The European crisis and the accumulation of TARGET2 imbalances

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Abstract In the context of the European financial crisis, TARGET2 payment system of the European Monetary Union (EMU) countries became crucial, reflecting funding stress in the banking systems of most crisis-hit countries. This paper analyses the role displayed by TARGET2 in the EMU. Until now, the ECB has assumed a crucial role to overcome the European financial crisis. Anyway, to promote a full economic recovery in Europe, it is necessary a strong interconnection between single countries fiscal policies and the ECB's autonomous monetary policy. In this regard, we conclude that, in the medium term, a successful crisis resolution requires more political integration of EMU countries, which should include a fiscal union and a banking union. However, in the short run, a prompt recovery is essential to get out of the trouble, and this requires that surplus countries (specially Germany) expand aggregate demand and let domestic wages and the ensuing internal inflation rate increase.

Keywords European financial crisis, sovereign debt crisis, banking crisis, TARGET2, EMU.

1 Introduction

How was it that Europe came to the recent Great Crisis? To answer the question, in this paper some stylized facts are exposed and extensively discussed.

First, an important element that much contributed to the crisis was the mispricing of risk by capital markets and an ensuing misallocation of capital in the decade before the outbreak of the crisis. This had the effect of giving wrong incentives to policymakers. In fact, during the boom years, when financial markets were blind to the sovereign risks, no incentives were given to policy makers to reduce their debts, as the latter were priced so favorably. Since the start of the financial crisis, financial markets driven by panic overpriced risks and gave incentives to policymakers to introduce excessive austerity programmes.

Second, a high level of public debt is not a problem *per se*, as long as the government is able to refinance itself and roll over its debt. This requires public debt and the interest burden to grow more slowly than the economy and the tax base. This is not the case in many peripheral European countries. Therefore, today's debt crisis is not merely a debt crisis; it is first and foremost a competitiveness and growth crisis that has led to structural imbalances within the euro area. In fact, below the surface of the sovereign public debt and banking crises lies a balance of payments crisis, caused by a misalignment of internal real exchange rates (Moro 2014).

Third, since the European Monetary Union (EMU) has been built as a union of sovereign states, each state has retained its own national central bank, which has

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become a member of the so-called Eurosystem with the European Central Bank (ECB) at the top. National interbank payment systems have been merged into a euro area interbank payment system (TARGET2), where national central banks have assumed the role of the links between countries.[2] So, TARGET2 plays a key role in ensuring the smooth conduct of monetary policy, the correct functioning of financial markets, and banking and financial stability in the euro area, by substantially reducing systemic risk.

The settlement of cross-border payments between participants in TARGET2 results in intra-Eurosystem balances – that is, positions on the balance sheets of the respective central banks that reflect claims/liabilities on/to the Eurosystem. They are reported on the National Central Banks' (NCB) balance sheets as TARGET2 claims, if positive, or TARGET2 liabilities, if negative, vis-à-vis the ECB as the central counterpart. TARGET2 balances reflect funding stress in the banking systems of crisis-hit countries, which must be interpreted with caution as they also reflect transactions among multi-country banking groups.

Fourth, interpretations of the role assumed by TARGET2 balances fall into two camps. The first is that these balances correspond to current account financing, which can be labeled the *flow* interpretation. The second camp interprets TARGET2 balances as a "capital account reversal", that is they see this as one symptom of a balance of payments crisis. Someone argues that the Eurosystem full allotment refinancing operations should be seen as financing the reversal of an outstanding stock of cross-border claims, while the TARGET2 payments system merely records the results. This corresponds to the *stock* interpretation of TARGET2 balances.

Fifth, the tensions in sovereign debt markets and within the banking sector have fed each other, creating severe funding problems for many borrowers. These developments have also led to the fragmentation of the financial system along national borders, with a retrenchment of financial activities to national domestic markets. The resulting limited or costly access to funding for many businesses and households wishing to invest has been a major obstacle to recovery across Europe. At the same time, high levels of indebtedness mean that many economic actors need to reduce their financial exposure or increase their savings. Such "deleveraging" can also hamper recovery in the short term. The problems are particularly acute in the vulnerable euro area member states.

Sixth, the only possible way out to overcome the crisis is to launch a new phase of growth and promote a substantial increase in European employment. In the medium term, there is a widespread consent that a successful crisis resolution will need to include at least the following four components: 1) a fiscal union, i.e. a mechanism that ensures that fiscal policies in the Eurozone are partly centralized; 2) a banking union, i.e. a framework for banking policy and banking supervision at the European level; 3) an overhaul of EU/Eurozone institutions that would enable fiscal

[2] TARGET is the "Trans-European Automated Real-time Gross Settlement Express Transfer" system. It was replaced by TARGET2 in November 2007, with a transition period lasting until May 2008, by which time all national platforms were replaced by a single platform. The processing and settlement of euro-denominated payments takes place on an individual basis on the participants' accounts at NCBs connected to TARGET2. The transactions are settled in real time with immediate finality, thus enabling the beneficiary bank to reuse the liquidity to make other payments on that day.

and banking unions to be sustainable; and finally 4) short-term arrangements that chart a path towards the completion of the previous three points.

Finally, in the short run, we say that there exists a safe policy to promote growth in the European Union that can be implemented without interfering in the fiscal consolidation needs of the austerity-hit southern countries. This aim may be pursued if Germany does not maintain its public budget in balance for next few years and commits itself to promote an expansionary fiscal policy. In fact, Germany is the only country in the EU that can expand its aggregate demand without paying a substantial increase in domestic inflation.

In order to expand European aggregate demand in the measure necessary to promote growth, Germany could also let domestic wages increase. The combined effects of the two policies (budget deficit plus wage increases) and the ensuing moderate increase in domestic inflation could be sufficient to appreciate the real exchange rate in Germany, permitting the austerity-hit EMU countries to regain their external competitiveness vis-à-vis surplus countries.

In order to extensively expose all these stylized facts, the paper is organized as follows. Section 2 analyses the accumulation of TARGET2 imbalances. Section 3 is devoted to the distinction between the 'flow' and the 'stock' interpretations of TARGET2 balances, and section 4 deals with the insufficient responses and tensions among euro area governments. In section 5 the fragmentation of the European financial system along national borders is analysed, while section 6 explains why the ECB has partly lost the control of interest rates in the crisis-hit countries. Section 7 is devoted to the credit channel paradox, and finally section 8 concludes with an assessment of long and short run policies suggested to definitely overcome the European Great Crises.

2 The accumulation of TARGET2 imbalances

On the accumulation of TARGET2 imbalances, the debate was triggered by Sinn (2011, 2012a, b) and Sinn and Wollmershäuser (2011, 2012), whose views can briefly be summarized as follows. By reducing the collateral requirements for the refinancing credits of Eurozone central banks, the ECB undercut market rates in the southern Eurozone countries and Ireland. This enabled a huge asymmetric expansion of refinancing credit and money creation, compensating for stalling capital imports and outright capital flight.

The monetary expansion in the southern countries in turn enabled a net outflow of central bank money to other Eurozone countries by way of international payment orders for the purpose of buying goods and assets and redeeming foreign debt. Sinn and Wollmershäuser (2012) claim that this outflow is a classical balance of payments imbalance, and that its accumulated value is measured by the TARGET2 balances.

In the surplus countries, commercial banks placed the funds they withdrew from the deficit countries with their own central banks, which implied a sterilization of the inflowing liquidity. Because of the sterilization, the policy has (thus far) not

been inflationary, but for that same reason it is a pure fiscal credit transfer (a “stealth bailout”) that resembles the official intergovernmental credit transfers (Sinn, 2012b).

