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PAPER

External Imbalances in EMU. Reforms, Austerity and Funding

Antimo Verde

Abstract The paper is about external imbalances in the EMU, from the euro's inception on. This lapse of time - 2000-14 - has been divided into three periods each of them defined on the basis of what is deemed to be the-moment-prevailing theoretical scheme: *the competitiveness model, the excess of savings or insufficient domestic demand, the change of International Investment Position, or BoP funding.* The first period (2000-06) highlights the crucial importance of structural reforms to address - in normal situations - member states' competitiveness losses. Consequences and cures of the 2007-2010 external imbalances have been heavily affected by the austerity policies. Finally the third episode of the BoP imbalances has been discussed on the basis of a very peculiar institutional mechanism designed to fund, when the national banking system needs it, the intra-eurozone transactions, or TARGET2. Theoretical schemes of the external imbalances episodes are identified on the basis of undisputable aspects and not according to econometric estimates, as they could bring to the wrong conclusion. (McKinnon [2013]. The external imbalance topic is one of the most interesting and complex problems of an *incomplete* monetary union, such as the EMU. Indeed, all the papers dealing with "external imbalances in EMU" more or less implicitly maintain that we have to do with a *true* monetary union. Still more important is, according the paper, the interaction between external imbalances and the EMU policies and institutional framework, which is usually ignored, as though it were unimportant. This paper aims at detecting the *crucial role that policies and institutional aspects assume in defining causes, consequences and cure of external imbalances. In a word: in defining the right model of imbalances. This is particularly important when we talk about monetary union. But this aspect has been utterly overlooked.* This paper aims at filling this lack. In particular we also try to elucidate links between structural reforms, austerity and current account imbalances.

Keywords Current account adjustment - EMU - Financial crises and sovereign crises Payment system

JEL Classification F32 - F44 - E44 - E42 -E52 O52

Antimo Verde (✉)
Associate professor of International Economics
Tuscia University in Viterbo, Italy
e-mail: averde@luiss.it

1. Introduction

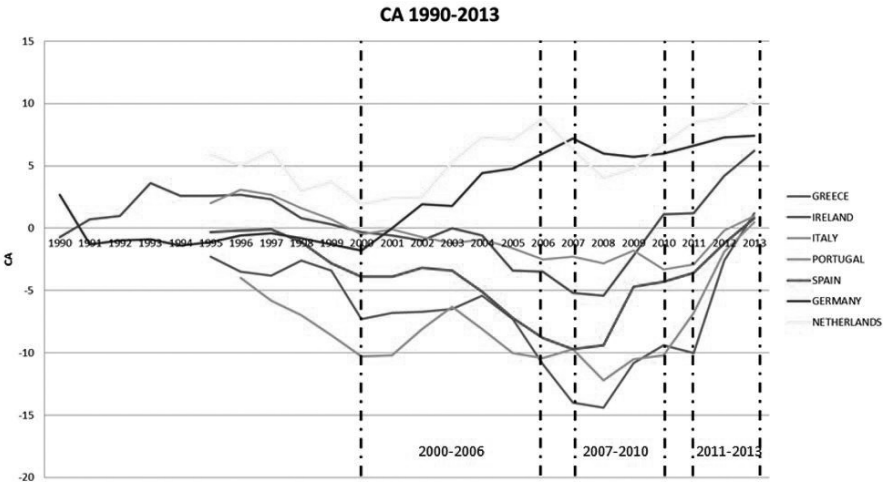
Since Bernanke's speech in 2005about the *saving glut,* external imbalances have known a new and growing importance. They favoured the 2007-09 global crisis and, later, they made the EMU slip in the 2011-13 sovereign crisis. By 2011, the macroeconomic imbalances-including the external ones- attracted the Commission's attention as a possible cause of turmoil within the euro Area. In that year the European Commission adopted the Macroeconomic Imbalances Procedure designed to avert or fix eleven types (scoreboard) of economic imbalances, in first place the external ones. Since then, studies on external imbalances have concentrated on current account deficits and on countries suffering from these imbalances; more or less sophisticated theoretical models- e.g intertemporal current account model, with traded and non traded goods– have been developed (Chen at al.[2011]). Yet, peculiarities concerning the European Monetary Union and their impact on the causes, consequences and cures of external imbalances have been fully overlooked. In particular two peculiarities: a) the incomplete nature of the EMU; b) the relationship between external imbalances and the Union's policies and those institutional aspects which interact with them. All the papers dealing with "external imbalances in EMU" more or less implicitly maintain that we have to do with a true monetary union. Still more important, the interaction between external imbalances and the EMU policies and institutional framework is ignored, as though it were unimportant. On the other hand, it is impossible to assess the implications of the incompleteness of the union for macroeconomic imbalances. But we can say some things about point b), i.e the relationship between EMU policies and institutional framework (when relevant) and external imbalances. This paper is about this relationship. In particular, on the basis of the actual external imbalances surfaced in EMU since the inception of the euro. The period 2000-14- has been divided into three periods each of them defined on the basis of what is deemed to be the-moment-prevailing theoretical scheme. Moreover, the paper will focus on the interaction between structural reforms, fiscal austerity and external imbalances and on the relationship between the system of intra banks payments for external transactions of member states and imbalances among them. This latter (institutional) aspect will bring us to concentrate also on the capital account of the BoP, as well as on a rather complex mechanism of settlement within the Euro-system of National Central Banks which protected weaker member states from capital reversals during the 2011-13 sovereign crisis. Theoretical schemes of the external imbalances episodes are identified on the basis of undisputable aspects and not according to econometric estimates, as they could bring to the wrong conclusion. (McKinnon [2013]).

The two following graphs play a fundamental role in this paper. Figure 1, refers to the CA evolution from 1990 to 2013. It allow us to identify three periods or episodes of external imbalances within the euro area:

a. from 2000 to 2006;
b. from 2007 to 2010: when the external imbalances significantly widen and overlap growing fiscal imbalances;

c. from 2011 to 2013 when imbalances were not limited to the CA component of BoP and pushed the euro area in a dramatic crisis.

Figure 1 CA evolution from 1990 to 2013

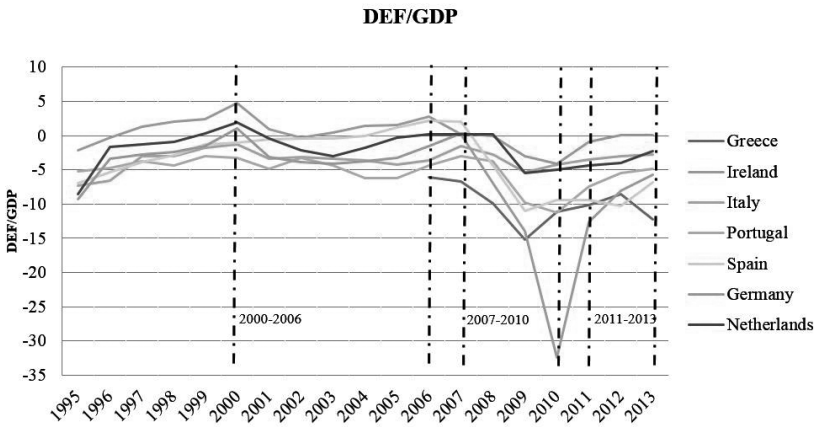


In the first period (2000-2006) current Account (CA) imbalances become important and as concerns the policy aspect of this first episode it appears interesting for the claims of deficit countries or GIIPS to carry on structural reforms of labour and goods markets aiming to provide their economies with more wage and price flexibility. This episode assumes a general value, i.e. untied from the existence of a currency union that the following two episodes haven't[1]. Imbalances b) and c) are more intriguing, from policy and institutional point of view. The paper is about the crucial link between external imbalances and the fiscal austerity policies, imposed by the union (or the union's boss) and carried out by deficit countries. This link is particularly clear-cut in the period 2007-10 when external and fiscal imbalances overlap each other. This is evident if graph1 and figure 2 are jointly glanced. The two imbalances, though, did not assume the same importance because the sole "pillar" of institutional policy framework was the fiscal commitment. While the crisis winds shattered the EMU, external imbalances were not excessively important, but they were about to narrow thanks to austerity adopted to cope with fiscal imbalances.

