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DISCRETIONARY FISCAL POLICY IN THE EURO AREA: PAST, PRESENT AND FUTURE

by Francesco Caprioli*, Marzia Romanelli* and Pietro Tommasino*

Abstract

The depth and the length of the recent crisis prompted a more positive re-assessment of a countercyclical fiscal stance, especially in the euro area. Against this background, we look at discretionary fiscal policy in the euro area from three different perspectives. First, we provide evidence that the discretionary fiscal policy in euro-area countries has been mostly a-cyclical even if our estimates suggest that using it counter-cyclically could have been useful, particularly during the crisis. Second, focusing on the short-run – i.e. taking as given the economic and institutional constraints that currently make a significant fiscal expansion quite unrealistic in Europe – we discuss some budget-neutral proposals aimed at fostering economic growth. Finally, taking a more forward-looking perspective, we discuss the issue of the appropriate fiscal stance for the euro area as a whole, and argue that the advantages of having a coordinated approach (e.g. through a centralized fiscal capacity) can be substantial.

JEL Classification: E62, H87.
Keywords: discretionary fiscal policy; automatic stabilizers; European Monetary Union.

Contents

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1. INTRODUCTION[1]

Economic thinking about the role of fiscal policy in smoothing cyclical fluctuations has evolved over time. In the 1990s, when the EMU project was launched, most economists would have agreed with what Furman (2016) calls the Old View, i.e. the idea that the business cycle should be mainly stabilized by monetary policy and automatic fiscal stabilizers, while fiscal policy-makers should focus on redistribution and long-term efficiency issues (see also Krugman, 2005; Blinder, 2006).

Several arguments supported this view. First, much emphasis was put on the crowding-out effects of a budget expansion on private spending. The so-called Ricardian equivalence (Barro, 1974) suggests that rational agents – understanding that a fiscal expansion today requires a fiscal tightening in the future to comply with the government's inter-temporal budget constraint – are likely to offset the expansionary impact on aggregate demand by increasing their private savings. In some circumstances, increasing the deficit can even have contractionary effects, as agents might be led to question public debt sustainability and therefore demand higher sovereign risk premia (Giavazzi and Pagano, 1990).

Second, it is undeniable that discretionary fiscal policy is characterized by decision and implementation lags that are longer than for monetary policy.

Third, the then-burgeoning political economy literature highlighted the fact that fiscal policy decisions are taken by politicians which might be more interested in their short-term electoral effects than in their long-run consequences. In the extreme case, given the inter-temporal government budget constraint, profligate fiscal policy actions could constitute a risk for monetary policy independence, making inflation a function of the fiscal stance (Sargent and Wallace, 1981).

Applied to the EU context, the Old View translated into an institutional architecture featuring an independent central bank whose aim is price stability and several national fiscal policy authorities whose medium-term objective is a substantially balanced budget. In this way, the automatic stabilizers – to which most of the aforementioned critiques do not apply, in that they are timely, predictable and not subject to the vagaries of the political process – could operate freely, without jeopardizing fiscal solvency (Taylor, 2000).

However, the depth and the length of the recent economic and financial crisis, the risk of "hysteresis" effects, and policy interest rates near the zero lower bound, have brought renewed attention to a more active role of discretionary fiscal policy, both in academia (see e.g. Christiano et al., 2011; Auerbach and Gorodnichenko, 2012; DeLong and Summers, 2012) and among policy-makers.

An example of this renewed attention is the G20 Leaders' Communiqué at the Chengdu Summit in 2016: "*Monetary policy will continue to support economic activity and ensure price stability, consistent with central banks' mandates, but monetary policy alone cannot lead to balanced growth. Underscoring the essential role of structural reforms, we emphasise that our fiscal strategies are equally important to supporting our common growth objectives*".

[1] The views expressed in this paper are those of the authors and do not necessarily reflect those of Banca d'Italia. We would like to thank Massimiliano Pisani and participants to the 19th Banca d'Italia Workshop on Public Finance for useful comments. The usual disclaimers apply.

Especially in the euro area, given its still fragile economic recovery and a monetary policy stance that is already extremely accommodative, the advisability of supporting structural policies and monetary stimulus with a more expansionary fiscal policy is being intensely discussed.

In the speech delivered in Jackson Hole in 2014, Mario Draghi, the President of the ECB, remarked that "*it would be helpful for the overall stance of policy if fiscal policy could play a greater role alongside monetary policy, and I believe there is scope for this, while taking into account our specific initial conditions and legal constraints*".[2]

According to the remarks made by the President of the European Commission, Jean-Claude Juncker, at the start of the 2017 European Semester, the priority for the European Union is "*recommending a positive fiscal stance (for the euro area), to support the recovery and the monetary policy of the European Central Bank, which should not bear the burden alone. Every member state should play its part: those that can afford it need to invest more, while those which have less fiscal space should pursue reforms and growth-friendly fiscal consolidation"*.

Indeed, the "two pack legislation" that entered into force in 2013 explicitly states that *"the Commission shall make an overall assessment of the budgetary situation and prospects in the euro area as a whole. (...) [The assessment] shall also, as appropriate, outline measures to reinforce the coordination of budgetary and macroeconomic policy at the euro-area level. (...) [It] shall be made public and shall be taken into account in the annual general guidance to Member States issued by the Commission"*. The Commission also established, at the end of 2015, an independent advisory European Fiscal Board, which, among other tasks, *"will provide to the Commission an evaluation of (...) the appropriateness of the actual fiscal stance at euro area and national level (...) and advise the Commission on the prospective fiscal stance appropriate for the euro area as a whole based on an economic judgment. [The European Fiscal Board] may advise the Commission on the appropriate national fiscal stances that are consistent with its advice on the aggregate fiscal stance of the euro area within the rules of the Stability and Growth Pact"*.

Of course, we are quite far from knowing what the appropriate fiscal stance for the euro area as a whole is. For example, the European Commission (2016b), using a methodology in which there is a trade-off between the two objectives of short-run stabilization and long-run public finance sustainability, estimated that "*a fiscal expansion of up to 0.5% of GDP in 2017*" would be more appropriate than the projected stance (which is broadly neutral). However, Bankowski and Ferdinandusse (2017), using a similar methodology, conclude that the projected euro area fiscal stance for 2017 "*fulfills the stabilization objective but deviates slightly from the range implied by the sustainability objective*", i.e. it is too expansionary. The IMF (2016) is somewhat in the middle, as it suggests, for the same year, that aggregate fiscal policy in the euro area "*should aim for a broadly neutral stance*".

Furthermore, even if the need for a more expansionary fiscal policy at euro-area level were uncontroversial, it is unlikely it would be implemented, given the current institutional framework: low-growth countries are also those which have no fiscal space, while policymakers in high-growth

[2] The academic literature has also recognized the need for monetary and fiscal policy coordination in a monetary union. Most works emphasize the role of nominal rigidities and fiscal externalities. See for example Dixit and Lambertini (2003), Beetsma and Jensen, (2005), Kirsanova et al. (2007), and Galì and Monacelli (2008).

countries, which enjoy sufficient fiscal margins, do not internalize the beneficial effects of a domestic fiscal expansion on the other member states.

Against this background, in this paper we look at discretionary fiscal policy in the euro area from three different viewpoints. Looking backward (Section 2), we provide evidence that the fiscal stance in the euro area has been mostly a-cyclical, as suggested by the Old View, and that the role of absorbing macroeconomic shocks has been left to automatic stabilizers, even if our estimates – contrary to the Old View – suggest that discretionary fiscal policy could have been a useful stabilizing tool especially during the crisis. Looking at the present (Section 3) – i.e. taking as given the economic and institutional constraints that currently make a significant fiscal expansion in Europe quite unrealistic – we evaluate some budget-neutral proposals to foster economic growth. Finally, taking a more forward-looking perspective (Section 4), we assess the effects of a coordinated fiscal expansion at euro-area level vis-à-vis a common adverse shock. We show that in exceptional circumstances, i.e. when monetary policy is constrained by the zero lower bound and there is a lot of slack in the economy, the advantages of having a cross-country coordinated approach to discretionary fiscal policy (e.g. through a centralized fiscal capacity) can be quite significant.

2. THE PAST

2.1) Did euro area countries use discretionary fiscal policy?

It is important to keep distinct two different fiscal policy components: automatic stabilizers (i.e. changes in revenues and spending purely due to changes in economic cycles, unrelated to changes in the legislation) and discretionary fiscal policy (the change in the budget balance due to changes in the fiscal legislation). The latter (which we interchangeably also call "fiscal stance") is the focus of our paper.

The literature on the cyclical response of discretionary fiscal policy is quite large and relatively inconclusive, also because contributions differ along many dimensions, such as the choice of the dependent variable, model specification, the data vintage (ex post or real time) and the estimation method (see Golinelli and Momigliano, 2009).

