

In the absence of fiscal union, the Eurozone needs a more flexible monetary policy

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Global macroeconomic imbalances have contributed to the global recession; this has been true for the Eurozone (EZ) as well. Figure 1 highlights the sharp heterogeneity in the EZ in terms of current-account imbalances, measured as a percentage of GDP. The Southern countries of the Eurozone (Greece, Italy, Portugal and Spain), as a group, have experienced deficits consistently up to 2012. The Northern countries (Austria, Belgium, Finland, Germany, and the Netherlands), instead, have enjoyed large and rising current-account surpluses all the way up to 2014.

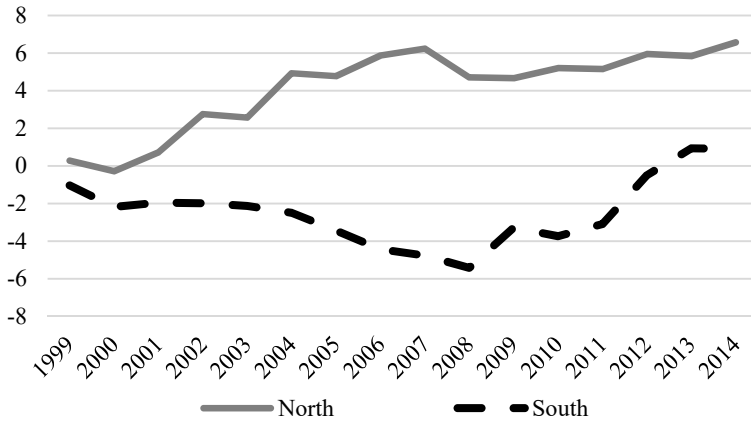
So long as credit was easily available, the South found it easy to finance its deficit with private capital mainly provided by the North.¹ This “chronic” situation was considered consistent with growth convergence in the EZ. But the evidence has shown otherwise. One explanation for the lack of convergence is that capital flows were not directed to the financing of productive investment in the South (Blanchard and Giavazzi, 2002), resulting in variations in prices and productivity that brought about a misalignment in the internal real exchange rates and ultimately induced a balance-of-payment crisis.

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¹ Deficits and surpluses refer to each country’s position in relation to the rest of the world and not to the inter-EMU current-account balance, whose statistical record is still largely incomplete. The former is used as a proxy of the latter with the justification that Eurozone countries trade a great deal with one another.



Figure 1 – *Current account balance as a per cent of GDP, North vs. South of the Eurozone, 1999-2014*



Note: The ‘North’ consists of Austria, Belgium, Finland, Germany, and the Netherlands; the ‘South’ of Greece, Italy, Portugal and Spain.

Source: IMF (2015), *WEO database*, April, Washington (DC).

Alessandrini *et al.* (2014) examine two explanations of the European sovereign debt crisis, one based on fiscal dynamics and one on external imbalances. With the exception of Ireland, badly affected by the sub-prime financial crisis, the North has benefited from below median inflation (real exchange rate depreciation relative to the South), whereas the South has suffered from above median inflation rates (real exchange rate appreciation relative to the North). These data are consistent with the hypothesis that the asymmetries in the external imbalances of EZ countries were emphasized by real exchange rate misalignments. The empirical analysis of the determinants of government bond yield spreads relative to Germany suggests that both views provide useful insights into the roots of the current sovereign crisis. However, differences in growth

and competitiveness and capital flows between North and South have assumed a much more dominant role since the onset of the global crisis.²

This paper makes three points. The first is that external imbalances between Member States ('inter-member external imbalances') are relevant for the performance of a monetary union, when it is not backed by a strong political commitment, and a solid political framework does not exist. EZ policymakers have historically ignored these inter-member imbalances and have instead concentrated on union-wide imbalances, so much so that statistical data on the former phenomenon still remain largely incomplete. There are signs that a correction is in the making, primarily shown by the recognition of the qualitative relevance of the issue, which we hope will lead to a comprehensive quantitative knowledge of intra-EMU imbalances; more on this in paragraph 5 below. The second objective of the paper is to design specific policies aimed at reducing inter-member external disequilibria, for example by fixing targets on current-account imbalances symmetrically applied to both deficit and surplus countries. The contrast between the keen attention of the EZ policymakers on national fiscal imbalances and the belated and lukewarm attention given to external imbalances is striking. The third aim of the paper is to propose a more flexible monetary policy aimed at controlling the distribution of liquidity among Member States, resulting from inter-member external imbalances.

