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PUBLIC FINANCES AND THE CURRENT ACCOUNT: AN ANALYSIS FOR THE PERIPHERAL EUROPEAN COUNTRIES

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Abstract

The relationship between fiscal policy and international trade, and their implications on economic growth, has not been widely discussed. The effects of fiscal policy on growth is a classical topic in economics, and we also can find research relating external openness and economic growth; but the extent to which fiscal policies could affect international trade policies, competitiveness and the trade balance is a question that has not yet been answered by the literature.

In this paper we will study the relationship between the government balance and the current account in the scenario of a monetary union where fiscal consolidation is constrained by the fiscal discipline required by supranational agreements. For the empirical application we will use data on Portugal, Greece, Ireland, Italy and Spain. Those countries of the Eurozone are of particular interest since they have been grouped, in Anglo jargon, as PIIGS due to high national budget deficits, rising government debt levels and major problems of competitiveness in the current economic crisis.

JEL classification: E62, F32, F41.

Keywords: Fiscal consolidation, fiscal rule, current account, peripheral countries.

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1. Introduction

The role of public finances in influencing economic growth has been widely discussed by academicians and by policy-makers. The theoretical and empirical literature on fiscal policy and economic growth is rich and growing (see Díaz-Roldán and Martínez-López (2006), for a survey). In closed economies the government deficit affects the aggregate demand; and the structure of taxation and public expenditure plays a key role on the decisions on saving and invest. Adding to that, in open economies fiscal policies also could influence decisions on exports and imports, and on foreign direct investment. Therefore, the channels of transmission of fiscal policies could affect competitiveness and, consequently, economic growth.

On the other hand, the relationship between openness and economic growth also has been a growing debated topic (see Krugman (1996), Frankel and Romer (1999) and Andersen and Babula (2008), among others). Economic openness not only will cause a country to be more vulnerable when facing external shocks, but also its inability to compete with other countries. In the spirit of Mundell (1961), the lack of flexibility of prices and wages would aggravate this problem. However, the extent to which fiscal policies could affect international trade policies, competitiveness and the trade balance is a question that has not yet been answered by the literature.

Monacelli and Perotti (2008), study, both empirically and theoretically, the effects of a shock to government spending (on goods and services) on the terms of trade and the relative price of traded and non-traded goods. Using a structural VAR approach, they found that a rise in government spending generates an appreciation of the terms of trade and a fall in the price of goods relative to services (which is the empirical measure of the relative price of traded goods).

Nickel and Vansteenkiste (2008) analyze the empirical relationship between fiscal policy and the balance of payments. They estimate a dynamic panel threshold model for 22 industrialized countries and they found that in low and medium debt countries an increase in the fiscal deficit leads to a higher current account deficit (consumers react in a Keynesian manner). On the contrary, in high debt countries a rise in the fiscal deficit does not result in a rise in the current account deficit (consumers have become Ricardian, in words of the authors). Therefore the main conclusion is that the relationship between fiscal deficit and current account deficit depends on the initial public debt level, because this variable affects the private sector expectations.

Barrios et al. (2010) estimate the determinants of successful fiscal consolidations and find that the repair of banking sector is a key condition, and that would be useful a proper coordination of national fiscal policies. They also stress that the initial public debt level plays a significant role to achieve a successful fiscal consolidation, but they do not explore the effects of fiscal adjustment on the external sectors.

Riguzzi (2011), following a New Keynesian model, studies the extent to which the degree of openness influence the transmission mechanism of fiscal policy. He finds that openness to trade limits both the stimulating effect of government spending on output, and the contractive effect of higher taxes on output. Moreover, and in contradiction to the traditional Keynesian model, capital mobility and exchange rate flexibility do not limit fiscal effectiveness, but rather work as amplifiers of the effect of fiscal policy on output.

More recently, Karras (2012) tests the effectiveness of fiscal policy in open economies. Using annual data for 62 developed and developing economies, and for the years 1951 to 2007, finds that an increase in trade openness by 10% of GDP reduces the magnitude of the long-run fiscal multiplier by 5 or 6%. From another point of view, Camarero et al. (2012) explore the relationship between the current account and the net foreign assets using a multicointegration test, but they do not focus on the theoretical linkages behind.

As we can see, the public debt level seems to be determinant for the success of fiscal consolidation and its implications for external deficit. But the empirical results are inconclusive, and none of the papers refereed explicitly study the relationship between government deficit and the current account.

In recent years following the financial and economic crisis, some debate on the role of economic policies has been opened. It is well known that the success of fiscal consolidation depends not only on the improvement of the primary fiscal balances, but also on the macroeconomic conditions such as the monetary policy regimes and the exchange rate adjustment. Gil-Pareja et. al. (2007) provides an interesting analysis on this issue for peripheral countries. They found that the European exchange-rate mechanism contributed to a deeper integration of those peripheral countries that participated in the mechanism for at least several years, before their accession to the European Union (EU). But even in a set of integrated economies as the EU and the Eurozone proves to be, the policies measures adopted for recovering after the crisis become of special relevance in the particular scenario of the monetary union, where

fiscal consolidation is constrained by the fiscal discipline imposed by supranational agreements.

In the European Monetary Union (EMU), the fiscal consolidation has been enforced by the Pact for the Euro signed in March 2011. The aim was to reinforce the coordination of economic policy in favour of competitiveness and convergence, pointing out as an essential need that member states implement in national laws the budget rules of the EU established in the Stability and Growth Pact (SGP). Among the current 18 countries of the EMU, some of them exhibit both high national budget deficits relative to GDP, and rising government debt levels: namely Portugal, Italy, Greece and Spain. Those are the southern and peripheral European countries, and they have been grouped, in Anglo jargon, as PIGS; although in 2008, it became PIIGS when Ireland was added after her banking crisis.

Given the special importance of fiscal consolidations and their implications on current account, when trying to recover after the financial and economic crisis, we are interested on studying those relationships. For that reason, in this paper we will explore such issues in a monetary union scenario, where we will consider the possibility of following an explicit fiscal rule to guarantee a medium-term budgetary position close to balance. And for highlight the relevance of high government deficits and debt level, we will perform the empirical applications for the peripheral European countries (PIIGS). The structure of the paper is as follows: in next section we will introduce some considerations on monetary unions, in section 3 we will obtain and discuss some empirical results using fiscal rules. Then, in section 4 we will relate the obtained results to the performance of the current account. Finally in section 5 the concluding remarks will be presented.

2. The macroeconomics of monetary unions

Our environment, the EMU started by 11 member countries of the EU in January 1st 1999, is a good example of a particular economic policy framework. A single monetary policy is the exclusive competence of an independent and supranational central bank, the European Central Bank (ECB), whilst other economic policies (budgetary and structural policies, as well as wage determination) generally remain the responsibility of the member states. The ECB formulates its policy in the light of developments in the

euro area as a whole. Monetary policy is therefore well placed to respond, if necessary, to any symmetric shocks that might affect the currency area.

