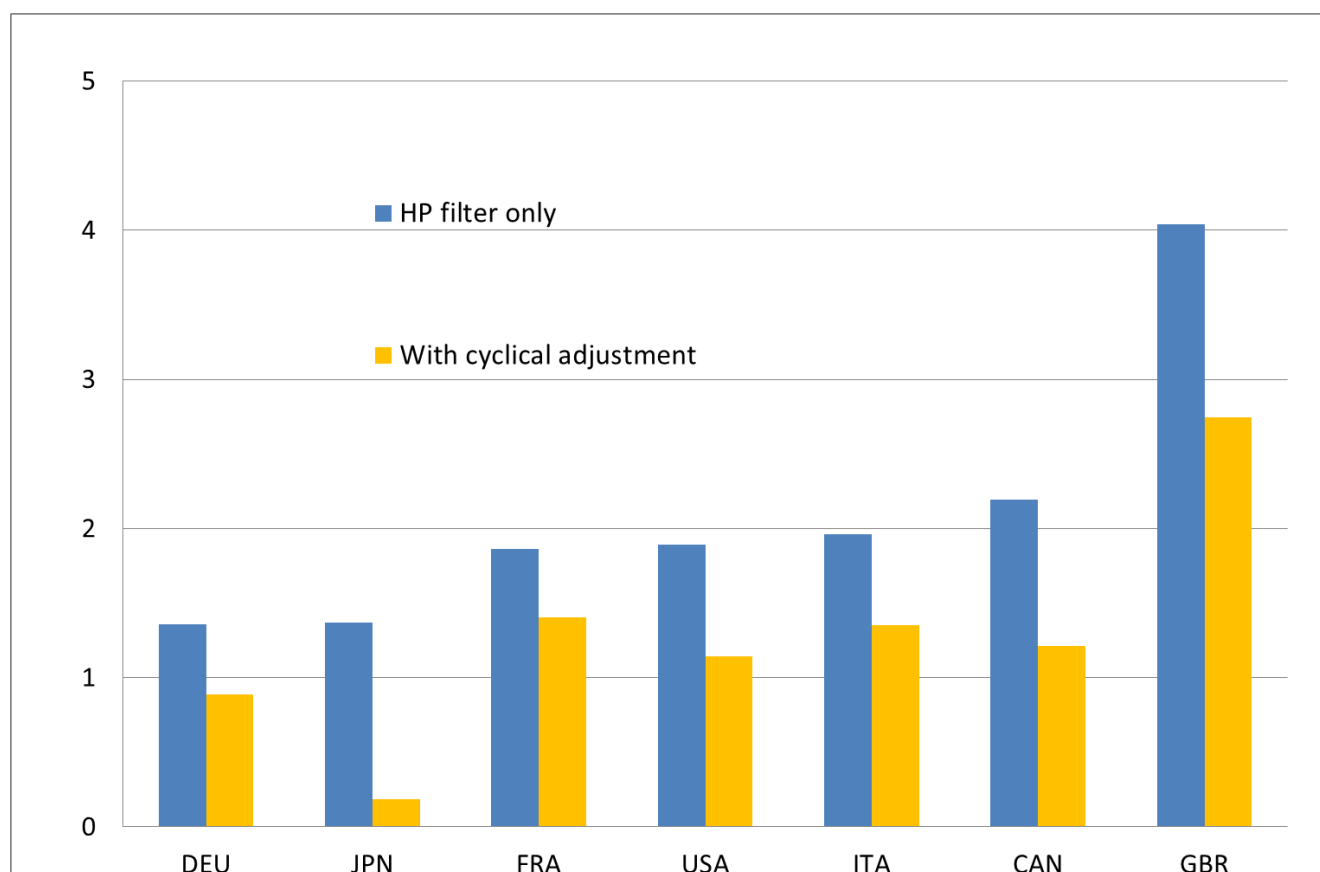
Recent OECD work proposes a way of incorporating additional information into the existing OECD methodology that should better anchor output gap estimates so they are less prone to revision. Estimating the output gap essentially means trying to disentangle the sustainable trend component of output from its cyclical component. Large revisions to a key component of the output gap occur because simple statistical filtering techniques, such as the Hodrick-Prescott filter, cannot distinguish trend from cycle at cyclical turning points when they occur at the end of the sample. Indeed, revisions to OECD published estimates of the output gap for G7 countries over the immediate pre-crisis period have typically been 2–3 percentage points and sometimes larger.

To better distinguish trend from cycle, the paper proposes exploiting historical correlations between key components of the output gap and other macroeconomic variables which are available on a timely basis: particularly manufacturing capacity utilisation and the share of investment in GDP, and for some countries credit, house prices or the unemployment rate. How strongly each of these variables correlates to output gap components varies by country, but overall revisions to the output gap are reduced when a highly-correlated factor is considered in the estimation.

The additional adjustment substantially reduces revisions over the crisis period; the occurrence of revisions exceeding 2 percentage points is reduced from six of the G7 countries to a single country and the root mean square revision at turning points is reduced by one-third on average (Figure).

**Root mean squared revisions to a key component of the output gap for 2007 and 2009**

**Percentage points of potential GDP**



**Note:** The chart shows revisions to the labour efficiency gap which is the main component of the output gap accounting for large historical revisions. Revisions are calculated both for a simple Hodrick-Prescott (HP) filter and an HP filter which is modified with the additional cyclical adjustment. Revisions for 2007 (2009) are calculated by applying the filtering procedure to data ending in 2007 (2009) to derive an initial estimate of the gap and then applying the same procedure over the full sample to 2014.

Useful though it is, this twist on the current methodology is not a panacea. Also, the size of eventual output gap revisions is only one of the yardsticks against which different methodologies should be evaluated. After all, a rule that the output gap was a fixed number would show no revision at all, but would be useless for policy. Good estimates should also pass the 'smell test' of credibility and be able to explain inflation developments. Research on these issues is ongoing at the OECD and elsewhere.

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