Current accounts in Europe: implications of the external imbalances for the future of the common monetary policy

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Abstract

The paper discusses the seriousness of current account imbalances in the last few decades in Europe, with a particular focus on the European Monetary Union. A closer look at the development of current accounts in European economies suggests the existence of some serious structural problems that might jeopardize economic performance of single countries, but even more importantly, of the entire monetary union. Although current account positions have been subject of numerous research projects till now, scarce interest has been offered regarding specifically the situation in the member states of the euro area and in the euro candidate countries. This lack of interest could be justified among others with the myopic conviction expressed in the literature that current account positions become irrelevant in a monetary union. Instead, there are conceptual reasons to be worried about external imbalances in a currency area, and particularly, in the current as well as potentially enlarged EMU.

Key words: current account imbalances, monetary union, central and eastern European countries, southern European countries

JEL codes: F 32; F 34; F 36

1. Introduction

External imbalances among industrialized and developing countries have been extensively analysed and documented in numerous empirical contributions. Authors were particularly interested in explaining the main determinants of the mid- and long-term development of the current account (CA) dynamics, as well as in answering the question of sustainability of external imbalances (Debelle and Faruqee 1996; Chinn and Prasad 2003; Gruber and Kamin 2007).

While most of the past studies concentrated rather on providing an understanding of the underlying questions in a broad and unified context including both industrial and developing countries, there are only a few contributions specifically dedicated to the European (Monetary) Union. Instead, the question of the future of the common European currency is getting its momentum, especially due to the recent uneven development experienced by the member states of the euro area. Moreover, the perspective of the adoption of the euro especially by central and eastern European countries (CEECs) constitutes an open question in economic analysis and policy strategies. Especially now, in face of serious difficulties experienced by some member states of the European Monetary Union (EMU) in serving their internal and external debts, doubts raise around the readiness of CEECs to adopt the common currency without the risk of incurring in similar solvency problems. Related to this last aspect, the expectation could be that, due to the (earlier) stage of the development of the group of CEECs, the importance of a negative external position is less of a concern than it is the case of the other more developed European countries. Having still the potential to grow, financial capital provided by the foreign investors would permit them to invest in profitable exportable activities and repay in the future their current debts. Nevertheless, this optimistic scenario doesn't necessarily need to be fulfilled if the CA deficits are driven by the other, more consumption-oriented factors. In such a case, the question of the (un)sustainability of the external debt becomes central.

Motivated by those different tendencies, and pointing out high and persistent CA deficits in several economies within the EU, the present study has the aim to explain those imbalances and to assess the relative importance of single determinants of the CA observed in European countries either belonging already to the EMU or in the process of preparation for the euro adoption. Intuitively, the importance and the strength of the influence of single CA determinants will differ between the three groups of countries, the CEECs, the PIIGS (referring to the euro area economies currently encountering major insolvency problems, namely, Portugal, Ireland, Italy, Greece and Spain), and finally the rest of the EU (Austria, Belgium, Denmark, Finland, France, Germany, Netherlands, Sweden and UK). More precisely, the expectation is that some structural factors would have a greater impact on CA positions in the CEECs than in countries that have already adopted the euro or in any case are longer integrated in the European economy. But also in the case of PIIGS, due to their difficulties in achieving competitiveness standards of the core EMU economies, CA imbalances are supposed to be driven by factors having long-run dimension.

Moreover, the question of the surveillance of CA positions of single countries of the euro area has been neglected both in the economic discussion and in the monitoring of the EMU's creation and its further performance. Instead, the importance of the CA imbalances in a monetary union seems to be no lesser than that of the internal imbalances in the government accounts. This recognition has important policy implications as it could provide a new relevant indicator of compatibility between economies forming or preparing to form a common currency area.

The aim of this paper is to face the most of the aforementioned challenging questions by means of an intertemporal empirical investigation. The study of the external imbalances in the euro area should contribute to understanding the importance of those imbalances for a currency union in general and for the EMU in particular, as well as it should provide a policy oriented strategy compatible with a sustainable external position.

The paper is organized as follows. Section 2 reviews theoretical contributions dedicated to the importance and determinants of external imbalances in a monetary union. The next section illustrates some relevant facts about the European economy that should introduce and clarify crucial issues of the underlying empirical investigation. Section 4 describes the estimation framework, presents the data, the model and discusses the results obtained from the panel estimation. It also includes the robustness check. Finally, Section 5 summarizes the paper and provides some policy implications.

2. External imbalances in a monetary union – their determinants and their significance.

In the recent years, growing and persistent imbalances in the CA positions were subject to an intensified discussion among political authorities all over the world. Moreover, they attracted attention of economists in the field of international macroeconomics. The discussion was built mostly around the US external debt financed extensively by the Asian economies. Often this external position has been argued to tend to an unsustainable level.[1] Only limited attention in this field has been offered to the European economy and to the CA positions of countries in the euro area and more generally in the European Union.[2]

Concerning the EMU, the main reason of this lack was that since the beginning of its existence the CA of the euro area as a whole was near to balance. This notwithstanding, substantial differences were characterizing single countries' CA positions[3], with some of them experiencing sometimes serious deficits, covered by surpluses of some other member states. Only recently, and mostly in the political sphere, these CA imbalances within the euro area have caused lively discussions between proponents of the reduction of the disparities present in the two country groups. On the one hand, there were

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[1] There is an extensive empirical literature trying to explain the huge US CA deficit. For an overview, see Chinn and Ito (2007).

[2] One of the most recent studies regarding EMU is due to Zemanek et al. (2010).

[3] Only recently, during the years of the financial crisis, the imbalances have been reduced. Moreover, some authors provide reasons to believe that the global imbalances in CA positions will decline in the years to come (Feldstein, 2011).

voices coming prevalently from activists of the deficit countries postulating the need to boost domestic demand by means of adequate fiscal or labour market measures in the surplus countries (with German economy addressed with the most serious appeals) in the way to stimulate their imports.[4] All this would and should deteriorate competitiveness of the surplus countries, bringing it more in line with low-competitiveness standards in the deficit countries. The latter, however, should not passively wait for the adjustment to come, but make an effort to improve their productive performance as well. The other, and probably more reasonable, line of argumentation suggested especially deficit countries to act by means of structural reforms in the way to catch up with the competitiveness levels in the surplus member states.

Another relevant reason for this lower interest in the CA imbalances within the EMU derives from the very motivation that drove the establishment of the monetary union, namely, that once the common monetary policy is introduced, the problems with the balance of payments would disappear (Marzinotto et al. 2010). Indeed, many economists argued in the past contributions that one of the purposes of creating a monetary union would be to replace the concept of the national CA positions with the regional ones, analogously to regional current accounts observed in a country with independent monetary policy.[5] In that way, the argument follows, in a monetary union, CA deficits at the regional level would become irrelevant.

