1. How European Monetary Union works

Introduction

In this chapter, we will look first at the Euro Area's governance and the European Commission's approach to removing macroeconomic imbalances. We will then discuss the usefulness of balance of payment concepts for assessing macroeconomic imbalances in European Monetary Union and finally describe how current account deficits are financed in monetary union.

1.1 The Excessive Imbalance Procedure, national statistics and the chauvinistic bias

Europe's new economic governance

Let us start with governance issues. One key lesson from the crisis has been that more attention needs to be paid to macroeconomic imbalances and divergences in competitiveness between EU countries (European Commission 2012). Nevertheless, European authorities have implemented a number of important reforms which are even broader than this. [3]

First, under pressure from financial markets, liquidity problems were tackled by setting up three emergency facilities (Collignon 2011). The *European Financial Stability Mechanism* (EFSM) allows the European Commission to borrow on financial markets on behalf of the Union under an implicit EU budget guarantee in order to support EU member

---

[3]. For a summary see Fischer and Hofmann 2011.

states under the regulation of balance of payment of non-Euro Area member states.[4] It has a budget of Euro 60 billion. In addition, the *European Financial Stability Facility* (EFSF) was set up in May 2010. Its purpose is to provide loans to Euro Area member states with difficulties in accessing the primary market, to recapitalise banks when needed and to intervene in the secondary markets.[5] The EFSF was authorized to borrow up to 440 billion in funds guaranteed by Euro Area member states, to which the € 60 billion of the EFSM should be added, while additional funding to the International Monetary Fund of at least 250 billion was secured as a safety umbrella for distressed member states. This meant that the crisis mechanism created in May 2010 amounted to total funds of 750 billion euros. While support for Greece was provided from the EFSM, the first Euro Area member state to use the newly established EFSF facility was Ireland, in November 2010. The total Irish package of financial assistance amounted to 85 billion euros. In April 2011, Portugal also negotiated a rescue package, which was formally agreed in May 2011, amounting to 78 billion euros, 26 billion of which were financed under the EFSM, another third by the EFSF, and the final third by the IMF. All three rescue packages were conditional on fiscal consolidation strategies and adjustment programmes.

The EFSF has had already had two lives. The original EFSF (EFSF-1) was decided in May and set up in June 2010. However, it soon became clear that to obtain AAA rating for bonds issued to finance the EFSF, cash guarantees had to be given, which handicapped the fund's lending capacity. In December 2010 the guarantee commitments were increased from 440 billion to 780 billion. Finally, in December 2010, the European Council created a permanent crisis mechanism, the European Stability Mechanism (ESM). This is expected to be merged in 2012 with the EFSF and to replace the latter as a permanent intergovernmental institution. Its purpose is to provide loans to the Euro Area member states and it may exceptionally intervene in debt primary markets.

However, as the frequent changes to the arrangements show, these 'monetarist' remedies have often come too late or have not gone far enough, because fundamentalists have been willing to accept only measures that

---

4. The legal basis for the EFSM is article 122 TFEU and the Council regulations no. 407/210 of 11May 2010.
5. EFSF, available at: http://www.efsf.europa.eu/attachments/efsf_guideline_on_interventions_in_the_secondary_market.pdf [accessed 01.03.2012].

were consistent with their own fundamentalist view while rejecting the liquidity explanation. Thus, the simple and elegant solution of issuing Eurobonds to deal with the liquidity shock has been vetoed repeatedly by the German government. In addition, chaotic communication by governments has aggravated uncertainty in financial markets, because loose talk by member states has often put into doubt their political commitment to safeguard the euro (Collignon et al. 2011).

Second, fiscal policy has been tightened. While monetarists have always been running behind the curve, fundamentalists were successful in imposing reforms to deal with policy misbehaviour. They strengthened fiscal discipline by improving the coordination of national budget policies and reducing discretion in enforcement of the Stability and Growth Pact (SGP).[6] They created the *European Semester*, which sets in motion a communication cycle between member states' budget planning processes. They have also adopted a 'reverse voting mechanism' to facilitate the imposition of sanctions against violations of the SGP (European Parliament 2011). Furthermore, in December 2011, the European Council agreed on a new fiscal pact, the so-called *Euro Plus Pact*, which will be adopted under a separate Treaty by 25 member states (not the UK or the Czech Republic). Governments are also expected to introduce 'debt brakes' into their national budget processes, often through constitutional amendments. It remains to be seen whether these new procedures, which are essentially a form of voluntary policy coordination among sovereign member states, can ever deliver consistent fiscal policies. However, this is not the object of this paper.[7]

Third, macroeconomic imbalances have become part of policy makers' 'common concerns'. These reforms are aimed at restoring competitiveness by correcting imbalances in the Euro Area, because it has been noticed that member states with difficulties regarding public (Greece, Portugal, Italy) or private (Spain, Ireland) debt have also run large current account deficits. The fundamentalist thesis is that current account imbalances reflect a lack of competitiveness and unsustainable national

---

6. For details see European Commission 2010 and European Council 2010.
7. For an assessment of the sustainability of public debt in Europe, see Collignon 2012; for a critique of Europe's intergovernmental governance see Collignon 2003; 2008; Collignon and Paul 2008. ECB president Jean-Claude Trichet (2011) has proposed the creation of a European Treasury, which could reduce the excessive surplus of intergovernmentalism, although such an institution needs to be firmly grounded in the democratic legitimacy of Europe's citizens.

macroeconomic policies. In principle, this reflects progress in the economic governance of the Euro Area. Ignoring how macroeconomic developments in member states have affected the Euro-aggregate has always been a major weakness in Europe's economic governance (Collignon 2008). Even the European Commission, whose purpose it is to 'promote the general interest of the Union and take appropriate initiatives' (TEU, art.17), has often looked at the Euro Area as if it were an assembly of states instead of treating it as an integrated monetary economy. Hence, the devil is in the detail. In principle, it is a good idea to monitor macroeconomic developments in the Euro Area, but the practical implementation of the idea matters substantially for finding ways out of the crisis.

All these reforms together amount to a substantial transformation of the Euro Area's economic governance. Yet most of them have been ad hoc responses rather than a carefully considered policy framework. They are still far from a genuine 'economic government'. Some of these measures may make a real difference, some may be irrelevant, and some could be harmful. The fiscal policy rules imposed under the new pact have already been scrutinized widely and are far from being convincing from a theoretical or empirical point of view. However, the newly created *Excessive Imbalance Procedure* has been little discussed. We will see that, in a currency area, not all imbalances are unsustainable and some may actually turn out to be benign. Nevertheless, the issue of imbalances within the Euro Area is for real; we therefore need to clarify their causes and role in a currency union before solutions can be prepared.

The Excessive Imbalance Procedure

Macroeconomic imbalances take many forms: they may appear as inflation differentials, diverging cost levels, increasing income gaps between regions, unemployment clustering, and social inequalities. In international economics, imbalances are frequently associated with balance-of-payment items, such as current account deficits and capital flows, which contribute to changes in foreign currency denominated assets and debt. The Maastricht Treaty initially stipulated monitoring of macroeconomic developments in the Euro Area under the Broad Economic Policy Guidelines (BEPG). This has proved to be too weak. At the end of 2011 the so-called 'six pack' legislation produced a sprawling package of new rules intended to (1) tighten economic coordination among Euro Area governments; (2) prevent governments from building up excessive debts and

(3) monitor economic imbalances between member states in order to send early warnings at the build-up of asset bubbles (Commission 2010).

We will concentrate our discussion on this third point.

The major innovation is the *Excessive Imbalance Procedure* (EIP), which aims at preventing and correcting macroeconomic imbalances. This new instrument is largely a copy of the *Excessive Deficit Procedure* (TFEU, art. 126), which was translated into secondary legislation by the Stability and Growth Pact (SGP). Like the SGP, the EIP has two 'arms', a corrective and a preventive one.[8] The *corrective* arm closely resembles the Stability and Growth Pact. Once the EU Commission has formally established that a member state's imbalance is 'excessive' and the Council has agreed, a non-interest bearing *deposit* amounting to 0.2% of GDP will be imposed. This deposit would be converted into a *fine* in the event of non-compliance with the Commission's recommendation to correct the imbalance. If a member state repeatedly fails to act on recommendations or does not present a corrective action plan sufficient to address excessive imbalances, it will have to pay a yearly fine. The fine should, as a rule, be equal to 0.1% of GDP of the member state concerned. Hence the corrective arm looks fairly constraining. However, it is somewhat paradoxical to copy the *Excessive Deficit Procedure* to deal with macroeconomic imbalances, given that fundamentalists claim that the EDP has not been able to prevent the sovereign debt crisis. Why should such a procedure work for avoiding macroeconomic imbalances?

The *preventive* arm is part of the 'European Semester' when member states are coordinating their budget plans. At its core stands the annual Alert Mechanism Report (AMR), which will identify countries and issues for which an in-depth review is deemed necessary. Based on a scoreboard, the European Commission examines economic indicators that identify what it calls 'internal and external imbalances'. Different thresholds apply for Euro Area and non-Euro Area member states. Here is a list of these indicators: (see European Commission 2012 and 2012a)

---

8. See: Regulation (EU) No 1175/2011 of the European Parliament and of the Council of 16 November 2011 amending Council Regulation (EC) No 1466/97 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies; and: Regulation (EU) No 1176/2011 of the European Parliament and of the Council of 16 November 2011 on the prevention and correction of macroeconomic imbalances.

External imbalances and competitiveness:

- 3-year average of the *current account balance* as a percentage of GDP, with a threshold of +6% and - 4% of GDP;
- *Net international investment position* (NIIP) as a percentage of GDP, with a threshold of 35%; [the NIIP shows the difference between a country's external financial assets and external financial liabilities];
- 5-year percentage change of export market shares measured in values, with a threshold of 6%;
- 3-year percentage change in nominal *unit labour cost* (ULC), with thresholds of +9% for euro area countries and +12% for non-euro area countries;
- 3-year percentage change of the *real effective exchange rates* (REER) based on HICP deflators, relative to 35 other industrial countries, with thresholds of -/+5% for Euro Area countries and -/+11% for non-Euro Area countries.

Internal imbalances:

- Private sector debt as a percentage of GDP with a threshold of 160%;
- Private sector credit flow as a percentage of GDP with a threshold of 15%;
- Year-on-year changes in deflated house prices, with a threshold of 6%;
- Public sector debt as a percentage of GDP with a threshold of 60%;
- 3-year average of unemployment rate, with a threshold of 10%.

The major problem with this *Excessive Imbalance Procedure* is that it conducts policy surveillance using tools familiar from international economics but which have lost their significance in the Euro Area. The reason for this problem is a misunderstanding of the functional mechanism of a currency area. Monetary union is often discussed as if it were a fixed exchange rate system with a same currency denomination.[9] Some

---

9. An amazing example of such distorted views is the Sinn and Wollmershaeuser (2011) paper which places EMU on the same footing as Bretton Woods. If already important economists within the EU do not fully understand how monetary union works, the confusion is even worse outside Europe. In 2009, a leading Chinese investment banker told me that Chinese decision-makers knew Obama and the US Constitution, but did not understand how Europe was governed. After the debt crisis erupted, an ECB board member was asked at a public meeting in Kyoto in 2010 whether it 'was not time to devalue the Greek currency *within* the euro'!

commentators believe that it should be possible to take a holiday from such a system, just as member states used to join and exit the European Exchange Rate Mechanism (ERM) (Feldstein 2010). But this is wrong. Monetary union is not a currency board. The difference in the functioning of fixed exchange rate mechanisms and a single currency is explained in detail below. My point here is that, with the exclusion of unit labour costs, none of the 'external' indicators on the score board are providing a correct assessment of imbalances in the Euro Area.