Sinn and Wollmershäuser (2012) also argued that this policy was defensible at the time of the Lehman crisis, but has meanwhile begun to undermine the allocative function of the capital market by offering credit at conditions that do not take idiosyncratic country risks into account and undercut the market rates. They also maintain that the TARGET2 debts impose risks on the rest of the Eurozone countries in proportion to their share in the ECB capital, should the deficit countries default and leave the Eurozone. In the case of a breakup of the Eurozone, the surplus countries’ TARGET2 claims themselves would be at risk.

They note, moreover, that saying that the current-account deficits were sustained with the extra refinancing credit behind the TARGET2 balances does not equate to claiming that current account deficits and TARGET2 deficits were positively correlated. On the contrary, to the extent that the ECB helped slow down the adjustment of pre-crisis current account deficits despite the reversal of private capital flows, the correlation should have been small if not zero, while the correlation between private capital imports and TARGET2 deficits should have been (and was) strongly negative.

This means that the ECB's extra refinancing credit, which resulted in TARGET2 debt, helped provide the funds needed to finance the current account deficits. This conclusion is confirmed by the definition of a country's budget constraint, according to which the sum of TARGET2 balances, private and intergovernmental international capital flows, and current account imbalances is zero.

The policy implication of this interpretation of TARGET2 balances is that, when exchange rate adjustments are impossible, the accumulation of credit and debit positions in TARGET2 needs to be limited and imbalances of cross-border payment flows must be accommodated officially on a annual basis.

These arguments were rebutted by many authors, particularly by Whelan (2011, 2012), Buiter et al (2011b), Buiter and Rahbari (2012), Bindseil and Konig (2011), Deutsche Bundesbank (2011), ECB (2011), and Banca d’Italia (2012). The main conclusions of these papers can be summarized as follows.

The fact that for some banking systems, such as Germany’s, the refinancing obtained from the Eurosystem, net of the funds placed with the reserve account and the deposit facility, is negative in no way limits the ability of the Eurosystem to control the monetary base. What is important for the transmission of monetary policy is the net liquidity provided to euro-area banks, not how it is distributed.

More generally, the increase of TARGET2 imbalances does not interfere with the conduct of monetary policy or the objective of price stability within the area. In particular, the existence of a large positive TARGET2 balance in some euro-area countries does not entail a risk of inflation. The Eurosystem maintains its ability to mop up all the excess liquidity with appropriate instruments whenever changes in economic and financial conditions make this necessary.

Moreover, in the Eurosystem the increase of TARGET2 imbalances does not create any specific risk not already contained in monetary policy refinancing operations, which in any case for the NCBs is managed and mitigated by the threshold for the quality of collateral accepted in refinancing operations and the system of

haircuts. Also, it is shared across the Eurosystem according to the ECB's capital key and thus independent of the credit or debit TARGET2 position of each single NCB.

Taking into account the mechanics of the transactions and the economic factors behind these imbalances, and looking at balance of payments (BOP) identities, Cecioni and Ferrero (2012) argue that TARGET2 imbalances are correlated to the recourse to monetary policy refinancing operations, via NCBs' balance sheets, but they are not caused by them.

Adopting the fixed-rate full allotment (FRFA) procedure in the refinancing operations and expanding the list of eligible collateral countered the pressures on banks' liquidity and on financial markets, which originated from the massive disruption of interbank and capital markets at the peak of the crisis and to the drying up of cross-country flows. These measures played a key role in preserving the functioning of the payment system and the financial stability of the euro area. The resulting increase in central bank's reserves was accompanied by the widening of the TARGET2 balances.

3 The *flow* and the *stock* interpretation of TARGET2 balances

The increase in TARGET2 balances has been closely linked to BOP imbalances. During the crisis, trade balance deficits were neither necessary nor sufficient conditions for the increase in TARGET2 imbalances. BOP financial account imbalances, instead, were a necessary condition. Before the crisis, both the BOP current account and the trade balance of the countries under stress were in deficit, with the exception of Italy where they were approximately balanced. These deficits were funded mostly from foreign investments in domestic securities and in the interbank market. The capital flowing in and out of the countries was almost completely netted out, leaving small average net balances for the individual items of the BOP financial account.

During the crisis, the absolute size of individual items in the BOP increased and its composition changed significantly. The main changes were in the financial accounts. The reversals of foreign investments in domestic securities and of liabilities issued by domestic monetary and financial institutions (MFIs) were not matched by a similar increase in disinvestments of domestic capital previously invested abroad. Net outflows in the financial accounts of the BoP were compensated by a considerable increase in the respective NCB's TARGET2 liabilities with the ECB (Cecioni and Ferrero 2012).

The timing of these changes was uneven across countries. Referring to Fig. 1, during the global financial crisis (August 2007–April 2010) and in the first phase of the sovereign debt crisis (May 2010–June 2011), Italy's and Spain's financial accounts remained almost unchanged while those of Greece and Portugal showed the largest adjustments. In the latter countries, foreigners disinvested from the interbank and the securities markets, and some signs of deposit flight from domestic banks by residents appeared.

In the second phase of the sovereign debt crisis (July 2011–May 2012), access to international financial markets by the Italian and Spanish governments and

MFIs was also impaired. During this period, Italy and Spain recorded net outflows from the MFIs, respectively, of €118 and €182 bn, and net outflows of portfolio investments of about €90 bn.

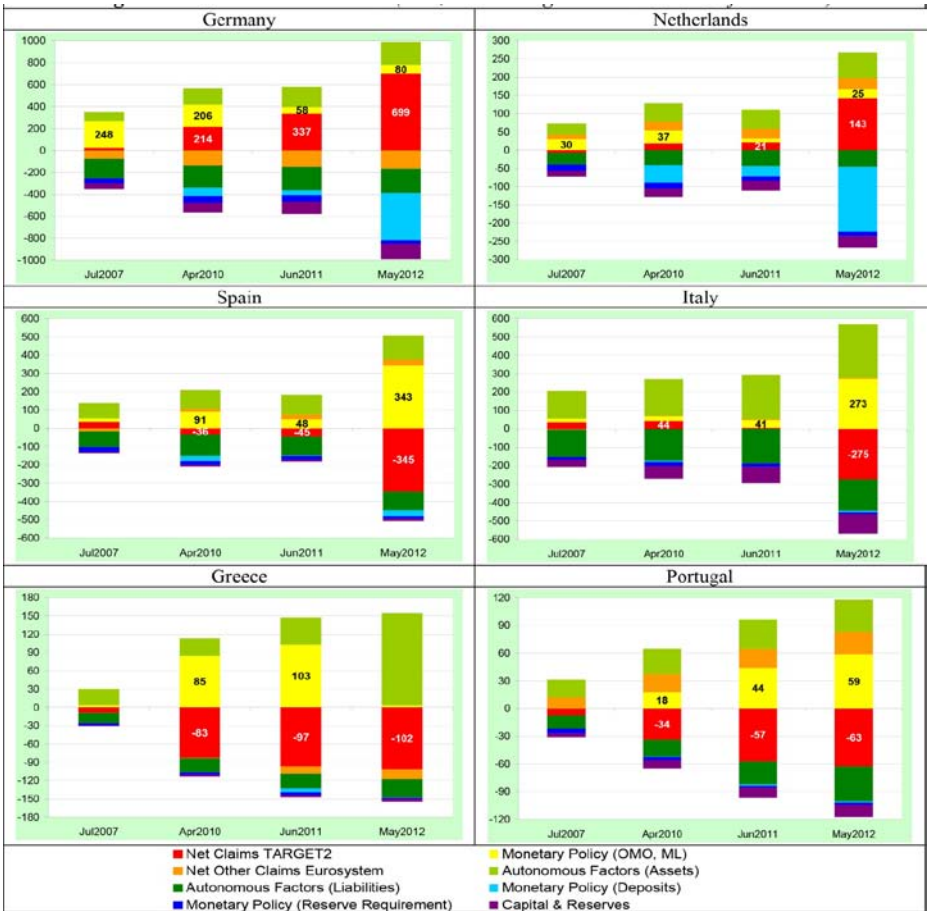

Fig. 1 NCBs balance sheets (*€bn; outstanding amount at the end of the month*). *Source*: Cecioni and Ferrero 2012.