In this Section, we follow the majority of the literature by measuring the fiscal stance with the change in the cyclically-adjusted primary balance (CAPB)as a percentage of GDP[3]. We estimate three nested empirical models. In the first – the most parsimonious – specification, the fiscal stance is regressed on the output gap only, as proposed by Taylor (2000); in the second specification, the public-debt-to-GDP ratio is added as a further control, to capture the idea that fiscal authorities aim not only at stabilizing the economy but also at preserving public finance sustainability; finally, in the third specification (which is often used in the literature, starting from the seminal contribution

[3] Specifically, we consider the cyclically-adjusted primary deficit, so that a positive value of the variable represents a fiscal loosening.

by Galì and Perotti, 2003[4]), we add the lagged value of the dependent variable to allow for the possibility of autocorrelation of budgetary decisions:

$$\Delta CAPB_{i,t}=\alpha_i+\beta GAP_{i,t}+\gamma\ Debt_{i,t-1}+\delta\ CAPB_{i,t-1}\ +\varepsilon_{i,t} \qquad (1)$$

The data are annual, taken from the European Commission's AMECO database, and cover the period from 1996 to 2016. The countries considered are Austria, Finland, France, Germany, Greece, Ireland, Italy, Spain, Portugal and the Netherlands.

We split the sample into two sub-periods, the first one covering the years from the start of the EMU (1999) to 2007 and the second one from 2008 (the year of the Lehman default) to 2016, in order to understand whether the fiscal policy reaction function has changed since the outbreak of the financial crisis. We also distinguish between two groups of countries, the "core" countries (Austria, Finland, France, Germany and the Netherlands) and the "peripheral" ones (Greece, Italy, Ireland, Portugal and Spain); this appears a sensible middle ground between the two polar choices of estimating equation (1) country by country (which is not possible given the short time dimension of our sample) and pooling together all the countries (which appears problematic given their very different fiscal fundamentals before the crisis and economic developments thereafter).

Finally, we use both a standard OLS fixed effect estimator and – to take into account possible reverse causation issues – an IV fixed effect estimator, where the output gap is instrumented with (i) the average contemporaneous output gap of all other countries and (ii) its own lagged output gap. All our estimates are to be taken with a pinch of salt: first of all, the IV estimates rely on the assumption that other countries' output gaps influence domestic fiscal stance only via the cyclical economic conditions and not due to some form of fiscal coordination; second, it is well known that the fixed effect estimator provides inconsistent estimates in dynamic models.[5]

Table 1 shows the estimates of the elasticity of the fiscal stance in the three specifications.[6] Interestingly, if one looks at the pre-crisis sample period, the estimates broadly confirm a point already made, among others, by Galì and Perotti (2003), Golinelli and Momigliano (2009), and Bénétrix and Lane (2013), namely that since the inception of the EMU the fiscal stance in euro area countries has been substantially a-cyclical.

Things are slightly more nuanced if one considers the second sub-period. Indeed, while discretionary fiscal policy in periphery countries appears still a-cyclical in most estimates, in core countries there are more evident signs of counter-cyclicality.

[4] See e.g. Fatas and Mihov (2010, 2012), or Bénétrix and Lane (2013).

[5] To partially address this issue, we also computed the GMM Arellano-Bond estimator, and found that the results are qualitatively similar (results available upon request). However, it should be reminded that the performance of this estimator in small samples is not perfectly understood.

[6] In the estimations à la Galì-Perotti, we address the well-known endogeneity issue by resorting to the Arellano-Bond GMM estimator.

Table 1. Fiscal reaction functions

	CORE COUNTRIES								
	Whole period			**Pre-crisis**			**Post-crisis**		
Output gap	-0,04	-0,13	-0,22 ***	0,03	0,06	-0,09	-0,15	-0,21 **	-0,22 ***
Public Debt/GDP	no	yes	yes	no	yes	yes	no	yes	yes
CAPB(t-1)	no	no	yes	no	no	yes	no	no	yes
Est. method	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Output gap	0,07	-0,16	-0,35 ***	0,03	0,05	-0,18	0,12	-0,15	-0,24 **
Public Debt/GDP	no	yes	yes	no	yes	yes	no	yes	yes
CAPB(t-1)	no	no	yes	no	no	yes	no	no	yes
Est. method	IV	IV	IV	IV	IV	IV	IV	IV	IV
	PERIPHERY COUNTRIES								
	Whole period			**Pre-crisis**			**Post-crisis**		
Output gap	0,16	0,00	-0,06	0,23	0,25	0,27	0,22	-0,01	-0,01
Public Debt/GDP	no	yes	yes	no	yes	yes	no	yes	yes
CAPB(t-1)	no	no	yes	no	no	yes	no	no	yes
Est. method	OLS	OLS	OLS	OLS	OLS	GMM	OLS	OLS	OLS
Output gap	0,15	-0,20	-0,24	0,15	0,14	0,01	0,20	-0,44	-0,48 *
Public Debt/GDP	no	yes	yes	no	yes	yes	no	yes	yes
CAPB(t-1)	no	no	yes	no	no	yes	no	no	yes
Est. method	IV	IV	IV	IV	IV	IV	IV	IV	IV

NOTE: Dependent variable: ΔCAPB/GDP. Core countries: Germany, France, Netherlands, Austria, Finland; Periphery: Greece, Spain, Italy, Ireland, Portugal. Pre-crisis period: 1999-2007; Crisis Period: 2008-2016. All specifications include country fixed effects. ***: significant at 1%; **: significant at 5%; *: significant at 10% (Robust std errors). Instruments: for each country, the contemporaneous output gap is instrumented with the average contemporaneous output gap of all other countries and its own output gap.

2.2) Would discretionary fiscal policy have been useful? A VAR analysis

In the previous Section we found that in euro area countries the fiscal stance is not much influenced by the economic cycle. In this Section, we focus on the opposite link, i.e. on how fiscal policy (both its discretionary and its automatic components) influences the economic cycle.

Although estimates lie on a very wide range, depending on the sample period and the identification scheme used, most empirical literature finds positive short-run effects of fiscal policy on the macro-economy of EU countries (see e.g. Canova and Pappa, 2007, Burriel et al., 2010, Beetsma et al. 2008). Furthermore, Callegari et al. (2012) find that, at euro-area level, these positive effects are stronger and much more permanent in recessions than in expansions.

To better understand the two-way link between the public budget and the economic cycle, we estimate a standard panel VAR model:[7]

$$Y_{i,t}=A_i+BY_{i,t-1}+\varepsilon_{i,t} \quad (2)$$

A_i is a vector of fixed effects; $\varepsilon_{i,t}$ collects the reduced-form residuals, which have zero mean and variance-covariance matrix Ω.

The vector $Y_{i,t}$ includes the following variables: real GDP growth, inflation (namely, the growth rate of the GDP deflator), automatic stabilizers,[8] the ratio of general government interest expenses to GDP, the fiscal stance (defined in the previous section as the change in the cyclically adjusted primary deficit), and the public debt-to-GDP ratio.[9] All the variables are expressed as deviation from a linear trend.

The model is estimated in a Bayesian way, with Minnesota priors. Structural shocks are identified using a Choleski decomposition with the variables ordered as above. Such ordering implies that both the automatic and the discretionary components of the budget balance are not able to exert a simultaneous impact on real GDP growth, for example because of implementation and legislative lags.[10] Furthermore, ordering the discretionary component of fiscal policy after automatic stabilizers and interest payments implies that the fiscal authority chooses its discretionary measures taking into account the other two elements of the budget. Finally, the public debt ratio is ordered last since, by construction, it reacts to movements in all the other variables, both macro and fiscal. As in the previous section, we use annual data taken from the European Commission's AMECO database.[11]

As already discussed, in the euro area automatic stabilizers represent the main fiscal tool for macroeconomic stabilization. In order to evaluate their effectiveness, we compare the dynamic effects of a negative shock to real growth in our model with those in a counterfactual economy – analogous to our benchmark except for the fact that automatic stabilizers are assumed not to respond at all. The solid lines in Figure 1 report the medians of the benchmark simulation (in red) and of the alternative one in which stabilizers are not active (in blue). In the benchmark simulation, the decline in the GDP growth triggers a response of the automatic stabilizers which lasts for six periods. Notwithstanding the slightly negative response of the fiscal stance, which partially attenuates the overall reaction of the budget, on impact the public-debt-to-GDP ratio increases, not only because of the denominator effect, but also because inflation goes down and the interest

[7] The literature about the macroeconomic effects of fiscal policy is large, and a comprehensive survey goes definitely beyond the scope of this paper. Among the most relevant references, there are Blanchard and Perotti (2002), Perotti (2004), Fatás and Mihov (2001), Mountford and Uhlig (2002), Edelberg et al. (1999).

[8] The automatic stabilizers are defined as the cyclical component of the primary net borrowing of the general government (as a percentage of GDP).

[9] Overall, this specification is similar to that employed in Caprioli and Momigliano (2011), with the difference that here we split the budget between discretionary and automatic components, rather than into revenue and expenditures.