The proposed indicators use concepts derived from national statistics,[10] which are no longer consistent with the functioning of monetary union. For example, to speak of member states' 'external' balances when a large share of the statistically recorded transactions originate from within the Euro Area makes only very limited economic sense. There is nothing 'external' about imbalances within the same currency area. Why should one care about current account balances between Germany and Italy, but not between Bavaria and Saxony or Sicily and Lombardy? This question is at the core of the Euro crisis, but few observers address it correctly and the implicit answers contained in the EIP are mistaken.

Similarly, the notions of *Net international investment position* (NIIP), or *net foreign asset* or *external debt* of a 'country' are irrelevant in a monetary union. Why should one call 'domestic debt' a credit given to a local firm by a Greek bank which gets its money from the ECB, but 'foreign debt' a credit to the same borrower from a German bank which also gets its money from the ECB? From a macroeconomic point of view this makes no sense, for the entire banking system has equal access to base money. From a microeconomic point of view it may, of course, be reasonable to assess the solvency of banks in national jurisdictions, at least as long as banks are controlled by national financial supervision; but this has nothing to do with macroeconomic imbalances. Hence, applying the familiar notion of *external* balances to members of monetary union confuses economic, political and juridical concepts and prevents us from taking the right decisions for overcoming the crisis, because it creates a chauvinistic bias for policy makers in the Euro Area.

---

10. By 'national' statistics we do not refer to the way they are collected, but to the conceptual issue of whether or not the recorded transactions are inherently national in character.

Old thinking and chauvinism

Dictionaries define *chauvinism* as 'prejudiced belief in the superiority of one's own gender, group or kind', or 'a blind belief in national superiority'. Hannah Arendt (1945) said of chauvinism that it 'almost naturally springs from the old idea of the national mission [(...) which] might be interpreted precisely as bringing its light to other, less fortunate peoples that, for whatever reason, have miraculously been left by history without a national mission'. Some statements made during the European debt crisis would doubtless fit such a description.

However, Ravenscroft (2005) has defined chauvinism in a simpler way by describing it as 'a bias in favour of the familiar'. This is the sense in which I will use the term chauvinism in this paper. Chauvinism keeps people stuck in old patterns of thinking.

The 'bias in favour of the familiar' results from **taking for granted the nation state framework for policy making, even if the economy has become integrated in a single market with a single currency**. The bias can lead to important policy errors because it supports the idea that member states can solve policy problems on their own, when in fact a coherent European framework for centralised European macroeconomic policies is required. For example, it is has sometimes been argued that bailing out distressed debtors was not desirable because 'every government has to make order in its own house'. The implication here is that member states are the appropriate institutional framework for keeping the European house in order because national governments are familiar with what is good for their people. However, on the same basis, the European house has many flats, and someone should be responsible for the common parts. National governments are much less familiar with the latter, and Europe has no authoritative agent to manage them. Hence, the familiar idea that member states are in charge of governing Europe has become an obstacle to the improvement of European welfare.

Chauvinism is an attitude that feeds the resistance to more decision-making at the European level and is often justified on grounds of the *subsidiarity principle*. In reality, however, the resistance to setting up a macroeconomic government at the European level constitutes a violation of the subsidiarity principle which states that a central authority should perform those tasks which cannot be performed effectively at a more immediate or local level. Economic theory has argued for over half

a century that macroeconomic stabilisation policies need to be central-ised at the same level as monetary authority (see Musgrave and Mus-grave 1973). Retaining competences for macroeconomic policies at the familiar national level is therefore contrary to subsidiarity.

Given 400 years of European history, we are all perfectly familiar with nation states, but after only 10 or 12 years of existence the euro is hardly yet a familiar institution. Half a century ago, Europe needed to heal its wounds from two disastrous world wars, crimes against humanity and intolerable dictatorships. Overcoming the shadows of the past required European policies to be firmly grounded in the democratic legitimacy of nation states and it is, therefore, not surprising that the mechanisms of a unified currency area are often misunderstood and that policy mak-ing is biased in favour of nation states. This bias must be overcome by lucid analysis, for otherwise chauvinism will generate economic and social instability. Prisoner dilemmas and moral hazard will systemati-cally generate coordination failure. Efficient policies for managing the integrated market and the Euro Area thus become increasingly hard to achieve. These diminishing returns from 'output legitimacy', in other words, from the fact that people have consented to European integration because their welfare was improved, are gradually undermining the ac-ceptance of the European project and could ultimately destroy the Euro-pean Union (Collignon 2003).

In fact, the bias in favour of the familiar confuses the European politi-cal with the economic sphere. The political sphere is characterised by institutional and political heterogeneity, where national constituencies legitimize and impose different political constraints on member states. This heterogeneity creates a holistic sense of 'us' against 'them' and an attachment to separate identities instead of unified interests; it prevents thereby the emergence of genuine European democratic legitimacy. The economic sphere, on the other hand, is defined by monetary homogene-ity, because the European Central Bank sets a common domestic budget constraint for the entire Euro Area by determining money supply. At the same time, the ECB's foreign exchange reserves constitute the Ar-ea's common external budget constraint. These political and economic spheres often interact inconsistently in the context of Europe's inter-governmental policy framework. The conflict between the two spheres is fairly obvious with respect to budget policies, where the Stability and Growth Pact has become nearly synonymous with coordination failure; but the inconsistency is now also dominating the proposals for avoid-

ing excessive macroeconomic imbalances, because the chauvinistic bias justifies the assumption that the member states in the Euro Area are still subject to *separable* national budget constraints. This is wrong. To understand why, we need to recall the meaning of the concepts of current accounts and balance of payments.

1.2 Current accounts in EMU: a category mistake

Conceptual issues

According to the IMF Balance of Payment Manual (1993:6), 'the balance of payments is a statistical statement that systematically summarizes, for a specific time period, the economic transactions of an economy with the rest of the world'. The trouble starts here. What is an economy? If we assume with chauvinistic bias that an *economy* is a *country* is a *state*, then we focus on the juridical aspect of an economy. The IMF (1993:7) takes that approach here: 'a country's economic territory consists of a geographic territory administered by a government'. However, that does not help in the European context, for while there is agreement that the Euro Area is not administered by a government, one could argue that it should be. In fact, the state-like nature (or not) of the EU has long been debated, without any conclusion having been reached.

By contrast, if we focus on the *payment* aspect of the economic transactions, then *money is the distinguishing category*.[11] The balance of payments records payments for goods, services and financial assets which need to be converted from *foreign* into domestic currencies. *What is 'foreign' is determined by the fact that foreign currency is not accepted as a domestic means of payment*. Which of these two interpretations of the balance of payments one uses depends on the purpose. For the economic analysis of a functioning market economy, the monetary aspect should dominate. For policy-related interference by governments and regulators in the economy, one may have to refer to jurisdictions.

Payments in foreign currency for economic goods and services are recorded, after conversion into domestic values, in the *current accounts*

---

11. Keynes (1930) famously defined money as a means of payment which is 'the ultimate asset that extinguishes debt contracts'.

of the balance of payments; a payment received is a credit, a payment going out a debit. The changes in financial assets and liabilities appear in the *capital accounts*.[12] The net difference between these two flows determines the changes in foreign reserves. Current account payments are related to 'real' transactions, such as imports and exports, but also factor income for labour and capital, or governments transfers like foreign aid, and so on. Cohesion and structural fund payments in the European Union are such transfers. The financial flows recorded in the capital accounts refer to foreign direct investment, portfolio investment and other financial transactions of the domestic economy with the rest of the world. Net foreign reserves are assets in the balance sheet of the central bank and their liability counterpart is central bank money or base money (M0).[13] M0 consists of banknotes (cash) and deposits which commercial banks hold with the central bank. (See Box 1.)

Box 1   Balance of payments and money

For a given economy, the demand and supply of foreign currency is determined by the following payment streams: demand for foreign currency is derived from the need to pay for imports and also for foreign financial assets, in other words, for capital outflows; supply of foreign currency is obtained by selling goods and services abroad (and receiving income for labour and capital), that is, exports, plus foreigners buying financial assets denominated in domestic currency, namely, capital inflows. Hence, we have:

Demand: $IM + K_{out}$
Supply: $EX + K_{in}$

At a given exchange rate, the excess supply of foreign currency is accumulated by the central bank and shown in its balance sheet as the change in net foreign assets:

---

12. The nomenclature of the IMF distinguishes between financial accounts and capital accounts. The former cover most of the items, which traditional theory calls capital flows, while the IMF capital account records mainly capital transfers, which are usually very small compared to other BOP transactions, except in rare cases where a country is the beneficiary of substantial debt forgiveness.

13. In the Euro Area, governments have a claim on ECB reserves in proportion to their share capital.

$$\Delta NFA = EX + K_{in} - (IM + K_{out}) = (EX-IM) + (K_{in} - K_{out})$$

where $(EX - IM)$ stands for the current accounts and $(K_{in} - K_{out})$ for the balance of capital accounts. A surplus in the capital accounts is equivalent to foreign borrowing, a deficit of foreign lending.

Excess of supply of foreign currency would lower the price of foreign currency and cause the domestic currency to appreciate in value. The central bank could stabilise the exchange rate by buying up the excess supply of foreign currency and as a consequence it would issue central bank money. Inversely, if there is excess demand for foreign currency, the exchange rate would depreciate or the Central bank will need to sell net foreign assets. This is clear from a simplified central bank balance sheet:

Central bank balance sheet

Assets	Liabilities
Net foreign assets (NFA) net lending	currency
to domestic banks	commercial bank deposits

If the Central bank buys NFA and keeps net lending to domestic banks constant, M0 will increase. The opposite happens if it sells foreign assets. It could, however, sterilise the purchase of NFA by reducing net lending to the domestic economy by exactly the same amount by which NFA have increased.

If the current account balance is in deficit, payments for foreign goods or services have exceeded the income received from the sale of goods and services abroad. This is possible only when foreigners grant credit to domestic operators, or when the latter are able to use previously accumulated foreign assets to make payments. However, a large portion of these foreign assets constitute credit claims on foreign economies. Thus, it takes two to tango: every borrower must have found a lender and every surplus creates a deficit somewhere else.

Granting credit to an importer is equivalent to a foreigner acquiring a claim on the domestic economy, in other words, buying a financial asset denominated in domestic currency. Note that in balance-sheet terms,

the inflow of capital is equivalent to a net increase of liabilities to non-residents. It follows that, if foreign reserves are to remain constant, an excess of imports over exports, that is, a current account deficit, implies a net import of capital, in other words, a surplus in the capital balance. The sum of current accounts and capital accounts is then zero. Similarly, a current account surplus implies an outflow of capital, which means an increase of asset claims on the rest of the world. The net position of external liabilities and assets is the economy's *net international investment position* (NIIP) vis-à-vis the rest of the world.

In the old days, when payments were settled by transferring gold, a current account surplus was identical to an inflow of gold reserves, which simply increased the country's assets. Surplus countries got rich, because they accumulated gold and silver (*specie*), deficit countries became poor because they lost money.[14] For example, in the fifteenth and sixteenth century, Florence ran huge current account surpluses by exporting wool and silk textiles and earned gold and silver in return which was generously spent (*con larghezza*) on the Brunelleschis and Michelangelos of the time. Once the trade surplus disappeared, Florence's glory was over. Today, the payment function of *specie* has been replaced by 'capital flows', in other words, by claims and liabilities recorded in balance sheets, and it is sometimes suggested that the capital balance is simply the mirror of the current account. This view implies that any current account deficit is financed by an inflow of foreign capital, although an economy could also make payments in excess of foreign income by running down previously accumulated foreign reserves if capital flows are insufficient to finance the current account deficit.[15] Technically, it is therefore not the sum of current accounts and capital flows, but the *balance of payments* that is always zero, because the change in foreign reserves is the balancing item, which drives a wedge between the current account and capital balance.

