Hacienda Pública Española / Review of Public Economics, 215-(4/2015): 119-138

DOI: 10.7866/HPE-RPE.15.4.5

Spending Dynamics in Euro Area Countries: Composition and Determinants*

SEBASTIAN HAUPTMEIER
European Central Bank
A. JESÚS SÁNCHEZ-FUENTES
Universidad Complutense de Madrid & GEN
LUDGER SCHUKNECHT
German Ministry of Finance

Received: January, 2015
Accepted: September, 2015

Abstract

This study analyses the composition and main determinants of spending dynamics in selected euro area countries between 1999 and 2013. To assess the stance of public spending policies we use the indicators developed in Hauptmeier *et al.* (2011). Our results indicate that the overall expansionary expenditure stance in 1999-2009 was mainly driven by public consumption. Transfers and subsidies on the other hand were mostly expansionary after 2008 while public investment had boomed just before the crisis and turned restrictive during the crisis. The overall policy stance turned restrictive in 2010 and strongly so in Greece, Ireland, Portugal and Spain. Most consolidation efforts focussed on public investment and on public consumption and while transfers and subsidies were largely spared. Our econometric analysis, which covers the 2000-2013 period, shows a significantly pro-cyclical stance of public consumption which was driving overall spending dynamics. The degree of spending expansion tends to be negatively affected by the size of government debt and the presence of effective fiscal rules. On the other hand, EMU-related interest savings coincided with an expansionary expenditure stance. Revenue windfalls and shortfalls exerted a significant effect on government investment spending.

Keywords: Expenditure policies, public debt, expenditure rules, sustainability, fiscal stance.

JEL Classification: E17, E61, E65, H50, H60.

1. Introduction

Public spending dynamics constitute an important determinant of developments in headline fiscal indicators such as the deficit and debt ratio. A number of recent studies provide

* The views expressed are the authors' and do not necessarily reflect those of the authors' employers. We thank to Francisco de Castro, the participants to the XXII Encuentro de Economía Pública- Public Economics Meeting and HPE editors and referees for helpful comments. Sánchez-Fuentes acknowledges the financial support of the Spanish Ministry of Economy and Competitiveness (project ECO2012-37572) and the Regional Government of Andalusia (project SEJ 1512). Corresponding author: A. Jesús Sánchez-Fuentes. Universidad Complutense de Madrid. Campus de Somosaguas, 28223, Madrid (Spain). Tel: +34 913942542, Fax: +34 913942431. Email: ajsanchezfuentes@ucm.es

evidence that government expenditures have been the main reason for the deterioration of fiscal positions in most advanced economies since around the turn of the millennium (see, e.g., Turrini, 2008, Schuknecht, 2009; Rother *et al.,* 2011, and Trachanas and Katrakilidis 2013). Hauptmeier *et al.* (2011) develop a set of indicators to assess the policy stance of government expenditure in selected euro area countries (and for the euro area aggregate) relative to benchmark rates guided by long-term or potential growth in economic activity. The study finds that in many countries expenditure policies had been expansionary from the start of EMU which prevented the built-up of sufficient fiscal buffers in economic «good times». As a result, many euro area countries already entered the financial and economic crisis in 2007/2008 with relatively weak fiscal positions. This certainly contributed to the subsequent emergence of the so called European debt-crisis.

In this paper, we extend the analysis of Hauptmeier *et al.* (2011) in two directions. First, we provide a disaggregated analysis of expenditure dynamics in 12 euro area countries over 1999-2013, focussing on three expenditure aggregates which governments can affect in the short-run, i.e. public consumption, public investment as well as transfers and subsidies. Our results indicate that the overall expansionary expenditure stance in 1999-2009 was mainly driven by an expansion of public consumption during the whole period. Transfers and subsidies, on the other hand, were mostly expansionary post-Lehmann while public investment had boomed just before the crisis and turned restrictive during the crisis. The aggregate policy stance turned restrictive in 2010 and strongly so in Greece, Ireland, Portugal and Spain while most consolidation efforts focussed on public consumption and on public investment while largely sparing transfers and subsidies.

Second, the study provides an econometric analysis of the determinants of expenditure patterns over the 2000-2013 period. It suggests a pro-cyclical pattern of public consumption spending. The expenditure stance, i.e. the excess of spending growth over the neutral benchmark rate (total and most categories), tends to be negatively affected by the size of public debt (less expansionary, the higher public debt) and the presence of effective fiscal rules. On the other hand, we find a significant positive effect of EMU-related interest savings and elections. Moreover, investment spending dynamics tend to be linked to the emergence of revenue windfalls / shortfalls.

The rest of the paper is organised as follows. Section 2 provides a brief overview of expenditure patterns in EMU and disentangles the expenditure stance in EMU across spending categories across countries and over time. Section 3 reports on the cumulative effect of the expenditure stance on spending ratios. Section 4 discusses the determinants of patterns in the expenditure composition. Section 5 concludes.

2. Expenditure stance across countries, time and categories

We analyse public expenditure in selected euro area countries across the three main expenditure components that governments can influence in the short term: government con-

sumption, transfers and subsidies and public investment. Table 1 gives an overview of spending developments —as a ratio to GDP— for 12 euro area countries and the euro area (12) aggregate between 1999 and 2013. A number of interesting findings can be deducted from these data: First, between 1999 and 2007, primary spending increased as a ratio to GDP in all countries except for Austria, Germany and Finland, in some cases significantly. During the same period the output gap averaged at 1% of GDP, i.e. spending increases relative GDP took place in economic «good times». Spending increases were strongly driven by public consumption (e.g. in Greece and the Netherlands), in some cases also by increases in transfers and subsidies (e.g. Portugal) and public investment (e.g. Ireland).

Table 1
MAIN FISCAL INDICATORS (% OF GDP)

	Primary expenditures					**Public consumption**				
	1999	**2007**	**2009**	**2010**	**2013**	**1999**	**2007**	**2009**	**2010**	**2013**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Euro Area (12)	43,5	42,5	47,8	47,1	46,5	19,4	19,5	21,7	21,4	21,2
Austria	48,3	46,0	50,9	49,5	48,3	19,6	18,7	20,6	20,4	19,8
Belgium	43,0	43,6	49,3	48,9	51,3	21,1	21,7	24,1	23,6	24,4
Germany	44,6	40,1	44,8	43,7	42,3	19,0	17,5	19,6	19,2	19,3
Spain	36,5	37,4	44,1	43,7	40,6	16,8	17,7	20,5	20,5	19,5
Finland	48,1	45,4	53,3	53,3	56,5	20,3	20,9	24,2	23,9	24,9
France	49,1	49,6	54,4	54,1	54,9	22,4	22,3	23,9	23,8	24,1
Greece	37,1	41,2	48,8	46,2	44,5	16,8	19,9	22,7	21,6	19,9
Ireland	31,7	35,0	43,0	43,1	35,9	14,8	16,7	20,1	18,7	17,5
Italy	41,0	42,1	46,5	45,5	45,7	17,7	18,9	20,6	20,4	19,4
Luxembourg	37,3	37,8	44,6	43,5	43,4	14,6	15,0	17,2	16,7	17,3
Netherlands	39,8	40,8	46,0	46,3	45,9	20,6	23,5	26,4	26,5	26,3
Portugal	39,6	41,7	47,2	46,6	44,7	18,2	19,8	21,4	20,7	19,0
Memorandum: EA(12) - DE	43,1	43,4	48,9	48,4	48,2	19,5	20,3	22,5	22,3	21,9

