

Decomposition and determinants of public expenditure policies: the case of the euro area in the EMU period

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Abstract: This study looks at the decomposition of expenditure dynamics during EMU in seven euro area countries (Germany, France, Italy, and the programme countries, Spain, Ireland, Greece and Portugal). It finds that an overall expansionary expenditure stance in 1999-2009 was mainly driven by expanding public consumption during the whole period. Transfers and subsidies were mostly expansionary post-Lehmann while public investment had boomed just before the crisis and turned restrictive during the crisis. Policies regarding transfers and subsidies and government consumption were expansionary in all countries except Germany. The policy stance turned restrictive in 2010 and strongly so in Greece, Ireland, Portugal and Spain. Most consolidation efforts focussed on public consumption and public investment while spending on the welfare state was largely spared (except in Greece).

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

JEL code: E17, E61, E65, H50, H60

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1. Introduction

Public expenditures are the main reason for the deterioration of fiscal positions in most advanced economies since around the turn of the millennium (Schuknecht, 2009; Rother et al, 2011). Hauptmeier et al (2011) find that with a neutral expenditure stance during EMU, most euro area countries would have featured much lower expenditure, deficit and debt ratios by 2009/10 to the extent that the fiscal crisis of 2010/11 would probably not have taken place. Instead, boom years were used to expand public spending so that fiscal positions were already unsound when the financial crisis struck. Subsequent advice to smoothen the crisis via expansionary fiscal policies neglected this and the fact that boom-related over-indebtedness, exuberance and resource misallocation would also imply a lower output level and growth trend after the crisis (Schuknecht, 2009, 2011). As a result, public spending ratios are now at or near record levels in most advanced economies.

This study looks at the decomposition of expenditure dynamics during EMU in seven euro area countries (Germany, France, Italy, and the programme countries Spain, Ireland, Greece and Portugal). It finds that the overall expansionary stance in 1999-2009 was mainly driven by expansionary policies as regards public consumption during the whole period. Transfers and subsidies were subject to expansionary policies mostly post-Lehmann while public investment had boomed just before the crisis and turned restrictive during the crisis. Transfers and subsidies and government consumption were expansionary for all countries except Germany. Public wage and investment expenditure were broadly neutral for Germany and France. The study also examines the expenditure stance over the European debt crisis period 2010 – 2013. The policy stance turned restrictive in 2010 and strongly so in Greece, Ireland, Portugal and Spain. Most consolidation efforts focussed on public consumption and public investment while spending on the welfare state was (surprisingly) largely spared (except in Greece).

The study also looks at the determinants of this expenditure pattern with an econometric analysis: the expenditure stance regarding public consumption and transfers and subsidies was significantly pro-cyclical over 1999-2012. More specifically, it was expansionary during the boom and then contractionary during bust and crisis. The expenditure stance (total and most categories) was also correlated with public debt (restrictive), EMU-related interest savings (expansionary), political stability and fiscal institutions (restrictive) and the election cycles (expansionary). Moreover, investment spending was geared up with the emergence of revenue windfalls and were then curtailed as windfalls reversed.

Section 2 provides a brief overview of expenditure patterns in EMU. Section 3 disentangles the expenditure stance in EMU across spending categories across countries and over time. Section 4 reports on the cumulative effect of the expenditure stance on spending ratios and public debt. Section 5 discusses the determinants of patterns in the expenditure composition. Section 6 concludes.

2. Expenditure patterns in EMU

Taking the period of EMU, 1999-2009, as whole, public primary expenditure in the euro area have been rising strongly (Table 1). After a modest decline from 44% to 43.1% of GDP over 1999-2007, they reached 48.5% of GDP in 2009. The largest public expenditure component for most countries is public consumption. Over half of the increase was on this component, which increased by a round 2½pp to 22.3% of GDP between 1999 and 2009. Transfers and subsidies, the second most important component, rose by around 1pp until 2009. Public investment ratios remained broadly stable.

Table 1: Main fiscal indicators (% of GDP)