1. Monetary union without fiscal union

In a canonical fixed exchange rate system, cross-border monetary transactions would be settled with flows of international reserves (*IR*). In a sovereign country, that is in a country that enjoys both a monetary and fiscal unity, a current-account imbalance of one region vis-à-vis other regions of the country poses no direct problem to the stability of the

² On the relative importance of macroeconomic fundamentals and pure financial markets' panic in determining interest rates' spread, see De Grauwe and Ji (2013) as well as Alessandrini *et al.* (2014).

monetary union. But in the EZ this is not the case, because of the absence of a centralized budget that can absorb idiosyncratic shocks to individual member countries (Kenen, 1969).

The call for a sizable centralized fiscal budget in an Economic and Monetary Union goes back to the 1970s (Commission of the European Communities, 1977), a point reiterated in the late 1980s by the *Delors Report* (1989, p. 89) and more recently by the President of the European Council (Van Rompuy, 2012, p. 5). The conclusion of this literature is that a monetary union, in the absence of a fiscal union, needs to have current-account equilibrium in the medium run. Capital-flow adjustments to current account imbalances are not fully reliable because of the risk of sudden stops and flow reversals. Monetary adjustments to current account imbalances cannot be trusted because of a risk of a speculative attack against individual members of the monetary union (Garber, 1999).

To illustrate this point, let us define the balance of payments of an EZ member country as:

$$BP = CA + CM = e \cdot \Delta IR + \Delta T2 = BP_{OUT} + BP_{IN} \quad (1)$$

where:

CA = current-account balance,

CM = financial-account balance,

e = nominal exchange rate (e.g. euro/\$),

IR = international reserves,

$T2$ = TARGET2 balance,

$BP_{OUT} = e \cdot \Delta IR$ = external 'monetary' balance vis-a-vis non-EZ countries,

$BP_{IN} = \Delta T2$ = external 'monetary' balance vis-à-vis EZ countries.³

In the EZ, inter-member monetary transactions are settled through the real-time payment system TARGET2, which is expected to guarantee

³ It should be pointed out that there is no change in $T2$ balances if intra-EMU current account changes are financed with capital flows between non-EZ and EZ countries, as in the case of Germany exporting merchandise to Italy financed by a US-based bank.

unlimited credit to each national central bank (NCB). If this guarantee is in doubt because a strong-currency NCB (one with consistent current-account surpluses) may refuse to provide unlimited money to a weak-currency NCB, the market may conclude that a default on the deficit country's bonds or a bank run is a possibility, with the attendant consequences on the stability of the common money.⁴

In sum, a monetary union in the absence of a fiscal union must pay attention to members' external imbalances, a point that was largely ignored by the founding fathers of the EZ, who focused almost exclusively on fiscal stability by setting explicit numerical targets as well as monitoring and setting corrective mechanisms. This omission explains to a large extent the depth of the sovereign debt crisis.

2 Adjustment mechanisms

Let us define the balance sheet of a NCB as:

$$(B + Lf) + (e \cdot IR + T2) = K + (BR + Df + C) + PA \quad (2)$$

where:

B = bonds (collateralized main refinancing operations and long term loans, and direct open market purchases),

Lf = marginal loan facilities,

IR = international reserves,

$T2$ = TARGET2 balance,

K = capital,

BR = bank reserves = required reserves + excess reserves,

Df = marginal deposit facilities,

C = currency,

PA = governments' account.

⁴ This is the essence of Garber's (1999) argument; for a fuller development see Alessandrini *et al.* (2014). A referee has correctly pointed out that the possibility of a bank run depends on the ECB not being a lender of last resort with respect to public debt.