Regarding the other countries of the European Union that either joined the euro area in the last four years or are expected to adopt the common currency in a more or less near future, the lack of economic investigation dedicated specifically to the examination of their external positions could be probably explained as follows. For those countries that recently adopted the euro, a longer time span would be needed to be able to make some consistent conclusion over their CA development deriving from their participation in the monetary union, while the remaining economies still stay outside of the euro area and as such are subject to the standard arguments brought in the investigations over CA concerning economies with independent monetary policies. However, given that since the beginning of the millennium, the rising CA deficits in CEECs are considered to be driven by a decline in competitiveness and not as an indication of higher returns on investment that would indicate a still

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[4] The argument seems to miss sound economic reasoning. Generally, it should be taken into account that an increase in, say, German imports would have to spread between its trade partners and, consequently, would translate only into a limited and unsure effect of an increase in exports in the deficit countries, like Spain, Portugal and Greece. Moreover, to postulate that wages in the surplus countries should be increased neglects the fact that such a measure is out of the political influence. Additionally, it is plausible to expect that changes in wages would produce effects prevalently on the internal levels of employment with no or very scarce influence on trade flows. Finally, boosting domestic demand with the final scope to increase imports by means of fiscal policy measures sounds unreasonable in countries that, despite their positive development in the external balance, should make an effort to improve their public finances.

[5] For an extensive analysis of European monetary integration and the treatment of the balance of payments of single member states of the EMU, see Ingram (1973).

ongoing catching up process (Belke et al. 2009), it wonders why their CA deficits do not provoke concerns in the political and economic discussion[6].

Till now, CEECs and their CA positions were studied by Bussiére et al. (2004) who estimate structural CA levels based on an intertemporal CA approach. Their main result suggests that the CA positions of the most of the acceding countries are compatible with the estimated structural CA levels, i.e. levels to which each country is supposed to converge to in a medium-term. Another study dedicated to the group of CEECs is due to Rahman (2008) in which she concludes that, because widening CA deficits reflect increased investment rather than decreased savings, the expectation is that in the future, the higher growth thanks to accumulated productive capacity will improve the intertemporal solvency of CEECs. It remains, however, to check the quality and the composition of investment, as a large part of them could have been used rather to finance activities in non-tradable sectors (transportation, financial services and utility sectors). Apart these and some other but still few contributions, the examination of CEECs remains scarce. Given, however, that, unless already part of the euro area, almost all of them are in the process of negotiations towards the adoption of the common currency, and moreover, taking into account their rather high CA deficits in the recent years, the proper *ex-ante* examination of their CA positions is advisable as it could help to point out some important characteristics of their CA imbalances and avoid similar difficulties experienced currently by the actual EMU's 'periphery'. This last consideration justifies and explains the inclusion of the group of CEECs into the present analysis.

Considering CA balance from the theoretical point of view, the economic wisdom says that the external position of a country reflects the difference between domestic savings and investment. If there is a discrepancy between the two, this results in a surplus, if savings prevail over investment, or in a deficit, in the opposite case. In principle, there is no need to worry about such an imbalance, similarly as in the case of a private agent that temporarily invests more than he saves in order to improve his future performance and repay his current debt in the next periods. Analogously, savings in excess of investment in an open economy may reflect an intertemporal need of an ageing nation to smooth its consumption over time.

More in details, countries experiencing higher expected rates of return and better growth prospects attract relatively higher levels of investment from countries facing declining domestic investment opportunities. While the former countries will experience CA deficits, the latter will face CA surpluses. This dynamics of investment flows between economies is supposed to be enhanced by the process of international financial integration offering better (more cost attractive) access to finance and thus an even more intensified tendency of growing economies to borrow and of lending countries to allocate their financial resources in promising destinations. As a consequence, the dispersion of CA balances should tend to increase.

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[6] This notwithstanding the fact that Article 140(1) of the Treaty on the Functioning of the European Union explicitly requires from the European Commission and from the ECB to monitor the development of the current accounts of the euro-candidate countries.

Regarding the deficit countries, in this group has been often classified economies in their earlier stage of development, the so called catching up economies. Being relatively poorer in terms of per capita income, and at the same time having promising growth perspective, they have potential to catch up with more advanced economies, through either accumulation of the existing capital or brand-new technological progress. Better investment opportunities would assure higher interest rates in such a country, inducing domestic financial institutions selling financial assets in the capital markets abroad. Moreover, the initial levels of higher unemployment should contribute to a more moderate increase in wages and prices than in the other countries, thus, leading to an adjustment in relative wages and prices required to improve the trade balance. In parallel, richer countries characterized by relatively lower growth rates, but disposing sufficient financial resources, would consider deficit countries as increasingly attractive places to establish new businesses. They would become a source of inflow of direct investment and at the same time they would run CA surpluses (Gourinchas and Rey 2007). As a consequence of this long-term growth dynamics in an area - being it a monetary union or not - composed both by deficit and surplus countries, one should observe what in the economic growth literature has been labeled with the term conditional convergence (Barro and Sala-i-Martin 1992; Blanchard and Giavazzi 2002). But an important precondition for this process to take place is that capital inflow from abroad is used for productive purposes and not to maintain current consumption levels. Borrowed funds should find their use in profitable investment able to increase productive capacity and wealth of the deficit nation in the way to improve its competitive position and, finally, assure that the repayment of the currently borrowed funds is possible. This occurs, if investment is made especially in the tradable sectors because otherwise, if foreign funds are used to finance non-tradables, the intertemporal budget constraint will not be satisfied (Giavazzi and Spaventa 2010). Indeed, given that non-tradable goods are used domestically, financing their production would be equivalent to spending borrowed foreign resources in the internal consumption. But if the aforementioned precondition is satisfied, it is acceptable and even desirable that the borrowing nation continues to be net borrower even for a relatively long period of time, as its ratio of debt to wealth and the relative burden of debt service would show a declining tendency over time. In this sense, public policy interventions aimed at restoring the balance could be considered harmful for the economy (Belke and Dreger 2011). In the long run, catching up should produce desired results of increased future exports, permitting the deficit economies to repay their net foreign debt accumulated over years.

All these CA developments could be observed in any single country, in a system of flexible exchange rates. But the expectation is that these tendencies become even more pronounced if one considers a union of politically independent countries but with a unique currency and a common monetary policy. In this case, aforementioned effects of financial integration, very probably accompanied by intensified economic integration in goods and services, as in the case of the European integration, result in even more attractive conditions to borrow, with reduced frictions in capital flows, interest rates that decline and exchange-rate risk premiums that disappear. Especially economies

facing relatively high interest rates *ex-ante* are supposed to benefit from the process that might have fostered investment booms. In such conditions, and due to a better functioning of financial markets, CA imbalances are expected to be even more intensified than in an area with flexible exchange rates. Nevertheless, these more pronounced CA imbalances should not be considered as a sign of misalignments in macroeconomic policies, but rather as an indication of a normal operating of financial integration forces (Schmitz and von Hagen 2009; Belke and Dreger 2011).

