Creditor countries and debtor countries: some asymmetries in the dynamics of external wealth accumulation

Ángel Estrada and Francesca Viani

Following the global financial crisis, the external imbalances in terms of countries' current account balances have been reduced to a large extent. However, the imbalances measured in terms of net external wealth (or net international investment position, NIIP) have continued to increase. The empirical analysis presented in this article suggests that there is asymmetry between net debtor countries (negative NIIP) and net creditor countries (positive NIIP), with potential implications for global trade and growth. In the case of debtors, their negative NIIP contributes to reducing current account deficits and is therefore a stabilising factor. Conversely, in the case of the creditors, the NIIP contributes to increasing current account surpluses which, in turn, strengthens the dynamics of wealth accumulation in these countries, compared with the rest of the world.

CREDITOR COUNTRIES AND DEBTOR COUNTRIES: SOME ASYMMETRIES IN THE DYNAMICS OF EXTERNAL WEALTH ACCUMULATION

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Introduction[1]

The widening of external imbalances prior to the financial crisis of 2008 was perceived by many analysts as a symptom of an unsustainable pattern of global growth (Blanchard and Milesi-Ferretti, [2009]). The extent to which these imbalances have been corrected is therefore an issue of great importance. External imbalances are normally analysed using countries' current account balances (imbalances in terms of flows). From this perspective, as can be seen in Chart 1.1, global imbalances, represented by the sum of current account balances of the different countries in absolute terms) were substantially reduced as a result of the crisis and have not continued to increase during the economic recovery. However, external imbalances can also be analysed using the NIIP (imbalances in terms of stocks), which measure countries' net external wealth. From this standpoint, Chart 1.2 shows that the correction of imbalances observed after the crisis (represented by the sum of the NIIP of the different countries in absolute terms) was only transitory, as afterwards these imbalances have continued to widen.
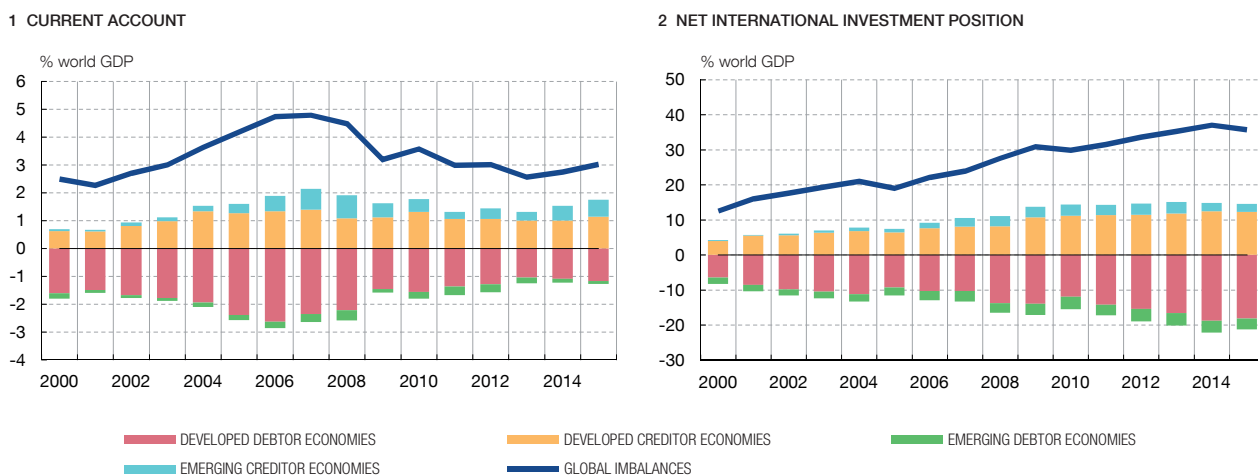
The opposing sign of these indicators, flows as opposed to stocks, explains the prevailing concern with analysing the possible implications that imbalances in terms of the NIIP may have for global stability (see, for example, IMF [2014a, 2014b and 2016], Catao and Milesi-Ferretti [2014], Forbes *et al.* [2016], and Benetrix *et al.* [2015]). In this context, the work presented in this article seeks to answer two questions. The first is whether net creditor (debtor) countries, by virtue of their positions, keep accumulating net foreign assets (liabilities); if this were the case, the imbalances measured in terms of the NIIP would have a destabilising effect on the accumulation of external wealth. The second issue addressed is whether there are mechanisms that, working through the real exchange rate, affect the accumulation or loss of external wealth, and if these mechanisms are equally important in a monetary union.