With the liberalisation of capital markets, cross-border movements have developed their own logic and dynamics and are often dissociated from current account transactions. Investors respond rapidly to all kinds of economic and political news and this makes capital movements highly

---

14. Early mercantilist writers were concerned about the loss of money caused by payment outflows. See Leigh, 1974. Interestingly, the mercantilist logic derives from the assumption that the supply of money is fixed at the world level, while trade imbalances redistribute it across countries. We will see that this is exactly the same mechanism that operates in monetary union.

15. In the opposite case, it would accumulate foreign reserves.

volatile. If central banks were to refuse to intervene in foreign exchange markets and stop buying or selling foreign currency, the exchange rate would also become highly volatile. This is incompatible with a stable competitive environment in a single market. Hence, with free movements of capital, central banks have to become very active players in foreign exchange markets, especially if the currency is relatively small. But this need for activism increases the risk of running out of reserves when the economy is hit by substantial shocks. Such shocks can therefore cause large exchange rate distortions. The European Monetary System, which functioned from 1979 until the start of monetary union in 1999, tried to solve this problem by granting participating central banks unlimited short-term credit. China and other Asian economies have learned the lesson of the Asian Financial Crisis in the late 1990s and have accumulated large reserves ever since. The reason is that a sudden or sustained outflow of funds may reduce foreign reserves to a point where the central bank can no longer guarantee domestic agents the access to foreign currency. This is equivalent to a case of insolvency with respect to claims on foreign currency. Markets will devalue the domestic currency and this effectively constitutes a market-induced 'haircut' of the value of domestic asset relative to foreign currency. Hence, the balance of payments is important for investors in countries with different currencies, *because the net foreign financial asset position determines the country risk, which is ultimately a currency risk*. Country risk means here that each and every debtor and creditor is equally affected by macroeconomic developments.

Using national statistics from the balance of payments and current accounts to assess macroeconomic imbalances between member states in a currency union is problematic, because these statistics do not differentiate between domestic (the euro) and foreign currency; they aggregate intra-Euro Area and external cross-border payments and therefore mix up what needs to be distinguished. This can lead to wrong conclusions about the sustainability of current account deficits. The proper distinction is between Euro Area and Non-Euro Area payments. Unfortunately, in spite of the need for these statistics, Eurostat does not report them. The *Excessive Imbalance Procedure* is therefore based on a conceptually mistaken information set. It commits a category mistake.[16]

---

16. A category mistake is a semantic or ontological error by which a property is ascribed to a thing that could not possibly have that property.

The proper way of assessing macroeconomic imbalances would require distinguishing three forms of payments: (1) local payments within the same state; (2) intra-Euro Area cross-border payments between member states and (3) external payments in foreign currency. The main distinction of what is 'internal' and 'external', including what is external debt, must be derived from the function of money and not from familiar conventions about statistical reporting. In this context, monetary policy sets the ultimate budget constraint by keeping domestic base money scarce,[17] while local and intra-Euro Area payments will allocate *money deposits and wealth* across 'regions'; external payments will determine the aggregate foreign reserve position of the Euro Area.

Box 2 shows how the three payment streams are connected. Within the same currency area, the surplus of one 'region' must always be equal to the deficit of another. Furthermore, imbalances in commercial transactions between firms can be compensated (or reinforced) by transfers between households (for example, remittances of wages and profits) or governments. In the European Union regional policy transfers are the most important element of such intergovernmental transfers. As far as the external balance of the Euro Area's current accounts is concerned, the surplus of one region can balance the deficit of another, so that net foreign assets of the Euro Area remain fairly constant.

Box 2 **Current accounts in the Euro Area**

Let us assume that the Euro Area consists of two jurisdictions or regions, i and j. In each of them, firms, households and governments make payments in the same currency locally and across borders from one region to the other; by contrast, external transactions are made in foreign currency. Assume we can aggregate these three sectors for each 'region'. The payments can then be represented by Table 2.1.

---

17. Technically this means that the ECB must control the supply of money in such a way that the long-run real interest rate is positive, reflecting liquidity preference. Otherwise, money may lose its function as the final-settlement asset. See Manning, 2009: 32 and Riese 2004.

Table 2.1

Expenditure	Region			
	i	j	x	
Fi	Fii	Fji	Fxi	
Fj	Fij	Fjj	Fxj	Firms
Fx	Fix	Fjx	Fxx	
Hi	Hii	Hji	Hxi	
Hj	Hij	Hjj	Hxj	Households
Hx	Hix	Hjx	Hxx	
Gi	Gii	Gji	Gxi	
Gj	Gij	Gjj	Gxj	Government
Gx	Gix	Gjx	Gxx	

Here *F* stands for firms, *H* for households, *G* for governments; payments are made from the first index to the second, hence *Fii* are local payments made by firms in region *i* to other firms in the same region; *Fji* are payments made by firms in *j* to firms in region *i*. Hence, for each sector, the diagonal represents local payments. The first row in each sector records payments to region *i*, the second to region *j* and the third payments in foreign currency to the rest of the world *x*.

The current account balance for each of the two regions as recorded by familiar national accounts is then defined as:

(2.1) CA$_i$: $[(Fij+Fix) - (Fji + Fxi)] + [(Hij + Hix) - (Hji + Hxi)] + [(Gij + Gix) - (Gji + Gxi)]$

(2.2) CA$_j$: $[(Fji + Fjx) - (Fij + Fxj)] + [(Hji + Hjx) - (Hij + Hxj)] + [(Gji + Gjx) - (Gij + Gxj)]$

For each 'region' the current accounts are the net payments of the three sectors into the rest of the currency area and into the rest of the world. But written in this way, the confusion between domestic and foreign currency (which is indexed by x) is evident. The distinction between intra and external balances becomes clearer if one writes:

(2.1a) CA$_i$: $[(Fij - Fji) + (Hij - Hji) + (Gij - Gji)] + [(Fix - Fxi) + (Hix - Hxi) + (Gix - Gxi)]$

where the first square bracket represents trans-border payments within the Euro Area and the second external payments in foreign currency.

The current account balance for the currency area as a whole is totally dependent on foreign currency transactions:

(2.3) CA $_{i+j}$: $[(Fix + Fjx) - (Fxi + Fxj)] + [(Hix + Hjx) - (Hxi + Hxj)] + [(Gix + Gjx) - ((Gxi + Gxj)]$

which is the sum of net payments between domestic firms, households and governments and the rest of the world. If we ignore transfers from factor income and between governments, it is immediately apparent that the current account deficit with the non-Euro Area of one region can easily be balanced by the surplus of another:

(2.4) **CA $_{i+j}$** $= (Fix - Fxi) + (Fjx + Fxj)$

However, the balance of cross-border transactions within the Euro Area is a mirror image between the two member states:

(2.5) intrabalance $(Fij - Fji) + (Hij - Hji) + (Gij - Gji) = - [(Fji - Fij) + (Hji - Hij) + (Gji - Gij)]$

In other words, the surplus of one member state in the Euro Area is identical with the deficit all the other member states have with the first. Furthermore, it is clear that if the deficit is driven by commercial transactions between firms $(Fij - Fji)$, it can be balanced by a surplus of factor income (households) across borders $(Hij - Hji)$, or by net transfers from government to government $(Gij - Gji)$. This is the reason why it is often argued that imbalances need a fiscal transfer union. However, this focus on current accounts neglects the role of capital flows, which are the mirror image of commercial transactions.

Standard economic textbooks assume that the domestic economy is identical with an autonomous jurisdiction, which implies that different jurisdictions (countries) have different currencies. The relation between such economies is defined by the exchange rate regime and, given that the exchange rate depends on supply and demand of foreign currency,

it is the net foreign assets accumulated by the ECB that determine the 'country' risk for the Euro Area as a whole. National current account positions with the rest of the world are relevant only insofar as they contribute to the aggregate.

That the country risk depends on exchange rates is clear when one considers that current account deficits increase the stock of *external indebtedness (liabilities) in foreign currency* and therefore lower an economy's net assets, in other words, the *net international investment position* (NIIP). Thus, with persistent current account deficits, the external debt, that is, debt denominated in foreign currency, will grow until the question arises concerning whether and for how long the accumulation of such debt will remain sustainable.[18] The problem becomes acute when foreign lenders are no longer willing to grant credit to the domestic economy or even *withdraw their capital, because this will drain the central bank's reserves.* It was pointed out above that if a government wishes to stabilise the exchange rate relative to an important trade partner,[19] the central bank will have to buy the excess inflow of foreign currency and accumulate reserves, or, in the opposite case, to use existing reserves to accommodate the excess demand for foreign currency. This means that central bank controls external relations by means of exchange policy; but clearly, national central banks no longer can or need to do so in monetary union.

I have discussed this mechanism of foreign reserves and balance of payments so extensively because it helps us to understand how differently a monetary union works from a fixed exchange rate policy. Within a currency area, the problem of foreign reserves does not exist. By definition

---

18. For example during the crisis of the European Exchange Rate Mechanism in 1992-3, the UK and Italy ran out of foreign reserves and the foreign exchange markets adjusted to the excess demand for foreign currency by devaluing sterling and lira. By contrast, the Banque de France also ran out of reserves, but the Bundesbank was willing to lend unlimited amounts to France, because it rightly considered that France was able to repay these loans.

19. The need to avoid exchange rate instability in Europe's Single Market is the main argument for the existence of a single currency. See Padoa-Schioppa 1987.

20. In an influential article, De Grauwe (2011) has argued that members of the Euro Area effectively issue debt in a foreign currency because they cease to have control over the currency in which their debt is issued and can no longer force the central bank to buy their debt. However, in this case, the issue is not whether the euro is domestic or foreign currency, but simply that the central bank is independent and money supply therefore exogenous for policy makers. In other words, De Grauwe challenges the idea that the ECB determines the hard domestic budget constraint in the Euro Area.

there is no exchange risk when every actor uses the same currency and payments between different jurisdictions are no longer 'foreign'.[20] A payment from Hamburg to Rome is as much a domestic euro transfer, as a payment from Boston to San Francisco is a domestic dollar transfer. There is also no exchange rate.[21] A euro is a euro. There are no German or Greek or Irish euros.[22]

In this respect, a currency area functions somewhat like the species-flows mechanism in the old gold standard: a transaction is finished when money is paid. This becomes perfectly clear when one considers cash payments. If I take cash out of my bank account in Pisa, it makes no difference if I buy a book in Rome or Paris. The book seller here or there will simply put the money into his own banks and the 'current account deficit' between Pisa and Rome or Pisa and Paris is settled by the transfer of cash. I do not have to go and teach in Rome or Paris in order to pay back the Pisan current account deficit. By contrast, what makes a difference, if I buy a book in London and therefore affect the trade balance between the Euro Area and the UK, is that, within the Euro Area, euros are the accepted legal settlement asset, while outside the Euro Area they are not.

