LESSONS FROM THE EUROPEAN ECONOMIC AND FINANCIAL GREAT CRISIS: A SURVEY

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Abstract

This paper discusses several key issues regarding the present European economic and financial Great Crisis, which essentially is a twin sovereign debt and banking crisis. The shift of the recent world financial crisis into a European sovereign debt crisis is tackled by analysing how via the banking system the financial contagion was extended from the US to Europe. The explanation focuses on the imbalances of European Monetary Union (EMU) countries balance-of-payments. The European crisis has shown that it can spread quickly among closely integrated economies, either through the trade channel or the financial channel, or both. In this context, TARGET2 payment system of EMU countries became crucial, reflecting funding stress in the banking systems of crisis-hit European countries. The paper concludes that, in the medium term, a successful crisis resolution requires more political integration, which will include a fiscal union and a banking union. However, in the short run, a prompt recovery is essential to get out from the troubles, and this requires that surplus countries (particularly Germany) expand aggregate demand and let domestic wages and the ensuing inflation rate increase.

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1. Introduction

Europe currently faces a severe economic and financial Great Crisis. It is often described as a sovereign debt crisis, but in fact it is really a sequence of interactions between sovereign problems and banking problems that caused a severe economic slowdown. The premises of this crisis lie in the fact that, since the start of European Monetary Union (EMU), euro area countries have experienced very diverse macroeconomic developments. Some countries saw a boom in external demand and a significant improvement in their current account balances during the period preceding the 2008-09 crisis. This was supported by significant competitiveness gains, as reflected in the sizeable reductions in unit labour costs relative to their trading partners. In contrast, other countries experienced a sustained loss of competitiveness, often associated with mounting current account deficits. For most countries, large and persistent competitiveness losses were linked to booms in domestic demand, as nominal interest rates declined significantly and consumers, firms and banks were overly optimistic about future income and profit prospects. Excessive demand and the associated credit boom led to the build-up of large domestic and external debt in several euro area countries.

The correction of macroeconomic imbalances and structural vulnerabilities began in 2008. The pace of adjustment varied significantly across countries and accelerated after the 2010. Between 2010 and 2012, Greece, Ireland and Portugal entered into fully fledged European Union (EU) and International Monetary Fund (IMF) financial assistance programmes, involving far-reaching economic policy adjustments, including those pertaining to structural reforms. Spain entered into an EU financial assistance programme for the recapitalisation of its financial institutions, and other vulnerable countries such as Italy implemented a series of fiscal consolidation measures and some structural reforms (ECB, 2013a).

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Anyway, the prospect of a slow recovery, the current account imbalances and the levels of debt accumulated by public and private actors made the situation troublesome. Structural reforms are an essential part of restoring Europe's competitiveness, but these decisions are not easy to undertake. Macroeconomic imbalances, which accumulated over a long time, are now being partially corrected, and some of crisis-hit European countries are regaining competitiveness. Some progress is being made in consolidating public finances, and some important steps have been taken to reduce tensions in the financial markets (European Commission, 2013). Nevertheless, the fragmentation of euro area financial markets increased further in 2012 and in the first half of 2013. The key driver was redenomination risk, linked to fears of a possible break-up of the euro area. Around mid-2012, the decisions by European leaders to set up a banking union and the announcement, as well as adoption, of non-standard measures by the European Central Bank (ECB) greatly contributed to restoring confidence in euro area financial markets, improving market sentiment and reversing the earlier trend towards market fragmentation (ECB, 2013b). Nonetheless, the crisis continues to remain very strong and it is very far to be overcome in the short run.

How was it that Europe came to the present 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 favourably. 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 rate.

Third, since EMU has been built as a union of sovereign states, each state has retained its own national central bank, which has become a member of the so-called Eurosystem with the 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. 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. Nevertheless, TARGET2 balances reflect funding stress in the banking systems of crisis-hit countries. Therefore, such imbalances 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: *a*) 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; *b*) 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; *c*) 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 *d*) short-term arrangements that chart a path towards the completion of the previous three points, which is bound to take some time.

Consequently and finally, in the short run, 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 only if Germany does not maintain its public budget in balance for next few years and commits itself to promote 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 of 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 apreciate 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 deals with the origin and development of the European Great Crisis. Section 3 analyzes the mispricing of risk by financial markets, while section 4 discusses the misalignment of internal real exchange rates among European countries and the ensuing balance of payments imbalances. Then in section 5 we analyze the link between TARGET2 positions and EMU countries balances of payments. Section 6 is devoted to the accumulation of TARGET2 imbalances, and section 7 to the erratic responses and tensions among euro area governments. In section 8 we show that the ECB has partly lost the control of interest rates in the crisis-hit countries. Finally, section 9 concludes with an assessment of long and the short run policies we suggest to overcome the crisis.

2. The origin and development of the European Great Crisis

The origin of the current European crisis can be directly traced back to the global financial crisis of 2007–2009, which spilled over into a sovereign debt crisis in several euro area countries in early 2010. In fact, one aspect of the global contagion was the extension of the Great Crisis from the US to European countries. It began with Greece, but suddenly it spread over some other countries of the Eurozone like Portugal, Ireland, Italy and Spain (shortly indicated as the PIIGS countries). As a consequence, Europe since 2010 faces a severe economic and financial crisis. It is often described as a sovereign debt crisis, but in fact it is really a sequence of interactions between sovereign problems and banking problems. With deteriorating public finances, sovereign risk has increased and worsened bank's balance sheets. In fact, as public debt approached sustainability limits in

PIIGS countries, a high bank exposure to sovereign risk gave raise to a fragile interdependence between fiscal and bank solvency and so the possibility of a self-fulfilling crisis. Therefore the situation is best described as twin sovereign and banking crises that mutually feed each other, and the result of this interaction is a gradual contagion to more countries and more asset classes (Adler, 2012; Véron, 2011).[1] To offset sharp falls in output, euro area governments responded with counter-cyclical fiscal policies that increased fiscal deficits. Moreover, fiscal positions worsened as tax revenues declined and transfer payments grew larger due to rising unemployment during the crisis. In many countries, government bailouts of banking systems also contributed to an increase in public debt. Private debt became public debt, be it through banking crises or the burst of housing bubbles, leading to sovereign crisis. The debt crisis in several member states of the euro area has raised doubts about the viability of European Monetary Union (EMU) and the future of the euro. The crisis has highlighted the problems and tensions that will inevitably arise within a monetary union when imbalances build up and become unsustainable (Volz, 2012).

The Eurozone sovereign crisis started when the government of Greece, freshly elected in October 2009, revealed that its predecessor had misled its Eurozone neighbors and the public about the true state of the country's public finances. The budget deficit for 2009 was 14.7% of GDP, more than double the previously published figure. This raised serious doubts about the country's ability to repay its debt. On December 2009, rating agencies downgraded Greek debt below investment grade. Government bond yields rose to unsustainable levels and by the end of April 2010 Greece turned to the European Union (EU) and the International Monetary Fund (IMF) to activate a €45 billion bailout package. By early May 2010, the EU-IMF rescue package had to be increased to an amount of €110 billion over three years.

Soon after Greece's bailout, since 2010 EU decided to set up a European Financial Stabilisation Facility (EFSF) with €440bn financial firepower to intervene in similar situations. Simultaneously, the ECB initiated a "Securities Markets Programme" under which it buys sovereign debt of troubled countries in secondary markets.[2] Subsequently, the EFSF and IMF jointly agreed to provide conditional assistance packages to Ireland (November 2010) and Portugal (April 2011). In July 2011, further assistance to Greece was decided by the Eurozone heads of state and government. A relatively mild debt restructuring scheme, euphemistically known as "private sector involvement" (PSI), was made a condition for the new assistance package to Greece, whose outline was announced on July 2, 2011. Therefore, in March 2012 a new package of €130 billion to Greece was approved by the EU and IMF after Greece's creditors agreed to the PSI to restructure Greek government bonds, which implied losses of up to 75%. More than 85% of private bondholders agreed to the deal, but not doing the agreement could have meant that Greece would not qualify for more bailout money and could have faced default (Kirkegaard, 2012).