Finally the paper is about the imbalances favouring the 2011-13 sovereign crisis which harshly hit the EMU. In this case, external imbalances assumed a peculiar shape, reflecting themselves in particular imbalances within the intra-eurozone payment system or TARGET2. We talk in this third case, of external imbalances, even if capital reversals and high involvement of balance sheets of National Central Banks and ECB make them absolutely particular.

1 For instance " Recent developments have highlighted the urgent need for some euro-area Member States to restore their external imbalances and to improve their competitiveness" is a sentence which it is to read in policy reports.

Figure 2



The paper is structured as follows. In the next section I focus on external imbalances in the years 2000-06. They seem to be explained by the neoclassical price or competitiveness approach. As such, they give adequate rationale to the role of structural reforms in improving a country's competitiveness. The relationship between external, fiscal imbalances and austerity is discussed in section 3. Austerity seems to allow the periphery countries to kill two birds with one stone. Section 4 touches a different case of external imbalances, those surfacing in the 2011-13 years. In it we have been forced to dwell on the intra- euro area payments system or TARGET2. Section 5 concludes.

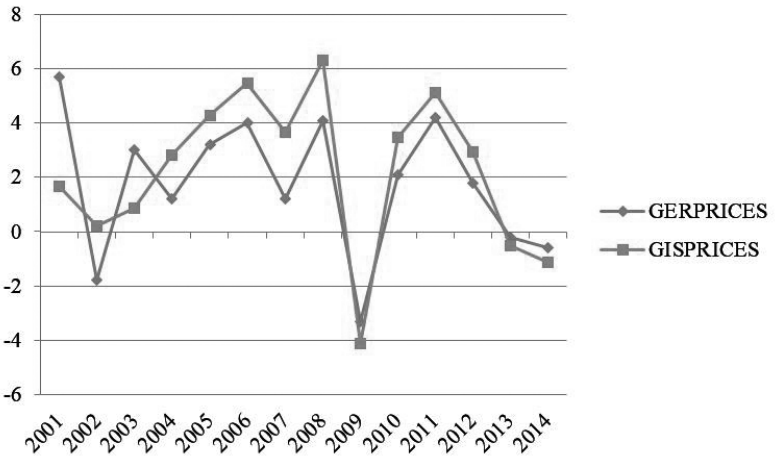
2. The External Imbalances in EMU: Devaluation, Structural Reforms and Competitiveness

From 2000 on, external imbalances become a steady figure of the EMU economic situation. Germany, Netherland and (not reported in the graph) Austria, Finland are the CA surplus countries; Greece, Ireland, Italy, Portugal and Spain (GIIPS) those in deficit.

Let's consider the period from 2000 to 2006 when imbalances appear, all in all, sustainable. In this period, important structural reforms were adopted by the German government, led by Gerhard Schroder, i.e the labour market reforms, known as the Hartz Reforms (2002-2006). In Germany, these reforms favoured labour productivity, while keeping the rise of wages to levels lower than that of productivity. (M.Wolf [2014]) This is the leading sentence of this period. Consistent with it is the following statement:

"The shifts in relative prices between different euro area countries were sizable, with consumer prices and unit labour costs rising very significantly in the euro area *periphery* relative to the euro area core, and particularly vis-à-vis Germany" (Chen et al. [2012, p. 6), moreover a declining competitiveness of tradeable goods in *periphery* countries surfaced. (Blanchard 2007); Data of figure 1 and 3 seem consistent with these sentences. Summing up: 2000-2006 external imbalances seem due to differences in competitiveness between core (Germany in primis) and periphery countries.

Figure 3 Producers prices of Germany and GIIPS (% changes)



Producers' prices allow us to conceive a very simple "two-country" model of the etiology of CA surpluses and deficits in EMU, according to the remarks a) and b), hereafter our hypotheses.[2]

2.1 A very simple two country model of CA surplus

Let us suppose that the two "countries" -Germany and the GIPS group (Greece, Italy, Spain and Portugal considered as a single "country") have the same-parameter Cobb Douglas production function:

1) $Y_G = A^{\alpha}L^{\beta}1$ 1*) $Y^* = A^*K^{\alpha^*} L^{\beta^*}$

where : Y= output (GDP) , A= total factor productivity variable summarizing the current state of technical know-how, K= capital stock, L=Labour, α and β are the elasticities of output with respect to the two factors, K and L, G stands for Germany and * for GIIPS

α+ β =1 and are equal to the ratio between marginal and average productivities:

$\alpha = F_k / (Y/K)$ $\beta = F_{L'} / (Y/L)$ where $F_{K,L}$ are derivatives of Y respect to K and L, i.e. marginal productivities. According to our hypotheses German marginal labour productivity F_L is higher than GIPS', and German real wages are lower than marginal productivity as well. Thus we can write:

2) $F_L > F^*_L$ and

3) $W_G / P_G < F_L$ 3*) $W/P^* = F^*_L$ where W= wages.

Equation 4) and 4*) refer to the producer prices determination according to a mark-up, μ, on the unit labour costs is equal in the two countries:

4) $P_G = (1+\mu)\ W_G / F_L$ 4*) $P^* = (1+\mu)\ W^* / F^*{}_L$

where: P_G= German producers prices; P*= GIPS producers prices; μ = *mark-up*,

2 We prefer a two country model based on the producer prices of both of them, instead of tradable and not tradable prices of one country, because it is suitable when talking about external imbalances, which by definition has two faces.

assume equal in the two "countries"

Given the previous hypotheses 2) and 3), it will be: $P_G < P^*$.

The following equations 4) and 4*) refer to the real exchange rates, Q_G and Q*, which are given by the ratio between the prices of the two "countries" both expressed in terms of euros. Then:

4) $Q_G = P^*/PG$ 4*) $Q^* = PG/P^*$

where $Q_G > Q^*$, i.e. the German real exchange rate is depreciated compared to the GIIPS'.