In this economic policy framework, the management of fiscal policy becomes an issue of special relevance. In line with the subsidiarity principle, national governments are in a position (subject to certain common rules) to deal with their respective economies, e.g., in the case of country-specific shocks. But, in contrast with the federal system of the United States of America (US), in the EU there is not a federal budget big enough to provide an insurance against shocks. Incorporating the insurance function to the EU budget would mean to reinforce fiscal competencies at the EU level, given that the size of its budget is still relatively small. In fact, proposing structural reforms of the budget would require several institutional changes, such as reinforcing the role of the European Parliament, creating either a supranational authority on taxes or funds guaranteed by different budget rules, or establishing a joint decision mechanism for the coordination of fiscal policies.

In a monetary union, the degree and the mechanism for coordination of national economic policies differ according to how convincing the economic rationale for coordination is in the particular policy area. As mentioned before, a monetary union can be defined on the basis of achieving the *inflation targeting*, and also with the purpose of keeping external balance in the economy. On one hand, the large risk posed by fiscal imbalances to any monetary area stability justifies close rules-based coordination in budgetary policies. But, in the other hand, the fiscal discipline imposed by the monetary agreements could limit the scope of stabilization fiscal policies, and its implications on economic growth.

Summing up, in a monetary union, fiscal policy is the only demand policy aimed to achieve the stabilization goal; and, the monetary autonomy is obtained at the cost of losing direct control over the exchange rates. Therefore, member states of a monetary union would face special difficulties when dealing with external shocks. In the EMU, the fiscal policy is oriented to achieve output stabilization in the short-run, through the use of the public deficit and automatic insurance mechanisms. In the long-run the fiscal policy should guarantee the sustainability of public finances, and also it should contribute to economic growth through the structure of revenues and expenditures, and the public investment in physic and human capital (European Central Bank, 2004). However, as mentioned before, in the EMU the management of fiscal policy is constrained by the limits imposed to the deficit and the lack of a federal budget.

As stated in the introduction, there is a debate about the utility and effectiveness of fiscal rules, and on their complementarities with discretionary fiscal policy measures and automatic stabilisers to deal with short-run fluctuations. Particularly, in EMU, the Maastricht Treaty stressed as basic that the Member States of EMU should avoid excessive deficits; and the reference values for deficit-to-GDP and debt-to-GDP ratios, have worked in practice as an explicit fiscal rule. But the success of any kind of fiscal rule remains an empirical question. In next section we will explore the possibility of following an explicit fiscal rule to guarantee a medium-term budgetary position close to balance in a monetary union scenario.

3. Fiscal rules

Since the purpose of this paper is to study the relationship between the government balance and the current account in the scenario of a monetary union, we will use data of European countries (source Eurostat) from 2000 (from where the whole data for each country is available) to 2013.

Table 1 shows the government deficit (–)/surplus (+), the government debt, the current account (in percentage of GDP), and the GDP rate of growth (% change on previous year) for the Eurozone-17 and for Portugal, Ireland, Italy, Greece and Spain (the PIIGS). In 2000 the government deficit and the government debt of Eurozone-17 were –0.1 and 69.2 respectively. In that year Portugal, Italy, Greece and Spain exhibit higher values for deficit and debt, while Ireland shows government surplus and lower levels of public debt. In 2013 the government deficit and the government debt of Eurozone-17 were – 3.0 and 92.6 respectively, and the PIIGS exhibit highest levels. After the economic crisis the figures are above the 3 and 60 limits required by the Maastricht Treaty, for the government deficit and debt respectively. On the other hand, in 2000 figures for current account and GDP growth were – 1.5 and 3.8, for Eurozone-17 respectively; –10.3 and 3.9 for Portugal, while for Ireland the figures are –0.4 and 10.6. After the economic crisis, in 2008, the records are – 1.5 and 0.4, for Eurozone-17; –5.6 and –2.2 for Ireland; –14.9 and –0.2 for Greece while for Spain the figures are – 9.6 and 0.9. In the last year, 2013, government deficits are around – 3.0 or above (–12.7 in Greece), while the current account figures have become positive. The most noticeable cases are those for Ireland and Spain. When they exhibit government surpluses, values for current account are negative while the public debt levels are relatively low and

figures for GDP are high. And when the current account recovers, the public debt levels turn to be higher and there is a drop of GDP rates of growth. Those facts seem to reveal that in those years, public finances and economic growth have been sustained by the external sector.

Table 1
Government deficit (-)/surplus (+), debt and current account (% of GDP)
GDP rate of growth (% change on previous year)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EU-17														
Def/sup	-0,1	-1,9	-2,7	-3,1	-2,9	-2,5	-1,3	-0,7	-2,1	-6,4	-6,2	-4,1	-3,7	-3
Debt	69,2	68,1	68	69,1	69,6	70,2	68,5	66,2	70,1	80	85,5	87,4	90,7	92,6
CC	-1,5	-0,4	0,6	0,3	0,8	0,1	-0,1	0,1	-1,5	-0,1	0,1	0,1	1,4	2,4
GDPgwt	3,8	2	0,9	0,7	2,2	1,7	3,3	3	0,4	-4,5	1,9	1,6	-0,7	-0,4
Portugal														
Def/sup	-3,3	-4,8	-3,4	-3,7	-4	-6,5	-4,6	-3,1	-3,6	-10,2	-9,8	-4,3	-6,4	-4,9
Debt	50,7	53,8	56,8	59,4	61,9	67,7	69,4	68,4	71,7	83,7	94	108,2	124,1	129
CC	-10,3	-10,3	-8,2	-6,4	-8,3	-10,3	-10,7	-10,1	-12,6	-10,9	-10,6	-7	-2	0,5
GDPgwt	3,9	2	0,8	-0,9	1,6	0,8	1,4	2,4	0	-2,9	1,9	-1,3	-3,2	-1,4
Ireland														
Def/sup	4,9	0,9	-0,4	0,4	1,4	1,6	2,9	0,2	-7,4	-13,7	-30,6	-13,1	-8,2	-7,2
Debt	37	34,5	31,8	31	29,4	27,2	24,6	24,9	44,2	64,4	91,2	104,1	117,4	123,7
CC	-0,4	-0,6	-1	0	-0,6	-3,5	-3,6	-5,3	-5,6	-2,3	1,1	1,2	4,4	6,6
GDPgwt	10,6	5	5,4	3,7	4,2	6,1	5,5	5	-2,2	-6,4	-1,1	2,2	0,2	-0,3
Italy														
Def/sup	-0,8	-3,1	-3,1	-3,6	-3,5	-4,4	-3,4	-1,6	-2,7	-5,5	-4,5	-3,7	-3	-3
Debt	108,6	108,3	105,4	104,1	103,7	105,7	106,3	103,3	106,1	116,4	119,3	120,7	127	132,6
CC	-0,2	0,3	-0,4	-0,8	-0,3	-0,9	-1,5	-1,3	-2,9	-1,9	-3,4	-3	-0,3	1
GDPgwt	3,7	1,9	0,5	0	1,7	0,9	2,2	1,7	-1,2	-5,5	1,7	0,4	-2,4	-1,9
Greece														
Def/sup	-3,7	-4,5	-4,8	-5,6	-7,5	-5,2	-5,7	-6,5	-9,8	-15,7	-10,9	-9,6	-8,9	-12,7
Debt	103,4	103,7	101,7	97,4	98,6	100	106,1	107,4	112,9	129,7	148,3	170,3	157,2	175,1
CC	-7,7	-7,2	-6,5	-6,5	-5,8	-7,6	-11,4	-14,6	-14,9	-11,2	-10,1	-9,9	-2,4	0,7
GDPgwt	4,5	4,2	3,4	5,9	4,4	2,3	5,5	3,5	-0,2	-3,1	-4,9	-7,1	-7	-3,9
Spain														
Def/sup	-0,9	-0,5	-0,3	-0,3	-0,1	1,3	2,4	2	-4,5	-11,1	-9,6	-9,6	-10,6	-7,1
Debt	59,4	55,6	52,6	48,8	46,3	43,2	39,7	36,3	40,2	54	61,7	70,5	86	93,9
CC	-4	-3,9	-3,3	-3,5	-5,2	-7,4	-9	-10	-9,6	-4,8	-4,5	-3,7	-1,2	0,8
GDPgwt	5	3,7	2,7	3,1	3,3	3,6	4,1	3,5	0,9	-3,8	-0,2	0,1	-1,6	-1,2