The bailout, however, failed to restore market trust in the Greek economy. Moreover, it failed to halt contagion of the crisis to other countries of the euro area.[3] In particular, the Greek

[1] The mutation of the original financial crisis into a sovereign debt one in the euro area countries is investigated by Candelon and Palm (2010) and De Grauwe (2010). More in general, Sturm and Sauter (2010) analyze the impact of the crisis on Mediterranean countries, while Wyplosz (2010) compares the United States and European situations during the crisis and examines how much of the crisis has been imported by Europe from the US. The paper argues that Europe never had a chance to avoid contagion from the US. On the other side, a comparison between Japanese and European crises is made by Schnabl (2013), who argues that Europe may stand at the beginning of a persistent lingering crisis as it is observed in Japan since more than two decades. Finally, the strong relation existing between the soundness of the public budgets and the international financial stability for the Italian case is illustrated by Banca d'Italia (2010) and Albertazzi et al. (2012). The theoretical debate on the Great Crisis is extensively analysed by Moro (2012), while the essential role played in the crisis by the run on repo, both in Europe and in the US, is analized by Moro (2013).

[2] Kilponen et al. (2012) stress that the economically most significant effects on the bond yields have been due to the announcement of the ECB's Securities Market Programme.

[3] Forbes (2012) surveys and assesses the academic literature on defining, measuring, and identifying financial contagion and the various channels by which it can occur, highlighting contagion risks in the euro area. He shows that a country is more vulnerable to contagion if it has a more levered banking system, greater trade exposure, weaker macroeconomic fundamentals, and larger international portfolio investment liabilities.

crisis and the hesitant political response from the other European countries raised concerns over the debt situation and the structural and competitiveness problems of the economically weaker periphery member countries of the euro area. As a consequence, the borrowing costs for the PIIGS countries increased significantly and the cost of insuring sovereign debt against default soared as trust in their ability to repay vanished. The interdependence between sovereign credit and banking systems has been a running theme of this sequence of events. Eurozone sovereign debt is held in large amounts by Eurozone banks, with a significant bias for the bonds of the country in which the bank is headquartered, but also significant is cross-border exposure to other Eurozone countries' sovereign debt. This is partly due to policy choices before the crisis which in retrospect appear questionable, particularly the risk-weighting at zero of Eurozone sovereign bonds in regulatory capital calculations, the longstanding acceptance of such bonds with no haircut by the ECB as collateral in its liquidity policies, and possible instances of moral suasion by home-country public authorities that resulted in large holdings of the home country's sovereign debt (Véron, 2011).

Between 2007 and 2010, the debt to GDP ratio of the euro area increased from 66.3% to 85.4%. Greece is a special case in the sense that the level of Greek debt had already been very high before the crisis, at 107.7% of GDP in 2007. Greek debt, which has been on a continuous rise since 2003, reached a level of 144.9% of GDP in 2010. Like Greece, Italy had a debt level above 100% of GDP prior to the crisis, but unlike in the case of Greece the debt to GDP ratio fell between Italy's adoption of the euro in 1999 and 2007.[4]

Among euro area countries, the most dramatic increase in public debt occurred in Ireland, where the country's debt problems can be clearly ascribed to the country's banking crisis. Ireland did not have a fiscal or debt problem until 2008. Indeed, between 1997 and 2007, Ireland had a fiscal surplus every year except for 2002, when the government recorded a tiny deficit of -0.4% of GDP. Accordingly, the Irish debt to GDP ratio declined steadily over this period from 64.3% in 1997 to 24.9% in 2007, with Ireland being one of the EU countries with the lowest public debt burden. The situation changed in the course of the Irish banking crisis in September 2008 when the Irish government, under pressure from European governments and institutions (including the ECB) but also from the US government, guaranteed most liabilities of Irish-owned banks (Regling and Watson, 2010; McMahon, 2010). The government guarantee was initially €400 billion but was later increased to €440 billion. As a consequence, the Irish deficit ballooned and the debt to GDP ratio shot up from 24.9% in 2007 to 94.9% in 2010. The ensuing deterioration of Ireland's access to capital markets in the autumn of 2010 led it to seek an international financial rescue package by the IMF and the EU over €90 billion in November 2010 to finance its borrowing and bank recapitalization needs.

Like Ireland, Spain did not have a fiscal or debt problem before 2008. In the period 1999-2007, Spain had an average annual budget surplus of 0.3% of GDP. In 2007, Spain even recorded a fiscal surplus of 1.9%. Until the outbreak of the global financial crisis, Spain did not violate a single time the EU's Stability and Growth Pact (SGP).[5] Spain's fortunes changed when the global financial crisis put an abrupt end to a long cycle of high growth (which started around 1996) that had been accompanied by a construction and real estate boom (Suarez, 2010; Moro and Nũno, 2012). When output contracted in 2008, the Spanish housing bubble burst and destabilized the

[4] In the case of Italy, Albertazzi et al. (2012) show that a rise in the 10-year yield spreads relative to Germany is followed by an increase in the cost of wholesale and of certain forms of retail funding for banks and in the cost of credit to firms and households; the impact tends to be larger during periods of financial turmoil. An increase in the spread also has a direct negative effect on lending growth, beyond that implied by the rise in lending rates. Finally, they document a negative impact of the spread on banks' profitability, stronger for larger intermediaries. More in general, Di Cesare et al. (2012) show that for several countries the spread has increased to levels that are well above those that could be justified on the basis of fiscal and macroeconomic fundamentals. Among the possible reasons for this gap, the analysis focuses on the perceived risk of a break up of the euro area. Finally, the sustainability of Italian fiscal policy in the long run is analyzed by Bartoletto et al. (2011).

[5] The SGP requires EU member countries to have an annual budget deficit no higher than 3% of GDP and a national debt lower than 60% of GDP or approaching that value.

banking system. The Spanish fiscal position deteriorated, with Spain recording fiscal deficits of 4.5% in 2008, 11.2% in 2009, and 9.3% in 2010. Spain's public debt rose from 36.5% of GDP in 2007 to 61.0% in 2010. Even in Portugal, which was the first country to breach the SGP in 2002 and which had seen a steady increase of its debt to GDP ratio since joining the euro area in 1999 (when debt stood at 49.6% of GDP), the by far largest increase of public debt occurred during and after the 2008-2009 crisis, with debt rising from 68.3% in 2007 to 94.9% in 2010 (Volz, 2012).

3. Mispricing of risk by financial markets

An important element that contributed to the European financial crisis was a mispricing of risk by capital markets and an ensuing misallocation of capital in the decade before the outbreak of the crisis. European monetary unification brought about a convergence of interest rates among euro area members. Countries with weaker positions that had joined the Euro could refinance themselves roughly at the same cost as the most solvent states. Spreads of sovereign bonds of the PIIGS over Germany narrowed rapidly in the run-up to EMU membership and almost disappeared once they had become members of the euro area (Figure 1). By January 2001, the time of Greece's entry into the euro area, the yields on 10-year Greek bonds had fallen to 5% from 25% in 1992. Sovereign risk of virtually all euro area countries, including the PIIGS, was priced more or less the same as German sovereign debt. Financial markets were too much optimistic, depending on the fact that the risk of euro area central government bonds was weighted at zero in regulatory capital calculations and because the ECB treated such debt with no haircut - basically as risk-free - when these were offered as collateral for repos and other collateral financing trades (Véron, 2011). Buiter and Siebert (2005) early highlighted this problem, maintaining that the ECB's open market operations created moral hazard by not discriminating sovereign risk within the euro area.

