

Please cite this paper as:

Barnes, S., J. Lawson and A. Radziwill (2010), "Current Account Imbalances in the Euro Area: A Comparative Perspective", *OECD Economics Department Working Papers*, No. 826, OECD Publishing.  
doi: [10.1787/5km33svj7pxs-en](https://doi.org/10.1787/5km33svj7pxs-en)



OECD Economics Department  
Working Papers No. 826

# Current Account Imbalances in the Euro Area

A COMPARATIVE PERSPECTIVE

Sebastian Barnes, Jeremy Lawson,  
Artur Radziwill

**Unclassified**

**ECO/WKP(2010)82**

Organisation de Coopération et de Développement Économiques  
Organisation for Economic Co-operation and Development

**09-Dec-2010**

**English - Or. English**

**ECONOMICS DEPARTMENT**

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**By Sebastian Barnes, Jeremy Lawson and Artur Radziwill**

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**JT03294204**

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## ABSTRACT/RÉSUMÉ

### Current account imbalances in the euro area: a comparative perspective

This paper considers the increase in current account imbalances in euro area countries since the early 1990s. While the euro area as a whole has remained relatively close to external balance, the current account balances of individual countries have diverged: Spain, Greece and Portugal ran large current account deficits by historical norms for industrial economies, while Germany and the Netherlands ran large surpluses. These imbalances are larger and more sustained than those observed in recent decades. While there has been extensive discussion of the US and Chinese external positions in the context of the debate on global imbalances, more attention has been given to the developments in the euro area only in the wake of the recent sovereign debt crisis. This paper uses a period-average model estimated on data for OECD countries since the late 1960s to investigate the determinants of current account imbalances. Fundamental economic factors are found to play an important role, in line with earlier studies, but do not fully explain the extent of imbalances over the past decade. The strength of housing investment appears to capture important effects over this period.

This working paper relates to the 2010 OECD Economic Survey of the Euro Area ([www.oecd.org/eco/surveys/euroarea](http://www.oecd.org/eco/surveys/euroarea)).

JEL classification: F32; F41

Keywords: euro area; current account; imbalances

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### Les déséquilibres de la balance courante dans la zone euro : une perspective comparative

Ce document analyse l'augmentation des déséquilibres de la balance courante dans les pays de la zone euro depuis le début des années 90. Si le solde extérieur de la zone euro dans son ensemble est resté relativement proche de l'équilibre, les soldes des opérations courantes des pays pris individuellement ont divergé : l'Espagne, la Grèce et le Portugal ont connu d'importants déficits de la balance courante sur la base des normes historiques des économies industrielles, tandis que l'Allemagne et les Pays-Bas ont connu d'amples excédents. Ces déséquilibres sont plus importants et plus marqués que ceux observés ces dernières décennies. Alors qu'il y a eu de nombreuses études sur les positions extérieures des États-Unis et de la Chine dans le contexte du débat sur les déséquilibres globaux, l'attention ne s'est tournée vers l'évolution de la zone euro qu'à la suite de la récente crise sur les dettes souveraines. Ce document utilise un modèle estimé sur des données qui représentent des moyennes temporelles des pays de l'OCDE depuis la fin des années 60, pour rechercher les déterminants des déséquilibres de la balance courante. Il se trouve que les facteurs économiques fondamentaux y jouent un rôle important, conformément aux études antérieures, mais ils n'expliquent pas entièrement l'ampleur des déséquilibres au cours de la dernière décennie. La vigueur de l'investissement en logement semble expliquer des effets importants au cours de cette période.

Ce document de travail porte sur l'*Étude économique du Zone euro*. ([www.oecd.org/eco/etudes/zoneeuro](http://www.oecd.org/eco/etudes/zoneeuro)).

Classification JEL : F32 ; F41

Mots clés : zone euro ; solde extérieure

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## **Current account imbalances in the euro area: a comparative perspective**

**By Sebastian Barnes, Jeremy Lawson and Artur Radziwill<sup>1</sup>**

This paper considers the increase in current account imbalances in euro area countries since the early 1990s. While the euro area as a whole has remained relatively close to external balance, the current account balances of individual countries have diverged. Over the past five years, Spain, Greece and Portugal have run large current account deficits by historical norms for industrial economies, each averaging over 8% of GDP. These deficits are larger and more sustained than those observed in recent decades. By contrast, Germany and the Netherlands ran surpluses averaging over 6% of GDP over the same period. While there has been extensive discussion of the US and Chinese external positions in the context of the debate on global imbalances, more attention has been given to the developments in the euro area only in the wake of the recent sovereign debt crisis.

The implications of current account imbalances within a monetary union differ somewhat than for countries with their own currencies as there are fewer risks from currency mismatches. However, the increase in the size of external imbalances raises the question of whether these reflect the efficient accumulation of net assets and liabilities, or whether they are the result of distortions and misallocation of resources. Blanchard and Giavazzi (2002), writing shortly after the establishment of the euro area, reached the relatively optimistic conclusion that euro area current account imbalances could be explained by greater financial and goods market integration, leading to deficits in countries with higher growth prospects and surpluses in the more mature economies. Developments in the subsequent years contradicted these early conclusions: some countries such as Portugal have continued to run high deficits but only achieved disappointing growth rates, while some economies such as Spain and Ireland have experienced high growth and large deficits but only on the back of property and construction booms that proved unsustainable. Meanwhile, current account surpluses in Germany and the Netherlands far above historical norms financed unsustainable booms elsewhere.

