



The ECB is running out of policy space: Can fiscal policy help?

Daniel Gros and Angela Capolongo

Given persistently low inflation, sluggish growth and global uncertainties, the ECB needs to provide even more monetary stimulus. However, with interest rates already negative and strong opposition to further asset purchases (Financial Times, 13 September 2019), it seems to have run out of ammunition. This is why former ECB President Draghi, in his last press conference, called for fiscal policy ‘to do its part’ (Draghi, 2019).

A further argument in favour of fiscal stimulus concerns the strident complaints of German savers about negative rates (Bindseil et al., 2015). An expansionary fiscal policy would presumably drive interest rates higher. According to this line of argument ‘the Germans’ should thus favour a fiscal stimulus in their own interest.

Evaluating the Impact of Fiscal Expansion on inflation and interest rates

To understand whether an expansionary fiscal policy can provide significant support to the ECB (and relief for German savers) a quantitative model is needed. There exist many different macroeconomic models making it possible to study the effect of fiscal policies. We use the mainstream models used by central banks and international institutions. This allows us to test the proposition, made by ECB representatives, that a fiscal expansion would materially help in achieving the inflation target within the type of models used by the ECB itself.

Daniel Gros is Director at CEPS. Angela Capolongo is Researcher in the Economic Policy Unit at CEPS and PhD candidate at ECARES, Université Libre de Bruxelles.

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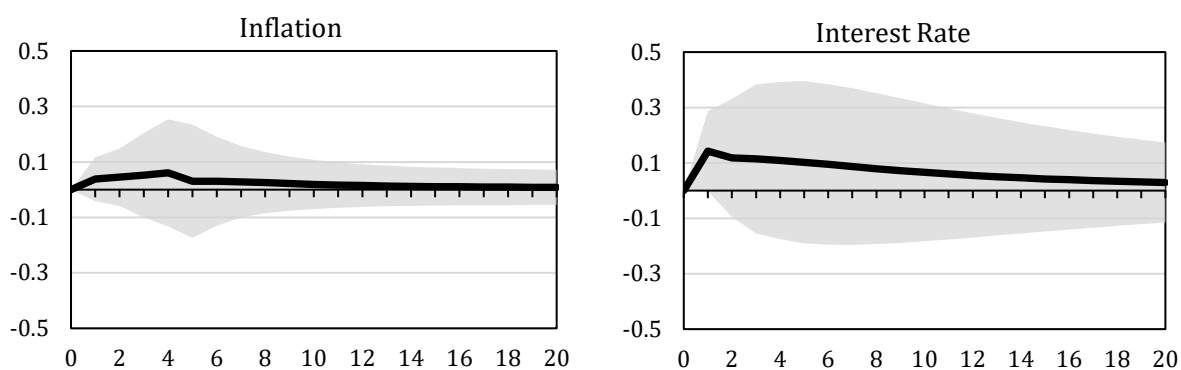
We perform our analysis using the Macroeconomic Model Database (MMB), which is an archive of macroeconomic models based on a common computational platform that provides a way to implement a systematic model comparison (Volker et al., 2006 and Volker et al., 2012). For our purposes, we selected all the models estimated or calibrated for the euro area economy, that allow us to study the impact of a fiscal policy shock (resulting in 10 models to be used). Among them, there are also two two-country (US and EA) models, which are two versions of the old model used by the ECB, the New Area Wide Model (see Table 1 part 3). For each model we accept the model-specific monetary policy rule.

The MMB allows us to compute the impact of a standard fiscal shock, namely a one percent increase in discretionary government expenditures (as a % of GDP). A shock of 1% of GDP would be substantial, given that the average fiscal deficit in the euro area is already running at about 1% of GDP. Such a shock would thus bring the overall deficit, temporarily, to 2% of GDP. Given the limitations of the MMB comparison tool, we limit our analysis to the case of a temporary fiscal impulse without monetary accommodation, meaning that the central bank keeps its interest rate setting rule unchanged.