	Transfers and subsidies					**Public investment**				
	1999	**2007**	**2009**	**2010**	**2013**	**1999**	**2007**	**2009**	**2010**	**2013**
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Euro Area (12)	17,5	16,4	18,5	18,5	18,7	3,1	3,2	3,6	3,4	2,8
Austria	21,2	19,1	20,9	21,0	20,6	2,8	2,9	3,4	3,2	2,9
Belgium	16,3	16,9	19,1	19,1	20,1	2,4	2,0	2,2	2,2	2,2
Germany	19,7	17,0	18,7	17,8	16,5	2,4	2,0	2,3	2,3	2,2

	Transfers and subsidies					Public investment				
	1999	**2007**	**2009**	**2010**	**2013**	**1999**	**2007**	**2009**	**2010**	**2013**
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Spain	13,1	12,5	15,5	16,2	17,3	3,8	4,6	5,1	4,7	2,1
Finland	18,6	15,8	18,6	18,9	20,4	3,9	3,5	4,0	3,7	4,2
France	18,7	18,8	20,9	21,0	21,6	3,8	3,9	4,3	4,1	4,0
Greece	13,8	14,7	17,6	17,9	18,8	3,8	4,3	4,6	3,2	2,7
Ireland	9,5	10,8	15,8	15,8	14,6	3,1	4,6	3,7	3,4	1,7
Italy	17,5	17,6	19,9	20,0	21,5	2,9	2,9	3,4	2,9	2,4
Luxembourg	14,2	15,1	18,3	17,5	17,8	4,2	3,7	4,3	4,6	3,5
Netherlands	12,7	11,0	12,3	12,6	13,1	3,8	3,9	4,3	4,1	3,6
Portugal	12,1	14,9	17,1	17,2	18,9	4,9	3,2	4,1	5,3	2,2
Memorandum: EA(12) - DE	16,6	16,1	18,5	18,7	19,6	3,5	3,6	4,0	3,8	3,0

Source: Ameco.

In the context of the financial and economic crisis, public primary expenditure increased markedly in the euro area between 2007 and 2009 (by around 5pps of GDP on average), now mainly owing to increases in transfers and subsidies but also further increases in public consumption. As of 2010, primary expenditure as a ratio to GDP started to decline in most euro area countries. However, Table 1 shows that the spending adjustment did not reverse the developments observed up to 2009. While public investment was reduced on average by 0.8pp of GDP —accounting for more than 60% of the overall adjustment in primary expenditure—, public consumption declined by 0.5pp of GDP whereas transfers and subsidies increased slightly. As a result, aggregate public investment in the euro area (12) fell below the 1999 level in 2013 whereas public consumption as well as transfers and subsidies still significantly exceeded the 1999 GDP ratios.

While one can already derive important insights from longer-term developments in spending-to-GDP ratios, a proper assessment of the policy stance of government expenditure on a year-by-year basis will need to compare spending growth with some form of benchmark rate that abstracts from cyclical swings. Hauptmeier *et al.* (2011) develop a set of indicators which aim at defining a «neutral» expenditure stance on the basis of expenditure rules guided by long-term or potential growth in economic activity[1]. In this paper, we use two of the expenditure rules presented in Hauptmeier *et al.* (2011):

1. Nominal Potential GDP Growth (NPG): According to this rule, spending growth is considered as neutral if the growth rate equals that of nominal potential GDP in a given year.

2. Real Potential GDP growth + ECB price stability objective (RPECB): According to this rule, spending growth is considered as neutral if the growth rate equals that of

real potential GDP plus the ECB price stability objective (for simplicity we set the deflator component of the rule to 2%).

Both rules are computed on the basis of real time data (using past vintages of the European Commission's annual macro-economic database (AMECO)) and ex post data (latest published AMECO vintage). Using real-time data —in addition to the standard ex-post evaluation— allows us to also assess spending policies on the basis of the information set available to policy-makers at the time of implementation of policy measures[2]. Overall, we therefore use four measures of expenditure stance.

Figure 1 compares actual developments in spending as a ratio to GDP (primary spending and the three subcategories) for the euro area (12) aggregate to the counterfactual of developments that would have occurred if spending growth in each year had followed the «neutral rates» generated by our set of expenditure rules. When computing these alternative spending paths, we take into account macroeconomic feedback effects related to the alternative rule-based spending paths when computing GDP ratios. In this context, we use impact fiscal multipliers computed in Coenen *et al.* (2012) who carry out a model comparison exercise on the basis of various large-scale macroeconomic models[3]. Concretely, we consider the middle point of the range presented in this study to construct country-specific GDP multipliers, explicitly taking into account the country-specific structure of government spending. Using this approach, the size of the GDP multiplier varies from 0.47 in Greece to 0.57 in the case of Ireland. More detailed information can be received from the authors upon request.

Figure 1 shows that primary expenditure —for the euro area (12) aggregate— remained close to the NPG ex-post rule until 2007 before decoupling until 2010. Public consumption on the other hand shows a strongly expansionary pattern for the whole period up to 2010.

For the period 2010-2013, the stance for aggregate spending and public consumption was restrictive as illustrated by the shrinking distance between actual and neutral spending. Transfers and subsidies do not show a expansionary path at the aggregate level, in the pre-crises period before exceeding ex-post «neutral» levels in the crisis (as of 2009)[4]. Public investment spending was expansionary from about 2005-2009 before it became strongly restrictive as of 2010 (see lower panels of Figure 1).

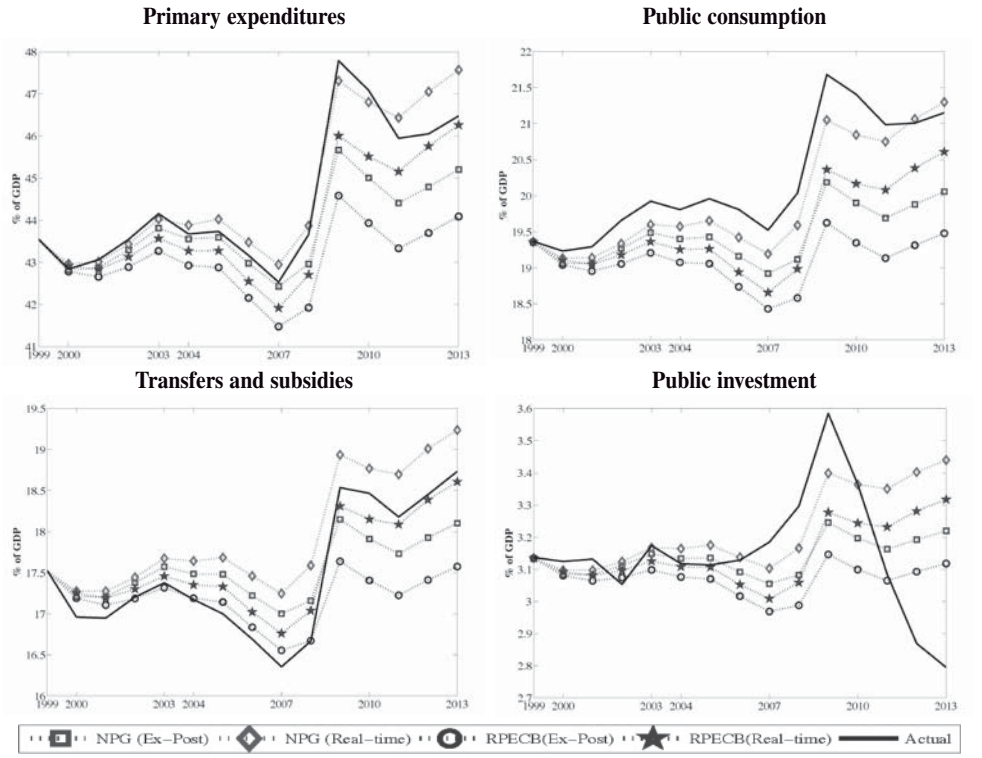

Figure 1. Euro Area (12). Actual versus rule-based expenditure developments, euro area aggregate across rules and main expenditure components