On the contrary, soon after the explosion of European financial crisis, spreads of sovereign bonds of the PIIGS over Germany began to differentiate again (Figure 1). De Sanctis (2012) found that three factors can explain the recorded developments in sovereign spreads: (i) an aggregate regional risk factor, (ii) the country-specic credit risk and (iii) the spillover effect from Greece. Specifically, higher risk aversion has increased the demand for the Bund and this is behind the pricing of all euro area spreads, including those for Austria, Finland and the Netherlands. Country-specific credit ratings have played a key role in the developments of the spreads for Greece, Ireland, Portugal and Spain. Finally, the rating downgrade in Greece has contributed to developments in spreads of countries with weaker fiscal fundamentals: Ireland, Portugal, Italy, Spain, Belgium and France. On this argument, De Grauwe and Ji (2012a) found two important pieces of evidence. First, since the start of the financial crisis, financial markets have started worrying about the high debt-to-GDP ratios in the eurozone, and have interpreted these high and increasing debt-to-GDP ratios as leading to default risk.[6] On the contrary, no such worries have developed in stand-alone countries despite the fact that debt-to-GDP ratios were equally high and increasing in these countries. Second, they observe that in the eurozone the spreads can move away from underlying fundamentals (such as the debt-to-GDP ratio) in a 'bubble-like' fashion. Once again, no such 'bubbles' were observed in stand-alone countries.

A theoretical explanation of this fact was provided by De Grauwe (2011). Because members of a monetary union issue government debt in a currency they do not control, as a result the governments of these countries cannot guarantee that the cash will always be available to pay out the bondholders. This contrasts with stand-alone countries, which can always guarantee that their central bank will print the cash necessary to pay out bondholders. In a monetary union, instead, the absence of a guarantee that the cash will always be available creates a situation in which a liquidity

[6] Heinemann et al. (2013) study the determinants of sovereign risk premia in the EU countries between 1992 and 2008 and find that fiscal rules have the largest potential for countries with particularly poor fiscal stability culture in the past. For these countries, the effect of rules on risk premia is stronger than for highstability countries. It seems that these countries could benefit from the establishment of external debt brakes which is intended by the Fiscal Compact.

crisis arises. And because such a crisis leads to large increases in the interest rate on government debt, it can drive governments of a monetary union into default. The important ingredient in this dynamics is its self-fulfilling nature: when investors start fearing default they will sell the bonds, creating a liquidity crisis that degenerates into a solvency crisis. The fear of insolvency creates conditions that make insolvency more likely.

When fear and panic takes over, sales of government bonds become massive, creating increases in the interest rates (and the spreads) on government bonds in the absence of observable changes in the fundamentals. When such movements of distrust are triggered, the government bond rates tend to be driven away from their fundamentals. That is exactly what De Grauwe and Ji (2012a) observed in the data of the eurozone since 2010. They conclude that there is a widespread consensus that financial markets in the eurozone have been systematically wrong when, during 2001-08, they were charging the same risk premium on Greek and German government bonds despite huge differences in debt-to-GDP ratios of these countries.

But why is it that if markets were systematically mispricing risks and failed to see any risk during 2001-08, these same markets suddenly found the truth? De Grauwe and Ji argue that financial markets did not suddenly find the truth. Since the start of the sovereign debt crisis, they made errors in the other direction, i.e. they overestimated risks. So, a large part of the surge in the spreads of the PIIGS countries during 2010-11 was disconnected from underlying increases in the debt-to-GDP ratios, and was the result of negative market sentiments that became very strong since the end of 2010. They also found evidence that after years of neglecting high debt-to-GDP ratios, investors became increasingly worried about the high debt-to-GDP ratios in the eurozone, and reacted by raising the spreads. Once again, no such worries developed in stand-alone countries, despite the fact that debt-to-GDP ratios were equally high and increasing in these countries. This is in line with De Grauwe's (2011) conclusion according to which government bond markets in a monetary union are more fragile and more susceptible to self-fulfilling liquidity crises, while the stand-alone countries have been immune from these liquidity crises. From this reasoning it derives the conclusion that one way to get out of the trouble in that situation is to attribute to the ECB the role of the lender of last resort in the government bond market. In this way the ECB whould become very similar to central banks of stand-alone countries, assuming the same behavior as the Fed or the Bank of England.[7]

The systematic mispricing of sovereign debt observed in the eurozone also had the effect of giving wrong incentives to policymakers. 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 favourably. Since the start of the financial crisis financial markets driven by panic overpriced risks and gave incentives to policymakers to introduce excessive austerity programmes. This implies measures aimed at reducing the debt burden. If, however, there can be a disconnection between the spreads and the fundamentals, a policy geared exclusively towards affecting the fundamentals (i.e. reducing the debt burden) will not be sufficient. In that case policy makers should also try to stop countries from being driven into a bad equilibrium. This can be achieved by more active liquidity policies by the ECB that aim at preventing a liquidity crisis from leading to a self-fulfilling solvency crisis (Wyplosz, 2011; De Grauwe, 2011).

To this aim, between December 2011 and February 2012, the ECB first provided two unconventional longer-term refinancing operations (LTRO) for a total of more than €1.000 bn at a fixed rate of 1%, maturing 3 years later. Then, on September 6, 2012, the ECB approved the Outright Monetary Transactions (OMT) programme, under which the Bank announced to be ready to buy in secondary markets unlimited sovereign bonds of troubled countries with a maturity of between one and three years. The purpose of this programme was to reduce spreads in public bonds interest rates for the component not dependent on fundamentals, by contrasting fear and panic to take over. In fact, even if the OMT programme has not been activated until now, both these

[7] On this topic, see also Buiter and Rahbari (2012b).

unconventional monetary policy decisions have greatly contributed to keep financial markets calm in 2012 and in the first half of 2013.

Anyway, it should be stressed that the policy aiming at improving the fundamentals through budgetary austerity and the policy of liquidity provision by the central bank are not substitutes, but complements. When a member country of a monetary union is hit by a liquidity crisis that leads to a disconnection between the spreads and the fundamentals, both policies will in general be needed.

4. The misalignment of internal real exchange rates and the ensuing balances of payments crisis

Mersch (2011) points to flaws in the Maastricht Treaty as a factor that explains the deteriorating of the crisis. Nowak and Shachmurove (2012) hold up that the European Union was created to promote economic, cultural, and regional prosperity. However, the global financial crisis demonstrates that its economic institutions are flawed. While each sovereign state in the Eurozone forfeits the control of its money supply, the lack of a common fiscal institution allows individual countries to pursue their own political and financial agendas. To avoid conflicts among countries, the no-bailout clause and the Stability and Growth Pact (SGP) were incorporated in the very core of the EMU Treaty. The first should have excluded free rider incentives and the second should have aligned national fiscal policies to prevent negative spillover effects to the currency union as a whole. The SGP was a compromise of quantifying fiscal soundness without interfering with the budgetary and fiscal policies of sovereign states. It aimed to maintain fiscal discipline within EMU. Member states adopting the euro had to meet the Maastricht convergence criteria, and the SGP should make sure that they continue to observe them. The compromise was also characterized by the strong belief that governments would be reactive to market discipline. The spirit of the SGP was also characterized by a strong belief in the power of free markets to discipline governments.[8]

But the global financial crisis has undoubtedly marked a turning point also in that context. With hindsight, it is now obvious that the availability of cheap credit led to an unsustainable accumulation of private (as in Ireland, Portugal, and Spain) and public (as in Greece and Portugal) debt in crisis-hit countries. The drop in real interest rates in the periphery countries after their entry into the euro area and the inflowing capital fuelled unsustainable developments, including excessive credit dynamics and real estate bubbles in Spain (Moro and Nũno, 2012) and excessive fiscal spending in Greece. It also reduced the pressure for economic reform to improve competitiveness within the monetary union as countries could easily finance their current account deficits through abundant inflowing capital. As stressed by Lin and Treichel (2012), the adoption of a single currency led to convergence of interest rates in periphery countries to the levels in core countries and, in combination with rising capital inflows owing to greater financial integration, set off a consumption and real estate boom in periphery countries, leading to higher growth and increases in government revenue and spending. The resulting appreciation of real exchange rate led to a loss of competitiveness in these countries (Table 1) which caused rising current account inbalances (Figure 2), sharply increased budget deficits and worsened debt indicators, which triggered the sovereign debt crisis.