Setting the capital account as fixed in the medium term, the flow creation of the monetary base is the sum of its foreign component [$\Delta MB_F = \Delta(e \cdot IR) + \Delta T2$], domestic component ($\Delta MB_D = \Delta B + \Delta Lf$), and government component ($-PA$). The flow uses of the monetary base is the sum of the changes in bank reserves, bank deposit facility with the NCB and currency. Compactly, flow sources and uses of the monetary base are given by equation (3):

$$\Delta MB_F + \Delta MB_D - \Delta PA = \Delta MB = \Delta(BR + Df + C) \quad (3)$$

Given that $\Delta(e \cdot IR) + \Delta T2 = BP_{OUT} + BP_{IN}$ by identity (1), and that the exchange rate e is flexible, making flows of international reserves denominated in euros virtually zero, we obtain a strict link between the external balance vis-à-vis EZ countries and changes in TARGET2 balances:

$$BP_{IN} = \Delta T2 = \Delta MB_F \quad (4)$$

NCBs of surplus (deficit) Member States accumulate credit (debit) TARGET2 balances. For the system as a whole, naturally, TARGET2 balances sum to zero. These monetary flows from deficit countries to surplus countries unleash, in the absence of sterilization policies by the NCBs, an adjustment mechanism that is similar to the price-specie flow mechanism originally described by David Hume ([1742] 1987) for the gold standard: the correction of external imbalances works by raising prices and wages in surplus countries in relation to prices and wages in deficit countries.

The alternative mechanism to Hume's price-specie flow is the Keynesian income adjustment mechanism (Mundell, 1968, chs. 13 and 20): deficit countries contract aggregate spending relative to surplus countries to reduce imports and hence current account deficits. To avoid undue asymmetric burdens, the Keynesian mechanism calls for a cooperative solution. In times of inflation and excess utilization of resources, the brunt of the adjustment falls on deficit countries (by contracting). In times of deflation and underutilization of resources, the

burden of adjustment should fall primarily on the surplus countries, which must expand spending relative to deficit countries. In modern economies, income (unemployment) moves faster than prices and wages. In line with this experience, we would expect that in this instance the Keynesian adjustment will occur first and the Humean mechanism afterwards.

In fact, the adjustment in the Eurozone has been asymmetric through a generalized imposition of fiscal austerity that has caused the South to bear a more severe economic slowdown than the North. The relative slowdown of the South in relation to the North, in turn, has triggered a correction in the current-account deficits of the South while leaving the high and rising trend of current-account surpluses of the North unchanged: see the imbalances in the period 2011-2014 shown in figure 1.⁵

Eventually, according to the Humean process, the South will have to experience real exchange rate depreciation, with smaller price and wage increases than the North. But for this to occur, money and credit within the EZ will have to be reallocated against the South and in favor of the North. In sum, the convergence of external imbalances, so far, has taken place almost exclusively from the side of the South. The North continues to enjoy high and rising current-account surpluses.

2.1. Internal adjustment in the Eurozone has not worked

We now advance two reasons why internal adjustment in the EZ, through changes in real exchange rates, has not generated the desired convergence outcome. The first is the fragility of compensatory private capital flows. The second is institutional sterilization.

A by-product of a monetary union is the raise in the degree of integration of capital markets. Integrated capital markets imply high capital

⁵ While both exports and imports relative to GDP have been falling in the South, income-sensitive imports have been declining faster than exports; hence, the improvement in the trade imbalance.