However, this aggregate euro area (12) view hides significant cross-country differences. Table 2 shows cumulative deviations from the neutral spending paths for individual countries for different time periods: (i) 1999-2007, (ii) 2008-2009 and (iii) 2010-2013. This enables us to highlight time patterns, notably with a view to distinguishing developments before, during and in the aftermath of the economic and financial crisis. Note that positive figures indicate cumulative positive deviations from the rule in % of GDP and vice versa.

In accordance with Hauptmeier *et al*. (2011), this analysis shows a restrictive primary expenditure stance for Austria, Finland and strongly so for Germany over the 1999-2007 period while cumulative primary spending dynamics exceed the neutral spending rule in all other sample countries. This holds for the real-time and the ex-post assessment alike. At the same time, the divergence between real-time and ex-post rules is remarkable, indicating the relevance of data revisions. For the euro area as a whole, ex-post downward revisions in potential growth have resulted in a more expansionary aggregate stance for all sub-periods, but in particular for the years as of 2008. Table 2 also highlights notable differences in the results for the NPG and RPECB, indicating that in some countries expenditure levels grew more partly because of their higher inflation. This can be observed, in particular in Spain, Greece and Ireland

for the pre-crisis period. Extreme values for deviations are Germany, where primary expenditure fell short of rule based spending by some 4.8pp of GDP cumulatively between 1999 and 2007. On the other hand, Greece shows a very expansionary spending stance (positive deviation between 6pp to 8pp of GDP, depending on the rule) during this period.

The degree of expansion varies strongly between the different expenditure components and countries. For most of the EA-12 countries, the expansionary spending stance was strongly driven by public consumption, while for Greece and Portugal increases in transfers and subsidies explain the bulk of excess spending dynamics between 1999 and 2007. With the exception of Ireland and Spain, government investment did not contribute much to the expansionary spending in the pre-crisis period.

Table 2 also highlights interesting changes in spending patterns during the crisis. For the immediate crisis period 2008-2009 we observe a particularly expansionary spending stance in Belgium, Spain, Greece, Netherlands and Portugal in the order of between around 2 and 5pp of GDP above the neutral rule assessed in real-time. These developments reflect both discretionary spending measures to combat the severe economic downturn as well as strong expenditure dynamics notably on transfers and subsidies. At the same time, the assessment of the spending stance changes significantly when switching to the ex-post rule. Using actual data for the years 2008 and 2009 we find a substantially larger degree of spending expansion relative to our neutral expenditure rule in all countries (high remarkable are the cases of Greece and Ireland). This is due to a sharp ex-post correction of potential growth rates in these two years which makes the expenditure stance, due to the way we define our «neutral» stance, much more expansionary as well. The comparison of real-time and ex-post assessment highlights the problems related to fiscal surveillance and coordination based on real-time macroeconomic variables, especially around cyclical turning points.

Finally, looking at the spending developments in real-time between 2010 and 2013 we observe a significant tightening of the expenditure stance, notably in those countries facing financial constraints (Spain, Greece, Ireland and Portugal). Expenditure consolidation was also significant in Italy and, somewhat less so, in Austria and Luxembourg. Again, ex-post information confirms the lower impact of these consolidation packages, reducing the countries presenting restrictive policies to the former group mentioned above. As the rest of countries present also expansionary policies during this last period, the tightening seems to reflect large scale fiscal consolidation measures which became necessary following the strong fiscal loosening before and in the context of the crisis and the much increased debt financing costs during the European fiscal crisis as of 2010. To some extent this adjustment and its composition reverts previous expansionary trends in certain spending components. In particular, the adjustment in public consumption constitutes the largest contribution to the restrictive primary spending stance in Greece, Italy and Portugal. On the other hand, with the exception of Greece, transfers and subsidies only play a minor role in the recent expenditure adjustment. In fact, this spending category shows a neutral or even expansionary stance in most of the sample countries showing its counter-cyclical nature. At the same time, it is well worth mentioning that government investment stands for a significant part of the 2010-2013 spending adjustment, notably in Spain, Ireland and Portugal.

Table 2
CUMULATIVE DEVIATIONS FROM RULE-BASED SPENDING FOR SELECTED PERIODS, COUNTRIES AND SPENDING COMPONENTS

Panel A: Real-time NPG rule

		Euro Area (12)	AUT	BEL	DEU	ESP	FIN	FRA	GRC	IRL	ITA	LUX	NLD	PRT
1999-2007	Primary expenditures	-0,5	0,6	1,8	-4,8	3,4	-0,8	1,2	5,0	2,6	1,5	-0,1	1,8	2,0
	Public consumption	0,3	0,3	1,1	-1,6	1,9	1,1	0,2	3,5	1,2	1,2	0,1	3,1	1,4
	Transfers and subsidies	-0,9	-0,8	1,0	-2,8	0,5	-1,8	0,5	1,2	1,1	0,3	0,5	-1,2	2,5
	Public investment	0,1	0,3	-0,2	-0,4	0,9	-0,2	0,2	0,6	1,1	0,0	-0,5	0,2	-1,5
	Others	0,0	0,8	-0,1	0,0	0,1	0,2	0,3	-0,3	-0,8	-0,1	-0,2	-0,3	-0,4
2008 -2009	Primary expenditures	1,1	1,4	2,2	0,3	3,5	1,5	1,0	3,4	0,1	0,2	0,7	2,3	2,3
	Public consumption	0,2	0,4	0,7	0,4	1,3	0,5	-0,2	0,9	-0,8	-0,6	0,0	1,5	-0,2
	Transfers and subsidies	0,5	0,1	1,2	-0,6	1,9	0,3	0,7	1,7	2,5	0,8	1,0	0,4	1,2
	Public investment	0,2	0,3	0,1	0,3	0,3	0,2	0,1	0,0	-1,2	0,2	0,0	0,1	0,5
	Others	0,2	0,5	0,2	0,2	0,0	0,5	0,4	0,9	-0,3	-0,2	-0,3	0,3	0,7
2010-2013	Primary expenditures	-1,2	-1,2	2,8	0,0	-4,3	2,4	0,5	-18,2	-8,2	-2,2	3,4	-1,5	-3,6
	Public consumption	-0,7	-0,4	0,4	0,6	-1,8	0,0	-0,1	-8,8	-2,7	-2,2	1,6	-0,9	-3,4
	Transfers and subsidies	0,5	0,1	1,5	-0,9	2,0	1,9	0,9	-3,8	0,6	1,2	1,5	0,6	1,8
	Public investment	-0,8	-0,4	0,0	0,1	-3,1	0,0	-0,2	-4,3	-3,9	-0,9	-0,3	-0,9	-2,0
	Others	-0,2	-0,5	0,9	0,2	-1,4	0,4	-0,1	-1,4	-2,2	-0,3	0,5	-0,3	0,0