In Italy, in particular, net outflows of portfolio investments largely corresponded to a willingness in non-residents not to roll over maturing sovereign debt securities and, to a lesser extent, to sales by non-residents of sovereign debt securities on the secondary market.[3] In the same period, TARGET2 liabilities increased for Italy and Spain to approximately €280 and €300 bn, respectively.

[3] In fact, what happened in the periphery countries was a twin crisis as described in Kaminsky and Reinhart (1999), as the financial crisis stopped the capital inflows ('sudden stop'), producing both a banking crisis (as banks could not be financed, here the causality is double,

As to the implications for the monetary policy transmission and the risks for the balance sheet of the Eurosystem, Cecioni and Ferrero's main conclusion is that the ECB's unconventional monetary policies contrast the risks of segmentation in the money markets along national lines with the aim of preserving the transmission of the unique monetary policy. Any institutional change that would limit the flow of payments through TARGET2 would have a pro-cyclical effect, by tightening further liquidity conditions in troubled countries, and it would increase asymmetries within the euro area, undermining the existence of the unique monetary policy.

Furthermore, when evaluating the cross-country risks, it should be taken into account that member states' net external positions have not changed because of the widening of TARGET2 balances. Rather, private credit (debit) positions have been substituted by NCBs' credit (debit) TARGET2 positions vis-à-vis the ECB. The risks that were previously entirely borne on the private sector of creditor countries are now shared across Euro system's NCBs.[4]

Nevertheless, the banking system cannot permanently rely on central bank funds for its main source of funding. In the medium term, peripheral countries cannot continue to substitute inflows of foreign private sector liquidity with TARGET2 liabilities. Stressed countries must return to private markets and attract funds from the rest of the area. This requires the restoration of confidence in both the banking sector and in the sustainability of public finance.

Similar conclusions are reached by Whelan (2012), who first argues that the process by which TARGET2 liabilities are incurred does not change the net asset position of central banks because they either replace existing liabilities or are combined with the addition of new assets. Rather than an external bailout, in practice, the increase in TARGET2 balances reflects the ability of national central banks in the Eurosystem to create money to lend to banks experiencing funding problems and so, if anything, these balances reflect countries "bailing out themselves".

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as the bad performance of banks is also responsible for the stop in inflows) and a current account crisis (as the capital inflows helped to finance the current account).

[4] Auer (2014) examines the extent to which changes in national TARGET2 balances can be statistically associated with cross-border private capital flows and current account (CA) balances. In a quarterly panel spanning the years 1999 to 2012 and 12 countries, it is shown that while the CA and changes in TARGET2 balances were unrelated until the start of the 2007 financial crisis, since then the relation between these two variables has become statistically significant and economically sizeable. This reflects the 'sudden stop' in private sector capital that had hitherto funded CA imbalances. Auer next examines how different types of private capital flows have evolved over the last few years and how this can be related to changes in TARGET2 balances, finding some deposit flight by private customers, a substantial retrenchment of cross-border interbank lending, and also an increase in bank's holdings of high-quality sovereign debt. His first conclusion from this analysis is that since TARGET2 imbalances were caused by a sudden stop and are unlikely to grow without bounds as Eurozone CA imbalances are currently diminishing at a rapid pace, there is no evidence that the institutional set-up of the European monetary union needs to be reformed fundamentally. A further conclusion relate to how the current system transfers risks across the currency union. Limiting or settling TARGET2 balances are not viable options. Rather, policies must be geared to limiting the implicit risk transfer from the private to the public sector within TARGET2 creditor nations, which is facilitated by the current system as it may change the incidence of euro break-up risk.

Whelan agrees that the large changes in intra-Eurosystem balances in recent years are the result of capital flight from the periphery rather than the accumulation of current account deficits. These balances have evolved due to the monetary policy strategy agreed by the ECB's Governing Council and because of the free movement of capital guaranteed by the EU rather than because of any special features of the TARGET2 payments system.

Indeed, he describes how large changes in intra-Eurosystem balances would have occurred due to capital flight even if electronic bank transfers via TARGET2 had been shut down and only cash payments allowed. The increasing risks for Germany associated with the Bundesbank's TARGET2 balance have been offset to a large extent by a significant decline in private German bank exposures to the periphery. Also in the extreme event of a full uncooperative euro breakup, Whelan argues that the underlying costs to German taxpayers will be far lower than the regularly cited full value of the TARGET2 balance.[5]

Finally, Whelan argues that the Eurosystem should consider proposals for annual settlement of TARGET2 balances with settlement taking place using assets acquired during monetary policy operations. Such a settlement procedure would see TARGET2 balances reset to zero each year.

While this proposal would imply a change in the Eurosystem's accounting procedures for dealing with balances owed between its members, it would not change the daily operations of the TARGET2 payments system nor would it change the nature of risk-sharing on monetary policy operations currently in place for euro member states.

In contrast, Sinn's (2011) proposal to limit TARGET2 balances would imply an effective end to the euro as a common currency, while his proposal for annual settlement of balances using state-owned real estate or senior rights to future tax revenue (Sinn, 2012a) would represent a significant change to current risk-sharing arrangements in relation to monetary policy operations and would likely undermine the operation of a common monetary policy. Therefore, neither of these proposals is consistent with a continuation of the euro as a common currency.

To conclude on this point, according to Cecchetti et al (2012), interpretations of TARGET2 balances fall into two camps. The first is that these balances correspond to current account financing, which can be labeled as the *flow* interpretation. Proponents of this view include most prominently Sinn and Wollmershäuser (2011, 2012). The second camp, including Buiter et al (2011a), Mody and Bornhorst (2012), Bindseil and König (2012), and Cecioni and Ferrero (2012), interprets TARGET2 balances as a 'capital account reversal'.[6] That is, they see this as one symptom of a

[5] This is partly because the rest of the Eurosystem has a large claim of about €200 billion on Germany relating to banknote issuance, and partly because the seigniorage powers of a post-breakup for the Bundesbank are likely to be considerably higher than at present. Whelan's conclusion is shared by De Grauwe and Ji (2012) who argue that, also in the extreme case of a euro break up, the risk of losing TARGET2 claims for surplus countries does not exist.

[6] This term was coined by Mody and Bornhorst (2012). Lane (2013) investigates the behaviour of gross capital flows and net capital flows for euro area member countries; he highlights the extraordinary boom-bust cycles in both gross flows and net flows since 2003. He also shows

balance of payments crisis. Bindseil and König (2012) argue that the Eurosystem full allotment refinancing operations should be seen as financing the reversal of an outstanding stock of cross-border claims, while the TARGET2 payments system merely records the results. Cecchetti et al (2012) label this the *stock* interpretation of TARGET2 balances.

Finally, it is worth mentioning that the members of the European Economic Advisory Group (2012) take an intermediate position. They read Sinn and Wollmershäuser (2011, 2012) as arguing that Greece and Portugal financed their current account deficits since 2008 to 2010 through TARGET2, while Ireland's TARGET2 balance was associated with a capital outflow, and Spain's TARGET2 balance financed only a quarter of its cumulated current account. Italy is identified as a case of "capital flight" in late 2011.

4 Insufficient responses and tensions among euro area governments

The European crisis has highlighted that international financial integration will not automatically lead to an efficient allocation of capital, as predicted by neoclassical theory.

The Stability and Growth Pact (SGP) belief in the ability of free markets to efficiently allocate capital and discipline governments was certainly not warranted. What we have seen instead is that unrestricted financial integration in the euro area contributed to the development of unsustainable imbalances and bubbles. While financial markets underpriced sovereign risk in the euro's first decade, the pendulum has swung back and after 2010 gave way to excessive pessimism about the periphery countries' ability to repay their debt.