	Primary expenditures					Public consumption				
	1999 (1)	2007 (2)	2009 (3)	2010 (4)	2013 (5)	1999 (6)	2007 (7)	2009 (8)	2010 (9)	2013 (10)
<i>Euro Area (12)</i>	43.5	42.6	48.0	48.6	46.9	19.4	19.5	21.7	21.4	21.2
<i>Germany</i>	44.6	40.1	44.8	46.1	42.4	19.0	17.5	19.6	19.2	19.3
<i>France</i>	49.1	49.6	54.4	54.1	54.9	22.4	22.3	23.9	23.8	24.1
<i>Italy</i>	41.0	41.9	46.9	45.6	45.6	17.7	18.9	20.6	20.4	19.4
<i>Spain</i>	36.5	37.4	44.1	43.7	41.5	16.8	17.7	20.5	20.5	19.5
<i>Greece</i>	37.1	43.2	49.1	46.2	66.0	16.8	19.9	22.7	21.6	19.9
<i>Ireland</i>	31.7	35.0	48.1	83.0	36.4	14.8	16.7	20.1	18.7	17.5
<i>Portugal</i>	39.6	41.4	47.2	51.2	45.5	18.2	19.8	21.4	20.7	19.0
<i>Memorandum: EA(12) - DE</i>	43.1	43.5	49.2	49.6	48.8	19.5	20.3	22.5	22.3	21.9

	Transfers and subsidies					Public investment				
	1999 (11)	2007 (12)	2009 (13)	2010 (14)	2013 (15)	1999 (16)	2007 (17)	2009 (18)	2010 (19)	2013 (20)
<i>Euro Area (12)</i>	17.5	16.4	18.5	18.5	18.7	3.1	3.2	3.6	3.4	2.8
<i>Germany</i>	19.7	17.0	18.7	17.8	16.5	2.4	2.0	2.3	2.3	2.2
<i>France</i>	18.7	18.8	20.9	21.0	21.6	3.8	3.9	4.3	4.1	4.0
<i>Italy</i>	17.5	17.6	19.9	20.0	21.5	2.9	2.9	3.4	2.9	2.4
<i>Spain</i>	13.1	12.5	15.5	16.2	17.3	3.8	4.6	5.1	4.7	2.1
<i>Greece</i>	13.8	14.7	17.6	17.9	18.8	3.8	4.3	4.6	3.2	2.7
<i>Ireland</i>	9.5	10.8	15.8	15.8	14.6	3.1	4.6	3.7	3.4	1.7
<i>Portugal</i>	12.1	14.9	17.1	17.2	18.9	4.9	3.2	4.1	5.3	2.2
<i>Memorandum: EA(12) - DE</i>	16.6	16.1	18.5	18.7	19.6	3.5	3.6	4.0	3.8	3.0

Source: Ameco

This overall pattern masks significant differences across countries. Germany saw only a small increase in the primary expenditure ratio, which was driven by public consumption spending but broadly counterbalanced by lower transfers and subsidies and investment. Public consumption and transfers and subsidies increased in all other countries and in some cases enormously. In Ireland, transfers and subsidies increased from 9.5% to around 15% of GDP and public consumption from around 15 to 20% of GDP between 1999 and 2009. France had amongst the highest spending ratios under both categories. Public investment did not increase much as a ratio to GDP except in Ireland and Spain while it declined strongly in Portugal.

Between 2009 and 2013, about half of the expenditure increase from the first EMU decade was reversed. This concerned all sample countries except France. The decline was focussed on public consumption and public investment and was strongest in the crisis countries. Spending ratios on transfers and subsidies, by contrast, changed little or even increased over this period, except in Germany and Ireland.

