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Abstract

The neoclassical and OCA theories predict that higher capital market openness, providing better risk sharing opportunities, should enable catching up and convergence among countries. However, starting from '90s, Current Account (CA) dispersions within European Union (EU) member States have been progressively increasing. To shed light on this issue this paper investigates whether financial integration played a role in determining the so called Eurozone CA “core-periphery dualism”. The analysis considers two samples of 22 OECD and 15 EU countries, three time horizons corresponding to various European integration steps, different control variables and several panel econometric methods. The results suggest that within OECD and EU groups, financial integration significantly contributed to explain CA dispersion. Moreover, financial integration seems to have negatively influenced the CA balance in the peripheral countries especially in the post EMU period.

JEL Classifications: F36, F43

Keywords: current accounts imbalances, financial integration, EMU, core-periphery countries, panel econometric models.

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1. Introduction

The sovereign debt crisis highlighted the persistence of current account imbalances within the European Monetary Union (EMU) especially in the so called “peripheral” countries. In particular, while the current account (CA) of the Eurozone as a whole has remained almost balanced over the last two decades, starting from the second half of the ’90, in particular in the post EMU period, current account in the Eurozone periphery registered persistent deficits that have been complemented by growing surpluses in some core countries.

One interesting interpretation for current account dispersion within the EMU countries has been proposed in terms of structural changes determined by the European financial liberalization process (Giavazzi and Spaventa, 2010, Schmitz and von Hagen, 2011). This latter, enabling an easier access to international capital markets of some “peripheral” countries, contributed to generate domestic demand pressures that finally determined the accumulation of large and persistent current account deficits (or surplus of financial account). With respect to this explanation there is also evidence that, during the EMU, huge capital inflows in some EZ peripheral countries were allocated towards uses that were not able to stimulate growth, produce labor market improvements and foster convergence (Chen et al 2012, Sanchez and Varoudakis 2013).

Blanchard and Giavazzi (2002) and Schmitz and von Hagen (2011) also find that the Feldstein Horioka puzzle¹ doesn’t hold in the Eurozone and interpret this evidence as an increase of financial integration and as one of the causes of Current Account divergences among EMU countries. Furthermore, several empirical papers found evidence suggesting that financial integration within Europe² increased after the introduction of the single currency. The larger net capital flows among the EZ member countries brought by such financial market integration were reflected in their statistical counterparts that are current account balances.

¹ The Feldstein-Horioka puzzle is a widely-discussed problem in macroeconomics and international finance. According to economic theory, if we assume that investors are able to easily invest anywhere in the world, they will invest in countries that offer the highest return per unit of investment. Despite the widespread perception of increased capital mobility during the last decades, Feldstein and Horioka, using cross section analysis, found values of correlation between national savings and domestic investment close to one. Extensive subsequent empirical literature confirmed their findings, and high correlations values between savings and investment are considered by many researchers an empirical regularity.

² For a survey see Lane (2008).

If from one hand the increase of foreign capital inflows in the EU countries with higher expected return demonstrates that the EMU was effective in creating a well-integrated capital market, on the other hand the so called “*home bias reduction*” in the European financial market seems not to have favored an endogenous process of convergence and catching up as neoclassical and OCA theories predict.

In this context a number of studies (Chen et al., 2012; Schmitz and von Hagen, 2012; Sinn et al., 2011) concluded that the dispersion of CA balances among EMU members has widened in the past decade-and-a-half and especially after the introduction of the single currency. Recent empirical evidence also shows that, in certain European countries, higher financial integration although bringing to better risk sharing opportunities could also determine asymmetric business cycle fluctuations³. This lack of an endogenous process of “convergence” or at least some convergence bias as was well highlighted by the recent financial and sovereign debt crises in the euro area would require considerations on the effects of the European financial integration process deepening on the EMU countries.

The objective of this paper is to investigate the so called “core periphery dualism” in terms of current account imbalances within the Eurozone with a particular focus on the role played by the European financial integration process deepening. To this end we examine the impact of capital liberalization in addition to the main CA determinants within the Eurozone considering different time samples, groups of countries and econometric techniques and control variables. The financial integration effect is taken into account considering a capital openness measure (i.e. Chinn Ito index) and a financial diffusion indicator both of them available for a wide set of countries.

The previous related literature on this topic mainly relies on the Blanchard and Giavazzi (2002) seminal paper. The authors focus on investment saving differentials showing that the Eurozone was a well economic integrated area even before the adoption of euro. They also find evidence that saving investment correlations fell significantly especially with the advent of euro and interpret this finding as increased financial integration due to the advent of a single currency. Indeed in the period analyzed (1985-2001) the deficits of some poorer countries (namely, Greece and Portugal) were financed

³ See Cesaroni et al (2011) for a description of the main Euro Area business cycle properties and stylized facts.

by savings coming from European richer countries. They also demonstrated that current account imbalances strongly depend on income per capita levels reflecting opportunities for catching up and convergence.

Since the seminal paper of Blanchard and Giavazzi (2002) vast empirical work has investigated the determinants of current account balances countries by means of panel econometric techniques. To this regard Chinn and Prasad (2003) analyze current account determinants for developed and developing countries using cross section and panel techniques. In their findings current account balance is positive correlated with government balances and the initial stock of net foreign assets. For developing countries they also find evidence of a positive impact of financial deepening indicators on current account. More recently, Jaumotte and Sodsriwiboon (2010) find that external imbalances in the Eurozone periphery exceeded their predicted levels based on current account fundamental determinants, with the gap possibly attributable to financial integration and to the periphery's relative loss of competitiveness. Results by Lane and Pels (2012) suggest that the initial level of per capita income and expected growth have been significant factors of current account imbalances in the Eurozone. Furthermore Schmitz and von Hagen (2012) distinguish between balances against the Eurozone and the rest of the world and examine these for the EU-15 countries. Their main finding is that for EZ members net flows followed differences in per-capita incomes even before the introduction of euro. Their econometric investigation also reveals a quite substantial financial deepening of European capital markets, whereby divergent capital endowments across the EMU countries triggered by financial flows going from countries where capital was abundant to countries where it was scarce confirming that Feldstein Horioka puzzle doesn't hold for Europe.

Analogously, Belke and Dreger (2013) compare the relative effect of per capita income differences and competitiveness using panel cointegration techniques and conclude that diverging competitiveness has been a main factor of external imbalances in the Eurozone. Therefore, often, the diverging competitiveness among the periphery and the core has been interpreted as direct evidence that competitiveness gaps have been at the root of the external imbalances in the periphery, with the analysis then focusing on the structural reform agenda to rebalance competitiveness in the Eurozone (Zemanek et al., 2009). The literature has also examined other factors affecting the external balance, such

as dependency ratios and trade (Chen et al., 2012). However, systematic evidence on the drivers of external imbalances in the Eurozone remains relatively sparse.

Finally, Sanchez and Varoudakis (2013) assess the contribution of key factors associated with CA imbalances in the Eurozone through the estimation of a panel-data vector autoregressive model over 1975–2011. Growth fluctuations, initially associated with demand booms triggered by unusually low interest rates and later with demand contractions resulting from the crisis and policy adjustments, have been key drivers of current account fluctuations. Changes in competitiveness, measured by real exchange rates or unit labor costs, have played a less important role. Demand shocks have contributed more to current account balance dynamics in the Eurozone periphery than in the core, whereas competitiveness has been a less prominent factor in the periphery but relatively more important in the core. Interestingly, among the previous literature, as far as we could find, very few studies use a dynamic panel data approach and none for the specific case of the Eurozone.