The example of the cash payment is intuitively simple and shows the basic structure of how a currency area works. Modern economics, however, are based on bank transfers and this fact makes payment operations more complex, although this complexity does not change the logic. Domestic money (M1 or M3) is supplied by the banking system when banks grant credit to their clients. However, banks need liquidity reserves (M0), which they obtain when the central bank grants them credit. With fiat money, liquidity reserves are based on trust (that is, credit); they are no longer derived from the exchange of goods against gold and silver. As a result, within a given monetary economy there is a *specific credit risk for each debtor*, who has to repay a credit in the same currency, but there is no collective country risk. Individual borrowers may become

---

21.   Relative prices may, of course, differ and this is sometimes called the real exchange rate. I will argue in the second part of this paper that relative cost conditions are crucial for assessing competitive advantages and remedying macroeconomic imbalances. However, explaining relative prices within the same currency area is fundamentally different from economies with different currencies.

22.   Such rather adventurous interpretation is found in the paper by Sinn and Wollmershaeuser, 2011.

insolvent and unable to repay their debt and this failure could spill over to other banks. This contagion problem is particularly important when a sovereign debtor loses creditworthiness, because local banks often hold a large part of their jurisdiction's government debt in their portfolio. Nevertheless, *the credit risk is individual and not holistic*. If economic agents in a member state of the Euro Area collectively spend more than they earn, they get credit from banks in domestic currency, because any solvent commercial bank has in the last resort access to the refinancing mechanism of the central bank. Hence, no 'member state' can ever run out of reserves, because foreign reserves are collectively owned by the Eurosystem and individual banks must hold minimum reserves in domestic currency.

This is the reason why the balance of payments has changed its nature in European monetary union. And the flows recorded for individual member states have lost their informational function. This raises the following question: how does monetary union work if it must be institutionally distinguished from a fixed exchange rate system?

What is a monetary union?

What defines the currency area? The answer is simple: a currency area is the territory where credit contracts can be enforced and extinguished by paying the legally defined and generally accepted currency. This currency – that is, base money – is issued by the central bank. To be precise, it is created when the central bank gives a credit against collateral to a commercial bank or buys outright financial assets, such as foreign assets. Either banks hold this money as deposits on their central bank account, or they exchange deposits against bank notes which they supply to their clients. Hence money proper is the liability of the central bank.

Banks and holders of bank notes use this central bank liability as the ultimate settlement asset when they make payments. In fact, a payment is nowadays defined as the transfer of the central bank liability which is 'legal tender'. In early economies, 'specie' (gold and silver) was the settlement asset, but soon merchants understood that they could make payments without having to hand over metal. They deposited the settlement assets with a trustworthy bank, which issued 'banknotes' against them. Transferring these certificates was effectively 'as good as' settling in species. Over time banks started to accept claims on each other and

payments could be made more securely by having a bank of banks – in other words, a central bank – so that the payments from one bank to another became book transfers on the ledger of the central bank. Banks also realised that they could use the deposits of their clients in the same way to make payments. They could then net out the payments received and sent out to other banks on behalf of their clients, and then needed to settle (in other words, to pay) only the net amounts owed to another bank. Nevertheless, the ultimate settlement asset is always the liquidity commercial banks get from the central bank. We call this liquidity base money (M0) and the deposits used for settlement of the broader public are either called 'narrow' (M1) or 'broad money' (M3).

The Euro Area functions exactly as any other currency area, even if its legal framework is not established by a state, but by a treaty concluded between different states. When European Monetary union started on 1 January 1999, the euro became legal tender in the participating member states (TEU, art. 3.4). Previously existing monetary laws in member states were abrogated. The European Central Bank (ECB) was set up as the ultimate organ and head office for the conduct of monetary policy. The existing national central banks (NCB) were effectively merged with the ECB to form the *Eurosystem*.[23] In business, a merger is a combination of two companies where the less important company loses its identity and becomes part of the more important corporation, which retains its identity. This is precisely the status of NCBs, which the ECB uses for the execution of its policies, even if the national central banks are the shareholders of the ECB.[24]

The Eurosystem is the only institution to issue money. The Treaty (TFEU art.126.1) stipulates: 'The European Central Bank shall have the exclusive right to authorise the issue of euro banknotes within the Union. The European Central Bank and the national central banks may issue such notes. The banknotes issued by the European Central Bank and the na-

---

23. A broader cooperative framework, the European System of Central Banks (ESCB), was also set up for non-participating central banks in EU member states.

24. TFEU, 282.1: 'The European Central Bank, together with the national central banks, shall constitute the European System of Central Banks (ESCB). The European Central Bank, together with the national central banks of the member states whose currency is the euro, which constitute the Eurosystem, shall conduct the monetary policy of the Union.' See also TFEU, Protocol No 4, *On the Statute of the European System of Central Banks and of the European Central Bank, art 1*. The Eurosystem did not exist as a genuine organ before the Lisbon Treaty.

tional central banks shall be the only such notes to have the status of legal tender within the Union.' But the ECB and the Eurosystem also function as the *bank of banks*, as article 17 of the Protocol says: 'In order to conduct their operations, the ECB and the national central banks may open accounts for credit institutions, public entities and other market participants and accept assets, including book entry securities, as collateral.' In addition, the Treaty (TFEI, art 127.3) and its Protocol 4 (art. 3) explicitly stipulate the joint task to 'promote the smooth operation of payment systems'.

The Treaty is also clear how money is created (Protocol 4, article 18.1): 'In order to achieve the objectives of the ESCB and to carry out its tasks, the ECB and the national central banks may:

- operate in the financial markets by buying and selling outright (spot and forward) or under repurchase agreement and by lending or borrowing claims and marketable instruments, whether in euro or other currencies, as well as precious metals;
- conduct credit operations with credit institutions and other market participants, with lending being based on adequate collateral.'

Finally, the ECB has legal personality and is independent from all other institutions.[25] While NCBs are 'the sole subscribers to and holders of the capital of the ECB' (Protocol, art. 28), the ECB is liable for all actions of the Eurosystem, and profits and losses are the distributed to the shareholders of the ECB in proportion to their paid-up share capital (Protocol 4, art. 33): 'In the event of a loss incurred by the ECB, the shortfall may be offset against the general reserve fund of the ECB and, if necessary, following a decision by the Governing Council, against the monetary income of the relevant financial year in proportion and up to the amounts allocated to the national central banks in accordance with Article 32.5.'

Hence, there can be no doubt that the Euro Area is a currency area as I have defined it. The monetary economy functions exactly like any other economy, whether it be in Switzerland, the UK or the USA. The legal

---

25. Art.282.3: 'The European Central Bank shall have legal personality. It alone may authorise the issue of the euro. It shall be independent in the exercise of its powers and in the management of its finances. Union institutions, bodies, offices and agencies and the governments of the member states shall respect that independence.'

status of the euro is unambiguous: it is the liability by the Eurosystem as a whole and not by national central banks. It is therefore a serious mistake to interpret money flows within the Euro Area as if they were international transactions recorded in the balance of payments. Worse, to regard European monetary union as equal to Bretton Woods or similar fixed exchange rate arrangements is simply absurd. In fact, European Monetary union is effectively an economic country and member states have become economic provinces of Euroland.

Because it is the bank of banks, the ECB must provide equal conditions of access to the liquidity of the Eurosystem for all commercial banks in the Euro Area. When, for example, a Greek borrower receives a credit, it does not make a difference whether the lender is a Greek, French or German bank, because all these banks either use their local euro-deposits, or borrow from each other in the interbank market or refinance themselves with the ECB under (essentially) identical conditions. By contrast, if a British bank wishes to lend to a Greek borrower, it has to go through the exchange market, convert sterling deposits into euros and this changes the nature of the operation, either by generating exchange rate risk or by affecting the balance of payment. *Hence, the open and unlimited access to liquidity for banks defines European Monetary union as a domestic economy.*

But this has important implications. Maybe the most important is that the familiar distinction between tradable and non-tradable goods loses its importance for the adjustment of imbalances within the currency area. There is no longer a need to switch expenditure from non-tradable to tradable goods. Standard international theory defines the equilibrium real exchange rate as the relative price of tradable to non-tradable goods that results in the simultaneous attainment of internal and external equilibrium. Internal equilibrium means non-tradable goods clear with unemployment at its 'natural' level. External equilibrium is attained when the intertemporal budget constraint, which states that the discounted sum of an economy's present and future current account balances has to be zero, is satisfied (Edwards 1989: 16). But clearly, if the currency union is behaving as an economic country, then the external equilibrium is defined by the intertemporal budget constraint for foreign currency and the equilibrium effective exchange rate is defined only for relative prices between the Euro Area and the rest of the world and not between member states.

This may seem counterintuitive. Most economists would argue that if 'Greece' borrows from 'Germany', it will have to generate future surpluses to pay back the loan, even in monetary union. However, in principle the same logic would apply to geographic units within nation states: If 'Berlin' borrows from the rest of 'Germany', the intertemporal budget constraint would require that 'Berlin' generates current account surpluses in the future, unless the debt is serviced by fiscal transfers. Yet no one cares about these imbalances within nation states. Rightly so, for this 'payback' argument misses the point that neither 'Greece' nor 'Berlin' ever borrows money. Behind these names stand individual borrowers, namely firms, households and public authorities. *Each of them has to satisfy the intertemporal budget constraint individually*, which simply means that the discounted sum of future income in domestic currency must equal the liability undertaken today. There is no collective risk for German lenders to 'Greece' or 'Berlin', because there is no exchange risk; there is only an *individual default risk*.[26]

That the familiar distinction of tradable and non-tradable goods is not relevant for adjusting cross-border imbalances within the Euro Area does not mean that relative cost issues between regions can be neglected. In the second part of this paper, we will look at these distortions. At this point it is important to clarify that a currency union is a payment union where all economic agents use the same means of payment. This has important consequences for the assessment of macroeconomic imbalances.

Do current accounts matter?

We have discussed earlier the conceptual implications of balance of payments and current accounts and argued that they have lost their function in monetary union. Nevertheless, since the beginning of the crisis, a growing number of economists have argued that even in monetary union national current accounts matter (See Giavazzi and Spaventa, 2010; Dullien, 2010; Alcidi and Gros, 2010). The European Commission seems to believe that reducing excessive imbalances of current accounts should be a policy priority. We will now look at their arguments.

---

26. Of course, there may be a systemic risk of contagion, which could be regionally concentrated when local banks keep a high concentration of local assets in their loan portfolio. As long as financial regulation is national based, there may be a positive correlation between individual credit risks on a member state basis, but this is different from a country risk.

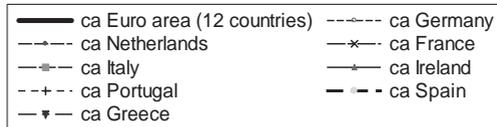Figure 1 **Current account positions relative to GDP**
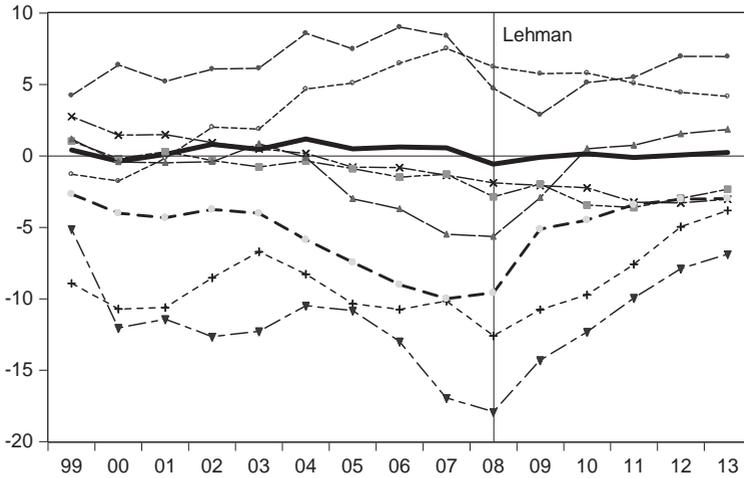
Source: AMECO

Figure 1 shows the evolution for the current account position as recorded by official statistical methods in some selected Euro member states. While the Euro Area as a whole was essentially in balance, there is a clear mirror image between Germany and the Netherlands in the North and Europe's South. Germany and the Netherlands have produced large surpluses, Greece, Portugal, and Spain even larger deficits. Italy and France witness long-run deteriorations in their position. In Ireland, the deficit was short (2004-2008), but large. The mirror image is also manifest in the post-crisis dynamics. The economies in Europe's South (within which I include Ireland) have started to narrow their current account deficits since 2008, Germany has reduced its surplus, while the current account balance between the Euro Area and the rest of the world has not changed substantially.