In fact, 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. Unfortunately, this is not the case in the PIIGS countries. The economic crisis in these countries is therefore 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 (Lane and Pels, 2012; Bergsten and Kirkegaard, 2012; Mayer, 2011). According to this field of research, below the surface of the sovereign public debt and banking crises lies a balance of

[8] Farmer, Nourry and Venditti (2012) present a model that invalidates the implication that competitive financial markets efficiently allocate risk. Their work demonstrates that financial markets, by their very nature, cannot be Pareto efficient, except by chance. Although individuals are rational, they conclude that markets are not.

payments crisis, caused by a misalignment of internal real exchange rates (Sinn, 2012a; Sinn and Wollmershäuser, 2011; Neumann, 2012; Lin and Treichel, 2012).

According to Mayer (2011), until the beginning of the Eurocrisis in 2009, EU officials tended to ignore the current account imbalances among EMU member countries. Some of them, who failed to grasp the difference between a common currency area within a political union and a currency union of politically sovereign states, even insisted that these imbalances were irrelevant. As long as financial markets were buoyant and credit easily available at rock bottom cost for borrowers of differing quality, the flaw in this argument was not laid bare. This changed abruptly when risk appetite in credit markets plunged in the course of the financial crisis and EMU member countries with high government deficits or debt and a bleak economic outlook experienced a "sudden stop" of capital inflows and even net capital outflows.[9]

On the surface, the sudden stop has led to a government funding and banking crisis. In response, EU authorities began to extend financial support - associated with pressure for fiscal adjustment - to the affected countries, while the ECB supported the banks. Below the surface, however, lies a balance-of-payment crisis, which has so far received only scant attention. Recall that the balance of payments is defined as the sum of the current and capital account.[10] In a floating exchange rate system, the balance of payments is always zero as the exchange rate adjusts so as to equilibrate the current with capital account balance. In a fixed nominal exchange rate system, however, balance of payment imbalances can emerge when the real exchange rate is above or below its equilibrium value. In the first case, when the real exchange rate is over-valued, a country imports more than it exports so that the current account moves into deficit. At the same time, domestic asset prices in foreign currency are higher than foreign asset prices so that investors sell the first and buy the latter. This leads to net capital outflows and hence a deficit in the capital account. The combined deficits of the current and capital accounts then lead to a deficit of the balance of payments. Traditionally, balance of payment deficits have been funded by the sale of international reserves of the central bank. When the stock of reserves is depleted and the central bank can no longer fund the balance of payments deficit, the nominal exchange rate depreciate so as to restore current and capital account balance. This happens because to a nominal exchange rate depreciation, in the short run, it also corresponds a real exchange rate drop. In the second case, when the real exchange rate is under-valued, the current and capital accounts and hence the balance of payments are in surplus and the central bank accumulates international reserves. This process comes to an end only when reserve accumulation has increased the money supply to an extent that inflation rises to intolerable levels and the authorities up-value the nominal exchange rate in an effort to regain price stability (Mayer, 2011).

Since EMU has been built as a union of sovereign states, each state has retained its own national central bank, which has become a member of the so-called Eurosystem with the ECB at the top. National inter-bank 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.[11] 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

[9] Lane and Pels (2012) show that the European crisis is partly attributable to the sharp increase in external imbalances across Europe during the pre-crisis period. They find that the discrete expansion in current account imbalances during the 2002-2007 period can be attributed to a strengthening in the link between growth forecasts and current account balances.

[10] The IMF balance of payments definition includes the current account, the capital account and the financial account. In Mayer's reasoning, however, the financial account is mixed with the capital account.

[11] 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.

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 NCBs' balance sheets as TARGET2 claims (if positive) or TARGET2 liabilities (if negative), vis-à-vis the ECB as the central counterpart (Figures 3 and 4).

5. The link between TARGET2 positions and EMU countries balances of payments

According to Mayer (2011), a key consequence of this system is that each euro area country has a national balance of payments in the form of the net position of its central bank within TARGET2. This net position can result in a claim (balance-of-payment surplus) or liability (balance-of-payment deficit) against the ECB, which sits in the centre of the payment system. The consequence of this system is that a country with a balance of payments deficit automatically receives unlimited funding. Take the example of a country which, due to an overvalued internal real exchange rate and a large government budget deficit, has a current account and capital account deficit (with the latter due to capital flight as residents exchange over-valued domestic assets against foreign assets). As the banks extend credit to an over-indebted government and an uncompetitive private sector, they are considered unsafe and are therefore cut off from private sources of funding. To ensure solvency, the banks in this country receive credit from their national central bank, which acts on behalf of the ECB. Thus, reserve money flows from the ECB to fund payment outflows induced by the current and capital account deficits. Therefore, while banks in the country with the overvalued internal real exchange rate rely primarily on their national central banks and the ECB for funding of their balance sheets, banks in the country with the undervalued exchange rate that receive the payments have plenty of liquidity and therefore do not need ECB funds. Hence, Mayer's conclusion is that the ECB's funding operations become tilted towards the countries with overvalued real exchange rates.

Anyway, Mayer's idea that TARGET2 provides unlimited funding to the balance of payments deficits of peripheral EMU countries is questionable, as we will explain more extensively in the next section. TARGET2 flows reflect a kind of lender of last resort intervention by the ECB through the free allotment program. They just reflect the funding necessity of banks in different regions, periphery banks being the most in need, not because they lent to over-indebted governments - except in Greece - but because they were the ones in dire straits due to the large positions, for instance in real estate markets as in Spain.

In fact, before the beginning of the financial crisis, until July 2007, TARGET2 positions were balanced overall. Cross-border payments were flowing in both directions and were netted out to zero at close of business each day. The beginning of the financial crisis in August 2007 led to one-direction flows from "peripheral" countries (Greece, Ireland and Portugal) to "core" countries (Germany and the Netherlands). The divergences widened with the outbreak of the sovereign debt crisis in May 2010. Since the summer of 2011, as the crisis has intensified and also affected Italy and Spain, divergences of TARGET2 positions have become even wider.

In mid-2012, the total of TARGET2 claims (or equivalent liabilities) on the balance sheet of the euro NCBs reached €1 trillion. In particular, in Germany and the Netherlands net claims in TARGET2 increased from close to zero in the first half of 2007 to about €700 and €140 bn, respectively, at the end of May 2012. Conversely, in Greece, Ireland and Portugal, net liabilities in TARGET2 increased from close to zero to €102, €97 and €63 bn, respectively. Finally, the NCBs of Italy and Spain, which had slightly positive TARGET2 net claims before the start of the crisis, registered net liabilities for €275 and €345 bn at the end of May 2012 (Figures 3 and 4).