To address these questions, an empirical analysis was conducted using annual data from a sample of 39 advanced and emerging countries for the period 1980-2015. This database not only includes information on the NIIP and current account balances of these countries, but also various breakdowns of the two variables and other macro-economic and socio-economic aggregates.

The results presented in this article reveal a marked asymmetry between debtor countries and creditor countries. In debtor countries, a negative NIIP helps reduce their current account deficits, minimising the loss of external wealth, with a stabilising impact, whereas in creditor countries, a positive NIIP contributes to further increasing their current account surpluses, boosting external wealth accumulation, with a destabilising effect on their external accounts. As regards the effects exerted through the real exchange rates, those of net creditor countries tend to appreciate, limiting their current account surpluses, which contributes to stabilising their external accounts. However, this mechanism is weaker in creditor countries that are members of a monetary union and, in any case, it does not compensate for the direct impact on the accumulation of net external wealth mentioned earlier.

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1 This article is based on Banco de España Working Paper, no. 1742: *Global imbalances from a stock perspective*, by E. Alberola, Á. Estrada and F. Viani.

1 CURRENT ACCOUNT

% world GDP

2 NET INTERNATIONAL INVESTMENT POSITION

% world GDP

DEVELOPED DEBTOR ECONOMIES
DEVELOPED CREDITOR ECONOMIES
EMERGING DEBTOR ECONOMIES
EMERGING CREDITOR ECONOMIES
GLOBAL IMBALANCES

SOURCES: IMF and Banco de España.

The next section of the article presents the main features of external wealth accumulation in a representative sample of advanced countries and emerging countries. The third section reviews the theoretical channels through which the NIIP has an impact on the accumulation or loss of external wealth. The fourth section sets out the empirical results and the fifth section provides a summary of the main conclusions.

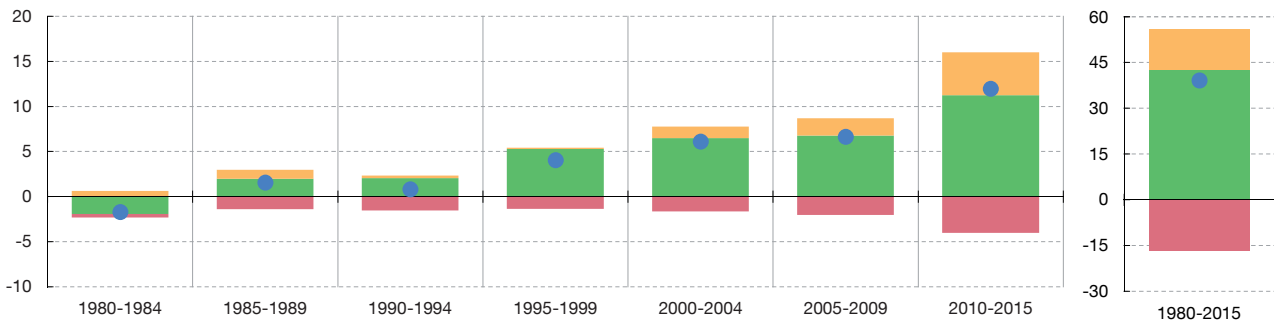**Main features of external wealth accumulation**

From an accounting standpoint, changes in net external wealth over time can be broken down into the current and capital account balance and the valuation changes in the assets and liabilities that make up the portfolio. Although the valuation changes may at times be substantial, over a broad time horizon, it is the external balance which determines changes in the NIIP. In turn, the current and capital account can be broken down into the trade balance (balance of trade in goods and services), the income balance (balance of revenues and payments on assets and liabilities with the rest of the world) and a residual balance (balance of the remaining items).

