

# **QUARTERLY REPORT ON THE EURO AREA**

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Highlights in this issue:

- Focus: The surveillance of macroeconomic imbalances in the euro area
- The contribution of taxes to fiscal consolidation in the euro area
- Capital flows into vulnerable countries: official and private funding trends
- The euro-area sovereign CDS market

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# Table of contents

<b>Editorial</b>	<b>5</b>
<b>I. The surveillance of macroeconomic imbalances in the euro area</b>	<b>7</b>
<b>I.1. Introduction</b>	<b>7</b>
<b>I.2. Macroeconomic imbalances in the euro area</b>	<b>7</b>
<b>I.3. The MIP as a tool to tackle macroeconomic imbalances</b>	<b>9</b>
<b>I.4. How the MIP works</b>	<b>10</b>
<b>I.5. The role and design of the MIP scoreboard</b>	<b>12</b>
<b>I.6. The 2012 Alert Mechanism Report and the way forward</b>	<b>13</b>
<b>I.7. Conclusions</b>	<b>15</b>
<b>II. Special topics on the euro-area economy</b>	<b>17</b>
<b>II.1. The contribution of taxes to fiscal consolidation in the euro area</b>	<b>18</b>
<b>II.2. Capital flows into vulnerable countries: official and private funding trends</b>	<b>24</b>
<b>II.3. The euro-area sovereign CDS market</b>	<b>31</b>
<b>III. Recent DG ECFIN publications</b>	<b>37</b>



## EDITORIAL

The beginning of this year has seen further advances in stemming the tide of the euro-area crisis and setting right the remaining weaknesses in the economic governance framework. To be sure, during the course of last year the euro area was already put on a more stable institutional footing. A far-reaching drive at the European level has ensured that the vulnerabilities and blind spots that first gave rise to the crisis are being corrected.

Overall, the EU has responded to the many pressing challenges thrown up by the crisis based on a five-point strategy. First, credible adjustment programmes have been put in place in vulnerable Member States. Second, good progress has been made in establishing an adequate firewall against contagion in sovereign-debt markets. Third, a better capitalisation of EU banks is well underway, which has eased funding stress. Fourth, structural measures to boost economic growth potential are being put in place at the Member State and EU level. Finally, a stronger and more comprehensive economic governance framework has been created for the EU and the euro area. These elements make up the foundations for a stronger euro area, but their beneficial impact hinges on their stringent implementation by Member States.

A number of these policy areas have seen recent advancement. In March, 25 Member States signed the so-called 'fiscal compact', which adds to the array of governance reform measures already enacted and will ensure that fiscal discipline is further strengthened. It will introduce stricter fiscal surveillance within the euro area, notably by establishing a balanced budget rule that must be transposed into national legislation within one year under the auspices of the EU Court of Justice. Financial firewalls have also been strengthened, with the Eurogroup agreeing on 30 March on a combined lending capacity of the EFSF and ESM of €700bn, consisting of €200bn of existing EFSF lending commitments to programme countries and a maximum of €500bn of fresh lending from the ESM. The EFSF will co-exist alongside the ESM until June 2013, with the ESM however being the main instrument to finance new programmes as from July 2012.

Support for vulnerable Member States is also being developed further, with Euro-area Heads of State and Government having set out a

roadmap for Greece in March. Following the Eurogroup's agreement with the Greek government in February on domestic policy reform, Greece has already passed new laws in the areas of fiscal consolidation, revenue administration, pension reform, financial regulation and growth-enhancing structural reforms. The second financial assistance programme, financed jointly by the EU and IMF, was approved on 14/15 March. The programme will amount to €30bn and will run until 2014. Operationally, programme implementation will take on a new quality, as an expanded Taskforce for Greece as well as permanent representatives of the Troika in Athens will encourage greater ownership on the part of the Greek authorities. Finally, the Greek sovereign bond exchange for private sector investors successfully closed on 8 March, covering most of the outstanding principal in privately held sovereign debt. This makes a substantial contribution to the overarching aim of ensuring debt sustainability.

When looking at the latest economic developments the importance of having set up a durable crisis prevention infrastructure is underlined, as the euro-area economy has once again entered a recessionary period. The latest interim forecast of the European Commission, presented on 23 February, points to a mild recession in the euro area, with annual GDP contracting slightly in 2012. However, modest growth is predicted to return in the second half of the year. At the level of the individual Member States, growth divergences remain large, and downside risks are still dominant on balance. In particular, an aggravation of the sovereign debt crisis may ultimately result in a credit crunch and a prolonged and deeper recession. On the back of persistently high energy prices, inflation has remained higher than forecast in autumn and is expected to decelerate slowly over the forecast horizon to reach just over 2% for 2012 as a whole.

In the context of its strengthened economic surveillance role, the Commission presented its first annual Alert Mechanism Report on 14 February. This forms the starting point of the Macroeconomic Imbalance Procedure (MIP), a surveillance tool devised to detect and correct risky macroeconomic developments in the EU and the euro area, and thereby strengthens the economic pillar of EMU. The MIP forms part of the so-called "six-pack" that entered into force

on 13 December 2011. Given the central role that the procedure plays in the integrated surveillance framework of the EU and in view of the considerable and diverse macroeconomic imbalances still present in the euro area, this Quarterly Report dedicates its Focus section to an in-depth examination of the MIP.