Accordingly, greater CA imbalances in a monetary union may derive from a greater role played by cyclical components that are neglected in the implementation of a single monetary policy. Also due to persisting asymmetries in the structure and evolution of the goods and inputs markets, money wages and other costs increase disproportionally in the member states (Arghyrou and Chortareas 2008). In this situation, fixed exchange rates unable any nominal adjustment and result in lower competitiveness of the products of the nation with faster price dynamics. Ultimately, this would cause an adverse swing in the trade balance. Due to the very causes of such an imbalance, efforts made by the government to support consumption levels would bring only a short-term solution and most importantly would result in a deterioration of the fiscal balance, negatively influencing the debt-to-income ratio (Ingram 1973)[7]. Moreover, stronger competition in the goods markets provoked by higher degree of substitutability between goods produced in different parts of the integrated area could be a reason of a greater dispersion of CA balances in a monetary union. In this case, a variation in the real exchange rate is expected to produce more pronounced effects in trade flows with the consequence of variations in the respective CA positions. Finally, in a monetary union, national governments could be less motivated to target on CA balances. This might be due to the fact that observing reciprocal misalignments in the policy making of the other governments of the community, it is easier for each single government to justify its own cohesionless policy.

At this point, one observation is of crucial importance. While countries with independent monetary policies can still rely on the nominal exchange rate as an instrument to adjust their external position, this is no more the case of countries involved in a currency area where exchange rates are permanently fixed. The competitiveness adjustment in this situation could be done either through changes in structural conditions of productive activities, or through real wages alignments. As it is well known, especially this last solution implying wage cutting could be particularly costly if not socially impossible.

The discussion just offered was aimed at shedding light on the importance and the determinants of CA imbalances with a particular emphasis put on the case in which countries are linked by means of a

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[7] Nevertheless, Ingram (1973) argues that there is no sound justification to believe that the general level of wages and prices in one member state develops very differently from the rest of the union and provokes concerns. This may be the case, he argues, of a single industry, yet not of the national economy at large. The evidence of the recent years in some member states of the EMU shows, however, that the negative development in wages may indeed regard almost all industrial activities in a country.

monetary agreement. Given limited possibilities to adjust competitiveness positions in a monetary union, the relevance of CA imbalances should not be undermined.

In addition to the already discussed determinants, there are also other, standard determinants that have been included in the past studies to check their relative importance in shaping the dynamics of CA balance and its adjustment process. The common feature of the studies in this field is to point on the same set of determinants, however, with mixed results depending mostly on the degree of economic advanced of countries. Chinn and Prasad (2003) study the determinants of the CA positions in a cross-sectional perspective including high-, middle- and low-income countries. They find that in industrialized countries CA balances are significantly determined by GDP growth, the net foreign asset to GDP ratio, and the balance of the government budget. In developing countries, also the latter two have been found to be significant, although with a weaker explanatory power, in addition to other determinants typical for that group of countries, namely, relative income, financial deepening, and terms-of-trade. In a study including a sample of industrialized countries, Debelle and Faruqee (1996) conclude that in a cross-sectional approach, CA positions are significantly influenced by the stage of development and demographics, while in a dynamic approach - by fiscal policy variable. Finally, adopting a panel-regression approach, Chinn and Prasad (2003), as well as Gruber and Kamin (2007) arrive at the conclusion that the present patent of external imbalances in the global economy can be hardly explained with a model based on the standard determinants of the CA - per capita income, output growth, fiscal balance, net foreign assets, economic openness, and demographic variables. Only by extending the standard framework by a variable expressing the impact of financial crisis, the model is able to capture and explain the dynamics of CA surpluses in the Asian economies. The question of why these surpluses might end up to provoke prevalently US CA deficits, instead of providing a more even distribution of resources all over the world, remains, however, unresolved.

Finally, there are a few contributions studying CA sustainability. Although from the theoretical point of view authors agree that large CA deficits should provoke concerns, the difficulty lies in determining a common and unique threshold level indicating CA (un)sustainability. Some authors tended to establish the CA deficit's sustainability at the numerical level of 5% of GDP (Summers 1996), while for the others CA sustainability is equivalent with a stabilized ratio of net external liabilities over GDP (Milesi-Ferretti and Razin 1996; Edwards 2001). Even less satisfactory is the state of the empirical investigation in this regard. Indeed, given numerous and diversified sources of CA imbalances, implying differences in the willingness to lend to single countries, it follows that the same levels of CA deficits may face different acceptability reactions from the side of potential investors (Freund 2005).

3. Facts on the sustainability of CA developments in the E(M)U.

While it is true that in an integrated market, especially where the degree of integration reaches the level of monetary policy, CA imbalances are partly determined by improved conditions of access to finance and possibly also by the elimination of exchange-rate risk premiums, there are theoretical reasons discussed in the previous section to worry about CA imbalances in such an area.

The following descriptive analysis focuses on some worrisome developments in economic performance of the European countries in the recent years. Observing the performance especially of south European members of the euro area and of Ireland, aggravated by the events of the financial and economic crisis, motivates an intensified monitoring of their past experiences, trying to extract some useful lessons for the future of the common monetary policy.

At the origins of the European economic and later monetary integration, there was the conviction that the process would give raise to a clear pattern of adjustment in current accounts of the member states. This, at least till 2006, was generally the case of the Eurozone as a whole, although after 2006 the development in the CA balance begun to be rather uneven and far from converging. Even less satisfactory was the path of the CA of the European Union that since 2003 – due to the new wave of enlargement in 2004 – and until 2009 exhibited a continuous process of worsening. Moreover, such an average picture of the EMU or of the EU masks still a more troublesome situation of different groupings of countries as well as of the single member states within the integrated area. As can be observed in Fig. 1, the group of PIIGS experienced a continuous deterioration of the CA position in the observed time period and since 2005 they record deficit values exceeding 5% of GDP.[8] In the case of CEECs, the development in the CA balances was rather stabilized between 1995 and 2002, although at negative levels, while between 2003 and 2007 their CA positions deteriorated significantly, passing in the region with values of CA deficits exceeding 5% of GDP.[9]

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[8] As already anticipated in the theoretical part, a certain consensus exists in the literature that CA deficit exceeding 5% of GDP is unsustainable if persists for a time span longer than three or four years (Freund 2005). Regarding CA positions of single countries in this group, the most serious CA deficits could be observed in Portugal and Greece, where the value of 5% of GDP was exceeded since 1997 and 2000, respectively. Spanish CA was continuously in deficits above the 5% sustainability level between 2004 and 2009, while Italian CA – in 2007 and 2008. Finally, Ireland started to register CA deficits since 2000, but till now they were always above 5% threshold.