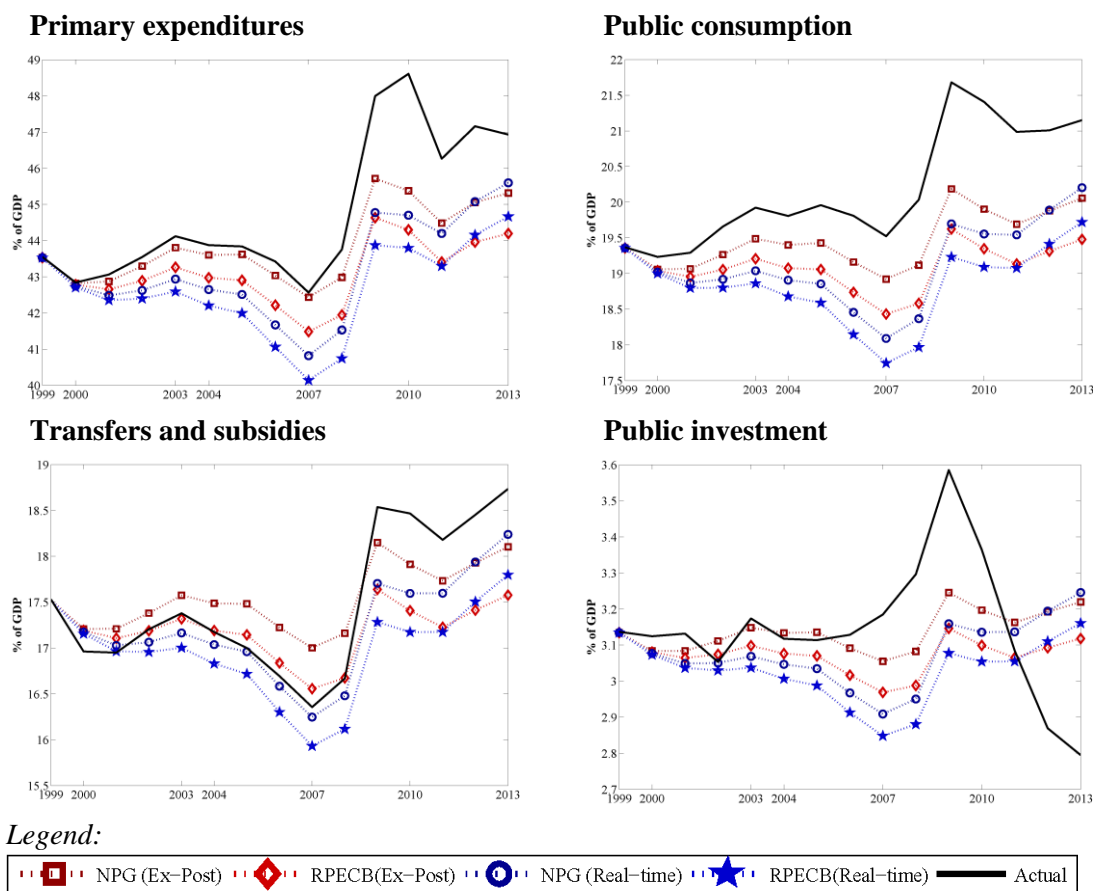
3. Expenditure stance across countries, time and categories during EMU

In this section, we analyse the public expenditure stance across the three main expenditure components that governments can influence in the short term: government consumption, transfers and subsidies and public investment. We apply the same methodology as in Hauptmeier et al (2011): actual public expenditure developments are assessed against an expenditure path that should have been taken if countries had followed a neutral expenditure stance. The latter is measured by two expenditure rules (nominal potential GDP growth and real potential GDP growth plus a cap at the ECB's price stability objective of below but close to 2%) based on real time and ex post data. This provides four measures of expenditure stance.¹ Deviations can be analysed by looking at either marginal deviations on a year-by-year basis or at cumulative changes (i.e. the year wise aggregation of past marginal deviations).

Firstly, to provide a general perspective, we focus on the cumulative effects for the aggregate euro area. Figure 1 compares the actual and rule-based expenditure stance expressed as percentage of GDP, showing a growing decoupling of primary expenditure developments from the neutral policy stance until 2009 under consideration for most policy rules. This decoupling at the aggregate euro area level was mainly driven by relative expansionary developments in public consumption as indicated by the vertical distance between the actual expenditure ratio and the cloud of simulated ratios based on the different rules (see upper panels of Figure 1). 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 particularly expansionary path at the aggregate level, in the pre-crisis period before exceeding “neutral” levels in the crisis (2009 following). Public investment spending was expansionary from about 2005 – 2009 before it became strongly restrictive as of 2010 (see lower panels of Figure 1).

¹ The earlier study applied 6 measures but the two additional ones did not provide much additional guidance.

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 view hides significant cross country differences. In the following, we therefore highlight country patterns for the main expenditure components. Table 2 shows cumulative deviations from the neutral spending paths 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. For expositional reasons we focus on two specific expenditure rules which apply nominal potential GDP growth as the benchmark, measured in real-time (using past AMECO vintages) and ex-post (actual data). 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 strongly restrictive primary expenditure stance for Germany over the 1999-2007 period while cumulative primary spending dynamics exceed the neutral spending rule in all other sample countries. This holds both for the real-time and the ex-post assessment. In Germany primary expenditure fell short of rule based spending by some 5% of GDP cumulatively between 1999 and 2007. For the other countries, on the contrary, cumulative excess primary spending amounted to between around 2pp of GDP in France and almost 8pp of GDP in Greece when assessed on a real-time basis. Similar numbers result from the application of the ex-post NPG rule. The degree of expansion varied strongly between the different expenditure components and countries. For Italy, Spain and Ireland 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 Portugal, 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 Spain, Greece, Portugal and Ireland in the order of between around 1½ and 3pp 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. Germany and France's expenditure stance was only slightly expansionary.

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. This is due to a sharp ex-post correction of potential growth rates in these two years which makes the expenditure 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.