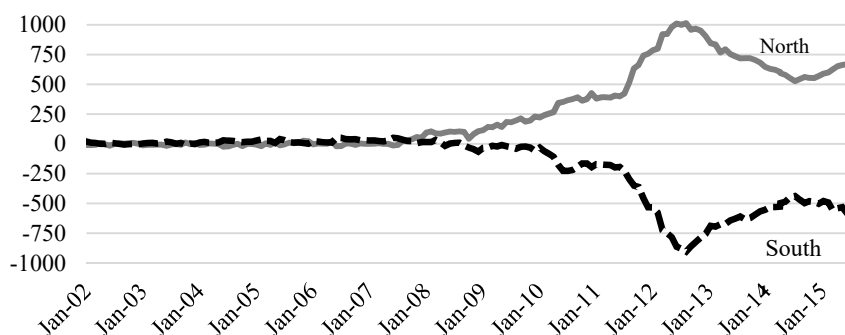
mobility that equalizes interest rates in the unified monetary area, net of credit risk. In the case of fully compensatory capital flows, $CA + CM = 0$, there is no net redistribution of monetary base among EZ member countries; yet, CA imbalances remain. For a deficit country, capital inflows add to the stock of foreign debt that needs to be financed. The cost of financing this debt adds to the deficit of the current account. Furthermore, flows of capital are not completely dependable as a source of current account financing. Changes in market sentiment can trigger sudden stops and flow reversals, which can force the indebted country to make quick and painful adjustments in income and relative prices, with income moving faster than relative prices (Wyplosz, 2013). For example, Greece, which had benefited from large capital inflows since 2002, faced a capital flow reversal between March and June of 2008, followed by a second between October 2008 and January of 2009 and a third in April through July 2010; the other three Southern countries – Italy, Portugal and Spain – were hit by a reversal at the end of 2011 (Merler and Pisani-Ferry, 2012).

Monetary financing, through $\Delta T2 (= BP_{IN})$, occurs if net capital flows do not fully compensate the CA imbalance. Monetary base flows from deficit to surplus countries that, in turn, trigger the Keynes-Hume adjustment. Under ordinary circumstances, capital mobility in a monetary union provides the bulk of the financing and the residual changes in $T2$ balances are typically small. Compensatory movements come to a halt during crises. Figure 2 shows the level of $T2$ balances of the Northern countries (Austria, Finland, Germany, Luxembourg, and the Netherlands) and of the four Southern countries.⁶ The surplus of the North and the deficit of the South are very close to the zero line all the way through 2008. Then they start diverging, increasingly up to the peak value of August 2012. There is a decline in the gap until mid-2014 and then a rise again up to July 2015. In sum, according to the evolution of the $T2$ balance, the monetary base should have shifted from the deficit South to the surplus North from 2009 to August 2012. But, as it happened during the pre-WWI gold standard and even more so during the interwar gold-

⁶ The definition of the North here changes with respect to the previous definition in that we drop Belgium and add Luxembourg.

exchange standard, the self-equilibrating price-specie flow mechanism was not allowed to operate in full because of central bank sterilisation practices, which is the topic of the next sub-section.

Figure 2 – TARGET2 balances, North vs. South of the Eurozone, January 2000 – July 2015 (€ billions)



Note: The 'North' consists of Austria, Finland, Germany, Luxembourg, and the Netherlands; the 'South' consists of Greece, Italy, Portugal and Spain.

Source: Institute of Empirical Economic Research, *Euro Crisis Monitor*, Osnabrück University.

3. Institutional sterilisation

In the Eurosystem, there is an endogenous channel of monetary base creation: banks can buy liquidity from their NCBs by submitting eligible securities; the liquidity is added to bank reserves. After the October 2008 Lehman default, the ECB has set no limits to this type of base creation. So, given a flow amount of eligible collateral, there is a potential for banks to activate an equivalent flow creation of domestic monetary base. A deficit country that loses monetary base through the TARGET2 mechanism can replenish part or all of the lost monetary base by buying liquidity from its NCB, provided of course that it has an adequate amount of eligible collateral. This is what we call institutional sterilization.

Sterilisation is complete when the deficit country replenishes in full the liquidity shortage of a negative BP_{IN} with liquidity purchases from the Eurosystem, that is $\Delta MB_F + \Delta MB_D = 0$.

Sterilisation may also work for the surplus country: the increase in the foreign component of the monetary base can be compensated in part or in full by banks in the surplus country, either by selling liquidity to the NCBs in change of collateralized bonds, B , or depositing excess reserves in the deposit facility, Df , also with NCBs. In terms of equation (3), the former implies a reduction of the source component of the monetary base MB , whereas the latter implies a change in the composition of the uses side of the base. In fact, inasmuch as banks move part of BR to Df , the stock of MB remains the same. However, liquidity that would have normally been employed in the money market (e.g. in the interbank market) is withdrawn, with the result of weakening the transmission mechanism of monetary policy to the economy.