So far, the structural imbalances, reflected by high current account deficits of the periphery countries and matching surpluses in core countries (Figure 2), apparently seem to be at the heart of the ongoing problems, since a lack of competitiveness reduces the periphery countries' chances of growing out of the crisis. To service their debt, deficit countries essentially need to become surplus countries. However, the fact that the PIIGS are members of a monetary union and hence cannot

restore competitiveness by means of currency devaluation makes the adjustment much more painful. An internal devaluation requires harsh structural adjustments and real wage cuts to push down costs. This is politically much more difficult to administer than one-off currency devaluation.

Therefore, according to this field of research, the lacklustre growth performance in the euro area periphery over the past years has been due to an erosion of competitiveness, both against other euro area countries and the rest of the world. The domestic booms resulting from low real interest rates and capital inflows after accession to EMU led to large wage increases in excess of productivity growth and hence rising unit labor costs (Figure 5) and higher price inflation than in Germany and other "core countries" of the euro area. The result was an erosion of competitiveness of peripheral members of the euro area vis-à-vis the core countries, in particular Germany, which has been able to improve its price competitiveness significantly since the launch of the euro through wage constraints and structural reforms (Table 1).

As emphasized by Véron (2011) and Weidmann (2011), besides fiscal adjustment and bank restructuring, structural reforms that enhance the crisis countries' growth potential are an indispensible dimension of any successful crisis resolution.[12] It is also the difficulties of economic adjustment, which require unpopular public policies, that have caused markets to doubt the solvency of the periphery countries. Therefore, one key issue for defining and solving the Eurozone's difficulties also lies in readjusting the relationship between the centre and the periphery (Fahrholz and Wójcik, 2012).

However, the view that European financial crisis was caused by external imbalances is not shared by all economists. According to Taylor (2012), for instance, there have been essentially two competing views of the global financial crisis, albeit there are some complementarities among them. One view mainly blames external imbalances, the large-scale mix of current account deficits and surpluses, which entailed massive and growing international financial flows in the last decade. The alternative view finds more fault in the domestic arena of the afflicted countries, attributing the problems to financial systems where risks originated in excessive credit booms in local banks. Of the two, Taylor's view is that the credit boom explanation stands out as the most plausible predictor of financial crises. He concludes that, historically, global imbalances are not as important as a factor in financial crises as is often perceived, and they have much less correlation with subsequent episodes of financial distress compared to direct indicators like credit drawn from the financial system itself.

In addition, also the identification of the balance of payment imbalances with TARGET2 positions is questionable. In fact, Cecioni and Ferrero (2012) show that movements in the current account's deficits are significantly related to TARGET2 balances only for Greece, whereas intra-area trade balances are not related to TARGET2 in any other country. For all countries, the large increase in TARGET2 liabilities appears to be mostly related to capital flight, concerning both portfolio investments and cross-border interbank activity.

As highlighted by ECB (2013c), large TARGET2 imbalances emerged when the Governing Council of the European Central Bank, in order to maintain price stability over the medium term, decided to accommodate the liquidity needs of solvent banks. TARGET2 balances emerged as a result of imbalanced cross-border payment flows between banks in the euro area and the Eurosystem's accommodation, in its operations, of the ensuing liquidity needs of solvent banks, against adequate collateral.

Anyway, TARGET2 balances reflect funding stress in the banking systems of certain countries. Therefore, such imbalances must be interpreted with caution, as they also reflect transactions among multi-country banking groups. Further, any risk is attached to the Eurosystem operations themselves in the contest of the monetary union, in particular not to the TARGET2 balances per se. Overall, the TARGET2 balances are a manifestation of underlying tensions in the

[12] Aizenman (2012) analizes reforms and adjustments needed in the context of the euro and the global financial crisis, stressing the challenges associated with finding the proper balance between financial integration and financial regulations.

Economic and Monetary Union, highlighting the need for macroeconomic imbalances to be addressed, trust in banking systems to be re-established, and the institutional foundations of EMU to be strengthened. Therefore, a deeper analisys on the accumulation of TARGET2 imbalances and the implied correlation of the external imbalances with them is needed at this point.

6. The accumulation of TARGET2 imbalances

On the accumulation of TARGET2 imbalances, the debate has been triggered by Sinn (2011, 2012b, c) and Sinn and Wollmershäuser (2011, 2012), whose views can briefly 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 sterilisation of the inflowing liquidity. Because of the sterilisation, 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, 2012c).

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 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 (2012a), 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.[13] The resulting increase in central bank's reserves was accompanied by the widening of the TARGET2 balances.

The increase in the 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 by foreign investments in domestic securities and in the interbank market. The capital flowing in and out of the countries were almost completely netted out, leaving small average net balances in 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 reversal of foreign investments in domestic securities and of liabilities issued by domestic MFIs was 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 Figure 4, 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: in this period, Italy and Spain recorded net outflows from the MFIs respectively for €118 and €182 bn and net outflows of portfolio investments for about €90 bn. In Italy, in particular, net outflows of portfolio investments largely corresponded to a willingness by nonresidents 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.[14] In the same period TARGET2 liabilities increased respectively for the two countries by about €280 and €300 bn.

[13] 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.

[14] 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, producing both a banking crisis (as banks could not be financed, here the

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 unconventional monetary policies are contrasting 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 procyclical 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 Eurosystem's NCBs.

Nevertheless, the banking system cannot be permanently reliant 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. Countries under stress need to return to private markets and attract funds from the rest of the area. This requires that confidence be restored both in 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". 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.[15]

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, 2012b) 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

causality is double, 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).

[15] 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 (2012b) who argue that, also in the extreme case of a euro break up, the risk of loosing TARGET2 claims for surplus countries does not exist.

monetary policy. Therefore, neither of these proposals are 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 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".[16] That is, they see this as one symptom of a 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 in 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.

7. Erratic 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 SGP's 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 are currently experiencing 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., 2013). 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 global financial crisis and now the European 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).

Anyway, the crisis is not merely an economic and financial crisis. It is 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

[16] This term was coined by Mody and Bornhorst (2012).

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.[17]

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 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 eurobonds (Delpla and Von Weizsäcker, 2010, 2011) or a partial guarantee of all euro area sovereign bonds by the ECB (Wyplosz, 2011).

8. The ECB has partly lost control of interest rates in the crisis-hit countries

The crisis not only had a strong impact on the financial situation of many European countries, but also affected the confidence of investors and lenders 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 to date. 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 (European Commission, 2013, p. 6).

To overcome these problems and tensions, in July 2012 President Mario Draghi announced that the ECB would have done whatever it takes to preserve the euro and to struggle the crisis. On September 6, 2012, as anticipated in section 3, the ECB approved the Outright Monetary Transactions (OMT) programme. Under this programme, the Bank decided to buy in secondary markets unlimited sovereign bonds of troubled countries with a maturity of between one and three years. The purpose of this programme was firstly to reduce spreads in public bonds interest rates of troubled countries with respect to Germany, and, at the same time, to safeguard the monetary policy transmission mechanism in all countries of the euro area, preserving the singleness of Eurozone monetary policy and ensuring the proper transmission of the policy stance to the real economy throughout the area. This decision has kept financial markets in troubled countries calm, despite warries that the bloc is failing to tackle what many analysts see as its underlying weakenesses, including the shaky health of many banks.

After the ECB's announcement, actually the spreads in public bonds interest rates began to fall. Spanish and Italian bond yields became stable in the first half of 2013, but many European officials warn that the euro zone remains vulnerable to a change in investor sentiment. The ECB has bought time for governments to overhaul their economies and banks, but politicians have taken advantage of the financial-market calm to slow their recovery efforts. Eurozone leaders agreed in 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. But 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

[17] Also 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.

markets persist. In fact, the precise transmission mechanism of the ECB monetary policy is not so clear. The problem of troubled EMU countries, expecially Italy and Spain, but also of the UK, is that the interest rates small and medium-sized enterprises (SMEs) pay to borrow 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.