As Chart 2 shows, the breakdown of the current and capital account balance for the sample of countries analysed in this paper reveals the following stylised facts. First, that the trade balance is the most variable. It is of considerable magnitude in creditor countries, gradually increasing in the group of advanced economies.
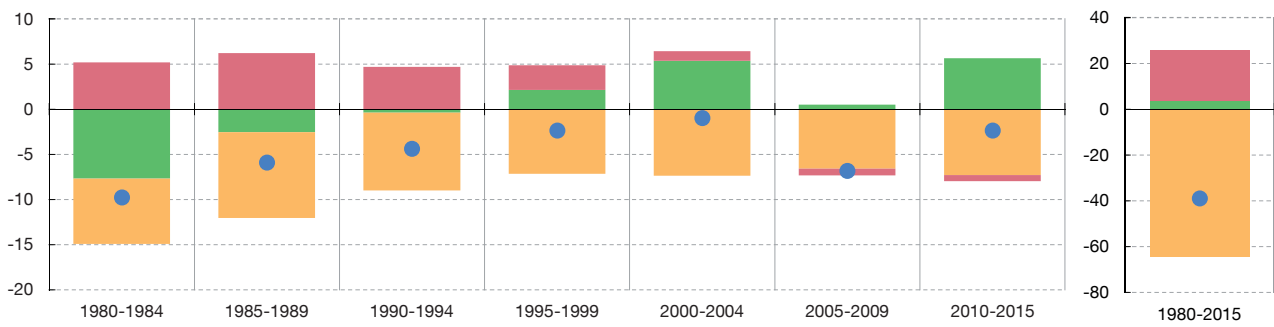
Second, that the income balance is more persistent and is the main determinant of the deficits of debtor countries. The income balance presents the expected sign: positive for creditors and negative for debtors, with the exception of emerging economy creditors. The composition of the external portfolios of this group of countries is skewed towards safe, low-return assets and higher-risk and high-return liabilities, which means that they end up paying more than they receive, despite having more external assets than liabilities.

Also noteworthy is the persistency of countries' creditor and debtor positions. As can be seen in Chart 3.1, the conditional probability of a country remaining a debtor the following year is 98% and that of remaining a creditor, 92%. Both creditor countries and debtor countries may simultaneously post deficits and surpluses in the current and capital account balance (see Chart 3.2), but the bias towards surpluses is more marked for creditors. In fact, the regression line fitted between the balance of the current and capital
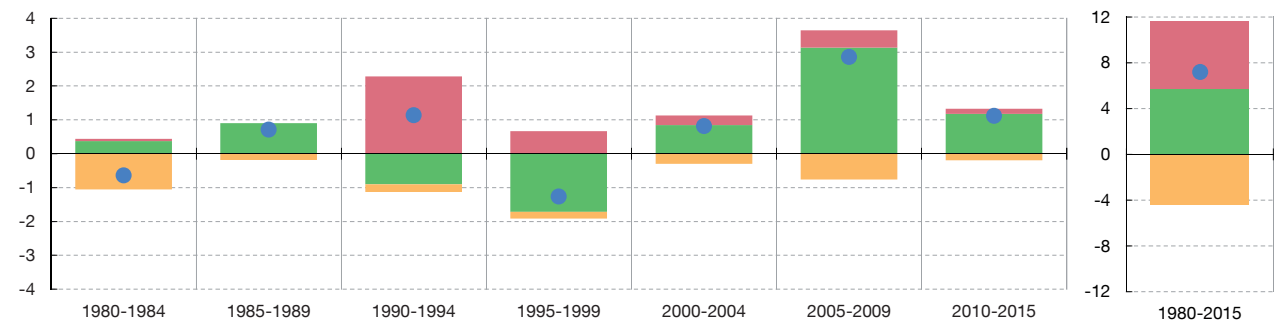
BREAKDOWN OF THE CURRENT AND CAPITAL ACCOUNT. NON-WEIGHTED AVERAGES

