Why structural balances should be scrapped from EU fiscal rules

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A prominent team from DG ECFIN of the European Commission challenged some of the criticisms of the EU's methodology for estimating potential output and output gaps, as well as their role in the EU fiscal framework. In this post, I conclude that their responses to the criticisms they considered are questionable. More importantly, they overlook serious problems with the EU's potential output methodology.

The EU fiscal framework strongly relies on the concept of the structural budget balance of the general government, which is an intuitive concept. It is the budget balance cleaned from temporary effects, such as smaller tax revenues and larger unemployment benefit payments in a recession, and one-off budgetary measures like bail-out of banks or temporary tax measures.

However simple the intuition, the structural balance is not observable and its estimation implicates difficulties, uncertainties and controversies. In particular, it requires the quantification of potential output, i.e. the output that could be produced if all resources were employed at their long-term sustainable levels. Potential output is not observed either. There are various alternative methods for estimating potential output; see the description of the EU's methodology here. The EU's methodology has been subject to debate by experts from all EU member states since it was launched two decades ago. The methodology has been endorsed by the ECOFIN Council and implemented by the European Commission. Hence, I'll speak about the "EU's methodology" and the "Commission's estimates".

The gap between actual GDP and potential output is the output gap, which can indicate the degree of overheating (if actual GDP is larger than potential output) or slack (the reverse). The structural budget balance is estimated on the basis of the output gap estimate. EU countries have to achieve a certain level of structural balance in the medium term. If they are not yet there, the annual fiscal adjustment should be 0.5% of GDP increase in the estimated structural balance in the benchmark case. (Larger than 0.5% adjustment is required in 'good times' or in 'normal times' if the public debt is over 60% of GDP, while in 'bad times' lower adjustment is required; see page 38 here.)

Several crucial criticisms of the EU's potential output methodology have been voiced. In a recent article, Buti *et al* (2019) aim to refute some of the criticisms. While they focus on assessing how the method does in assessing the current cyclical position, they do not discuss the criteria used to select the criticisms they consider and make the general statement "*this column argues that much of the criticism is both conceptually and empirically inaccurate*".

In this post I conclude that their response to the criticisms is highly questionable. More importantly, I argue that they do not mention the most serious problems with the EU's potential output methodology, such as the very large revisions in output gap and structural balance estimates, the pro-cyclicality the methodology creates, the implausibility of an inverted U-shaped estimated potential output level, and the various problems associated with identifying the potential level of labour, capital and productivity. As regards the fiscal framework as a whole, they do not discuss the implications of its complexity much.

Let me start with the three issues Buti *et al* aim to address:

- The puzzle of 'missing inflation' in the euro area: low inflation despite a significant improvement in the estimated output gap
- The link between external imbalances and the output gap
- The puzzle of estimating the same (close to zero) output gap for Germany and Italy

The missing inflation puzzle

Figure 1 shows that the Commission's estimate for the euro-area output gap increased from -3.1% of potential output in 2013 to +0.5% in 2018. Despite this significant improvement in the estimated cyclical position of the euro area economy, core inflation remained stuck practically at 1%. This is indeed a great puzzle and could question the plausibility of the output gap estimate.

Buti *et al* (2019) argue that a possible explanation for this missing inflation puzzle in the euro area is the emergence of supply shocks and they highlight the role of a fall in the trend unemployment rate (called NAWRU, which is the non-accelerating wage inflation rate of unemployment). However, they do not mention that a fall of the NAWRU must boost potential output. For example, if there was a zero output gap right before the shock, with unchanged demand a negative output gap develops after a supply shock that boosted potential output. In that case, low or falling inflation will coincide with a negative output gap as expected, and not with a zero or a positive output gap that we see in the data.