Initially, the ECB paid little attention to national current account statistics, correctly as I believe. However, there are four arguments which deserve consideration.

First, in the view of the Commission (2012a:9), these statistics indicate a loss in competitiveness that puts into question the sustainability of public debt. We will take up this argument in the second part of this paper and show that, although competitiveness does indeed matter in Europe, current accounts represent a highly dubious indicator in this respect.

Secondly, some economists claim that current account deficits reflect low gross national savings, so that less cash flow is available to service public debt and private investment. Countries with large deficits are therefore relying heavily on foreign capital inflows. This has two consequences: on the one hand, the return on capital in the regional economy would need to be higher in order to attract capital flows. On the other hand, a 'sudden stop' of capital inflows could make it impossible for firms and governments to refinance themselves on the markets and generate a debt crisis (Gros 2010, 2011; Kopf 2011). The Asian financial crisis is often quoted as an example of such a 'sudden stop'. However, while this model may explain financial crises in emerging economies, it is not suitable for explaining developments within the Euro Area, as I will show below.

Third, a stronger argument is related to default risks for public debt. We have seen that current account deficits accumulate external debt. Foreigners will ask for a risk premium when holding domestic debt, because in a democracy it is easier for governments to default on foreigners who have no voting rights than on citizens. Daniel Gros (2011: 2) provides some 'simple evidence' about the relationship between the risk premiums on long-term government bonds in February 2011 and the current account balance averaged over the last three years before the European debt crisis (2007-2009).[27] His simple scatter plot reveals non-linearity in the relation, which he interprets as resulting from risk adverse behaviour by foreign investors. However, as so often, simple evidence is not simple. I have reproduced Gros' scatter plot and the result can be seen as the red line of Figure 2.[28] When we look at the same relation with a lag of

---

27. I find the one-year gap between the last current account and the spread date mysterious, but assume that Gros did not have the most recent current account data.

28. The regression result for 2011 is: $y = 0.012x^2 - 0.2087x + 1.0359$ with $R^2 = 0.7419$ and the result for the same countries in 2007 is: $y = 0.0004x^2 - 0.0093x + 0.0666$ with $R^2 = 0.4997$.

Figure 2 **Current accounts and bond spreads**
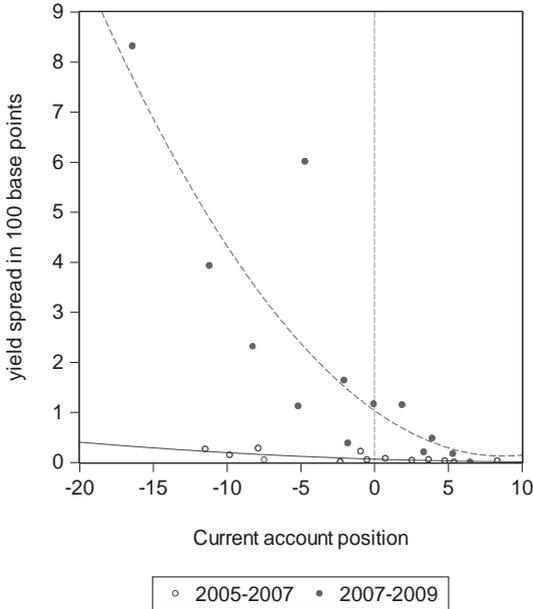
Source: AMECO and Bloomberg

three years, in other words, when we use risk premia for early 2007 and the average current accounts for 2004–2006, we get a very different picture: the risk premia are significantly lower and the relation is essentially linear. Thus, the huge spreads between yields on Greek and German public debt cannot be explained by large current account deficits. The above mentioned monetarist model of a liquidity crisis following shocks does a much better job (See also Collignon *et al.*, 2011).

The fourth – and maybe the queerest – argument about why current accounts matter refers to credit and debit positions in the balance sheets of national central banks. Recently, large imbalances have emerged within the ECB's payment system, called TARGET2, and they

---

29. FAZ, Die Bundesbank fordert von der EZB bessere Sicherheiten; http://www.faz.net/aktuell/wirtschaft/schuldenkrise-die-bundesbank-fordert-von-der-ezb-bessere-sicher-heiten-11667413.html [Accessed 01.03.2012]
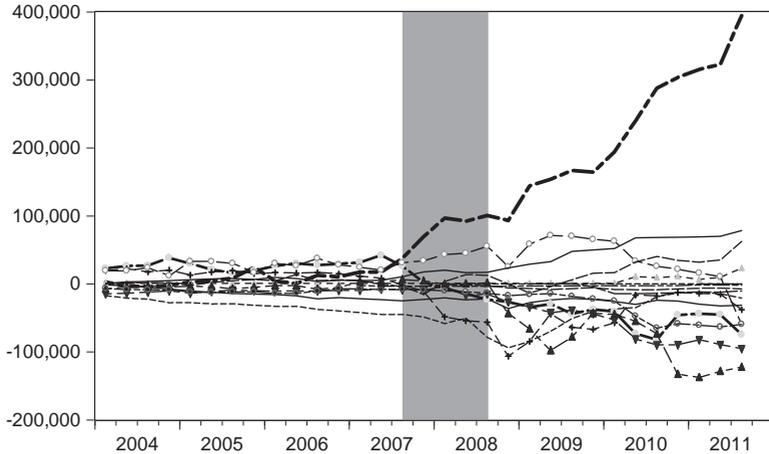
are thought to represent a risk to national central banks. This argument was first developed by Hans-Werner Sinn at the Ifo Institute in Munich (Sinn and Wollmershaeuser 2011) but apparently it has now also reached the President of the Bundesbank Weidmann, who is reported to have written a letter of concern to ECB President Draghi.[29] While some of the claims by Sinn have been dismissed by serious analysts, TARGET2 imbalances do highlight an important mechanism for the functioning of European Monetary union and document how payment imbalances are settled in monetary union even in situations of severe financial instability.

TARGET2 is an acronym for the second generation Trans-European Automated Real-time Gross-Settlement Express Transfer System through which payments by both public and private market participants are recorded, cleared and settled in the Euro Area. The system is operated by the ECB. While the net balances of other members are settled daily or even in an intra-day fashion, Euro Area NCBs can build up gross and net claims and liabilities vis-à-vis TARGET2 over time, in principle without limit. In other words, Euro Area NCBs can borrow from or lend to other Euro Area NCBs through TARGET2. This arrangement is a constitutive feature of European monetary union.

In recent years, a sharp and sustained rise in target imbalances has been observed. Figure 3 shows that until 2007, these balances had exhibited alternating signs and remained within fairly narrow bounds (Deutsche Bundesbank 2011). In August 2007, the US subprime crisis spread to Europe and severe tensions emerged in the Euro interbank market (De Socio, 2011); after the Lehman crisis in September 2008 these tensions sharpened and the European interbank market effectively froze. Commercial banks lost trust and confidence and stopped borrowing from each other; they turned to the Eurosystem for liquidity instead. Since then the Deutsche Bundesbank has accumulated huge TARGET2 credits, while all other NCBs with the exception of Luxembourg, the Netherlands and Finland have gone into debt. The Banca d'Italia used to be a lender as well, until Italy came under pressure from financial markets in late 2011.

Sinn (2011) argues that TARGET2 balances are a measure of cumulated payment imbalances made by the banking system. He claims that they reflect a member state's record of current account deficits 'with other Eurozone nations' (!) that have not been financed by inflows of private or

Figure 3 **TARGET2 balances**

Source: Ifo

—— Austria	- - - - Belgium	– – – Cyprus
– – – Germany	– – – – Estonia	—■— Spain
– ▲· – Finland	– + – France	– ▼– Greece
– ▲ – – Ireland	—○— Italy	—— Luxemburg
- - - - Malta	– – – Netherlands	—◆— Portugal
– – – Slovenia	—— Slovakia	

public capital but rather by the National Central Bank's money creation. He then concludes that the TARGET2 payments system has been operating as a 'hidden bailout' whereby the Bundesbank has lent money to the crisis-stricken Euro Area members via the Target system and claims that TARGET balances are similar to Eurobonds. Notice the chauvinistic confusion: while the argument deals with intra Euro Area payment balances, no distinction is made between current accounts and public budget deficits;[30] 'nations' are bailed out, not specific debtors. Sinn and Wollmershaeuser (2011:1) go even further when they write that in order 'to finance the balance-of-payments deficits, the European Central Bank

---

30. Sinn 2011 first claims that TARGET balances 'reflect past current account balances', and at the end of the paper links these balances to the issuing of Eurobonds by the European Stability Mechanism.

(ECB) tolerated and actively supported voluminous money creation and lending by the NCBs of the periphery at the expense of money creation and lending in the core.' In other words, current account deficits in the 'periphery' have imposed detrimental policies on and for Germany, because, by financing these deficits, banks in the periphery force their NCBs to 'print' money and crowd out credit in Germany. According to these authors, 'the crowding out of refinancing credit is well known from the times when the Bretton Woods System forced the European central banks to maintain a fixed exchange rate vis-à-vis the US dollar' and they warn: 'The European Monetary union is stuck in a severe balance-of-payments imbalance of a nature similar to the one that destroyed the Bretton Woods System'. The policy implication drawn by Sinn's analysis is therefore to impose limits on the amount of credit that is accumulated through TARGET balances.

Sinn's argument has been thoroughly questioned. The Deutsche Bundesbank (2011:34) has clarified that TARGET balances are, on the one hand, 'affected by credit institutions' operations on the money and capital markets and, on the other, by transactions carried out by the non-banking sector, which generates payments via the banking system. (...) For the purposes of the balance of payments, an increase in TARGET2 claims is considered to be a net capital export'. Similarly, Buiter *et al.* (2011:13) have concluded at the end of a thorough analytic paper that TARGET2 net balances of NCBs: (1) cannot be automatically linked to current account deficits; (2) do not automatically reduce central bank credit to commercial banks in other member states (and any reduction of central bank credit should not be interpreted negatively, as implying reduced funding for banks and their customers); (3) should not be interpreted as a measure of the risk exposures of the NCBs of TARGET2 creditor countries; (4) cannot be directly capped without putting into question the basic functioning of the Eurozone currency union. Finally, Jobst (2011) has taken into account the circulation of bank notes and found that (1) large imbalances can (and do) arise even without current-account deficits (Sinn) or banking crises (his critics) just because of the normal functioning of the Euro Area; (2) banknotes have to be included in the analysis and may change the nature of the imbalance; (3) the Bundesbank had considerable debts within the Eurosystem before 2007; (4) therefore Sinn's and Wollmershäuser's recommendations to limit TARGET imbalances are not merely impractical but are actually incompatible with a monetary union.