Institutional sterilisation contradicts the rules of the game of a fixed exchange rate system. Monetary policy in the Eurozone is decided by the ECB Board. NCBs operate as local branches of a federal system, with the same goal, the same instruments and the same official rates agreed at the supranational ECB level. There cannot be monetary sovereignty at the national level. Yet, within a member state, banks are allowed to use ECB facilities at their own discretion to manage liquidity needs. There is a contradiction between a common monetary policy and the ability of banks, within a member state, to fully endogenise the creation of monetary base so as to achieve national sterilisation.

4. Consequences of inadequate adjustment

In conclusion, the ECB Board decides on a common monetary policy by setting official rates that are the same in the entire Eurozone, but it has lost control not only of the total amount of liquidity issued, but also of its distribution across Member States. The combined impact of compensatory capital flows and institutional sterilisation delays the Hume-Keynes adjustment. There is some evidence that the price-specie

flow mechanism has worked in a perverse way, at least up to 2009. In fact, the South, in addition to experiencing current-account deficits, has had a consistently higher inflation rate than Germany, the centre country of the Eurozone (Alessandrini *et al.*, 2014, table 2). As table 1 shows, the growth of M3 and bank credit in the South for the period 2003-2009 has been higher than that in the North. Only between 2010 and 2012 has M3 growth in the South fallen below that in the North, though not the growth of bank credit, which has remained considerably higher than the North's. A similar finding has been reported for Greece with respect to Germany by Dellas and Tavlas (2013, table 2).

Table 1 – *Comparison of M3, bank loans and bank credit between the North and the South, period average of annual percentage changes*

	M3 average % change	Bank loans	Bank credit
North, 2003-2009	6.8%	3.3%	4.3%
South, 2003-2009	7.8%	7.8%	8.1%
North, 2010-9/2012	3.9%	1.3%	0.6%
South, 2010-9/2012	-2.1%	3.6%	5.8%

Note: the 'North' consists of Austria, Belgium, Finland, Germany and the Netherlands; the 'South' consists of Greece, Italy and Portugal; data for Spain are not available; bank loans are those extended to the private sector.

Source: ECB, *Statistical Data Warehouse*.

In the long run, the lack of adjustment to permanent imbalances raises the specter of sustainability of a fixed exchange rates system. The experience of the breakdown of the Bretton Woods system is exemplary in this respect. The issue of sustainability that the Euro area has been facing since 2010 confirms the basic principle that a monetary union, without a fiscal union that acts as a transfer union against idiosyncratic shocks, is fragile. A faltering adjustment mechanism to inter-member external imbalances leads to growing disparities between the stock of foreign credit of surplus countries and foreign debt of deficit countries, which accentuates the fragility of the Eurozone. There is a lack of real

and nominal convergence between the North and the South, in part reflecting long-standing heterogeneity. The prescription of fiscal austerity and the burden imposed on the South resulting from a highly asymmetric adjustment process have failed to generate sufficient economic growth to reduce ratios of government debt to GDP. In many dimensions, the outcomes have been perverse if measured against the stated objectives.

For a long time, little or no attention was paid to external imbalances, an attitude that stood in sharp contrast with the enormous political capital that has instead been spent in trying to contain government budget deficits and public debt. The first generic reference by the European Union to the necessity of addressing external imbalances goes back to the end of 2011 (European Union, 2011), when Member States were invited to implement symmetric adjustment policies and the Commission was charged with monitoring the existence of excessive balances:

“[g]iven vulnerabilities and the magnitude of the adjustment required, the need for policy action is particularly pressing in Member States showing persistently large current-account deficits and competitiveness losses. Furthermore, in Member States that accumulate large current-account surpluses, policies should aim to identify and implement measures that help strengthen their domestic demand and growth potential” (L. 306/26 paragraph 17).

“The Commission may undertake enhanced surveillance missions for Member States which are the subject of a recommendation as to the existence of an excessive imbalance position under Article 7(2) for the purposes of on-site monitoring” (L. 306/31 paragraph 2).