Other shocks mentioned, low raw material and oil price inflation, and low import price inflation in general, might perhaps keep domestic inflation low without boosting potential output. But such external price shocks impact headline inflation, while their (secondary) impact on core inflation must be small. Furthermore, in 2017 and 2018 import prices have in fact increased (Figure 1), yet core inflation remained unchanged at 1%, while headline inflation surpassed core inflation.

Therefore, the supply shocks mentioned by Buti *et al* (2019) do not explain the unchanged low core inflation of the past five years, when the estimated output gap improved significantly.

More convincing is their secular stagnation argument and the reference to the experiences of Japan, with persistently low inflation despite massive central bank

interventions (as I have also highlighted in my work assessing the forecast errors of the ECB). If that's the view of the authors, they should initiate a discussion about the ECB's inflation target.

External imbalances and the output gap

Buti *et al* are perfectly right in pointing out that the current account balance reflects various structural factors like demographic shifts. They are also right in highlighting that not only domestic demand but external demand conditions also influence the current account balance. But they do not mention that these factors can be considered in economic modelling and thereby the current account can provide valuable information for measuring the cyclical position of the economy.

Our own potential output estimates consider the factors highlighted by Buti *et al* (see here). In open economies, excess demand could create excess employment and wage/price inflation via the Phillips-curve or excess demand could absorbed by the trade balance, parallel to, or even without, the increase of inflation. Demand conditions of the rest of the world have implications for domestic inflation and trade balance developments. The trade balance is typically the largest component of the current account balance. Due to the structural determinants of the current account balance, in itself it is not a suitable indicator for inferring excess demand. We therefore first estimate the equilibrium level of the current account balance using its structural determinants, based on a large literature estimating such models. Then we use the difference between the actual and the estimated equilibrium current account balance as one indicator that can reflect demand conditions, the other being inflation. We let the data to determine the relative importance of the current account gap and inflation in estimating the output gap.

Our model is not just well-grounded in economic theory, but its output gap estimates have better real-time revision properties than the estimates of the European Commission, the IMF and the OECD. Disregarding open economy considerations is a major handicap of the EU's methodology.

The same 2019 output gap estimate for Germany and Italy

The Commission's estimates for the German and Italian output gap for 2019 is practically identical at -0.25% of potential output (Figure 2). They also estimate that potential growth in Germany was 3-times as fast as in Italy during the past two decades. Buti *et al* rightly point out that there are a number of structural reasons behind the low potential growth of Italy over the past decades, a view shared by many academic researchers, including Adam Tooze. But Buti *et al* do not give an explanation for why the German and Italian output gaps should be the same. There are three issues to discuss.

First, decades-long low potential growth does not say much about the current state of the economy. By looking at several indicators, such as unemployment, inflation, housing price developments, credit growth, etc., Germany looks to have a more positive cyclical

position than Italy.

Second, while Buti *et al* claim that the methods they use have been agreed by the OECD and the IMF, they do not mention that the OECD and IMF have very different assessments of the German and Italian output gaps in 2019 (and in earlier years too). In contrast to the Commission that estimates identical output gaps for Germany and Italy in 2019, the OECD concludes that the Italian output gap is 2.4 percentage points lower than the German output gap in this year (Figure 2), which is a huge difference. The IMF estimates this difference at 1.8 percentage points, still a very large number. I highlighted in my June 2019 post that the Italian treasury's own estimate is very similar to the OECD's estimate. In that post I also showed that the average range between the output gap estimates of the three institutions for those 18 countries for which all estimates are available between 2000 and 2019 is really wide, around 1.7% of potential output. This shows that the three institutions widely disagree not just about the Italian situation, but about most advanced countries.

So who is right, the European Commission, the IMF or the OECD? Nobody knows. Yet the major disagreement between the three international institutions highlight elevated output gap uncertainty. And such uncertainty has important policy implications, given that the output gap estimate is translated into a structural budget balance estimate, which is used to guide fiscal policy in the EU fiscal framework – even if this is not automatic, as Buti *et al* rightly argues.