[9] The development of CA positions in the single central and eastern European countries was more dispersed than in the PIIGS. In some cases, CA exhibited major fluctuations with periods of considerable deficits alternated with periods of surplus or only slightly deficit values. The most serious and persistent CA deficits with values above 5% of GDP over a period longer than 3 years could be observed in Bulgaria (2000–9), Czech Republic (2000-4), Estonia (2000-8), Latvia (1997-2008), Lithuania (1995-2008), Hungary (1999-2008), Malta (1995-8, 2004-9), Romania (1995-8, 2003-8) and Slovakia (1996-9, 2005-8).
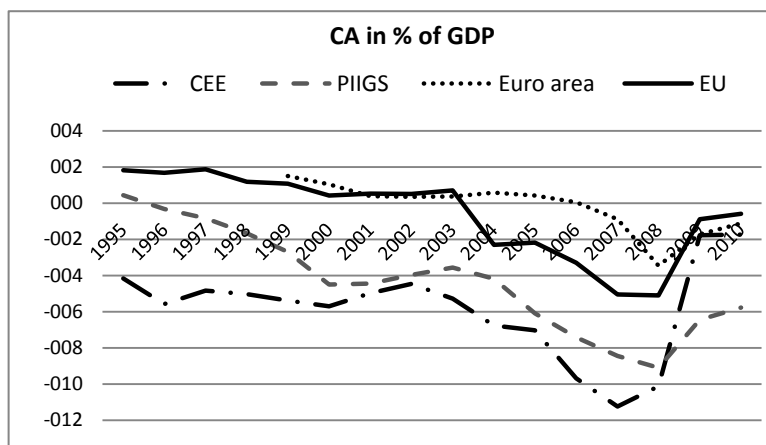
Fig. 1 CA position in groupings of the European countries

Source: Own elaborations on Eurostat data

Observing those developments, question raises about the origins especially of the CA deficits. As already discussed in the previous section, negative values of CA do not necessarily need to provoke troubles, if they are used in a productive way. On the contrary, if current borrowing is used to cover current consumption or it takes the form of investment channeled into non tradable sectors, like housing or services, this will not permit to repay future foreign debts.

Considering more in detail trends in national consumption as well as investment, and their possible influence on CA position, Fig. 2 illustrates the developments between 1995 and 2010 of the two aggregates in the two groups of countries, CEECs and PIIGS. In the CEECs, consumption and investment followed a rather stable path until the enlargement in 2004. Afterwards their development became more divergent: between 2004 and 2007 consumption was decreasing and investment was increasing, while the opposite tendencies could be observed for the next two years, potentially signaling a negative impact on CA positions. Regarding PIIGS, a clearly raising tendency in consumption rate can be observed at least starting in 2003, while investment followed a rather stabile path between 2000 and 2007 and started to decline only afterwards. This suggests that at least during the last four years taken under observation CA imbalances in that group of countries became increasingly unsustainable.
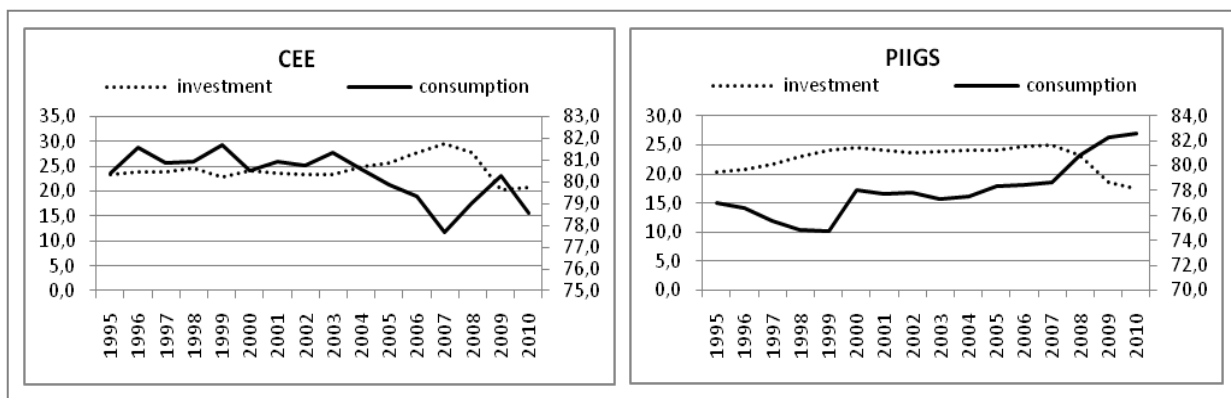
Fig. 2 Investment (left axis) and consumption (right axis) in % of GDP