The MIP has been conceived to identify potential risks early on, to prevent the emergence of harmful imbalances and to correct excessive imbalances already present. It does so by ensuring that appropriate policy responses are adopted in Member States to address the underlying problems. A 'corrective' surveillance arm applicable to all EU Member States is supplemented in the case of euro-area countries by an enforcement mechanism comprising financial sanctions. In the coming months and in the context of the European semester, the Commission will prepare in-depth reviews for countries identified in the Alert Mechanism report on the basis of a 10-point scoreboard as warranting further in-depth examination.

One of the clearest instances of potentially harmful economic imbalances lies in external borrowing and indebtedness trends. Despite some rebalancing since the beginning of the crisis, current account positions across Member States are still relatively divergent, and countries that have accumulated the largest net external debt stocks still need to adjust further. Starting from this observation, a special topic in this edition examines trends in the external financing of current account positions. One key development since 2008 has been the gradual shift away from market-based external funding for vulnerable countries towards official forms of financing, notably through EU/IMF programme lending and liquidity transfers via the Eurosystem. This has bridged the financing gap that the large outflow of private capital from these economies would have left, and which would have forced a sudden and disruptive current account adjustment on them.

A further section in this report assesses the exposure of the euro area and its Member States to sovereign CDS, the possible systemic role of which has commanded much attention since the

beginning of the crisis and even more lately against the background of the Greek sovereign bond exchange. The analysis finds that the sovereign CDS market overall appears to be functioning well, with no evidence of significant mispricing. Market participants' exposure related to euro-area Member States has been stable during the crisis, and the systemic importance of CDS exposure appears relatively limited. And while full market transparency is still lacking in some respects, numerous regulatory improvements at the EU have greatly reduced the potential for unreported or purely speculative CDS trading.

Finally, on the fiscal front, the widespread deterioration of public finances during the crisis has brought consolidation needs to the top of policy priorities. Though the required adjustment may in some cases be large, the exact manner in which such deficits are reduced can make a difference to both short-term growth and longer-term growth potential. A special topic in this Quarterly Report therefore investigates the role that taxation measures can play in achieving growth-friendly budgetary consolidation. Additional tax measures should not be passed lightly, as virtually all forms of taxation are economically distorting and may thereby harm jobs and growth. An increase in the tax burden should be contingent on country-specific circumstances, and to this end the section develops a set of indicators to identify Member States with a need and room for tax increases. Looking at factors such as a country's tax-to-GDP ratio, the thrust of the assessment is to explore the scope for increasing tax categories least detrimental to growth. While the overall need for consolidation is already firmly established, some open questions surrounding its implementation can now hopefully be answered better.

MARCO BUTI

DIRECTOR-GENERAL

## *Focus*

### **I. The surveillance of macroeconomic imbalances in the euro area**

*In the first decade of the euro's existence, many euro-area countries witnessed a build-up of macroeconomic imbalances. These vulnerabilities proved to be highly damaging once the financial crisis set in. The ongoing unwinding of the accumulated macroeconomic imbalances is a protracted process and the adjustment is proving to be particularly painful in terms of growth and employment. Against this background, the recently adopted Macroeconomic Imbalance Procedure (MIP) broadens the EU economic governance framework to include the surveillance of unsustainable macroeconomic trends. The aim of the MIP is to identify potential risks early on, prevent the emergence of harmful imbalances and correct the excessive imbalances that are already in place. It has a broad scope and encompasses both external imbalances (including competitiveness trends) and internal imbalances. While the design of the MIP builds on experience gained from the recent crisis, it is flexible enough to take on board new trends and developments as potential future crises may have different origins. Its objective is to ensure that appropriate policy responses are adopted in Member States in a timely manner to address the pressing issues raised by macroeconomic imbalances. In doing so, the MIP relies on a graduated approach that reflects the gravity of imbalances and can eventually lead to the imposition of sanctions on euro-area members should they repeatedly fail to meet their obligations. Implementation of the MIP started with the Commission publishing in February its first Alert Mechanism Report, which identifies a group of Member States for which more in-depth analysis is warranted. Following the completion of these in-depth reviews, policy guidance will be issued where appropriate and further steps decided.*

#### ***I.1. Introduction***

The unravelling of the economic and financial crisis of recent years has laid bare some weaknesses in the surveillance arrangements within EMU and the framework for coordinating economic policies in general. In particular, the build-up of macroeconomic imbalances in pre-crisis years was not checked sufficiently and their unwinding has since proven very costly for some euro-area countries and has also contributed to the ongoing sovereign debt crisis, with serious implications for the functioning of the euro area as a whole.

These developments show the need to broaden the economic governance framework underpinning EMU so as to include the issue of unsustainable macroeconomic trends. The new procedure for the prevention and correction of macroeconomic imbalances — the Macroeconomic Imbalance Procedure (MIP) — responds to this need and was one of the key building blocks of the legislative package (the 'six-pack') to enhance the governance structures in EMU.<sup>(1)</sup> This focus section describes further the economic rationale of the MIP, how it will work and the state of play, given that it is currently being applied for the first time in the context of the 2012 European Semester.

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<sup>(1)</sup> Besides the Regulations introducing the MIP, the 'six-pack' includes enhancements in the Stability and Growth Pact and national fiscal frameworks. It has been in place since December 2011.