In 2012, the European Commission published target guidelines for current-account imbalance and the net investment international position, both measured relative to GDP, as well as changes in real effective exchange rates. For the current-account imbalance, adjustment was recommended to kick in when a deficit exceeds 4 percent and a surplus exceeds 6 percent; for the net external position, adjustment is contemplated only for net debtor Member States, when it is equal to or

higher than 35 percent.⁷ Finally, for changes in the real effective exchange rate, the tolerance band is comprised between -5 and +5 percent. For all three target variables, the relevant measure refers to the country's position vis-à-vis the rest of the world. There is no reference or guidelines concerning inter-member imbalances and inter-member changes in the real exchange rate, an omission of fundamental importance in light of our discussion above.

Only in a recent authoritative report written by EU Commission President Jean-Claude Juncker, in close cooperation with Donald Tusk, Jeroen Dijsselbloem, Mario Draghi and Martin Schulz (2015), the objectives of the so-called Macroeconomic Imbalance Procedure and the burden of adjustment between current account deficit and surplus member countries are clearly spelled out:

“[t]he procedure should also better capture imbalances for the euro area as a whole, not just for each individual country. For this, it needs to continue to focus on correcting harmful external deficits, given the risk they pose to the smooth functioning of the euro area (for example, in the form of ‘sudden stops’ of capital flows). At the same time, the Macroeconomic Imbalance Procedure (MIP) should also foster adequate reforms in countries accumulating large and sustained current account surpluses if these are driven by, for example, insufficient domestic demand and/or low growth potential, as this is also relevant for ensuring effective rebalancing within the Monetary Union” (*ibid.*, p.8).

In a note for discussion of 21 April 2015, the Sherpas on the *Report* remarked that:

“[s]ome contributions note that the Macroeconomic Imbalances Procedure remains underutilised as a means to correcting harmful imbalances [...]. Proposals to streamline the procedure and refocus it on a smaller number of indicators (e.g. only on current account imbalances and competitiveness) have also been put forward. Finally, a number of contributions stress the need for a more symmetric framework, capable to correct not only harmful external deficits but also excessive surpluses as this would facilitate intra-Euro Area adjustment. The current framework is seen as relying

⁷ The need of correcting external imbalances is analysed by Williamson (2012) and by Hughes-Hallett and Martinez Oliva (2012). Williamson indicates a target of 3% of GDP for current-account imbalance and 40% of GDP for foreign debt.

excessively on regaining price competitiveness” (European Commission, 2015, p. 3).

There are also inadequacies with policy instruments. While national fiscal instruments have been constrained by fiscal austerity, the absence of a fiscal union has debilitated the European Union in exercising any sort of centralised fiscal policy. Consequently, the entire responsibility to manage the crisis has fallen on the ECB. There are at least two reasons why we ask too much from the ECB and the NCBs. The first is that monetary policy misses an essential companion, European-level fiscal policy. The second is that we evidenced above a pitfall in the execution of the common monetary policy: NCBs have been given a sterilisation instrument that delays or stops altogether the operation of the Hume-Keynes adjustment mechanism by offsetting the redistribution of the monetary base between large creditors and debtors of TARGET2 balances.

5. Policy proposals

Let us start from the assumption that a fiscal union cannot be realized in the short run. It will take a long process of convergence before a fiscal union can be established in the Eurozone. In the meantime, some important steps could be taken to strengthen its stability. To begin with, policy makers must possess statistical knowledge of intra-EMU current account and financial-account imbalances. The two institutions that are best positioned to collect and disseminate these data are Eurostat and/or the ECB.

The reason for this serious statistical delay may well be based on the notion that if a monetary union has no significant external imbalance vis-à-vis the rest of the world, there is no reason to worry about the inter-member external imbalances. But this notion rests on the assumption that member countries have a high degree of homogeneity, which does not correspond to reality. Regional current-account imbalances matter a great deal when there is no centralized fiscal authority that is capable and

committed to act as a buffer against idiosyncratic shocks, which is the case of the Eurozone.

Secondly, targets on current-account imbalances need to be set and taken as seriously as fiscal imbalances and debt-to-GDP ratios.