Source: Own elaborations on Eurostat data

One more useful indication of the quality of CA imbalances could be obtained when looking at the contribution of different sectors to value added growth (Fig. 3). In a great majority of central, eastern and southern European countries, growth during the analysed period was largely concentrated in mostly non tradable, private service sectors, with a great role played particularly by wholesale and retail trade; real estate, renting and business activities; community, social and personal services; as well as by construction. Developments especially in this last sector have been the reason of negative tendencies in housing prices in Ireland and Spain in the last few years. The housing boom in those countries was financed principally by impressively increasing domestic credit. Similarly, although at a more moderate speed, domestic credit rose in Portugal and Greece, but on the contrary to Ireland and Spain it was used to finance excessive private consumption and public deficits. Moreover, everywhere credit growth was possible thanks to foreign financing, via commercial papers or bonds issued by domestic banks. Also in the Baltic economies, dynamic growth of credit flow in the early 2000s, mostly denominated in euro and in a large part provided by Scandinavian banks, was directed towards financing of the housing sector by means of mortgage loans. After such a boom period, between 2006 and 2007 conditions in the credit market deteriorated sharply, due to the growing credit risk driven by the awareness of an unsustainable domestic demand boom. All this suggests that the pattern of growth observed in the analysed decade both in the Baltics and in the Southern European countries was departing from satisfying the intertemporal budget constraint and thus was becoming rather incompatible with the perspective of successful repayment of foreign debts in the more or less near future.
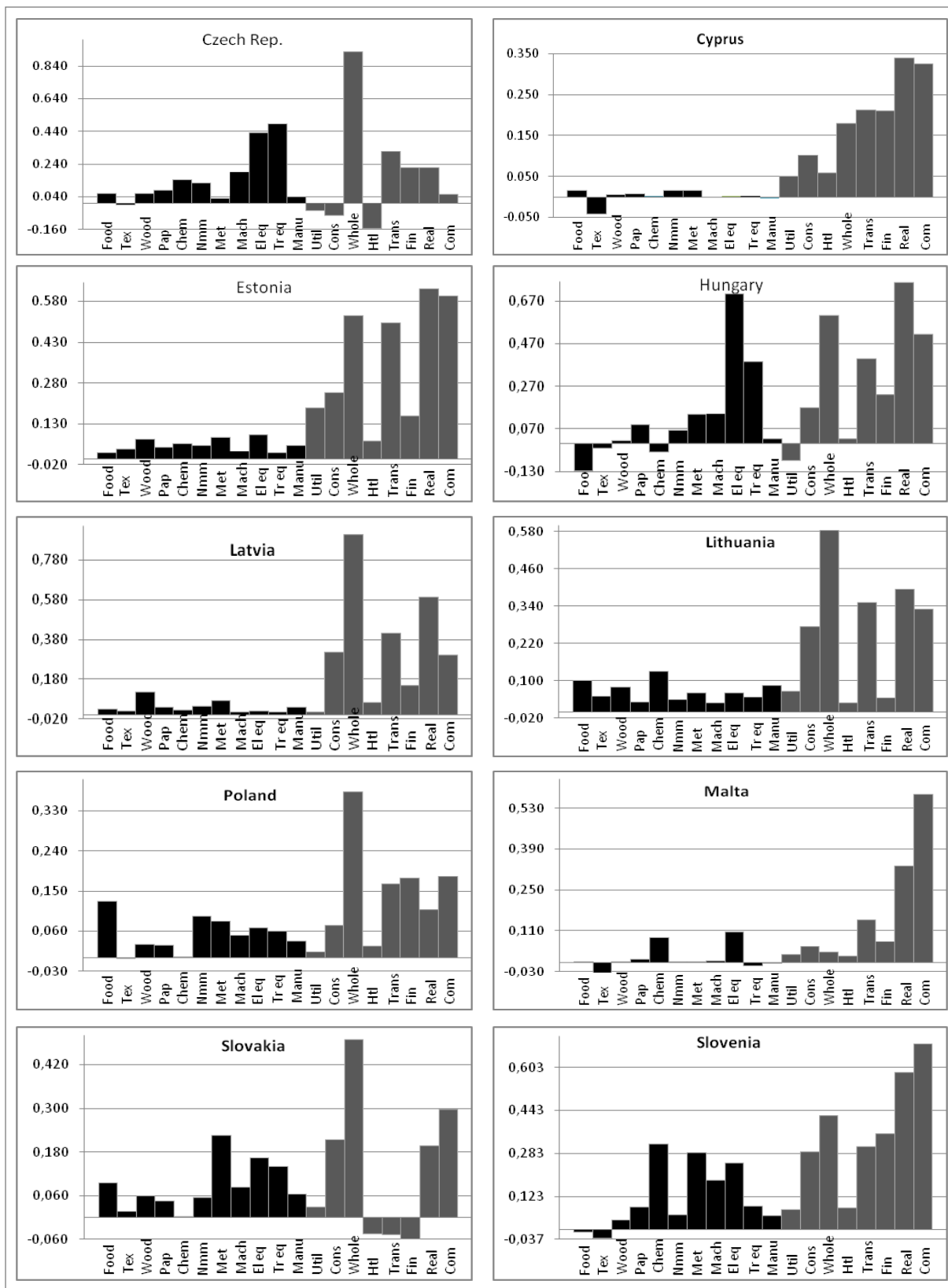
Fig. 3 Contribution (in %) of sectors to the value added growth, average values, 1996-2007

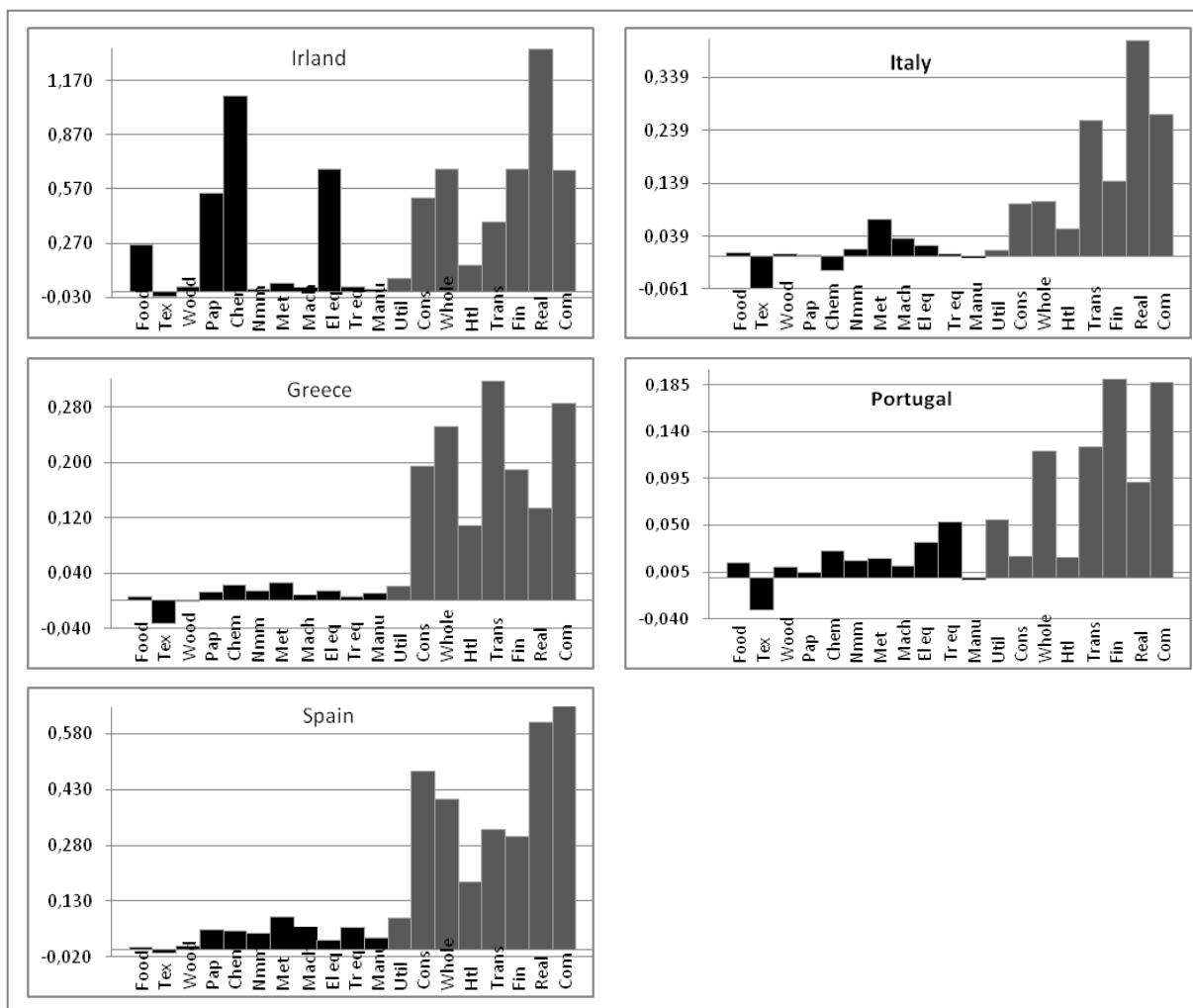Source: Own elaborations on EU KLEMS data

Fig. 3 cont.