#### ***I.2. Macroeconomic imbalances in the euro area***

One of the salient features of the first decade of the euro area's existence was the gradual accumulation of macroeconomic imbalances. Perhaps the most visible manifestation of such imbalances was the increasing divergence in external positions. Some Member States saw their current account deficit rise to staggering levels while others accumulated substantial current account surpluses (Graph I.1).

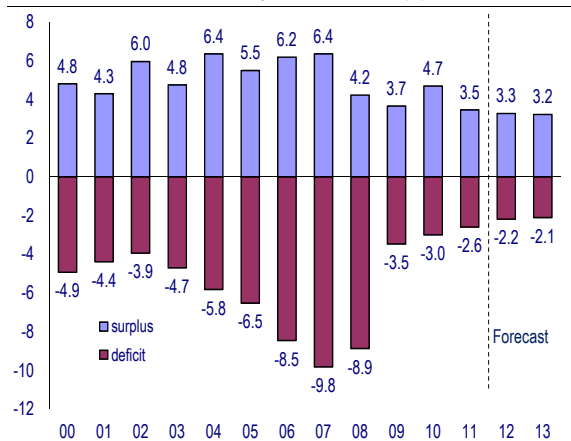
The mounting current account deficits and surpluses were a counterpart to strong capital flows across the euro-area members. These were boosted by the establishment of the euro and progress in financial market integration in the euro area.

Capital inflows benefited mostly those Member States which in the run-up to EMU experienced the largest reductions in nominal interest rates and where the real returns on investment appeared the highest.

While the observed developments partially reflected sound catching-up processes, particularly in the initial period, they also had much less benign repercussions and became a significant ingredient of unsustainable macroeconomic trends in some countries. Part of the capital flows was channelled into unproductive uses and fuelled domestic demand



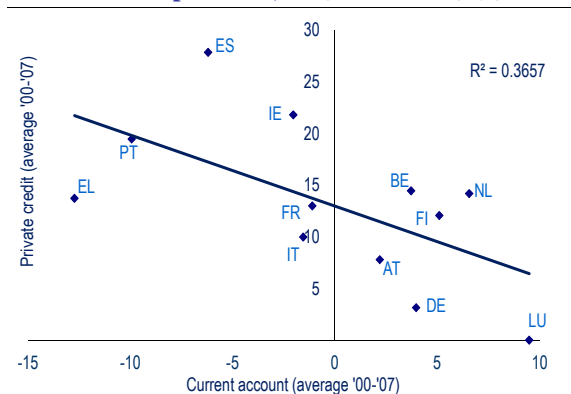
Graph I.1: Current account positions in the euro area, % of GDP (1)



(1) Surplus countries: BE, DK, DE, LU, NL, AT, FI and SE. Deficit countries: BG, CZ, EE, IE, EL, ES, FR, IT, CY, LV, LT, HU, MT, PL, PT, RO, SI, SK and UK. Surplus/deficit countries grouped on the basis of average current account positions between 2000 and 2010.

Source: Commission services

Graph I.2: Private credit growth and current account positions, % (2000 - 2007) (1)



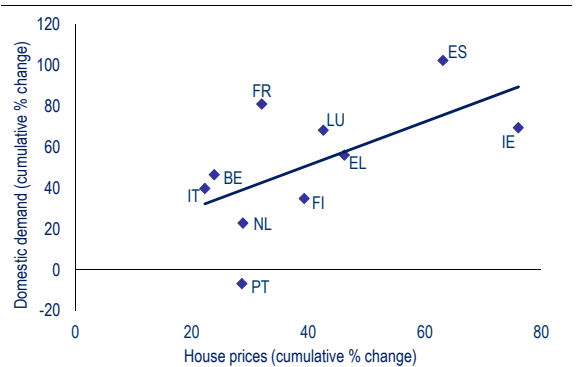
(1) Note: Average private credit (transactions) as % of GDP and average current account over 2000-2007.

Source: Commission services

booms, which were associated with excessive credit expansions in the private and/or public sectors and housing bubbles in some euro-area members. The links between external imbalances and imbalances building up in domestic sectors of euro-area economies can be seen in Graph I.2, which shows that the excessive credit expansions stimulated demand and pushed current accounts into deep deficits in some Member States. In particular, countries such as Greece, Spain or Ireland experienced rather fast rates of growth that were to a large degree driven by domestic demand booms and, with the exception of Greece, housing booms and expansions in the construction sectors (Graph I.3).

The expansion of domestic demand generated upward pressure on prices, which was particularly strong in non-tradable sectors. The resulting changes in relative prices induced a reallocation of resources in the economy towards the non-tradable sectors and, on the whole, resulted in substantial losses in price and cost competitiveness. This can be clearly seen from the developments in competitiveness indicators, such as real effective exchange rates or unit labour costs, which document the increasing divergences in the euro area. Faced with strong demand pressures, some countries were also unable to react appropriately to negative productivity shocks.

Graph I.3: Domestic demand and house price growth, % (2000 - 2007) (1)



(1) Certain Member States are omitted due to lack of data availability.

Source: Commission services

Moreover, some euro-area countries have shown a worrying gradual deterioration in export market shares. Changes in shares of world export markets for goods and services point to potentially large structural losses in overall competitiveness in the global economy. In some countries, this may reflect the already discussed losses in price/cost competitiveness or the diversion of resources to the non-tradable sector during domestic absorption booms, but an important role also seems to be played by relative losses in non-price competitiveness and low ability to exploit new sales opportunities. As a result, the export performance of some euro-area countries has been lagging behind not only the dynamic global competitors such as China but also other euro-area peers.