Table 2: Cumulative deviations from rule-based spending for selected periods, countries and spending components

Panel A: Real-time NPG rule

		Euro Area (12)	Germany	France	Italy	Spain	Greece	Ireland	Portugal
1999-2007	<i>Primary expenditures</i>	2.0	-4.8	1.2	1.3	3.4	7.0	2.6	1.8
	Public consumption	1.4	-1.6	0.2	1.2	1.9	3.5	1.2	1.4
	Transfers and subsidies	0.1	-2.8	0.5	0.3	0.5	1.2	1.1	2.5
	Public investment	0.3	-0.4	0.2	0.0	0.9	0.6	1.1	-1.5
	Others	0.2	0.0	0.3	-0.3	0.0	1.7	-0.9	-0.6
2008 -2009	<i>Primary expenditures</i>	1.8	0.2	1.0	-1.1	3.5	3.4	5.2	2.3
	Public consumption	0.6	0.4	-0.2	-0.6	1.3	0.9	-0.8	-0.2
	Transfers and subsidies	0.8	-0.6	0.7	0.8	1.9	1.7	2.5	1.2
	Public investment	0.2	0.3	0.1	0.2	0.3	0.0	-1.2	0.5
	Others	0.2	0.2	0.4	-1.5	0.0	0.8	4.7	0.8
2010-2013	<i>Primary expenditures</i>	-1.5	-0.4	0.5	-2.1	-3.4	-0.1	-7.3	-1.1
	Public consumption	-1.0	0.6	-0.1	-2.2	-1.8	-8.8	-2.7	-3.4
	Transfers and subsidies	0.3	-0.9	0.9	1.2	2.0	-3.8	0.6	1.8
	Public investment	-0.8	0.1	-0.2	-0.9	-3.1	-4.3	-3.9	-2.0
	Others	0.0	-0.1	-0.1	-0.2	-0.5	16.7	-1.3	2.5

Panel B: Ex-post NPG rule

		Euro Area (12)	Germany	France	Italy	Spain	Greece	Ireland	Portugal
1999-2007	<i>Primary expenditures</i>	0.1	-3.6	1.4	1.7	1.6	7.5	4.4	0.4
	Public consumption	0.6	-1.0	0.3	1.4	1.1	3.7	2.1	0.7
	Transfers and subsidies	-0.6	-2.2	0.6	0.5	-0.1	1.4	1.7	2.1
	Public investment	0.1	-0.4	0.2	0.1	0.8	0.6	1.3	-1.6
	Others	0.0	0.1	0.3	-0.3	-0.1	1.8	-0.7	-0.8
2008 -2009	<i>Primary expenditures</i>	2.5	1.0	2.1	0.3	5.0	7.0	12.9	3.6
	Public consumption	0.9	0.8	0.3	0.0	2.0	2.5	2.8	0.4
	Transfers and subsidies	1.0	-0.3	1.2	1.4	2.4	2.9	4.9	1.7
	Public investment	0.3	0.3	0.1	0.3	0.5	0.3	-0.3	0.6
	Others	0.2	0.3	0.5	-1.4	0.1	1.2	5.4	0.8
2010-2013	<i>Primary expenditures</i>	0.9	0.2	2.8	0.4	-1.9	9.2	-6.0	1.2
	Public consumption	0.1	0.8	0.9	-1.0	-1.1	-4.6	-1.8	-2.3
	Transfers and subsidies	1.2	-0.7	1.8	2.3	2.6	-0.3	1.2	2.6
	Public investment	-0.6	0.1	0.0	-0.8	-3.0	-3.5	-3.6	-1.8
	Others	0.3	0.0	0.1	-0.1	-0.4	17.6	-1.8	2.7

Source: Ameco

Finally, looking at the spending developments between 2010 and 2013 we observe a significant tightening of the expenditure stance, notably in Ireland but not in the other programme countries Greece, Ireland and Portugal. Expenditure consolidation was also significant in Spain and, somewhat less so, in Italy. The tightening reflects 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, Portugal and Ireland. 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. 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. This suggests that expansionary spending on transfers and subsidies was not reversed.

4. Implications for public debt developments

In this section, we look at the implications of public expenditure policies for debt developments. Taking into account standard assumptions on fiscal multipliers, tax elasticities and compound interest effects² we derive cumulative debt effects of the deviations from neutral spending policies according to the two rules we applied in Section 3. The main findings are reported in Table 3, which shows –within each subperiod- how much lower or higher in percentage points of GDP the public debt ratio would have been if countries had employed neutral expenditure policies. Again these effects are differentiated for to the main expenditure components we look at.