Source: Eurostat

- The government deficit (-)/surplus (+) is defined as the difference between the revenue and the expenditure of the general government sector.
- The debt corresponds to the consolidated general government gross debt at nominal value, outstanding at the end of the year.
- The current account registers the value of exports (credits) and imports (debits) of goods, services, income and current transfers.

The economic crisis contributes to create difficulties when deciding how to finance the public deficit. And in such a context, the scope of fiscal policies for stabilization purposes is more reduced in a monetary union. Moreover, the current

account imbalances have amplified the effect of the actual economic and financial crisis in Europe and could difficult the recovery. In the EMU the fiscal consolidation has been enforced by the Pact for the Euro trying to reinforce the coordination of economic policy in favour of competitiveness and convergence, pointing out as an essential need that member states implement in national laws the budget rules

¿But to which extent fiscal consolidations have impact on competitiveness and it could limit the economic growth? In order to illustrate this question, we first will assume that Eurozone-17 countries could have made use of a fiscal rule to limit excessive deficits. ¿How would have changed the actual data on public deficit reported in Table 1? And the next question would be ¿What are the implications of using fiscal rules on current account? To answer those questions, we will explore in a very simple way the relationships between fiscal discipline and the current account.

In the first step we will calculate the value of public deficit given by fiscal rules¹; and as second step, we will obtain the current account value resulting from the use of fiscal rules.

In our first step, following Ballabriga and Martínez-Mongay (2003), we will consider a fiscal rule which relates an explicit public deficit target (in terms of the GDP), g^o , with public debt deviations (in terms of the GDP) respect to its optimal level ($d_{-1} - d^o$), and the output level y :

$$g_i^o = - [\delta(d_{i,-1} - d_i^o) + \theta y_i] \quad i = 1, 2 \quad (1)$$

The public deficit adjusts according to the following path, where $0 \leq \rho \leq 1$:

$$g_i = (1 - \rho)g_i^o + \rho g_{i,-1} \quad (2)$$

From equations (1) and (2), we obtain the fiscal rule:

$$g_i = -(1 - \rho)\delta(d_{-1} - d^o) + \rho g_{i,-1} - (1 - \rho)\theta y \quad (3)$$

Notice that if $(d_{i,-1} - d_i^o) > 0$, then the country has a relatively high level of debt. And the opposite holds for $(d_{i,-1} - d_i^o) < 0$.

We would like testing whether the public deficit would have been different if Portugal, Ireland, Italy, Greece and Spain; i.e., the PIIGS countries, would have followed a fiscal rule. And since we are also interested in exploring the implications of

¹ From a different point of view, Díaz-Roldán and Montero-Soler (2011) analyze the convenience of using fiscal rules for the New Member States (NMS) of the EMU. And they found that the success of fiscal policy decisions depend on the symmetric or asymmetric nature of the shocks to deal with.

fiscal consolidation both in foreign sector and, consequently on growth, we will relate public deficit with the rate of growth, $\hat{y}$, instead of the output level, y . In that way, our fiscal rule will be:

$$g_i = -(1 - \rho)\delta(d_{-1} - d^o) + \rho g_{i-1} - (1 - \rho)\theta \hat{y} \quad (4)$$

And, according to the rule given by equation (4), we will calculate the “theoretical” public deficit in the three following scenarios:

- (i) The fiscal authorities give identical weights to debt deviations and to the output level, being $\delta = \theta = 0.5$. And the deficit adjust, also, in the same proportion, being $(1 - \rho) = \rho = 0.5$. This will be the “symmetric” scenario.
- (ii) The fiscal authorities are particularly concerned by fiscal discipline and they are averse to debt deviations, so, $\delta = 0.75$ and $\theta = 0.25$; because public deficit was high in the past, so, $(1 - \rho) = 0.25$ and $\rho = 0.75$. We will call this the disciplined, conservative or “debt averse” scenario.
- (iii) The fiscal authorities are particularly concerned about economic growth, so, $\delta = 0.25$ and $\theta = 0.75$; and about the deficit target, so, $(1 - \rho) = 0.75$ and $\rho = 0.25$. And this will be the “growth promoting” scenario.

As is well known, in EMU the Maastricht Treaty stressed as basic that the Member States of EMU should avoid excessive deficits, no more than 3 in percentage of the GDP, and the government debt should not exceed the 60 per cent of the GDP. Those reference values for deficit-to-GDP and debt-to-GDP ratios, have worked in practice as an explicit fiscal rule. According to those requirements, the fiscal rules for the cases detailed above will be:

- (i) “Symmetric” scenario:

$$g = -0.25(d_{-1} - 60) + 0.5 g_{-1} - 0.25 \hat{y}$$

- (ii) “Debt averse” scenario:

$$g = -0.1875(d_{-1} - 60) + 0.75 g_{-1} - 0.0625 \hat{y}$$

- (iii) “Growth promoting” scenario:

$$g = -0.1875(d_{-1} - 60) + 0.25 g_{-1} - 0.5625 \hat{y}$$

In Table 2, we show the actual value for the government deficit/surplus, taken from Table 1; and the computed values for the government deficit/surplus, given by the fiscal rules under the three scenarios proposed above.