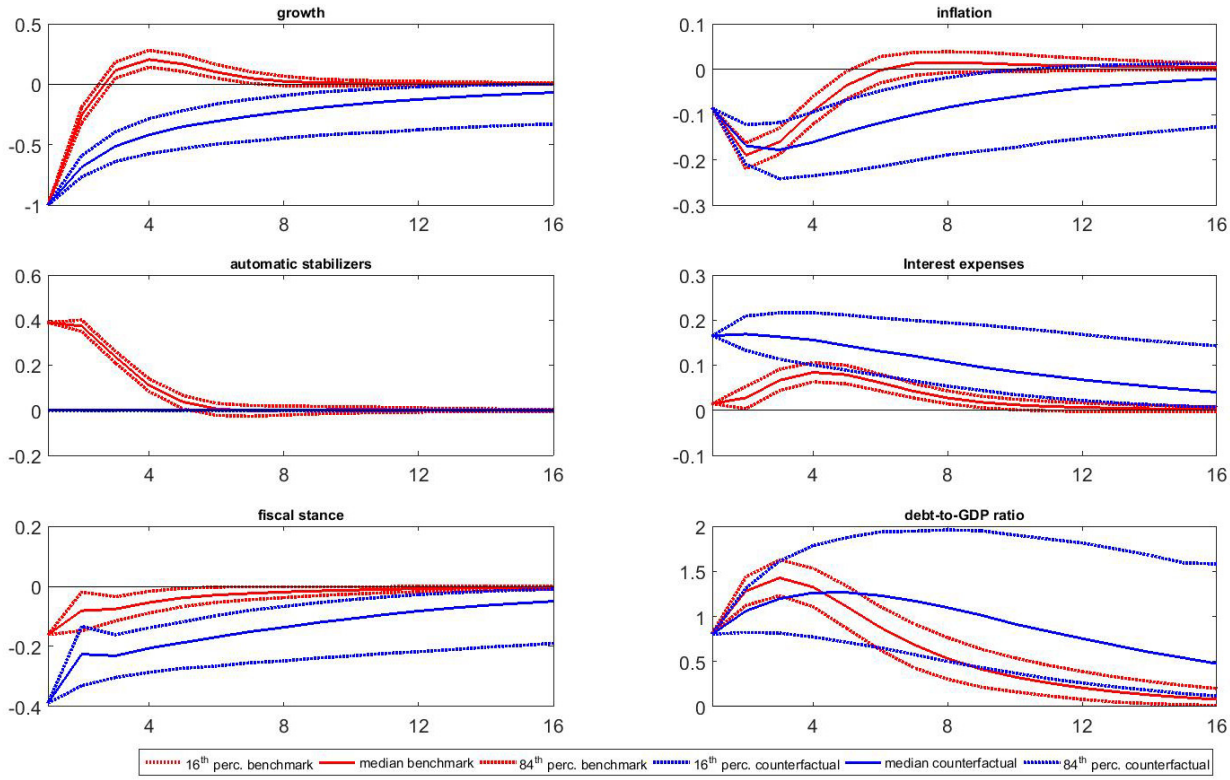
[10] The assumption of implementation lags in fiscal policy, natural with quarterly data, is questionable with annual data. However, we checked that ordering the fiscal stance as the most exogenous variable leads to a very similar pattern in terms of the effects of the fiscal stance on the economic growth.

[11] The Countries included are the same considered in Section 2 plus Belgium. The sample period is 1996-2016.

expenses over GDP goes up. However, the increase of public debt is fully reabsorbed at the end of our simulation horizon.

The effect of the automatic stabilizers in reducing the persistence of the recession is quite relevant. In the counterfactual simulation, the recession is clearly more long-lasting, going back to the pre-shock level after 10 periods rather than in 2, as in the benchmark scenario. Without automatic stabilizer, the increase of the public debt-to-GDP ratio is lower on impact but it becomes higher after a few periods, due to a lower denominator.

Figure 1. Impulse Response Functions (IRF) associated to a negative shock to real growth (with and without automatic stabilizers)



Discretionary fiscal policy, however, is also effective. Figure 2 shows the impulse response function of the macroeconomic and fiscal variables to a 1% expansionary shock to the fiscal stance.

The Figure highlights that the fiscal expansion is quite short-lived. This notwithstanding, the response of the real GDP growth is positive after the second period, with a peak effect equal to around 0.15, and statistically significant, broadly in line with the previous literature. Because of this increase, automatic stabilizers move in the opposite direction. The response of inflation basically mimics that of real GDP growth. On impact, the public debt-to-GDP ratio increases but only marginally. The response of the interest expenditure to GDP is zero (the slight decline observed in the second period is entirely due to the denominator dynamics).

Our model assumes no dynamic heterogeneity across countries (while the constant heterogeneities across variables and/or units are instead captured through the fixed effects vector) and parameter stability over time. We know that this might be problematic (see e.g. Favero et al., 2011) and, to

analyze better the stability across countries and over time of the impact of a discretionary fiscal expansion on the economic growth, we proceed as in Section 2 and re-estimate our VAR considering separately the core and the peripheral countries, and looking separately at the pre-crisis and at the crisis period.

It turns out that the effects of a change in the fiscal stance in the core countries (Figure 3, in blue) are not statistically different from those in the periphery (Figure 3, in blue), even if the median response is somewhat weaker. More importantly, the effect is significantly higher in the second sub-period than in the first one (Figure 4). This supports the view that in "exceptional circumstances", as in the Great Recession, discretionary fiscal policy can have an important counter-cyclical role.

Figure 2. IRF associated to a 1% discretionary fiscal expansion

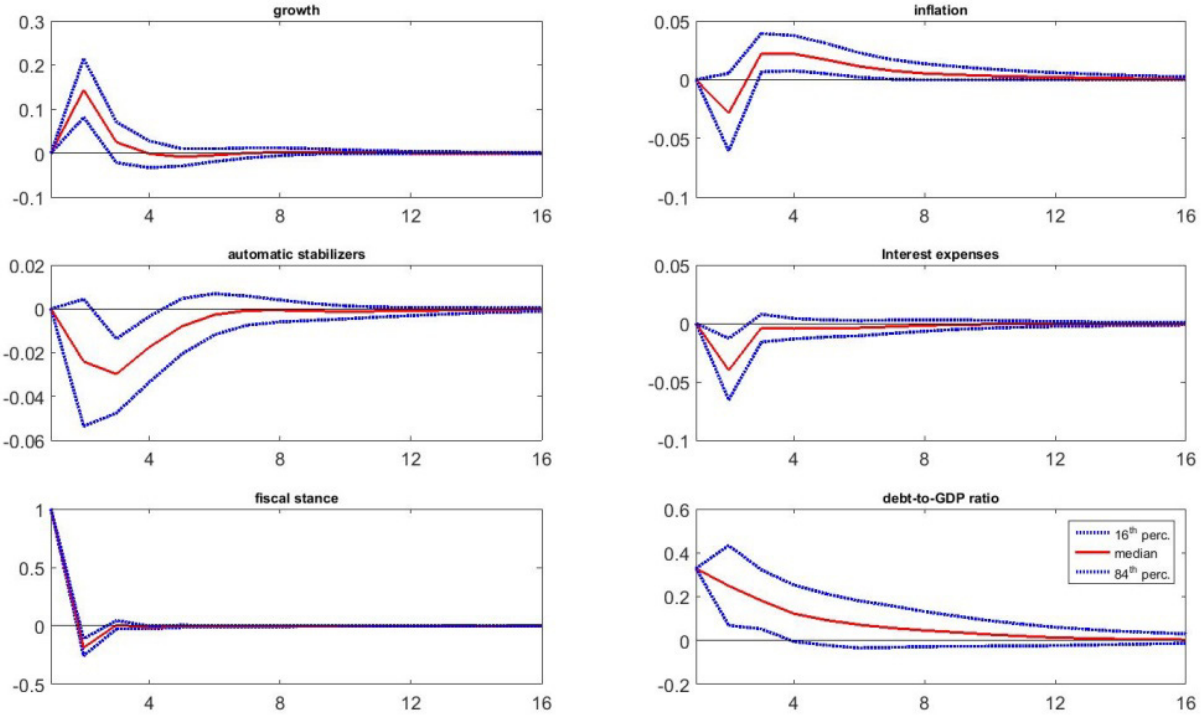


Figure 3. Response of real GDP to an expansionary fiscal shock in the EA core and periphery
(median and confidence band)