This criticism is correct in destroying the chauvinistic bias in Sinn's analysis. The Eurosystem must be seen as an integrated whole and not as a fixed exchange rate system where National Central Banks operate for their own account. The euro is a single and not a common currency.[31] A closer look in the next section will show that these TARGET2 (im) balances are dependent on how payments are effected within the Euro Area. Artificially limiting or suppressing these TARGET balances would destroy the mechanism which holds European monetary union together. Before making risky policy recommendations, one needs to understand how the payment system works.

1.3 Financing imbalances in EMU

Balance of payment adjustments

In a fixed exchange rate zone, the balance of payment theory explains that a current account deficit must be financed by an inflow of capital or the use of foreign reserves. If the country runs out of foreign reserves, the exchange rate will adjust. This theory links current account imbalances to competitiveness. If a country is uncompetitive, its exchange rate is overvalued. Exports are stagnating, imports increase and the current accounts become negative; foreign direct investment will be low, because the return on capital is unattractive. Foreign investors perceive the risk of a devaluation of their assets and pull out their capital. The central bank will then lose reserves and let the exchange rate depreciate until competitiveness is restored. Everyone lives happily ever after, until another crisis occurs. Note, however, that domestic wealth and income will be devalued relative to the rest of the world. This adjustment mechanism is therefore the story of the happy poor.

The story is different if the deficit is caused by high investment that causes economies to catch up with the rich. This requires the exchange rate to be competitive and the return on capital high. The capital inflow will then finance the current account deficit and hopefully contribute to improved efficiency, higher productivity and growth. An undervalued exchange rate will help the poor to get jobs and the rich to get richer be-

---

31. For the early policy debates around a single and a common currency, see Collignon and Schwarzer 2003.

cause investment is profitable. Note that in this case many of the rich are foreigners building up claims on the domestic economy. However, as the efficiency of the physical and human capital stock improves, exports will hopefully overtake imports, the current accounts turn into surplus and domestic capitalists get rich too. This optimistic model of development has been practised successfully by Asia in recent decades, and by Europe and Japan in the 1950s and 60s.

In the Euro Area there is, of course, no exchange rate. Nevertheless, cross-border intra-Euro Area capital flows are important, even if we have no statistical records to measure them. In fact, these flows are desirable because they deepen European integration and improve the efficient allocation of capital in the large European economic space. Capital flows will respond to regional differences in costs and profitability. Hence, the issue of competitiveness continues to exist, even if there is no exchange rate. For example, as we will see below, in terms of unit labour costs it is mainly the rich in the North that are today undervalued, while the poor in the South are overvalued. We will need to explain why this is so, but here we are first interested in clarifying whether such overvaluations and the resulting imbalances are sustainable and for how long.

Evidence from emerging economies and the related 'sudden shock' theory shows that sustaining current account deficits by capital inflows is a fragile strategy. *However, the fragility is due to the existence of different currencies, for the risk of asset devaluation creates an incentive to pull out of an overvalued economy.* While the central bank could try to lean against the wind by selling foreign reserves or raising interest rates, this strategy cannot be sustained in the long run. Macroeconomic imbalances always stand under the shadow of the exchange rate risk.

In monetary union, the adjustment mechanism is different. Capital flows freely between the regions. An imbalance between payments coming in and going out of a given region does not affect the *foreign* reserves of the central bank; instead it moves money balances (deposits and cash) from banks in one region to another, and the shifts in the regional distribution of this money stock can compensate private capital flows.

To understand this clearly, assume a region in the currency area is uncompetitive. The cost of production is higher than in other regions. There is, therefore, no incentive to invest and the regional economy will grow less than the Euro Area average and regional unemployment will

rise. Thus the overvaluation creates unhappy poor; but if the overvaluation is due to a sustained rise in asset prices, as was arguably the case in Spain and Ireland, it may also create some rich happy wealth owners. No doubt, some adjustment in the cost structure is ultimately necessary, but both the unhappy poor and the happy rich may fear that they will become poorer. This could delay adjustment.

The literature has identified two mechanisms for dealing with such imbalances: fiscal transfers and labour market flexibility. Fiscal transfers may provide direct income support through welfare programmes. This strategy makes the poor happy, but it is expensive, and this will not please the rich who must pay for it. For example, the high costs of transfers to the new *Bundesländer* could explain why a European Transfer Union is so unpopular in Germany. More importantly, pure income support is unlikely to change supply-side conditions and correct cost distortions, although targeted transfers, such as structural funds in the EU, could help to improve a poor region's competitive conditions. In any case, the efficiency of transfers is more likely to improve within a currency area, for transfers and capital inflows from abroad might otherwise cause the exchange rate to appreciate and this would sharpen the distorting costs effects of the overvaluation.[32] The efficiency of fiscal transfers as an adjustment tool will, therefore, depend importantly on whether an EU member state is part of the Euro Area and also on the way the Transfer Union is structuring incentives towards improving productivity.

The issue of labour market adjustment has two dimensions. In the American context, the mobility of the labour force across state borders has been emphasised (Blanchard and Katz, 1992) and this has often been taken as the defining criterion for an optimal currency area. However, changes in labour costs are an alternative adjustment channel. We will discuss this in detail below. Evidence suggests that this mechanism is less efficient in the Euro Area than in the United States or within Germany (Dullien and Fritsche 2008). Nevertheless, even if imbalances in the Euro Area are persistent, a currency union is economically more robust than a fixed exchange rate area because the imbalances are automatically financed. In fact, the flow of capital and money is a third channel through which current account imbalances can be made to persist. Remember from Box 2 that the intra-Euro Area current account balances

---

32.   For some new member states, such as the Czech Republic, this may be a problem.

are mirrors. This means, unless German financial institutions (which include the Bundesbank) would provide finance to the deficit areas, German industry could not export to those countries. They might sell cars in China, but not in Portugal or Greece. This is a simple matter of making payments and has nothing to do with competitiveness. Unless someone pays for a nice BMW, it is irrelevant how good or cheap the car is. In a single currency area, the money to make payments is generated by the banking system. We will therefore now explain how the payment mechanism works in EMU.

Transfers and payments in monetary union

It is impossible to understand the functioning of a monetary economy properly without having understood that money is the settlement asset in the payment system between banks (Manning *et al.* 2009). As we said above, payments are made when banks settle their claims by transferring base money, and broad money is created when banks give credit. The banking system in the Euro Area collects deposits and savings and allocates this money to profitable investment. Yet the system as a whole can only obtain money – liquidity – from the ECB. Individual banks may be short of the required liquidity or have a surplus, and because the size and distribution of payment flows between economic agents and their banks are subject to some randomness, banks usually lend or borrow in the interbank money market. If they credit their customers' accounts during the day, before the final settlement has occurred, they effectively extend credit to each other. They are therefore exposed to a credit risk. The ESCB has minimised this settlement risk by building up the so-called TARGET2 system. However, during the recent crisis, banks' trust in each other took a beating and the preference for liquidity increased. As a consequence, the interbank market has become dysfunctional and banks went directly to the ECB in order to obtain liquidity. This had immediate consequences for the structure of payment flows that are reflected in the cumulated TARGET2 balances between central banks.

To explain how this payment union works, we will first look at an example of purely local transactions. Let us assume a hairdresser in Thessaloniki takes out a credit from Alpha Bank to refurbish her shop and pay some local workers. Economists call this a transaction in non-tradable goods. After the completion of the work, she re-opens the shop in the hope that more people will be attracted and the hairdresser will pay back

her loan out of the additional income. Thus, all is well. From a monetary point of view, Alpha Bank's balance sheet has been extended by giving a credit. The bank loan has increased bank deposits in Greece,[33] therefore M1 has grown, and, because there will be more business, GDP has increased as well. Yet banks need to hold a fractional minimum reserve of liquid cash in relation to their deposits; Alpha Bank will therefore need to borrow the necessary liquidity. Let us assume, this is done by borrowing from the Bank of Greece (BoG), which is an integral part of the Eurosystem.[34] Thus, *ceteris paribus*, M0 is growing in the Euro Area as well. In conclusion, the Greek economy has grown in the non-tradable sector; money supply has increased as well, but there is no change in the trade balance or in the price level.

We will now look at the case of a transaction between Greece and Germany. We assume our hairdresser buys new dryers, produced in Germany. This has the following consequences for the real economy. The German exporter sends the equipment and a bill to Greece. The trade balance now turns negative in Greece and positive in Germany. The balance of payment records a capital inflow, because the German supplier has extended credit to the Greek client. Assuming the dryers are made on order (not sold from inventory), GDP grows in Germany, because of an export boom and the higher income will increase German net worth: in other words, Germans get richer. In Greece, GDP remains unchanged, because the bank loan from the hairdresser's bank is spent on German goods. Of course, our hairdresser is making net investment in the sense that she is increasing the Greek capital stock, but this may increase Greek GDP only in the future, not the present. Thus, the efficiency of the average Greek capital stock[35] will first drop and hopefully increase in the future. While the Greek capital stock increases, the German exporter obtains a claim on the hairdresser's assets for the same amount. Hence, the hairdresser's assets and liabilities both increase, but her wealth (net worth = assets – liabilities) is unchanged. National statistics, however, will record a 'foreign' liability, which reduces the net international investment position (NIIP) because our hairdresser has no claim on German assets.

---

33. The loan is a non-liquid asset for the bank and it puts the money in the hairdresser's bank account, which is a bank liability for demand deposits.
34. Alpha Bank could also borrow in the interbank market. We keep the discussion of the implications for case 3.
35. The average efficiency of the capital stock (ACE) is defined as the ratio of GDP to capital. See the analysis below.

How can the hairdresser pay her German supplier after the trade credit expires? The easiest way is to pay cash directly. However, it is more likely she will ask her bank to make the payment her behalf. Let us assume that the hairdresser finances this investment again by a loan from Alpha Bank, and asks the bank to make the payment to the German exporter. At first she will then have a new liability to her bank, but also cash (an asset) in her bank account. The subsequent payment to Germany will lower her liquid assets again, but also extinguish her liability to the exporter. Hence, she ends up with a real asset (the hairdryer) and a liability to her Greek bank (the loan). As a mirror image, the balance sheet of the German exporter becomes more liquid as his claim on the Greek hairdresser (receivables) is replaced by cash in the German bank. How does the hairdresser pay back the loan to her bank? As there is no extra income in Greece (*ceteris paribus*), she has to service the loan from profits resulting from higher productivity. This is an important difference to the previous case.[36] If our hairdresser were not able to improve productivity, she would have to reduce her consumption and save more in order to service her debt.[37] If her reduced consumption generated a negative externality via the accelerator, it could slow down growth.[38] Nevertheless, in either case, the hairdresser's debt can be serviced by income generated within the non-tradable sector and does not necessarily require a future current account surplus.

This raises the question: who will pay the 'Greek' debt to the German supplier? It is no longer the hairdresser, because she has transferred her liability to Alpha Bank. The exporter still has a claim that will be extinguished only when the money has arrived in his German bank account. The transaction is somewhat similar to payments in specie of gold or silver in the old days. To put it differently: The Greek current account deficit is Germany's surplus, which is identical with a German financial claim on Greece, **and this claim is settled not by goods, but by domestic money** in other words, euros. Money being the liability of the Eurosystem, if represents claims on the European economy as a whole. Thus, what was a specific claim on the hairdresser's assets in the trade credit contract, has been turned into a 'generalized claim' on the GDP of Euro-

---

36.   On this subject, see also Giavazzi and Spaventa 2011.
37.   This is in fact the mechanism by which government debt is serviced, because taxes reduce private consumption.
38.   Given that the capital stock has increased, but output has not, and the average efficiency of the capital stock would have declined. The effect is the same as an increase of interest rates.

land, because euros can be exchanged and used anywhere for purchases. German exporters are happy to hold money; they do not need haircuts or feta cheese when they sell hairdryers or cars. If they get more money than they wish to hold, they may lend it to Irish property developers or their banks will return it to the ECB.