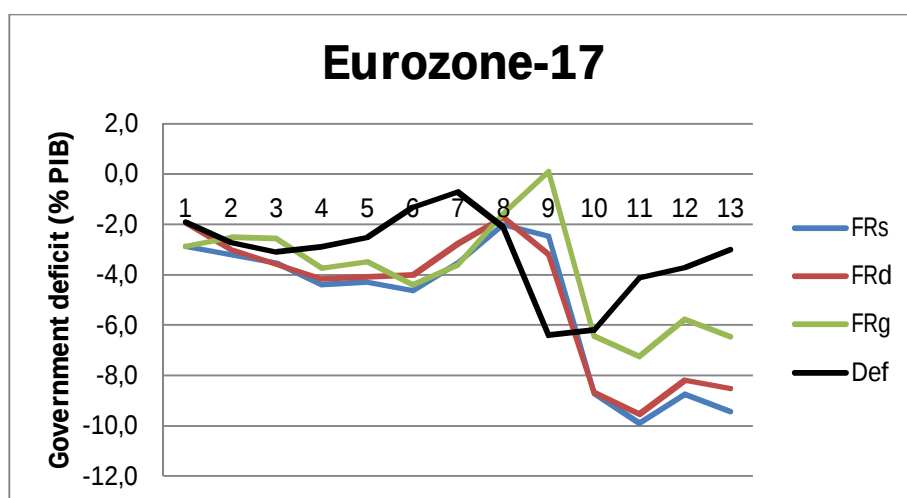
Table 2
Public deficit (-)/surplus(+)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EU-17														
Def/sup	-0,1	-1,9	-2,7	-3,1	-2,9	-2,5	-1,3	-0,7	-2,1	-6,4	-6,2	-4,1	-3,7	-3
FRs	-2,9	-3,2	-3,5	-4,4	-4,3	-4,6	-3,5	-2,0	-2,5	-8,7	-9,9	-8,7	-9,4	-2,9
FRd	-1,9	-3,0	-3,6	-4,2	-4,1	-4,0	-2,8	-1,7	-3,2	-8,7	-9,5	-8,2	-8,5	-1,9
FRg	-2,9	-2,5	-2,6	-3,7	-3,5	-4,4	-3,6	-1,6	0,1	-6,4	-7,2	-5,8	-6,5	-2,9
Portugal														
Def/sup	-3,3	-4,8	-3,4	-3,7	-4	-6,5	-4,6	-3,1	-3,6	-10,2	-9,8	-4,3	-6,4	-4,9
FRs	0,2	-1,1	-0,7	-2,1	-2,7	-5,5	-5,3	-3,7	-4,0	-11,5	-13,1	-13,4	0,2	-1,1
FRd	-0,9	-2,5	-1,9	-2,8	-3,4	-6,4	-5,4	-3,9	-4,7	-12,2	-13,6	-12,1	-0,9	-2,5
FRg	-0,2	-0,5	0,3	-1,7	-1,8	-3,9	-4,3	-2,4	-1,5	-8,1	-8,1	-8,3	-0,2	-0,5
Ireland														
Def/sup	4,9	0,9	-0,4	0,4	1,4	1,6	2,9	0,2	-7,4	-13,7	-30,6	-13,1	-8,2	-7,2
FRs	7,0	5,5	5,9	6,4	6,8	7,6	9,1	9,4	1,9	-7,7	-23,7	-17,6	-18,4	7,0
FRd	7,7	5,1	4,8	5,5	6,4	7,0	8,5	6,9	-2,2	-11,0	-28,9	-18,1	-16,9	7,7
FRg	2,7	2,0	3,1	3,2	2,7	3,5	4,6	7,9	4,7	-3,6	-14,7	-11,7	-12,6	2,7
Italy														
Def/sup	-0,8	-3,1	-3,1	-3,6	-3,5	-4,4	-3,4	-1,6	-2,7	-5,5	-4,5	-3,7	-3	-3
FRs	-13,0	-13,8	-12,9	-13,3	-12,9	-14,2	-13,7	-11,3	-11,5	-17,3	-17,2	-16,4	-13,0	-13,8
FRd	-9,8	-11,4	-10,8	-11,1	-10,9	-12,0	-11,3	-9,2	-10,3	-14,8	-14,5	-14,0	-9,8	-11,4
FRg	-10,4	-10,1	-9,3	-10,1	-9,6	-10,9	-10,5	-7,8	-6,2	-12,9	-12,5	-11,0	-10,4	-10,1
Greece														
Def/sup	-3,7	-4,5	-4,8	-5,6	-7,5	-5,2	-5,7	-6,5	-9,8	-15,7	-10,9	-9,6	-8,9	-12,7
FRs	-13,8	-14,0	-14,3	-13,3	-14,0	-14,0	-15,3	-15,1	-17,4	-24,1	-25,8	-30,6	-27,8	-13,8
FRd	-11,2	-11,8	-11,8	-11,5	-13,0	-11,7	-13,1	-13,8	-17,1	-24,5	-24,3	-27,4	-24,7	-11,2
FRg	-11,4	-11,2	-12,3	-10,9	-10,4	-11,9	-12,0	-10,4	-10,6	-14,2	-15,3	-19,1	-18,3	-11,4
Spain														
Def/sup	-0,9	-0,5	-0,3	-0,3	-0,1	1,3	2,4	2	-4,5	-11,1	-9,6	-9,6	-10,6	-7,1
FRs	-1,2	0,2	0,9	1,8	2,5	3,8	5,4	6,7	3,7	-4,0	-5,3	-7,0	-11,5	-1,2
FRd	-0,8	0,3	1,0	1,7	2,3	3,9	5,4	5,9	0,6	-7,2	-7,5	-9,1	-12,8	-0,8
FRg	-2,2	-0,8	-0,4	0,2	0,5	1,2	2,4	4,4	4,7	-1,5	-2,8	-3,5	-6,9	-2,2

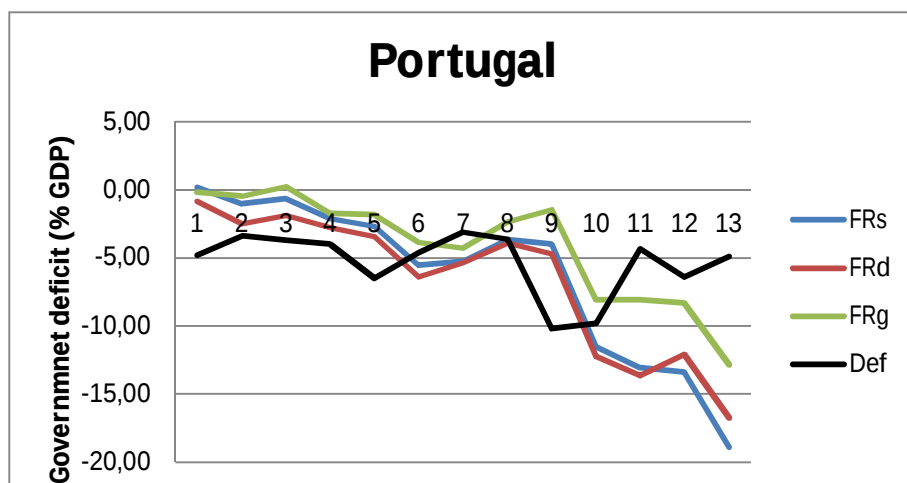
Notes: The row Def/sup shows the actual value of government deficit (-)/surplus (+) as percentage of GDP (see Table 1). The rows FRs, FRd and FRg, show the results given by the fiscal rule in the three proposed scenarios (i), (ii) and (iii) in section 3.

Using fiscal rules seem to reduce public deficit in some cases, or even turn the deficit into a surplus. This outcome is more significant for the Irish and the Spanish cases, as can be seen also in Graph 1. On the contrary for Italy and Greece seems not to be a good advice using fiscal rules. For Portugal and the Eurozone-17 as a whole, fiscal rules prove to be useful just in a couple of years after the economic crisis, but not before, neither later.