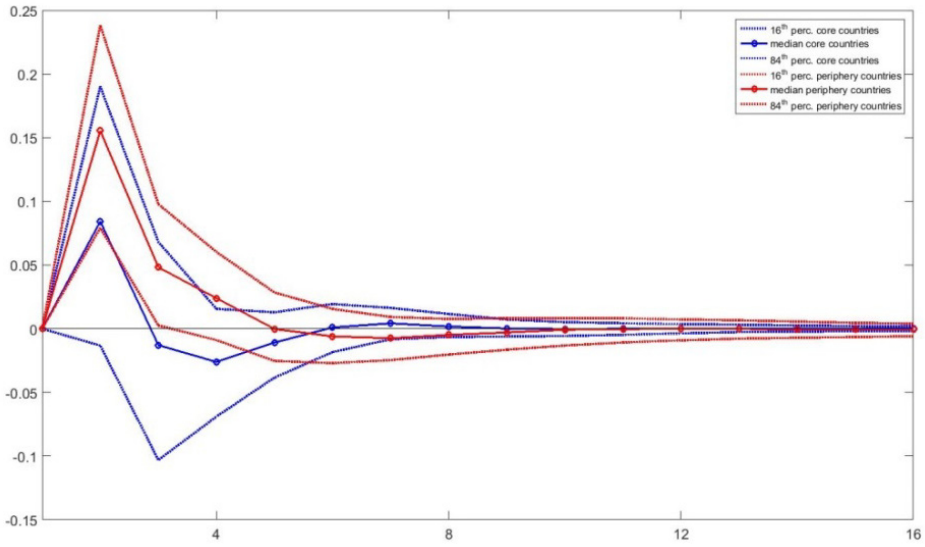
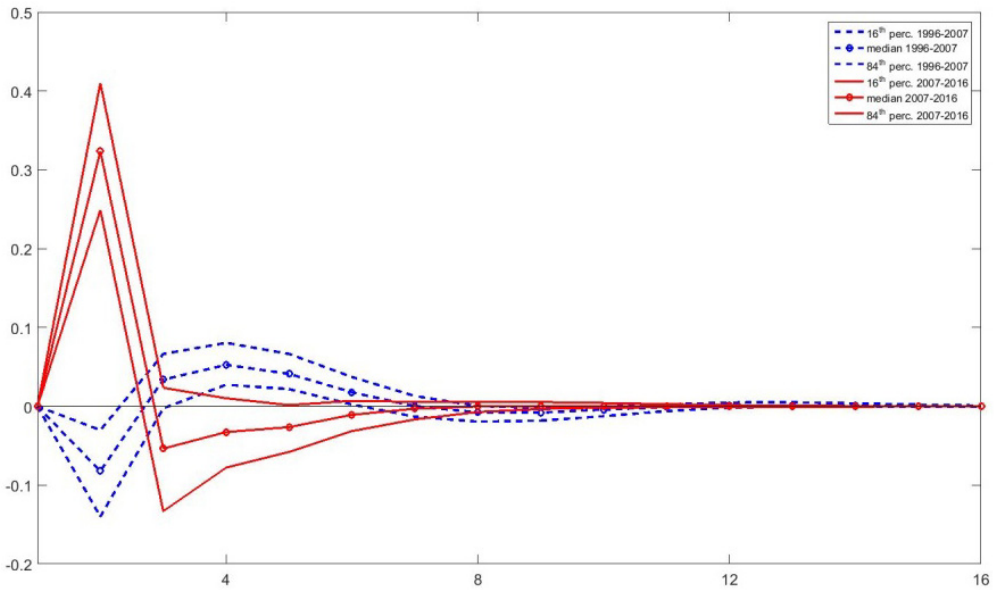


Figure 4. Response of real GDP to an expansionary fiscal shock before and after the EMU crisis
(median and confidence band)



The greater impact of the discretionary fiscal policy during the economic and financial crisis is confirmed if we consider only the spending or the revenue component of the fiscal stance. Indeed, it turns out that the effects associated to higher government spending (measured by the sum of final consumption expenditure and gross fixed capital formation) and those associated to higher net revenue (constructed by adding to the primary balance adjusted for the cyclical component the measure of government spending) are stronger in the second subsample (see Figure 5 and 6, respectively).

Figure 5. Response of real GDP to a positive spending shock before and after the EMU crisis

(median and confidence band)

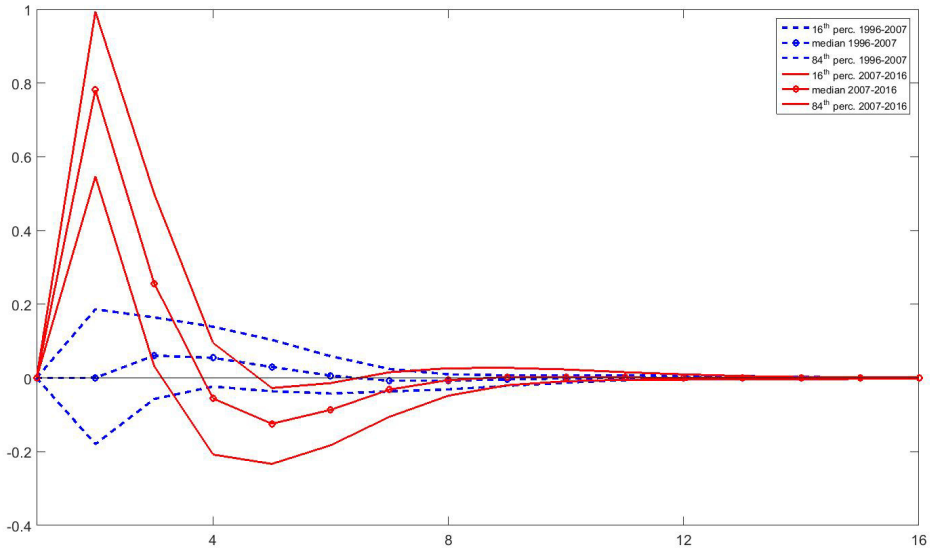
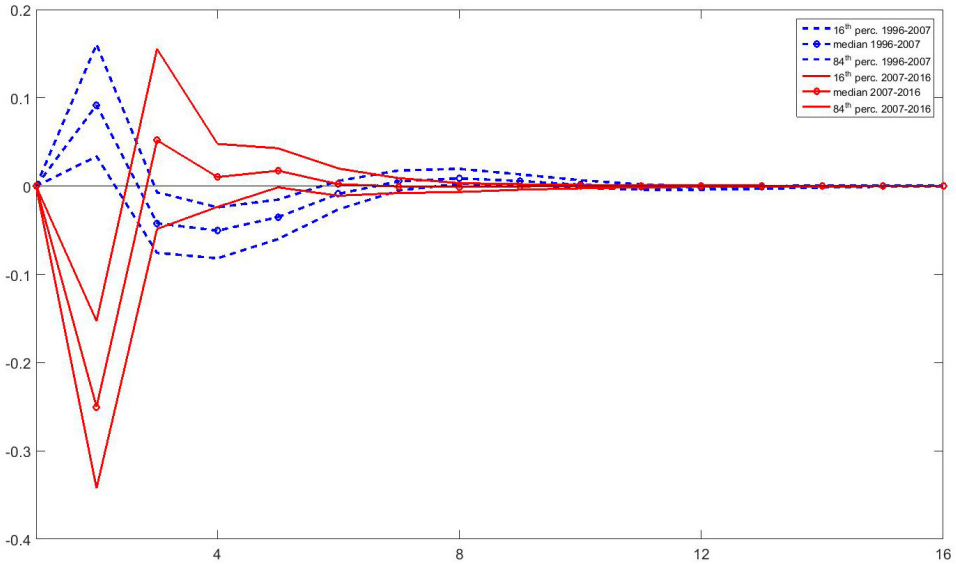


Figure 6. Response of real GDP to a positive net revenue shock before and after the EMU crisis

(median and confidence band)



3. THE PRESENT

3.1) Economic and institutional obstacles to a more positive fiscal stance in the euro area

The main takeaway of Section 2 is that the use of discretionary fiscal policy by euro area member states has been so-far quite limited, even if it would have provided a useful contribution to macroeconomic stabilization, especially during the crisis.

This is true both for core and for periphery countries. For the latter, the main reasons can be identified in the limited fiscal room due to high public debts and high and rising sovereign risk premia. Indeed, during the crisis many countries belonging to the periphery found it very difficult and costly to finance an expansionary fiscal policy (de Grauwe and Ji, 2013).

For core countries, a reason for a limited use of expansionary fiscal policy can be due to the fact that positive fiscal spillovers were not taken into account in policy decision making. Indeed, aggregate demand externalities induce countries to use fiscal policy less actively than it would be optimal, as they do not internalize the effects of their policies on other countries. After a fiscal expansion imports rise, reflecting the increase of disposable income, and exports diminish, as competitiveness deteriorates.[12] The reduction of the trade surplus dampens the domestic expansionary effect of the initial fiscal impulse, but improves the economic conditions of the country's trading partners.

Spillovers might be particularly large in a monetary union because its members are more integrated than stand-alone countries. Furthermore, among very integrated countries, chances are that the import content of government spending is also somewhat higher.