The econometric investigation aims to capture main determinants of current account increases. The model is estimated for a sample of OECD countries for averages of 5-year periods beginning in 1969, so that two latest periods correspond to existence of the euro area (1999-2003 and 2004-2008). The use of period-averaging is intended to abstract from cyclical effects and other high frequency noise in the data. A range of specifications is estimated using panel econometric techniques to provide robust estimates of determinants of current account developments. Regressions are estimated in levels, time differences and deviations from period averages, including and excluding country fixed effects, and with different sample lengths. There is a potential endogeneity problem for some macroeconomic variables used as explanatory variables. As there is no obvious choice of instruments other than lagged variables, conclusions about causality are necessarily tentative.

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1. The authors are economists in the Economics Department of the OECD. The authors would like to thank Piritta Sorsa, Andrew Dean and colleagues in the Economics Directorate of the OECD for comments on earlier drafts, but retain full responsibility for any errors or omissions. Thanks also to Isabelle Duong for excellent technical assistance and to Deirdre Claassen for technical preparation.

Results suggest that for the euro area in recent years, fundamental factors do appear to explain a substantial part of the current account imbalances. Demographic factors played some role in most cases. The current age-dependency ratio boosts current consumption relative to income while future increases in the age-dependency ratio increase current saving. The analysis suggests that Germany's demographic position would have been expected to generate a substantial surplus, while a country with a relatively young population such as Ireland would have been expected to have run a deficit. Income and growth differentials also had an impact on the current account, reflecting the flow of capital to low-income high-growth countries, but these effects were relatively small. The initial net foreign asset position had a large impact on imbalances over the period. Both trade openness and structural rigidities improve the current account balance. Other factors also have an identifiable role in determining the current account, even if they are not deep economic fundamentals and may even reflect economic excesses. The current account balance is typically positively correlated to the fiscal balance, although the effect is much less than one-for-one. In particular, the budget deficits in Greece and Portugal made significant contributions to their weak external positions. Strong housing investment, associated with unsustainable property booms, was associated with the large current account deficits of Ireland and Spain. Finally, euro area membership is shown to have a significant impact on current account imbalances.

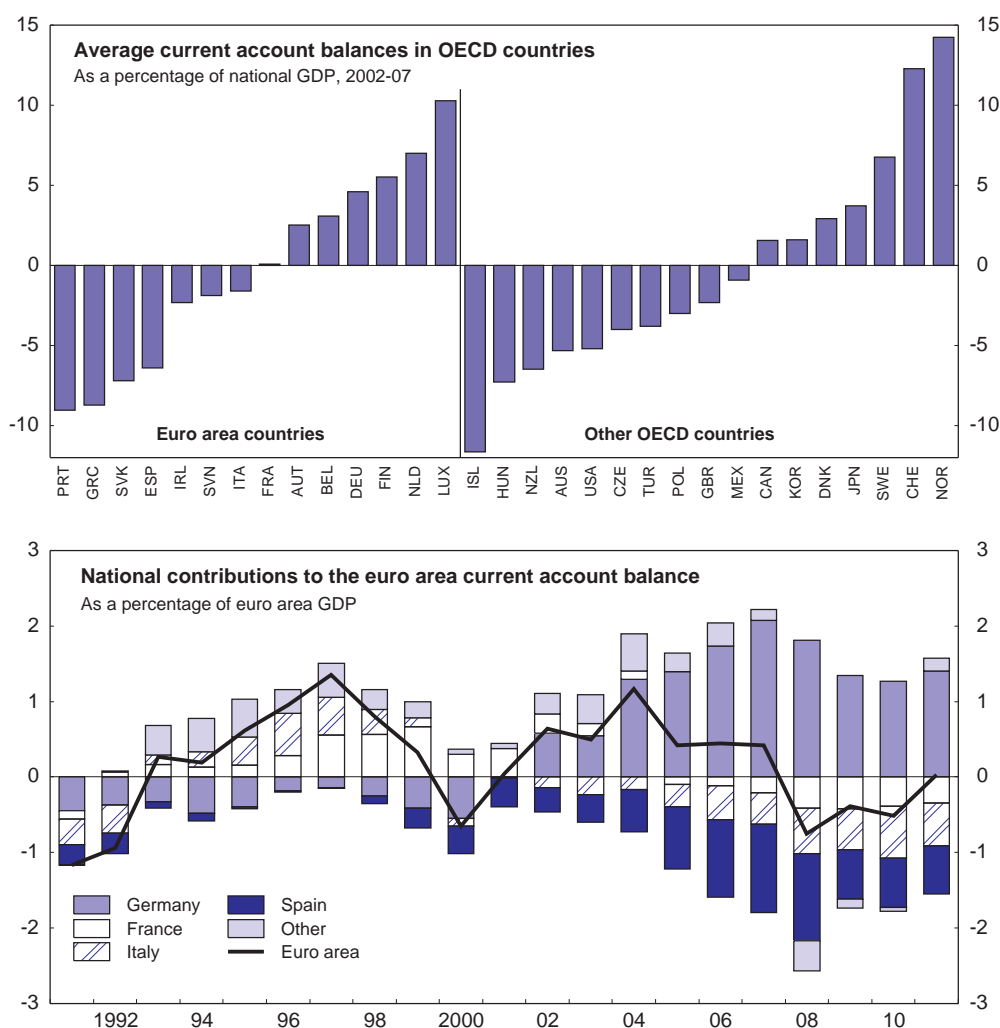
The scale of imbalances over the most recent period in both euro area and other OECD economies cannot be fully explained by historical relationships. The unexplained component of current account balances was noticeably larger than for earlier periods in most countries. While fundamental factors typically explain the sign of the imbalance, they tend to underestimate the size. Between 2004 and 2008, both the large current account surpluses of Germany and the Netherlands, and the major deficits in Greece, Portugal and Spain, have greater unexplained components in this model than for other euro area countries. Notably, there is also a large unexplained component to the US current account deficit. Given the unusually large unexplained component of recent imbalances and the explanatory role of factors such as fiscal policy, housing booms and euro area membership, current account imbalances in some euro area countries would appear to have gone beyond what can be explained by fundamentals. One explanation could be stronger financial market integration. However, the broadening dispersion of current account positions internationally during this period appears to be "well ahead of the underlying dispersion trends" (Faruqee and Lee, 2007).