This means that German goods are more competitive. The result of Germany's higher competitiveness will stem from eq.5 regarding the current account determination of surplus CA:

5) $CA_G = \gamma_0 + \gamma_1 Q_G + \gamma_2$ WD 5*) $CA^* = \gamma_0 + \gamma_1 Q^* + \gamma_2$WD

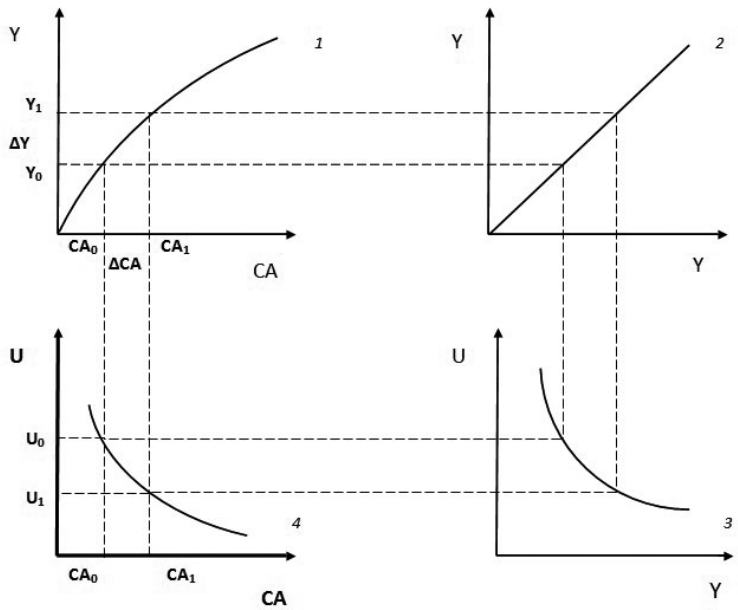
variables are log, and γ_1 is the elasticity- equal in the two countries- of CA with respect to real exchange rates and γ_2 is the elasticity of CA with respect to the World Demand (WD). Both γ_1 and γ_2 are > 0 and Q_G rises.

Let's start from a situation of CA equilibrium. Let's introduce our hypotheses. Then, if the Marshall-Lerner condition holds, $\delta CA/\delta Q > 0$ ie. Germany will record a CA *surplus*.

2.2 The impact of external devaluation in a monetary union: a graphical example.

It could be interesting to sum up the impact of the economy of our hypotheses. We focus on two variables: current account and unemployment rate, which assume a crucial role in our reasoning. In fig.4 we consider the impact of Germany's CA surplus produced by external devaluation of real exchange rate, $Q_{G,}$ on output and unemployment. In our example, this devaluation stems from moderate relative price growth linked to the structural reforms.

Figure 4 The external devaluation in a monetary union



In fig.4 the scheme adopted is a [CA. u] type, i.e. able to highlight the impact of the CA improvement, produced by the external depreciation, on the unemployment rate, u. In panel 1 we have the relationship between income Y and CA drawn from a very simple Keynesian model, reported below. The curve is positively sloped. Relative prices don't appear explicitly but they affect CA according to equation 5. Thus once German industry can exploit its comparative advantage due to the structural reforms (eqq 2 and 3), the CA will improve, provided that the Marshall-Lerner condition holds, and with it also the German GDP, or Y, will increase. Panel 3 shows the relationship between the unemployment rate (u=1- N/FL) and Y, where the labour demand depends on income: $N= \delta_0+ \delta_1 Y$. Thus when Y increases, the unemployment rate decreases from u_0 to u_1. Finally panel 4 shows the relationship [u, CA] between CA and the unemployment rate: an improvement of the RER leads to a reduction of unemployment.

Equations panel1	Equation panel3	Equation panel 4
$Y= A+X (S)- M$	$U= [FL-N]/FL$	$u= \alpha - \beta CA$
$A= a0+a1Y$	$N= \delta_0+ \delta_1 Y$	
$M=b0++b1Y$	$U= 1/FL (1- \delta_0) - 1/FL \delta_1 Y$	
$CA= X (S)-M$		
$\Delta Y= 1/[(1-a_1)m] \Delta CA$		
$m= (1-a_1+b_1)$		

2.3 Policy implications: structural reforms and their limits

What about policy implications of structural reforms as way to improve competitiveness and then current account imbalance? Doubtless the most important lessons are that structural reforms are crucial in increasing the labor and goods markets flexibility and then in reducing costs and prices. In this case, the theoretical scheme implies a wage-price adjustment, as in the model just shown. Structural reforms allow modern economies to sidestep problems given by generalized nominal and real rigidities characterizing them. Thus if the country's exports are price sensitive, *current account* improvement will result. Then reforms would bring with them clear-cut benefits, stemming from the supply-side of the economy.

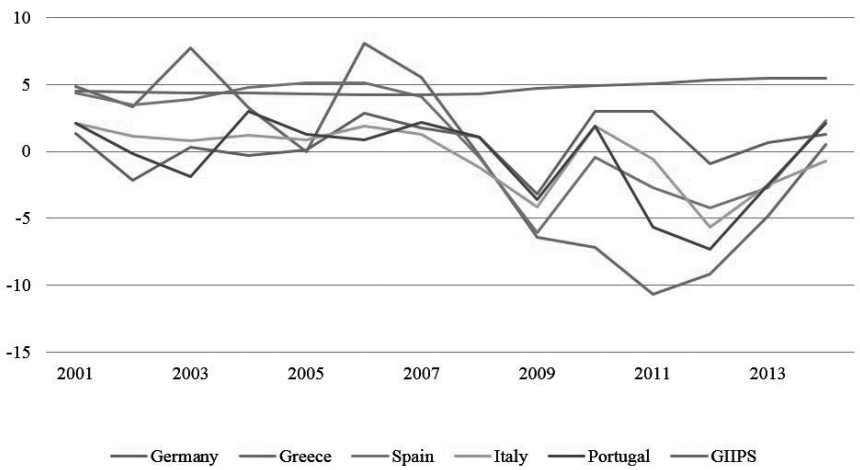
But this supply-side aspect are not, *ex se*, sufficient to ensure the reforms success. To this end, an adequate level of domestic demand is needed. In particular, structural reforms, coupled with a strong dose of high-quality- infrastructures public investment and /or private consumption would see exalted its effectiveness. Higher internal demand allows to exploit reforms' benefits to the maximum extent. Usually the recovery of net exports is not sufficient from this point of view.

We might express this point, linking labour marginal productivity (which is proper with respect to the unit labour cost) and total factor productivity to the internal demand for consumption and investment, as the following equation shows:

(6) $F_{Lt} = \varphi_0+ \varphi_1 \Sigma I_{t-k} +\varphi_2 C_t$

where, I= investments, C= consumption and where the expected impact of investments will last eventually exceeding the C's.
Then, structural reforms to be effective need a buoyant *domestic* demand. Keynesian policies could help in spurring it. But, in the weakest countries- which need reforms - these policies are normally rule out by the EMU fiscal constraints and internal demand go down (fig 5)

Figure 5 Internal demand in EMU (% changes)2001-2013



Anyway, structural reforms benefits could be evident only in the long run. Finally, and more important, winners and losers will stem from economic reforms. Thus a fierce opposition is expected, if a political consensus about them lacks. They could be postponed or forced to miss their tip. This is not an unthinkable outcome of reform projects in some EMU weakest countries.

Summing up: to say that economic reforms are not important or to difficult to carried out is not correct. It is correct to maintain that, to be effective, they should meet at least a couple of pre-requisites: a tonic internal demand, a widespread political consensus.

3. External imbalances in EMU and austerity

In this second period we are diving in one dramatic period of the globalized world. We start with the global crisis (2007-09) and we will end when sovereign crisis comes out. Glancing both figures 1 and 2, we can detect that *two* serious imbalances have surfaced overlapping each other: the *external and fiscal* imbalances. In Maastricht Treaty terminology, *fiscal imbalances* occur when one or more member states breach one or more EMU fiscal constraints :for instance the ceiling imposed to the deficit/GDP ratio of 3 per cent, or the *six pact* ceiling of 60% for the debt/GDP ratio.

In general, at least in the period we are talking about, these two imbalances were not

equally feared, at least for a couple of reasons. Because: a) meeting fiscal commitment was the pillar of EMU policy framework; b) for a long time economists and policy makers were convinced that in a monetary union current account would not matter, at least under the funding point of view. This prediction soon revealed itself absolutely wrong in the EMU case. However, these two points put us in a condition to understand why fiscal imbalances were extremely important and targeted by national and union policies. Not so for the external imbalances.