Conversely, domestic demand in other Member States appears to have been constrained, in part, due to existing rigidities in product markets. This, together with mispricing of risk in financial markets and the related outflows of capital, resulted in growing current account surpluses.



## I. The surveillance of macroeconomic imbalances in the euro area

When the crisis struck, the existence of large imbalances proved highly damaging: their unwinding contributed, particularly in the euro area, to the gravity and propagation of the crisis in a number of Member States by deepening the contraction as well as aggravating the situation of public finances. Implicit or explicit government guarantees for the troubled banking sector resulted in the transfer of risk from private to public sector. Additionally, sharp contractions in the overblown sectors, e.g. construction, and the related increases in unemployment contributed to the deterioration of public finances through falling tax revenues and increased unemployment support. Moreover, the sovereign debt crisis that hit Greece, Ireland and Portugal generated strong cross-border spillover effects through the loss of confidence by financial markets. This underlines the need for an EU/euro area-wide approach to the surveillance of imbalances.

While current account positions have converged to some extent since the onset of the crisis, there is still considerable scope for adjustment and rebalancing in the euro area. In particular, the large accumulated stocks of debt will require prolonged repair of balance sheets in both public and private sectors. Moreover, some of the most affected countries still run non-negligible current account deficits that point to the need for external financing, which is difficult to secure given the distress in financial markets.<sup>(2)</sup> Finally, more pronounced relative price adjustment than experienced so far is necessary to ensure that the corrections in external imbalances prove to be lasting and not associated with the build-up of persistent internal imbalances such as a high rate of structural unemployment.

### *1.3. The MIP as a tool to tackle macroeconomic imbalances*

In view of these hard-learned lessons, the MIP has been conceived to identify potential risks early on, prevent the emergence of harmful imbalances and correct the excessive imbalances that are already in place. Its objective is to ensure that appropriate policy responses are adopted in Member States to address the pressing issues raised by macroeconomic imbalances.

Today, it is relatively straightforward to see that in the years preceding the crisis, low financing costs and other factors fuelled a misallocation of resources, often to less productive uses, feeding

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<sup>(2)</sup> See also the special topic on capital flows in this Quarterly Report.

unsustainable levels of consumption, housing bubbles and the accumulation of external and internal debt. Indeed, previous Commission analysis did identify imbalances in several areas of the EU/euro-area economies.<sup>(3)</sup> However, at the time, the policy discussions and responses were not systematic and lacked teeth.

As regards the policy responses, alongside sound fiscal policies and appropriate financial regulation, growth-enhancing structural policies are key to addressing the issue of macroeconomic imbalances. Such policies help stimulate the supply side of the economy, increase competitiveness and improve adjustment capacity — this is essential in countries experiencing external deficits. Such policies can mitigate the adverse growth effects of the deleveraging. At the same time, they boost domestic demand to the extent that it is constrained by market and policy failures — this is relevant for surplus countries with anaemic domestic demand.

Nevertheless, there are significant analytical challenges involved in the identification of excessive imbalances that are also reflected in the design of the procedure.

Most importantly, macroeconomic imbalances are part of everyday reality and in many cases they can be justified by the underlying economic developments. For example, external imbalances do not necessarily need to be worrisome if deficits/surpluses are efficient market-based responses to changes in underlying fundamentals and the related saving and investment decisions of households or businesses. Similarly, ‘downhill’ capital flows from rich to less well-off countries are usually seen as a positive development that facilitates economic convergence as they help catching-up countries cover their domestic financing gaps. To the extent that capital inflows are used for building up productive capacity, they boost future growth prospects and the ability to repay the borrowed capital. However, if they become excessive and are driven by policy or market failures, they can have dire repercussions.

This also reflects the fact that imbalances are a result of complex economic interactions involving

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<sup>(3)</sup> For example, in the framework of the Commission’s review of competitiveness developments and imbalances, informal surveillance in the Eurogroup and assessments in the context of the Stability and Growth Pact and the Lisbon strategy. An overview of the Commission’s analysis can be found in the special issue of the Quarterly Report on the Euro Area on ‘The impact of the global crisis on competitiveness and current account divergences in the euro area’, Volume 9 No 1 (2010).

different sectors within as well as outside the national economy. Consequently, the underlying indicators of imbalances cannot be seen as policy objectives as they are not under the direct influence of policy-makers (unlike in the case of fiscal policy).

What is more, the nature of imbalances can change over time and past experience can give only limited guidance on how and where they are likely to appear.

#### ***1.4. How the MIP works***

The overall design of the Macroeconomic Imbalance Procedure follows the implicit logic of the Stability and Growth Pact, with a ‘preventive’ arm and a stronger ‘corrective’ arm for more serious cases. For euro-area countries, the corrective arm is supplemented by an enforcement mechanism including the possibility of financial sanctions.<sup>(4)</sup>

##### ***1.4.1. The preventive arm and the alert mechanism***

To detect macroeconomic imbalances, the procedure relies on a two-step approach. The first step consists of an alert mechanism aiming to identify Member States where there are signs of potentially emerging macroeconomic imbalances and which therefore require more in-depth examination. In the second step, the in-depth reviews undertaken for the identified Member States assess whether there are imbalances and, if so, their nature and extent.