The size of fiscal policy spillovers in the euro area has been assessed in several papers. Cwik and Wieland (2011) use a New-Keynesian DSGE model to show that the effects of a fiscal expansion in a member state on the rest of the area are minor, due to the appreciation of the euro vis-à-vis the other currencies. However, the Cwik and Wieland (2011) results might not be valid in the current euro area situation, characterized by the zero lower bound. Indeed, Blanchard et al. (2016) show that the effects on the periphery of the euro area of an expansion by the core countries depend on ECB's policy: if it reacts with an increase in interest rates, the effects are negative, but if it is accommodative they are quite positive. Similar conclusions are reached by in 't Veld (2013) and the European Commission (2014) which present simulations made with a DSGE model. These quantitative exercises show that – assuming an accommodative monetary policy – a fiscal expansion of one percentage point of GDP in the euro area core would increase GDP in the periphery by about 0.2%.

Similar insights are provided by the VAR literature. Hebous and Zimmermann (2013) estimate a Global VAR on a sample of European countries and find that a domestic fiscal shock of a given size has an impact on domestic GDP which is lower that the domestic impact of a euro area fiscal shock of the same size, implemented pro rata by each of the member states – a similar policy exercise will be discussed in section 4 of the present paper. Goujard (2016) shows that a 1% point of GDP fiscal consolidation in Germany is associated with a 0.23% GDP contraction in a typical OECD country.

Besides monetary policy stance, another determinant of the size of the spillovers is the amount of slack in the economy. Indeed, Auerbach and Gorodnichenko (2013), which use a state-dependent VAR, find that cross-country spillovers tend to be larger in recessions.

All in all, both the theoretical and the empirical literature suggests that in the euro area cross-border spillovers from fiscal policy measures are likely to be sizable, given its current monetary conditions and the very slow pace of the economic recovery.

[12] With flexible exchange rates this happens via currency appreciation, under a fixed exchange rate regime or in a currency union via a gradual increase in domestic wages and prices.

Of course, the spillovers of a fiscal expansion will be positive for the other countries only to the extent that the expansion does not put public finances sustainability into question (Corsetti et al., 2010). Otherwise, it might have – due to the increased risk premia – contractionary effects on the domestic economy, reducing its imports; it might also trigger forms of financial contagion, inducing an increase in sovereign yields in other countries as well (on sovereign debt market spillovers in the euro area, see for example Giordano et al., 2013).

3.2) A possible alternative: balanced-budget, growth-friendly fiscal recomposition

One possible way for periphery countries to circumvent the lack of available fiscal space and use fiscal policy actively to stimulate the economy is to implement a budget neutral growth-friendly recomposition of fiscal policies. This approach is often advocated by international organizations (see e.g. IMF 2016, OECD, 2016, ECB, 2017) and it can be implemented in several ways.

In this Section we explore two options. First, focusing on the revenue side of the budget, we assess a shift in the burden of taxation from direct to indirect taxes – what has been labeled as a "fiscal devaluation". Second, we consider the expenditure side of the government budget, and look at the effects of a shift of resources from relatively "unproductive" to more "growth-friendly" items.

In principle, fiscal devaluation policies are a way for those euro area countries most affected by the sovereign-debt crisis to regain competitiveness and ultimately support growth. Indeed, in the context of a monetary union, a revenue-neutral shift from social contributions or labour income taxation to consumption taxes can replicate the effects of a nominal devaluation: by reducing wage costs, exports become cheaper, while higher tax rates on consumption make goods sold within the country more expensive. Two conditions need to hold for fiscal devaluation to be successful. First, higher domestic prices should not translate into higher nominal wages. Second, firms should not increase their profit margin out of the lower tax rates on labour.

Already in the run-up to EMU, tax reforms have been investigated as a possible substitute for the inability to devalue (Calmfors, 1998, Andersen, 1997).[13] The most recent academic literature confirms that fiscal devaluation can have a positive impact on employment and GDP.[14] Focusing on the euro area, de Mooij and Keen (2012) find that revenue-neutral shifts from the employers' social contributions towards the VAT could improve the trade balance in the short run in a sizable way. Similar conclusions are drawn by Attinasi et al. (2016), which analyze with a New Keynesian DSGE model of a monetary union the effects on output and welfare of cutting the tax wedge on labor in Austria, Belgium, Germany and Italy, using alternative fiscal instruments to achieve budget neutrality, including raising indirect taxes. Using a two-country DSGE model of a monetary union characterized by national fiscal and supranational monetary policy, Lipinska and Von Thadden (2012) analyze unilateral permanent shifts of the tax structure towards indirect taxes and find usually small long-run effects on output and consumption that depend crucially on the degree of financial integration between the two countries. The authors show that the short-run impact depends

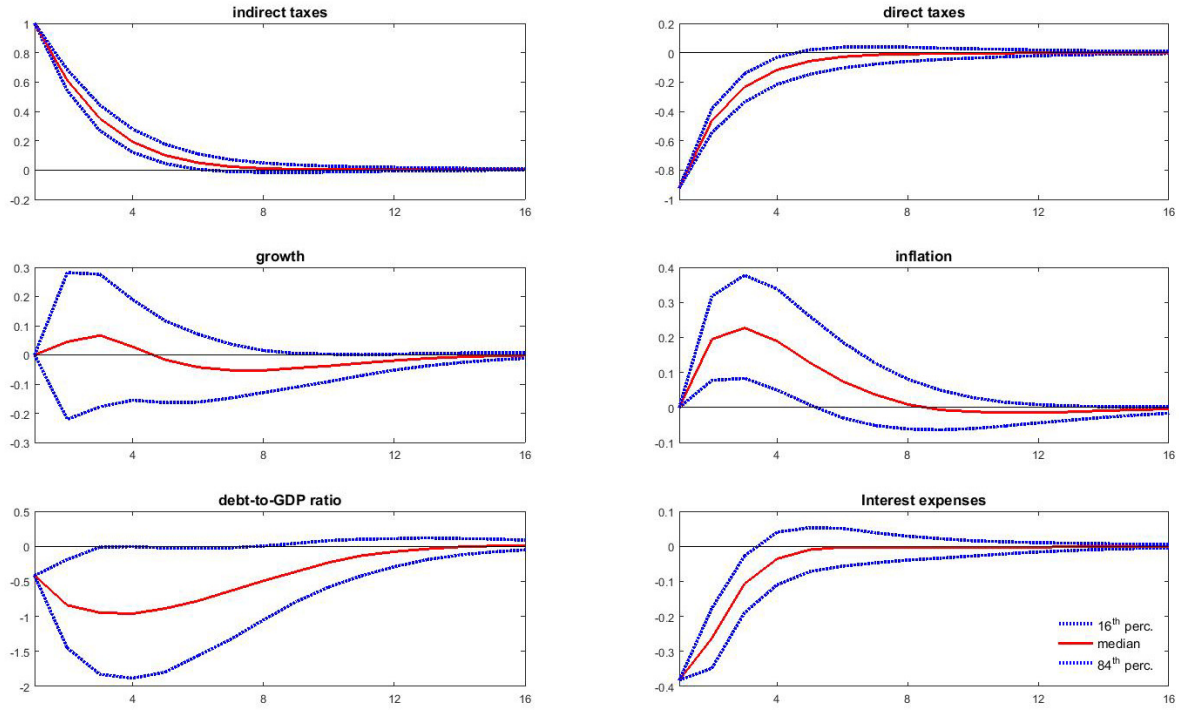
[13] The idea of using fiscal policies to replicate nominal exchange rate devaluation dates back to Keynes (1931), who proposed a combination of a tariff on imports and a contemporaneous subsidy on exports.

[14] See e.g. Farhi et al., 2014, which use a New Keynesian open economy DSGE model. For a comprehensive analysis on the impact of unilateral and multilateral fiscal devaluation policies, with a focus on the euro area, see European Commission (2013).

also on whether the tax shift is anticipated, on the choice of the inflation index stabilized by the central bank (pre-tax or after-tax) and on the degree of wage stickiness. Gomes at al. (2016) assess the effects on trade balance of a temporary fiscal devaluation enacted by Spain or Portugal by using EAGLE (the same DSGE model that we will use in Section 4). They find a significant improvement of the trade balance for both countries, the size of which however depends on the degree of substitutability between domestic and imported tradable. The results hold also when fiscal devaluation is enacted multilaterally, even though to a smaller extent. Similarly, Engler at al. (2014), using a two-country New Keynesian DSGE model calibrated to the Southern and the Central-Northern euro area countries, show that a fiscal devaluation in the South, implemented as a revenue-neutral shift from employer's social contributions to the VAT, can have a strong effect on output (a mild one on the trade balance) while determining only small negative effect in the other zone. On the other hand, a very recent paper by Baiardi et al. (2017) challenges the view that a fiscal devaluation is associated with higher economic growth. Indeed, looking at the empirical correlation between per capita GDP, overall tax revenue and tax composition on a sample of 34 OECD countries during the period 1995-2014, they show that a shift from direct to indirect taxes seems to have no robust relationship with economic growth.

Figure 7. IRF associated to Fiscal devaluation

(median and confidence band)



To delve deeper into the fiscal devaluation issue, we estimate a panel VAR model similar to the one described in Section 3.1, but with a different set of fiscal variables. In particular, we substitute in the vector of endogenous variable the automatic stabilizers and the fiscal stance, replacing them with direct and indirect taxes, respectively. We consider the effect of a shock to the former, adjusting the latter so that on impact the effect on the primary balance is nil. This can be interpreted as a discretionary, budget-neutral fiscal devaluation.