As we know, fiscal policies of austerity reach their apex in these years, to fight growing deficits.

"The most powerful country in Europe, Germany, was deeply committed to a strategy of austerity, and skeptical of forceful financial rescues. I had met Schauble ,a survivor of an assassination attempt that left him in a wheelchair, he had a clear view that .nations with unsustainable deficits had to go on a strict diet, even though it would cause pain for their citizens" (T. Geithner [2014] p.447, adapted)

Moreover. the European institutions, based in Brussels, believed that austerity was the obliged choice, the final objective being to put or maintain the control on public deficits and debt.[3] However, we continue to focus on external imbalances. Regarding these questions, we are about to answer:

a. which are the causes of external imbalances ?
b. what about the nexus between the external and fiscal imbalances?
c. what about the debate which ignited in this period, and doomed to re-emerge in 2015, about the effectiveness of austerity?

a)Let's start with the ***causes*** of external imbalances. In the considered years, the EMU countries took full profit from the most important benefit stemming from the participation of the euro area: the drastic reduction of interest rates. In general, this unexpected – at least as it concerns its dimensions- cut of interest rates brought with it the increase of private and public demand, the fall of household savings, inflows of foreign capital, and eventually the CA slipping into deficit (Fagan and Gaspar[2007, 2008]). In other words, adequate foreign financing sources (Jaumotte et al.[2010]); the excess of investment compared to internal savings, (Uxo et al. [2011]) justify the large and growing CA deficits of the periphery countries or GIIPS (Greece, Ireland, Italy, Spain, Portugal) in 2007-2011. Indeed, in some cases, deficits were due to higher investment, in others to lower savings. The cases of Ireland and Spain are interesting. Their CA deficit was clearly due to private investment growing at sustained pace, significantly exceeding that of internal savings. These investments were largely funded by foreign capitals, but they were realized in non tradable sectors: above all, construction. That is, in sectors enables, by definition, to generate currency flows to pay back foreign loans. Thus, persistent CA deficits led the two countries towards external imbalances, sluggish economic growth, and eventually to the worsening of budgetary stance or fiscal imbalance. This imbalance, then, had its roots in the external one. It is worth noting that at the beginning of our period both the Irish and Spanish fiscal stance was absolutely reassuring, very

3 For a deep analysis of the EMU's austerity policy and of the German finance minister Wolfgang Schauble's role, see Geithner T.([2014], ch. Eleven).

close to the equilibrium (Spain) or in surplus (Ireland). Fiscal imbalances, unthinkable still in 2006 surfaced because of the low quality of private investment funded by foreign sources. (Giavazzi e Spaventa [2010]).

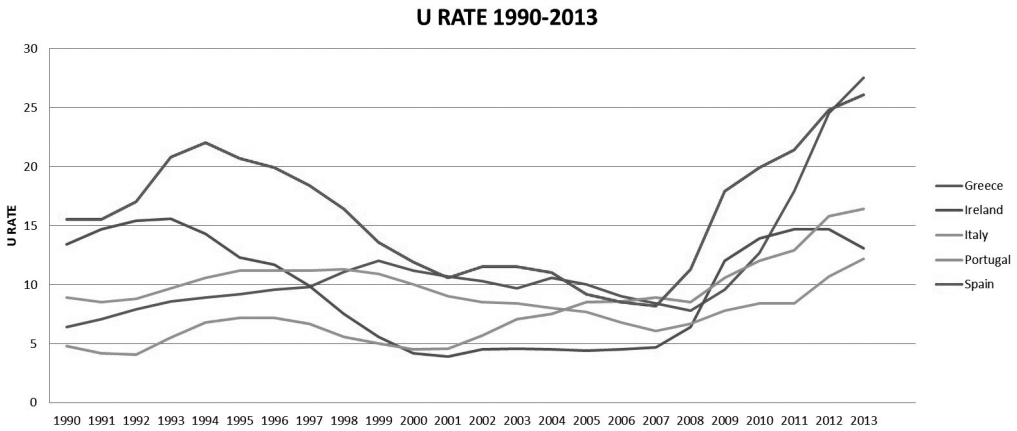
However, in this period, fiscal imbalances in the GIIPS area were due to a growing level of public spending exceeded State revenue. On the other hand, household and firms were pushed to consume and to invest by the low level of interest rates and, above all, by large amount of foreign financial resources. International financial markets profligacy appeared based on the widespread impression that in a currency union, such as the EMU, the German and Italian or Greek bonds were equally risky. This impression will change from 2010 on, for reasons we will identify later.

Summing up: the external imbalances of this period are due to an excess of internal absorption over the overall spending or income (Alexander [1952]). $Y= A+CA$, where Y is income; $A= C+I$= domestic absorption, or in equivalent terms $C+S= C+I+ CA$ where S= savings, I=investments and then $CA= S-I$. In the GIIPS area happens that $A > Y$, $I > S$ and then $CA <0$. In other words, the underlying model is completely different from that based on the competitiveness changes stemming from the gap between internal absorption and income or between internal investment and saving. It has been possible because private financial markets have been available to fund the excess of GIIPS' spending.

But let's turn to point b). Figures 1 and 2 show the overlapping imbalances-external and fiscal continued to characterize this period. We have already hinted how they are linked to each other. But this paper chooses a particular nexus between them. Usually, imbalances can be described by the following sequence: causes, consequences and cures. The nexus between external and fiscal imbalances here chosen is in the last phase, that of cures. Indeed we will show how fiscal policies adopted by GIIPS in the attempt to meet again fiscal rules constraints have allowed de facto those countries to substantially solve the external imbalances. With the exception of Greece. More in general, we can say that fiscal tightening will lead to an improvement of CA imbalance, even if we do not know it is limited to the short run; on the contrary fiscal expansionary policy adopted by GIIPS could not avert a worsening of it. In other words the problem of the two imbalances have been temporary solved by the fiscal austerity, that is by fiscal policies adopted by national member states aiming to meet again the EMU fiscal constraints. The reason of this nexus is clear-cut: fiscal policy affect variables, such as C and I, which are crucial determinants of imports and of CA balance. That is why external imbalances have been linked here to the fiscal austerity.

b) Two imbalances. In this period, austerity is the watchword all across Europe in particular starting from 2008. But the debate on austerity soon ignited in all member states and is still under way. The effects of austerity – on the economic growth and on unemployment- have been such as to push toward a reconsideration of fiscal austerity programs. Figure 6 shows how the unemployment rates soar starting from 2007 when austerity was getting more severe.

Figure 6 The unemployment rates in EMU



c) Austerity debate. While starting from the end of the observed period, the conviction that there should be something wrong in rigid austerity as well in the neoclassical theories supporting it gained a growing and widespread consensus. Here we propose a stylized model showing the crucial features of a corrective fiscal policy designed to meet fiscal rules and, with it, to improve the External imbalance. It is a "two country" model: Germany and GIIPS, considered as a unit. In the following discussion, GIIPS is suffering from a fiscal imbalance, i.e.it is breaching EMU constraint and it is pushed by the European Commission to cut public spending and increase taxes.

3.1 A two country-model of CA and fiscal and external adjustment

The union is divided in Germany and GIIPS. Variables of the latter group are * marked. The model aim at highlighting: a) the corrective fiscal policy adopted by GIIPS breaching-rules to push back fiscal aggregates under the target values; b) the interrelationships between the economies of the two "countries" relevant for the external and fiscal imbalances correction.