One explanation of this situation is Bernanke and Gertler's (1995) "black box" analysis according to which, 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 small and medium enterprises (SMEs) only if they have a correspondent amount of capital or deposits, 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 which 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 slows the economy by raising costs for bank-dependent borrowers, which is the case for SMEs.

In order 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 insolvences 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 UK, where the banks make more loans than 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. As predicted by the bank-lending channel, but now as a result of a change that the ECB did not control, the supply of loans contracted. 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) provide empirical evidence for the existence of a bank lending channel of monetary policy transmission in the euro area. Furthermore, they find that changes in the supply of credit, both in terms of volumes and in terms of credit standards applied on loans to enterprises, have 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. As a consequence 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 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, 2013c).

9. Concluding remarks

The European financial crisis has illustrated once more that any fixed exchange rate arrangement (including 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.[18] Therefore, structural reforms are unavoidable in indebted countries to improve productivity and increase competitiveness. Unfortunately, they will produce positive results only in the long term.

In the medium term, there is a widespread consent that a successful crisis resolution will need to include at least the following four components: *a*) 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; *b*) 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; *c*) 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 *d*) 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 to be completed as soon as possible.[19] 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

[18] 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 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.

[19] 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.

euro zone rescue funds (EFSF and ESM). 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.[20] Furthermore, there is now 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.

At this regard, there is now a deep division between the economies of the prosperous North (Germany, Austria, 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, but also the European Commission, have all indicated their strong concerns to promote growth without delaying fiscal consolidation. And 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 its public budget in balance for next few years and commits itself to promote 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.

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 wages increases) and the ensuing moderate increase in domestic inflation could be sufficient to apreciate the real exchange rate in Germany, permitting the austerity-hit South EMU countries to regain their external competitiveness. In this way, German surplus of the current account, now 7% of GDP (Figure 2), will decrease, while exports of deficit EMU countries will increase, fuelling again the economic growth of the entire Union. The final effect of this policy will be a reduction of the net claims and liabilities in TARGET2 payment system.

[20] Kilponen J., H. Laakkonen and J. Vilmunen (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 last evolution is the Outright Monetary Transactions programme.

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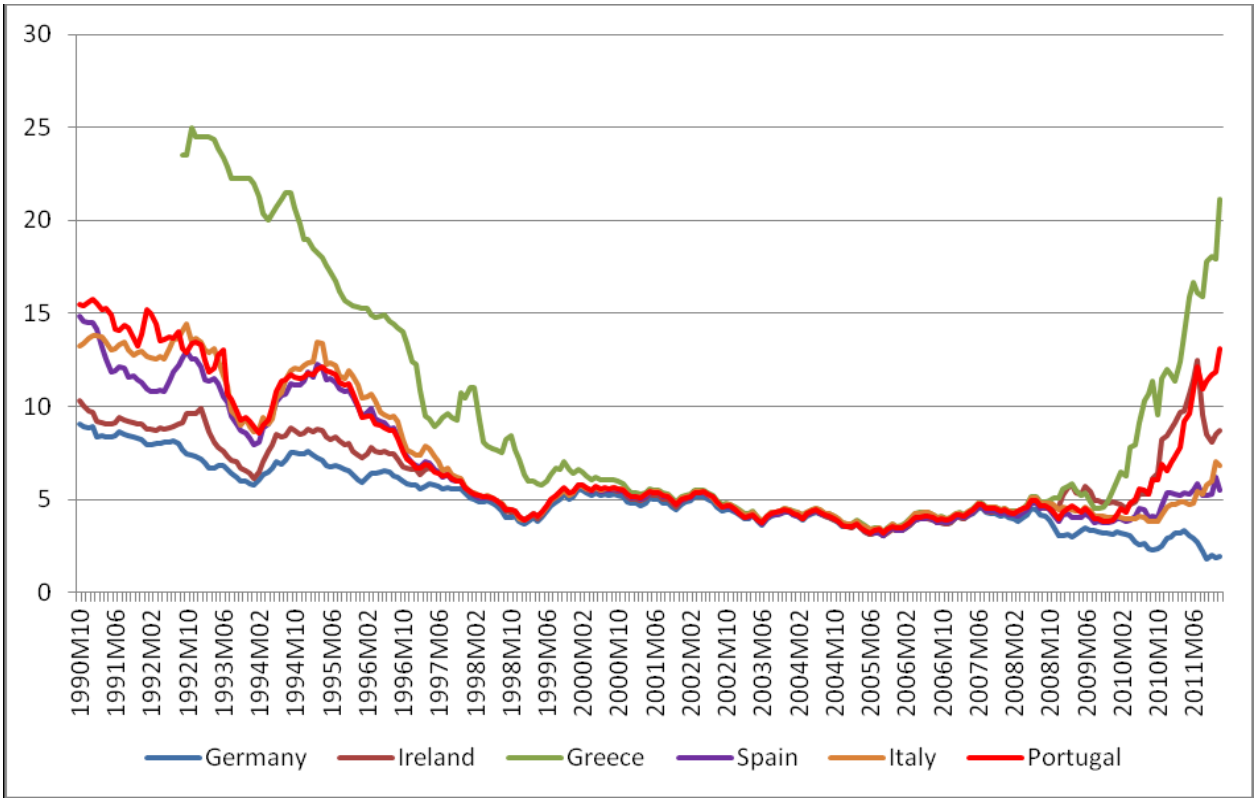
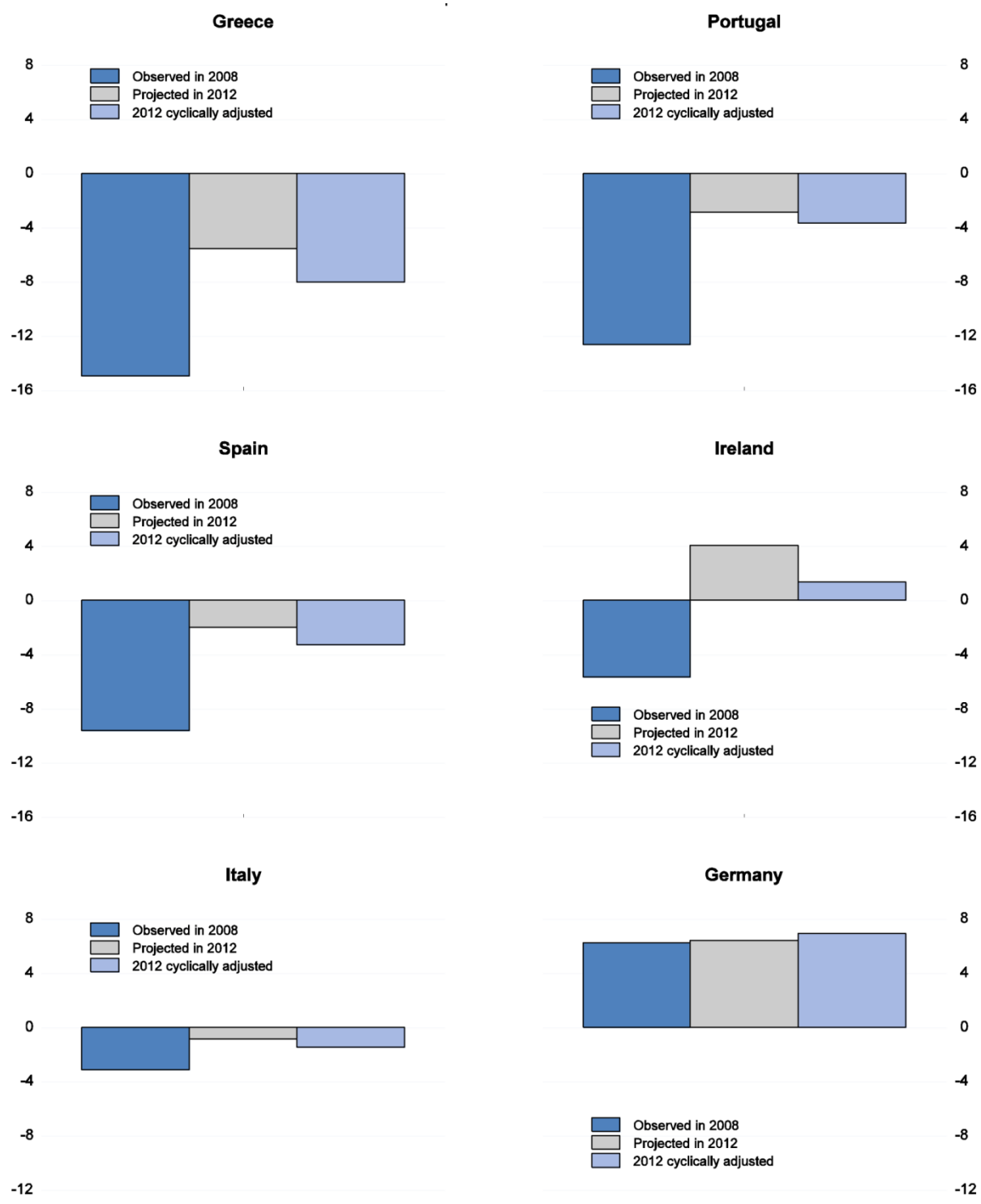
Figure 1: 10-Year Government Bond Yields (% per annum), October 1990–December 2011