Thirdly, economic policies must address the correction of the critical factors underlying external imbalances. Two types of corrections come to mind: supply-side corrections, aimed at reducing relative prices and costs in deficit countries, and coordination of national aggregate spending in the monetary union, using the Keynesian principle of symmetric burden sharing. The latter is achieved when, in the absence of a significant rate of inflation, the surplus countries expand aggregate demand, whereas deficit countries implement supply-side policies. If instead we lived in an inflationary environment, the burden of adjustment would fall primarily on deficit countries that need to contract aggregate spending. Finally, the ECB should assume a more active role, not only as a lender of last resort, but also in promoting the adjustment process to external imbalances. Monetary policy should be more flexible to compensate for the lack of a common fiscal policy that acts as a transfer agent against idiosyncratic shocks.

5.1. The case for a more flexible monetary policy

The Eurozone was built on the foundation of a common monetary policy and differentiated national fiscal policies subject to upper limits on budget deficits. Stricter restrictions on these deficits were introduced following the sub-prime crisis. The first principle of our monetary policy package is that the unified supranational monetary policy should remain the core of the monetary union. The noted heterogeneity of Member States, which manifests itself with differences in economic performances and current-account imbalances, calls for a managed flexibility of the common monetary policy.

On the surface, there could be a contradiction between a common monetary policy and the introduction of some flexibility. These two objectives, however, can be reconciled as follows. The ECB, as a

supranational entity, monitors the evolution of the inter-member external imbalances (BP_{IN}) and the flow-stock divergences between deficit-debtor countries (DDC) and surplus-creditor countries (SCC). TARGET2 balances, defined as BP_{IN} , would be 'booked' in a clearing account, a sort of Euro Clearing System, under the jurisdiction of the ECB. The Euro Clearing System would operate according to multilateral settlements of T2 debit and credit. The multilateral settlement norm would reduce the 'exposure' and consequently problems of confidence for highly indebted NCBs. The ECB would allow institutional sterilisation, but would condition it on being consistent with the goals of the common monetary policy and the long-run working of the Hume-Keynes adjustment mechanism; in other words, institutional sterilisation would continue and be justified as a short-run smoothing process.

The ECB would retain direct control on institutional sterilisation through two mechanisms. The first is a discretionary quantitative control. The second is to add a risk premium cost to official interest rates on 'excessive' borrowings from the NBCs, that is those borrowings that compensate inflows and outflows of monetary base due to the evolution of T2 balances. In sympathy with the principle of shared burden of adjustment, the risk premium is applied on both DDCs and SCCs. The first mechanism is identical to that envisioned by Keynes in his original reform of the international monetary system (Keynes, 1943); the interest-rate penalty option is discussed in Alessandrini and Fratianni (2009). In the Keynes Plan, the size of monetary financing is constrained through the overdraft facility. Bancor balances, the equivalent of T2 balances that deviate from the quotas, are not permitted. Alternatively, the accumulation of T2 balances can be made progressively more expensive through a variable interest rate charge applicable to both surplus and deficit countries. It should be emphasized that this scheme of managed flexibility is not in contrast with the principle of a unified monetary policy: the basic official rates of interest remain the same for all EZ countries under conventional monetary policy. The cost supplement on top of the official rates apply only to 'excessive' borrowings from NCBs.

Finally, the ECB has no responsibility for the adjustment of inter-member external imbalances. But, in its monitoring role, the ECB can

signal to the European Commission the existence of structural CA imbalances that need to be corrected through coordinated economic policies. The European Commission is the appropriate institution to direct policy coordination among Member States. The guiding principle of coordination, to repeat, is that when the European economy is in depression the adjustment burden should be primarily fall on SCCs' governments, while DDCs' governments implement supply-side adjustments to reduce their competitive gap and readjust their real exchange rates.