Let's start with the fiscal adjustment in EMU, or point a)

Our discussion leaves Germany aside to concentrate on GIIPS. This "country" has breached the fiscal constraint of 3% and it is called to contract its deficit. Monetary policy is *common* to both groups of countries and is caught by the ECB Taylor's rule. The exchange rate is not a policy tool[4]. In this scenario, where fiscal policy is the sole policy instrument of member states, its aims at increasing taxes and/ or cutting spending, in the attempt to reduce fiscal deficit under the ceiling of 3 per cent. Once this policy is actually adopted, internal demand – or absorption- is cut, relative to income, producing a CA improvement. This is a by-product result of fiscal corrective action, consistent with the absorption approach to the current account, if $\Delta A > \Delta Y$

4 De facto both monetary and exchange rate policies don't play any role in the following model. This could be an obvious limit of the model as the two countries have – by hypothesis- different inflation rates and then are involved by the Walters critique. However in our exercise we take both policies aside.

3.1.1 The model: a synthesis

The model is old Keynesian. This choice is not causal[5]. The first equation is a Taylor rule[6] which substitutes the usual condition of perfect capital mobility or uncovered interest parity, since we are in a monetary union. Eq. 2 concern prices which are divided according to the origin of goods: domestic and foreign. Eq.3 is a traditional Phillip-Lipsey curve. Labour market is completed by eq. 3-5 regarding the unemployment rate, the labour demand and labour income. Labour mobility between the two countries is ruled out. Definition of disposal income is crucial in our case: tight fiscal policy (austerity) will mainly act through income taxes (IT) and public transfers to households (TR). Equations of internal demand and current account follow. Public sector is limited to eq.13-16 : according to the first one income taxes are estimated as the product between tax rate and nominal GDP; eq.14 concerns the public transfers linked to the cyclical evolution such as the unemployment subsides, eq.15 defines the actual public deficit, F. The last equation makes endogenous the deficit consistent with the constraint of 3 per cent of GDP, F°. If F> F° fiscal corrective action is needed. The respective dimensions depend on the elasticity deficit/GDP times the Output Gap: φ OG. In the model the square brackets in the eq. 13-16 aim at catching corrective fiscal measures.

A Stylized "two-country"model of policy adjustment of fiscal and external imbalance[c]

Core	*Periphery*
1. i= i a(π EMU -2) + b OGEMU	
2. p = φ(w /δy*/δL*) + (1-φ)(p/p*)	p* = φ (w/δy*/δL*) + (1-φ) (p*/p)
3. w = e0- e1u + e2p	w* = e0 - e1u*+ e2π*
4. u = [FL-L] /L	u*= [FL*-L*] /L*
5. L= d0 + d1Y + d2 w/p	L* = d0 + d1Y* + d2 w*/p*
6. YL= L w	YL*= L*w*
7. YD= YL – IT +TR	YD* = YL*-IT*+TR*
8. C= α1+α2YD	C*= α1+α2 YD*
9. I= β1(p-p*) + β2 (i-p/p-1)	I=β1(p*-p) + β2(i- p*/p*-1)
10. A= C+I+G	A*=C*+I*+G*
11. CA= - μ (A-A*) – δ(p/p*)	CA*= - μ(A*-A) –δ (p*/p)
12. Y= A+CA	Y* =A*+CA*
13. II DD= γ1Y[+γ2(F-F°)]	IIDD*= γ1 Y*[+γ2(F*- F°)]
14. TR = δ1Y [– δ2(F-F°)]	TR* =δ1Y* [-δ2(F*- F°)]
15. F=IIDD + AE - TR - G	F* = IIDD* +AE* – TR* - G*
16. [F° = F - θ OG]	[F° = F* -θ OG*]

where i= ECB's official interest rate; OG= output gap: [Yᵖ- Y]/Yπ= inflation; δY/δL=

5 Indeed we think that micro-foundations of New Keynesian models give rise to many doubts that make them less suitable than the traditional Old Keynesian models, macro-founded (Chiarella et al. [2005]), especially when what matters is the empirical evidence (Mayer T. [1995]).

6 To understand better the meaning of Taylor rule in the EMU case in normal times and under the 2015 ECB QE, see Verde [2015]

labour marginal productivity; p= prices; p/p*= real exchange rate; u= unemployment rate; FL= labour force; L=employed; Y= income, YL= labour income; w= wages; Yd= disposable income; IIDD= direct taxes; TR=public transfer (pensions) C= private consumption; I= private investment; A= domestic absorbtion; CA= current account; F= actual public deficit; F°= public deficit consistent with the EU fiscal rules. θ= deficit /output elasticity G= public spending excluding TR= public transfers; AE= other revenues.

Note: All variables are at constant prices, except those concerning public finances (eqq. 13-16) . Deflators, when they need, are put equal to1, so nominal and real variables coincide. The coefficients of the equations are supposed equal. This choice does not affect the conclusion drawn from the exercise. The EMU's institutional aspects are caught by equations 1(single ECB monetary policy)and16 (fiscal policy Stability Growth Pact constraints). Fiscal rules also involve eqq.13 and 14 when corrective fiscal measures are envisaged. Equations of fiscal sector are completed with parts included in the square brackets to consider changes imposed by austerity. Potential output is exogenous, not-affectable by policy changes[7].

3.1.2 Fiscal adjustment mechanism

The above model has actually been simulated. Results are expounded elsewhere[8]. In this paper we limit ourselves to a couple of essential remarks.

The starting point of fiscal adjustment is in eqq. 15 and 16 where F* is the actual deficit and F° the target one, with F*> F. We assume periphery point of view. Periphery or GIIPS area is supposed to breach the fiscal rule of 3 per cent. Dimension of deficit contraction is F*- F°, where F* is the actual level of nominal deficit and F° the level of nominal deficit equal to 3 per cent of nominal GDP. The corrective action is based on tax increases and transfer reduction as well. In particular GIIPS representative member state (or our country) will plan an increase of income taxes and a reduction of unemployment subsides. That is fiscal contraction will mainly aim at cutting disposable income and, then, private consumption, besides public outlays. Imports will decrease and considered as given exports, CA i.e. external imbalance will improve. But output and employment will go down, giving rise to an increase of unemployment.