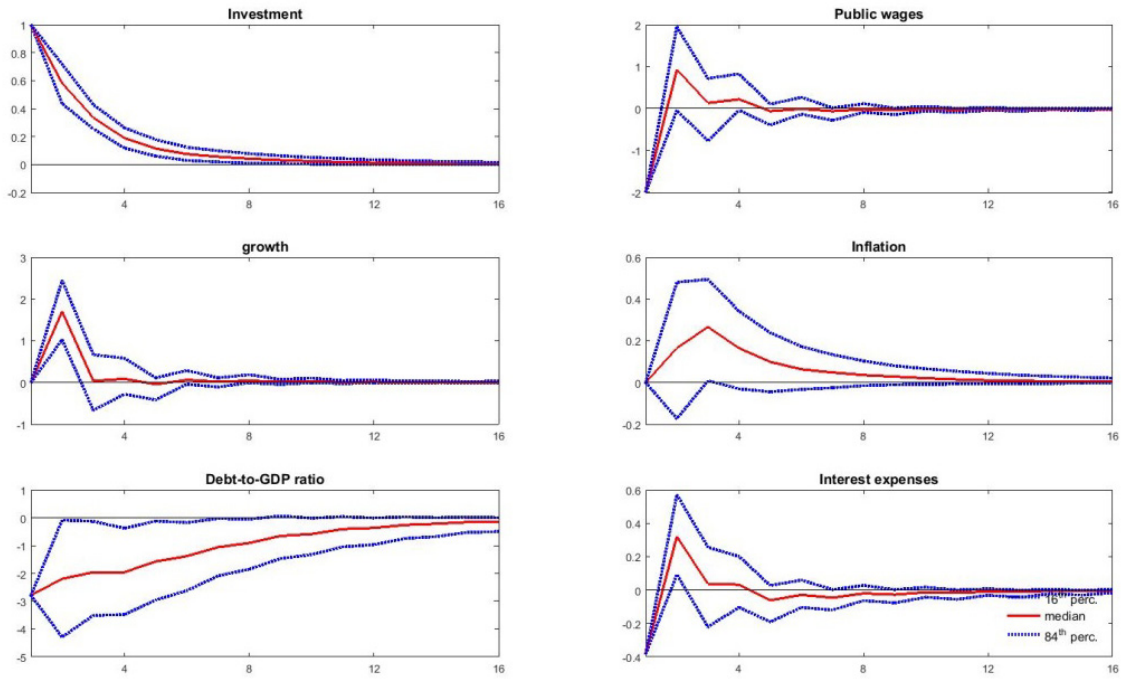
Simulating the estimated model, it appears that the effects on growth are quite small (see Figure 7). As expected, however, the fiscal devaluation package increases inflation.

It is also interesting to explore budget-neutral fiscal re-compositions on the expenditure side of the budget.

Indeed, the composition of expenditure may be very important in determining the macroeconomic impact of a given fiscal policy stance. In particular, due to the more direct impact on aggregate demand, the multiplier on government investment seems to be larger than that on government consumption. This finding holds across econometric methods (SVAR vs DSGE models), countries and time periods (see for example, Ilzetzki et al., 2013, and Auerbach and Gorodnichenko, 2012). Of course, one condition is that public capital is sufficiently productive, so that implementation delays and the negative effects due to investment financing can be more than balanced by the expansionary effect (Leeper at al., 2010). With a focus on the euro area, Stähler and Carlos (2012) develop a DSGE model of a two-country monetary union economy with a comprehensive fiscal block which explicitly distinguishes between (productivity-enhancing) public investment, public purchases, and the public sector wage bill. They simulate a number of policy measures aimed at achieving fiscal consolidation, finding that cuts in public investment is the less desirable instrument, in terms of both its short-run and long-run effects on economic activity, whereas reductions in public sector wages or employment can have even positive spillover effects on the private sector thanks to lower labor costs and improved international competitiveness.

Figure 8. IRF associated to a spending-based budget re-composition package

(median and confidence band)



To assess the effects of such a recomposition, we estimate another version of our panel VAR model, in which the automatic stabilizers and the fiscal stance are substituted by investment spending and government wages. We then simulate a shock to the former, adjusting the latter so that on impact

the change in the primary balance is zero, in this way engineering a budget-neutral recomposition in favor of an allegedly more growth-friendly budget item.

Figure 8 shows the effects of such a budgetary maneuver. Compared to the fiscal devaluation exercise, the decline in the public debt-to-GDP ratio is larger because of the stronger effects on economic growth. The effect on the GDP growth is quite large after the first period, but it does not seem persistent.

4. THE FUTURE

4.1) *Potential gains from coordinated fiscal action in the euro area: a model-based analysis*

As we argued in Section 3.1, in a monetary union the appropriate response of the fiscal policy to macroeconomic shocks should take into account the presence of cross-country spillovers. Without adequate coordination, chances are that, faced with a common shock, the fiscal reaction be excessively subdued, as individual countries do not internalize the spillovers.

To better understand the mechanisms through which a "coordinated" fiscal policy could be beneficial for the euro area economy, we use the EAGLE (euro area and Global Economy) model, an open-economy DSGE model including four regions, two of which belong to a monetary union (where the monetary authority sets the nominal interest rate according to a standard Taylor rule, function of area-wide variables), one representing the US and the last region representing the rest of the world. In this way we are able to capture the cross-country spillovers associated to international relative prices and trade flows, which are not captured by our previous VAR analyses.

For a detailed description of the model we refer to Gomes et al. (2012); here we briefly describe its structure. In each country there are two types of firms, one type producing internationally-tradable and nontradable intermediate goods, the other type producing nontradable final goods for consumption and investment purposes, using as inputs domestic and foreign intermediate goods. Nominal prices are sticky. In each country there are also two types of households: "Ricardian" agents, which have access to financial markets, both domestic and international, and hand-to-mouth consumers, for which the only way to intertemporally smooth their consumption is to adjust their money holdings. In the following simulations, the share of the latter category of households is set equal to 0.25 in each region.[15] Finally, the Government spends resources for wasteful consumption of non-tradable intermediate goods, and public debt sustainability is guaranteed by the presence of lump-sum taxes, which are adjusted when the public debt-to-GDP ratio exceeds the target value of the fiscal authority.

We first simulate (Figure 9) the effects of a 1% negative demand shock simultaneously hitting the two regions belonging to the monetary union (region B, which is a relatively large country in the monetary union, accounting for 1/4 of total euro area GDP, and region A, made of the rest of the area), when monetary policy follows an interest-rate rule such that the nominal interest rate is constant at its baseline level for the first 8 periods after the shock (such a rule mimics a prolonged

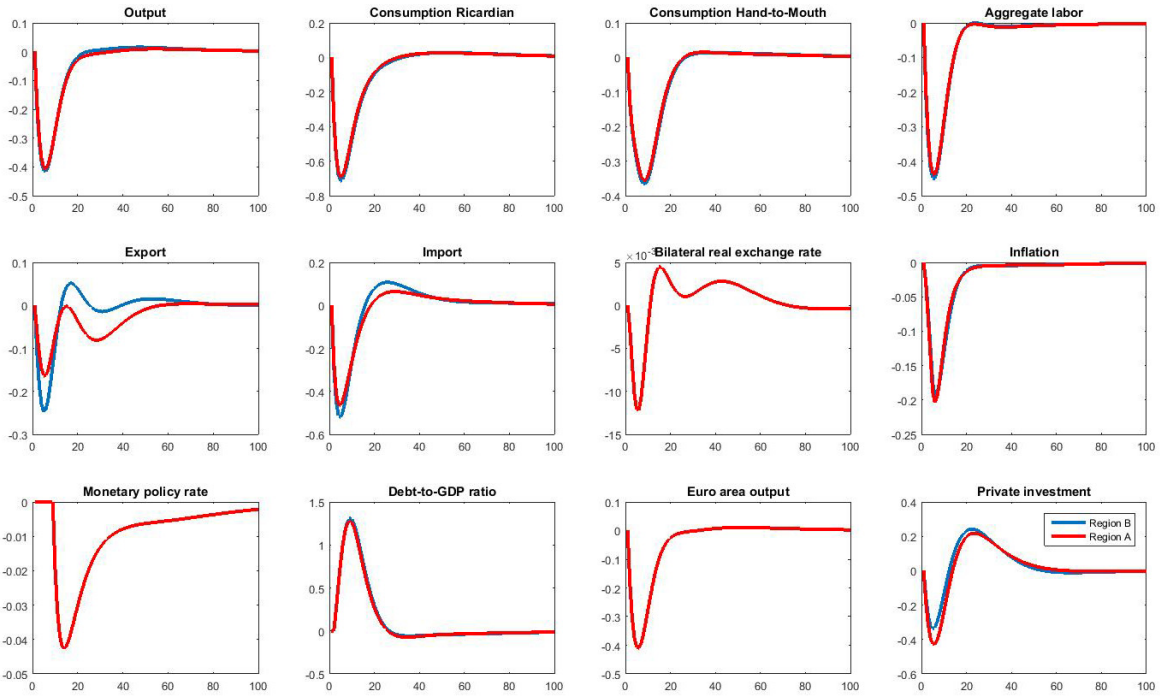
[15] This estimate is in line with the empirical findings by Kaplan et al., 2014, which document that 30 percent of households in the US are hand-to-mouth, less than 20 percent in Australia and Spain to over 30 percent in the United Kingdom and Germany.