Panel B: Ex-post NPG rule

		Euro Area (12)	AUT	BEL	DEU	ESP	FIN	FRA	GRC	IRL	ITA	LUX	NLD	PRT
1999-2007	Primary expenditures	0,1	-1,4	1,3	-3,6	1,7	-0,7	1,4	5,5	4,5	1,9	0,2	1,4	0,7
	Public consumption	0,6	-0,5	0,9	-1,0	1,1	1,1	0,3	3,7	2,1	1,4	0,3	2,9	0,7
	Transfers and subsidies	-0,6	-1,6	0,8	-2,2	-0,1	-1,8	0,6	1,4	1,7	0,5	0,6	-1,3	2,1
	Public investment	0,1	0,2	-0,3	-0,4	0,8	-0,2	0,2	0,6	1,3	0,1	-0,5	0,1	-1,6
	Others	0,0	0,6	-0,2	0,1	0,0	0,2	0,3	-0,2	-0,7	-0,1	-0,2	-0,3	-0,5
2008 -2009	Primary expenditures	2,5	2,3	3,6	1,1	5,0	3,2	2,1	6,9	7,8	1,6	2,6	3,7	3,5
	Public consumption	0,9	0,8	1,4	0,8	2,0	1,3	0,3	2,5	2,8	0,0	0,8	2,3	0,4
	Transfers and subsidies	1,0	0,5	1,8	-0,3	2,4	0,8	1,2	2,9	4,9	1,4	1,8	0,8	1,7
	Public investment	0,3	0,4	0,2	0,3	0,5	0,3	0,1	0,3	-0,3	0,3	0,1	0,3	0,6
	Others	0,3	0,6	0,3	0,3	0,1	0,7	0,5	1,1	0,3	-0,2	-0,1	0,4	0,8
2010-2013	Primary expenditures	0,6	0,2	3,9	0,5	-2,8	6,1	2,8	-9,2	-6,2	0,4	2,1	1,4	-1,4
	Public consumption	0,1	0,1	0,9	0,8	-1,1	1,7	0,9	-4,6	-1,8	-1,0	1,1	0,8	-2,3
	Transfers and subsidies	1,2	0,7	1,9	-0,7	2,6	3,2	1,8	-0,3	1,2	2,3	1,0	1,4	2,6
	Public investment	-0,6	-0,3	0,0	0,1	-3,0	0,3	0,0	-3,5	-3,6	-0,8	-0,4	-0,6	-1,8
	Others	0,0	-0,3	1,0	0,3	-1,3	0,9	0,1	-0,7	-2,1	-0,1	0,4	-0,1	0,2

Panel C: Real-time RPECB rule

		Euro Area (12)	AUT	BEL	DEU	ESP	FIN	FRA	GRC	IRL	ITA	LUX	NLD	PRT
1999-2007	Primary expenditures	0,7	0,6	2,0	-4,8	6,1	-0,5	1,2	7,8	5,1	2,1	1,3	3,3	3,4
	Public consumption	0,8	0,3	1,2	-1,6	3,2	1,2	0,2	4,8	2,4	1,5	0,7	3,9	2,0
	Transfers and subsidies	-0,4	-0,8	1,1	-2,8	1,4	-1,7	0,5	2,3	1,8	0,6	1,0	-0,7	3,0
	Public investment	0,2	0,3	-0,2	-0,4	1,2	-0,2	0,2	0,8	1,4	0,1	-0,4	0,3	-1,3
	Others	0,1	0,8	-0,1	0,0	0,3	0,3	0,3	-0,1	-0,6	-0,1	0,0	-0,1	-0,3
2008 -2009	Primary expenditures	1,5	1,5	2,5	0,3	4,3	1,8	1,0	5,0	0,6	0,6	1,8	2,6	3,0
	Public consumption	0,4	0,5	0,8	0,4	1,7	0,7	-0,2	1,6	-0,6	-0,4	0,5	1,7	0,1
	Transfers and subsidies	0,6	0,2	1,3	-0,6	2,2	0,4	0,8	2,2	2,7	1,0	1,5	0,5	1,5
	Public investment	0,2	0,3	0,1	0,3	0,4	0,2	0,1	0,1	-1,2	0,3	0,1	0,1	0,6
	Others	0,2	0,5	0,2	0,2	0,1	0,6	0,4	1,0	-0,3	-0,2	-0,2	0,3	0,7
2010-2013	Primary expenditures	-1,1	-1,0	3,1	0,0	-4,3	3,3	0,5	-17,4	-8,2	-2,1	4,5	-1,3	-3,1
	Public consumption	-0,7	-0,4	0,6	0,6	-1,8	0,4	-0,1	-8,4	-2,7	-2,1	2,1	-0,8	-3,1
	Transfers and subsidies	0,5	0,2	1,6	-0,9	2,0	2,3	0,9	-3,5	0,6	1,3	2,0	0,7	2,0
	Public investment	-0,8	-0,4	0,0	0,1	-3,1	0,1	-0,2	-4,2	-3,9	-0,9	-0,2	-0,9	-2,0
	Others	-0,2	-0,4	0,9	0,2	-1,4	0,5	-0,1	-1,3	-2,2	-0,3	0,6	-0,3	0,0

Panel D: Ex-post RPECB rule

		Euro Area (12)	AUT	BEL	DEU	ESP	FIN	FRA	GRC	IRL	ITA	LUX	NLD	PRT
1999-2007	Primary expenditures	1,2	-1,0	1,9	-3,6	5,6	0,1	1,8	7,9	7,7	3,4	2,7	3,3	4,2
	Public consumption	1,1	-0,4	1,2	-1,0	2,9	1,5	0,5	4,8	3,7	2,1	1,3	3,9	2,4
	Transfers and subsidies	-0,2	-1,5	1,1	-2,2	1,3	-1,5	0,7	2,3	2,6	1,1	1,6	-0,7	3,2
	Public investment	0,2	0,2	-0,2	-0,4	1,2	-0,2	0,2	0,8	1,7	0,2	-0,2	0,3	-1,3
	Others	0,1	0,6	-0,1	0,1	0,2	0,3	0,3	0,0	-0,4	0,0	0,1	-0,1	-0,2
2008 -2009	Primary expenditures	2,8	2,4	3,8	1,1	5,5	4,0	2,5	8,6	7,8	2,0	3,3	3,8	3,9
	Public consumption	1,0	0,8	1,4	0,8	2,2	1,7	0,5	3,3	2,8	0,2	1,1	2,4	0,6
	Transfers and subsidies	1,2	0,6	1,8	-0,3	2,5	1,1	1,3	3,5	4,9	1,6	2,1	0,8	1,8
	Public investment	0,3	0,4	0,2	0,3	0,6	0,4	0,2	0,5	-0,2	0,4	0,2	0,3	0,7
	Others	0,3	0,6	0,3	0,3	0,2	0,8	0,5	1,2	0,3	-0,1	0,0	0,4	0,8
2010-2013	Primary expenditures	0,7	0,2	4,0	0,5	-2,8	7,0	2,8	-8,8	-6,2	0,4	4,5	1,4	-1,3
	Public consumption	0,1	0,1	1,0	0,9	-1,1	2,1	0,9	-4,4	-1,8	-1,0	2,0	0,8	-2,3
	Transfers and subsidies	1,2	0,7	2,0	-0,7	2,6	3,5	1,8	-0,2	1,2	2,3	2,0	1,4	2,7
	Public investment	-0,6	-0,3	0,1	0,1	-3,0	0,4	0,0	-3,5	-3,6	-0,8	-0,2	-0,6	-1,8
	Others	0,0	-0,3	1,0	0,3	-1,3	1,0	0,1	-0,7	-2,1	-0,1	0,6	-0,1	0,2

Source: Ameco.