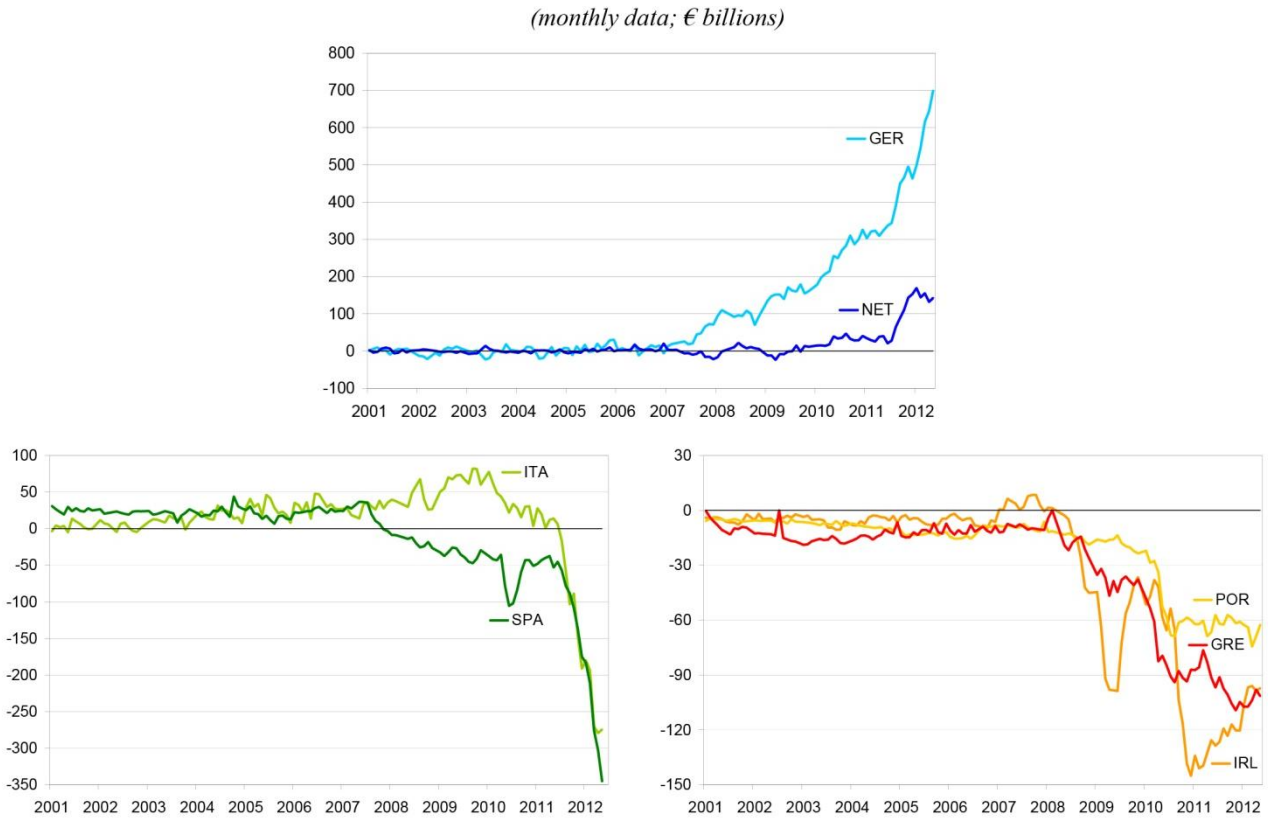
Source: Eurostat.

Figure 2 – Current account balances in euro area countries: In per cent of GDP



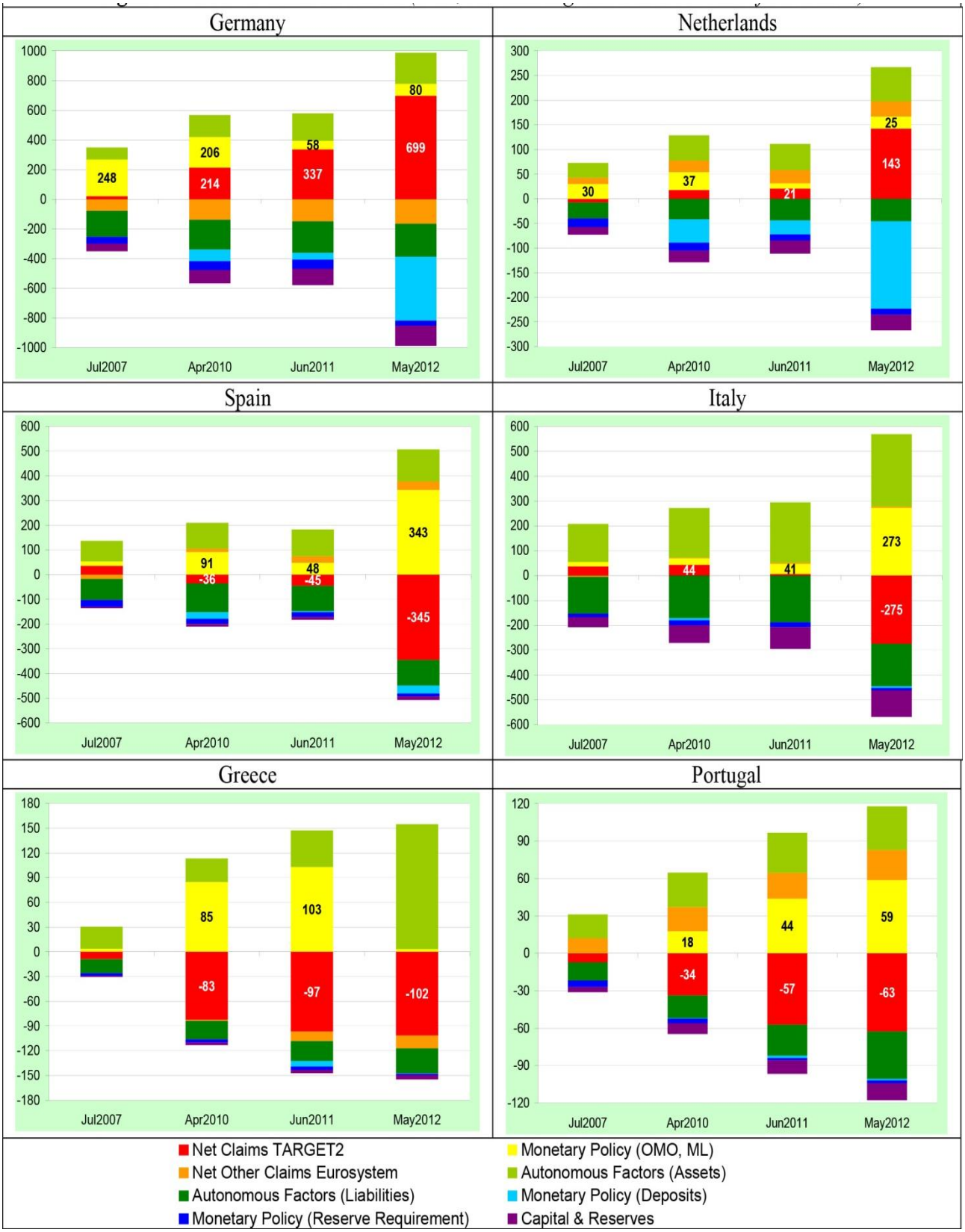
Note: Cyclical adjustment assumes that the economy's cyclical position is the same as that of its (trade weighted) Trading partners.
Source: OECD Economic Outlook 92 database, and OECD calculations.