The rest of the paper is structured as follows. Section I provides an overview of current account developments in the euro area and other OECD countries. Section II outlines reviews results of earlier studies. Section III outlines the methodology and discusses main determinants of current account balances.

## **I. Current account developments**

Some euro area countries ran very large current account imbalances during the upswing prior to the financial crisis. From 2002 to 2007, the current account deficits in Greece, Portugal and Spain averaged over 7% of national GDP (Figure 1). By contrast, Finland, Germany and the Netherlands ran average surpluses of over 5% of GDP. As the aggregate euro area current account position was close to balance, much of the lending and borrowing of individual countries can be accounted for by the offsetting positions of other euro area economies. In effect, the large German and, to a lesser extent, Dutch surpluses were financing deficits in Italy, Spain and a number of other euro area countries. Only in the wake of the financial crisis, the dispersion of current account balances has narrowed considerably with some reduction in surpluses and, with the collapse in domestic demand, a more marked narrowing of deficits (OECD, 2010).

Figure 1. External balances in euro area countries

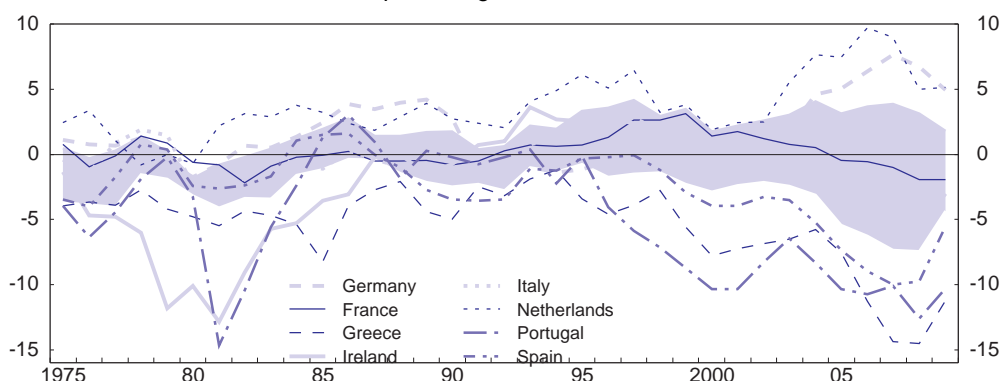


Source: OECD, *OECD Economic Outlook 88* database.

The scale and persistence of the imbalances was greater than in earlier decades (Figure 2). In 1998, current account imbalances in the euro area countries ranged from -5% to 7% of GDP with the average absolute imbalance at 3% of GDP. By 2007, the range had widened to -14% to 8% of GDP and the average absolute imbalance had doubled to 6% of GDP. Although euro area countries have experienced large imbalances in the past, with Ireland and Portugal for example running very large deficits in the early 1980s, the rapid broad-based widening of external imbalances during the upswing was new. While the dispersion of current accounts were increasing over the past four and a half decades worldwide, closely associated with increasing financial integration of the world economy (Faruqee and Lee, 2007), Blanchard and Giavazzi (2002) found that the increase in dispersion among OECD countries was greatest for European Union, particularly euro area, countries. The formation of the euro area appears to have had an additional effect on increasing current account deficits.



Figure 2. **Current account balances**<sup>1</sup>  
As a percentage of national GDP



1. The shaded area indicates the range between the 25th and 75th percentiles.

Source: OECD, *OECD Economic Outlook database*.

The scale of the imbalances and the accumulated net foreign asset and liability positions in some euro area countries raises questions about whether such large and unprecedented positions can be justified by underlying economic needs. According to the new open economy macroeconomics, and in particular, to the intertemporal approach to the current account that was proposed by Sachs (1981) and elaborated by Obstfeld and Rogoff (1995), current account imbalances and international saving and borrowing are an important mechanism for open economies to smooth consumption. To the extent that imbalances reflect demographics, preferences, technology and initial wealth, they are part of the gains from international trade and finance. Indeed, facilitating such movements of capital by removing nominal exchange rate risks and improving integration of financial markets was one of the motivations for monetary union. While long-term solvency implies that countries cannot continuously increase their indebtedness faster than income, some foreign borrowing may be sustainable to finance productive investment and to smooth consumption. For mature economies with ageing populations, building up foreign assets may be an effective way of funding future consumption. Schmitz and von Hagen (2007) show that, within the euro area, capital does flow from richer to poorer countries and that the elasticity of these flows has increased since EMU for intra- but not extra-euro area flows. While greater financial integration and greater international risk-sharing could explain the larger variation in external balances, this process could have overshoot and the external positions may indicate underlying distortions. Statistical analysis incorporating the effect of financial integration suggests that the dispersion of imbalances in recent years was “well ahead of the underlying dispersion trends” (Faruqee and Lee, 2007).