The objective of the alert mechanism is to identify macroeconomic imbalances as soon as they emerge so that necessary policy actions can be taken in due time to prevent them from becoming damaging for the Member State concerned and from jeopardising the functioning of the euro area. More specifically, the alert mechanism consists of an indicator-based scoreboard (presented in detail in the next section) together with an economic reading thereof, presented in an annual Alert Mechanism Report (AMR). It should be stressed that the scoreboard is just one component of the alert mechanism, and additional relevant

indicators, economic circumstances and country-specific situations are taken into account.

The alert mechanism is an initial ‘filter’ where the outcome is to identify countries and issues for which more in-depth analysis is required. The conclusions of the AMR are discussed in the Council and the Eurogroup to enable the Commission to obtain appropriate feedback from Member States. The Commission then decides on the final list of countries for which it will prepare country-specific in-depth reviews.

It is only the in-depth reviews that lead to eventual policy guidance to be issued to Member States. The reviews will undertake thorough analysis of the macroeconomic imbalances, in particular as regards their nature and extent, taking into account the economic and structural specificities of the Member State considered.

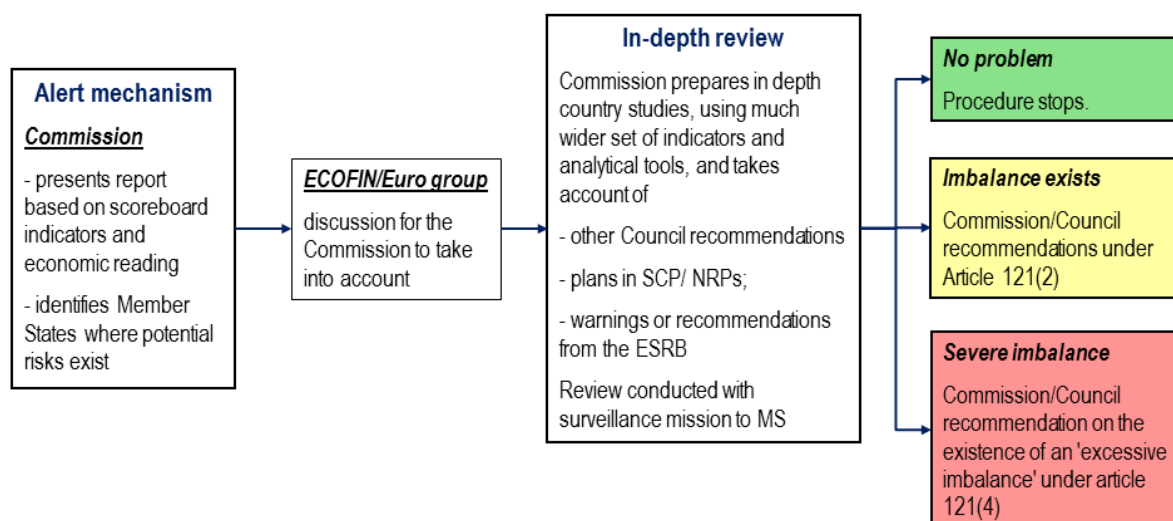
If, on the basis of this analysis, the Commission considers the situation unproblematic it will conclude that no further steps are needed. If, however, the Commission considers that macroeconomic imbalances exist, it may come forward with proposals for policy recommendations for the Member State(s) concerned. In the preventive arm, these will be part of the integrated package of recommendations under the European Semester. This is particularly important since policy remedies to address imbalances cover to a very large extent policies (e.g. labour market, product market and fiscal policies) that may also be subject to other surveillance processes. If the Commission instead considers that there are severe imbalances, it may recommend that the Council open an excessive imbalance procedure, which constitutes the corrective arm of the new procedure. Graph I.4 sums up the entire process graphically.

##### ***1.4.2. The corrective arm and effective enforcement***

As mentioned above, the corrective arm includes an enforcement dimension that applies only to euro-area Member States. While decisions are normally taken in the Council by qualified majority voting, in this procedure several of the key Council decisions are taken by reverse qualified majority voting (RQMV). In the case of RQMV, a novelty for many of the key enforcement decisions across the ‘six-pack’, a

<sup>(4)</sup> The Macroeconomic Imbalance Procedure rests on two pieces of legislation. The first Regulation (EU 1176/2011) sets out the details of the new surveillance procedure and covers all the Member States. The second Regulation (EU 1174/2011) establishes the enforcement mechanism, including the potential use of sanctions, and only applies to the euro-area Member States.

Graph I.4: The two-step MIP procedure



Source: Commission services

Council decision on a Commission recommendation is deemed to be adopted by the Council unless it decides, by qualified majority, to reject the recommendation within ten days of the Commission adopting it. The aim of this voting rule is to increase the automaticity of the decision-making process.

If the in-depth review points to severe imbalances in a Member State, the Council declares the existence of an excessive imbalance and adopts a recommendation asking the Member State to present corrective actions by a specified deadline. Then, and this is a key feature of this new procedure, the Member State has to present a corrective action plan (CAP) setting up a roadmap to implement corrective policy actions. The CAP should be a detailed plan for corrective actions with specific policy actions and an implementation timetable. This timetable and the follow-up will be tailored to the country-specific situation and can thus depart from the European Semester cycle.