This paper contributes to the existing literature in three ways. First it provides a broad empirical analysis of the intra Eurozone current account balances determinants including some European financial integration process indicators. Second, it explicitly estimates the different behavior of core and peripheral countries with respect to some selected regressors. Third it includes in the estimates next to the traditional quantitative regressors some qualitative indicators trying to assess the role of the Governance and policy coordination in determining the imbalances within the EMU.

The paper is organized as follows: section 2 reports the main stylized facts concerning current accounts imbalances within the EMU, section 3 describes data sources and sample selection, section 4 describes the empirical strategy, estimates results and robustness checks. Conclusions follow.

2. Stylized facts

The recent and persistent current account discrepancies among EZ member States have raised concerns on the sustainability of EMU in its current form which seems to be far away to fulfill the endogeneity properties auspicated by the OCA theories. There is

strong evidence that from the beginnings of the nineties, current account balances among members have been progressively diverging⁴. Whereas in a small group of countries (mainly Spain, Greece, Portugal, Italy and Ireland) deficits became large and persistent, another group of countries (mostly Germany, Belgium, the Netherlands, Finland and Austria) registered significant surpluses. This finding reflects what in the recent literature has been called “European core periphery dualism of current account”. After the recent Eurozone debt crisis concerns emerged on the common fiscal and monetary policies suitability to reduce countries divergences. With respect to this, the question whether the core periphery dualism existed before or was actually favored by the intensification of European economic and financial integration process has also represented a main point in this debate⁵ To shed light on the above question is important to carefully analyze the determinants of such disequilibria.

In order to analyze such dynamics Figure 1 reports the current account balance for the euro area, US and Japan for the period 1991-2012. Looking at the overall dynamics we see that while Japan and US were persistently in surplus and deficit (respectively) the Eurozone experimented a balance near to zero with a small trend in surplus after the 2008 crisis.

[Figure 1]

To disentangle the dynamics of CA within the Eurozone members⁶, Figure 2 reports the trends of current account averages for core and peripheral countries. The periphery group is composed by Italy, Spain, Portugal, Ireland and Greece. The core countries are Germany, Austria, Finland, Belgium, the Netherlands and France.

Observing the current account intra area balances dynamics is quite evident that while in the pre euro period there was not any substantial divergence between core and peripheral countries on average, starting from 2000, in correspondence with the completion of the EMU, the divergences and the dispersion of current account positions in the member countries become evident. Although this trend was part of a more global phenomenon

⁴ European Commission (2012).

⁵ Caporale et al (2014).

⁶ The Eurozone group is composed by Italy, Spain, Portugal, Ireland, Greece Germany, Austria, Finland, Belgium the Netherlands and France.

among the advanced economies due to capital liberalization it was particularly pronounced within the European Union⁷.

[Figure 2]

In the period 1985-2008 Germany and a number of other smaller countries in Northern Europe (core countries) progressively built larger current account surpluses versus some peripheral countries (Spain, Greece, Portugal and Ireland)⁸. The international investors purchased primarily financial instruments issued by France and Germany that were then used as capital inflows within the euro area to finance deficit countries.⁹

More in detail, the intra-euro area capital flows financed government debt (in Greece), financial sector borrowing (in Spain or Ireland), or a combination of both (in Portugal or Italy). This pattern of capital flows suggests, inter alia, that EZ investors viewed securities issued by 'peripheral' European countries as closer substitutes for securities issued by the core ones to a larger extent than investors from outside the euro area.

Among the periphery and core groups, Italy and Germany displayed peculiar dynamics. In fact Germany current account surplus had the best performance among core while Italy current account deterioration was not as severe as for the other peripheral countries.

In order to take into account of such differences in Figure 3 the dynamics of Italy and Germany current account together with the CA averages of the remaining core and periphery countries are reported.

[Figure 3]

Looking at Figure 3 we can notice that even if in many recent economic analyses Italy has often been included among the peripheral countries, the Italian situation is quite singular and differs from that of both core and peripheral countries.

Italy's current account balance deteriorated steadily in the period 1996-2011. From a surplus of 3.2% of GDP in 1996, the current account balance turned slightly negative over

⁷ In 1993 was also implemented the European Union's "single passport" legislation (the 1993 EU Investment Services Directive that addressed the cross-border activities of all types of financial firms), an EU bank that wishes to do business in another member state no longer needs to set up a full subsidiary and be subject to local regulation and supervision. It can do business there by opening a branch or, even more simply, by operating directly from its home base, where all the key aspects of its solvency, liquidity, and risk are supervised by its home regulator. In parallel, the harmonization of firms' reporting requirements has improved information and decreased the risk faced by foreign lenders.

⁸ Portugal's deficit remained at the very high levels it had reached early in the decade.

⁹ Germany was a net supplier for Euro area and a Net receiver from outside the Euro area.

2002-05 and deteriorated significantly after the 2008 financial crisis, reaching a deficit of more than 3% of GDP in 2010-11.

Part of the decline in the current account balance was driven by worsening terms of trade as the increasing price of imported oil – on which the Italian economy is structurally dependent – negatively affected the goods balance. Since euro adoption Italy's Net international Investment Position (NIIP) also deteriorated: it stood at -8.3% of GDP at the end of 1996, but declined to about -22.5% by the end of 2012. However, differently from the other peripheral countries, the accumulation of current account deficits since 2006 is only partly explained by the deterioration of Italy's NIIP¹⁰.

In 2009-12, there has been a substantial adjustment in the euro area peripheral countries external imbalances. On average the CA balances of Ireland, Italy, Greece, Spain, and Portugal improved and Spain, Ireland, Portugal and Italy eventually reached surpluses. The rebalancing of trade (and thus CA balances) in the peripheral countries was mainly due to domestic demand declining faster than output. Private investment contraction, particularly construction, was among the main driver of this decline.

Figure 4 reports the average current account of all the core and periphery countries for the two sub-periods 1985-1999 and 2000-2012.

[Figure 4]

Looking at the graph we can see that the average current account balance switched from positive to negative for Italy, France, Ireland and from negative to positive for Austria and Finland.

[Figure 5]

In order to make a preliminary descriptive investigation of the possible linkages between current account balance and budget balance (i.e. twin deficit theory), figure 5 and 6 display the positions of EMU members states with respect to average CA and average budget balances over before and after the common currency introduction. Looking at figure 5 we notice that in the pre EMU period (1990-1998) Germany stayed in the “deficit country-group” both considering budget deficit and current account balance. In that period

¹⁰ See Lane and Milesi Ferretti databank EWN II (2012)

Italy registered a substantial average deficit but experimented also an average current account surplus.

[Figure 6]

In the post euro period (Figure 6) on average Finland improved substantially its current account position shifting from a CA deficit to a CA surplus while quite the opposite occurred to Italy and Ireland. As for the rest of EZ countries, the peripheral countries, as already mentioned, worsened their deficit of current account while the core countries improved their surpluses¹¹.