## II. Review of earlier studies

The emergence of the intertemporal approach to the current account at the time of a strong increase in the cross-country current account dispersion gave a new stimulus to the empirical work on current account determinants. Chinn and Prasad (2003); Gruber and Kamin, 2007; Ca’Zorzi *et al.*, 2009 (2009), Decrassin and Stavrev (2009), Cheung (2010), Jaumotte and Sodsriwiboon (2010) and Koske (2010) are prominent recent studies examining the medium and long-term relationship between the current account balance and its potential determinants, that emerge from the underlying theories. These studies provide fairly robust and consistent estimates (Table 1) of the role played by:

- *Demographic variables.* A high contemporaneous share of dependents relative to workers entails that consumption is likely to be high relative to income and reduces current account balance and this hypothesis is confirmed by empirical evidence. Population growth contributes to lower current account balances in samples including developing countries. On contrary, the future dependency share is a proxy for the amount of saving that household in aggregate would

undertake now to sustain living standards in the future, and therefore is expected to increase current account balance. This effect is tested in the section below.

- *Faster GDP growth* may be associated with higher income levels in the future relative to the present, and therefore higher consumption out of current income. Higher growth rates resulting from productivity gains would also coincide with a return on capital, leading to increased investment. For both reasons, higher GDP growth reduces the current account balance, although this result is not very robust across studies.
- *Lower levels of GDP per capita* leads to the expectation of higher growth rates in the future if economic convergence is likely due to similar institutions and technologies, and therefore is expected to reduce current account balance. This result tends to be particularly robust.
- *The initial net foreign asset position* is empirically proven to be positively linked to the current account during the subsequent period, either through the corresponding flow of income, or indirectly, due to persistence of balances that led to the earlier accumulation of assets. This is despite the fact that countries with relatively high initial net foreign assets can afford to run higher current account deficits.
- *Higher world oil prices* reduce current account balances in oil importing countries, and a higher oil balance is translated into a stronger overall current account balance.
- *Higher long term real interest rates* make current consumption more expensive compared with future consumption and therefore increases savings. It also increases opportunity cost of investments. For both reasons it is expected to lead to the improved current account balance. However, quoted studies do not identify statistically significant link.
- *The increase in general government balance* increases national savings directly, although this impact can be offset by private sector response. If households are credit constrained or Ricardian equivalence fails to hold for other reasons, the two balances will tend to move in the same direction, consistent with the “twin deficits” phenomenon. This is a result common to the empirical studies.
- *Structural rigidities* (approximated for example by natural rate of unemployment, NAIRU) may systematically discourage investment in the home economy and therefore generate current account surpluses, although the empirical evidence for this effect is not very strong.
- *Trade openness* is commonly used in the literature as a proxy for barriers to trade and may be correlated with other attributes that make a country attractive to foreign capital. However, empirical evidence points to a positive link with current account balance.
- *Institutional quality* might lead to a lower current account balance as more market-friendly and stable government institutions attract foreign capital, but there is a mixed empirical support for this hypothesis.
- *Measures of financial deepening* are negatively associated with current account balances, as the relaxation of the borrowing constraints lead to the deterioration of the current account balance. It is also consistent with capital flows from emerging economies with under-developed financial markets towards economies with more developed financial systems. However, this relation is statistically significant for mixed samples of advanced and developed countries, but not for a sample of industrialised countries (Cheung *et al.*, 2010).

**Table 1. Summary of selected studies of current account balance determinants**

|                            | Chinn & Prasad (2003) | Ca'Zorzi <i>et al.</i> , (2009) | Gruber and Kamin, (2007) | Decressin & Stavrev (2009) | Cheung <i>et al.</i> , (2010) | Jaumotte & Sodsriwiboon (2010) | Koske (2010) |
|----------------------------|-----------------------|---------------------------------|--------------------------|----------------------------|-------------------------------|--------------------------------|--------------|
| Age dependency             |                       | -                               | -                        | -                          | -                             | -                              | -            |
| Population growth          |                       |                                 |                          | -                          |                               | -                              | -            |
| Oil price/oil balance      |                       | +                               | +                        | +                          | +                             | +                              |              |
| GDP per capita             | +                     | +                               | +                        | +                          | +                             | +                              |              |
| GDP growth rate            |                       |                                 | -                        | -                          |                               |                                |              |
| Initial net foreign assets | +                     | +                               | +                        | +                          | +                             | +                              |              |
| Real interest rate         |                       |                                 |                          |                            |                               |                                |              |
| Fiscal balance             | +                     |                                 | +                        | +                          |                               | +                              |              |
| Structural rigidity        |                       |                                 |                          |                            |                               |                                | -            |
| Trade openness             |                       | +                               | +                        |                            |                               |                                |              |
| Financial deepening        |                       | -                               |                          |                            |                               | -                              |              |
| Institutional quality      |                       | +                               | -                        |                            |                               |                                |              |
| EMU membership             |                       |                                 |                          |                            |                               | +/-                            |              |
| Countries                  | 89adv&dev             | 63adv&dev                       | 59adv&dev                | 11 euro                    | 30 OECD                       | 49adv&dev                      | 97adv&dev    |
| Sample                     | 1971-1995             | 1980-2006                       | 1982-2003                | 1970-2007                  | 1994-2008                     | 1973-2008                      | 1994-2008    |

\*only result significant at the 10% are shown.

The empirical evidence summarised in Table 1 confirms in a robust way that current account positions are in part determined by fundamental economic factors that underlie saving and investment patterns across countries. Differences in initial foreign assets, income levels, GDP growth and demographics play an important role. Increasing trade opening and financial deepening has eased constraints on international saving and borrowing and led to a trend widening in the dispersion of current account positions. Other observed but less deep economic factors such as structural rigidities, the fiscal policy stance and oil balances had also identifiable impact on external balances. In principle, monetary union would have been expected to reinforce the role of fundamentals for euro area countries. However, while much of the literature tended to focus on flow of capital from developing to industrialised countries (notably from China to the United States), only recently has more attention been given to the dispersion of imbalances within the euro area. The current study provides additional evidence in this direction.