As regards the content of the CAP it is clear that the policy response to the macroeconomic imbalances has to be tailored to the circumstances of the Member State concerned and where needed will cover the main policy areas, including fiscal and wage policies, labour markets, product and services markets and the financial sector. Moreover, efficiency and credibility depend on consistent approaches across policy strands. As described above, to this end consistency must be ensured with the policy advice given in the context of the European Semester.

After the Member State has submitted its CAP, the Council assesses it with two possible outcomes:

- If the Council considers the CAP to be insufficient, it adopts a recommendation to the Member State calling on it to submit a new CAP. If the new CAP is still considered to be insufficient, a fine can be imposed (by RQMV, see below) for having failed twice in a row to submit a sufficient CAP (0.1 % of GDP). Thus the Member State cannot stall the procedure by not presenting a satisfactory CAP.
- If the Council considers the CAP to be sufficient, it will endorse the CAP through a recommendation that lists the corrective actions and their implementation deadlines.

Once a sufficient CAP is in place, the Council will then assess whether or not the Member State concerned has taken the recommended actions according to the deadlines set. Two outcomes are possible:

- If the Council considers that the Member State concerned has not taken the recommended corrective action, it will adopt a decision establishing non-compliance together with a recommendation setting new deadlines for taking corrective action. In this case, the enforcement regime established by the Regulation comes into play. It consists of a two-step approach. In case non-compliance with the issued recommendation is established for the first time, the Council may impose an

interesting-bearing deposit (0.1% of GDP). Once the Council establishes non-compliance for a second time, it can convert the deposit into an annual fine. These decisions are taken by RQMV.

- If the Council decides, on the basis of a Commission recommendation, that the Member State concerned has taken the recommended corrective action, but imbalances are not yet corrected, the procedure will be placed in abeyance. The Member State continues to be subject to periodic reporting. If the Council considers that the Member State concerned has taken the appropriate action and the Member State is no longer experiencing excessive imbalances, the EIP will finally be closed.

### *1.5. The role and design of the MIP scoreboard*

The scoreboard is an important component of the alert mechanism and is intended to facilitate the identification of trends that require closer examination. As mentioned above, it is not interpreted mechanically and economic judgment is employed when interpreting its results.

The indicators that are included in the scoreboard cover the most relevant areas of imbalances that are under the scope of the MIP. In line with the different challenges faced by the EU/euro-area countries, it comprises indicators of external positions (current account and net international investment position), competitiveness developments (real effective exchange rates, unit labour cost, export market shares) and indicators of internal imbalances (private sector and general government debt, private sector credit flow, house prices and the unemployment rate). The scoreboard thus encompasses variables that both the economic literature and recent experience establish as being linked to economic crises.

This broad coverage of the scoreboard makes it possible to take into account the versatile nature of imbalances and their close interlinkages. As discussed above, the developments in external imbalances are typically intrinsically linked to internal developments (e.g. the domestic counterpart to excessive external debt is excessive private or public debt). In such a case, internal indicators show whether risks associated with external imbalances are concentrated in specific sectors of the economy. In some cases, individual indicators on their own can point to specific risks

that need to be addressed. In particular, some internal imbalances can have repercussions for other Member States via financial contagion.

For the sake of transparency and easy communication, the scoreboard contains a limited number of simple indicators of high statistical quality. It combines stock and flow indicators that can capture both shorter-term rapid deteriorations and the longer-term gradual accumulation of imbalances.

To facilitate the use of the scoreboard, indicative thresholds have been set for each indicator. These thresholds are mostly based on a simple statistical approach and are set at lower and/or upper quartiles of the historical distributions of the indicator values. These statistically determined thresholds are broadly in line with the findings of economic literature on the early-warning properties of different indicators in terms of predicting economic and financial crises. The breach of the indicative thresholds does not automatically trigger an 'alarm' in the form of a requirement for an in-depth review, though. Only the comprehensive economic reading of the result of the scoreboard, which takes into account additional information, indicates a need for further analysis.

The scoreboard takes into account the euro-area dimension and differentiates between euro-area and non-euro area Member States where appropriate. Due to differences in exchange rate regimes, the behaviour of some economic variables in the euro area is different from the non-euro area countries. This argues in favour of using different alert thresholds for euro-area and non-euro area Member States for indicators such as REERs and ULC developments. With respect to REERs, a differentiation in the indicative thresholds reflects greater nominal exchange rate variability in the non-euro area countries. For ULC, an additional margin was added to the indicative threshold for non-euro area countries because most of them have experienced major trade liberalisation since the mid-1990s that entails a natural process of factor price equalisation towards the levels of trade partners. These strong adjustment processes due to trade liberalisation should, however, be considered weaker in the future and the threshold reassessed.



## I. The surveillance of macroeconomic imbalances in the euro area

At present, the scoreboard includes ten indicators: <sup>(5)</sup>

- three-year backward moving average of the **current account balance** in per cent of GDP, with a threshold of +6% and -4%;
- **net international investment position** in per cent of GDP, with a threshold of -35%;
- five-year percentage change of **export market shares** measured in values, with a threshold of -6%;
- three-year percentage change in **nominal unit labour cost** (ULC), with thresholds of +9% for euro-area countries and +12% for non-euro area countries respectively;
- three-year percentage change of the **real effective exchange rates** (REERs) based on HICP/CPI deflators, relative to 35 other industrial countries, with thresholds of -/+5% for euro-area countries and -/+11% for non-euro area countries respectively;
- **private sector debt** in per cent of GDP, with a threshold of 160%;
- **private sector credit flow** in per cent of GDP, with a threshold of 15%;
- year-on-year **changes in the house price index** relative to a Eurostat consumption deflator, with a threshold of 6%;
- **general government sector debt** in per cent of GDP, with a threshold of 60%;
- three-year backward moving average of the **unemployment rate**, with a threshold of 10%.