3. Determinants of the expenditure stance

An empirical analysis of the factors influencing countries' expenditure stance can provide further insights on the reasons and remedies for expansionary expenditure policies. We therefore employ standard fixed-effects panel estimation techniques for our sample of 12 euro area countries[5] over the 2000-2013 period to explain the governments' expenditure stance on the basis of fiscal and macroeconomic factors, relevant institutional characteristics as well as political economy variables[6]. Our empirical model has the following specification:

$$y_{it} = (\alpha + u_i) + XB + T_t + e_{it}$$

As the dependent variable in these regressions we use our measure of the expenditure stance, i.e. the (marginal, i.e. year-by-year) deviations of actual spending growth from rule-based or neutral spending (see Section 2).

We include country-fixed effects ($\boldsymbol{u}_i$) to control for unobserved time-invariant heterogeneity in our cross-section. Moreover, a full set of time dummies (T_t) is included to control for common shocks.

The choice of independent variables for our basic model explaining the expenditure stance is fairly standard. First, we control for the macroeconomic environment by including the output gap. This allows us to test the cyclicality of the spending stance. Given that a contemporaneous inclusion of the output gap may cause problems of endogeneity, in our baseline specification, we follow Gali and Perotti (2003) and Turrini (2008) and include the output gap as a percentage of potential GDP with a lag. There are of course alternative ways to overcome potential endogeneity problems related to the inclusion of the output gap. Table 5 therefore presents a sensitivity analysis using several of the approaches used in the literature[7].

The stock of government debt and interest payments are included as fiscal sustainability indicators since a higher debt burden should limit the room for budgetary manoeuvre and discourage discretionary spending. We introduce the stock of government debt -with a lag- and interest payments (leaded). We also incorporate a variable capturing revenue surprises since positive surprises on the revenue side of the budget may translate into more expansionary expenditure policies with a lag. This is taken into account by including a dummy that equals 1 if actual government revenues turn out higher than projected by the European Commission in the initial forecast. Here we make use of our real-time AMECO vintage, i.e. we compute differences between projected government revenues in real-time versus ex-post outcomes. Finally, Bénétrix and Lane (2010) find that the deterioration of fiscal balances during the crisis was highly correlated with financial imbalances accumulated in the pre-crisis period. To control for this effect in our specification, we include domestic credit growth (previous 5 years average).

A second set of independent variables captures institutional factors. In particular, we include expenditure rules index developed by Debrun *et al*. (2008) to control for the extent

to which national expenditure policy faces domestic institutional constraints[8]. This index includes all budgetary provisions, which fix numerical targets or ceilings to government expenditure. We would expect the pro-cyclicality of expenditure policies to be lower in the presence of strong budgetary institutions on the expenditure side. We also interact the expenditure rule index with the output gap and expect a negative coefficient, given that strong institutions should reduce spending expansion notably in good times. We also test for a contingent effect of the debt ratio and analyse whether strong expenditure rules limit the spending of revenue windfalls by incorporating an interaction with the rules index. Moreover, we include a dummy capturing whether a country is facing an external surveillance for public finances, either the Excessive Deficit Procedure (EDP) due to deficits above the 3% of GDP reference value of the Stability and Growth Pact or, more recently, EU/IMF economic adjustment programmes applied to some of the countries we consider in this study.

Political variables typically also play a role in determining fiscal outcomes. In particular, electoral cycles might affect spending policies in the sense that upcoming parliamentary elections —which we control for by including a dummy variable— increase political incentives to expand the budget. Moreover we include two variables related to the existence of political constraints in deciding and implementing expenditure policies. First, one variable (extracted from the World Bank Database of Political Institutions) captures the years left in the current election term, expecting a negative sign since the incentives for fiscal discipline can be expected to be higher at the beginning of the legislative period. Second, we include a political constraints index developed by Henisz (2000), which is regularly updated and widely used in the empirical literature on fiscal policy (e.g. Lane, 2003; Fatás and Mihov, 2003).

The results of our regression analysis are presented in Tables 3 and 4 corresponding to ex-post and real-time rules, respectively[9]. Starting with the impact of the cycle on the expenditure stance, our regression analysis confirms the indications from our descriptive analysis in Section 2. In particular, the results suggest a procyclical stance of primary expenditure which was driven by public consumption, i.e. excess spending over our neutral policy rule(s) in this category tended to increase when macroeconomic conditions improved. On the other hand, the coefficient on the output gap, when using the stance of transfers and subsidies as well as government investment on the left hand side, rarely show significance. These findings are robust to the inclusion of alternative measures of the cycle (see Table 5).

The stock of public debt and the interest burden show negative significant coefficients for most of the specifications and spending categories. This is in line with the hypothesis that a higher debt burden should reduce the budgetary room for manoeuvre and constrain spending outcomes. With regard to the role of the financial imbalances accumulated during the pre-crisis period, our findings are in line with Bénétrix and Lane (2010) for transfers and subsidies and public consumption (borderline statistical significance). Interestingly, governments react to tighter financial conditions by applying more prudent spending policies in general, but in particular for public consumption and public investment. This latter finding supports the view that the fiscal consolidation programs as a reaction to the debt crisis to a

significant extent relied on cuts in public investment rather than on reducing transfer and subsidies. This finding may cast some doubt on the design of the adjustment and their growth-friendliness.

Regression results also point to a significant effect of revenue surprises on spending dynamics, for public consumption and, public investment. Concretely, in line with what one would expect, unexpected revenue windfalls tend to increase spending growth above potential.

Our results also suggest that strong budgetary institutions in the form of effective expenditure rules exert an impact on the design of the spending stance. The interaction term of the expenditure framework and the public debt shows a negative and significant coefficient in the case of public consumption, suggesting that higher debt in the presence of effective expenditure rules leads governments to constrain public consumption. This finding is along the lines of Holm-Hadulla *et al.* (2012), Turrini (2008) and Wierts (2008). On the other hand we find a positive significant effect in the case of public investment. This is an interesting result which could be interpreted in a way that governments also target the composition of government spending when restraining expenditure dynamics, i.e. putting an emphasis also on the design of spending consolidation as regards their growth-friendliness.

Finally, turning to the political economy variables, we find that the expenditure stance is mostly unaffected (coefficients are not statistically significant) except for the Political Constraint Index proposed by Henisz (2000) in real time (positive). An interpretation of this index is that power dispersion reduces governments' ability to introduce legal or constitutional changes. In our framework, governments' effective capacity to tackle expansionary spending policies would be lower.