By asking her bank to make a payment, our Greek hairdresser is shifting her liability to Alpha Bank, which now needs to make the payment. There are several ways in which the bank can settle this liability, in other words, extinguish the Greek debt. None of them are comparable to foreign exchange transactions. To show how this mechanism works, we can distinguish three cases.

1. Cash transfers

First of all, either the hairdresser herself or Alpha Bank could take cash and send it by courier to Germany. This would reduce the hairdresser's liquid assets and the bank's liabilities, because the hairdresser has less money in her bank account. Money supply (M1 and M3) in Greece would be reduced and in Germany increased, the overall balance for the Eurosystem remains unchanged. Given that more than 80 percent of the Eurosystem's liquidity consists in banknotes, this form of payment may actually be less quaint than it appears. We do not have data on the circulation of bank notes, but European central bankers have always been aware that there is a very likely net flow of bank notes from the North to the South due to the payment habits of tourists.

2. Transfers within the same bank

Alternatively, the hairdresser may ask her bank to make the payment transfer. To understand how this works, we need to keep in mind that a payment flow is a change in the stocks of assets and liabilities. The original credit by Alpha Bank to the hairdresser has increased the bank's assets (a claim on the Greek economy) and its liabilities (the hairdresser's deposit account). To make the payment, the bank now debits the hairdresser's account (whereby it reduces money balances held in Greece) and transfers it to Germany, where it will ultimately increase German deposits and M1. Hence, the transfer only shifts money balances, but does not affect the aggregate money supply which is relevant for monetary policy. However, in practical terms, making a payment is a rather complex operation. In the simplest case the German supplier would have a bank account with the German branch of Alpha Bank. The Greek branch would then debit the hairdresser's account and credit the suppli-

er's account in Germany. Thus, it would simply switch liabilities between clients within its own balance sheet.

3. Transfers financed by the Eurosystem

It is more likely, however, that Alpha Bank makes the payment to another German bank, say Deutsche Bank. It must therefore shift the liability it has against the hairdresser to a German bank. Let us assume Alpha Bank uses the ECB's TARGET2 payment system. This means that Alpha Bank keeps an account with the Bank of Greece (BoG) and Deutsche Bank with the Bundesbank. The cash balances held by the two banks with the central bank are part of the Eurosystems's base money supply (M0). They are an asset for the commercial bank and a liability of the Eurosystem. When Alpha asks the BoG to make a transfer to Deutsche Bank, it effectively requests the Eurosystem to debit its account and to credit Deutsche's. This reduces the liability of BoG to the Greek banking system and effectively reduces Alpha Bank's liquid assets; instead Alpha Bank has a less liquid claim (the loan it granted to the hairdresser). On the other hand, the credit increases liquidity for Deutsche Bank. This is how base money is transferred from Greece to Germany.

However, for technical reasons, the two banks have their accounts in two separate central banks, which are integral parts of the euro system. For bookkeeping reasons, the money must therefore also be shifted from the BoG to the Bundesbank. Both central banks have an account with the ECB's TARGET2 system. The BoG will therefore ask the ECB to debit its TARGET account and to credit the Bundesbank's account. This means that the liability it had toward Alpha has now been shifted to the TARGET2 system. The Bundesbank will in return credit Deutsche Bank, which will then credit the exporter's account. Hence, the Bundesbank has a positive and the BoG a negative TARGET balance. The balancing item for the Bundesbank is a liability to Deutsche Bank (M0). By definition, this liability is Deutsche's asset balance with the Eurosystem, which is balanced by the bank's deposit liability (M1) to the exporter.

In order to be able to contract a liability to the BoG, Alpha Bank must provide adequate collateral. If it were to default, the BoG would seize the collateral and if the collateral would also default, the loss would go to the ECB's shareholders. Hence there is a risk to the Eurosystem, which does not exist if the trans-border payment is made in cash or within the same bank.

This transaction has the following *Gestalt*: By granting a loan to the Greek hairdresser, Alpha Bank has initiated a process which ends with increased supply of broad and narrow money and higher income in Germany. Within the Eurosystem, a TARGET liability has arisen for the Bank of Greece, and a TARGET claim for the Bundesbank. The increase in Bundesbank liabilities to German banks is not matched by central bank loans to the banking system, but by the TARGET2 balance in the Bundesbank's balance sheet. Thus, as one would expect in monetary union, national central banks no longer hold exclusive claims on residents of national economies; because they are now part of the Eurosystem, they hold, directly or indirectly (via TARGET2), claims against the Euroland economy. In other words, money supply in Germany is no longer a Bundesbank decision but is the market-induced outcome of payments for goods, services and financial transactions.

4. Transfers financed by the banking system

Contrary to the hairdresser's bank deposits, Alpha Bank's liability to the BoG does not come without costs. A profit-oriented bank will seek to minimise these costs. As an alternative to borrowing from the central bank, Alpha could borrow on the interbank market, which means, in our simplified model, that it borrows from Deutsche Bank. In this case, the payment from the Greek hairdresser to the German supplier via TARGET2 is similar to our previous case, although this time Alpha obtains the required liquidity not by borrowing from the BoG but by obtaining a credit from Deutsche Bank. Deutsche Bank has excess liquidity, which it will lend to Alpha, provided Alpha is solvent and trustworthy. Lending to Alpha is in effect the same as buying a security from Alpha. The payment process is therefore analogue to the hairdresser buying dryers, only it works in the opposite direction. Deutsche Bank uses the liquidity it holds in its account with the Bundesbank and makes a payment to Alpha. The Bundesbank will debit the ECB TARGET2 account and the ECB credits BoG, which credits Alpha. This operation will therefore simultaneously reduce the Bundesbank's TARGET2 claim and the BoG TARGET2 liability. M0 has been reduced in Germany and by the same amount increased in Greece. As in the cash transfer, total base money is unchanged.

Next, Alpha takes this money to make the payment for the hairdresser to the German supplier, and this transaction proceeds back in the same ways as in case 3. As a consequence, we have two opposite movements on the TARGET2 system, which partly offset one other. It may seem strange that borrowing in the interbank market to pay for Greek net im-

ports implies such complicated operations, but whether banks choose case 3 or 4 depends on risk and return considerations. In normal times, the interbank market is the main source of finance, but in the recent crisis when the insolvency risk increased for banks all over Europe, the ECB had to assume financing the payment mechanism, without which a monetary union could not exist.

The logic of this example does not apply to current account transactions alone, but also to the payment for financial securities. However, given that granting a credit is always equivalent to buying security, the effect on TARGET balances from financing the net imports into Greece are very different when Greek banks borrow on the interbank market rather than from the Eurosystem.

These examples explain the sudden accumulation of TARGET2 balances in the Eurosystem since 2007: with the tensions in the euro interbank market during the financial crisis, banks stopped borrowing from each other and have relied instead on the 'open discount window' of the central bank. By acting as a lender of last resort to the banking system (but not to governments), the ECB has fulfilled its function as the 'bank of the banks'. It has thereby guaranteed the functionality of European monetary union. As an unintended consequence of this reliance on the ECB, large TARGET2 balances have been building up, but they are without effect for the real economy or for inflation, which is the ECB's primary policy objective. In other words, the large TARGET2 balances are the statistical expression of lack of trust between banks and tensions in the money market; they are not a sign of unsustainable current account imbalances or sudden stops of capital flows. In this context it is inevitable that the largest TARGET2 balances are accumulating in the balance sheet of the Bundesbank, because Germany has the largest current account surplus in the Euro Area, which is used to finance the deficits of German partners. No doubt, a reduction of German surpluses, which may have merit in itself, would also reduce TARGET balances. Nevertheless, the existence of these balances within the Eurosystem is not a danger to the sustainability of the euro. On the contrary, the TARGET2 imbalances have held the Euro Area together during the financial crisis. What is really needed is to improve the functionality of the interbank market.

In order to restore trust and stability in the Euro Area's financial markets, the ECB has implemented a number of unorthodox policy measures with the aim of ensuring sufficient liquidity in the European banking system.

These measures were needed to preserve the ECB's technical capacity to maintain price stability. The two main tools were the Covered Bond Purchase Programme (CBPP) and the Securities Markets Programme (SMP). In December 2011 and February 2012, it injected a total of nearly a trillion euros into the banking system. These operations have started to calm some market segments, although they are also likely to increase payment flows between banks and the Eurosystem and will therefore further push up TARGET2 imbalances. This seems to worry Bundesbank President Weidmann, although the Bundesbank (2011:35) has officially emphasized that 'there is no immediate change in the level of risk to NCBs due to the rise in the TARGET2 settlement balances. An actual loss would occur only if and when a Eurosystem counterparty defaults and the collateral it has posted does not realize the full value of the collateralized refinancing operations despite the risk-control measures applied by the Eurosystem. Any loss would always be borne by the Eurosystem as a whole, and shared among the national banks in line with the capital key'. The Bundesbank's concerns are not trite. For our example has shown that the generation of the Eurosystem's assets in the money creation process is primarily localized in deficit member states. This means that the collateral for monetary operations is largely composed of securities, which have been repeatedly downgraded by rating agencies. Hence, if a local borrower were to default, especially if this should be as a consequence of a sovereign default, the National Central Bank might hold worthless securities. On the one hand this causes losses to the national Treasuries, on the other it makes the conduct of monetary policy more difficult, because the ECB has fewer assets to pull in liquidity, should it considers this to be necessary in the interest of price stability.

There is an elegant answer to this problem: improve the quality of collateral in peripheral economies of the Euro Area by swapping local sovereign debt against a European debt security. How this could be done, I have described elsewhere (See Collignon 2011a; 2011b and 2011c). However, in our context of macroeconomic imbalances, one should be aware that the financial repression of TARGET2 imbalances, as proposed by Sinn, would immediately cause the breakup of the Euro Area because the payment system is the pillar of any monetary economy.

Empirical evidence

Our analysis has shown that the mechanism through which the sustainability of monetary union is ensured despite persisting regional imbal-

ances consists in the payment mechanism. It defines a currency union as a payment union. A trade or current account deficit within the Euro Area is either financed by credit or by shifts in money (in other words, bank deposit) balances. How important is this mechanism? Empirical evidence is difficult to obtain because of the statistical bias toward familiar national records, which amalgamates intra and extra Euro Area flows: in other words, it records data as per our equation (2.1) and not as per (2.5) in Box 2, and also because balance of payment statistics do not distinguish between credit and money payments.