This notwithstanding, it is worth to investigate more in details by means of an empirical analysis the exact determinants of CA positions in the European economy in order to assess the main sources of difficulties and, consequently, search for adequate policy measures.

4. Empirical evidence on the determinants of CA imbalances in the EU.

How different is the CA experience of central and eastern European countries from that of the PIIGS? How sound are current accounts of the other euro area member states? Which nature have variables explaining their CA imbalances? The answer to those questions may provide precious insights in interpreting the seriousness of CA deficits and providing policy implications, especially regarding CEECs among which there are still candidate countries for the EMU.

The following empirical exercise is aimed at comparing CA determinants in both country groups and, additionally, confront the results with those obtained for the group compound of the rest of the EU. A sound econometric procedure, based on panel estimation, has been implemented. Moreover, the results obtained have been strengthened with a series of robustness checks.

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4.1 Data and methodology

Annual time series are available for the three groups of countries: 12 CEECs (Bulgaria, Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia), PIIGS countries (Portugal, Ireland, Italy, Greece and Spain) and for the rest of the EU (Austria, Belgium, Denmark, Finland, France, Germany, Netherlands, Sweden and UK). The time coverage embraces the period 1995-2010. The data before 1995 have not been included as they are highly fragmented due to limited availability of data especially for CEECs that at the beginning of the 90s were still experiencing deep economic transformation of the post-communist era. The detailed description of data sources is included in Appendix 1.

Given possible cyclicality and other factors determining the short-run dynamics of the data, annual time series have been transformed into four-year non-overlapping averages, resulting in four observations for each country.[10]

Analogical panel estimation procedures have been implemented parallel for the three country groups. They consisted in running regressions according to the pooled OLS methodology. Fixed effect method has been also applied. Nevertheless, in all three cases, it has been rejected by the Hausman specification test. All models report robust standard errors. In all estimations, dependent variable is given by the ratio of CA to nominal GDP. To explain CA positions, following the macroeconomic balance approach, a series of explanatory variables that affect a country's underlying saving and investment positions have been included. Given the past empirical investigations, standard determinants of CA position include fiscal balance, indicators of demographic dependency, relative income, net foreign assets and often indicators of financial integration.[11] All those variables have been included also in the present study.[12] Other authors pointed out the importance to include some measure of catching up, as well as variables expressing competitiveness development, like effective real exchange rate (Belke and Dreger 2011). Those variables could be considered to play an important role in explaining CA developments in countries under examination, given that, from the one side the sample includes post-communist countries which underwent a deep economic transformation and, from the other side, there are countries with serious competitiveness concerns. Additionally, given that the majority of CEECs but probably also PIIGS are still potentially attractive destinations for the establishment of cross-border business activities, FDI inflow has been included to check whether CA imbalances could be actually determined by intensified investment activity coming from foreign operators. Finally, considering the hypothesis of Giavazzi and Spaventa (2010) a variable *nn-trade* has been included in order to verify whether non tradable sectors could be made responsible for CA deficits. If this were the case, sustainability concerns would raise.

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[10] Additionally, in order to provide an investigation based on a higher number of observations, estimations implementing annual data have been run. The results are included in Appendix 2.

[11] See for instance Rahman (2008).

[12] All variables are described and explained in Appendix 1.

4.2 Estimation results

The empirical estimation has been based on the following functional form:

$$ca_{kt} = \beta_1 fisc_{kt} + \beta_2 old_{kt} + \beta_3 pop_{kt} + \beta_4 rel_{kt} + \beta_5 catch_{kt} + \beta_6 fdi_{kt} + \beta_7 rer_{kt} + \beta_8 nfa_{kt} \quad (1)$$
$$+ \beta_9 fin_{kt} + \beta_{10} ntrade_{kt} + \varepsilon_{kt}$$

where *ca* is the ratio of CA balance in percentage of GDP for country *k* at time *t*.

Table 1 reports the results from the estimation of equation (1) for the three analysed groups of countries. Generally, the results seem to confirm the past investigations on CA determinants, although the evidence for the most variables is weaker, probably due to the fact that the samples here included are much more limited than in the majority of other studies.[13]

Looking at the contribution of individual explanatory variables, for PIIGS there is strong evidence of a positive influence on the CA position exercised by the fiscal balance, while for CEECs and for the rest of the EU this variable appeared to be insignificant, although the coefficient exposes the right sign. This result may be explained with the fact that, while in the years here examined southern European countries suffered from both excessive fiscal balances that went hand in hand with CA deficits, national governments in CEECs were making effort to consolidate their fiscal positions, although experiencing increasing CA imbalances. This contributed in the latter country group to a lacking correlation between internal and external balances. The rest of the EU was experiencing rather moderate fiscal and external balances which also explains no correlation.

Moreover, considering population dependency variables, there is an evidence of a negative effect of old age dependency in CEECs[14] and in the EU rest, while in PIIGS population growth that affects young age dependency plays a significant role in deteriorating CA positions. Regarding the other two variables, namely, relative income and catching up, the first is significant and has the expected sign in the EU rest. Moreover, both variables appear to be statistically significant and display expected signs in PIIGS, while they are insignificant in CEECs. In this context, the missing evidence of catching up variable in the case of CEECs confirms the results of the past investigations (Belke *et al.* 2009).

Foreign direct investment inflows exercise an expected negative influence on CA positions in CEECs, while a contrary effect can be observed in PIIGS.[15] These opposite signs of the coefficients may reflect different nature of FDI inflows in these two groups. The positive impact could be driven by the fact that FDI would be directed more towards export industries with a slightly positive impact on the CA balance in the medium-run. On the contrary, a negative impact of FDI inflows in the CEECs could be probably explained with a more urgent need to invest in new capacities first in order

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[13] See Chinn and Prasad (2003), Chinn and Ito (2007), Rahman (2008), Jaumotte and Sodsriwiboon (2010).

[14] Central and Eastern European countries have a demographic profile characterized by a large share of older population which influences negatively CA via lower national savings.

[15] FDI inflows are insignificant for the EU rest.

to replace poor quality capital stock accumulated in the years before transition. Similar interpretation can be offered regarding the influence of financial integration. Indeed, CEECs are still on the road to complete their involvement in the global financial markets. Becoming more and more integrated, those countries experience a continuous improvement in the access to external financing that permits them to borrow and run CA deficits.[16] The result regarding the negative influence of financial integration on CA in CEECs is also confirmed in their lower NFA positions that reflect confidence of foreign investors in their growth prospects. On the contrary, as argued also by Abiad et al. (2007), being already relatively more integrated in the international financial system, PIIGS are in a stronger lender position.