The results show that the cumulative debt effects of deviations from neutral policies over the pre-crisis period (1999-2007) were sizeable in all sample countries with the exception of Germany where a restrictive spending path was followed in this period. Based on ex-post data, excess spending over the neutral rule added around 10pp of GDP to the debt ratio in Italy and Portugal and

² For this purpose, we build on Coenen *et al* (2010) who carry out a model comparison exercise on the basis of various large-scale macroeconomic models. 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.

more than 20pp of GDP in the case of Greece. Effects were somewhat more contained in the cases of France (around 6pp of GDP) and Ireland (around 5pp of GDP) but still significant. Table 3 also highlights the main drivers of the debt increases which vary between countries. In Italy the spending-related debt increase almost entirely came from public consumption while dynamics in social transfers and subsidies were particularly important factors in Greece and Portugal.

Table 3: Decomposition of cumulative changes to public debt ratios compared to a neutral expenditure stance for selected periods

Panel A: Real-time NPG rule

	Euro Area (12)	Germany	France	Italy	Spain	Greece	Ireland	Portugal	
1999-2007	Primary expenditures	8.2	-17.3	4.9	9.8	11.6	27.0	5.4	13.5
	Public consumption	5.6	-7.1	2.1	8.7	6.5	13.0	5.4	10.3
	Transfers and subsidies	0.4	-9.1	1.1	1.0	1.5	8.3	2.5	10.3
	Public investment	0.6	-2.3	0.9	0.0	2.7	3.1	3.2	-4.2
	Others	1.6	1.2	0.9	0.1	1.0	3.6	-5.6	-2.9
2008 -2009	Primary expenditures	3.7	-3.3	1.6	2.0	6.1	9.2	7.0	3.3
	Public consumption	1.9	-1.1	0.1	1.3	2.9	3.4	0.3	1.4
	Transfers and subsidies	0.8	-2.8	0.8	0.9	2.1	3.2	3.5	3.2
	Public investment	0.4	-0.2	0.1	0.2	0.8	0.9	-0.6	-0.5
	Others	0.7	0.7	0.6	-0.3	0.3	1.8	3.7	-0.9
2010-2013	Primary expenditures	-2.4	1.1	-0.7	-7.2	-1.9	-25.6	19.2	-3.5
	Public consumption	-1.9	0.9	-0.5	-4.0	-2.8	-22.6	-5.8	-8.5
	Transfers and subsidies	-0.2	-3.1	0.9	1.5	3.7	-6.1	1.3	1.9
	Public investment	-1.7	0.2	-0.6	-2.5	-6.8	-10.8	-5.9	-2.3
	Others	1.4	3.0	-0.5	-2.2	4.0	14.0	29.5	5.4

Panel B: Ex-post NPG rule

	Euro Area (12)	Germany	France	Italy	Spain	Greece	Ireland	Portugal	
1999-2007	Primary expenditures	1.6	-9.0	6.0	9.0	3.5	23.9	5.2	8.0
	Public consumption	2.7	-3.5	2.5	8.4	2.7	11.6	5.3	7.7
	Transfers and subsidies	-2.2	-5.5	1.5	0.6	-1.4	7.1	2.4	8.6
	Public investment	0.1	-1.9	0.9	-0.1	1.8	2.7	3.3	-4.8
	Others	1.0	1.9	1.0	0.0	0.4	3.4	-5.8	-3.5
2008 -2009	Primary expenditures	3.0	-0.8	2.8	3.6	6.2	12.3	16.3	3.6
	Public consumption	1.6	0.0	0.6	2.0	3.0	4.8	4.8	1.6
	Transfers and subsidies	0.5	-1.7	1.3	1.5	2.1	4.3	6.4	3.4
	Public investment	0.3	-0.1	0.2	0.3	0.8	1.2	0.6	-0.5
	Others	0.6	0.9	0.7	-0.2	0.3	2.2	4.5	-0.9
2010-2013	Primary expenditures	1.7	2.4	2.3	-1.7	-0.5	-7.0	21.0	0.7
	Public consumption	-0.1	1.5	0.8	-1.6	-2.2	-14.2	-4.1	-6.7
	Transfers and subsidies	1.4	-2.5	2.1	3.9	4.2	0.8	2.2	3.3
	Public investment	-1.4	0.3	-0.4	-2.1	-6.7	-9.3	-5.3	-1.9
	Others	1.8	3.2	-0.2	-1.9	4.1	15.6	28.2	5.9

Source: Ameco

Turning to the immediate crisis period (2008-2009) we observe additional strong expenditure-driven debt increases (particularly when applying the ex-post NPG rule), notably in Ireland (15pp of GDP aprox) and Greece (around 10pp of GDP) but also in Spain (around 6 pp of GDP) and Portugal (5pp of GDP aprox). Especially in the programme countries, debt increases were primarily the result of expansionary spending on social transfers and subsidies. Public consumption played a more important role in Spain and Italy.