The European countries facing the crisis have experienced what a large number of developing and emerging countries went through over the past decades: a period of strong yet unsustainable output growth fuelled by capital inflows comes to a halt at some point, leading to a "sudden stop" or reversal of capital flows (Kaminsky and Reinhart 1999; Reinhart and Reinhart 2009; Moro et al 2015).

This pattern, which has often been repeated in the modern era of global finance, and now once more in Europe, should give pause to seriously reconsider the costs and benefits of international financial integration (Lama and Rabanal 2012). Fortunately, the Great Crisis have not only given impetus to fresh academic thinking on this matter, but also led the IMF to reconsider its position on capital account management and regulation of international capital flows (IMF 2012; Ostry et al 2010, 2011).

However, even the Fund was unprepared for the possibility of balance of payments (BOP) crises in the euro area. In their surveillance work during the period 1999-2009, IMF staff never raised the possibility of major sovereign or BOP crises in the euro area despite their intimate knowledge of crises elsewhere and potential parallels with the euro area that should have drawn their attention, in particular

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that the 'reversal' in net capital flows during the crisis has been very costly in terms of macroeconomic and financial outcomes for the high-deficit countries.

consumption booms, real exchange rate appreciation and large current account deficits, which are typical in countries before a BOP crisis (Pisani-Ferry et al 2011).

We also must recognize that, if the Great Crisis became particularly serious in the euro area, it is also because of the design flaws in economic and monetary European Union (EU). The euro was built on an imperfect institutional framework, envisaged by the 1992 Maastricht Treaty and the 1997 Stability and Growth Pact (SGP).

The Commission and the ECB were also unprepared. What was not well understood was that euro area countries could face BOP problems like emerging countries. A BOP crisis happens when private markets stop financing viable borrowers because of the country they belong to. Because it is within the confines of its jurisdiction, the state, as the ultimate insurer of private agents – notably banks – that risks incurred by households, companies and banks tend to concentrate. Banks with assets that are not diversified internationally also concentrate risks resulting from the potential insolvency of private agents as well as of the sovereign (Pisani-Ferri et al 2013, 9).

As they rely on the state as their backstop, they transfer the risk to it. Finally, because in the euro area the state issues debt in a currency over which it has no control (De Grauwe 2011), it is vulnerable to liquidity crises. This perspective in turn weakens private agents that hold large quantities of government paper. This web of interdependence between the state, banks and non-financial agents may lead markets to price country risk and, in the extreme, to shun all agents located in a particular country, irrespective of their individual financial health.[7]

After the Lehman Brothers collapse, financial markets reassessed their exposure to euro-area countries that had accumulated large current account deficits and net external investment positions before the financial crisis. They concluded that country risk existed in a monetary union and suddenly stopped the capital flows to those countries. The result was extreme pressure on the most vulnerable euro area countries (Pisani-Ferri et al 2013).

But a classical currency crisis, which would have meant the partial disintegration of the monetary union, was avoided thanks to the provision of ample liquidity by the Eurosystem (reflected in TARGET2 balances). The private sector could and did lose access to private funding contrary to the predictions in the academic literature. Yet, this did not lead to a lack in funding because the Eurosystem through its liquidity operations replaced outflowing liquidity.

The private capital flow reversals led to acute liquidity shortages in the banking systems of the countries concerned. The ECB provided liquidity to the banks. It did so in the framework of its Long-Term Refinancing Operations (LTRO) as well as the Main Refinancing Operation (MRO) (Pisani-Ferry and Wolff 2012). This is in contrast to typical currency crises, in which national central banks cannot replace the withdrawal of foreign-currency financing, which then leads to a crisis.

Nonetheless, sovereigns in affected countries did face a payment crisis. Because they had lost access to private markets or at least because they were facing

[7] Allen and Moessner (2012) examine the liquidity effects of the euro area sovereign debt crisis, including its effects on euro area banks as a group, on intra-euro area financial flows, on the supply of and demand for collateral, and on international liquidity.

escalating borrowing costs, governments in Greece, Ireland and Portugal had no choice but to seek foreign assistance to fill their financing gap.

Anyway, the crisis was not merely an economic and financial crisis. It was also a political crisis, stemming from erratic responses and tensions among euro area governments, quarrelling over the right crisis diagnosis and response. European leaders were caught wrong-footed in 2010, as they believed that a balance of payments crisis was impossible within a monetary union. Since such a crisis was not considered a priori, no crisis resolution mechanism had been put in place.

European policymakers hence faced the challenge of crafting a crisis response from scratch in the midst of crisis, first agreeing on bilateral lending to Greece and, when this appeared insufficient, on the creation of the European Financial Stability Facility (EFSF) and the European Financial Stability Mechanism (EFSM). This task has been complicated not only because the negotiations involve a large number of parties, but also because the chosen crisis resolution measures have serious ramifications for the long-term institutional framework and functioning of the monetary union. As Bergsten and Kirkegaard (2012) note, achieving the dual policy goals of solving a current crisis while trying also to prevent the next one - and using the same policy tools to do both - is rarely easy.

Collignon (2012) agrees that the crisis is due partly to fundamental economic developments, such as growth and competitiveness, and partly to uncooperative behavior between the main policy makers in Europe. Also Orphanides (2014) explores the dominant role of politics in decisions made by euro area governments during the crisis, and discusses decisions that appear to have been driven by local political considerations to the detriment of the euro area as a whole.

The domination of politics over economics has led to crisis mismanagement. The underlying cause of tension is identified by Orphanides as a misalignment of political incentives. Member state governments tended to defend their own interests in a non-cooperative manner. This has magnified the costs of the crisis and has resulted in an unbalanced and divisive incidence of the costs across the euro area. In the absence of a federal government, no institution but the ECB can adequately defend the interests of the euro area as a whole. European political institutions instead appear weak and incapable of defending European principles and the proper functioning of the euro. Political reform is needed to sustain the euro, but this is unlikely to pass the political feasibility test with the current governments of Europe.

The fears of the surplus countries, led by Germany, that an easy bailout of Greece would set a negative precedent and create moral hazard problems with other deficit countries - especially the larger euro area members, Spain and Italy, both of which are considered “too big to save” - prevented a quick resolution of the Greek crisis and led to piecemeal solutions, which were never comprehensive enough to end the crisis, and eventually caused contagion to other weak euro countries.

Worries of moral hazard and the risk to build-up a “transfer union”, where deficit countries would have to be financed permanently through direct or indirect transfers and subsidies, made surplus countries also reluctant to endorse proposals such as those for euro-bonds (Delpla and Von Weizsäcker 2010, 2011) or a partial guarantee of all euro area sovereign bonds by the ECB (Wyplosz 2011).

5 The fragmentation of the European financial system along national borders

The crisis has not only had a strong impact on the financial situation of many European countries, but has also affected investors' and lenders' confidence and the effectiveness of the financial sector. The tensions in sovereign debt markets and within the banking sector have fed each other, creating severe funding problems for many borrowers.

These developments have also led to the fragmentation of the financial system along national borders, with a retrenchment of financial activities to national domestic markets. The resulting limited or costly access to funding for many businesses and households wishing to invest has been a major obstacle to recovery across Europe.