REFERENCES

- ALESSANDRINI P. and FRATIANNI M. (2009), "Resurrecting Keynes to Stabilize the International Monetary System", *Open Economies Review*, vol. 20, pp. 339-358.
- ALESSANDRINI P., FRATIANNI M., HUGHES-HALLETT A. and PRESBITERO A. (2014), "External Imbalances and Fiscal Fragility in the Euro Area", *Open Economies Review*, vol. 25, pp. 3-34.
- BLANCHARD O. and GIAVAZZI F. (2002), "Current Account Deficits in the Euro Area: The End of the Feldstein-Horioka Puzzle?", *Brookings Papers on Economic Activity*, vol. 2, pp. 147-210.
- DELLAS H. and TAVLAS G.S. (2013), "The Gold Standard, the Euro, and the Origins of the Greek Sovereign Debt Crisis", *Cato Journal*, vol. 33 n. 3, pp. 491-520.
- DE GRAUWE P. and JI Y. (2013), "Self-fulfilling Crisis in the Eurozone. An Empirical Test", *Journal of International Money and Finance*, vol. 34, pp. 15-36.
- DELORS COMMITTEE FOR THE STUDY OF ECONOMIC AND MONETARY UNION (1989), *Report on Economic and Monetary Union in the European Community*, Luxembourg: Office for Publications of the EC.
- EUROPEAN COMMISSION (2012), "Scoreboard for the Surveillance of Macroeconomic Imbalances", *European Economy Occasional Papers*, n. 92, Brussels: Directorate-General for Economic and Financial Affairs.
- (2015), "Preparing for Next Steps on Better Economic Governance in the Euro Area: Overview of Contributions by Member States and the European Parliament", *Note for Discussion by Sherpas – Overview*, Brussels; available at http://ec.europa.eu/priorities/economic-monetary-union/docs/better-economic-governance-report-sherpas1_en.pdf.
- EUROPEAN UNION (2011), "Regulation (EU) n. 1176/2011 of the European Parliament and of the Council of 16 November 2011 on the Prevention and Correction of Macroeconomic Imbalances", *Official Journal of the European Union*, n. 306, November 23, pp. 25-32.
- GARBER P. (1999), "The TARGET Mechanism: Will It Propagate or Stifle a Stage III Crisis?", *Carnegie Rochester Conference Series on Public Policy*, n. 51, pp. 195-220.

- HUGHES-HALLETT A. and MARTINEZ OLIVA J.C. (2012), "Reducing Global Imbalances: Can Fixed Exchange Rates and Current Account Limits Help?", *Open Economies Review*, vol. 23 n. 1, pp. 163-192.
- HUME D. ([1742] 1987), "On the Balance of Trade", in (id.), *Essays. Moral, Political and Literary*, Indianapolis (IN): Liberty Fund.
- JUNKER J.-C., TUSK D., DIJSSELBLOEM J., DRAGHI M. and SCHULZ M. (2015), *Completing Europe's Economic and Monetary Union*, Brussels: European Commission.
- KENEN P.B. (1969), "The Theory of Optimal Currency Areas: An Eclectic View", in Mundell R.A. and Swoboda A.K. (eds.), *Monetary Problems of the International Economy*, Chicago: University of Chicago Press, pp. 41-60.
- KEYNES J.M. (1943), *Proposals for an International Clearing Union*, Cmd. 6437, London: British government publications.
- COMMISSION OF THE EUROPEAN COMMUNITIES (1977), *Report of the Study Group on the Role of Public Finance in European Integration (Macdougall Report)*, Brussels: Commission of the European Communities.
- MERLER S. and PISANI-FERRY J. (2012), "Sudden Stops in the Euro Area", *Review of Economics and Institutions – Economia, Società e Istituzioni*, vol. 3 n. 3, article 5.
- MUNDELL R. (1968), *International Economics*, London: MacMillan.
- VAN ROMPUY H. (2012), "Towards a Genuine Economic and Monetary Union. Report by the President of the European Council", EUCO 120/12 PRESSE 296 □ PR PCE 102, Brussels: European Council.
- WILLIAMSON J. (2012), "Rules for Correcting External Imbalances", *Open Economies Review*, vol. 23 n. 1, pp. 151-161.
- WYPLOSZ C. (2013), "Europe's Quest for Fiscal Discipline", *European Economy Economic Papers*, n. 498, Brussels: Directorate-General for Economic and Financial Affairs.