CHART 2

1 ADVANCED CREDITOR ECONOMIES
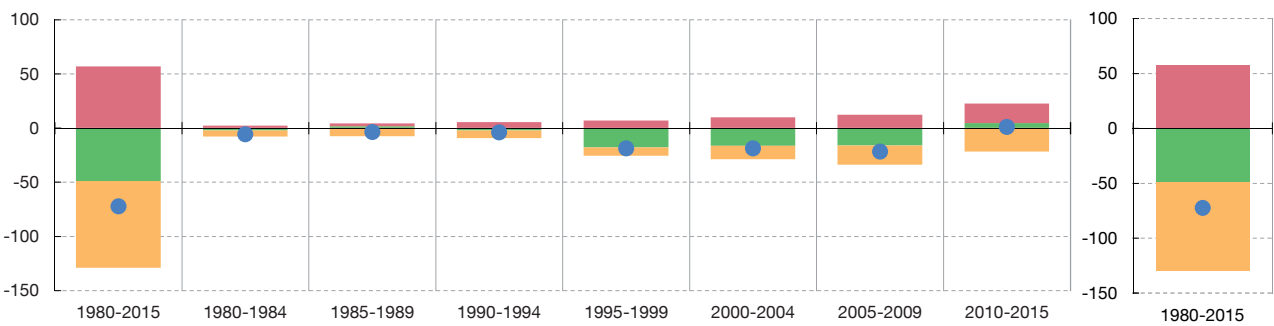

2 ADVANCED DEBTOR ECONOMIES

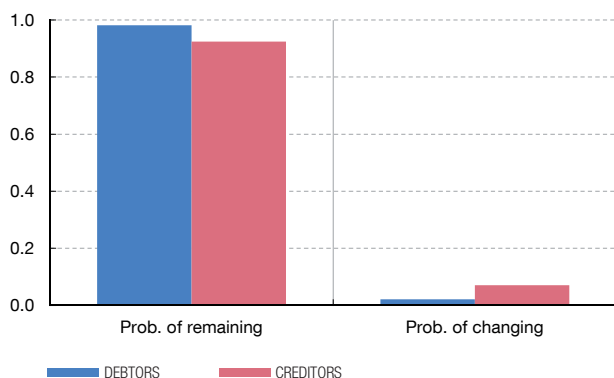
3 EMERGING CREDITOR ECONOMIES
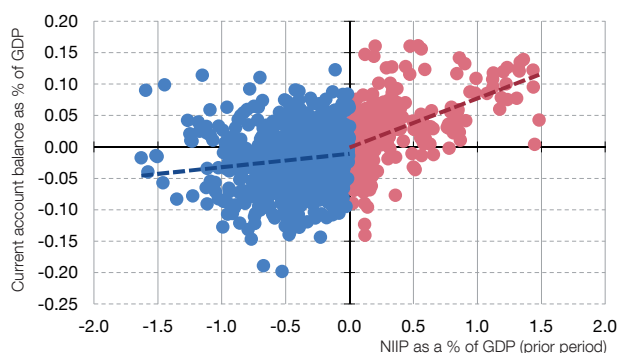

4 EMERGING DEBTOR ECONOMIES

RESIDUAL BALANCE   INCOME BALANCE   TRADE BALANCE   • BALANCE OF PAYMENTS

SOURCES: IMF and Banco de España.

1 CONDITIONAL PROBABILITY

2 SIMPLE CORRELATION BETWEEN CURRENT ACCOUNT BALANCE AND NIIP

SOURCES: IMF and Banco de España.

account and the NIIP has a steeper slope in the case of debtors. This asymmetry is key to the empirical analysis presented below.

The theoretical relationship between the current account balance and the NIIP

Economy theory identifies several direct and indirect channels through which the NIIP has an impact on the current and capital account balance of an economy. These channels can have a stabilising or destabilising effect on a country's accumulation of external wealth.

The most immediate of the direct channels is through the income balance, which is the difference between the revenues from external assets received by residents in the country and the payments on domestic assets to non-residents. Although there are significant exceptions, as mentioned above, creditor countries tend to run current account surpluses, thus increasing their creditor position, and debtor countries normally have deficits, with the opposite effect. Thus, *the NIIP will have a destabilising effect on the accumulation of external wealth through a country's income balance, which will be more pronounced the higher the interest rates.*

The second direct channel is through the trade balance, via wealth effects. The standard argument in this case is that each country's level of domestic demand depends positively on the level of wealth of its population. Thus, a country that accumulates net external assets will increase, *ceteris paribus,* the wealth of its population and, therefore, its domestic demand, with the consequent increase in imports, generating a current account deficit. Conversely, a country that accumulates net external liabilities will reduce, *ceteris paribus,* the wealth of its population, its domestic demand and its imports, thus generating a current account surplus. *Consequently, the NIIP will have a stabilising effect on the accumulation of external wealth through the trade balance.*