### III. Empirical results

The intertemporal approach to the current account (Obstfeld and Rogoff, 1995) provides the underlying theoretical framework for this study. However, the precise implications of this framework are sensitive to its underlying assumptions and there is no consensus about the correct model specification (MacDonald and Ricci, 2007). Moreover, no single theoretical model captures the entire range of empirical relationships affecting the savings-investment decisions, and hence the current account balances (Calderon *et al.*, 2002). Instead of a full structural model, we therefore follow the earlier literature in estimating a simple reduced form of current account determinants applied to a panel of countries, specified as:

$$(1) \quad \frac{CA_{i,t}}{GDP_{i,t}} = \alpha + \beta_{i,t} X_{i,t} + \varepsilon_{i,t}$$

where  $CA$  is the current account deficit,  $GDP$  is nominal GDP,  $\alpha$  is a (common) constant,  $\beta$  a vector of coefficients on the exogenous variables  $X$ ,  $\varepsilon$  is an error term, and  $i$  and  $t$  are respectively the country and time. Results from such estimates are often interpreted as “fundamentals” (Decressin and Stavrev, 2009),

and used to derive “norms” on current account balances (Jaumotte and Sodsriwiboon, 2010). However, the reduced form model is inherently only an approximation to the true model. It is particularly difficult to interpret causality within this framework. In the econometric sense, there is no presumption that the right-hand side variables are independent of each other or the error term. In an economic sense, almost all variables are likely to be interconnected and the outcome of underlying shocks and interactions that drive the macroeconomic developments. Therefore, this approach should be regarded in essence as a summary of past historical relationships and the notion of “fundamentals” or “norms” interpreted with caution.

The model is estimated for a sample of OECD countries based primarily on data from the OECD Economic Outlook database (OECD, 2010). Estimation is carried out for averages of 5-year periods beginning in 1969, so that two latest periods correspond to existence of the euro area (1999-2003 and 2004-2008). The use of time-averaging is intended to abstract from cyclical effects and other high frequency noise in the data. Given the limited historical data, specifications are estimated for unbalanced panels. A range of specifications is estimated using panel econometric techniques to provide robust estimates of determinants of current account developments. Regressions are estimated in levels, time differences and deviations from period averages, including and excluding country fixed effects, and with different sample lengths. There is a potential endogeneity problem for some macroeconomic variables used as explanatory variables. As there is no obvious choice of instruments other than lagged variables, conclusions about causality are necessarily tentative.

Table 2 presents main estimation results. In the basic model (columns 1-5), the current account balance, expressed as a share of GDP, is modelled as a function of demographic variables, including old- and young-age dependency ratios and old-age dependency ratios projected 25 years into the future, international oil prices, GDP per capita, GDP growth, the real interest rate, government net lending, the initial stock of net foreign assets, natural rate of unemployment and trade openness. The baseline specification is subsequently extended to include financial variables and housing investments (column 6), and to account for the direct impact of euro area membership (column 7). The baseline specification (column 1) is estimated for the unbalanced panel of 25 OECD countries and 8 periods with the total of 149 pooled observations. It is estimated without fixed effects, following Chinn and Prasad (2003) who argue that this would detract much of the economically meaningful part of the analysis by soaking up important but persistent parts of the cross-country variation. Nevertheless, to verify the robustness of results, the same specification is estimated also with country fixed effects (column 2) and in deviations from cross-country period averages (column 3). The relation is also estimated in time differences to capture dynamic effects (column 4). To provide additional robustness check, the relationship is also estimated for a sample limited to only to the two most recent periods, corresponding to the euro area existence (column 5).

Similar results across the different specifications attest to the robust impact of fundamentals in the determination of current account balances that is in line with economic theory and previous econometric studies. Both projected age dependency and current old-age dependency have the expected signs; however the former is more robustly significant across the range of specifications. The estimate of young-age dependency impact is less reliable, and it has a significant negative sign as predicted by theory only in two specifications. Higher world oil prices lead to deterioration in the current account balance, which is consistent with a sample that includes mostly net oil importers. Higher GDP per capita is associated with the stronger current account position, consistent with the flow of savings from relatively richer to relatively poorer countries. However, the GDP growth rate is not significant, therefore weakening support for the hypothesis about the role of these flows in supporting real convergence. Higher real interest rates lead to stronger current account balances, and this effect is robust across all specifications. There is some evidence for an element of Ricardian equivalence: an improved fiscal position is robustly associated with a more positive current account balance but the effect is much less than one-for-one, in line with earlier results. A stronger initial net foreign assets position is associated with a stronger balance. Among additional

structural variables tested for impact on current account balance, openness to trade (measured as a share of sum of exports and imports in GDP) and structural rigidity (proxied by higher NAIRU) have significant positive effect, consistent with saving flows from less to more liberalized markets.

Measures of financial deepening such as credit to private sector and stock market capitalisation (measured as share of GDP) appear to be insignificant (column 6). This is consistent with the observation of Cheung *et al.* (2010) that, while financial deepening might well explain current account differences between developing and industrialised countries as often discussed in earlier literature, it is insignificant in the sample of advanced countries. However, there are possible interactions between real interest rates and financial variables that may mask these effects, particularly in the aftermath of euro adoption. Housing investment has a very strong negative impact on current account imbalances, although causality is difficult to establish due to potential problem of endogeneity. Finally, including euro core and euro periphery dummies in the specification suggests that euro area membership boosts deficits in the euro periphery beyond what can be explained by fundamentals.