In view of the need to adjust to evolving macroeconomic conditions, the composition of the scoreboard is flexible. The design of the scoreboard could change over time to take into account improvements in data availability or enhancements in the underlying analysis and, even more importantly, new sources of potentially harmful macroeconomic imbalances that might develop in the future. Some changes in the scoreboard are already planned for the next annual cycle of surveillance: to capture possible

imbalances in the financial sector, an additional internal indicator will be included by the end of 2012.

Recognising the critical importance of taking due account of country-specific circumstances and institutions, the economic reading of the scoreboard is complemented by additional information and indicators. This includes *inter alia* the general macroeconomic situation, such as growth and employment developments, nominal and real convergence inside and outside the euro area and specificities of catching-up economies. Additional indicators are considered that reflect the potential for the emergence of imbalances as well as the adjustment capacity of an economy, including its potential to sustain sound and balanced growth, such as different measures of productivity, inflows of FDI, capacity to innovate and energy dependence. The state of financial markets, which played an important role in the current crisis, will also be covered.

### *1.6. The 2012 Alert Mechanism Report and the way forward*

As a first step in implementing the MIP, the Commission published its first Alert Mechanism Report on 14 February 2012.

This was done in a context of highly uncertain economic circumstances. All EU Member States are currently dealing with the adjustment to the impact of the crisis, although the challenges differ in terms of scope and severity. In addition to correcting the significant imbalances that built up over previous years, they are also dealing with the interrelated challenges of tackling low growth and high unemployment, ensuring sustainable public finances and restoring stability in the financial system. It is evident that a painful crisis-driven adjustment of macroeconomic imbalances is under way in many Member States, especially those that have or had high external deficits and large imbalances on household and corporate balance sheets.

Against this background, the first AMR made an economic reading of the scoreboard as provided for by the legislation and on this basis 12 Member States were identified as warranting in-depth reviews on different aspects of possible imbalances (see Table I.1 with the MIP scoreboard). Seven of them are euro-area

<sup>(5)</sup> For a detailed discussion per indicator, see European Commission (2012), 'Scoreboard for the surveillance of macroeconomic imbalances', European Economy, Occasional Paper No 92 (February).

Table I.1: MIP scoreboard 2012 (1)

Year 2010	External imbalances and competitiveness					Internal imbalances				
	3 year average of Current Account Balance as % of GDP	Net International Investment Position as % of GDP	% Change (3 years) of Real Effective Exchange Rate with HIPC deflators	% Change (5 years) in Export Market Shares	% Change (3 years) in Nominal ULC	% y-o-y change in deflated House Prices	Private Sector Credit Flow as % of GDP	Private Sector Debt as % of GDP	Public Sector Debt as % of GDP	3 year average of Unemployment
Thresholds	- 4/6%	- 35%	± 5% & ± 11%	- 6%	9% & 12%	+ 6%	15%	160%	60%	10%
BE	-0.6	77.8	1.3	-15.4	8.5	0.4	13.1	233	96	7.7
DE	5.9	38.4	-2.9	-8.3	6.6	-1.0	3.1	128	83	7.5
EE	-0.8	-72.8	5.9	-0.9	9.3	-2.1	-8.6	176	7	12.0
IE	-2.7	-90.9	-5.0	-12.8	-2.3	-10.5	-4.5	341	93	10.6
EL	-12.1	-92.5	3.9	-20.0	12.8	-6.8	-0.7	124	145	9.9
ES	-6.5	-89.5	0.6	-11.6	3.3	-4.3	1.4	227	61	16.5
FR	-1.7	-10.0	-1.4	-19.4	7.2	3.6	2.4	160	82	9.0
IT	-2.8	-23.9	-1.0	-19.0	7.8	-1.5	3.6	126	118	7.6
CY	-12.1	-43.4	0.8	-19.4	7.2	-6.6	30.5	289	62	5.1
LU	6.4	96.5	1.9	3.2	17.3	3.0	-41.8	254	19	4.9
MT	-5.4	9.2	-0.6	6.9	7.7	-1.6	6.9	212	69	6.6
NL	5.0	28.0	-1.0	-8.1	7.4	-2.9	-0.7	223	63	3.8
AT	3.5	-9.8	-1.3	-14.8	8.9	-1.5	6.4	166	72	4.3
PT	-11.2	-107.5	-2.4	-8.6	5.1	0.1	3.3	249	93	10.4
SI	-3.0	-35.7	2.3	-5.9	15.7	0.7	1.8	129	39	5.9
SK	-4.1	-66.2	12.1	32.6	10.1	-4.9	3.3	69	41	12.0
FI	2.1	9.9	0.3	-18.7	12.3	6.6	6.8	178	48	7.7

(1) The shaded cells in the table mark values that fall outside the scoreboard thresholds.