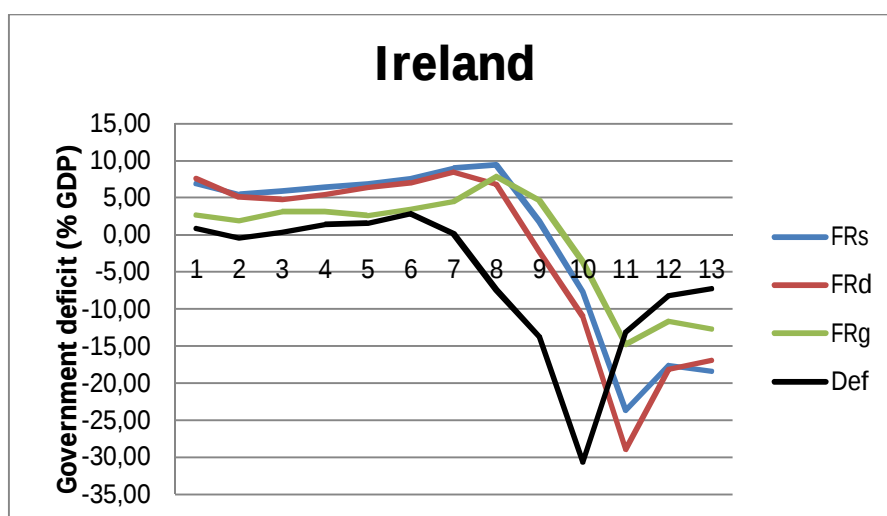
Graph 1.A: Eurozone-17 government deficit (% GDP)



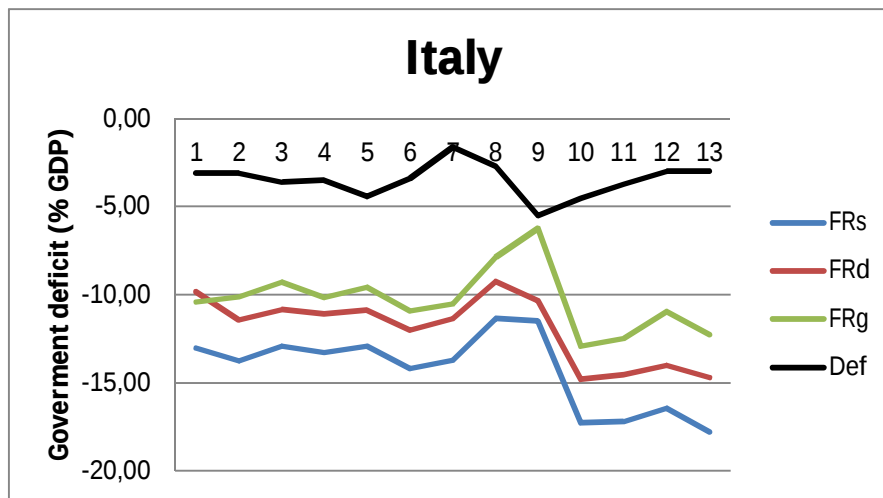
Graph 1.B: Portugal government deficit (% GDP)



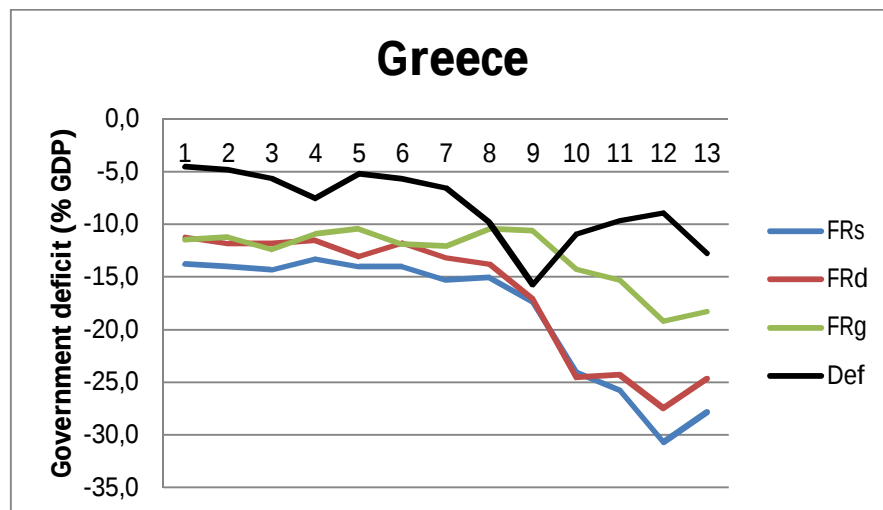
Graph 1.C: Ireland government deficit (% GDP)



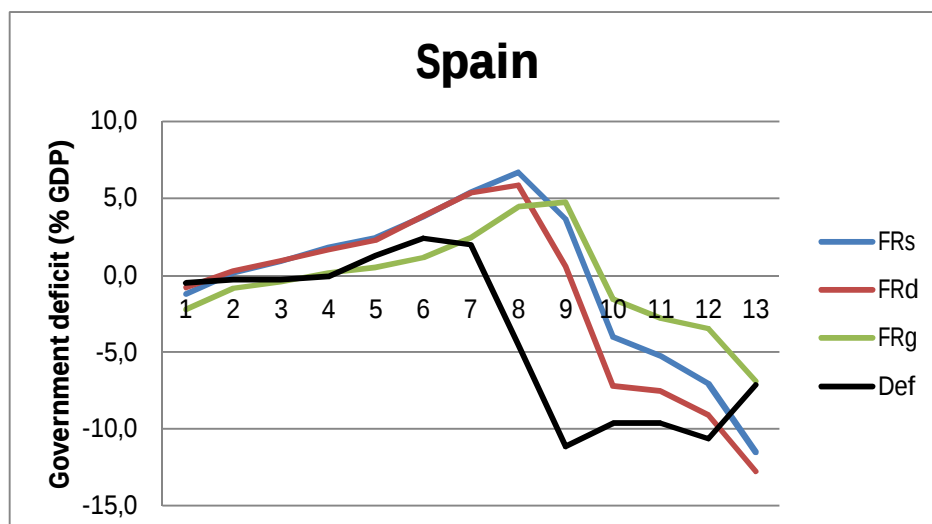
Graph 1.D: Italy government deficit (% GDP)



Graph 1.E: Greece government deficit (% GDP)



Graph 1.F: Spain government deficit (% GDP)



4. The current account

In a second step, since we are interested in studying the implications of fiscal consolidations on external deficit, we would like to know the path of current account under the three scenarios proposed in section 3. In the spirit of the fiscal rule, given by equation (4), we will assume that the current account path, CC , depends negatively on the public deficit, g , and the output rate of growth, $\hat{y}$, and positively on the past current account CC_{-1} . In that way, we built a kind of “*current account rule*” that offers the values of current account viewed as product of a weighted average of government deficit and the rate of growth plus an smoothing parameter².

So, we would write the foreign sector rule as:

$$CC = -(\alpha g + \beta \hat{y}) + \gamma CC_{-1} \quad (5)$$

Using the database provided by Eurostat for the variables reported in Table 1, we have estimated equation (5) using panel data for the 17 countries of the Eurozone with fixed effects, to capture the peculiarities of the countries. Estimating by OLS, when there are endogenous explanatory variables, the estimators of the parameters obtained are not consistent. But estimating using Instrumental Variables (IV), two-stage least squares, we can obtain consistent estimates of the parameters in the presence of endogenous explanatory variables, using as instruments lagged values of the regressors. Since our specification includes a lag of the endogenous variable as regressor, the IV estimates may present problems of autocorrelation and, thus, lead to inefficient estimators. To try to correct it, we use the Generalized Method of Moments (GMM) for dynamic panel data models (Arellano and Bover (1990) and Arellano and Bond (1991)), which provides efficient estimators³.