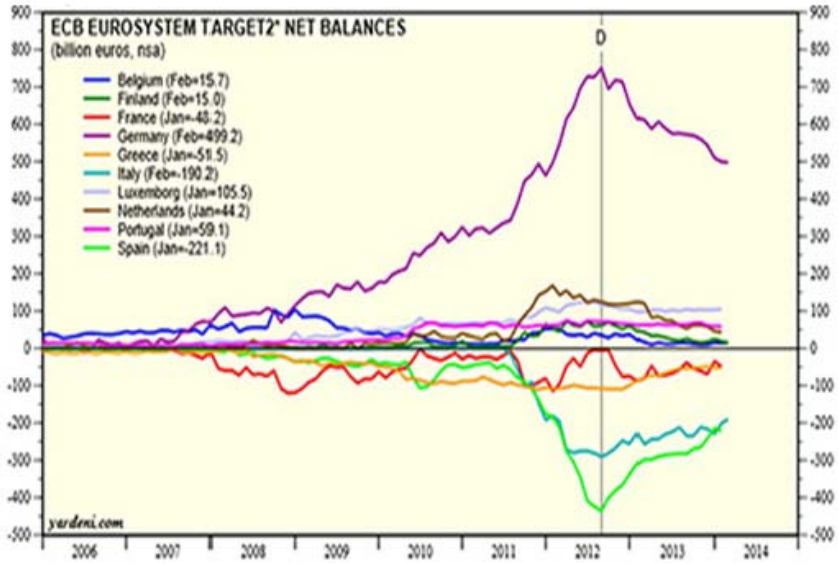

Fig. 2 European TARGET2 balances from 2006 to May 2014 (*billion €*).
Source: Il Sole-24Ore

At the same time, high levels of indebtedness mean that many economic actors must reduce their financial exposure or increase their savings. Such "deleveraging" can also hamper recovery in the short term. The problems are particularly acute in the vulnerable euro area member states (Van Rixtel and Gasperini 2013; Al-Eyd and Berkman 2013; de Sola Perea and Nieuwenhuyze 2014; European Commission 2013).

To overcome these problems and tensions, in July 2012 President Mario Draghi announced at an investors' conference in London that the ECB would do "whatever it takes" to preserve the euro and fight the crisis. Soon after this commitment, on September 6, the ECB approved the Outright Monetary Transactions (OMT) programme. Under this programme, the Bank promised to buy unlimited

sovereign bonds of troubled countries in secondary markets, with a maturity of between one and three years.

The program could be activated by the ECB only after an explicit request of the troubled country in which the latter agreed to accept the ECB's direct control and supervision of its financial and budgetary public policies.

The purpose of this programme, first, was to reduce the spreads in the interest rates for public bonds of troubled countries with respect to German bonds, and, second, to safeguard the monetary policy transmission mechanism in all countries of the euro area, preserving the uniqueness of Eurozone monetary policy and ensuring the proper transmission of the policy stance to the real economy throughout the area.

As shown in Fig. 2, soon after Draghi's London speech, TARGET2 net positions stopped to increase and began to decrease towards lower levels. On 31 December 2014, TARGET2 balances had fallen by half since July 2012 (Draghi 2015), and this means that confidence was again growing in the euro system. Private money is now coming into circulation again, and it is being invested in other countries. This is clearly the evidence of the strong power that the ECB has in influencing the expectations of financial flows among euro area countries.

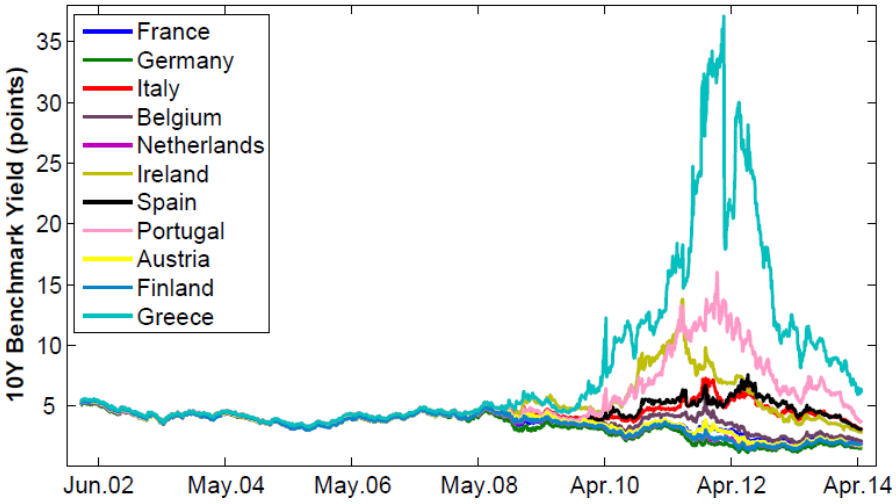

Fig. 3 EMU sovereign 10-years public bond yields, from March 2002 to May 2014 (Source: Sensoy et al. 2015)

In fact, also the spreads in public bonds interest rates have considerably fallen, in line with interest rates reductions among European crisis-hit countries (Fig. 3). After Draghi's London speech, Spanish and Italian bond yields have also greatly fallen, according to the decrease of their spreads with respect to German public bonds.

As shown in Fig. 4, the level of Italian and Spanish spreads on 12 March 2015 were, respectively, 89 and 90 basis points, very close to the levels they had at the end of 2009 before the outburst of the sovereign debt crisis.[8]

This means that, soon after the first months 2015, those spreads incorporate only the country risk due to fundamentals, without any risk premium due to the potential break-up of the whole monetary union. The ECB has bought time for governments to overhaul their economies and banks, but it happened that politicians have taken advantage of the financial-market calm to slow their recovery efforts.[9]

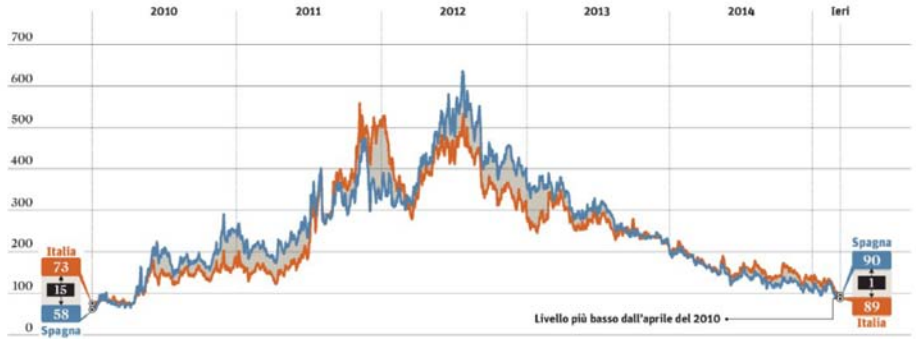

Fig. 4 Italy's and Spain's spreads on 10-years public bond yields with respect to the German Bund. Final data are on 12 March 2015 (Source: Il Sole-24Ore)

Eurozone leaders agreed during the 29 June 2012 summit to build a banking union that would include a single banking supervisor housed within the ECB, a common deposit insurance for households and a common bank resolution rule. However, the lack of progress on the banking union and doubts about the financial strength of the banks in crisis-hit countries are hindering cross-border lending. So, the fragmentation of the financial system along national borders and the retrenchment of financial activities to national domestic markets persist.[10]

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[8] Altavilla et al (2014) evaluate the macroeconomic effects of OMT announcements by the ECB. They find that Italian and Spanish 2-year government bonds yields decreased by about 2 percentage points, while leaving unchanged the bond yields of the same maturity in Germany and France.

[9] Aizenman et al (2013) investigate the impact of credit rating changes on the sovereign spreads in the EU. They find that the association between credit rating changes and spreads shifted markedly between the pre-crisis and crisis periods. European countries had quite similar CDS responses to credit rating changes during the pre-crisis period, but large differences emerged during the crisis period between the now highly-sensitive PIIGS group and other European country groupings (EU and euro area excluding PIIGS, and the non-EU area). They also find a complicated non-linear pattern dependent on the level of the credit rating. In addition, contagion from rating downgrades in PIIGS to other euro countries is not evident once own-country credit rating changes are taken into account.