Table 3
DETERMINANTS OF EXPENDITURE STANCE (EX-POST RULES)

Dependent variable: Deviation expenditure components growth from rules-based growth rate

	Primary expenditures			Public consumption			Transfers and subsidies			Public investment		
	(I)	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*
Output gap (based on Potential GDP)(t-1)	0,538	0,593	0,586	0,688	0,686	0,682	0,217	0,249	0,246	0,825	1,232	1,157
	[4.72]***	[8.09]***	[8.20]***	[6.28]***	[6.40]***	[6.00]***	[3.21]***	[3.62]***	[3.76]***	[0.91]	[1.43]	[1.35]
Public debt ratio (t-1)	-0,067	-0,063	-0,06	-0,037	-0,029	-0,033	-0,052	-0,051	-0,041	-0,172	-0,186	-0,175
	[4.69]***	[4.24]***	[3.47]***	[1.24]	[0.96]	[1.09]	[5.37]***	[5.00]***	[2.32]**	[2.07]*	[2.19]*	[2.08]*
Government Bond spread (t+1)	-0,999	-1,041	-1,008	-1,151	-1,172	-1,204	-0,762	-0,811	-0,734	-1,09	-1,398	-1,204
	[9.67]***	[8.01]***	[7.06]***	[10.69]***	[8.69]***	[8.44]***	[6.12]***	[7.60]***	[4.79]***	[0.90]	[1.45]	[0.99]
Revenue growth (above expectations) (t-1)	0,178	0,148	0,152	0,158	0,153	0,16	-0,042	-0,034	-0,029	1,039	0,895	0,909
	[2.11]*	[2.28]**	[2.31]**	[1.79]	[2.00]*	[2.05]*	[0.33]	[0.33]	[0.29]	[2.84]**	[3.11]***	[3.17]***
Credit domestic growth -5 years, average- (t-1)	0,09	0,098	0,11	0,134	0,128	0,127	0,083	0,092	0,126	0,246	0,342	0,408
	[1.30]	[1.28]	[1.62]	[1.63]	[1.52]	[1.50]	[1.46]	[1.57]	[2.63]**	[0.77]	[0.93]	[1.21]
Strenght of expenditure framework * Output Gap	-0,114			-0,097			-0,075			-0,501		
	[0.75]			[0.86]			[0.67]			[1.10]		
Strenght of expenditure framework * Public debt ratio (t-1)	-0,005			-0,016			-0,001			0,042		
	[1.05]			[2.45]**			[0.10]			[3.48]***		
Strenght of expenditure framework * Revenue growth (above unit elasticity) (t-1)	0,043			0,058			-0,004			0,068		
	[1.12]			[1.18]			[0.11]			[0.33]		
EU surveillance framework (EDP + troika)	0,301			-0,699			-0,276			3,55		
	[0.31]			[1.03]			[0.22]			[0.92]		
Parliamentary elections		0,578			-0,628			0,497			3,467	
		[1.66]			[0.89]			[1.19]			[1.59]	
Government Stability		0,001			0,204			-0,08			-2,468	
		[0.00]			[0.25]			[0.11]			[0.65]	
Political Constraint Index -POLCON, Henisz (2000)-			-1,887			2,053			-5,076			-10,106
			[0.79]			[1.29]			[1.03]			[0.97]
Years left in the current term			0,039			0,237			0,054			-0,434
			[0.24]			[1.42]			[0.52]			[0.71]
Constant	8,962	8,668	9,882	6,311	5,876	4,097	8,475	8,083	10,961	14,334	14,734	22,461
	[7.31]***	[5.91]***	[5.50]***	[2.62]**	[2.34]**	[1.55]	[8.82]***	[7.04]***	[4.30]***	[2.00]*	[1.72]	[1.92]*
Observations	326	326	326	326	326	326	326	326	326	326	326	326
Number of countries	24	24	24	24	24	24	24	24	24	24	24	24
R-squared	0,74	0,74	0,74	0,72	0,72	0,72	0,53	0,53	0,53	0,48	0,48	0,47
corr u_i and Xb	-0,48	-0,48	-0,45	-0,28	-0,26	-0,32	-0,36	-0,36	-0,21	-0,64	-0,59	-0,57
adjusted R-squared	0,72	0,72	0,72	0,71	0,7	0,7	0,49	0,5	0,5	0,44	0,45	0,43
R-squared overall model	0,57	0,56	0,58	0,65	0,64	0,62	0,32	0,32	0,41	0,31	0,34	0,33
R-squared within model	0,74	0,74	0,74	0,72	0,72	0,72	0,53	0,53	0,53	0,48	0,48	0,47
R-squared between model	0,25	0,21	0,24	0,33	0,24	0,24	0,06	0,06	0,16	0,27	0,2	0,14
standard deviation of epsilon_it	2,14	2,13	2,15	2,35	2,36	2,35	2,41	2,4	2,38	8,99	8,9	9,04
panel-level standard deviation	2,09	2,1	1,96	1,39	1,46	1,61	2,29	2,28	1,88	6,71	5,97	5,7
fraction of variance due to u_i	0,49	0,49	0,46	0,26	0,28	0,32	0,47	0,48	0,38	0,36	0,31	0,28

Notes: (I) Baseline: Macroeconomic/Cyclical + Ex-ante situation determinants + Institutional framework + EU surveillance factors (II and III) Baseline + Political indicators.

Table 4
DETERMINANTS OF EXPENDITURE STANCE (REAL-TIME RULES)

Dependent variable: Deviation expenditure components growth from rules-based growth rate