3. Data description and sample selection

We consider two different countries groups; a full sample containing twenty two OECD members emerging and industrialized¹² and a subsample of 15 EU countries. Both of them include the 11 main EMU¹³ economies thus the remaining countries of the group are used as control. To account for core periphery effects in the estimates we split the EMU countries in two different groups: core (Germany, Austria, the Netherlands, Belgium, Finland and France) and periphery (Italy, Spain, Portugal, Ireland and Greece) according to the prevailing definition in literature¹⁴. The data comes from different data sources: OECD, Milesi Ferretti (2009) and World Bank database (see tables 1 and 2 in the Appendix for a detailed description of the data sources and summary statistics). The time sample spans from 1986 to 2012. 1986 is the year of the Single Act¹⁵ signature and 2012 is the latest available year for most of the series in the dataset. We divide the explanatory

¹¹ See De Nardis et al (2008).

¹² Australia, **Austria, Belgium**, Canada, Denmark, **Finland, France, Germany, Greece, Ireland, Italy**, Japan, Korea, Mexico, the **Netherlands**, Norway, **Portugal, Spain**, Sweden, Switzerland, the United Kingdom and the United States.

¹³ 1999 marks the beginning of the euro period for all countries except for Greece, who joined in 2001. Given the small size of their economies relative to the euro area as a whole, the omission of later entrants (namely Slovenia, Cyprus, Luxembourg and Malta) should not affect the results significantly. A similar choice has been made by Caporale and Girardi (2011), among others.

¹⁴ We also made some sensitivity analysis but changing the position of Italy from periphery to core does not change the empirical result.

¹⁵ A core element of the Single European act signed in 1986 was to create a Single Market within the European Community by 1992. The most novel aspect of the SMP was its focus on capital mobility. Some EU members had unilaterally liberalized capital mobility prior to EC92, but substantial pan European liberalization came only in the second half of the 1980s with a series of single market program directives. The opening was completed in 1988 by a directive that ruled out all remaining restrictions on capital movements among EU residents. The definitive system was codified in the Maastricht Treaty.

variables of CA in four groups: i) macroeconomic fundamentals ii) time and countries dummies, iii) capital openness measures, iv) governance indicators.

The first group includes:

- i) Real effective exchange rate¹⁶ (REEX): This variable takes account of price level differences between trading partners. More in detail, it considers variations in relative prices using consumer prices indexes with base 2005. Movements in real effective exchange rates provide an indication of the evolution of a country's aggregate external price competitiveness.¹⁷ An increase in the index indicates a real effective appreciation and a corresponding deterioration of the competitive country position (thus a worsening of the CA balance). It is expected to have a negative sign in the regression.
- ii) Fiscal balance ratio to GDP. The use is motivated by the effect that the fiscal balance (calculated as tax revenue and the proceeds of assets sold, minus any government spending) may have on current account (positive or negative). Higher levels of public savings across countries historically tend to be associated with larger current account surpluses ("theory of twin deficit"¹⁸). We do not have any a priori on the sign.
- iii) Business cycle. A positive business cycle (measured as output gap) will determine a higher income leading to an increase in consumption expenditure including imported goods and services lowering CA. This variable should catch also the impact of the financial crises and it is expected to have a negative sign in the regression.
- iv) Income per capita: higher levels of income reflect higher productivity which is due to larger capital endowments. This variable has extensively been used in the past as a proxy of productivity and competitiveness (Blanchard and Giavazzi, 2002). It is expected to have a positive sign in the regression.

¹⁶ The role of real exchange rates in determining current account positions constitutes a basic element of the theoretical framework of both traditional and modern approaches to international macroeconomics. For a discussion on the empirical application see Chen et al. (2012), J.B. Gossé and F. Serrano (2014), Belke, A. and C. Dreger (2013).

¹⁷ Percentage changes in the index are calculated by comparing the change in the index based on consumer prices for a given country converted in US dollars at market exchange rates to a weighted average of changes in its competitors indices, Chain-linked index takes as base period 2005. Source OECD.

¹⁸ See Chinn (2005) This hypothesis underlines the fact that, according to national accounts, the current account balance (EXP-IMP) is equal to saving ($S = S_p + S_g$) minus investment. Therefore any expansion of the fiscal deficit (G-T) that lowers public saving (S_g), being equal the other variables, should cause a worsening of the current account balance. $(S_p + S_g) - I = (G - T) + (EXP - IMP)$. In the more sophisticated version of the hypothesis, which takes into account the endogeneity of private saving and investment decisions, fiscal expansion boosts domestic spending, pushing up domestic interest rates relative to foreign rates; this attracts foreign investors and buoys the dollar, thereby widening the current account deficit.

v) Real oil price in US dollars: this indicator accounts for the influence of the oil price on the current balance;

The second group includes:

- i) Dummies related to European economic integration deepening steps such as the Single European Act, the Ratification of Maastricht Treaty and EMU introduction. We do not have any a priori on the signs.
- ii) Dummies related to different countries subsets such as OECD, EU, core-periphery groups. We do not have any a priori on the signs.

The third group includes indicators of financial openness. Financial openness indexes capture the degree of financial market liberalization and development affecting cross country capital flows. Looking at the financial account as the difference between saving and investment and considering the link between current account and financial account, the expected sign of financial integration on current account balance will depend on the prevailing transmission mechanism on these two components. More in detail, the higher is financial development and the higher will be the expected returns on investments projects (and the lower the associated risk). The effect of financial development on saving is controversial due to possible substitution effects. With respect to this more developed financial markets and a more sophisticated financial system from one view would induce more saving. From another view they would reduce the need of precautionary saving and could potentially decrease the saving rate. Thus, considering the net saving, if the magnitude of the financial development effect on saving exceeds that one on investment we will have a CA improvement, if the effect on investment will be higher than the effect on saving, we will have a CA deterioration. Specifically we use in the analysis the following two indicators:

- i) Chinn-Ito index of capitals movement restrictions (*finopen*)¹⁹. Higher values of this index indicate greater financial openness since the country is more open to cross border capital transactions. The expected sign on current account balance depends on the prevailing transmission mechanism (Chinn and Ito, 2008).

¹⁹ The index is the first principal component of the binary variables pertaining to cross border financial transactions based on the IMF's categorical enumeration taken from Annual report on Exchange Arrangements and Exchange Restrictions (AREAER).

ii) Financial openness index (*finopenI*). The index is given by the sum of financial assets plus liabilities divided by GDP and it represents a “*de facto*” measure of financial diffusion in a given country. We do not have an a priori on the current account balance effect of this indicator since the expected sign depends on the prevailing transmission mechanism above described.

The fourth group includes governance indicators taken from two different sources the Worldwide Governance Indicators (WGI) database (see Kaufmann et al., 2010) and the Economic Freedom of the World database produced by the Fraser Institute²⁰. These indicators coming from opinion surveys are qualitative and are used as control variables for robustness results check. The indicators used are Voice and Accountability, Corruption, Government Effectiveness, Capital Market Regulation, Capital Control and Regulatory Quality. These indicators with the exception of corruption, capital controls and credit market regulations (available from 2000 on annual bases) are only available starting from 2002 (see Table 1 in the appendix for a full description).

4. Econometric analysis

In this section we empirically investigate to what extent the European financial integration as well as other EU specific effects (i.e. the creation of EMU) accounted for the CA divergences within the EZ members using both static and dynamic panel econometric models.