Table 1 Determinants of CA dynamics in CEECs, PIIGS and in the rest of the EU

| | Pooled OLS estimation, dependent variable CA/GDP | | |
	CEECs	PIIGS	EU rest
Fiscal balance	0.36	0.65***	0.03
	(0.21)	(0.16)	(0.27)
Old age dependency	-0.58**	0.61***	-0.69**
	(0.23)	(0.16)	(0.27)
Population growth	71.88	-465.95***	-1151.85***
	(192.27)	(115.28)	(294.63)
Relative income	4.64	12.66**	26.48***
	(5.01)	(5.84)	(4.77)
Catching up	-59.86	-152.45**	5.62
	(40.62)	(50.86)	(27.83)
FDI inflow	-0.34**	0.11**	0.05
	(0.15)	(0.05)	(0.14)
RER	-0.03	-0.12	0.09**
	(0.02)	(0.12)	(0.03)
NFA	0.01	0.04**	0.04**
	(0.02)	(0.02)	(0.02)
Financial integration	-0.01**	0.01***	0.01**
	(0.01)	(0.01)	(0.01)
Non tradables	-0.01	-0.52***	-0.14**
	(0.12)	(0.13)	(0.05)
Euro dummy		-6.70***	-1.17
		(1.22)	(0.87)
R^2	0.79	0.89	0.89

Note: ***, ** and * imply significance levels at 1%, 5% and 10%, respectively. Robust standard errors in parenthesis.

Real exchange rate appeared to be insignificant in the estimations related to CEECs and to PIIGS. This might be due to the difficulty to univocally interpret changes in this variable: they might be driven by a simple adjustment towards a new equilibrium, or alternatively by changing competitiveness conditions (Jaumotte and Sodsriwiboon, 2010).

Significantly negative influence on the CA positions in PIIGS of the variable expressing the importance of non-tradable sectors in the economy raises doubts regarding the sustainability of their CA imbalances. Indeed, this result seems to suggest that a large part of current expenditures connected

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[16] In a number of other studies, authors also find a negative impact of financial integration on the current account especially for less developed countries. Blanchard and Giavazzi (2002) as well as Jaumotte and Sodsriwiboon (2010) show that financial liberalization leads to deterioration of CA balances via decreasing saving rates.

with the inflow of foreign resources is made not in activities promising future repayment of current debts, but in non-tradable activities that by definition do not make part of exchange in the international markets. The influence of this variable appeared to be significant both in the EU rest, while in CEECs it revealed a significant influence only in the estimation based on the annual data.

Finally, an important observation regards the repercussions following the adoption of the euro in the south European countries. In order to measure those effects, in the estimation of PIIGS a dummy variable referring to the EMU membership has been included. This variable exercises a strong negative influence on CA positions in the first group of countries, meaning that the adoption of the euro contributed to growing CA imbalances. This confirms once again that the process of monetary integration generated easier conditions of access to finance for the members of the integrated area. Nevertheless, given the excessively negative external positions observed in the Eurozone periphery, concerns raise over the sustainability of such imbalances in the context of the common European currency.

4.3 Robustness check

Apart from the standard measure of catching up process, labour productivity has been included as an alternative measure. Countries being involved in the catching up process should experience fast productivity growth. However, the direction of influence of this indicator on CA position is not clear. Indeed, even if a negative sign of the coefficient could indicate ongoing intensified investment in capacities that exceeds savings and thus justifies CA deficits, nothing excludes that fast productivity growth could be a part of a normal growth performance in an already mature economy, running CA surpluses.

In the case of CEECs, the results in Table 2 show a negative and significant influence of the labour productivity on CA their positions, confirming the intuition just given, while in the PIIGS estimation (Tab. 3), similarly as in the estimation regarding the rest of the EU (Tab. 4), the variable appeared to be insignificant, although it reported an expected sign. Finally, in all three groups of countries, the substitution of the standard catching up variable with labour productivity measure contributed to a lower goodness of fit of the model in terms of R^2.

Some authors suggested that another alternative measure of catching up process could involve real GDP per capita (Belke and Dreger 2011). Countries with a lower real GDP per capita are expected to be still on their way towards more developed countries with the consequence of running CA deficits. The results demonstrate that the variable missed any explanatory power. Moreover, the overall performance of the model worsened in all three estimations.

Table 2 Robustness check for CEECs

	Pooled OLS estimation, dependent variable CA/GDP		
Fiscal balance	0.36	0.23	-0.07
	(0.21)	(0.24)	(0.26)
Old age dependency	-0.58**	-0.54*	-0.18
	(0.23)	(0.25)	(0.26)
Population growth	71.88	3.16	50.87
	(192.27)	(259.22)	(307.93)
Relative income	4.64	4.25	19.84*
	(5.01)	(5.26)	(7.41)
Catching up	-59.86		
	(40.62)		
Labour productivity		-0.76***	
		(0.22)	
Real GDP per cap			-0.03
			(0.02)
FDI inflow	-0.34**	-0.43***	-0.47**
	(0.15)	(0.12)	(0.16)
RER	-0.03	-0.03	0.01
	(0.02)	(0.02)	(0.03)
NFA	0.01	0.01	0.02
	(0.02)	(0.02)	(0.02)
Financial integration	-0.01**	-0.01	-0.01
	(0.01)	(0.01)	(0.01)
Non tradables	-0.01	-0.07	-0.08
	(0.12)	(0.12)	(0.13)
R^2	0.79	0.67	0.65

Note: ***, ** and * imply significance levels at 1%, 5% and 10%, respectively. Robust standard errors in parenthesis.

Table 3 Robustness check for PIIG

	Pooled OLS estimation, dependent variable CA/GDP		
Fiscal balance	0.65***	0.30	0.24
	(0.16)	(0.15)	(0.18)
Old age dependency	0.61***	0.52*	0.33
	(0.16)	(0.22)	(0.24)
Population growth	-465.95***	-461.61	-519.07
	(115.28)	(255.99)	(342.71)
Relative income	12.66**	5.63	3.29
	(5.84)	(5.45)	(6.68)
Catching up	-152.45**		
	(50.86)		
Labour productivity		0.53	
		(0.26)	
Real GDP per cap			0.01
			(0.01)
FDI inflow	0.11**	0.11	0.14
	(0.05)	(0.07)	(0.08)
RER	-0.12	0.08	0.09
	(0.12)	(0.19)	(0.24)
NFA	0.04**	0.09*	0.10*
	(0.02)	(0.03)	(0.03)
Financial integration	0.01***	0.01*	0.01
	(0.01)	(0.01)	(0.01)
Non tradables	-0.52***	-4.84*	-0.40
	(0.13)	(1.36)	(0.33)
Euro dummy	-6.70***	-0.58**	-3.66
	(1.22)	(0.15)	(1.66)
R^2	0.89	0.95	0.92

Note: ***, ** and * imply significance levels at 1%, 5% and 10%, respectively. Robust standard errors in parenthesis.