Third, a possible underestimation of economic slack could have had a negative feedback on the level of potential output in Italy. If in 2009-2010, when the recession started to kick in, the Commission underestimated the level of potential output due to the pro-cyclical nature of potential output estimates (see more on this issue below), then it calculated a smaller negative output gap. This, in turn, suggested a larger structural budget deficit and necessitated more intensive fiscal consolidation. But more fiscal consolidation depressed the economy further. Via hysteresis effects, potential output might have been negatively influenced by the initial mismeasurement of potential output. Hysteresis effects can result from persistently high unemployment lowering labour supply, low investment reducing the capital stock, and low productivity growth due to low innovation activity. While I agree that this argument has merits, in the particular case of Italy the high level of public debt was also a factor that played a role in fiscal consolidation after 2009. Further research is needed to study what role the mis-measured potential output played in the case of Italy.

Missing criticism

There are several important criticisms of the output gap and structural balance methodology of the EU which are not even mentioned by Buti *et al*. For example, none of the major criticisms raised by the recent works of teams from the French and the German economic councils are mentioned, nor my earlier critiques. (The longer German paper is here.)

Huge revisions

Any estimate is subject to revisions as new information arises, which is quite normal: it is better to revise a previous estimate when we have new info. But the revisions of output gaps and structural balances are really huge, around 0.5-1% of GDP, both for the level of these variables as well as for their changes (see my latest calculations here). The benchmark fiscal adjustment requirement codified in EU fiscal rules is 0.5% of GDP. I find it unacceptable that the EU's fiscal framework strongly relies on an indicator (the structural budget balance) for which the typical one-year revision in the estimate is the larger than the required benchmark policy action. While in their article abstract Buti *et al* remain "*mindful of the uncertainty which inevitably surrounds an unobservable variable such as potential output*", they do not discuss the magnitude and the implications of this problem in their article.

Pro-cyclicality

Potential output estimates of the European Commission are bound to be pro-cyclical. The simple reason for that is that neither recessions nor unusual growth accelerations are forecasted. The way potential output is estimated in the EU methodology is that the estimation sample is extended by 5 additional years to the future, with forecasts for the next two years and projections for an additional three years. This 5-year extended sample period is also used to anchor potential output and its components. So when e.g. an unexpected recession comes, actual output falls below the previous forecast and the new forecast level of output will also be at a lower level than the previous forecast. This, in turn, leads to a downward revision of the estimated potential output. The opposite happens in an unexpected growth acceleration.

Regression results reported by Antonio Fatas showed that surprises in GDP growth immediately translated into changes in potential output estimates. By analysing the sample period of 2010-2014, which includes the most acute phase of the euro-area crisis, he finds that even at the shortest, one-year window, a 1% surprise to GDP translates into an immediate 0.65-0.85% change in estimates of potential output. This is indeed a very large revision for a concept that is meant to reflect structural factors. Using a longer time span from 1980-2017, Yvan Guillemette and Thomas Chalaux confirm the pro-cyclicality of potential output estimates. They conclude that a one-percentage point change in actual real GDP growth is associated with a 0.18 percentage point change in potential growth estimate of the European Commission. They also find that the European Commission estimates of potential output are more procyclical than IMF and OECD estimates.

When the level of potential output is downward revised in a recession, the output gap is measured to be smaller and the structural budget deficit to be larger – which, according to EU fiscal rules, will necessitate a faster fiscal consolidation. So the mechanism I described above in the third point for Italy could kick in, whereby an initial

underestimation of the level of potential output could lead to a permanent decline in potential output and thereby validate the original pessimistic estimate, as Antonio Fatas argues.

As far as I know, the European Commission will publish its assessment of pro-cyclicality in the near future – I look forward to reading it.