Static panel data approach

Since we have cross country time series data and in order to compare the results with previous studies based on pooled regressions we first consider static panel regressions. We estimate the following equation:

$$CA_{it} = \beta_i + \beta_1 * REEX_{it-1} + \beta_2 * bcy_{it} + \beta_3 * I(k)finopen_{it} + \beta_4 * I(k)fisbal_{it} + \beta_5 * Z_{it} \quad [1]$$

²⁰The Worldwide Governance Indicators (WGI) are a research dataset summarizing the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. These data are gathered from a number of survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms. The Fraser Institute measures and studies the impact of competitive markets and government interventions on individuals and society. See Economic Freedom of the World 2013.

where the dependent variable CA_{it} is the ratio of the current account balance ratio to GDP in nominal US\$ terms determined by the difference Exports and Imports plus Net Income and unilateral transfers²¹. i and t are country and year indices respectively and β_i collects the fixed country effects. REEX is the real effective exchange rate of the currency included with a time lag in order to avoid possible endogeneity, $bcy_{:it}$ is a proxy of the business cycle (output gap) $fisbal_{it}$ is the public budget balance divided by the GDP and fin_{openit} is the financial openness indicator (i.e. a *de facto* capital openness indicator and the Chinn-Ito index). Z_{it} contains common factors affecting CA and includes real oil price, income per capita, internal distance, geographical area and qualitative governance indicators²². Finally, $I(k)$ is a binary indicator accounting for groups of countries interaction effects that takes value one (and zero otherwise) for: (a) countries belonging to core ($k = 1$), (b) countries belonging to periphery ($k = 2$), (c) countries belonging to OECD but not to core or periphery ($k = 3$). This interaction is considered both for capital openness and for Budget Balance data. Regarding the choice of splitting also the budget balance effects in addition to capital openness effects on CA, is important to stress that while the fiscal stance impact is not our main focus, it might be too informative to explore the link between the sign and magnitude of budget balance and of capital openness coefficients in the regressions among core and periphery groups.

Dynamic panel data approach

The use of a dynamic panel in the analysis reflects the fact that trade flows, and thus the current account, are affected by marked persistence effects due to the existence of sunk costs in entering foreign markets. However, considering dynamics raises econometric problems. If trade were a static process, the fixed-effect estimator would be consistent for a finite time dimension T and an infinite number of country N . But since we consider CA evolution as a dynamic process, the transformation needed to eliminate the fixed effects produces a correlation between the lagged dependent variable and the

²¹ We decided to take as dependent variable the overall CA balance and not the intra-area CA balance because the evidence showed a strict correspondence between CA deficit and surplus within the area that could potentially lead to some statistical misspecification once we run regression for the EU sample.

²² The internal distance taken of a country (taken by the Cepii database) is approximated by the area of the country or its square root, multiplied by a suitably defined proportionality factor. The area is the geographical area of the country in Km².

transformed error term that renders the least square estimator biased is not consistent. To avoid the inconsistency problem, Arellano and Bond (1991) suggested transforming the model into first differences and run it using the Hansen two-step GMM estimator.²³ Arellano and Bover (1995), described how, if the original equations in levels were added to the system of first-differenced equations, additional moment conditions could increase efficiency. This estimator, “System GMM” estimator, has been refined by Blundell and Bond (1998). The estimated dynamic equation takes the following form:

$$CA_{it} = \beta_i + \beta_0 CA_{it-1} + \beta_1 * REEX_{it-1} + \beta_2 * bcy_{it} + \beta_3 * I(k)finopen_{it} + \beta_4 * I(k)fisbal_{it} + \beta_5 * Z_{it}$$

[2]

Although System GMM provides many advantages, we should also consider some caveats. First of all, the approach is complicated to implement and can easily generate invalid estimates. To cope with the complexity, the key is to obtain proper instruments, to guarantee the overall validity of the moment conditions, and to control for serial correlation in the error term of the equation in levels. In the analysis we employ the Hansen test (Hansen, 1982) to check for the overall validity of the selected moment conditions and we use the Arellano and Bond (1991) test to check for possible serial correlation in the level equation. In addition, there is a specific issue associated with our exercise when using the System GMM. That is the long time dimension of our data set (1986–2012) that may cause too many instruments, which potentially makes the two-step System GMM not appropriate for inference. To deal with this issue in what follows we use the one step System-GMM, although theoretically less efficient than the two-step counterpart. However, according to Bun and Windmeijer’s (2010), the difference between both is only marginal.

4.1 Full sample analysis

Table 3 reports the results of static fixed effects, Hausman Taylor and dynamic panel regression models for the OECD and the EU countries groups in the full sample 1986-2012. To determine the static econometric strategy (i.e. Random Effects versus Fixed Effects) we performed an Hausman specification test to check the presence of

²³ They show how the two key properties of the first differencing transformation – eliminating the time-invariant individual effects while not introducing disturbances for periods earlier than period t-1 into the transformed error term – can be obtained using any alternative transformation (i.e. forward orthogonal deviations).

correlation between explanatory variables and individual effects. Results show that the null hypothesis of zero correlation is refused, showing that for our purposes the Fixed Effects model provides more efficient estimates than Random Effects one²⁴. Furthermore to evaluate the possible impact of time invariant factors such as area and internal distance, we also compare the Fixed Effects results with the Hausman and Taylor (HT) estimator.²⁵

In addition to the main macroeconomic determinants an EMU dummy²⁶ taking into account the effect of common currency joining on CA is also included in the estimates. Furthermore, in order to check possible differences in the financial integration and fiscal stance effects in the “core and periphery” Eurozone countries, we also included in the estimates three complementary interaction terms for the financial integration indicator (finopen*core, finopen*periphery and finopen*OECD_EZ) and three for the fiscal balance (fiscalbal*core and fiscalbal*periphery and fiscalbal*OECD_EZ²⁷) all of them built multiplying the core, periphery and OECD_EZ dummies for the above mentioned indicators. Core, periphery and OECD_EZ dummies takes into account the effect of financial openness and fiscal balance on CA for the core, periphery and OECD countries excluding the EZ, respectively. Finopen is the Chinn ITO (2008) index taken in level.

OECD countries The estimates results for OECD countries obtained with the fixed effects model (columns 1) show that REEX, output gap, income per capita and oil price are significant and enter with the expected signs²⁸. Looking at the interaction terms, fiscal balance has a positive and significant sign for the Eurozone core countries (0.26) and for

²⁴ The two most widely used panel data models are the random effect model (REM) and fixed effect model (FEM): both can control for heterogeneity. Their assumptions are different. REM models require that unobserved bilateral effects are \sim n.i.i. and orthogonal to the remaining part of the error term. regressors have to be uncorrelated to individual effects and error term for all cross sections and time periods. If the orthogonality conditions hold, the REM provides more efficient estimates than FE estimators. If explanatory variables are correlated with unobserved individual effects FEM is consistent.

²⁵ The HT method is a 2SLS instrumental variable estimator without external instruments that allows dealing with correlation between regressors and unobserved individual effects that is used when time invariant variables are included in the estimates. HT model uses variables already included in the model as instruments. In the empirical literature there are different selection procedures to select the variables correlated with μ_{ij} . It is possible to select instruments on the base of economic intuition or following different procedures. Our preferred selection of instruments include real effective exchange rate, outputgap and internal distance.

²⁶ This dummy considers the different entry dates of the various countries in the EMU.

²⁷ Following the literature (Caporale and Girardi, 2011, Caporale et al 2014) we define Austria, Belgium, Finland, France, Germany and the Netherlands as “core” and Greece, Ireland, Italy, Portugal and Spain as peripheral EMU countries, respectively.