The results of the estimates by MGM are shown in Table 3. We can observe that the signs and significance of the coefficients obtained are the expected. Both, the coefficient of determination as well as the Durbin-Watson statistic, provide fair values. And the p-value of the statistic J (Sargan) shows that there is no empirical evidence

² Notice that our fiscal rule based on Ballabriga and Martínez-Mongay (2003), shows government deficit deviations from a certain goal as a weighted average of deviations of public debt and growth. This fiscal rule is equivalent to the monetary rule proposed by Taylor (1993), where the deviations of the real interest rate from its equilibrium value, is obtained as a weighted average of deviations of inflation and output gap. In both cases, policy rules are intended to use the policy instrument (government deficit or interest rate) for smoothing the path of policy goals, or, in other words, to stabilize deviations from the desired values of inflation and output, for monetary policy; and public debt and output for fiscal policy.

³Estimates by OLS and Instrumental Variables are available, upon request.

against the validity of the instruments. Therefore, we choose as basic specification the obtained by estimating MGM reported in Table 3.

Table 3

Eurozone-17 estimates by GMM			
Dep vb. CC	FRs	FRd	FRg
α	-0.15 (-2.22)	-0.15 (-2.07)	-0.22 (-2.32)
β	-0.32 (-3.84)	0.28 (-2.88)	-0.42 (-5.98)
γ	0.70 (4.96)	0.71 (5.02)	0.71 (4.98)
	$R^2_{adj} = 0.90$ DW = 1.91 J = 16.75 P(J-stat) =0.000	$R^2_{adj} = 0.90$ DW = 1.93 J = 17.22 P(J-stat) =0.000	$R^2_{adj} = 0.90$ DW = 1.90 J = 17.15 P(J-stat) =0.000

Notes:

- t-ratios in parenthesis
- instruments are two lags of the regressors and two lags of FRs, FRd and FRg.
- critical values for J, chi-squared (23) are 32.01 (10%) and 35.17 (5%).

In Table 4, we show the actual value for the current account, taken from Table 1; and the computed values for the current account, given by the foreign sector rules under the three scenarios proposed in section 3, and the values estimated for Eurozone-17 reported in Table 3.

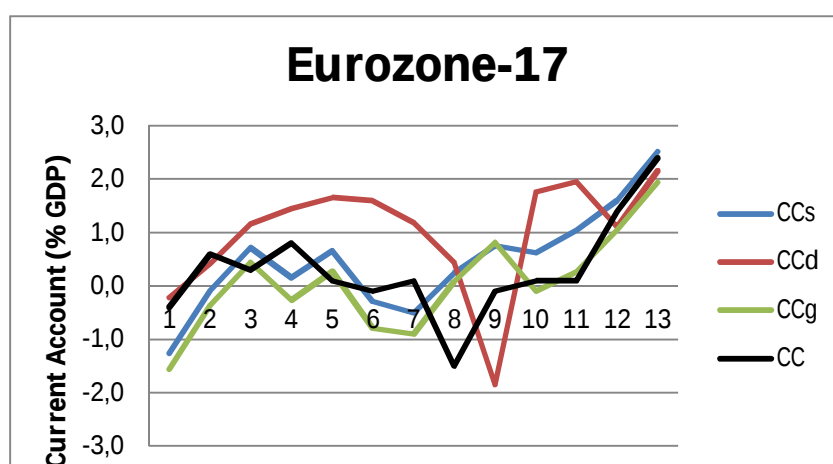
According to those results, the use of fiscal rules would not always translate in clear effects on current account deficit (see Table 4 and Graph 2).

Table 4
Current account deficit

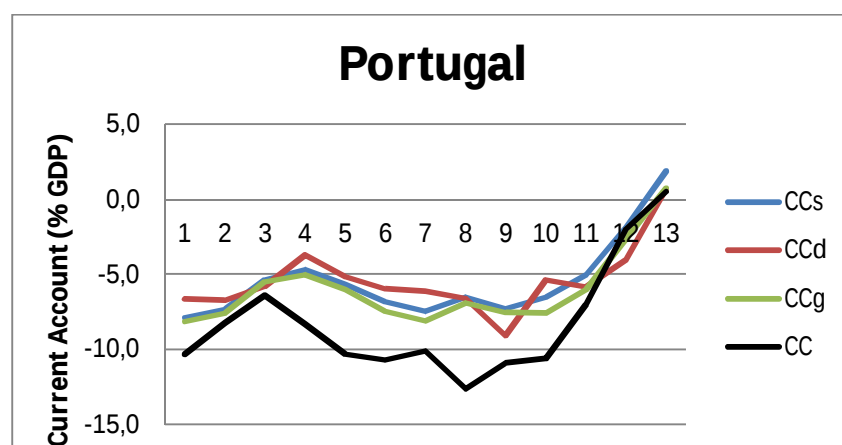
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EU-17														
CC	-1,5	-0,4	0,6	0,3	0,8	0,1	-0,1	0,1	-1,5	-0,1	0,1	0,1	1,4	2,4
CCs	-1,3	-0,1	0,7	0,2	0,7	-0,3	-0,5	0,2	0,8	0,6	1,0	1,6	2,5	-1,3
CCd	-0,2	0,4	1,2	1,5	1,7	1,6	1,2	0,4	-1,8	1,8	1,9	1,1	2,2	-0,2
CCg	-1,6	-0,4	0,4	-0,3	0,3	-0,8	-0,9	0,1	0,8	-0,1	0,3	1,1	1,9	-1,6
Portugal														
CC	-1,5	-0,4	0,6	0,3	0,8	0,1	-0,1	0,1	-1,5	-0,1	0,1	0,1	1,4	2,4
CCs	-7,9	-7,3	-5,4	-4,7	-5,7	-6,8	-7,5	-6,5	-7,3	-6,5	-5,0	-1,9	-7,9	-7,3
CCd	-6,6	-6,7	-5,8	-3,7	-5,2	-6,0	-6,1	-6,6	-9,1	-5,4	-5,8	-4,1	0,7	-6,6
CCg	-8,1	-7,6	-5,5	-5,0	-6,0	-7,4	-8,1	-6,9	-7,6	-7,6	-6,0	-2,6	0,7	-8,1
Ireland														
CC	-0,4	-0,6	-1	0	-0,6	-3,5	-3,6	-5,3	-5,6	-2,3	1,1	1,2	4,4	6,6
CCs	-2,9	-3,0	-2,8	-2,3	-3,4	-5,4	-5,5	-4,4	-2,1	-0,1	3,6	3,4	5,9	-2,9
CCd	0,0	0,3	-0,4	0,4	0,3	-2,0	-2,4	-5,4	-5,4	-0,3	5,7	3,6	5,6	0,0
CCg	-2,7	-2,9	-2,6	-2,1	-3,3	-5,2	-5,2	-3,8	-1,9	-0,7	1,6	2,2	4,8	-2,7
Italy														
CC	-0,2	0,3	-0,4	-0,8	-0,3	-0,9	-1,5	-1,3	-2,9	-1,9	-3,4	-3	-0,3	1
CCs	1,2	2,1	1,7	0,9	1,4	0,8	0,5	1,2	1,5	0,7	0,1	1,1	1,2	2,1
CCd	1,9	2,1	1,3	1,6	1,7	1,8	1,1	0,1	-2,1	1,3	-0,1	-0,7	1,5	1,9
CCg	0,3	1,2	0,8	-0,1	0,6	-0,3	-0,5	0,5	1,0	-0,5	-1,1	0,2	2,1	0,3
Greece														
CC	-7,7	-7,2	-6,5	-6,5	-5,8	-7,6	-11,4	-14,6	-14,9	-11,2	-10,1	-9,9	-2,4	0,7
CCs	-4,7	-4,0	-4,3	-4,0	-2,7	-5,0	-6,8	-7,9	-6,8	-2,7	-0,9	-0,1	3,7	-4,7
CCd	-2,6	-2,4	-1,2	-1,7	-1,5	-2,1	-5,1	-8,4	-8,9	-5,6	-5,5	-4,9	0,9	-2,6
CCg	-5,9	-5,2	-5,6	-5,2	-3,8	-6,3	-8,1	-9,0	-8,0	-4,2	-2,4	-1,8	2,1	-5,9
Spain														
CC	-4	-3,9	-3,3	-3,5	-5,2	-7,4	-9	-10	-9,6	-4,8	-4,5	-3,7	-1,2	0,8
CCs	-3,8	-3,6	-3,4	-3,8	-5,2	-7,1	-8,2	-8,3	-6,1	-2,7	-2,4	-1,0	1,3	-3,8
CCd	-1,7	-2,1	-1,6	-1,8	-3,0	-4,7	-6,2	-7,7	-8,0	-2,4	-2,0	-1,7	0,7	-1,7
CCg	-4,1	-3,8	-3,6	-3,9	-5,3	-7,1	-8,2	-8,0	-5,8	-3,1	-2,9	-1,5	0,5	-4,1