	Primary expenditures			Public consumption			Transfers and subsidies			Public investment		
	(I)	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*
Output gap (based on Potential GDP)(t-1)	0,542	0,646	0,642	0,69	0,735	0,735	0,222	0,305	0,305	0,827	1,281	1,211
	[3.86]***	[6.75]***	[7.02]***	[5.21]***	[6.02]***	[6.14]***	[2.34]**	[2.91]**	[3.01]**	[0.92]	[1.49]	[1.42]
Public debt ratio (t-1)	-0,081	-0,079	-0,078	-0,051	-0,044	-0,051	-0,067	-0,068	-0,06	-0,185	-0,201	-0,192
	[4.80]***	[4.28]***	[3.85]***	[1.44]	[1.23]	[1.44]	[5.12]***	[5.05]***	[3.03]**	[2.28]**	[2.40]**	[2.31]**
Government Bond spread (t+1)	-0,961	-1,012	-0,999	-1,115	-1,144	-1,196	-0,728	-0,789	-0,732	-1,024	-1,34	-1,165
	[7.19]***	[6.93]***	[6.18]***	[8.11]***	[7.44]***	[7.39]***	[5.57]***	[7.25]***	[5.18]***	[0.81]	[1.33]	[0.92]
Revenue growth (above expectations) (t-1)	0,251	0,187	0,192	0,232	0,194	0,201	0,034	0,011	0,015	1,104	0,925	0,938
	[4.66]***	[3.39]***	[3.77]***	[2.60]**	[2.08]*	[2.19]*	[0.36]	[0.16]	[0.23]	[3.32]***	[3.34]***	[3.46]***
Credit domestic growth -5 years, average- (t-1)	0,08	0,095	0,098	0,124	0,125	0,115	0,071	0,088	0,112	0,243	0,346	0,404
	[1.06]	[1.05]	[1.24]	[1.35]	[1.25]	[1.21]	[1.27]	[1.41]	[2.05]*	[0.75]	[0.91]	[1.17]
Strenght of expenditure framework * Output Gap	-0,196			-0,177			-0,161			-0,582		
	[0.93]			[1.02]			[1.19]			[1.12]		
Strenght of expenditure framework * Public debt ratio (t-1)	-0,007			-0,017			-0,002			0,04		
	[1.94]*			[3.11]***			[0.42]			[3.78]***		
Strenght of expenditure framework * Revenue growth (above unit elasticity) (t-1)	0,059			0,073			0,007			0,088		
	[2.15]*			[2.12]*			[0.33]			[0.49]		
EU surveillance framework (EDP + troika)	1,445			0,447			0,881			4,679		
	[1.53]			[0.83]			[0.72]			[1.21]		
Parliamentary elections		0,588			-0,617			0,514			3,514	
		[1.31]			[0.94]			[1.04]			[1.54]	
Government Stability		0,307			0,515			0,241			-2,17	
		[0.37]			[0.60]			[0.44]			[0.56]	
Political Constraint Index -POLCON, Henisz (2000)-			-0,678			3,273			-3,799			-9,02
			[0.36]			[1.83]*			[0.96]			[0.80]
Years left in the current term			0,088			0,285			0,107			-0,397
			[0.44]			[1.43]			[1.05]			[0.62]
Constant	9,566	9,83	10,314	6,895	7,02	4,506	9,121	9,302	11,41	14,773	15,691	22,789
	[6.47]***	[5.33]***	[4.89]***	[2.26]**	[2.20]*	[1.27]	[7.65]***	[6.97]***	[5.78]***	[2.08]*	[1.83]*	[1.88]*
Observations	326	326	326	326	326	326	326	326	326	326	326	326
Number of countries	24	24	24	24	24	24	24	24	24	24	24	24
R-squared	0,74	0,73	0,73	0,74	0,73	0,74	0,57	0,56	0,56	0,48	0,49	0,47
corr u_i and Xb	-0,53	-0,54	-0,54	-0,35	-0,35	-0,43	-0,47	-0,48	-0,39	-0,65	-0,6	-0,59
adjusted R-squared	0,72	0,72	0,71	0,72	0,72	0,72	0,54	0,53	0,53	0,45	0,45	0,44
R-squared overall model	0,54	0,52	0,52	0,64	0,62	0,59	0,3	0,29	0,35	0,31	0,33	0,32
R-squared within model	0,74	0,73	0,73	0,74	0,73	0,74	0,57	0,56	0,56	0,48	0,49	0,47
R-squared between model	0,22	0,19	0,2	0,3	0,22	0,2	0,05	0,05	0,1	0,24	0,18	0,14
standard deviation of epsilon_it	2,27	2,3	2,31	2,42	2,43	2,42	2,29	2,31	2,3	9,2	9,15	9,29
panel-level standard deviation	2,48	2,52	2,51	1,7	1,79	2,1	2,59	2,63	2,31	7,09	6,4	6,16
fraction of variance due to u_i	0,55	0,55	0,54	0,33	0,35	0,43	0,56	0,57	0,5	0,37	0,33	0,31

Notes: (I) Baseline: Macroeconomic/Cyclical + Ex-ante situation determinants + Institutional framework + EU surveillance factors (II and III) Baseline + Political indicators.

Table 5
ROBUSTNESS CHECK ON PUBLIC SPENDING CYCLICALITY

Dependent variable: Deviation expenditure components growth from rules-based growth rate

Panel A: Ex-post rules

	Primary expenditures			Public consumption			Transfers and subsidies			Public investment		
	(I)	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*
Output gap (based on Potential GDP)	0,514 [5.64]***	0,389 [5.03]***	0,367 [4.17]***	0,59 [8.08]***	0,499 [5.25]***	0,498 [4.76]***	0,199 [2.42]**	0,18 [1.71]	0,165 [1.48]	0,747 [1.10]	0,412 [0.75]	0,332 [0.57]
Output gap summary Indicator —Carnot & De Castro (2015)—	0,364 [1.33]	0,475 [2.12]*	0,438 [1.77]	0,561 [3.82]***	0,649 [3.06]**	0,608 [3.07]**	-0,043 [0.13]	0,007 [0.02]	0,026 [0.09]	0,596 [0.66]	0,785 [0.97]	0,794 [0.82]
Output gap (based on Potential GDP)(t-1) —Gali & Perotti (2003), Turrini (2008)—	0,538 [4.72]***	0,593 [8.09]***	0,586 [8.20]***	0,688 [6.28]***	0,686 [6.40]***	0,682 [6.00]***	0,217 [3.21]***	0,249 [3.62]***	0,246 [3.76]***	0,825 [0.91]	1,232 [1.43]	1,157 [1.35]
Output gap (based on Trend GDP) (t-1)	0,328 [3.17]***	0,343 [4.45]***	0,381 [3.80]***	0,396 [3.72]***	0,343 [3.98]***	0,33 [3.47]***	0,128 [1.92]*	0,124 [1.47]	0,177 [1.23]	0,489 [0.77]	0,861 [1.56]	0,988 [1.64]
Real GDP growth rate (t-1)	0,528 [4.27]***	0,491 [4.08]***	0,467 [4.05]***	0,628 [2.94]**	0,589 [2.62]**	0,617 [3.43]***	0,207 [1.90]*	0,222 [1.57]	0,185 [1.12]	1,715 [1.89]*	1,619 [1.97]*	1,479 [1.81]*
EA-12 average output gap (own country excluded) —Alesina *et al.* (2008)—	-0,356 [1.17]	-0,222 [0.88]	-0,246 [0.94]	-0,344 [0.95]	-0,081 [0.34]	-0,07 [0.30]	0,136 [0.77]	0,064 [0.24]	0,029 [0.10]	-2,137 [2.34]**	-1,342 [1.86]*	-1,449 [1.84]*

Panel B: Real-time rules

	Primary expenditures			Public consumption			Transfers and subsidies			Public investment		
	(I)	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*	*(I)*	*(II)*	*(III)*
Output gap (based on Potential GDP)	0,533 [6.20]***	0,318 [4.47]***	0,292 [4.01]***	0,605 [6.52]***	0,425 [3.49]***	0,421 [3.23]***	0,222 [3.53]***	0,111 [2.10]*	0,092 [1.67]	0,757 [1.17]	0,339 [0.66]	0,256 [0.47]
Output gap summary Indicator —Carnot & De Castro (2015)—	0,509 [2.08]*	0,622 [3.66]***	0,556 [2.76]**	0,702 [3.06]**	0,791 [3.10]**	0,722 [3.42]***	0,112 [0.48]	0,165 [0.82]	0,154 [0.82]	0,716 [0.81]	0,908 [1.16]	0,889 [0.93]
Output gap (based on Potential GDP)(t-1) —Gali & Perotti (2003), Turrini (2008)—	0,542 [3.86]***	0,646 [6.75]***	0,642 [7.02]***	0,69 [5.21]***	0,735 [6.02]***	0,735 [6.14]***	0,222 [2.34]**	0,305 [2.91]**	0,305 [3.01]**	0,827 [0.92]	1,281 [1.49]	1,211 [1.42]
Output gap (based on Trend GDP) (t-1)	0,439 [2.63]**	0,52 [4.24]***	0,559 [4.18]***	0,505 [3.11]**	0,517 [3.80]***	0,506 [3.40]***	0,244 [1.91]*	0,308 [3.16]***	0,362 [2.55]**	0,589 [0.86]	1,026 [1.72]	1,156 [1.78]
Real GDP growth rate (t-1)	0,504 [4.54]***	0,444 [3.82]***	0,424 [4.10]***	0,601 [3.25]***	0,539 [2.74]**	0,572 [3.76]***	0,187 [1.70]	0,179 [1.38]	0,146 [1.10]	1,687 [1.88]*	1,57 [1.91]*	1,432 [1.79]
EA-12 average output gap (own country excluded) —Alesina *et al.* (2008)—	-0,667 [2.44]**	-0,504 [2.05]*	-0,527 [2.12]*	-0,654 [2.18]*	-0,362 [1.96]*	-0,349 [1.94]*	-0,18 [0.97]	-0,221 [0.83]	-0,254 [0.85]	-2,438 [2.65]**	-1,618 [2.26]**	-1,725 [2.21]**

Notes: (I) Baseline: Macroeconomic/Cyclical + Ex-ante situation determinants + Institutional framework + EU surveillance factors (II and III) Baseline + Political indicators.