²⁸ In this form it is not possible to make a cross comparison of the magnitude of the coefficients that are not elasticities since the regressors are not in logarithmic form. This is due to the fact that many indicators take negative values and thus cannot be transformed in logarithms.

the OECD group excluding the Eurozone (0.21) confirming for these countries groups the Twin deficit hypothesis in line with Chinn and ITO (2008) findings²⁹. According to our estimates the financial openness indicator seems to have had positive impact on CA imbalance for the OECD countries excluding the EZ countries on average (2.39). However, disentangling the impact of financial integration for EMU core and periphery countries emerges that the financial integration had a negative impact on the peripheral (-1.22) while for the core countries the coefficient it is positive but not statistically significant. The EMU dummy is also significant and contributes to lower CA in the period considered. Looking at the HT estimates (column 2) the previous results are confirmed, the internal area and distance, accounting for possible geographical country effects, are not statistically significant. The estimation results from the dynamic panel model are reported in column 3. For income per capita and oil price the sign and the size of the estimated coefficients are similar to those obtained with the FE model. For business cycle and REEX the magnitude of coefficients slightly decreases to -0.21 and -0.04 respectively. The effects on CA coming from core and periphery groups concerning the interaction terms both for fiscal balance and financial openness are also confirmed showing a similarity with the static panel estimates.

European Union countries Looking at the fixed effects estimates for the EU sample (column 4) we found similar results to the OECD sample estimates although with a different magnitude of the impact coefficients. Specifically, the output gap coefficient is significant (-0.28) and seems to indicate that the business cycle contributed to explain CA trends even with a lower impact with respect to OECD sample (-0.36). Quite the opposite the real effective exchange rate (-0.16) seems to have had a greater role in explaining CA dynamics within the subset of EU countries.³⁰ Looking at the interaction terms, the fiscal balance coefficient is significant for the core countries (0.23) but seems to have played a minor role in the EU compared to the OECD group. The estimates coming from the dynamic panel model (column 6) even in this case are consistent with those coming from static models.

²⁹ We also tested the cyclically adjusted budget balance indicators and the results were substantially unchanged.

³⁰ It would be of great interest to study the effect of the “*non price*” competitiveness on CA balance however it was not possible to find non price indicators for all the countries.

[Table 3]

Overall, the financial openness seems to have had a negative and significant impact only on the peripheral countries (financial openness for the core countries is not significant) both in the OECD and EU subsets. In the EU group the EMU dummy coefficient, in line with the findings of Schmitz and von Hagen (2012) is negative and significant. The results also holds for the OECD group. The negative sign of the EMU dummy seems to be consistent with negative impact of financial integration for peripheral countries in both OECD and EMU samples and suggest, similarly to Jaumotte and Sodsriwiboon (2010), a role of capital flows in determining the CA imbalances in the periphery. The disentangled impact of fiscal balance for core and peripheral countries on CA also shows that the twin deficit hypothesis is confirmed only for the core countries while for the peripheral countries the regressor is not statistically significant. In principle we would expect a significant effect of the fiscal balance in the periphery, however this latter finding shouldn't be interpreted as the fact that budget balance doesn't matter in the periphery but rather as a lack of a direct link between fiscal dynamics and the CA balance deterioration periphery.

4.2 Robustness

In order to check the robustness of the results of the full sample, in table 4 we replicate the same fixed effects regression procedure in a shorter sample (1999-2012) corresponding to the post EMU period. As further check, given the peculiar behavior of CA balance dynamics in Germany and Italy with respect to other core and peripheral countries, we also consider an EU subset sample that excludes Italy and Germany from the estimates (column 3). It is worth to notice that when considering the post EMU period the capital account openness measures can lose significance in interpretation depending on the way in which they are constructed. For example the financial openness index of Chinn Ito appears to have low variability in this shorter sample because starting from the creation of the EMU the index is nearly constant at the level of highest capital openness within the Eurozone countries. To deal with this shortcoming in the following set of regressions we

substitute the Chin Ito index with a *De_Facto* financial integration indicator (finopen1) built as sum of net assets and net liabilities divided by GDP. As for the case of REEX the indicator is included with a lag in the estimates in order to avoid possible endogeneity (here due to the fact that the numerator of the ratio comes from balance of payments financial account component). As we will show in this paragraph, the use of this second financial integration indicator, doesn't weaken the previous findings because it performs very well also in the full sample (i.e. from 1986) providing similar results and conclusions.

[Table 4]

Looking at table 4 all the previous results are confirmed especially for what concerns the impact of financial integration on core and peripheral EZ countries.. The sensitivity analysis in column 3 shows that the exclusion of Germany and Italy from the sample keeps the empirical results substantially unchanged.

In order to check the reliability and the stability of our findings for the EU subset after the EMU introduction in what follows we concentrate on the EU countries group and we assess the estimates results with respect to different time samples and with respect to the inclusion of other some control variables, namely governance indicators. These latter also allow to make some considerations on the role played by the European institutions in determining CA disequilibria.

Table 5 compares the coefficients of the regressions over three samples corresponding to various European integration deepening steps: i) the full sample 1986-2012 with 1986 corresponding to the ratification of the European Single Act, ii) the economic integration sample 1993-2012 with 1993 as starting date being the year of both the completion of the Single Market Program and the ratification of the Maastricht Treaty and iii) the "post EMU sample" 1999-2012.

[Table 5]

Having a look to the changes over the three periods in the coefficients magnitude there are some interesting findings: i) the REEX coefficient decreases substantially in the

post euro period³¹ showing, similarly to Sanchez and Varoudakis (2013), a minor role for competitiveness in explaining CA trends in the more recent period; ii) the business cycle has a greater role in explaining the CA balance in the post euro period than in the other two previous samples iii) the magnitude of the financial openness coefficient for the periphery countries almost doubled in the post euro period in line with the stylized facts (paragraph 2 figure 2). Interestingly, the financial deepening indicator coefficient for the core countries is positive and significant starting from 1999. This result corroborates the view of Schmitz and von Hagen (2012) that the dispersion of CA balances in the EZ widened after the introduction of the euro and thus that somehow in the process of financial integration partly failed in triggering the endogenous convergence predicted by the OCA theories³².

In order to give an idea of the absolute magnitude of the impact coefficients on CA, in table 6 the average elasticity of the estimated coefficients over the 3 periods are reported³³.

[Table 6]

Looking at the results we can notice that the business cycle elasticity significantly increases in the EMU period from -0.05 to -0.72. Quite the opposite, the elasticity of the real effective exchange rate seems to decrease over the subsamples analyzed suggesting a decreasing role for price competitiveness. The elasticity of fiscal balance for the core countries increases in the post EMU sample. Interestingly the average elasticity of the financial openness coefficient for the peripheral countries shows a progressive increase from about -0.4% before the EMU to -1.5% in the post EMU period for the peripheral countries. For the core countries the elasticity of financial openness in the post EMU period is about 1.8%. These results support our hypothesis of a role played by the European Integration process in determining the core-periphery dualism in the EMU. The absence of an endogenously determined process of current account and business cycle

³¹The REEX is not statistically significant in the post EMU period at aggregate level while it is statistically significant for the periphery group.

³² These results are also in line with Caporale et al (2014).

