Effects of the Fiscal Policy Mix on Long-Run Growth: Evidence from the EU

Ilias Kostarakos (email: ilias.kostarakos@esri.ie)  
(Economic and Social Research Institute and Trinity College Dublin)  
Petros Varthalitis (email: petros.varthalitis@esri.ie)  
(Economic and Social Research Institute and Trinity College Dublin)

Extended Abstract

In contrast to the neoclassical growth theory approach, endogenous growth models (e.g. Barro (1990), Mendoza et al (1997)) predict that fiscal policy can exert an impact on long-run growth rates through appropriate changes in the policy mix. Given the renewed interest in the effects of fiscal policy in the aftermath of the global financial crisis and the mixed results that have been documented in the literature, testing the predictions of the endogenous growth model in light of recent developments in panel econometrics techniques, provides an insight into the role of the fiscal policy mix on long-run growth.

The aim of this paper is to examine whether fiscal policy can exert permanent, long-run effects on growth rates, that is, whether changes in the composition of the policy mix (in the different types of taxation and forms of government expenditure) can affect GDP growth rates in the long-run. In particular, we want to examine what were the effects of the fiscal policy on growth in the EU, during the global financial crisis of 2008 as well as during the recovery period in the aftermath of the crisis.

In order to capture the effects of the crisis and its impacts on the effectiveness of the fiscal policy mix, we adopt the unobserved common factors approach developed by Pesaran (2006). This approach assumes that both the error term and the covariates contain unobserved common factors which have a different impact on each country. These factors can be either strong, representing large, global shocks like the financial crisis, or weak, such as spillovers that affect a smaller number of countries (e.g. how recent developments in the Southern periphery of the EU affect the Italian and the Greek economy).

Our sample consists of all EU countries (with the exception of Croatia, due to limited data availability) and covers the period 1995-2016. The panel is unbalanced and is created using data from Eurostat, in order to ensure consistency and homogeneity in the sample. As regards the fiscal variables, we follow the classification of fiscal instruments in Kneller et al (1999) and Bleaney et al (2001) and we assign the various COFOG expenditures categories into productive and non-productive, while tax revenue categories are classified as distortionary and non-distortionary (mainly, consumption) taxes. Moreover, following Mendoza et al (1994) we use effective tax rates as tax instruments, as these closely correspond to the tax rates used in most theoretical models. In particular, we use a recently developed database of updated effective tax rate estimates for consumption, labour, capital and corporate income for the EU countries (see Kostarakos and Varthalitis (2019)).

The first part of the empirical analysis consists of testing for the presence of cross-sectional dependence across countries in the panel, using the weak cross-sectional dependence test developed by Pesaran (2015).

In order to test the predictions of the endogenous growth model, we first focus on the time series properties of the panel. Jones (1995) argued that for the predictions of the model to hold, permanent shifts in the policy variables should lead to permanent shifts in the growth
rate of GDP. If such a permanent shift is not observed then either the policy variables do not exhibit permanent shifts or there are opposite (and possibly offsetting) movements in other variables, which counteract the movement of the policy variables. We test Jones’ argument by performing the CIPS panel unit root test by Pesaran (2007) and by testing for the existence of a long-run equilibrium relationship utilizing the LM bootstrap cointegration test of Westerlund and Edgerton (2007).

Regarding the estimation of the long-run parameters, we compare and contrast estimates from a number of different empirical specifications. Apart from the standard two-way Fixed Effects estimator, we contribute to the literature by implementing the Common Correlated Effects estimators introduced in Pesaran (2006) – that is, the Pooled and the Mean Group estimators.

As regards the empirical methodology an important element of the analysis, which is crucial for the appropriate interpretation of the results, is that we take into account the government budget constraint identity and the implicit financing assumption. As demonstrated first in Kneller et al. (1999), in order to avoid multicollinearity, one of the elements of the budget constraint has to be omitted from the empirical specification; the excluded fiscal variable plays the role of the implicit financing element which adjusts in order to finance the increases in the other fiscal variables.

Our baseline estimates indicate that not taking into account the effects of cross-sectional dependence leads to incorrect inferences regarding the impact of the fiscal policy mix on growth. In particular, when we use estimators that accommodate cross-sectional dependence, our results appear to give strong support to the predictions of the Barro-type endogenous growth models; fiscal policy has strong effects on long-run growth (to the extent captured by our sample). In particular, productive government expenditures have the expected positive impact on growth. Second, distortionary taxation exerts a quite strong negative effect. Finally, the budget surplus variable appears to have large and positive effects. Overall, however, we observe a negative effect of fiscal policy on long-run growth, due to the strong negative impact of distortionary taxation.

References