The indirect channels derive from the NIIP's possible effect on the exchange rate, and run through the consequent fluctuations in relative prices and, thus, in the price competitiveness of domestic production, which affect the current account balance. In fact, economic theory links a positive (negative) NIIP with exchange rate appreciations (depreciations), at least in the long term. The idea underlying this relationship[2] is that, for the NIIP of a creditor (debtor) country to stabilise in the long term, it must have a trade balance deficit (surplus)

2   See, for example, Lane and Milesi-Ferretti, 2004.

TABLE 1

	Current account		Income		Trade	
	Baseline specif. (1)	Diff. btw. debtors and creditors (2)	Baseline specif. (1)	Diff. btw. debtors and creditors (2)	Baseline specif. (1)	Diff. btw. debtors and creditors (2)
NIIP (β_1)	0.003 (0.005)	-0.019** (0.008)	0.026** (0.003)	0.026** (0.004)	-0.015** (0.006)	-0.035** (0.008)
NIIP *creditor (β_2)	—	0.062*** (0.014)	—	-0.001 (0.009)	—	0.065*** (0.015)
NIIP * countries (NIIP < –80%)	—	0.012** (0.005)	—	—	—	0.006 (0.005)
REER	0.007 (0.008)	0.008 (0.007)	—	—	-0.009 (0.006)	-0.007 (0.006)
Obs.	1,164	1,164	1,164	1,164	1,261	1,261
R2	0.6591	0.6758	0.8	0.8	0.7	0.7

SOURCE: Banco de España.
NOTE: In brackets: standard deviation, *,**,*** p-value below 10%, 5% and 1%, respectively.

to offset the income balance surplus (deficit), and, for this to occur, its exchange rate must appreciate (depreciate). *Through this channel, the NIIP would have a stabilising effect on the accumulation of external wealth.*

Another indirect channel, not analysed in this article, is that relating to the valuation changes in the external portfolio. In effect, if external assets and/or liabilities are denominated in foreign currency, the exchange rate fluctuations associated with a particular NIIP will lead to capital gains or losses on that portfolio. Consequently, and depending on the portfolio composition, the NIIP will have a stabilising or destabilising effect on external wealth accumulation. For example, if a country's external assets are mostly denominated in a foreign currency and its external liabilities in the domestic currency, a positive NIIP will imply an exchange rate appreciation, which will reduce the domestic-currency value of the external assets, stabilising the accumulation of external wealth. The opposite would be true if the external assets were mostly denominated in domestic currency and the liabilities in foreign currency, although this is normally not the case.

Empirical results

As mentioned in the previous section, the stabilising or destabilising effect of the NIIP on the accumulation of external wealth will depend on the sign of the impact on the current account balance which, in turn, is the result of the positive or negative effect of different channels. This is therefore an empirical matter, which this paper aims to clarify based on the estimation of a series of regressions where the relationship between the external balance (approximated, alternately, by the current account balance, the trade balance or the income balance) and the NIIP is determined – distinguishing in certain regressions between creditor and debtor countries –, taking into account other possible drivers of the external balance.[3] The results obtained are summarised in Table 1. Columns 1, 3 and 5 include estimates that do not distinguish between debtor economies and creditor economies. Columns 2, 4 and 6 include estimates which do reflect the possible differential impact of the NIIP. In equations where the dependent variable is the current account and which do not distinguish between creditors and debtors, the NIIP has a positive impact,

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3   See Box 1 for the technical details of the estimate. The regressions are estimated using data from a sample of 39 countries (including the main advanced and emerging economies) for the period 1980-2015.

although the effect is not statistically significant. This result is very similar to that obtained by the IMF based on its assessment methodology for external imbalances (IMF [2012]).

However, this result conceals a marked asymmetry between debtor countries and creditor countries. The second column of the table, which distinguishes between creditors and debtors, reveals that, in the case of debtor countries, their negative NIIP reduces current account deficits and halts the accumulation of debt (the coefficient is negative and significant). In creditor countries, the NIIP is positive (note that the second coefficient in this column is positive and greater in absolute terms than the first one) and statistically significant, which means that the NIIP is destabilising i.e. the current account surpluses tend to increase, boosting wealth accumulation.