An interesting picture emerges for the period 2010-2013. While the expenditure stance was strongly restrictive in most countries (see Table 3) this does not translate into an equally strong impact on the accumulation of government debt. In fact, when applying the ex-post NPG rule, the favourable debt impact of the restrictive spending stance appears relatively contained in most countries with the exception of Greece. The reason for this observation lies in a relatively unfavourable interest-growth-differential, related to weak economic growth and crisis-related interest rate increases - as well as the sizable increases in the stock of government debt. Moreover, the impact of social transfers and subsidies remains expansionary in most cases.

5. Determinants of the expenditure stance

An empirical analysis of factors that influence countries' expenditure stance can provide further insights on the reasons and remedies for expansionary expenditure policies. In this section we present results based on standard fixed-effects panel estimations for a sample of 12 euro area countries³ over the 2000-2013 period. 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 (according to the ex-post NPG rule).

The aim of this empirical exercise is to explain the governments' expenditure stance on the basis of fiscal and macroeconomic factors, relevant institutional characteristics as well as political economy variables. We go beyond the empirical exercise presented in Hauptmeier et al (2011) by carrying

³ Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain.

out differentiated regressions for the different expenditure components we analyse in Sections 2 and 3 of this paper. Moreover it focusses on the period of the European debt crisis to gage what factors changed the behaviour of governments.

The choice of independent variables on our regressions is based on the following hypotheses. First, we control for the macroeconomic environment by including the output gap as a percentage of potential GDP. We also control for the stock of government debt as well as interest payments since a higher debt burden and a limited room for budgetary manoeuvre should reduce spending profligacy. It could also be argued that positive surprises on the revenue side of the budget translated into more expansionary expenditure policies with a lag. This is considered by including the excess revenue growth in a given year relative to previous year. We would expect that the revenue surprise is positively correlated with the expenditure stance.

At the same time, the pro-cyclicality of the expenditure stance should be lower in the presence of strong budgetary institutions on the expenditure side. To control for the extent to which national expenditure policy faces domestic institutional constraints, we use the expenditure rules index as developed by Debrun et al. (2008).⁴ It includes all budgetary provisions, which fix numerical targets or ceilings to government expenditure. To attach weights to different institutions, the index takes into account both the share of overall public spending covered by the rule and qualitative features such as the type of enforcement mechanisms and media visibility. We also interact the expenditure rule index with the output gap and expect a negative coefficient, as strong institutions should reduce spending profligacy 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, Troika programmes applied to

⁴ 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.

some of the countries we consider in this study. One could expect a less expansionary expenditure stance in the presence of this event. Parliamentary national elections are expected to lead to higher expenditure growth in that year. We therefore expect a positive sign of the coefficient of this dummy variable. Moreover we include two variables from the World Bank Database of Political Institutions: One 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.

The results of this regression analysis are presented in Table 4. Starting with the impact of the cycle on the expenditure stance we observe a positive coefficient, indicating pro-cyclicality except for most of the categories. However, the effect is only statistically significant for public consumption, which suggests that excess spending over our neutral policy rule in this category increases while macroeconomic conditions improve. At the same time, we observe a negative – though not significant – coefficient on transfers and subsidies, which would be in line with the operation of automatic stabilisers over the whole sample period.

The stock of public debt as well as the interest burden show negative – and in most cases significant – coefficients for all specifications and spending categories. This is in line with the hypothesis that a higher debt burden reduces the budgetary room for manoeuvre and therefore also spending dynamics. Interestingly, governments react to tighter expected financial conditions by applying more prudent spending policies. Regression results also point to a significant effect of revenue surprises on spending dynamics, notably for transfers and subsidies 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 a significant impact on the cyclicality 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 whereas is the interaction term of the expenditure framework and the surprises in revenues for the transfers and subsidies. The interpretation is that the pro-cyclicality of

this spending item is reduced in the presence of a strong expenditure framework. However, the EU surveillance framework variable shows a negative sign for the coefficient but it is not statistically significant.

Finally, turning to the political economy variables, we find that the expenditure stance is significantly more expansionary in election years (particularly in the case of the public consumption) and consistently less expansionary the more years are left in the current political term (with no exception).

There are also interesting results related to the time dummies for 2008 – 2013. They suggest a significant fiscal structure in those years relating to all three spending categories, but more importantly for Transfers and Subsidies. It can be seen that this period has strongly favoured expansionary expenditure policies over this sub period (great recession). Moreover, 2013 shows a positive effect for Public consumption indicating that fiscal consolidation effort was lower for this year. And last but not least, public investment is an exception in the sense that significant coefficients are not present.