3.1.3 External imbalances and austerity: a graphical analysis

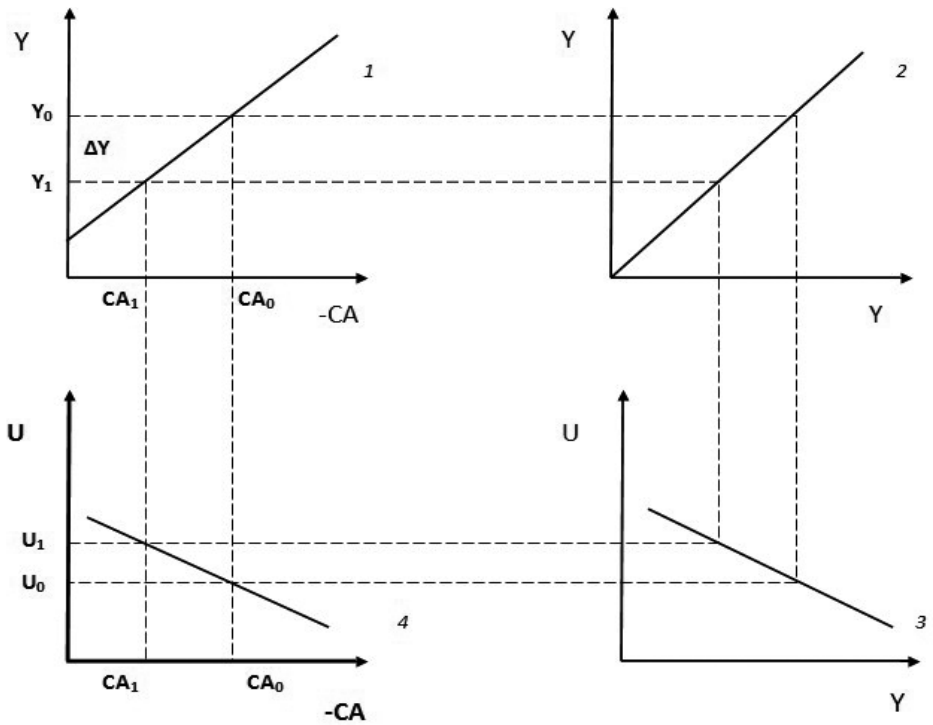
Fig.6 shows this scenario. It has four panels. As the previous fig. 3, the scheme is based on the [u, CA] relationship. On the X-axis in panels 1-4 there is the CA *deficit, left-direction steps mean CA improvement.* We start from panel 1, with the relationship between Y and CA, according to which, given the exports, a reduction of CA deficit is possible only thanks to an equivalent cut of imports and then of income Y. This reduction of Y is the first austerity impact. In our deficit country, income decrease from

7 Incidentally we notice that the estimation of potential output has become a huge problem in EMU because it is crucial in evaluating if fiscal constraints have been met by Member States.

8 Cfr Verde [2015b]

Y_0 to Y_1 and CA deficit goes down from CA_0 to CA_1.
In panel 3 we have the usual relationship between u= 1-N/FL and output Y is reported. From panel 3 we obtain the curve showing the relationship between unemployment and CA we are looking for. In the scenario, CA deficit can be reduced only at the expense of higher unemployment[9].

Figure 7 External imbalances and austerity



3.2 Austerity and internal devaluation: a hint

In the previous exercise, wages and prices changes are ruled out, as in the old pure Keynesian model. However we can imagine wages and prices, deemed as sticky or downward rigid, reduced thanks to an adequate dose of fiscal austerity. In this case we talk about *internal devaluation* from austerity. With few changes, our model could be use to simulate the link between internal devaluation and external imbalances. The relationship between internal devaluation and the austerity policies allow us to complete the analysis of the policy tools able to adjust CA imbalances. The internal devaluation might be important because of the loss of nominal exchange rate. It refers to alternative policies able to mimic the effects of an external devaluation. These policies are: a) a revenue-neutral shift from taxes on labour to taxes on consumption; b) a public-sector wage reduction or moderation. The first aims at reducing tax burden on export, the second to exert a pressure on wages in private sector. That is, internal devaluation policies aim at

9 And poverty and inequality according to some recent empirical analysis (Furceri D. [2012])

reducing domestic prices – by affecting relative export-import prices and/or by reducing production costs – in such a way to obtain a real exchange depreciation. Both measures should allow to improve competitiveness. Finally, internal devaluation acts through the *supply* side channel- costs and tradable prices; while fiscal austerity acts through the *demand* side of the economy, increasing taxes and reducing public spending, with negative effects of internal demand. And, then, on income and employment. In other words: austerity will weaken or cancel the internal devaluation supply-side effects.

3.3 Self- defeating austerity, surpluses countries role and external and fiscal imbalances

Our model will also tell us if fiscal contraction will be able to fill the gap [F*-F°] for our GIIPS country. If our policy's forecast is negative, we should considerer other or more drastic measures of fiscal policy, until our objective is achieved.
This is not the end of the story, because austerity could be *self-defeating* in the sense that after the corrective fiscal action and because of it, the debt/GDP or deficit/GDP ratio could even raise! It is not an impossible result[10].

Another interesting aspect to us -we will say why in the next section- it is to note that the final results of the austerity policies carried out by the GIIPS on fiscal and external imbalances will crucially depend on the "core" area or surpluses countries behaviour, in *primis* Germany.

An important and intuitive result of our model is: if surplus countries decide to spend their higher "potential" internal demand, where "potential" stands for the level of absorption (C+I) consistent with an acceptable level (i.e. reduction) of CA surplus, the GIIPS' adjustment of external imbalances would be easier: the loss of output and employment in the deficit countries will be lower. Thanks to the impact of the "core" absorption on the GIIPS CA (eq 11) and then on output, employment, disposable income, consumption, income taxes, public deficit, fiscal imbalances.

When a periphery country incurs in a fiscal imbalance – e.g because its deficit is higher than 3 per cent of GDP- it has two " external" chances making its cure less harmful: a) to count on expansionary policies by the "core" countries; b) to count on specific actions by the "Union".

The EMU experience gives evidence of neither of these options. The strong economies gave up to stimulate their internal demands to spur the exports of the countries in fiscal troubles. Are they responsible for that? In general it is difficult to ascribe them of this responsibility, but in a monetary union things change because the union's stability is to be considered a *public good.* This is still more important considering that the Union is not in condition to help these countries because the Treaties don't envisage any insurance mechanisms, or a fiscal union, even if in 2011 a procedure against macroeconomic imbalances was adopted by the Union.

10 We are talking about self-defeating austerity in the sense that the deficit cutting lowers GDP and the austerity outcome could be the increase of deficit or debt/ GDP ratio. This result depends on the multiplier values and the type of model used. A similar result seems likely in the sort run if the multiplier is 1.5; it is unlikely if the model is New Keynesian (Gross [2011])

4. External imbalances in EMU: Target2 imbalances

This third episode of external imbalances is more complex. Somebody even deems that in this case we have nothing to do with external imbalances. At least for three reasons. First. Imbalances exist but refer to the financial positions of member states' central banks within a intra euro-zone payments system or TARGET2. Second. In this case it is the capital account, KA, more than the CA to play main role.

Yet we believe that talking of "external imbalances" in this period of sovereign crisis is correct. Because: the financial positions' imbalances within the TARGET system always reflect the external –CA or BoP- imbalances among the euro-area, current or cumulated in the past; capital account assumes a crucial importance because sudden stops or capital reversals from the GIIPS, but they are strictly tied to external imbalances previously funded by capital inflows. It is true, instead, that in this third case of external imbalances the underlying theoretical scheme is quite different from those linked to competitiveness and absorption relative to the income. To some extent, it lacks own autonomy relative the first two approaches which explain the underlying imbalances.

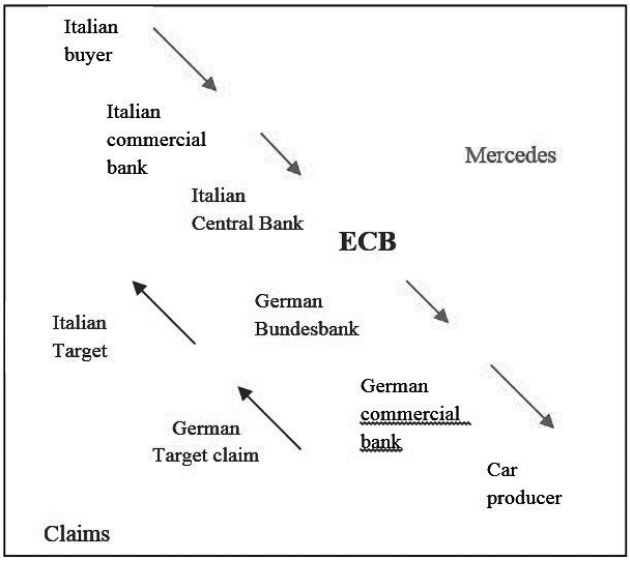
The TARGET system. TARGET stands for *Trans–European Automated Real-time Gross Settlement Express Transfer.* It changed the acronym in TARGET2 in 2007 when it was reformed. It is an intra- Eurozone payment system working among the NCB of the Eurosystem. The ECB acts as the clearing house of the system and as such the NCB's credit and debits are referred to it. Le's see to summarize the TARTGET2 *modus operandi* before asking why it became important. Let's start from the way which a intra euro area trade transaction was funding in before TARGET2 intervened.