Table 4 Robustness check for EU rest

	Pooled OLS estimation, dependent variable CA/GDP		
Fiscal balance	0.03	0.13	0.06
	(0.27)	(0.25)	(0.22)
Old age dependency	-0.69**	-0.67*	-0.62*
	(0.27)	(0.27)	(0.26)
Population growth	-1151.85***	-1141.72**	-1146.17**
	(294.63)	(350.49)	(333.58)
Relative income	26.48***	21.54**	26.06***
	(4.77)	(7.29)	(4.92)
Catching up	5.62		
	(27.83)		
Labour productivity		-0.23	
		(0.38)	
Real GDP per cap			-0.01
			(0.01)
FDI inflow	0.05	0.06	0.03
	(0.14)	(0.17)	(0.17)
RER	0.09**	0.06	0.09**
	(0.03)	(0.05)	(0.03)
NFA	0.04**	0.04*	0.04*
	(0.02)	(0.01)	(0.01)
Financial integration	0.01**	0.01	0.01*
	(0.01)	(0.01)	(0.01)
Non tradables	-0.14**	-0.09	-0.13
	(0.05)	(0.09)	(0.08)
Euro dummy	-1.17	-0.99	-1.16
	(0.87)	(1.00)	(0.97)
R^2	0.89	0.83	0.84

Note: ***, ** and * imply significance levels at 1%, 5% and 10%, respectively. Robust standard errors in parenthesis.

5. Conclusions and policy recommendations

The stability and the survival of a monetary union is strongly conditioned by a series of economic and political components. If politically independent countries decide to establish a union with a common currency and a common monetary policy, it is necessary that they agree on solid rules aimed principally at avoiding reciprocal opportunistic behaviours.

Whereas in the preparation of the European Monetary Union, an effort has been done to offer a set of such rules, elaborated and included in the Stability and Growth Pact, no provision regarded CA positions of the single member state. On the contrary, the ex-ante vigilance over possible excessively high external imbalances should be a part of a successful agenda of every monetary integration project (Bethge and Ohr, 2007). Indeed, recalling the arguments of the present contribution, there are serious reasons to be worried about external imbalances in a monetary union. This is most importantly due to the fact that improving conditions of access to the external financing offer to each single country the opportunity to invest not only in competitiveness-enhancing strategies, but also in consumption, and generally, in activities not bringing about the possibility to generate exportable resources, by means of which the currently negative external positions would be repaid.

More precisely, a more intensified process of financial integration, better opportunities to obtain external financing, and consequently, the effects deriving from faster process if economic integration could in some cases lead to higher levels of CA deficits. Given that such effects are even more intensive in a monetary union, it is plausible to expect that CA imbalances inside the area will be more considerable. If those tendencies persist for a too long period of time and if opportunistic behaviours of some member countries come into play, net borrowing could more easily result in excessively high CA deficits in the framework of common monetary policy than without.

As a crucial implication, excessive CA deficits of single member states, and consequently, problems with the future repayment of the current indebtedness, would influence negatively the performance of the entire community. Indeed, the foreign operators would involve also the sound rest of the monetary union to bear the risk connected with the potential insolvency of some of its members.

The evidence revealed in the present analysis suggests that some of the aforementioned problems could trigger the future functioning of the current and prospective EMU. Regarding the actual members of the EMU, the group of PIIGS provides the main concerns due to the negative influence on the CA balance exercised by activities in non-tradable sectors. The analogous effect for the group of CEECs countries has been confirmed in the estimation involving annual data. Moreover, in the CEECs countries, structural problems with the CA positions are coming from demographic factors.

Considering such competitiveness concerns, a reduction in unit labour cost is crucial in restoring price competitiveness. Additionally, non-price competitiveness is even more important, as it would assure long-run growth conditions. The achievement of non-price competitiveness should be addressed with a set of measures aimed at improving structural conditions of industries. Here, the focus should be on modernisation of the production and distribution systems, as well as on the generation of innovative products and processes (Zemanek et al. 2010). Finally, given that in the recent past, foreign financial resources have been extensively used in some countries of the EU to support activities in non-tradable sectors, effort should be made to provide the right incentives in directing investment towards export-promising destinations.

The necessity of those internal adjustments shouldn't undervalue the need to introduce in the institutional framework of the EMU of a formal surveillance over CA development in the single member states, in order to prevent an unsustainable expansion of foreign-made credit, their counterproductive use, and most importantly in order to preserve an undisturbed functioning of the Eurozone.

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Appendix 1. Data sources of variables included in the estimation framework

In Table 5 are presented variables included in the empirical exercise and their respective data sources.

Table 5 Variables used in the estimations and their data sources

	Variable	Data source
ca	CA in percentage of nominal GDP	Eurostat
fisc	Fiscal balance in % of nominal GDP	Eurostat
old	Old-age dependency as ratio of the population 65 and over to active population (15 – 64)	Eurostat
pop	Population growth rate	Eurostat
rel	Relative income as ratio between country PPP income per capita to US PPP income per capita	Own calculations based on World Economic Outlook 2009
catch	Catching-up as a growth rate of the index expressing the distance of the GDP per capita of a country from the euro-12 average	Own calculations based on World Economic Outlook 2009
fdi	FDI inflows in % of nominal GDP	Eurostat
rer	Effective real exchange rate based on labour unit cost	Eurostat
nfa	Net foreign assets calculated as the difference between foreign assets and liabilities; in % of GDP	Eurostat
fin	Financial integration as the sum of foreign assets and liabilities; in % of GDP	Eurostat
lab	Labour productivity growth	Eurostat
ntrade	Non-tradables expressing the percentage part of services in the total gross value added	EU KLEMS
rgdp	Real GDP per capita derived from nominal GDP per capita deflated with the GDP deflator	Own calculations based on World Economic Outlook 2009

Appendix 2. Results from the estimation procedure based on the annual time series

Table 6 Determinants of CA dynamics in CEECs and PIIGS – estimation results based on annual time series

	Pooled OLS estimation, dependent variable CA/GDP		
	CEECs	PIIGS	EU rest
Fiscal balance	-0.53***	-0.19	0.43***
	(0.15)	(0.12)	(0.12)
Old age dependency	-0.05	0.34*	0.25
	(0.19)	(0.16)	(0.16)
Population growth	18.75	-108.52	-139.43
	(182.45)	(196.52)	(385.54)
Relative income	9.57*	13.69***	9.12
	(4.81)	(3.77)	(6.77)
Catching up	-25.15	-12.42	31.58
	(14.74)	(39.90)	(20.88)
FDI inflow	-0.33**	-0.09	-0.04
	(0.10)	(0.06)	(0.05)
RER	-0.01	0.19	0.10
	(0.02)	(0.12)	(0.07)
NFA	0.02	0.06***	-0.01
	(0.02)	(0.02)	(0.01)
Financial integration	-0.01	-0.01	0.01
	(0.01)	(0.01)	(0.01)
Non tradables	-0.15*	-0.53***	-0.07
	(0.07)	(0.16)	(0.12)
Euro dummy		-1.39	0.68
		(0.90)	(0.64)
R^2	0.45	0.86	0.24

Note: ***, ** and * imply significance levels at 1%, 5% and 10%, respectively. Robust standard errors in parenthesis.

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