Notes: The row CC shows the actual value of current account as percentage of GDP (see Table 1). The rows CCs, CCd and CCg, show the results given by the foreign sector rule in the three proposed scenarios (i), (ii) and (iii) in section 3.

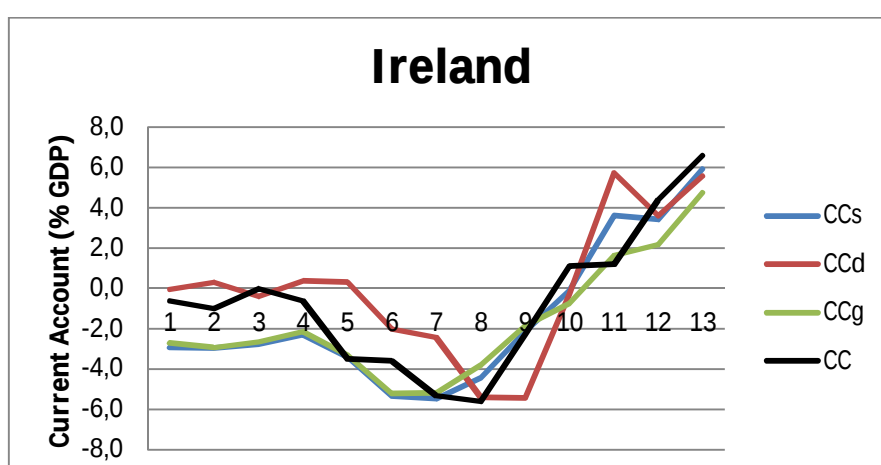
Graph 2.A: Eurozone-17 current account (% GDP)



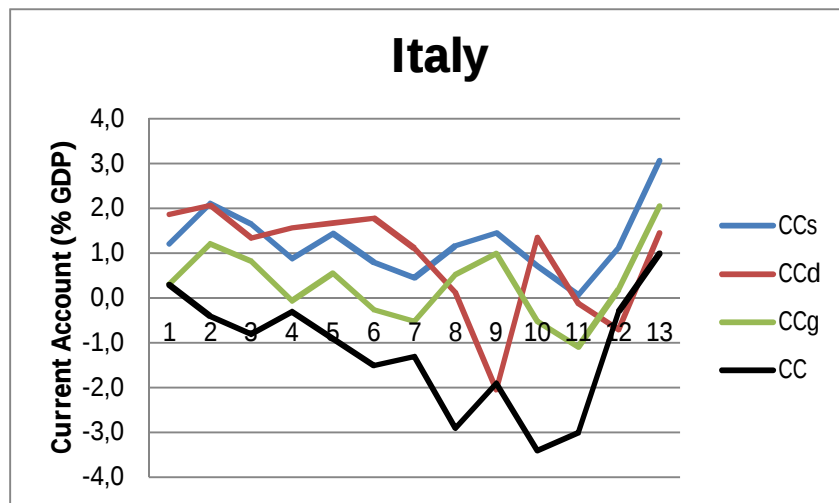
Graph 2.B: Portugal current account (% GDP)



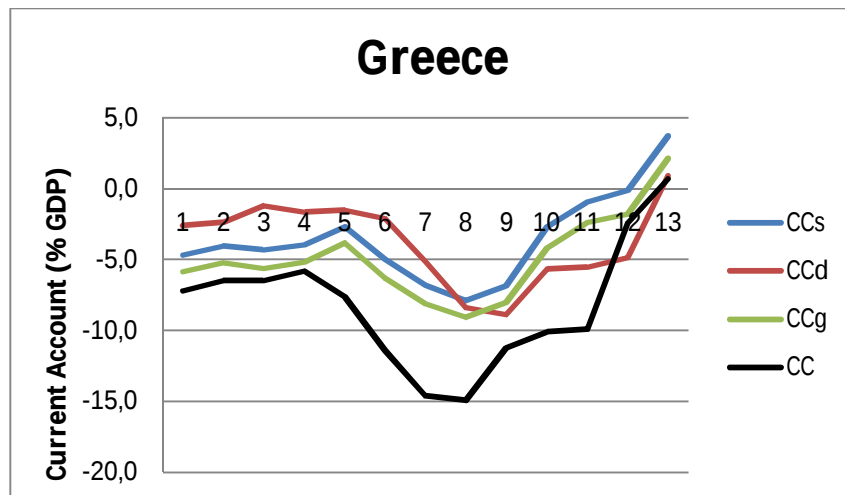
Graph 2.C: Ireland-17 current account (% GDP)



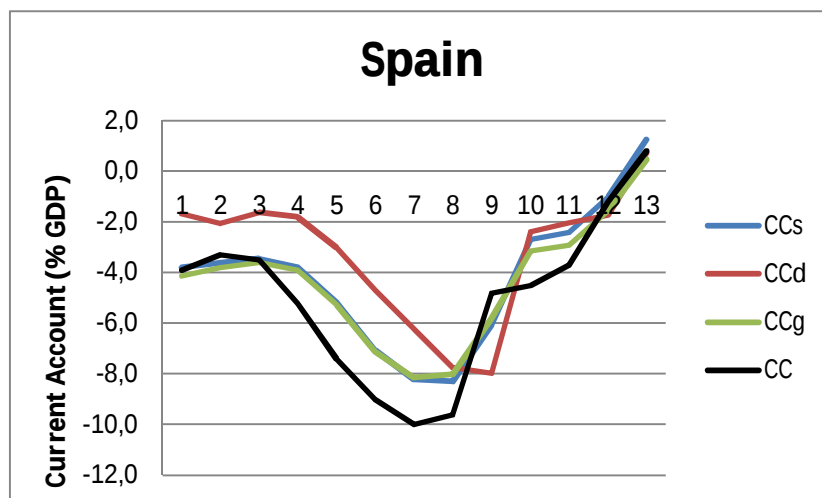
Graph 2.D: Italy-17 current account (% GDP)