Rossi, an Italian citizen orders his bank to pay 50,000 euros to Mayer a German citizen for the purchase of a car. Transaction is smoothly concluded thanks to deposit moves. The German bank debit the Italian bank for 50,000 euros lent ie. Mayer will see its deposit increases by 50,000 euros, while Rossi's deposit will debit for the same sum. Now let's see the TARGET2 working.

Trade transaction is transaction is the same. In this case its settlement is realized with the intervention of NCB- Bank of Italy and Bundesbank- as well as of the ECB – as clearing house of the system. In this case the Italian commercial bank ask Bank of Italy (BoI) to provide it with 50,000. BoI prints[11] monetary base to be transferred to the Ialian Bank. This bank has money to be transferred to purchase the car in Germany. The BoI 's counterpart is the ECB which *debit* the BoI TARGET account for 50,000. At the same time the ECB *credit* the Bundesbank's TARGET account for 50,000; the Bundesbank transfers 50,000 to the German commercial bank which in turn credit Mayer's deposit. At the end: the BoI has a debit TARGET position at the ECB; the Bundesbank has a credit TARGET position at the ECB. If that transition is the sole realized in the BoP, the debit BoI position has funded the Italian CA deficit. Monetary base in Italy has increased by 50,000 euros: the TARGET system has worked to inject money in the deficit country.

11 In this case, the term "prints" stands for "money creation" through a mere accounting issue. (cfr

Figure 8 –TARGET's modus operandi Source:Sinn and Wollmershhauser [2011]



At this point, it could be useful to make explicit the link between the BoP accounting system and the TARGET system. We can write two elementary definitions:
that $\Delta OR = CA + KA$ and :

$KA=(\Delta DI^f - \Delta DI^n)+ (\Delta PI^f - \Delta PI^n)+(\Delta LO^f - \Delta LO^n) +(\Delta OK^f - \Delta OK^n)+ T2 + SMP + PGM$

OR= official reserves; CA= current account balance; KA= financial account balance; DI = direct investment PI= portfolio investment; LO=loans, OK =other capitals. apex f stands for *foreign,* n for *national* . For instance: DI^f means direct investments realized in our country by foreign residents; DI^n means direct investments realized by residents outside their countries. Foreign capital are *liabilities* for our country, national capital are country's *assets.* Liabilities are recorded as credit (=inflows) and Assets as debit (=outflows) T2 = CB net position with ECB; SMP= the Securities Markets Program (SMP) for ECB purchases of government securities from residents; PMG = financing through official IMF and European assistance (PMG). That is the TARGET position is an item of the country's BOP: under the BoP accounting system, the TARGET liabilities changes are nothing but registrations (*credit*) of the KA.

But the questions now are: why the TARGET positions changes? Which are the determinants of TARGET flows?[12] In our example, above, the Italian bank substituted the foreign loan from German bank, usual before the markets' crisis, with credit from the BoI. That's the purchase abroad was funded with reserves from the ECB. In this case, the double-entry registrations in the BoP are as follows:

	Credit	Debit
CA (goods)	50,000	
KA (T2)		50,000

12 To this point see Cecioni and Ferrero [2012].

This example shows that T2 works as the item "ΔOR" in the pre euro- situation. Then, the Italian buyer paid with CB's OR, now with TARGET liabilities.

A similar example could made thinking of a cross border purchase or sale of bonds. Also in this case the counterpart of the purchase is not an official reserves loss, nor in case of sale an official reserves increase. Summing up: the determinants of TARGET2 negative positions or liabilities are : a) CA deficits; b) private capital reversals; c) deposit run by resident households and firms unrelated to the demand for goods. (Cecioni and Ferrero [2011], p. 20)

Therefore both trade and current account deficits and capital outflows could be behind the TARGET positions' imbalances. The problem, then, becomes empirical, rather than theoretical. Indeed some empirical analysis on this aspect exist. In primis, Cecioni and Ferrero [2012] and Buiter et al.[2011]. In general they bring us to the conclusion that TARGET2 net balances of NCBs cannot be automatically linked to current account deficits in those countries (Buiter et al. 2011, p.13) On the contrary "with the exclusion of Greece, the analysis suggests that during the crisis the current account and trade balance deficits *per se* are neither a necessary nor a sufficient condition for observing large TARGET2 liabilities" (Cecioni and Ferrero cit, p. 20)

According to this paper, TARGET2 imbalances should reflect – inevitably- external imbalances, current or cumulated in the past. Imbalances concerning competitiveness and more probable - because of the low correlation with CA deficits- imbalances in other parts of the

Thus TARGET works *as it were* official reserves but their positions not coincide with them nor with the net foreign investment position (NFA). We are able now to answer to the question *why* and when TARGET2 has become very important.

In the years going from 2007-10 [13]the GIIPS countries were recording growing CA deficits, as it is evident from fig 4. Nevertheless, the GIIPS could take profit from the drastic reduction of interest rate as well as from the adequate supply of foreign funding resources (Jaumotte et al.[2010], Fagan and Gaspar [2008]). Thus the CA deficits were funded by the international financial markets without problems. The financing sources of the GIIPS external imbalances were, at least up to 2009, utterly private. But by 2010, financial markets changed mind and modified their attitudes towards GIPPS imbalances. They were not more willing to fund them. Why? For a couple of reasons.

First. Because, on the occasion of the first Greek loans granted by the so called Troika (IMF, ECB, EU Commission), in 2010, relevant *haircuts* to the past debt were applied in the attempt to reduce the Greek financial burden. These haircuts produced a widespread loss of confidence by private investors in the GIIPS' ability to utterly re-pay their debts. Thus they feared to further lend money to Greece and other weaker EMU countries as well. Haircuts should have been claimed by all vulnerable EMU countries.

According to Geithner [2014, p.450] "making haircuts a necessary condition of all rescues would be like announcing that no loans to the weaker European banks or

13 Why 2997-10? In 2007 TARGET positions were close to equilibrium. 2010 is the years in which the TARGET becomes important in particular for the GIIPS and for the reasons expounded in the paper.

governments were safe".