The message from standard models: A small temporary impact

Figure 1 below reports the average of the models' impulse response functions for inflation and interest rates¹ to a unit fiscal shock. The grey shaded area represents the dispersion among the responses of the different models. A first result is that that the grey area also extends into negative territory. In other words, a zero or even negative impact is always possible, at least according to some models. There is thus considerable model uncertainty.²

Figure 1. Average Impulse response functions to a unit fiscal shock of ten EA models



Note: The black solid line is the average of the impulse response functions of ten different models calibrated or estimated for the euro area (listed in Table 1), and obtained using the Macro Model Data Base. The grey shaded area represents the 95% confidence interval. The horizon period is twenty quarters.

¹ The fiscal expansion would also increase output, but we are interested here only in the question how much a fiscal impulse could help the ECB achieving its inflation target and give German savers higher interest rates.

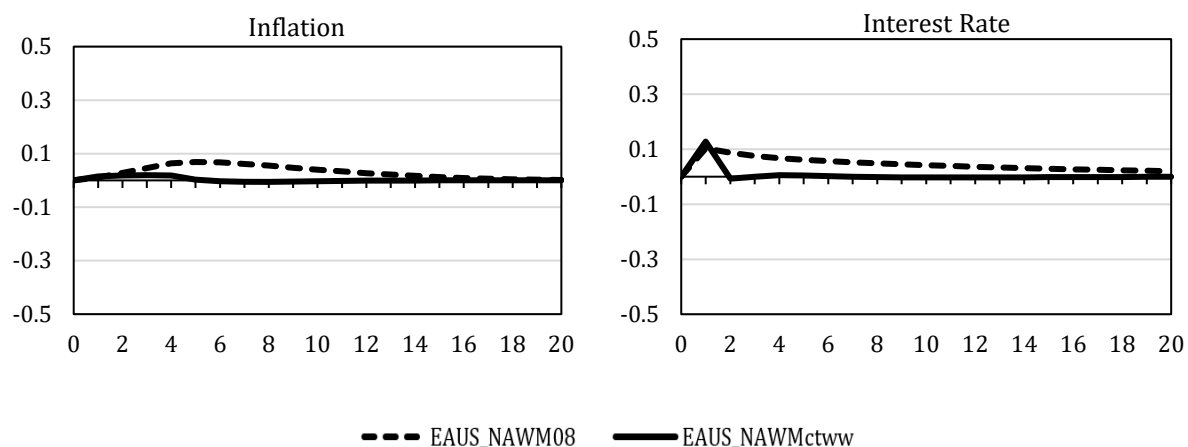
The highest impact of a fiscal policy shock on both interest rate and inflation is obtained by using the European Commission QUEST III model, that is designed to include a detailed government sector. The smallest impact on inflation and the interest rate is found by using two recent models mainly built for analysing the unconventional monetary policy instrument, i.e. Christoffel et al. (2009) and Gelain (2010).

As our purpose is to obtain a view of the mainstream we concentrate on the average of the different results. The 'average model' result suggests that the magnitude of the (temporary) boost to inflation and interest rate coming from a fiscal expansion is positive, but quite limited.

Figure 1 shows that, one period after the fiscal shock, the average peak impact on inflation is only about 4 basis points. A fiscal expansion would thus have essentially no significant impact on inflation. Fiscal policy 'doing its part' cannot bring inflation closer to 2%.

For the interest rate, the average impact would be 14 basis points, thus somewhat higher than for inflation, but even this is rather modest. If the aim of the operation were to allow the ECB to exit its negative rates, one would thus need a fiscal expansion of 3-4% of GDP, just to lift the interest rates, for a short period of time, above zero (the deposit rate is now -50 basis points; 4 times the peak impact of 14 bps would be 56 bps.).

Figure 2. Impulse response functions to a unit fiscal shock of two NAWM models



Note: The figure represents the impulse response functions of inflation and interest rate to a unit fiscal shock of two versions of the New Area Wide model. The dashed line is the response of the model by Coenen et al. (2008), and the solid line is the response of the model by Cogan et al. (2013). The impulse responses are obtained using the Macro Model Data Base. The horizon period is twenty quarters.

Concentrating only on the two versions of the New Area Wide Model, which is the one used by the ECB, we obtain broadly similar results as shown in Figure 2 below. In particular, the impact on inflation is again negligible and for the interest rate, the impact one quarter after the shock is similar for both models and, at about 10 basis points, close to the average response of Figure 1.

Moreover, the small effects mentioned above refer to peak, i.e. temporary impacts. Not surprisingly, given the temporary nature of the assumed fiscal shock, the impact is also temporary. On average, the interest rate increases in the same quarter as the shock and then starts decreasing. Similarly, inflation stays above baseline for one year and then it falls back.