³³ Elasticity is the percentage variation of CA as a ratio of GDP due to a unitary percentage variation of the explicative variables included in the estimates. The elasticity reported in the table is given by the estimated coefficient times the average regressor value for the period under examination divided by the average value of the dependent variable.

convergence within the Eurozone, as it seems to emerge in the empirical analysis, suggests that to guarantee financial stability within the EZ more coordinated policies and a more strict European surveillance procedure might be needed³⁴.

The dispersion in CA balances registered in various EZ members especially after 1999 in certain literature has also been put in relationship with qualitative indicators approximating governance and policy coordination (Giavazzi and Spaventa 2010, Eichengreen 2010). To make some further robustness checks in table 7 we include some governance indicators in the previous estimates. Although the governance concept is widely discussed among policy makers and difficult to quantify in empirical analyses, especially if the aim is to assess the effects of the European Governance, we try to approximate it through institutional quality indicators at country level.

[Table 7]

The estimation results reported in Table 7 column 1 show that the corruption indicator that by construction accounts for corruption reduction improvements is statistically significant and indicates, as expected and in line with Eichengreen (2010), that the corruption reduction contributes to improve the CA balance within the European Union countries in the sample considered. The results (table 7 column 2) also show that the governance effectiveness, that reflects perceptions of the quality of public and civil services, and the degree of governance independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies, is statistically significant and contributed to improve CA balance during the EMU. Voice and accountability indicator is also statistically significant during the EMU and enters with the expected positive sign.

³⁴ It has to be underlined, however, that in the aftermath of the crisis some reforms have already been implemented. For example, a new surveillance and enforcement mechanism was set up in December 2011 as part of the so-called "Six-Pack" legislation, which reinforced economic governance in the EU and the euro area. Starting from 2014 the introduction of banking union is also expected in order to guarantee a stronger supervision of banking sector activity at EU level.

Quite the opposite the capital control (limits on financial flows), the regulatory quality and the credit market regulation are not statistically significant in the period considered. That can be due to the fact that the phenomenon is captured by the quantitative financial openness indicator included in the estimates. Overall the governance indicators seems to have played a role in explaining the CA dynamics. In interpreting this latter analysis however we need to take into account all the caveat due to the weakness of signals coming from qualitative indicators.

5. Conclusions

In this paper, in addition to the traditional macroeconomic determinants, we analyzed the role of the European financial integration process in determining the dispersion in CA balances within Eurozone members in different time samples and countries subsets. More in detail the effect of such a process is quantified through the introduction in the estimates of two financial openness and capital liberalization indicators namely the Chinn ITO (2008) index and a *De facto* measure of capital openness.

According to our estimates and in line with the prevailing theoretical and empirical literature, financial integration seems to have played a role in explaining current account dynamics both in the main OECD and EU countries.

In particular looking at the Eurozone and differentiating the impact of financial integration for core and peripheral countries we find evidence of a statistically significant negative impact of financial integration in the EZ periphery. Moreover this negative relationship seems to have increased in the post euro period. These empirical findings proved to be robust to changes in econometric techniques, specifications, time and countries samples.

This result corroborates the view that the CA deficits in the peripheral EMU countries could have been determined to some extent by the increase of capital inflows triggered by the intensification of the European financial integration process. The increase of foreign capital inflows in the EU peripheral countries with higher expected return demonstrates that the EMU was effective in creating a well-integrated capital market, but also that the home bias reduction in the European financial market did not favored an endogenous process of convergence and catching up as neoclassical and OCA theories predict.

All in all, the exchange rate pegging in the first EMU decade seems to have amplified asymmetric transmission of shocks within the European countries. The findings suggest that to guarantee the Eurozone financial stability and the effectiveness of centralized actions, more coordinated policies responses and regulations and more strict European surveillance procedures should be needed.

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Appendix

Figure 1. CA balance in Industrialized Economies

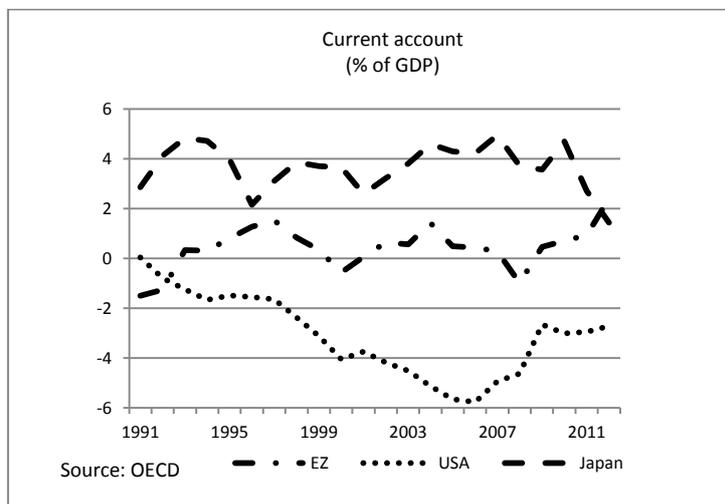


Figure 2. CA balance in the EMU “Core and Periphery” Countries

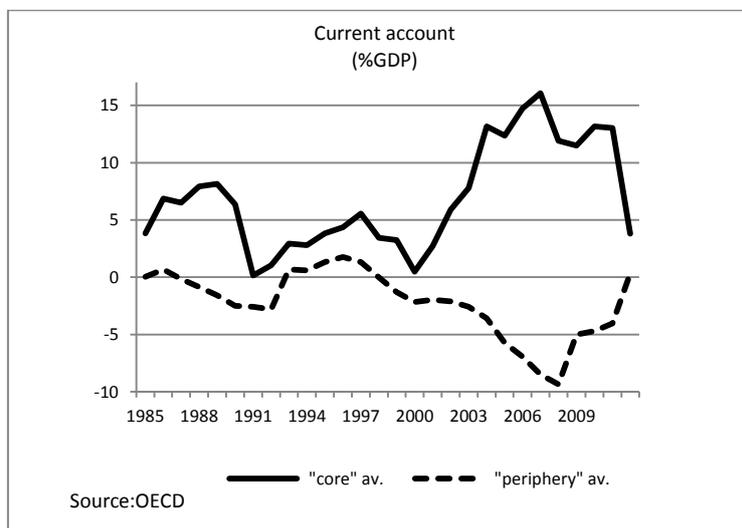
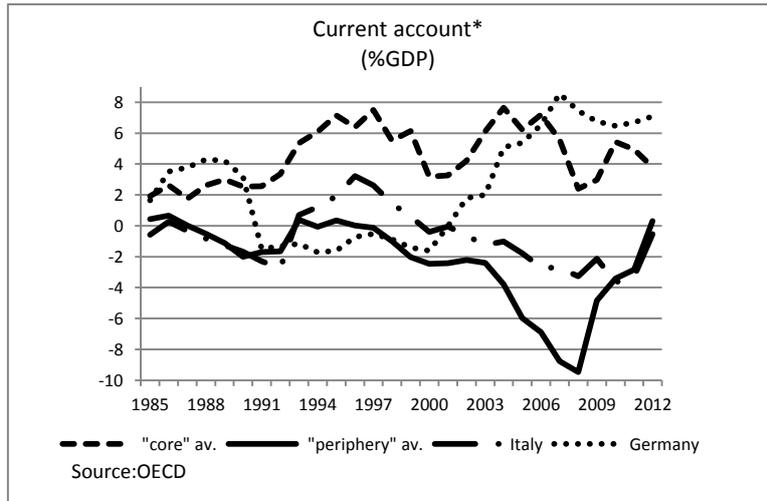