[10] The financial crisis also led to a systematic divergence in credit spreads for financial firms across national boundaries. This divergence in cross-country credit risk increased further as the European debt crisis has unfolded since 2010. Since that time, credit spreads for both

The crisis has caused significant disruptions to the functioning of the banking system and the financial markets within the euro area. The process of financial integration and convergence towards a single financial market that had been under way for a number of years was abruptly halted by the crisis, triggering a reversal of the integration process, which was then reinforced by the re-emergence of country risks within the euro area and by the related and perverse bank-sovereign feedback loop.[11]

6 The ECB's loss of control over interest rates in the crisis-hit countries

Bologna and Caccavaio (2014) show that the determinants of cross-border banking change substantially over time: first, in the pre-crisis period of financial integration the physical and the financial distances between countries were the main drivers; second, during the global financial crisis banks reduced the concentration in their foreign claims portfolio and retrenched from the more externally vulnerable countries, but kept on investing in the still profitable countries with a sound fiscal position; and third, during the euro area sovereign tensions, while portfolio diversification and the pull-back from externally vulnerable countries continued, foreign claims were also driven by the deteriorating sovereign conditions, the bank-sovereign link, and opportunities for flight-to-quality.[12]

Another problem was the transmission mechanism of the monetary policy to the economies of various countries. Since the early part of 2010, tensions in the sovereign debt markets of some euro area countries have progressively distorted monetary and credit conditions, hindering the ECB monetary policy transmission mechanism and raising the cost of loans to non-financial corporations and households.[13]

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non-financial and financial firms increasingly reflected national rather than euro area financial conditions (Gilchrist and Mojon 2014).

[11] Reichlin (2013) shows that while in the two recent episodes of euro area recession and financial stress the ECB acted aggressively providing liquidity to banks, the second recession, unlike the first, has been characterized by an abnormal decline of loans with respect to both real economic activity and the monetary aggregates. This shows that euro area banks, over the 2008-2012 period, did not change neither the capital to asset ratio nor the size of their balance sheet relative to GDP, keeping them at the pre-crisis level.

[12] Quoting BIS (2012) data, Bologna and Caccavaio (2014) provide a clear and reliable picture of cross-border banking at aggregate level by country of residence, which allows to identify a number of stylized features. Total gross consolidated foreign claims on an immediate risk basis of banks headquartered in euro area countries decreased by 35 per cent from the peak in March 2008 (€11,696 bn) to June 2012 (€7,579 bn), returning to levels previously seen at the end of 2005. The decline was more pronounced for claims on euro area countries (-40 per cent) than for those vis-à-vis non euro area countries (-32 per cent).

[13] Neri (2013) makes an empirical assessment of the impact of the tensions on bank lending rates in the main euro area countries, concluding that they have had a significant impact on the cost of credit in the peripheral countries. A counterfactual exercise indicates that if the spreads had remained constant at the average levels recorded in April 2010, the interest rates

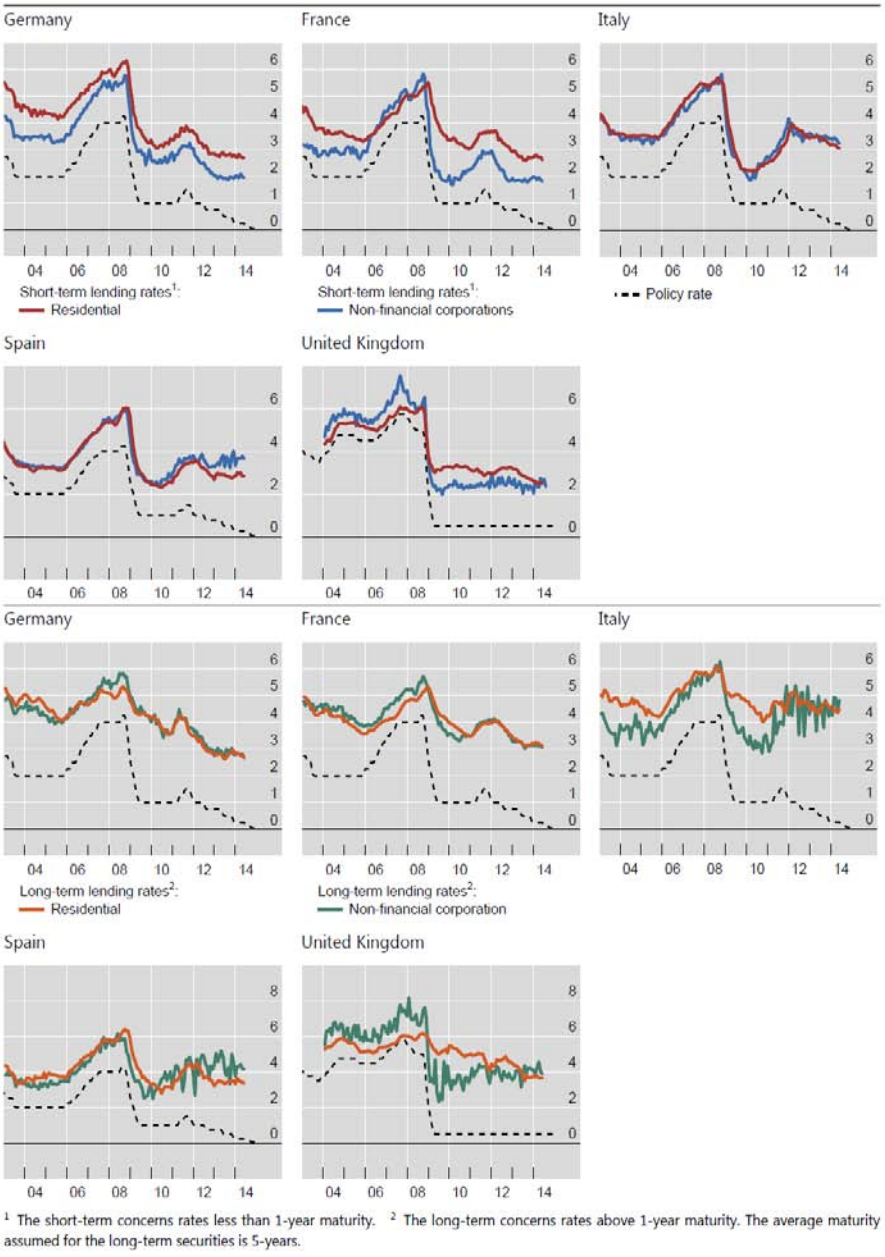

Fig. 5 MFIs lending rates: short- and long-term **(**Source: European Central Bank, national data)

on new loans to non-financial corporations and on residential mortgage loans to households in the peripheral countries would have been, on average, lower by 130 and 60 basis points, respectively, at the end of 2011.

In fact, the precise transmission mechanism of the ECB monetary policy is not so clear. The problem of troubled EMU countries, especially Italy and Spain, but also the UK, is that the interest rates that small and medium-sized enterprises (SMEs) must pay to borrow money are far above those set by the ECB and those paid to depositors. Therefore, the link between the ECB's policy rate and borrowing in the real economy is broken (Van Rixtel and Gasperini 2013; Neri 2013).[14]

As documented by Illes et al (2015), the global financial crisis pushed central banks in many countries to cut short term policy rates to near zero. Based on the pre-crisis relationship between bank lending rates on mortgages or loans to businesses with policy rates, it would have been reasonable to expect lending rates to have fallen by similar amounts.

But examination of the lending rates reveals they did not fall that much (Illes and Lombardi 2013; Gambacorta et al 2014). In fact, the margins over policy rates have widened as policy rates have fallen (Fig. 5). Comparing the average margins on short-term and long-term loans to small business for nine euro area countries, Denmark and the UK in the pre-crisis (January 2003 - August 2008) and post-crisis period (September 2008 - April 2014) shows that they rose by 19.5%, while margins on short-term and long-term mortgage loans rose by 41.8% and 37.5% respectively.

This reflects opportunistic behavior by banks, which have taken advantage of the reduction in official interest rates without transferring these benefits to borrowers. Inevitably this has raised the question of whether banks were taking advantage of the low interest rate environment by failing to pass on lower rates to loans (Arestei and Gallo 2014). Also the ECB (2013) gives a reason for divergence of lending rates between countries in the euro area, which also results in a breakdown of the relationship between policy rates and lending rates.