Table 2. Determinants of current account imbalances: regression analysis

| Specification  | 1         |     | 3             |     | 2         |     | 4          |     | 5         |     | 6         |     | 7         |     |
|--|-----------|-----|---------------|-----|-----------|-----|------------|-----|-----------|-----|-----------|-----|-----------|-----|
|  | Levels    |     | Fixed effects |     | Levels    |     | Time diff. |     | Dev. mean |     | Levels    |     | Levels    |     |
| Sample   | 1969-2008 |     | 1969-2008     |     | 1999-2008 |     | 1969-2008  |     | 1969-2008 |     | 1969-2008 |     | 1969-2008 |     |
| Constant   | -17.04    | *** | -21.27        | *** | -18.21    | *** | -0.60      |     |           |     | -8.85     | **  | -13.06    | **  |
|  | (5.49)    |     | (5.06)        |     | (0.78)    |     | (1.06)     |     |           |     | (4.09)    |     | (5.19)    |     |
| Old-age dependency<br>(% of working age population)                  | -0.08     |     | -0.24         |     | -0.18     | *   | -0.12      |     | -0.17     | **  | -0.08     | **  | -0.05     |     |
|  | (0.08)    |     | (0.15)        |     | (0.09)    |     | (0.29)     |     | (0.07)    |     | (0.03)    |     | (0.08)    |     |
| Young-age dependency<br>(% of working age population)                | 0.21      | **  | 0.33          | *** | -0.34     | *** | 0.16       | **  | 0.18      | **  | -0.30     | *** | 0.11      |     |
|  | (0.08)    |     | (0.08)        |     | (0.13)    |     | (0.08)     |     | (0.07)    |     | (0.10)    |     | (0.08)    |     |
| Projections: old-age<br>dependency.<br>(% of working age population) | 0.29      | *** | 0.07          |     | 0.41      | *** | 0.14       |     | 0.40      | *** | 0.20      | **  | 0.23      | *** |
|  | (0.08)    |     | (0.12)        |     | (0.08)    |     | (0.24)     |     | (0.10)    |     | (0.08)    |     | (0.08)    |     |
| World oil price (USD\$)  | -0.06     | *** | -0.02         |     | -0.05     | **  | -0.01      |     |           |     | -0.04     | *** | -0.05     | *** |
|  | (0.01)    |     | (0.02)        |     | (0.02)    |     | (0.01)     |     |           |     | (0.01)    |     | (0.01)    |     |
| GDP per capita (USD\$ 000s)  | 0.16      | *** | 0.31          | *** | 0.36      | *** | 0.17       |     | 0.19      | *** | 0.28      | *** | 0.16      | *** |
|  | (0.00)    |     | (0.00)        |     | (0.00)    |     |            |     |           |     | (0.00)    |     | (0.00)    |     |
| GDP growth rate (%)  | -0.14     |     | 0.05          |     | 0.02      |     | 0.04       |     | -0.21     |     | 0.02      |     | -0.00     |     |
|  | (0.22)    |     | (0.21)        |     | (0.32)    |     | (0.18)     |     | (0.18)    |     | (0.16)    |     | (0.20)    |     |
| Long term real interest rate<br>(%)                                  | 0.28      | **  | 0.27          | **  | 1.52      | *   | 0.29       | **  | 0.23      |     | 1.17      | *** | 0.12      |     |
|  | (0.12)    |     | (0.12)        |     | (0.86)    |     | (0.14)     |     | (0.15)    |     | (0.36)    |     | (0.10)    |     |
| Government net lending<br>(% of GDP)                                 | 0.31      | *** | 0.45          | *** | 0.68      | *** | 0.34       | *** | 0.38      | *** | 0.51      | *** | 0.31      | *** |
|  | (0.11)    |     | (0.10)        |     | (0.13)    |     | (0.10)     |     | (0.14)    |     | (0.14)    |     | (0.11)    |     |
| Initial net foreign assets<br>(% of GDP)                             | 4.97      | *** | 1.95          | *   | 2.30      | *   | -1.38      |     | 4.37      | *** | 2.91      |     | 4.67      | *** |
|  | (1.51)    |     | (1.06)        |     | (1.18)    |     | (0.95)     |     | (1.43)    |     | (1.80)    |     | (1.23)    |     |
| NAIRU (% of labour force)  | 0.11      |     | 0.72          | *** | 0.33      | *** | 0.60       | **  | 0.23      | **  | 0.30      | *** | 0.19      | **  |
|  | (0.07)    |     | (0.17)        |     | (0.12)    |     | (0.27)     |     | (0.09)    |     | (0.11)    |     | (0.09)    |     |
| Trade openness (ext. trade as<br>% of GDP)                           | 0.03      | *** | 0.06          | *   | 0.06      | *** | 0.10       | **  | 0.04      | *** | 0.05      | *** | 0.03      | *** |
|  | (0.01)    |     | (0.03)        |     | (0.00)    |     | (0.05)     |     | (0.01)    |     | (0.00)    |     | (0.01)    |     |

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|   |      |      |      |      |      |           |           |
|---|------|------|------|------|------|-----------|-----------|
| Housing investment<br>(% of GDP)          |      |      |      |      |      | -0.58 *** |           |
|   |      |      |      |      |      | (0.19)    |           |
| Credit to private sector<br>(% of GDP)    |      |      |      |      |      | 0.56      |           |
|   |      |      |      |      |      | (0.96)    |           |
| Stock market capitalisation<br>(% of GDP) |      |      |      |      |      | 0.85      |           |
|   |      |      |      |      |      | (0.87)    |           |
| Euro core dummy <sup>1</sup>              |      |      |      |      |      |           | 0.63      |
|   |      |      |      |      |      |           | (0.50)    |
| Euro periphery dummy <sup>1</sup>         |      |      |      |      |      |           | -3.90 *** |
|   |      |      |      |      |      |           | (0.36)    |
| Adj. R2                                   | 0.60 | 0.72 | 0.85 | 0.21 | 0.63 | 0.77      | 0.64      |
| Periods                                   | 8    | 8    | 2    | 7    | 8    | 4         | 8         |
| Cross-sections                            | 25   | 25   | 25   | 25   | 22   | 22        | 25        |
| Total observations                        | 149  | 149  | 50   | 124  | 140  | 82        | 149       |