Figure 3 – TARGET2 cumulated net balances



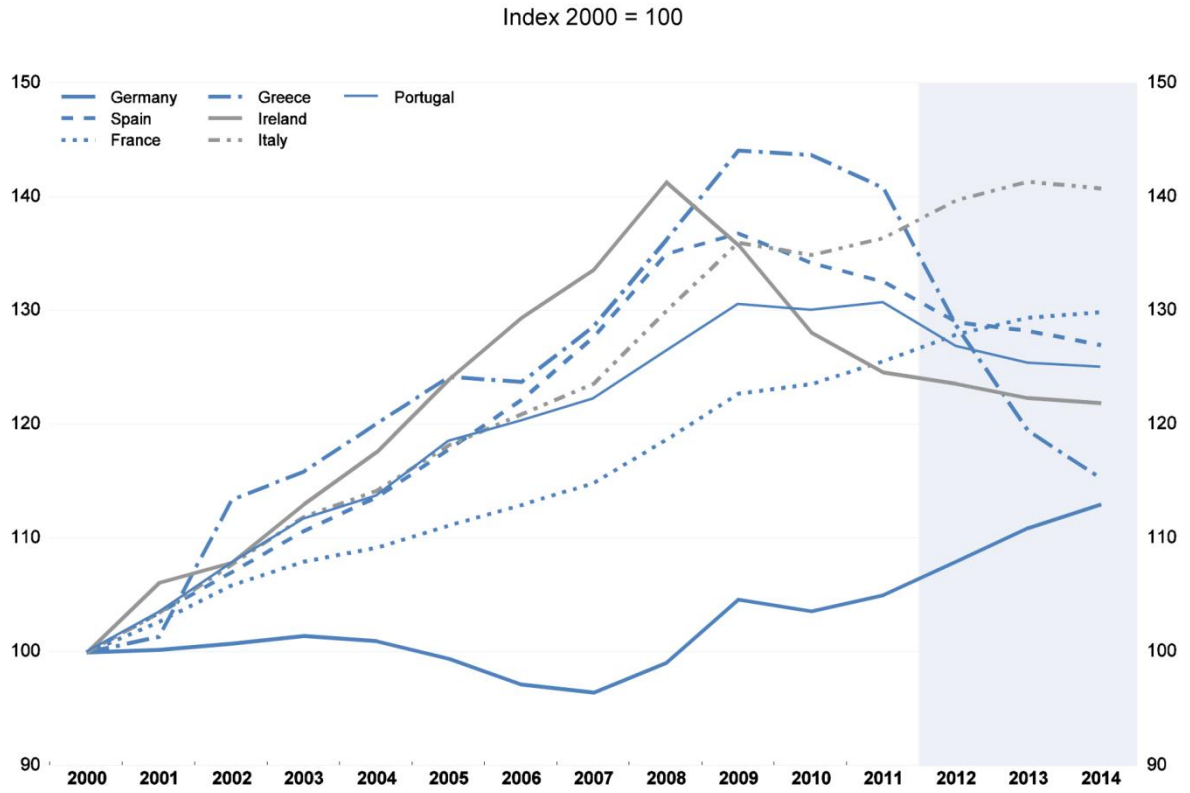
Source: NCBs balance sheets.

Figure 4 – NCBs balance sheets (*€bn; outstanding amount at the end of the month*)



Source: NCBs balance sheets.

Figure 5 – Unit labour costs



Note: The figures shown are for whole economy unit labour costs. If wage developments in the public sector diverge from those in the rest of the economy, changes in private sector costs may differ from those shown. This may mean that economy-wide labour costs are falling more sharply than private sector costs in the EU/IMF programme countries.

Source: OECD Economic Outlook 92 database.

Table 1. Harmonized competitiveness indicators based on unit labor costs indices for the total economy: 2012 Q4

(period averages; index 1999 Q1=100)

	Euro area	BE	DE	EE	IE	GR	ES	FR	IT	CY	LU	MT	NL	AT	PT	SI	SK	FI
Period average	90.7	102.8	82.1	148.7	100.2	89.3	94.8	101.9	105.8	111.2	119.0	111.2	103.0	92.6	100.5	101.3	166.9	101.9
Percentage change versus previous period	2.0	0.9	1.9	1.5	0.8	-0.4	-3.2	1.2	1.3	1.1	1.3	1.3	1.3	0.9	1.3	-0.2	0.1	1.4
Percentage change versus previous year	-2.4	0.3	0.2	2.7	-1.9	-12.9	-8.3	-0.3	0.6	0.1	3.3	0.0	-0.5	0.5	-3.3	-3.1	-1.9	0.4
Percentage change since 1998 Q4	-12.5	2.5	-19.9	43.6	-5.4	-7.6	-5.5	1.3	2.4	8.9	16.2	11.2	1.0	-7.7	0.9	0.7	66.7	0.3

Notes:
- For the euro area, the real effective exchange rate of the euro vis-à-vis 20 trading partners is displayed. For euro area countries, the table shows the harmonized competitiveness indicators calculated vis-à-vis the same 20 trading partners plus the other euro area countries. A positive change points to a decrease in cost competitiveness.
- The purpose of harmonized competitiveness indicators (HCIs) is to provide consistent and comparable measures of euro area countries' price and cost competitiveness that are also consistent with the real effective exchange rates (EERs) of the euro. The HCIs are constructed using the same methodology and data sources that are used for the euro EERs. While the HCI of a specific country takes into account both intra and extra-euro area trade, however, the euro EERs are based on extra-euro area trade only. Therefore, the HCIs and euro EERs reflect different phenomena and are not directly comparable. The HCIs complement other competitiveness indicators published by some NCBs which may follow different methodologies and, in some cases, use different price and cost measures in order to account for the specific circumstances in the respective country.

Source:
ECB, *Harmonized competitiveness indicators*, 2013.
http://www.ecb.int/stats/exchange/hci/html/hci_ulct_2012-10.en.html