In order to investigate the origin of these asymmetries, similar regressions are estimated, but taking the balance of the income and trade sub-balances as the dependent variable. In the case of the income sub-balance, and in line with the description of the channels in the preceding section, the NIIP coefficient reflects the profitability of net external assets and will therefore tend to be positive and, accordingly, have a destabilising effect on external wealth accumulation. The estimate in column 3 provides the expected results: the coefficient is positive and statistically significant and its value is consistent with that obtained in calculating the implicit returns on these portfolios. From the standpoint of asymmetries between creditors and debtors, the relevant coefficient (column 4) is not statistically significant, which indicates that the origin of the asymmetric impact of the NIIP on the current account balance is not related to the income balance.

In the trade balance, the specification of column 5, which does not distinguish between creditors and debtors, gives a negative, statistically significant coefficient, which implies that overall the NIIP has a stabilising effect on the trade balance. However, when creditor countries and debtor countries are taken into account (column 6), the NIIP value is positive and significant for the creditor countries; i.e. the effect of this variable on the trade balance is destabilising. Therefore, the origin of the asymmetric impact of the NIIP on the current account lies in the trade sub-balance.

As indicated in the previous section, the NIIP affects the trade balance both through wealth effects (direct channel) and through its impact on the real exchange rate (indirect channel) which, in turn, determines country price competitiveness. To facilitate the estimate of the regressions in Table 1, the contemporaneous real effective exchange rate was not included, such that the estimated coefficient for the NIIP includes both effects. Therefore, the estimated positive and destabilising impact for the NIIP in creditor countries could be a consequence of both a low marginal propensity to consume out of net external wealth (a weak wealth effect) and the lack of an appreciating impact on its exchange rate induced by its creditor position, reducing the country's price competitiveness and contributing to generate a trade balance deficit.

Thus, in order to distinguish between the two channels, a series of regressions are estimated that enable the impact of the NIIP on the real exchange rate (together with other determinants) to be identified. Additionally, these regressions were also designed to check the possibility of structural changes in the relationship between the real exchange rate and the NIIP. Specifically, the idea is to test whether the sensitivity of euro area countries to fluctuations in their NIIP has declined since the creation of the euro area. Indeed, under certain circumstances, it is possible to prove that the real exchange rate of countries that are members of a monetary union is more closely related to the NIIP of the area as a whole

EXCHANGE RATE REGRESSIONS

TABLE 2

	Baseline specif. (1)	Diff. btw. debtors and creditors (2)	Taking into account the euro area (3)
NIIP (lagged)	0.108*** (0.029)	-0.065** (0.032)	0.113 (0.076)
NIIP creditors (lagged)	—	0.414** (0.056)	0.407*** (0.107)
NIIP * post-1999 (lagged)	—	—	-0.176** (0.076)
NIIP creditors * post-1999 (lagged)	—	—	-0.006 (0.097)
NIIP * post-1999 * euro (lagged)	—	—	-0.016 (0.046)
NIIP creditors * post-1999 * euro (lagged)	—	—	-0.285*** (0.094)
Obs.	977	977	977
R2	0.8277	0.8434	0.8496

SOURCE: Banco de España.
NOTE: In brackets: standard deviation, *,**,*** p-value below 10%, 5% and 1%, respectively.

than to each country's NIIP. Once again, the specification of the different regressions allows us to distinguish between the impact of the NIIP on the exchange rate for debtor countries and creditor countries before and after the creation of the euro area.

As can be seen in Table 2, under the baseline specification, which does not distinguish between creditors and debtors and does not take into account the creation of the euro area, the estimated NIIP coefficient is positive and statistically significant. This appears to imply, as the theory suggests, that creditor countries tend to have a more appreciated real effective exchange rate and debtor countries a more depreciated one, movements which contribute to stabilising the external position. However, when the distinction between creditors and debtors is made, in column 2, the stabilising effect is only significant for creditor countries. Therefore, the results indicate that, for creditor economies, the indirect channel through the real exchange rate has a stabilising effect on the accumulation of net external wealth, since a higher NIIP relates to a more appreciated real exchange rate, which should reduce their competitiveness and limit their trade surpluses. Since, as seen earlier, aggregating the direct and indirect channels is destabilising and the exchange rate channel (indirect) is stabilising for these economies, it can be inferred that the destabilising impact of the creditor NIIP on external wealth accumulation comes from the direct channel, i.e. from a low marginal propensity to consume out of external wealth, which determines a low response of imports.