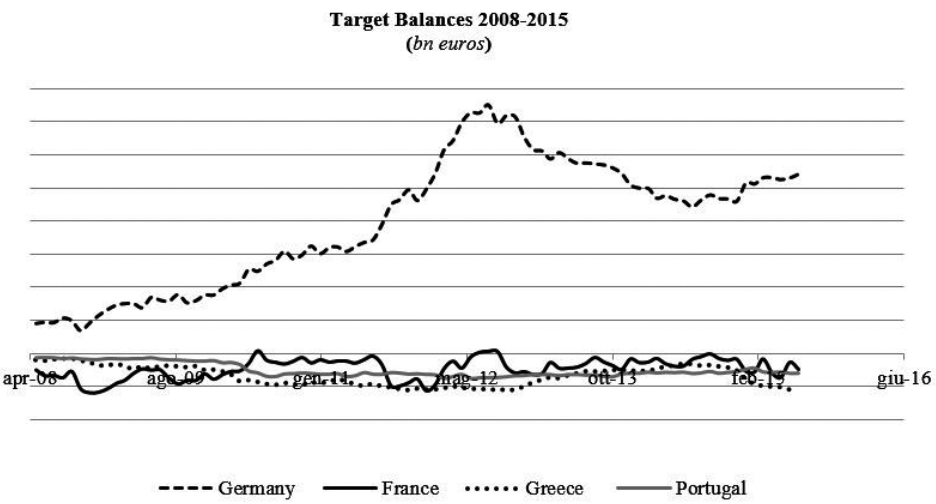
Thus private international financial markets became more cautious in lending to these countries and gradually capital inflows interrupted, first, and went back towards places where they came from. This was another proof of the *herd behavior* which characterizes speculative capital movements. Fears shattered financial markets putting a rough stop to the private capital inflows. These fears produced sudden stops or capital reversals[14]: the EMU slipped into a severe sovereign crisis (2012-13).

According to M. Wolf "once a country inside a currency union becomes dependent on large net capital inflows, a sudden turnaround in these flows will cause an economic crisis. Such a crisis will be marked by a financial shock" (M.Wolf [2014],p.60)

Then the interbank market in Europe dried up. Thus, as if before CA deficits were financed by financial markets, now a "federal" mechanism had to intervene to substitute private markets. This mechanism was the TARGET system. Thus while the private financial markets interrupted their financing and called back capital previously invested in the GIIPS, the monetary base created by GIIPS CB was able to substitute private credit. That's why the TARGET system became very important. It revealed itself a true safety net which each monetary must be provided for.[15]

However some time later, new worries stirred up not only financial markets, but economists and academician too. Indeed the level of cumulated TARGET2 positions or debts reached in 2012 their highs. Germany's active TARGET position was higher than 700 billion Euros. The GIIPS countries on average had, as a whole a negative TARGET position. However starting from 2013 the TARGET balances, between Germany and GIIPS have gone gradually shrinking. (fig. 9)

Figure 9 Net financial positions within the TARGET2 system



14 We define sudden stop as a succession of capital reversals.

15 "To be precise, the national central banks (of GIIPS) created money electronically by providing credit to their commercial banks and this money then replaced the money that seeped away electronically via the international TARGET transactions accounts" (Sinn H.W. [2011], p.4)

The policy implications imbalances within TARGET2 system.

It is important to dwell on the imbalances between claims and liabilities of NCB within the TARGET2 system. We can do it taking cue from an astonishing though well advertised thesis expounded in many occasion by the Director of the Center for Economic Studies at the Munich University, Hans-Werner Sinn [2011]. According to Sinn, the intra-euro-zone NBC payment system or TARGET2 was nothing but a Germany's stealth bailout of the GIIPS economies. Moreover, it was a sort of a ticking time bomb, hidden in about 700 billion claims (fig. 6) of the Bundesbank within the TARGET2 systems.
The basis and the conclusions of Sinn's reasoning were the following :

a. Target2 system works as Bretton Wood did. NBC of peripheral countries print money which goes into creditor core countries, in primis Germany. Here it crowds out monetary base created by the Bundesbank to fund home economy. This liquidity ends for going back toward GIIPS area to fund their BoP imbalances. Thus creditor fund debtor imbalance. This situation is similar to that linked to the famous remark of 1961 by De Gaulle about the US's "exorbitant privilège". Also in that Bretton Woods case, debtor's (US's) BoP imbalances were funded by surplus countries (Europe). Now with the TARGET2 the same mechanism between Germany (creditor)and GIIPS (debtor) is working. And- according to Sinn- also TARGET2 is doomed to fall. Why? Because foreign debt of periphery countries has reached unsustainable levels.
b. TARGET2 is a form of publicly finance the balance of payments of the periphery countries, doomed to bankruptcy.
c. Sinn's conclusion is clear cut. He proposes to limit the build –up of GIIPS TARGET2 liabilities by establishing the financial positions within the system should be settled once a year by transferring gold or marketable assets from the debtors to the creditor NCB. Or else, more simply, to copy the annual settlement of similar imbalances as the FED systems does. Finally and more important, Germany's Bundesbank should be put in a condition of refusing to further provide with unlimited credit vulnerable countries, because of the risks of huge losses in case of the break- up of the EMU. [16]

Sinn's opinions further scared financial markets, but have appeared substantially wrong.[17]. Let's try to set out our objections. In an *incomplete* monetary union, such as the EMU, a *safety net* is a pre-requisite to its launch: without a similar safety net a monetary union could not be conceivable.

As Buiter et al.[2011] pointed out , the TARGET2 net balances of NCBs should not be interpreted risky for creditor countries. On the other hand, it is long time, since 2013, that the financial positions within the TARGET2 have shrunk themselves. All that, after that the intra euro-zone payments has carried out its role as safety-net of the system.
Last but not least, TARGET positions were mere accounting items: they don't give

16 Indeed a similar thing happened in 1992 when Germany refused to provide the Bank of Italy with the needed amount of DM even if the 1987 Nyborg Agreement

17 Even if according to Buiter et al.[2011] under certain conditions, the increase in TARGET2 net debt of particular countries cannot be suggestive of serious problems.

obligation to pay or right to receive money. Sinn's suggested – periodic- payments of the financial liabilities would mean the end of the European integration process. And indeed a similar refund-clause could be claimed only in case of the break-up of EMU. Were Sinn's proposals suggesting the end of EMU or a two-speed union?[18]
Nevertheless, according to Buiter et al. [2011] TARGET2 imbalances may a symptom of the difficulty of banking systems of GIIPS have in funding themselves in the markets without public support. Then the cure is to put the banking systems in EMU on a sound footing. But this is an obvious opinion which has nothing to with Sinn's.

5. Some concluding remarks

This paper has stressed the *crucial role that policies and institutional aspects assume in defining causes, consequences and cure of external imbalances. In particular when we talk about monetary union. This aspect has been utterly overlooked.* This paper aims at filling this lack. The paper highlights three kinds and three episodes of external imbalances in the starting- from –the- euro- inception- years: 2000-2014 In all three episodes of external imbalances in EMU allow us to assess the policy responses.
Conclusions are as follows.
Schroder- Hartz's structural reforms in Germany could explain the CA surplus of the country in the years from 2000 to 2007, at least to some extent. Indeed, in general, it is reasonable to deem that structural reforms need a significant increase of domestic demand, i.e. more investment of high quality and adequate level of private consumption, to be effective; on the other hand, in the current cyclical phases, it is growth to lead productivity and not vice-versa;
the European Commission's austerity policies imposed from 2008 to 2010 brought GIIPS to internal devaluations, i.e. to the mediate causes of output losses and marked worsening of economic scenarios (*in primis*: higher unemployment) : this has been the cost of the deficit/GDP ratio and CA improvements;
c) The most dramatic period of the EMU sovereign crisis (2011-13) was packed by the intra-eurozone payment system or TARGET2. It was harshly criticized by some German economists. They were wrong and TARGET2 has shown itself as an effective safety -net against the crisis which helped GIIPS to draw themselves from the ravine. On the other hand, it is long time, since 2013, that the financial positions within the TARGET2 have shrunk themselves. All that, after that the intra euro-zone payments has carried out its role as safety-net of the system.

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