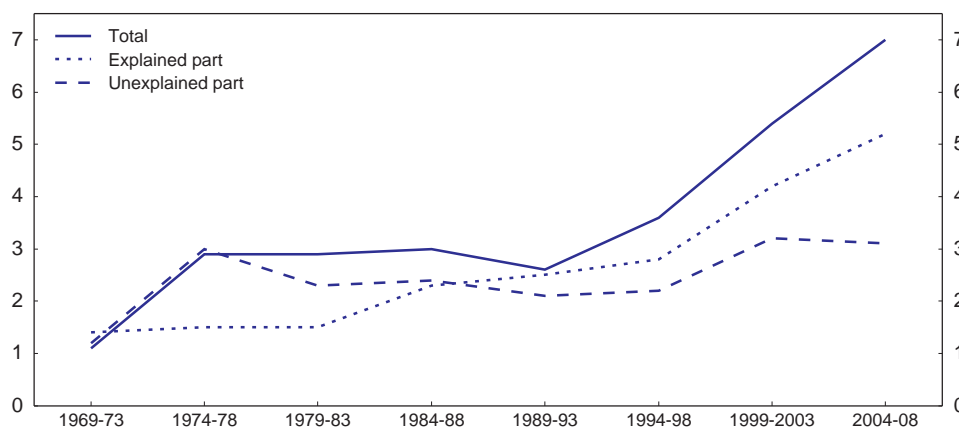
Notes: Standard errors reported in brackets (based on White robust co-variances). \*\*\*, \*\*, \* marks significance at 1%, 5% and 10% level, respectively.

1. Euro core countries are Austria, Belgium, France, Germany, Italy, Luxembourg and the Netherlands, and euro peripheral countries include Finland, Greece, Ireland, Portugal, Slovak Republic and Slovenia.

Source:

The baseline specification is generally successful in accounting for the changes in current account balances in recent decades, including for key euro area countries. Not only is the adjusted R-squared relatively high, but most of the increase in the cross-country standard deviation in current account deficit is attributable to changes in fundamentals (Figure 3). Nevertheless, the standard deviation of unexplained part also increased strongly in most recent periods, reflecting substantial increases in residuals (Annex Table), corresponding particularly to large surpluses in core euro area countries (Germany, Netherlands and to lesser degree France), and large deficits in the euro area periphery (Greece, Portugal and Spain), again suggesting the role of euro area membership in explaining current account imbalances.

Figure 3. **Cross-country standard deviation of current account by components**<sup>1</sup>



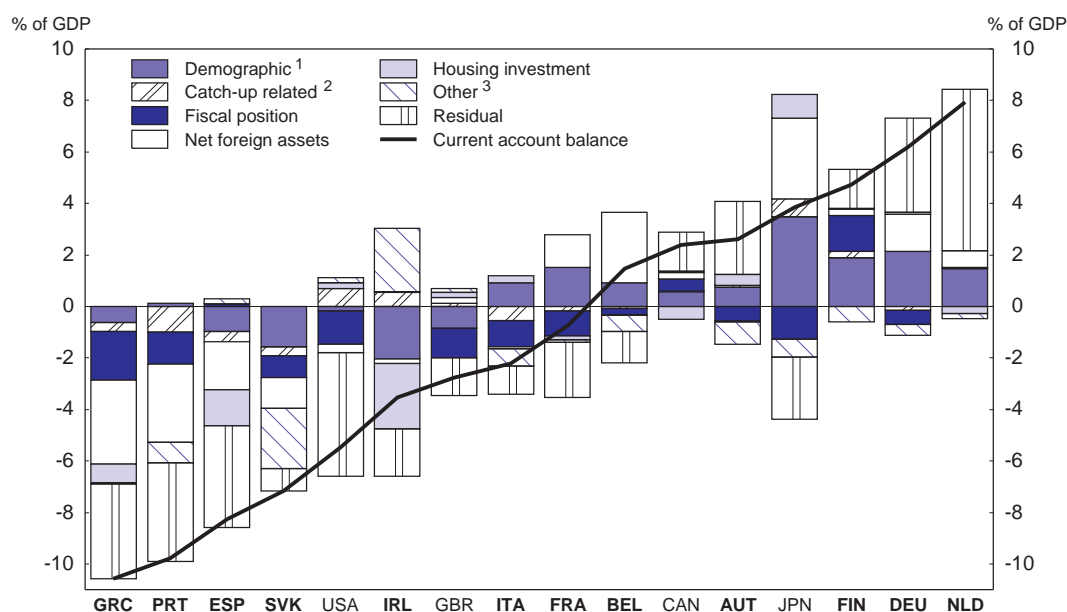
1. Based on baseline specification (Table 2, column 1).

Source: OECD calculations.