Figure 3. CA balance in Italy , Germany and the other “Core and Periphery” Countries



* the core average excludes Germany and the core periphery excludes Italy

Figure 4. CA balance (Average) in the EMU Countries

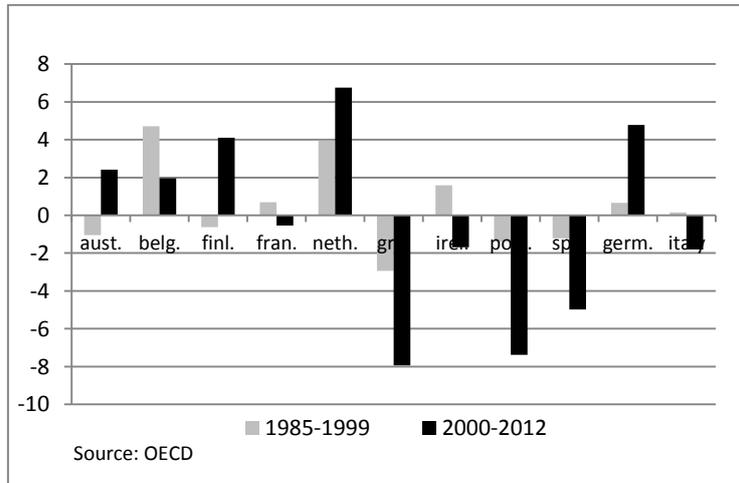
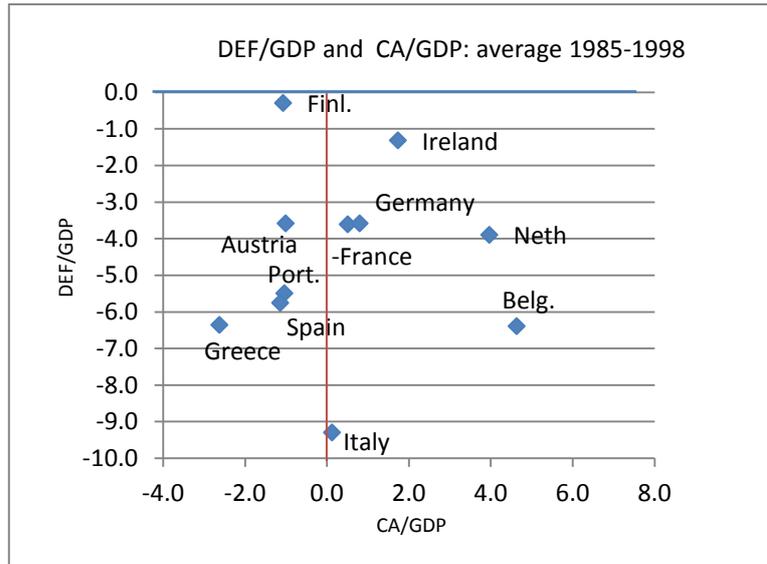
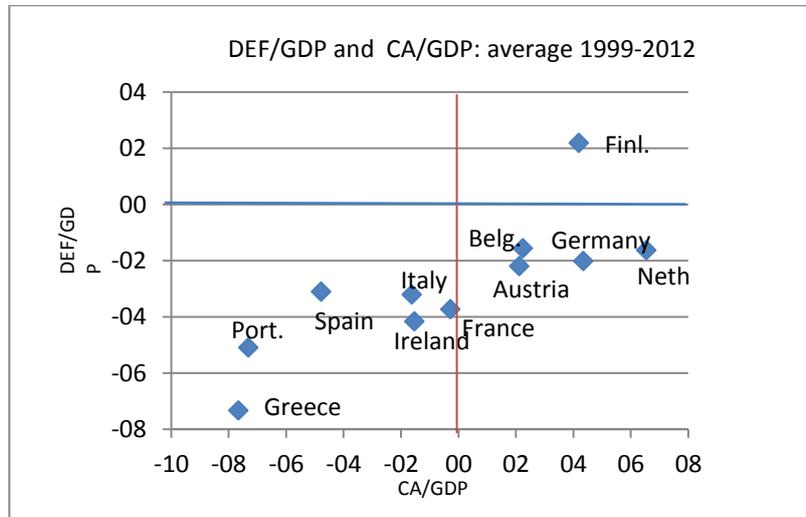


Figure 5. CA and Budget Balance (Averages) in EMU Countries before Euro



Source: OECD

Figure 6. CA and Budget Balance (Averages) in EMU Countries after Euro



Source: OECD

Table 1. Variables and indicators description

<i>Current account</i>	Sum of net exports of goods, services, net income and net current transfers as a percentage of GDP. All in nominal terms (US \$).	<i>Source:</i> OECD (1986-2012)
<i>Output gap</i>	% deviation of GDP from its trend.	<i>Source:</i> OECD
<i>Fiscal balance/GDP</i>	tax revenue and the proceeds of assets sold, minus any government spending.	<i>Source:</i> WDI World Bank
<i>Income per capita</i>	Income per capita in US dollars.	<i>Source:</i> OECD
<i>Real effective Exchange rate</i>	Percentage changes in the index are calculated by comparing the change in the index based on consumer prices for a given country converted in US dollars at market exchange rates to a weighted average of changes in its competitors indices, Chain-linked index takes as base period 2005.	<i>Source:</i> OECD
<i>Real oil price in US\$</i>	Price of oil in US dollars.	<i>Source:</i> Thomson Reuters
<i>Corruption reduction</i>	Is the abuse of public power for private gains.	<i>Source:</i> Fraser Institute
<i>Capital controls</i>	Restrictions on the citizens ability to own foreign currency, bank accounts domestically and overseas.	<i>Source:</i> Fraser Institute
<i>Regulatory quality</i>	Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	<i>Source:</i> WGI World Bank
<i>Voice and accountability</i>	Voice and accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.	<i>Source:</i> WGI World Bank
<i>Government effectiveness</i>	Government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.	<i>Source:</i> WGI World Bank
<i>Private sector credit</i>	Measures the extent to which government borrowing displaces private borrowing.	<i>Source:</i> Fraser Institute
<i>Credit market regulation</i>	Measures the restriction under which banks operate.	<i>Source:</i> Fraser Institute
<i>Chinn-Ito index</i>	Capital openness measure.	<i>Source:</i> Chinn-Ito (2008)
<i>Finopen 1</i>	Net foreign assets+ liabilities (NFA+NFL)/GDP.	<i>Source:</i> EWNII Milesi Ferretti (2012)
<i>Internal distance</i>	The internal distance taken of a country is approximated by the area of the country or its square root, multiplied by a suitably defined proportionality factor.	<i>Source:</i> Cepii
<i>Area</i>	The area is the geographical area of the country in Km ² .	<i>Source:</i> Cepii

Table 2. Summary statistics. Sample 1986-2012

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
cagdp	579	1.066625	5.528006	-15.3773	25.10396
bcycl	567	0.035219	2.799673	-12.6077	10.73026
reex	594	99.81061	12.17988	63.7	146.2
finopen	562	1.81517	1.022902	-1.86397	2.439009
oil price	594	67.15765	45.84463	24.8901	168.745
finopen1	572	3.656724	4.642344	0.25269	37.56802
incomepc	594	21.58691	8.874802	4.467985	58.25797
fiscalbal	542	-2.21286	4.746157	-30.62	18.79