The estimates included in column 3 of Table 2 show, in the case of creditor countries, that the entry to the euro area has weakened the stabilising effect on external wealth accumulation by this indirect channel. Conversely, no significant changes are seen in the case of euro area debtor countries.

Conclusions

Global imbalances were a very significant item of concern prior to the international financial crisis, as a symptom of the unsustainable pattern of growth followed until then and, for some, as a direct driver of shocks. Since then, global imbalances measured through current account balances have declined, but, when measured through the NIIP, they have continued to expand. This paper analyses certain implications of this difference in behaviour.

The results show that there is substantial asymmetry between net creditor countries and net debtor countries in terms of the impact of their NIIP on the current account balance. While the net debtor position of debtor countries contributes to reducing their current account deficits, the positive NIIP of creditor countries contributes to increasing their surpluses and, therefore, their own creditor position. This latter effect arises despite the fact that in creditor countries the real effective exchange rate tends to appreciate, especially at long term, although this mechanism is weaker in the case of creditor countries belonging to a monetary union. The empirical work performed seems to suggest that the destabilising effect of the NIIP on external wealth accumulation in creditor countries is the result of a reduced marginal propensity to consume and import out of their external wealth.

These results have significant implications for global trade and growth. In the short term, debtor countries are much more vulnerable to market sentiment and financial tensions. Therefore, they should correct their external imbalance by generating surpluses or by reducing their deficits. If creditor countries do not react symmetrically, increasing the demand for debtor country products, debtors will tend to make the adjustment through a reduction in their imports and in aggregate demand, with the consequent negative effect on global growth and trade in the medium term.

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To study the impact of the NIIP on the external balances of the economies, panel equations are estimated which link the current account and the trade or income sub-balances to the NIIP, distinguishing between debtor and creditor countries.

Specifically, the equations estimated have the following general format:

$$dep_{it} = \alpha + \beta_1 * niip_{it-1} + \beta_2 * niip_{it-1} * (creditor_{dum}) + (others)_{it} + \varepsilon_{it},$$

where dep is, alternately, the current account balance, the trade balance or the income balance, as a percentage of GDP for each i country; niip is the NIIP, also as a percentage of GDP; $(creditor_{dum})$ is a variable which takes the value 1 if the country has a positive NIIP and 0 otherwise; and (others) is a group of socio-economic features of each country. The parameters of interest are β_1 and $(\beta_1 + \beta_2)$, which include the impact of the NIIP on the balance considered in each case for the net debtor and creditor countries, respectively.

To study the impact of the NIIP on the real effective exchange rates (reer), the series of estimated regressions is as follows:

$$reer_{it} = \alpha + \beta_1\, niip_{it-1} + \beta_2 niip_{it-1}\, (creditor_{dum}) + \beta_3 niip_{it-1}\, (post\text{-}1999_{dum}) +$$
$$+ \beta_4 niip_{it-1}\, (post\text{-}1999_{dum})\, (creditor_{dum}) +$$
$$+ \beta_5 niip_{it-1}\, (post\text{-}1999_{dum})\, (euro_{dum}) +$$
$$+ \beta_6 niip_{it-1}\, (post\text{-}1999_{dum})\, (euro_{dum})\, (creditor_{dum}) + (others)_{it} + \varepsilon_{it},$$

where $(post\text{-}1999_{dum})$ is a variable which takes the value 1 after the establishment of the euro area and 0 otherwise, and $(euro1999_{dum})$ takes the value 1 for euro area members and 0 for the rest. In this case, the parameters of interest are β_1, which includes the impact of the NIIP on the real effective exchange rate for debtor countries prior to the creation of the euro; $\beta_1 + \beta_2$, for creditors; $\beta_1 + \beta_3$, for debtors outside the euro area following its creation; $\beta_1 + \beta_2 + \beta_3 + \beta_4$, for creditors outside the euro area following its creation; $\beta_1 + \beta_3 + \beta_5$ for euro area debtors; and, lastly, adding all the βs, the effect of the NIIP on the real exchange rate of euro area creditor countries.

All the regressions are estimated using data from a sample of 39 countries (including the main advanced and emerging economies) for the period 1980-2015.