Results from the specification with the highest predictive power in the full sample of countries (column 6) are used to identify the size of main contributions to the current account imbalances for euro area countries between 2004 and 2008 (Figure 4). Expected high old-age dependency and the initial stock of net foreign assets are the most important fundamental drivers of high current account surpluses. The analysis suggests that Germany's demographic position would have been expected to generate a substantial surplus, while a country with a relatively young population such as Ireland would have been expected to have run a deficit. Income and growth differentials also had an impact on the current account, reflecting the flow of capital to low-income high-growth countries, but these effects are relatively small. The initial net foreign asset position had a large impact on imbalances in deficit countries. Other factors also have an identifiable role in determining the current account, even if they are not deep economic fundamentals and may even reflect economic excesses. In particular, the budget deficits in Greece and Portugal made significant contributions to their weak external positions. Strong housing investment, associated with unsustainable property booms, was associated with large contributions to the current account deficits of Ireland and Spain. Nevertheless, unexplained parts of current account balances remain very large in several countries.



Figure 4. **Determinants of the current account balance**  
Contributions to current account balances over the period 2004 to 2008



1. Sum of contributions of youth dependency, old-age dependency and expected old-age dependency.
2. Sum of contributions of the level of GDP per capita and GDP growth.
3. Sum of contributions of the real interest rate and other factors.

Source:

## VI. Concluding remarks

The econometric investigation confirms the role that classic fundamental variables play in determining current account balances, including demographic variables, GDP per capital levels, real interest rates, as well as initial net foreign assets. Trade openness and structural rigidities contribute to current account imbalances. Other factors also have an identifiable role in determining the current account, even if they are not deep economic fundamentals and may even reflect economic excesses, including budget deficits and share of housing investment in deficit countries. Although, the goodness of fit is generally satisfactory, the predictive power of specifications based exclusively on fundamental variables is lower in case of recent imbalances within the euro area.

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*Annex 1A.1***Annex 1A.1.1. Average current account balances: actual vs. fitted values\***

|     | 1974-1998 |        |          | 1999-2003 |        |          | 2004-2009 |        |          |
|-----|-----------|--------|----------|-----------|--------|----------|-----------|--------|----------|
|     | Actual    | Fitted | Residual | Actual    | Fitted | Residual | Actual    | Fitted | Residual |
| AUS | -4.0      | -2.3   | -1.6     | -4.3      | -1.2   | -3.1     | -5.9      | -2.3   | -3.7     |
| AUT | -1.4      | -1.3   | -0.1     | 0.2       | 0.3    | 0.0      | 2.6       | -0.2   | 2.8      |
| BEL | 1.3       | -1.5   | 2.8      | 4.7       | 5.2    | -0.6     | 1.5       | 2.7    | -1.2     |
| CAN | -2.5      | -3.4   | 0.9      | 1.6       | 1.9    | -0.3     | 2.4       | 0.9    | 1.5      |
| CHE | 4.1       | 6.3    | -0.2     | 10.9      | 9.1    | 1.8      | 12.4      | 9.5    | 2.9      |
| CZE | n.a.      | n.a.   | n.a.     | -4.9      | -2.8   | -2.1     | -3.1      | -5.3   | 2.2      |
| DEU | 0.8       | 1.4    | -1.4     | 0.2       | 2.2    | -2.0     | 6.2       | 2.5    | 3.6      |
| DNK | -1.5      | -0.9   | -0.6     | 2.3       | 2.3    | 0.0      | 2.5       | 2.7    | -0.2     |
| ESP | -1.4      | -2.3   | 1.0      | -3.5      | -2.6   | -0.9     | -8.3      | -4.3   | -4.0     |
| FIN | -1.1      | -0.5   | -0.6     | 7.7       | -4.6   | 12.3     | 4.7       | 3.2    | 1.5      |
| FRA | 0.2       | 0.3    | -0.2     | 1.8       | 2.2    | -0.4     | -0.8      | 1.4    | -2.1     |
| GBR | -0.9      | -0.9   | 0.0      | -2.1      | 1.1    | -3.3     | -2.8      | -1.3   | -1.5     |
| GRC | -3.0      | -2.9   | 0.6      | -6.7      | -2.9   | -3.8     | -10.6     | -6.9   | -3.7     |
| HUN | n.a.      | n.a.   | n.a.     | -7.5      | -7.3   | -0.1     | -7.7      | -10.2  | 2.5      |
| IRL | -2.9      | -3.8   | 0.9      | -0.3      | 3.0    | -3.3     | -3.5      | -1.7   | -1.8     |
| ITA | -0.2      | -2.4   | 2.2      | -0.4      | 0.0    | -0.4     | -2.2      | -1.1   | -1.1     |
| JPN | 2.0       | 3.3    | -1.3     | 2.7       | 4.8    | -2.1     | 3.9       | 6.3    | -2.4     |
| NLD | 3.1       | -0.3   | 3.4      | 3.2       | 1.1    | 2.1      | 7.9       | 1.7    | 6.3      |
| NOR | -0.3      | 0.9    | -1.2     | 12.3      | 7.4    | 4.9      | 16.1      | 11.1   | 5.0      |
| NZL | -6.0      | -4.3   | -1.6     | -4.4      | -3.1   | -1.3     | -8.0      | -3.1   | -4.8     |
| POL | n.a.      | n.a.   | n.a.     | -4.4      | -2.8   | -1.6     | -3.6      | -5.6   | 1.9      |
| PRT | -3.1      | -3.5   | 0.4      | -8.6      | -3.2   | -5.3     | -9.8      | -5.9   | -3.8     |
| SVK | -4.4      | -0.7   | -3.8     | -4.5      | -5.1   | 0.6      | -7.2      | -6.3   | -0.9     |
| SWE | -0.8      | -0.6   | -0.2     | 4.1       | 3.8    | 0.3      | 7.8       | 2.0    | 5.9      |
| USA | -1.2      | -0.5   | -0.7     | -4.1      | 1.7    | -5.8     | -5.5      | -0.7   | -4.8     |

Source: \* Based on baseline specification (Table 2, column 1).

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