Nevertheless, Figure 4 gives an (imperfect) indication for these flows. The chart shows quarterly current accounts, financial (capital) flows and the net effect of the two (called *net*). The bars indicate the change of TARGET2 balances per quarter. If the net effect of current account and financial flows is zero, cross-border net borrowing has financed the resource deficit. This implies that the imported increase of local real assets is balanced by non-resident claims, so that the net worth of local residents is unchanged. However, a positive net balance of current accounts plus financial flows means that local residents have borrowed more than they have obtained by importing resources and their net worth is reduced. Inversely, a negative net balance implies domestic residents buying foreign securities, and this means excessive savings are placed in financial claims on the wealth of others. Figure 4 also shows that the net flows of credit and changes in net worth are not significantly correlated with changes in TARGET2 balances, which is what we argued above. Figure 5 reveals the *cumulative* effect of the net flows of assets and liabilities. It indicates that the current account deficits in Portugal and Greece were largely financed by capital inflows. By contrast, Spain and possibly Ireland 'overborrowed' (a rise in the net balance of Figure 4), and this credit inflow fuelled the property boom but reduced citizens' net worth. Italy ran a current account deficit but borrowed little and at times became even a net lender. By contrast, Germany 'oversaved': that is, it not only lent to finance its net exports, but lent even more to the rest of the world (its chart in Figure 5 has a tendency to fall). Remember, however, that these data represent national account which amalgamate payments from Euro and non-Euro Area states and do not reflect cash payments. Finally, we find a steady balance of overborrowing, probably for government debt, in Greece and Italy, and a lesser tendency to this effect in Portugal.
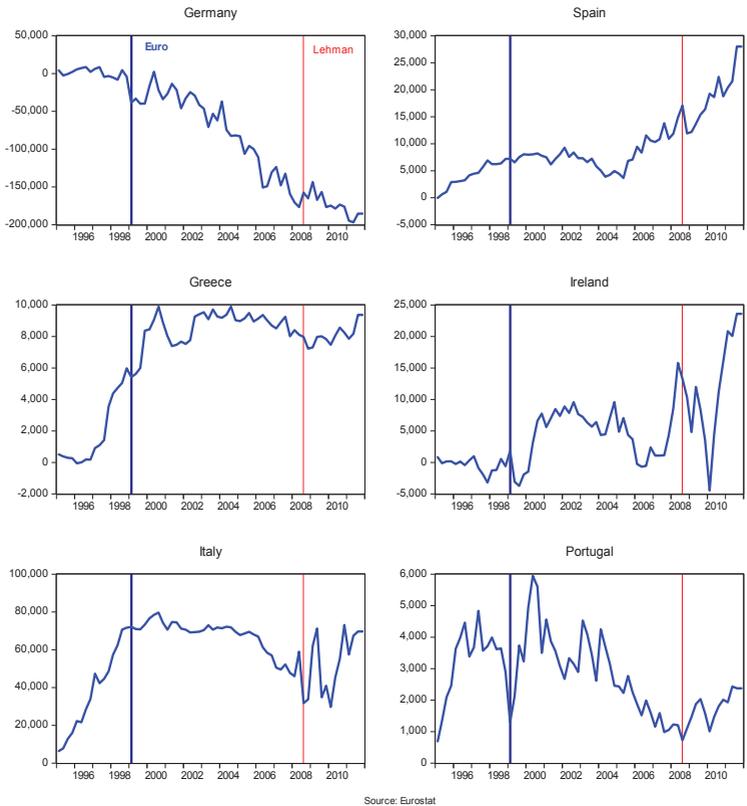
We have documented the fact that payments across borders within the same currency area shift money balances from one jurisdiction to an-

Figure 4 **Balance of payments flows in selected Euro Area member states**
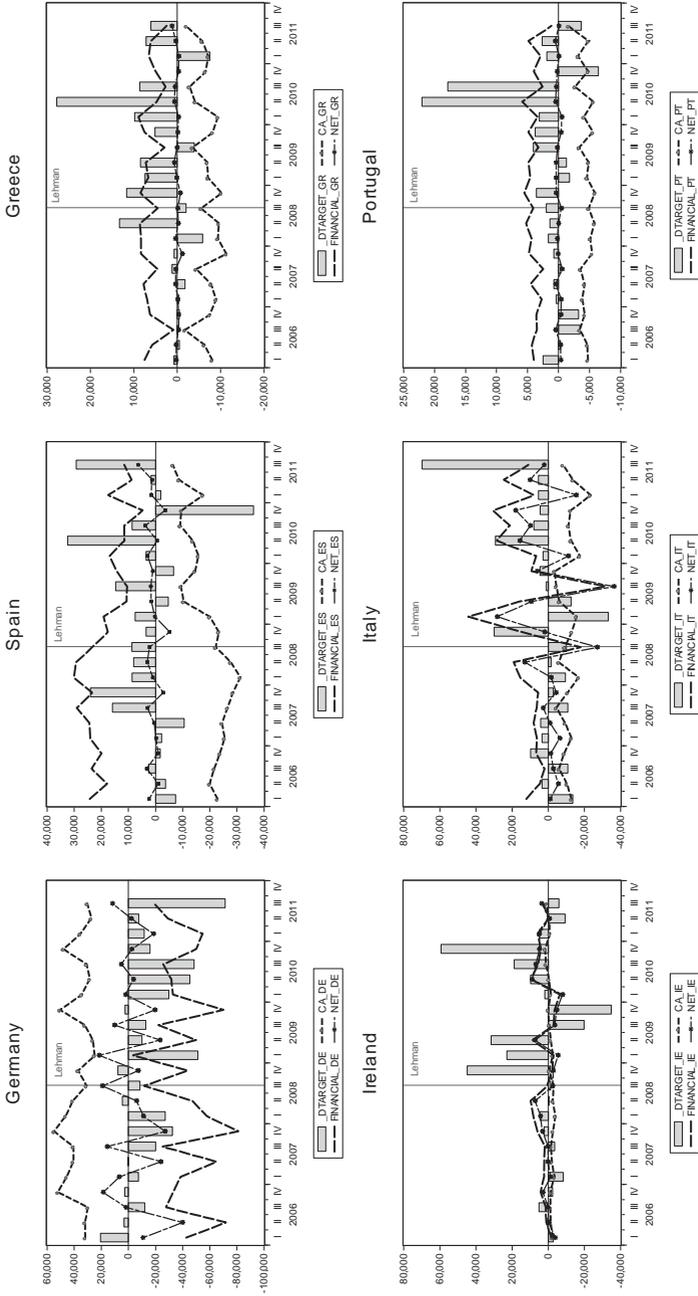
Source: Eurostat

Figure 5 **Cumulative net balance of payments**

Source: Eurostat

other. Figure 6 shows the share of deposits by residents in the national banking system as a percentage of the Euro Area's total. Given that cash is only a small portion of monetary aggregates M1 or M3 (contrary to base money M0), these shares are a good proxy for shifts in the distribution of money balances, even if we have no data for banknotes. No uniform pattern can be observed from Figure 6. The pointed vertical line in August 2007 signals the beginning of troubles in the interbank market that were reinforced by the Lehman bankruptcy in September 2008 (the thick vertical line). Germany has increased its share, confirming its status as a safe haven. The Netherlands seem to have played a similar role after Lehman, but Luxembourg has not. Of the large southern member states, Italy and Spain do not seem to be affected by a substantial

outflow of money. By contrast, Ireland was immediately affected by the liquidity crisis in 2007. Portugal has seen a continuous decline in its deposit ratio that mirrors the huge current account deficits. But Greece benefitted from monetary inflows even after the financial crisis started and this changed only when the Papandreou government revealed the truth about Greek public debt in 2009. Since then, the capital flight from Greece has drained out liquidity.

The shifts in the distribution of money have real economy consequences. Less money available means less demand, lower income, falling inflation, reduced growth, deteriorating public finances and growing unemployment. By contrast, large money inflows are likely to raise local inflation, stimulate regional growth and therefore improve public finances and employment. These two opposing tendencies should reduce macroeconomic imbalances in the long run. To test whether this hypothesis holds in monetary union, we estimate a simple quantity equation for the deviations of the share of national deposit holdings in the Euro Area's total. We assume that there is a long-run equilibrium relation between a member state's price level, money supply (measured by deposits), GDP and a constant, all relative to the Euro Area, and we estimate an error-correction model for a panel of 16 Euro member states. The results are shown in annex 1. The estimates are statistically significant and confirm the assumption that an excessive outflow of money will dampen inflation and economic growth in Euro member states.

We can therefore conclude that monetary union generates its own adjustment mechanism, which resembles the old specie-flow mechanism and makes the system simultaneously robust and flexible. However, the adjustment process may take a long time. The coefficient for the error-correction term in our estimate is between 0.06-0.07, which means it takes 10 years to halve a disequilibrium. This slow adjustment could cause what Olivier Blanchard (2006) once called 'rotating slumps'. One may argue that Germany's long stagnation from 2000 to 2006 and subsequent rebound was the mirror image to Southern Europe's boom until 2007. However, how deep the slump may turn out and how long it will last, is the real issue that needs to be addressed by the *Excessive Imbalance Procedure*. Using erroneous concepts and statistics will not help in this task. We will therefore now turn to the analysis of imbalances in the Euro Area's real economy.

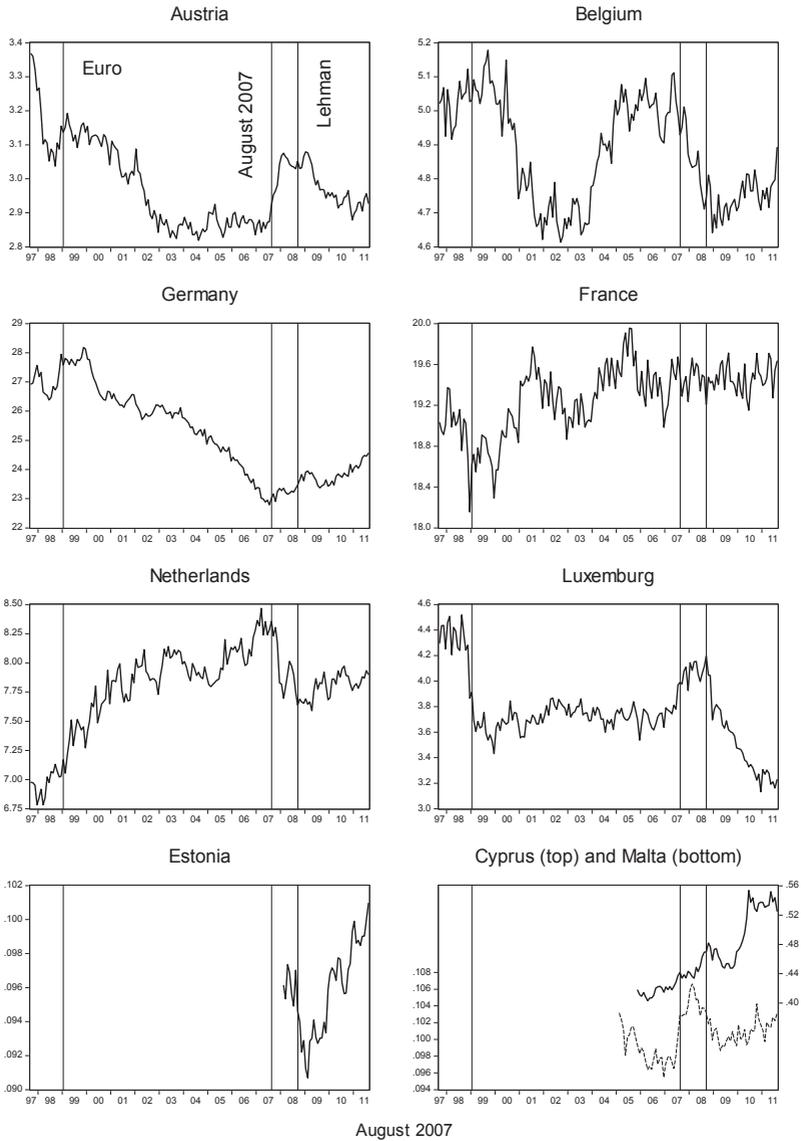## Figure 6 **National bank deposits as a share of total Euro Area**

August 2007

Figure 6 **National bank deposits as a share of total Euro Area** (cont.)