Table 3. CA determinants in OECD and EU countries. Sample 1986-2012

	OECD			EU		
	F-E (1)	H-T (2)	GMM-SYS (3)	F-E (4)	H-T (5)	GMM-SYS (6)
Ca _{it} -1			0.72***			0.87***
constant	6.90***	11.40**	0.97	-13.82 ***	19.25**	-0.023 ***
fisbal _i *OECD_EZ	0.21***	0.22 ***				
fisbal* _{core}	0.26**	0.26***	0.09	0.23**	0.23**	0.04
fisbal* _{periphery}	0.07	0.07	-0.11**	0.01	0.03	-0.15***
bcy _{cle,it}	-0.36***	-0.37***	-0.21***	-0.28***	-0.28 ***	-0.13***
REEXit-1	-0.12 ***	-0.12***	-0.04***	-0.17***	-0.16***	-0.02
fin _{openi} *OECD_EZ	2.39***	2.24***	0.27			
fin _{open} * _{core}	0.16	0.27	0.08	-0.23	0.04	-0.12
fin _{openi} * _{periphery}	-1.22***	-1.23***	-0.60***	-1.03 ***	-1.12***	-0.40**
EMU	-1.36 ***	-1.38 ***	-0.40	-1.93 ***	-1.97***	-0.33
Oil price	-0.03***	-0.03***	-0.03***	-0.03 ***	-0.03***	-0.03***
income per capita	0.34***	0.30 ***	0.27 ***	0.35***	0.32 ***	0.20 ***
distance		-0.02	0.00		-0.1	-0.1
area		0.00	0.00		0.00	000
Number of countries	21	21	21	14	14	14
Observations	513	513	513	317	317	317
R ²	0.27			0.45		
Sargan overidentifying restriction test			254.27 (0.000)			212.05 (0.000)
Test for interaction terms (F or χ^2)	1.09	1.03	0.37	3.11*	4.8**	2.73*
Overidentification test (S-H χ^2)	33.20***	32.3***	6.43**	19.43***	8.3**	
		4.04 (0.85)		7.66	9.44* (0.26)	

*** significant at 1% , ** significant at 5%, * significant at 10%. P-value in parenthesis

Table 4. CA determinants in OECD and EU countries. FE model. Sample 1999-2012

	OECD	EU	EU ex Italy and Germany
constant	-0.33	-0.82	-0.83
fisbal _i *OECD_EZ	0.23***		
fisbal*core	0.88***	0.89***	0.91***
fisbal*periphery	0.01	0.02	0.03
bcy _{cle.it}	-0.50***	-0.53***	-0.56***
REEXit ₋₁	-0.06**	-0.06	-0.04
fin _{open1} OECD_EZ _i	-0.04		
fin _{open1} *core	0.3*	0.33*	0.30
fin _{open1} *periphery	-0.27**	-0.27**	-0.28**
EMU	-1.76		
income per capita	0.49***	0.45***	0.39***
Oil price	-0.04***	-0.04***	-0.04***
Number of countries	21	14	12
Observations	273	168	156
R ²	0.48	0.49	0.45
Hausman test χ^2	5.58	27.01***	104.9***
Wald test for interaction terms (F or χ^2)	14.91***	28.00***	25.48***
	0.95	13.78***	13.51***

*** significant at 1% , ** significant at 5%, * significant at 10%.

Table 5. CA determinants in the EU countries. Fixed effects model

	Full sample (1986-2012)	Economic integration sample (1993-2012)	Post EMU sample (1999-2012)
Constant	14.34***	9.09**	-0.82
fisbal _{it} *core	0.20**	0.3**	0.89***
fisbal _{it} *periphery	-0.15**	-0.08	0.02
bcy.it	-0.30**	-0.41***	-0.53***
REEXit ₋₁	-0.16***	-0.12***	-0.06
fin _{open1} *core	0.07	0.02	0.33*
fin _{open1} *periphery	-0.13**	-0.16**	-0.27**
income per capita	0.21***	0.30***	0.45***
Oil price	-0.03***	-0.03***	-0.04***
Number of countries	14	14	14
Observations	317	272	196
R ²	0.31	0.44	0.49
Hausman test χ^2	50.08***	33.49***	104.9***
Wald test for interaction terms (F or χ^2)	6.58* 6.14*	5.87** 5.70**	25.48*** 13.51***

*** significant at 1% , ** significant at 5%, * significant at 10%. *With respect to table 1 we dropped the EMU dummy to compare the coefficients magnitude over time.

Table 6. CA elasticity to main explanatory variables in the EU countries*

	<i>Full sample</i> (1986-2012)	<i>Financial integration sample</i> (1993-2012)	<i>Post EMU sample</i> (1999-2012)
bcy.it	-0.04	-0.05	-0.72
REEXt-1	-25.3	-17.0	-13.8
fisbal _{it} *core	0.4	0.4	1.2
fisbal _{it} *periphery	-0.4	0.2	-0.1
fin _{open1} *core	0.3	0.1	1.8
fin _{open1} *periphery	-0.3	-0.4	-1.5

*The grey area indicates that the elasticity is referred to not statistically significant coefficients.

Table 7. CA imbalances and the “governance” in the EU countries. Sample 2000-2012

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3*</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>	<i>Model 7</i>
Constant	-14.86**	-9.33**	-3.55	-5.46*	-4.81	-0.05	-2.11
fiscalbal _{it} *core	0.71***	0.95***	1.1***	0.74***	1.00***	0.93***	0.73***
fiscalbal _{it} *periphery	-0.14*	-0.03	-0.05	-0.08	-0.02	0.00	-0.11*
REEXi _{t-1}	0.07*	0.01	-0.10**	-0.02	-0.04	-0.01	-0.08**
bcycle.it	-0.46***	-0.49***	-0.43***	-0.42***	-0.60***	-0.47***	-0.44***
fin _{openi1} *core	0.17	0.14	0.40**	0.42*	0.02	0.12	0.36
fin _{openi1} *periphery	-0.46***	0.31**	-0.29***	-0.28***	-0.32**	-0.25**	-0.27**
Income per capita	0.46***	0.24**	0.49***	0.49***	0.21**	0.28**	0.49***
Oil price	-0.03**	-0.02	-0.04***	-0.04***	-0.03**	-0.03*	-0.04***
corruption	1.72***						
gov effectiveness**		3.52**					
capital mkt reg			0.40				
capital control				0.32			
voice and accountability**					4.71**		
reg quality indicators**						-1.35	
priv. sect credit							0.23*
Number of countries	14	14	14	14	14	14	14
Observations	168	154	168	168	131	154	168
R ² overall	0.61	0.49	0.54	0.52	0.42	0.22	0.56
Wald test for interaction (a)	32.94***	38.5***	27.06***	27.74***	48.25***	32.4***	38.17**
	10.85***	3.96*	11.22***	13.00***	5.05**	2.64	11.85***

**Voice and accountability, government effectiveness and regulatory quality indicators are only available from 2002, Portugal is not included in the Governance indicators.

*** significant at 1% , ** significant at 5%, * significant at 10%. (a) the first row is referred to financial openness the second one to fiscal balance.