6. Conclusions

This study looks at the decomposition of expenditure dynamics during EMU in seven euro area countries (Germany, France, Italy, and the programme countries, Spain, Ireland, Greece and Portugal). It finds that an overall expansionary expenditure stance in 1999-2009 was mainly driven by expanding public consumption during the whole period. Transfers and subsidies were mostly expansionary post-Lehmann while public investment had boomed just before the crisis and turned restrictive during the crisis. Policies regarding transfers and subsidies and government consumption were expansionary in all countries except Germany. The policy stance turned restrictive in 2010 and strongly so in Greece, Ireland, Portugal and Spain. Most consolidation efforts focussed on public consumption and public investment while spending on the welfare state was largely spared (except in Greece).

The study also looks at the determinants of this expenditure pattern with an econometric analysis: the expenditure stance regarding public consumption and transfers and subsidies was significantly pro-cyclical over 1999-2013. The expenditure stance (total and most categories) was also correlated with public debt (less expansionary, the higher public debt), EMU-related interest savings (positive relation), political stability and fiscal institutions (negative) and the election cycles (positive). Moreover, investment spending was geared up with the emergence of revenue windfalls and was then strongly curtailed when revenue windfalls reversed during the crisis.

What are the implications? First, it contradicts those who argue that financial crisis had nothing to do with fiscal policies. On the contrary, all problem countries had manoeuvred themselves into less safe fiscal positions due to an expansionary stance during the boom years. Or in other words, with more "neutral" policies the fiscal crisis could have been prevented and the margin to implement countercyclical fiscal policies.

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-cyclicity especially in good times and in the presence of revenue windfalls and 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 is probably the best way to guard against expenditure pro-cyclicity 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. Preventing an expansion of welfare spending in crisis may in particular require flexible complementary policies in the labour market (so that flexible wages limit the increase in unemployment). This may also help preserve public investment spending from excessive cuts.

Finally, our study has disentangled primary expenditures to make explicit not only the different characteristic 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 that correcting the under-emphasis of welfare adjustment so far (contrary to public perception) is going to be a particular challenge in the years to come, notably as aging-related pressures on public spending will rise.