There are three reasons why bank lending rates do not reflect the behaviour of policy rates in the post crisis period. First, the policy rate is a very short-term rate, while the lending rates to business and households normally reflect longer-term loans. The spread between the lending and policy rates therefore reflects the maturity risk premium alongside other factors that determine the transmission of policy to lending rates.

Second, even if we correct for the maturity risk premium using an appropriately adjusted swap rate, the adjusted policy rate is not the marginal cost of funds for banks. Third, banks obtain funds from a variety of sources including retail deposits, senior unsecured or covered bond markets and the interbank market, and these differ in nature from policy rates since they comprise a range of liabilities of differing maturities and risk characteristics (Illes et al 2015).

Since the global financial crisis there have been a number of changes that have increased the cost of market funding. Larger risk premia associated with securities issued by banks and interbank borrowing, have raised the cost of market funding for banks (ECB 2009, 2010a,b; Zoli 2013). Financial market conditions have

[14] The literature on the pass-through of monetary policy to lending rates is vast. From an empirical point of view, a recent paper by Gambacorta et al (2014) investigates the pass-through of monetary policy to lending rates applied to non-financial firms in major advanced economies, prior and after the global Great Crisis. They find evidence of a structural break after Lehman Brothers' default, due to a strong increase in the mark-up between the lending rate and the policy rate of central banks, both in US and in Europe.

become heterogeneous reversing a trend of lower and more similar rates since the late 1990s.

The financial crisis is primarily responsible for the impairment of money markets and the divergence of bond yields across borders; but the sovereign debt crisis also contributed to a divergence in costs of funds for banks from financial markets (Illes et al 2015). The ability of governments to recapitalize their banks has declined as their own debt has increased, which has widened bond spreads (ECB 2012). In addition, deposit rates, which would normally be marked down along with the policy rates, have been constrained by the zero lower bound, which forced banks to reduce the mark-downs.

On top of that, there has been greater competition among banks for deposits, which further raised rates on time deposits, as higher-yield assets such as fixed-term securities issued by governments have increasingly been seen as substitutes for low-yield deposits by savers (Darracq-Paries et al 2014).

Therefore, comparing lending rates with policy rates, as is commonplace in the empirical pass-through literature, is highly misleading, since the latter do not reflect the effective cost of funding of banks. Greater focus should be placed on the whole range of liabilities that banks use to acquire funds (Adrian et al 2013; Turner 2013).

The focus should shift to the spread between lending rates versus a measure of effective bank funding costs, i.e. the weighted-average cost of liabilities (Illes et al 2015).

To overcome all these problems, on March 2015, the ECB for the first time inaugurated an European quantitative easing (Qe) monetary policy. It had lowered its main lending rate in September 2014 to just 0.05%, while charging banks on deposits they leave with it trough a negative rate of 0.2%. The ECB had hoped to reverse the shrinking of its balance-sheet, after commercial banks reimbursed their 2011-2012 LTROs, through another more extended round of long-term funding operations, providing liquidity until 2018 at a fixed rate of just 0.15% a year.

But the first two of eight ECB's planned lenders have been a disappointment: in September and December 2014, banks borrowed only €212 bn, little more than half the €400 bn available.

So, the only way for the ECB to expand the size of its own balance-sheet, which it intends returning at least to the high of €3.000 bn that it reached in early 2012, after the successful two extraordinary LTROs of December 2011 and February 2012, was to proceed without further delay with Qe.[15]

[15] Crowley (2015) presents an overview of exposures in the balance sheets of central banks, banks, and other depository institutions during the past decade, with emphasis on asset growth and currency composition. He exploits the IMF's Standardized Report Form-based monetary data to show: (i) there was a widely observed buildup of assets prior to the global financial crisis, but there has been no significant reduction in its wake; (ii) the foreign currency composition of the balance sheets of banks and other depository institutions remained remarkably constant in spite of the crisis, significant changes in the composition of balance sheets, and globalization, and does not seem to have been significantly influenced by the behavior of exchange rates; and (iii) exposure to households increased prior to the crisis, but this increased risk was offset by increased capitalization.

7 The credit channel paradox

An alternative explanation for the fact that the link between the ECB's policy rate and the market borrowing rates in the real economy was broken is given by Bernanke and Gertler's (1995) "black box" analysis. According to this view, when interest rates rise, credit supply might fall. This is known as the "credit channel paradox", which works as follows. Because of the capital rules of lending, banks can loan to SMEs only if they have a corresponding amount of capital or deposits on hand, while the rule does not apply when banks buy public bonds.

High interest rates on public bonds, therefore, crowd out the bank-lending channel to SMEs. Furthermore, banks lose deposits as customers prefer to use them to buy public bonds with higher rates of return. To plug the gap, banks offer long term deposits that also pay higher interest rates. So, the entire cost of funding for the banks increases. As their own costs rise, banks' loans become scarcer and dearer. This then slows the economy by increasing costs for bank-dependent borrowers, which is the case for SMEs.

For the bank-lending channel to hold, it is necessary that: first, banks' costs rise and this depends on the shortfall of customers deposits, plus the deteriorating of insolvencies by firms and households; and, second, it will be important only in countries where firms are dependent on bank borrowing. This is the case where SMEs prevail, as in Italy, Spain and the UK, where the loans that banks make exceed the cash they collect as deposits.

In 2008, as the euro zone started to contract, the ECB slashed its main rate from 4.25% to 1%, but because investors were worried about the state of the banks, the returns that banks had to offer on their own bonds rose. This offset the ECB's easing, so that firms' borrowing rates fell by less than normal. When the euro crisis intensified in 2010, the ECB's influence on interest rates in Spain and Italy waned even further. Banks' bond yields rose in line with their governments' cost of borrowing. The supply of loans contracted as predicted by the bank-lending channel, but now as a result of a change that the ECB did not control.

The amount of borrowing in Italy and Spain has started to fall again. Some of this may be due to weak demand, but Cappiello et al (2010) provided empirical evidence for the existence of a bank lending channel of monetary policy transmission in the euro area. Furthermore, they found that changes in the supply of credit, both in terms of volumes and in terms of credit standards applied on loans to enterprises, had significant effects on real economic activity.

To support the smooth transmission of its interest rate decisions to the wider economy, the ECB decided to accommodate the liquidity needs of banks that could not be satisfied in the financial market. Thus, since October 2008 the Eurosystem has been conducting most of its liquidity-providing tenders with a fixed-rate, full allotment procedure. This means that all bids received from counterparties are fully satisfied, against adequate collateral. In the context of a dysfunctional interbank market, banks could thus turn to the Eurosystem for liquidity. This enabled them to build up buffers to meet future liquidity needs while access to interbank funding was uncertain. Consequently, the Eurosystem provided more liquidity than needed on aggregate by the banking sector, at the same time taking on an intermediation

function. This prevented a disorderly deleveraging process and the ensuing adverse consequences for the euro area economy and price stability.

As the sovereign debt crisis emerged in some euro area countries, starting in spring 2010, the segmentation in funding markets for banks became more marked along national borders. The central bank intermediation allowed the banking systems in those countries to withstand the withdrawal of private capital and the reversal of cross-border capital flows. The recourse to central bank funding is therefore closely linked to the emergence of significant TARGET2 liabilities for countries most affected by the crisis and, on aggregate, at the euro area level.

The sovereign debt crisis and resulting bank funding market segmentation also led to a flow of capital into the more resilient countries, resulting in significant amounts being directed towards the central banks' liquidity absorbing facilities, for example via use of the deposit facility or via counterparties accruing amounts in excess of their reserve requirements in their current accounts at the central bank. In particular, the repatriation of previous investments and the lack of renewed lending to banks in crisis-hit countries led to significant net payment inflows, a concurrent increase in the TARGET2 claims of the NCBs in the more resilient countries and an increase in liquidity in the banking systems of those countries.