ZLB situation) and government expenditure is unchanged (*benchmark scenario*). GDP in both regions goes down by around 0.4 per cent (deviation from the baseline), and year on year inflation by 0.2 percentage points; the debt-to-(quarterly) GDP ratio increases in both regions by around 1 per cent.

This benchmark is compared with two alternative scenarios. In the first one, labelled the "uncoordinated" scenario (Figure 10), in response to the negative demand shock, the government in Country B increases spending by 1 per cent of the euro-area GDP; in the second one (Figure 11), the "coordinated" scenario, the same increase is evenly split between the two regions of the union.

In the first experiment, GDP in region B goes up by around 0.8 per cent favored by the increase in the public consumption, which is fully biased towards domestic intermediate goods. With respect to the benchmark scenario, hand-to-mouth households consume immediately more (i.e. in the first two years) and less later on, in line with the time profile of the net lump-sum transfers received from the government; Ricardian consumers instead do not change their consumption level, because the lower increase in the real interest rate is substantially compensated by the higher expected stream of future lump-sum taxes.[16]

Figure 9. - A common negative demand shock (benchmark scenario)



[16] The presence of hand-to-mouth households implies that the Ricardian equivalence does not hold.

Table 2. Fiscal spillovers (from region B to A) with accommodative monetary policy

	output	inflation	real interest rate	private consumption	private investment	export	import	debt-to-GDP ratio
1 year	0.11	0.07	-0.13	0.10	0.22	0.05	0.04	-0.16
2 year	0.15	0.11	-0.07	0.10	0.28	0.05	-0.01	-0.51
3 year	0.08	0.06	-0.01	0.06	0.17	-0.02	-0.04	-0.50
4 year	0.03	0.02	0.01	0.03	0.06	-0.04	-0.04	-0.31

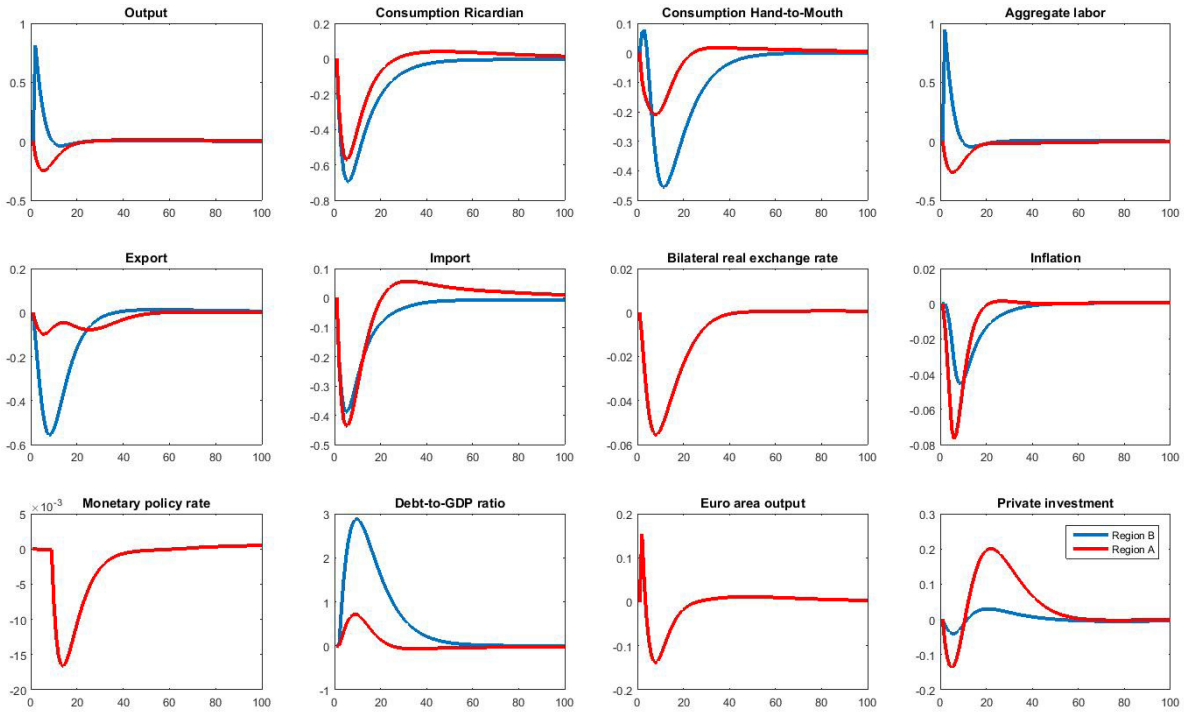
(*Annual values are computed as quarterly average of quarterly; differences with respect to the benchmark scenario*)

This increase in GDP and consumption causes an increase in Country B's net imports which also benefits Country A (Table 2). Therefore, compared to the benchmark simulation, output in region A goes down by a lower amount (by around 0.25 per cent after two years vs 0.4 p.p. in the benchmark scenario). Overall, output in the Monetary Union decreases cumulatively by just about 0.10 per cent. The positive effect on inflation of the fiscal expansion in B - which at the ZLB is not offset by an increase in the official interest rate - determines a less accentuated rise in real interest rate, and through this channel the decline in private investment is also partly offset. The smaller decrease in Country A GDP implies that the increase in the public debt-to-GDP ratio is lower than in the benchmark scenario, even if it is not negligible (around -0.5 at the peak).

These effects are in line with the empirical findings of in 't Veld (2013). Overall, the euro area output increases by around 0.15 per cent. Of course, the increase of debt-to-GDP ratio in region B is higher than in the benchmark scenario, but it is fully reabsorbed over time thanks to the debt-stabilizing fiscal rule.

When we consider a "coordinated" fiscal stimulus across countries, output in the monetary union as a whole increases by around 0.4 per cent, instead of declining by 0.4 per cent in the benchmark; that is, the euro-area GDP increases more than under an expansion of the same size but applied only in Country B. Of course in region B the impact is lower than in the case of a fiscal expansion only in region B, since the increase in government spending halves; however, the domestic effects of the fiscal expansion realized also in region A are large enough to more than counterbalance the negative effect of the adverse demand shock on euro-area output. This suggests that it is possible in principle to design a coordinated fiscal action which makes both countries better-off than under the benchmark scenario.

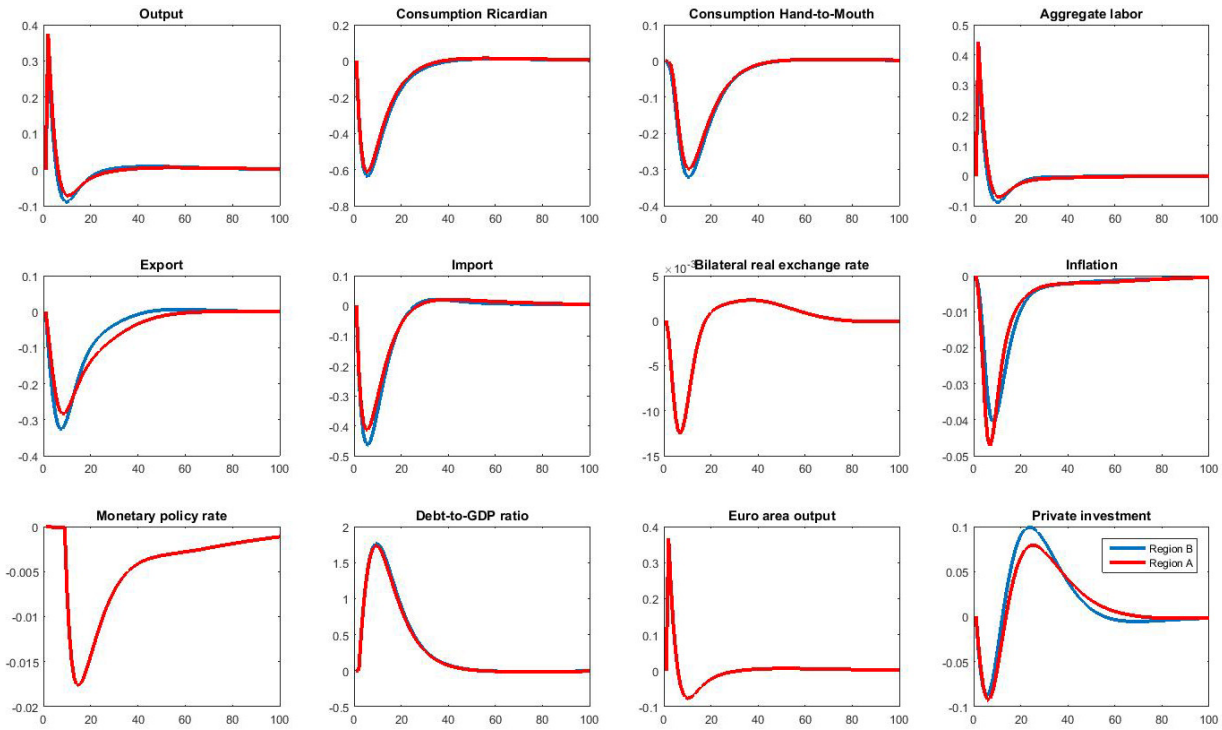
Figure 10. A common negative demand shock and a fiscal expansion only in region B