5. Conclusions

This study analyses expenditure dynamics in 12 euro area countries over 1999-2013. It finds that expanding public consumption —relative to benchmark measures of potential economic activity— drove an overall expansionary (primary) expenditure stance in 1999-2009. Transfers and subsidies were mostly expansionary as of 2008 while public investment had boomed just before the crisis and turned restrictive during the crisis. The policy stance turned restrictive in 2010 and strongly so in Greece, Ireland, Portugal and Spain. However, most consolidation efforts focussed on public investment with some contribution also coming from public consumption while transfers and subsidies were largely spared, also reflecting the operation of automatic stabilisers.

The study also analysis the determinants of this expenditure pattern with an econometric analysis. The regression results confirm an overall procyclical expenditure stance which was driven by public consumption, i.e. excess spending over our neutral policy rule(s) in this category tended to increase when macroeconomic conditions improved. The degree of spending expansion tends to be negatively affected by the size of government debt and the presence of effective fiscal rules. On the other hand, EMU-related interest savings affected the expenditure stance positively. Revenue windfalls and shortfalls exert a significant effect on government investment spending.

What are the implications? First, euro area countries had mostly manoeuvred themselves into less safe fiscal positions due to an expansionary stance during the boom years. Or in other words, with more «neutral» policies in economic «good times» the margin to implement countercyclical fiscal policies during the crisis would have been significantly higher in many countries.

Second, the evidence of this study provides support to those arguing in favour of prudent expenditure rules oriented on prudently assessed potential growth trends. This should help counter political economy biases towards pro-cyclicality especially in good times and in the presence of revenue windfalls and/or over-estimations of potential growth. An expenditure rule has, therefore, rightly been embedded in the European fiscal framework. Strict implementation of European rules on deficits, debt and expenditure will be important to guard against expenditure pro-cyclicality in the future.

Third, the paper suggests that countries should also watch the channels via which expansionary expenditure policies work. Guarding against expanding civil servants and public wages in good times seems an important lesson as compensation of employees in one of the main components of public consumption (see Lamo *et al.* 2013 for further details). Preventing an expansion of transfers and subsidies spending in crisis may in particular require flexible complementary policies in the labour market (so that flexible wages limit the increase in unemployment and, consequently, the increase in unemployment benefits). This may also help preserve public investment spending from excessive cuts avoiding potential damages on medium/term growth prospects.

Finally, our study has disentangled primary expenditures to make explicit not only the different characteristics of main expenditure components but also how government decisions

have modified expenditure composition, by assigning a prevalent position to some of them during the recent fiscal consolidation processes. It is still too early to draw overall lessons from the boom-bust cycle in Europe as further post-crisis adjustment will be necessary. It seems to us that taking into account the counter-cyclical nature of welfare related spending (transfers and subsidies in our study), would require to both save in good times and ensure an efficient allocation (avoiding redundant programmes) in the bad ones. In this regard, with the exception of countries facing financial constraints in the recent years, our study finds evidence of the under-emphasis of public spending adjustments on transfers and subsidies so far (contrary to public perception). Surely this is going to be a particular challenge in the years to come, notably as aging-related pressures on public spending will rise.

Notes

1. Alternatives measures may be considered as neutral. See Brück and Zwiener(2006) and Menguy (2008) for further information. We build here upon the basis of rules introduced in Hauptmeier *et al.* (2011) as they rely their neutrality measures on country-specific growth prospects (potential GDP as benchmark).
2. Substantial data revisions may result in a different assessment of the underlying policy stance when using ex-post and real-time data respectively (see, e.g., Cimadomo, 2008).
3. For a discussion on different ways to measure the fiscal multipliers, see Ilzetzki *et al.* (2013).
4. This may reflect the coordinated fiscal expansion in Europe at the beginning of the financial crisis.
5. Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain.
6. We go beyond the empirical exercise presented in Hauptmeier *et al.* (2011) by carrying out differentiated regressions for the different expenditure components we analyse in Section 2 of this paper.
7. Klemm (2014) presents a selection of studies dealing with this issue by applying alternative methodologies and instruments. Alesina *et al.* (2008) consider as instrument a summary measure of the output gap of the rest of the region. Carnot and De Castro (2015) highlight that the change in the output gap may offer a complementary and more robust signal (see European Commission, 2006, Part IV, or OECD, 2003).
8. For a definition and a detailed description of the computation of this index see European Commission (2006) and Debrun *et al.* (2008). The index is normalised to have a zero mean and unit variance.
9. Note that we pool results corresponding to different rules (NPG and RPECB) with the aim of identifying a generic/average role of the different determinants. Moreover, a comprehensive list of tables considering alternative construction of revenue surprise variables and rule-specific results are available upon request. This sensitive analysis confirms the robustness of our main findings.

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Resumen

Este estudio analiza la composición y los principales determinantes de la dinámica de gasto público en una selección de países de la zona euro entre 1999 y 2013. Para evaluar la posición de las políticas de gasto público de cada país utilizamos los indicadores desarrollados en Hauptmeier *et al.* (2011). Nuestros resultados indican que las políticas expansivas obtenidas para el gasto total en el periodo 1999-2009 fueron impulsadas principalmente por el consumo público. Por otro lado, después de 2008, Transferencias y subsidios fueron eminentemente expansivas mientras que la inversión pública –que se disparó justo antes de la crisis– se volvió restrictiva durante la misma. Asimismo, obtenemos que la política fiscal se volvió restrictiva desde 2010, con mayor intensidad en Grecia, Irlanda, Portugal y España. No obstante, la mayoría de los esfuerzos de consolidación se centraron en la inversión pública y el consumo público y mientras que las transferencias y subvenciones se mantuvieron en gran medida. Nuestro análisis econométrico, que abarca el periodo 2000-2013, muestra un comportamiento significativamente procíclico del consumo publico que conducía la dinámica general del gasto público. Obtenemos además que el tamaño de la deuda pública y la presencia de reglas fiscales eficaces tienden a favorecer comportamientos más prudentes por la vía del gasto. Por otra parte, encontramos que los ingresos extraordinarios derivados del ahorro de intereses relacionados con la Unión Monetaria favorecieron políticas expansivas por la vía del gasto. Por último, variaciones significativas –positivas o negativas- en el nivel de ingreso esperado, ejercieron un efecto significativo en el comportamiento de la inversión pública.

Palabras clave: gasto público, deuda pública, reglas de gasto, sostenibilidad, política fiscal.

Clasificación JEL: E17, E61, E65, H50, H60.