

# If potential output estimates are too cyclical, then OECD estimates have an edge

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To assess the cyclical position of an economy, macroeconomists use a concept called potential output, which measures the economy's production rate that is consistent with stable inflation at the target. When actual output is below potential, the 'output gap' is negative, the economy is depressed and, without prompt intervention by the central bank, inflation would tend to sag below target. Conversely, a positive output gap indicates an overheating economy and portends price and wage pressures, signalling the need for tighter monetary policy.

A country's output gap is also a crucial ingredient in the estimation of the structural budget balance, which serves to assess the impulse that fiscal policy is imparting on the economy. Since the 2005 reform to the European Union's fiscal framework, the Stability and Growth Pact, the structural budget balance has been at the centre of assessments by the European Commission of member countries' adherence to the Union's fiscal rules.

The difficulty is that potential output, and measures derived from it, such as the output gap and the structural budget balance, are not directly observable but must be estimated. The objective is for potential output to capture structural changes in the economy, such as a declining working-age population associated with ageing, while letting cyclical fluctuations, which are expected to be temporary, flow through to the output gap measure. Potential output estimation is

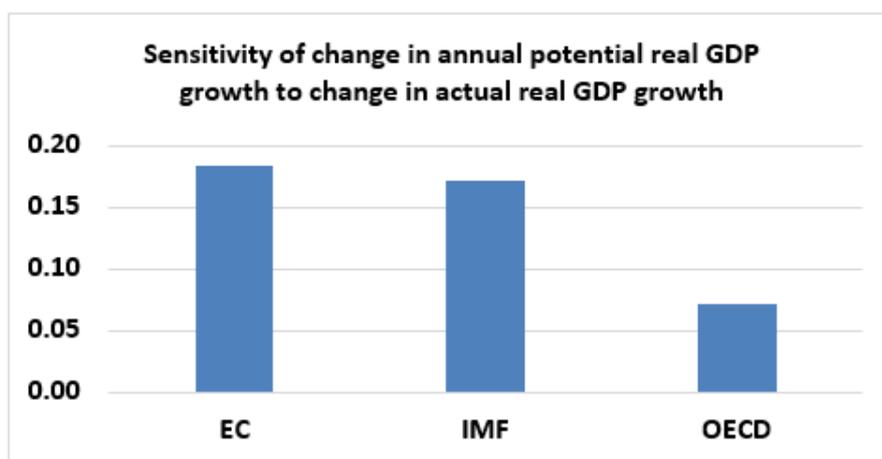
therefore largely a matter of separating out cyclical fluctuations from structural changes. Three international organisations routinely produce such estimates for their member countries: the European Commission (EC), the International Monetary Fund (IMF) and the OECD. Despite using broadly similar methods, differences arise from a number of methodological and judgemental choices.

It is difficult to assess the quality of potential output estimates because there are no 'true' observed values to compare them to. Nevertheless, one criticism increasingly levelled against such estimates is that they treat too much of regular economic fluctuations as being structural. Estimated potential growth tends to be too weak when the economy is weak and vice-versa. In other words, potential output estimates are excessively 'pro-cyclical'. One consequence is that governments will tend to have a pessimistic view of the structural budget balance in bad times and, conversely, an optimistic view in good times. Too much procyclicality in potential output therefore encourages procyclicality in fiscal policy, whereas economists generally agree that fiscal policy should be countercyclical.

For instance, the economists Antonio Fatás and Lawrence Summers have argued that the financial and economic crisis of 2008 created an overly pessimistic view of potential output among policy makers, which led them to support contractionary fiscal policy (i.e. cuts in spending or increase in taxes). Fiscal austerity affected economies negatively by subtracting a vital source of demand and, via hysteresis effects, caused a reduction in potential output that not only validated the original pessimistic assessment, but also led to a second round of fiscal consolidation. As Fatás says, this succession of contractionary fiscal policies was likely self-defeating for many European countries in the sense that their public debt-to-GDP ratios are barely better today than when austerity measures started.

A simple measure of the cyclicity of potential output series can be obtained by regressing the annual *change* in estimated potential growth on a constant and the annual *change* in actual growth. The estimated coefficient on actual growth then measures the sensitivity of potential growth to actual growth. Intuitively, this measure should be positive but small.

The chart below reports the result of this exercise for potential output estimates published by the three aforementioned institutions as part of their spring 2018 forecasting rounds, using a common panel of 24 countries over the 1980-to-2017 period. Each regression uses 682 observations, so an average of 28 years per country.



Note: The bars show the estimated coefficient  $\hat{\beta}$  from the panel regression  $\Delta p_{i,t} = \alpha + \beta \Delta g_{i,t}$ , where  $p_{i,t}$  is potential real GDP growth in country  $i$  and year  $t$  and  $g_{i,t}$  is actual real GDP growth. Each regression uses 682 observations on the same 24 countries and available years spanning (at most) the period 1980 to 2017.

The results show clearly that the spring 2018 European Commission potential output series were the most cyclical. On average in the Commission estimates, a one-percentage point change in actual real GDP growth is associated with a 0.18 percentage point change in potential growth. The coefficient on the IMF estimates is only slightly smaller. On the other hand, the OECD coefficient is less than half of the two others. One reason the OECD potential output measure may be less cyclical is that before smoothing them with a filter, the component series used to construct potential output are first cyclically adjusted by making use of other variables – such as

survey measures of capacity utilisation or the investment rate – which are known to be correlated with the cycle (see Turner et al., 2016).

The above exercise does not use ‘real-time’ estimates of potential output so, for instance, the 2010 potential growth estimate for France is different now than it was back in 2010. The 2010 estimate was of course the relevant one for the conduct of policy at the time. Rather, the test assesses the amount of cyclical sensitivity inherent in current methodologies, which may also have evolved since 2010. And if current estimates for past years are considered too sensitive to actual growth, then it is likely that the real-time estimates being produced now with a given methodology are too sensitive as well.

The sensitivity of changes to potential growth to changes in actual growth rates is neither a perfect nor a comprehensive measure of the quality and reliability of potential output estimates. After all, simply using a fixed number for a country’s potential growth would show a zero correlation but would obviously be problematic. However, in the absence of other obvious flaws, the OECD potential output estimates appear less exposed to the procyclicality criticism than those of the EC or IMF.

## References

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