The reason behind this result is that, besides the net-export channel that we have already discussed, a fiscal expansion also activates a second spillover channel, which in the second scenario is more pronounced than in the first: indeed, as public expenditure is tilted towards non-tradable (domestic) goods, when a country increases public expenditure the relative price of tradable compared to the non-tradable goods in that country decreases, leading to a re-composition of its consumption basket towards the former category. Through this channel, and given the elasticities of substitution between domestic and foreign goods for firms and households, the increase in public expenditures in a given region determines a further increase in income and demand in its trading partners. In the "uncoordinated fiscal expansion" scenario, this effect is limited to Country B, in the second scenario it also applies to Country A, in which the bias of private demand towards domestic tradable is relatively larger

The main result of the analysis is that - with monetary policy constrained at the ZLB - the beneficial effects on the euro-area GDP associated with this second scenario are larger than in the first one.

Figure 11. A common negative demand shock and a fiscal expansion in both regions



It is important to stress that the positive fiscal spillovers are strictly related to the behavior of the monetary authority, which is constrained in adjusting the official interest rate in the first 8 quarters. Removing this assumption is not innocuous: the higher government consumption in region B, by stimulating domestic output and therefore euro area growth rate, would be followed by a higher policy rate, which would counteract the positive trade effects in region A. This explains why we believe that a coordinated fiscal stimulus would be beneficial at the current juncture, when the monetary policy stance is already extremely accommodative.

Indeed, when the monetary authority follows an interest rate rule also in the first 8 quarters, the spillover effects disappear, as shown in Table 3.

Table 3. Fiscal spillovers (from region B to A) without an accommodative monetary policy

	output	inflation	real interest rate	private consumption	private investment	export	import	debt-to-GDP ratio
1 year	0.00	0.02	-0.01	0.00	-0.02	0.01	-0.03	0.00
2 year	0.00	0.03	0.00	-0.01	-0.06	0.00	-0.08	-0.01
3 year	0.00	0.02	0.01	-0.01	-0.07	-0.01	-0.08	0.01
4 year	0.00	0.02	0.01	-0.01	-0.04	-0.02	-0.06	0.02

(Annual values are computed as quarterly average of quarterly; differences with respect to the benchmark scenario)

It has to be stressed that the analysis does not take into account two important features of the euro area economy. First, potential sovereign markets tensions associated to the public finance developments in the peripheral countries, as stressed in Section 3. Second, the possible distortions stemming from budget corrections to ensure government solvency (indeed, in our exercise, the

feedbacks of the fiscal rule to the debt level act through lump sum taxation). We leave these issues for future research.

4.2) Institutional options to implement an appropriate EA fiscal stance

As we argued in previous Sections, in a deep and prolonged recession, the euro area would benefit from a more active fiscal policy. However, in the unfortunate event of another great recession in the future, the obstacles that prevented a more positive fiscal stance in the past will be probably still at play. First, in the periphery countries, debt levels are still very high, leaving a very small room for fiscal *manoeuvre*. Second, all the euro area countries – absent any area wide coordination procedure – tend to provide a suboptimal level of fiscal stimulus, due to existence of fiscal spillover. To overcome at least this second obstacle, a form of federal fiscal authority would clearly be helpful.

The importance of completing the EMU with some sort of "fiscal union" was already clear at the beginning of the EMU. For example, on May 3, 1998, when Europe was completing the last steps before the adoption of the single currency, Tommaso Padoa Schioppa wrote in a column for Corriere della Sera: "*The Union has full competence for microeconomic policy (…), but its capability for macroeconomic policy is, with the exception of the monetary field, embryonic and unbalanced: it can avoid harm (excessive deficits) but it cannot do good (a proper fiscal policy)*." In other words, EMU rules constrain national policies, but no institution has been created to substitute for these policies when needed. It is not by chance that the EU fiscal governance framework has been developed during the Great Moderation, when the Old View of fiscal policy was common wisdom.

Spurred by the experience of the EMU crisis, several proposals have been recently put forward to complete the euro area institutional framework along this direction.

First, there are proposals which suggest the constitution of a central authority with the right to enforce in each member state fiscal policies adequate from the euro-area viewpoint, by both prohibiting some countries to borrow further *and* forcing others to run higher deficits (Sapir and Wolf, 2015). Clearly, the introduction of such an authority would imply significant changes to the Treaty, but it would not require the creation of a common fiscal capacity.

The second group of proposals advocates the introduction of automatic fiscal stabilizers at euro area level, for example a common unemployment scheme. These proposals are meant to address the occurrence of country-specific shocks.[17] However, if this common fiscal capacity is not subject to a period-by-period balanced-budget requirement, it can also help in absorbing common shocks: during area wide recessions, benefits paid by the central authority would be higher than the contributions paid to the authority, and the contrary would happen during euro area booms. Of course this would imply the creation of a common debt, but the federal authority would not take any discretionary action. For the very reasons that we have outlined in the paper, however, this solution, which is basically a common automatic stabilizer, may not be sufficient in exceptional

[17] See e.g. the European Union's Five Presidents' Report (2015) and Balassone et al. (2014). A common fiscal stabilizer would be useful first and foremost to cope with permanent idiosyncratic shocks against which countries cannot self-insure (Fatas, 1997; Forni and Reichlin, 1999). However, it might also be needed to deal with a temporary idiosyncratic shock, if a member state for some reason loses the possibility to use its own fiscal policy to smooth the shock over time (see e.g. de Grauwe and Ji, 2013).

circumstances; to the extent that it would substitute for *national* automatic stabilizers, it might not even improve the overall counter-cyclical resilience of the euro area (Tabellini, 2016).

Therefore, a third group of proposals envisages a newly created fiscal authority which has the task of issuing common debt, in the form of so called "stabilization bonds" (Corsetti et al, 2015, Ubide, 2015, Guiso and Morelli, 2016, Giavazzi, 2016) only in case of severe common shocks or to counteract major systematic financial crisis. The bonds, whose maximum amount should be defined ex-ante, are meant to be bought-back through predetermined transfers from member states. Some authors propose that the new task be given to the European Stability Mechanism, which already issues debt to help member countries, albeit under strict conditionality and only when the risk of loss of market access is material.

The second and the third group of proposals are sort of extreme: the former would not entail any form of purely discretionary fiscal action, while the latter would not allow for any kind of automatic stabilization. Therefore, one could explore a further possibility, namely to establish a federal automatic stabilizer which not only issues debt during normal budget cycles, as a byproduct of the cyclical properties of its revenues and its outlays, but which can also, under exceptional circumstances, introduce discretionary changes to the parameters of the scheme. For example, in the case of a common unemployment scheme, the federal authority could be given the right to extend the length of the benefit, increase its size, or to reduce the contribution rate. This solution would be quite similar to what happens most of the time in national states: discretionary fiscal stimulus is mostly implemented not by introducing brand new programs, but by increasing the generosity of the existing ones.

5. CONCLUDING REMARKS

During the years of the "Great Moderation", monetary policy and automatic stabilizers were deemed sufficient for counter-cyclical purposes. In this paper we argue that the recent economic crisis warrants a reconsideration of the usefulness of discretionary fiscal policy as a means to stabilize the macro-economy.

As regards euro area countries, we have shown that a more active fiscal policy would be quite effective, at least in exceptional circumstances. However, achieving an adequate discretionary fiscal policy in the euro area is difficult, as the overall fiscal stance is determined in an uncoordinated way by the decisions of 19 decentralized fiscal authorities.

To solve this coordination problem, several institutional innovations have been proposed. While they move in the right direction, we should be aware that their implementation is fraught with difficulties. Some of them are technical, related to the quantification of the "appropriate" aggregate fiscal stance and its apportionment to each member state. The more relevant difficulties, however, are political: there is clearly an issue of compatibility between the desired aggregate fiscal stance, however defined, and the Stability and Growth Pact (SGP). There could easily be cases in which the appropriate aggregate fiscal stance could only be achieved if one or more countries implemented a more expansionary fiscal stance than compatible with European fiscal rules.

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