Table 4: 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)	0.14 [1.07]	0.161 [1.45]	0.173 [1.49]	0.312 [4.23]***	0.353 [5.95]***	0.355 [6.78]***	-0.026 [0.19]	-0.008 [0.05]	-0.004 [0.02]	0.331 [0.35]	0.473 [0.59]	0.519 [0.56]
Public debt ratio (t-1)	-0.098 [2.86]**	-0.086 [2.75]**	-0.085 [2.56]**	-0.069 [4.01]***	-0.056 [2.83]**	-0.051 [2.97]**	-0.118 [3.54]***	-0.119 [4.26]***	-0.119 [4.33]***	-0.077 [0.83]	-0.027 [0.34]	-0.051 [0.58]
Government Bond spread (t+1)	-0.436 [2.32]**	-0.484 [2.30]**	-0.455 [2.45]**	-0.602 [3.34]***	-0.623 [2.72]**	-0.62 [3.05]**	0.312 [1.38]	0.266 [1.26]	0.266 [1.21]	-2.268 [4.80]***	-2.571 [10.04]***	-2.358 [6.75]***
Revenue growth (above unit elasticity) (t-1)	0.054 [0.82]	0.06 [0.85]	0.054 [0.74]	-0.082 [0.96]	-0.077 [0.92]	-0.09 [1.14]	0.093 [1.16]	0.108 [1.28]	0.11 [1.19]	0.695 [2.33]**	0.68 [2.27]**	0.674 [2.22]**
Revenue growth (above unit elasticity) -quadratic term-	0.002 [0.13]	-0.006 [0.45]	-0.004 [0.26]	-0.018 [0.91]	-0.018 [1.03]	-0.019 [1.03]	0.034 [3.76]***	0.025 [4.13]***	0.025 [3.26]***	0.023 [0.35]	-0.005 [0.09]	0.013 [0.21]
Streight of expenditure framework * Output Gap	-0.045 [0.55]			-0.073 [0.89]			-0.044 [0.43]			-0.34 [0.94]		
Streight of expenditure framework * Public debt ratio (t-1)	-0.007 [1.23]			-0.015 [2.79]**			0.001 [0.14]			-0.021 [1.21]		
Streight of expenditure framework * Revenue growth (above unit elasticity) (t-1)	-0.096 [1.65]			-0.004 [0.11]			-0.13 [1.86]*			-0.135 [0.50]		
EU surveillance framework (EDP + troika)	-0.788 [1.64]	0.074 [0.11]	0.337 [0.67]	0.478 [0.44]	0.876 [0.95]	1.365 [1.16]	-1.119 [1.02]	-0.557 [0.54]	-0.48 [0.50]	-2.723 [0.54]	1.474 [0.18]	0.691 [0.12]
Parliamentary elections		0.229 [0.90]			1.117 [2.91]**			0.266 [1.16]			-1.164 [0.70]	
Government Stability		-1.711 [1.80]*			-0.151 [0.20]			-0.861 [0.54]			-11.03 [2.21]**	
Vote Share of Opposition Parties			0 [0.02]			0.003 [0.14]			0.02 [1.21]			-0.051 [0.69]
Years left in the current term			-0.453 [3.72]***			-0.384 [4.96]***			-0.226 [2.36]**			-1.437 [1.85]*
time dummy (2008)	3.401 [5.16]***	2.615 [3.40]***	2.469 [5.86]***	0.635 [0.41]	0.034 [0.03]	-0.115 [0.07]	3.749 [3.29]***	3.218 [3.24]***	3.278 [3.30]***	6.401 [1.02]	3.207 [0.37]	3.462 [0.53]
time dummy (2009)	5.893 [4.22]***	5.089 [3.81]***	4.786 [3.68]***	3.607 [2.64]**	3.093 [2.66]**	2.798 [2.43]**	7.746 [4.86]***	7.279 [5.19]***	7.355 [5.18]***	6.795 [0.69]	4.171 [0.34]	3.824 [0.35]
time dummy (2010)	2.361 [2.42]**	1.742 [1.50]	1.448 [1.37]	-0.038 [0.02]	-0.518 [0.30]	-0.518 [0.54]	2.582 [1.46]	2.547 [1.59]	2.639 [1.76]	8.554 [1.17]	5.474 [0.56]	5.685 [0.70]
time dummy (2012)	2.441 [2.37]**	1.759 [1.70]	1.291 [1.39]	0.756 [0.61]	0.213 [0.18]	-0.284 [0.23]	4.012 [2.52]**	3.787 [2.67]**	3.787 [2.70]**	-1.342 [0.17]	-3.773 [0.39]	-4.684 [0.58]
time dummy (2013)	3.764 [3.55]***	2.956 [2.70]**	2.064 [2.15]*	1.511 [1.00]	1.02 [0.78]	0.013 [0.01]	5.022 [2.79]**	4.723 [2.80]**	4.478 [2.84]**	2.125 [0.28]	-1.033 [0.10]	-2.818 [0.32]
Constant	6.793 [3.00]**	6.303 [3.27]***	6.937 [2.99]**	5.873 [4.77]***	5.074 [3.99]***	5.459 [3.75]***	6.978 [3.16]***	7.114 [3.75]***	6.516 [4.52]***	6.422 [0.83]	4.755 [0.86]	9.85 [1.01]
Observations	336	336	336	336	336	336	336	336	336	336	336	336
Number of countries	24	24	24	24	24	24	24	24	24	24	24	24
R-squared	0.49	0.5	0.51	0.5	0.51	0.51	0.49	0.48	0.48	0.3	0.36	0.32
corr u _i and X _b	-0.77	-0.75	-0.74	-0.65	-0.62	-0.59	-0.76	-0.76	-0.76	-0.37	-0.32	-0.34
adjusted R-squared	0.46	0.47	0.48	0.46	0.48	0.48	0.46	0.45	0.45	0.26	0.31	0.27
R-squared overall model	0.2	0.21	0.22	0.28	0.31	0.32	0.15	0.14	0.15	0.25	0.33	0.28
R-squared within model	0.49	0.5	0.51	0.5	0.51	0.51	0.49	0.48	0.48	0.3	0.36	0.32
R-squared between model	0.02	0.01	0.01	0.05	0.06	0.04	0	0	0	0.02	0.27	0.13
standard deviation of epsilon _{it}	2.36	2.33	2.32	2.24	2.2	2.21	2.51	2.53	2.52	9.64	9.25	9.53
panel-level standard deviation	2.83	2.72	2.65	2.01	1.88	1.8	3.59	3.61	3.59	3.06	2.38	2.62
fraction of variance due to u _i	0.59	0.58	0.57	0.45	0.42	0.4	0.67	0.67	0.67	0.09	0.06	0.07

Notes: Baseline (I), Baseline + Institutional framework (II and III), Baseline + electoral cycle and government stability. 2) “Revenue growth (above unit elasticity)” variable is constructed by using nominal Pot. GDP growth rate.

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