The implausibility of an inverted U-shape estimated potential output level for countries undergoing significant recessions

Figure 3 shows three vintages of Spanish potential output estimates, along with actual GDP. Clearly, there were very huge revisions in potential output estimates. But the main reason for showing this chart is to highlight a particularly bizarre result: even though GDP started to fall in 2009, the 2013 estimate suggested an inverted U-shape for potential output: continued growth till 2010 and an accelerating decline afterwards, which was expected to level off in 2016. Qualitatively similar estimates were made for other countries suffering from large recessions. How plausible is this inverted U-shape potential output development, which lags actual output developments?

Problems with measuring the potential level of labour, capital and productivity

There are a host of problems with the measurement of the potential level of labour, capital and productivity, as well the NAWRU, see some discussion here. While some modifications have been made to the EU's methodology in the past years, the nature of the problems remains.

Let me just show here two charts, estimates for the Latvian NAWRU and the French total factor productivity made in different years. The conceptual and measurement problems of the potential level of labour and productivity are reflected in large revisions of these estimates.

In 2007, when the Latvian economy was booming with 21% of GDP current account deficit and wage growth accelerated over 30% per year, the unemployment rate fell to 6.1%. Despite some obvious signs of boom and super-fast wage growth, the Commission estimated that the NAWRU was practically equal the actual unemployment rate, which in itself highlights major problems with the NAWRU methodology (Figure 4). And in 2007 the NAWRU was projected to fall further to 3.7% by 2011. After the Latvian GDP contracted sharply and unemployment rose to 19.5% in 2010, the NAWRU estimate was completely revised and it was projected to increase to 22.2% by 2014. Yet defying again earlier forecasts, unemployment started to fall in 2011, and the 2013 NAWRU estimate was again dramatically different. The most recent, 2019 estimate indicates further major revisions. Some part of these revisions were related to methodological changes to NARWU measurement, but the bulk comes from changes in actual unemployment developments, which frequently deviated from earlier forecasts, and the inability the NAWRU method to capture these.

Why Latvia is a small and emerging country, several higher income EU countries were

also subject large NAWRU revisions, such as Denmark, France, the Netherlands, Sweden and the United Kingdom, not to mention other large countries like Italy, Spain and Poland.

Figure 5 shows sizeable revisions to the French total factor productivity estimates made between 2007 and 2019. While again some methodological changes to TFP measurement have also contributed to these revisions, the bulk of the revision comes from unexpected changes in GDP growth. This highlights, again that the EU estimates of potential output depend on economic forecasts and projections, which frequently turn out to be inaccurate.

Complexity

The implications complexity, a further major issue related to the EU fiscal framework as a whole, is not much discussed by Buti *et al* (2019).

In the assessment of several experts, including the French and German economic council members, the multitude of EU fiscal rules and the different emphasis they receive, as well as the huge number of "flexibility" clauses make the whole fiscal framework overly complex, unpredictable, non-transparent and subject to a large degree of discretion. Complexity also makes the fiscal framework difficult to internalise by policymakers, which in turn has contributed to non-compliance.

The European Fiscal Board argues that "*While flexibility is desirable, the growing complexity of the functioning of the SGP has become problematic, raising questions about transparency, equal treatment among countries, and communicability to the public.*"

My colleague Thomas Wieser, who was long in the forefront of the application of the EU's fiscal framework, concludes that "*the present rules-based system of the Stability and Growth Pact (SGP) has become nearly unmanageable due to its complexity, and the constant addition of exceptions, escape clauses, and other factors*".

By analysing the implementation rules set by the Commission and its individual decisions in the preventive arm of the SGP, the European Court of Auditors concluded that the allowed deviations and flexibility clauses erode the target set by the SGP and recommended changes to the implementation rules and the Commission's practice.

All the issues I discussed in the post point to the same direction: a major overhaul of the fiscal framework is needed. To this end, useful suggestions were made by experts from the European Commission, the IMF, the OECD, the French and German economic councils, the European Fiscal Board, and Bruegel. Interestingly, these suggestions have some very similar elements in common by recommending a single target (public debt) and a single operational rule (net expenditure growth).

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