

surplus increased to 6 percent of GDP, though our models predicted a smaller increase (largely due to the aging process and to a lesser extent improved fiscal position and increase GDP per capita).

6. Error correction

If the fitted values from our model correspond to an 'equilibrium' current account balance, then we expect the actual current account to head for the predicted values. Therefore, whenever there is an excess surplus, then either the actual surplus is expected to decline towards the predicted surplus, or the predicted surplus is expected to increase towards the actual surplus (or both). A simple test of the first chain of events is to estimate a regression in which the change in the actual current account surplus is regressed on the previous period gap between the actual and the predicted surplus, similar to an error correction model:

$$(2) \quad \Delta CA_{i,t} = \alpha + \beta \cdot CAGAP_{i,t-1} + \varepsilon_{i,t},$$

where $\Delta CA_{i,t}$ is the change in the current account balance (% of GDP) of country i in period t ,

$CAGAP_{i,t-1} = CA_{i,t-1} - \hat{CA}_{i,t-1}$ is the previous period gap between the actual values of country i and the fitted values (% GDP), and $\varepsilon_{i,t}$ is the error term. A negative parameter for β would suggest that excessive imbalances are corrected. Lane and Milesi-Ferretti (2012, 2014) estimated a variant of this regression concerning the change in the current account balance from 2005-2008 either to 2010 or to 2012, using the current account gaps estimated in Lane and Milesi-Ferretti (2012) for 2005-2008⁴. They estimated a significantly negative value for β .

We estimated equation (2) for our full panel sample as well as for each time period as a cross section regression. The results are reported in Table 4. The first block of the table shows the results for our full panel sample. The estimated β is significantly negative for all country groups. The parameter estimate of -0.33 for the sample that includes all countries indicate that one-third of excess current account surpluses and deficits are corrected on average from one four-year period to the next, during our 40-year long sample period⁵. The parameter estimates are somewhat higher in absolute terms for the EU (-0.55) and the emerging country (-0.45), suggesting a stronger correction of current account gaps, while it is slightly lower for the advanced country group (-0.25). The results clearly indicate that our estimated current account gaps matter for the future development of the actual current account, which is reassuring.

The remaining ten blocks of the table report cross section results for each 4-year period. For example, the second block of the table under the heading '1976-79' reports the result of the regression of the change in the current account balance from 1972-75 to 1976-79 as a function of the 1972-75 current account gap. The parameter estimates are predominantly negative: there are only 6 of the 50 estimates (10 time periods x 5 country groups) which lead to a positive estimated parameter. Four of these 6 positive parameters are from the pre-crisis period of 2004-07, suggesting that in the run-up to the crisis, instead of a correction of existing current account imbalances, they have widened. This must have led to wider current account imbalances by the crisis, which may explain why in the subsequent two periods, 2008-11 and 2012-15, the parameter

⁴ Milesi-Ferretti (2012, 2014) include other variables in the regression, like the lagged NFA position and a dummy for countries having fixed exchange rate regime.

⁵ Note that our full sample includes eleven 4-year long periods between 1972-2015, but since we use the lagged value of the current account gap, the effective sample period is reduced by one and thereby includes ten 4-year long periods between 1976-2015.