In the second half of 2011 and the first half of 2012 the sharp increase in TARGET2 liabilities and claims was also due to concerns about the integrity of the monetary union. A number of banks from resilient countries had decided to replace head office funding for subsidiaries in financially-stressed jurisdictions with local funding. This meant that borrowing from the Eurosystem replaced inter-group funding from resilient countries. This behaviour was in some cases encouraged by national banking regulators aiming to safeguard their domestic banking system (ECB, 2013).

8 Concluding remarks: the role of Germany in promoting European recovery

The European financial crisis has demonstrated once more that any fixed exchange rate arrangement (including the monetary union) is prone to crisis if countries do not adjust their economies internally and imbalances are allowed to grow too large. If economic policies are not able to keep the domestic price level competitive vis-à-vis the rest of the integrating area, and external adjustments via the nominal exchange rate are precluded, real exchange rate appreciation will erode the countries' competitiveness. In most cases this will lead to current account deficits that at some point will trigger a balance of payments crisis.[16]

[16] According to Bordo and James (2013), there are some striking similarities between the pre 1914 gold standard and EMU today. Both arrangements are based on fixed exchange rates, monetary and fiscal orthodoxy. Each regime gave easy access by financially underdeveloped peripheral countries to capital from the core countries. But the gold standard was a contingent rule, because in the case of an emergency like a major war or a serious financial crisis a country could temporarily devalue its currency. The EMU has no such safety valve. Capital flows in both regimes fueled asset price booms via the banking system ending in

Therefore, structural reforms are unavoidable in indebted countries to improve productivity and increase competitiveness. Unfortunately, they will produce positive results only in the long run.

In the medium term, there is a widespread consent that a successful crisis resolution need to include at least the following four components: 1) a fiscal union, i.e. a mechanisms that ensure that fiscal policies in the Eurozone are partly centralized with shared backing across countries so as to meet the requirements of a monetary union; 2) a banking union, i.e. a framework for banking policy and banking supervision at the European level that credibly supports the vision of a single European market for financial services; 3) an overhaul of EU/Eurozone institutions that would enable fiscal and banking unions to be sustainable, by allowing centralized executive decision-making to the extent necessary and by guaranteeing democratic accountability; and finally 4) short-term arrangements that chart a path towards the completion of the previous three points, which is bound to take some time.

In the European summit held in Brussels on June 28 and 29, 2012, Europe's political leaders committed themselves to the creation of a banking union and a unified banking supervision.[17] They also decided to move towards a fiscal union and more political integration, and that troubled countries and their banking systems could directly access to euro zone rescue funds (EFSF, EFSM and ESM).[18]

Over the following months, many steps forward have been taken towards an effective governance of the Eurozone in order to guarantee financial stability, through the signature of the Treaty on Stability, Coordination and Governance (the Fiscal Compact), the Six Pack and the Two Pack Agreements.[19]

The Fiscal Compact entered into force on 1 January 2013, and in March 2014 Eurozone leaders agreed to build a banking union that would include a single

major crises in the peripheral countries. But not having the escape clause has meant that present day peripheral European countries have suffered much greater economic harm than did Argentina in the Baring Crisis of 1890.

[17] Steps towards the creation of European supervisory authorities to help oversee Europe's financial sector from a pan-European perspective were taken in late 2008, when the president of the European Commission mandated a high-level expert group on financial supervision in the EU. The expert group, led by Jacques de Larosière, proposed three new supervisory authorities, which were established in November 2010 and started operation in January 2011: the European Banking Authority (EBA) based in London, the European Securities and Markets Authority (ESMA) based in Paris, and the European Insurance and Occupational Pensions Authority (EIOPA) based in Frankfurt. These three supervisory authorities were complemented by the creation of the European Systemic Risk Board (ESRB), which is responsible for the macro-prudential oversight of the financial system within the EU and which has a secretariat hosted by the ECB.

[18] Honkapohja (2013) discusses on institutional improvements that can help in resolving the European crisis and avoiding a future one. These include the banking union and the strengthened Stability and Growth Pact and related institutional rules.

[19] Kilponen et al (2012) find that European crisis resolution policies succeeded in reducing stress in the financial market. However, the impact of the same policy decision might have been positive for some countries while negative for others, suggesting that contagion effects may be important. Anyway, they stress that the economically most significant effects on the bond yields have been due to the announcement of the ECB's Securities Market Programme, whose further evolution was the Outright Monetary Transactions programme.

banking supervisor housed within the ECB, a common deposit insurance for households and a common bank resolution rule. These decisions have enforced the process of convergence of TARGET2 balances depicted in Fig. 2.

Furthermore, there is now a general consensus that every country is obliged to pay off its own debt accumulated in the past. Therefore the way is open to ensuring that financial stability will be pursued by each member state within the Eurozone, under strict European control.

However, fiscal consolidation will be difficult to achieve without a strong recovery of the European economy. There is no national way out of the crisis. Expansionary measures are impossible at the level of member states, which are obliged to choose fiscal consolidation as a priority; and in any case they would be domestically ineffective since most of the effects resulting from national measures would be lost through increased imports from other European countries. Therefore, in the short run, the only possible way to overcome the crisis is to launch a new phase of growth at European level and promote a substantial increase in European employment.

In this regard, there is a deep division between the economies of the prosperous North (Germany, Austria, the Netherlands and Finland) and those of the austerity-hit South (France, Italy, Spain, Greece and Portugal). As the unemployment rates in Spain and Greece (both 27%), in Portugal (18.2%) and even in France (11.2%) and Italy (12%) have become unsustainable, a long simmering growth-versus-austerity debate has boiled over with increasing calls from outside Germany to rethink crisis-fighting measures.

Up to now, Germany has been a staunch advocate of austerity, outlining plans to balance its own budget a year ahead of schedule, while France, Italy and Spain, as well as the European Commission, have all indicated their strong concerns to promote growth without delaying fiscal consolidation. There is only one way to promote growth in the European Union without interfering in the fiscal consolidation needs of the austerity-hit southern countries. This is possible if Germany does not maintain a balanced public budget for the next few years and commits itself to promoting an expansionary fiscal policy with deficits ranging from 1% to 3% of GDP. In fact, Germany is the only country in the EU that can expand its aggregate demand without paying a substantial increase in domestic inflation.

To expand European aggregate demand to the extent necessary to promote growth, Germany could also let domestic wages increase. The combined effects of the two policies (budget deficit plus wages increases) and the ensuing moderate increase in domestic inflation could be sufficient to appreciate the real exchange rate in Germany, permitting the austerity-hit Southern EMU countries to regain their external competitiveness. In this way, German surplus of the current account (7% of GDP in 2014) will decrease, while exports of deficit EMU countries will increase, fuelling again the economic growth of the entire Union.[20]

[20] The same conclusion is reached by Holinski et al (2012), who agree that changes in competitiveness and fiscal stance are a joint responsibility of and will affect both surplus and deficit countries. Recognizing this joint responsibility will greatly increase the economic and political stability of the euro area and hasten adjustment. In a recent paper, Kollmann et al (2015) analyze the determinants of Germany's current account surplus after the launch of the Euro. The most important factors driving the German surplus were positive shocks to the

The final effect of this policy will be a further reduction of net claims and liabilities in the TARGET2 payment system.

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German saving rate and to the rest of the world demand for German exports, as well as German labour market reforms and other positive German aggregate supply shocks. The convergence of the rest of the euro area interest rates to German rates due to the creation of the euro only had a modest effect on the German current account and on German real activity. The key shocks that drove the rise in the German current account tended to worsen the rest of the euro area trade balance, but had a weak effect on real activity. These driving factors are likely to be slowly eroded, leading to a very gradual reduction of the German current account surplus. An expansion in German government consumption and investment would raise German GDP and reduce the current account surplus, but the effects on the surplus are likely to be weak.

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