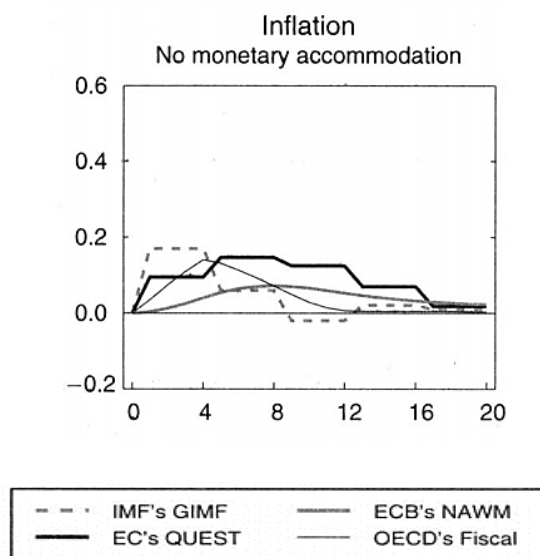
This should have been self-evident from the outset: a temporary boost from fiscal policy cannot solve the fundamental problem of the ECB, namely that longer term inflation expectations are so low. The inflation expectations over the next 10 years incorporated in so-called inflation swaps are now below 1%. And the inflation expected in five years, for the following five years is below 1.2%. The problem is thus not a temporary boost to inflation, but a sustained one. A temporary fiscal expansion cannot provide this.

It is an open question whether a permanent fiscal expansion could also provide a permanent boost to inflation. The government of Japan has run deficits of 4-5% of GDP in recent decades. But inflation has remained close to zero for most of the time. Moreover, running higher fiscal deficits for a decade would lead to higher debt levels and thus have a host of other negative side-effects. At any rate it would be highly inappropriate for the ECB to call for a policy which is clearly incompatible with the over-arching fiscal rules of the euro area.

Robustness

We have concentrated on the results from standard macroeconomic models, of the type used by the ECB itself to calibrate its own policy. The overall thrust of our results is confirmed by a comparative study made by seventeen authors (Coenen et al., 2012) simulating a fiscal shock in seven models heavily used by policymaking institutions, i.e. the IMF, the Federal Reserve, the ECB, the Bank of Canada, the OECD and the European Commission. Figure 3 reports the findings of these authors concerning the response of inflation in Europe to a two-year increase in government consumption of 1% of GDP if there is no monetary accommodation, i.e. if the ECB keeps its interest rate setting rule unchanged. The highest increase on impact, among the four models designed for the European economy, is slightly lower than 0.2% for the IMF model. This would mean that a very large fiscal expansion (of 4% of GDP) would be needed in order to lift inflation temporarily from the present 1% to 1.8%.

Figure 1. Effect on Inflation of two-year increase in government expenditure in Europe



Source: Coenen et al. (2012).

Conclusion

The result that a fiscal expansion is unlikely to have a strong impact on inflation should not surprise, given the large body of research finding that the Phillips curve has flattened (e.g. Blanchard et al., 2015). Lane (2019) also finds estimates of the Philips curve across various measures of economic slack of between 0.10 to 0.15, which is just slightly above the average peak impact of 0.08 found here if we assume that the average multiplier (reaction of output to a fiscal expansion) is close to 1.

The overall conclusion is clear: one would need a very large fiscal deficit to obtain even a modest impact on inflation or interest rates. Fiscal policy alone cannot save the ECB.

Table 1. List of models used in the analysis, available in Macro Model Database Version 3.0

NK_CKL09	Christoffel et al. (2009)
NK_GHP16	Gnocci and Pappa (2016)
EA_SW03	Smets and Wouters (2003)
EA_QUEST3	QUEST III Euro Area Model of the DG-ECFIN EU, Ratto et al. (2009)
EA_CKL09	Christoffel et al. (2009)
EA_GE10	Gelain (2010)
EA_PV16	Priftis and Vogel (2016)
EA_PV17	Priftis and Vogel (2017)
EAUS_NAWM08	Coenen et al. (2008), New Area Wide model of Euro Area and USA
EAUS_NAWMctww	Cogan et al. (2013)

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