Graph 2.E: Greece-17 current account (% GDP)



Graph 2.F: Spain-17 current account (% GDP)



As can be seen in Graph 2, the implications of using fiscal rules have different effects on the current account of the analysed economies. In the Eurozone-17 as a whole, it seems that the outcomes of current account would have been better after following a debt averse fiscal rule. When looking at the PIIGS countries, it seems that for Portugal, Italy and Greece, the use of fiscal rules clearly improves current account. For Ireland the conclusion is not clear, but for the case of Spain fiscal rules prove to benefit current account records but only for the years before the crisis.

In Table 5 we offer a summary on the usefulness of fiscal rules and their implications on current account records, according to the results showed in Tables 2 and 4, and Graphs 1 and 2. The most remarkable results are those obtained for Italy and Greece, where according to figures on Table 2 the use of fiscal rules should be not recommended. On the contrary, when using fiscal rules the current account figures would improve for Italy and Greece according to figures on Table 3.

Table 5
Implications of Fiscal Rules on Current Account

	Fiscal Rules	FR and Current Account
Eurozone 17	Not useful before the crisis. Useful only two years after the crisis.	Positive for FRd, but 2009 and after 2012.
Portugal	Useful just after the crisis	Positive
Ireland	Useful before 2011. Not useful after 2011.	Ambiguous
Italy	Not useful	Positive
Greece	Not useful	Positive
Spain	Useful	Positive before the crisis, ambiguous after the crisis.

Source: Own elaboration based on Tables 2 and 4.

Those results are in line with the obtained by Nickel and Vansteenkiste (2008), summarized in the introduction. For Portugal, Ireland and Spain, which show low and medium debt levels (see Table 1), when fiscal rules led to a decrease in the fiscal deficit, the current account registers lower deficits (consumers react in a Keynesian manner). On the contrary, for Italy and Greece, which are high debt countries (see Table 1), the use of fiscal rules lead to a rise in the fiscal deficit that does not result in a rise in the

current account deficit (consumers have become Ricardian, in words of Nickel and Vansteenkiste (2008)). Consequently, according to our results, we can also conclude that the relationship between public finances and current account performance depends strongly on the initial public debt level.

5. Concluding remarks

In this paper we have tried to analyse the relationship between public finances and the current account, in the novel economic framework provided by a monetary union scenario, where we will consider the possibility of following an explicit fiscal rule to guarantee a medium-term budgetary position close to balance. To that aim, we have study, in a very simple way, the relationship between the government balance, when fiscal rules are allowed, and their implications on the current account.

The empirical application has been performed for those countries of the Eurozone that exhibit both high national budget deficits relative to GDP, and rising government debt levels: Portugal, Ireland, Italy, Greece and Spain. Those are the southern and peripheral European countries that have been grouped, in Anglo jargon, as PIIGS.

The most remarkable results are those obtained for Italy and Greece, the countries with the highest levels of debt, where the use of fiscal rules should be not recommended. But, on the contrary, when using fiscal rules in these countries the current account figures would improve. Those results are in line with the obtained by Nickel and Vansteenkiste (2008), that support our findings. From that, our main conclusion could be also that the relationship between public finances and the current account performance depends strongly on the initial public debt level.

References

- Andersen, L. and Babula, R. (2008): "The link between openness and long-run economic growth", *Journal of International Commerce and Economics*, United States International Trade Commission.
- Arellano, M. y Bover, O. (1990): "La Econometría con datos de panel", *Investigaciones Económicas* 14, 3-45.
- Arellano, M. y Bond, S. (1991): "Some test of specification for panel data: Monte Carlo evidence and an application to employment equations", *Review of Economic Studies* 58, 277-297.
- Ballabriga, F. and Martínez-Mongay, C. (2003): "Has EMU shifted monetary and fiscal policies?", en Buti, M. (ed.): *Monetary and fiscal policies in EMU. Interactions and coordination*, Cambridge University Press, Cambridge, 246-272
- Barrios, S., Langedijk, S. and Pench, L. (2010): "EU fiscal consolidation after the financial crisis. Lessons from past experiences", Economic Paper 418, Dirección General de Asuntos Económicos y Financieros, Comisión Europea.
- Camarero, M., Carrión-i-Silvestre, J.L. y Tamarit, C. (2012): "Global imbalances and the intertemporal external budget constraint: a multicointegration approach", Department of Econometrics, University of Barcelona, *mimeo*.
- Díaz-Roldán, C. and Martínez-López, D. (2006): "Inversión pública y crecimiento: un panorama", *Hacienda Pública Española/Revista de Economía Pública*, nº 176, 2006, 109-140.
- Díaz-Roldán, C. and Montero-Soler, A. (2011): "Fiscal policy in the European Monetary Union: How can fiscal discipline be achieved?", *Argumenta Oeconomica* 27 (2), 5-14.
- European Central Bank (2004): "Fiscal policy influences on macroeconomic stability and prices", *Monthly Bulletin*, abril, 45-57.
- Frankel, J. A. and Romer, D. (1999): "Does trade cause growth?", *American Economic Review* 89, 379-399.
- Gil-Pareja, S., Llorca-Vivero, R., & Martinez-Serrano, J. A. (2007): "Did the European exchange-rate mechanism contribute to the integration of peripheral countries?", *Economics Letters* 95(2), 303-308.

- Hussin, A., Mustafa, M. M., and Habibullah, M. S., (2009): “*An investigation on trade openness, fiscal policy and economic growth in Malaysia: using an ARDL bounds testing approach*”, *International Journal of Management Studies*, 16 (2), 177-197.
- Karras, G. (2012): “Trade openness and the effectiveness of fiscal policy: some empirical evidence”, *International Review of Economics* 59 (3), 303-313.
- Krugman P. R. (1996): “Making sense of the competitiveness debate”, *Oxford Review of Economic Policy* vol. 12, n° 3, 17-25.
- Monacelli, T. and Perotti, R. (2008): "Openness and the Sectoral Effects of Fiscal Policy", *Journal of the European Economic Association*, MIT Press, vol. 6 (2-3), 395-403.
- Mundell, Robert A. (1961): “A theory of optimum currency areas”, *The American Economic Review*, vol. 51, 657-665.
- Nickel, C. and Vansteenkiste, I. (2008): “Fiscal policies, the current account and Ricardian equivalence”, Working Paper 935, European Central Bank.
- Riguzzi, Marco, (2011): “Openness and the effect of Fiscal Policy”, Department of Economics, University of Bern, Switzerland.
- Taylor, J.B. (1993): “Discretion versus policy rules in practice”, *Carnegie-Rochester Conference Series on Public Policy* 39, 195-214