Source: Commission services

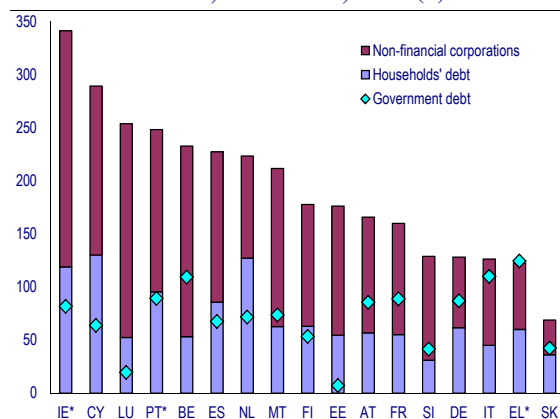
members: Belgium, Spain, France, Italy, Cyprus, Slovenia and Finland. The four programme countries (Greece, Portugal, Ireland and Romania) were not covered in the assessment as they are already under an enhanced programme-based surveillance regime.

The issues raised in the AMR as requiring further examination varied among the Member States concerned but to a large extent reflect the continuous adjustment to the imbalances built up in the years before the crisis described in Section I.2. Some countries need to correct accumulated imbalances on both the internal and the external side while others have to deal with issues concentrated in specific parts of the economy.

In particular, high levels of overall indebtedness appear challenging for a number of euro-area countries. While excessive credit flows have largely adjusted, many Member States are left with high levels of private sector indebtedness and are set for a likely prolonged process of deleveraging and adjustment in sectoral balance sheets (Graph I.5). In a number of cases, the deleveraging challenge for households and/or businesses is compounded by the high levels of public debt. The impact of deleveraging in the private sector could be magnified by the ongoing sovereign debt crisis exerting pressure on highly indebted public sectors. Elevated amounts of debt

in the hands of non-residents can prove to be an additional concern in a context of high uncertainty in international financial markets.

Graph I.5: Gross indebtedness by institutional sector, % of GDP, 2010 (1)

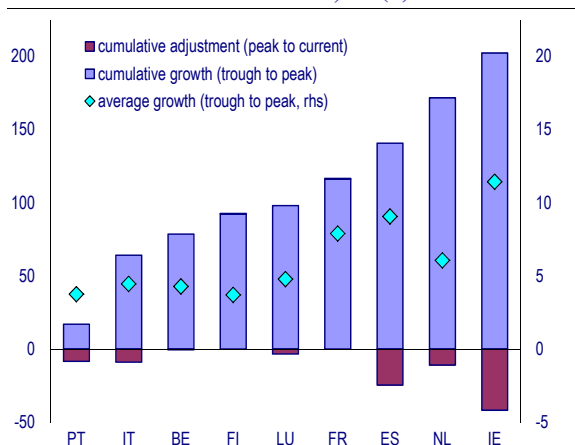


(1) Programme countries are marked with an asterisk.

Source: Commission services

Linked to the continuous build-up of indebtedness in the private sector, some countries also display developments in asset markets, in particular housing, that also warrant further analysis. This can be seen from Graph I.6, which shows the high cumulative house price increases in the upswing preceding the crisis in a number of euro-area countries and the limited adjustment that has taken place so far.

Graph I.6: **Housing market adjustment by Member State, % (1)**

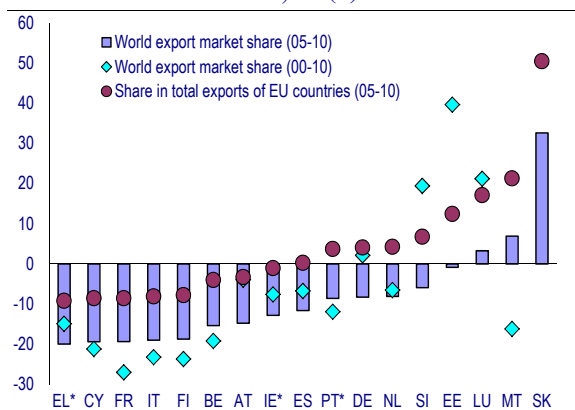


(1) Programme countries are marked with an asterisk.

Source: Commission services

Losses in competitiveness and export market shares are also issues that need to be addressed. For example, many euro-area countries lost export market shares well beyond what would be explained by the rapidly increasing competition from emerging economies. Some euro-area countries, including Cyprus, France, Italy, Finland and Belgium, fared worse than the rest of their EU peers (Graph I.7).

Graph I.7: **Export market shares by Member State, % (1)**



(1) Programme countries are marked with an asterisk; world export market share (00-10) for SK is 108.2

Source: Commission services

Finally, the AMR envisaged analytical work in the months ahead that would explore this issue and serve as a basis for possible policy guidance. This analysis will explore the divergence in economic performance across Member States, including trade and financial interlinkages between deficit and surplus countries, and examine ways for further rebalancing at the level of the euro area and within the global context. It will also assess the role played by structural

factors, including the functioning of services markets, through their impact on domestic consumption and investment, as a driver of sustained surpluses.

Following its publication, the AMR was discussed in the Council, which broadly endorsed the proposed list of Member States for which in-depth reviews are warranted<sup>(6)</sup>. In the coming months and in the context of the European Semester, the Commission will prepare in-depth reviews for these countries. These reviews will provide analysis of the challenges related to macroeconomic imbalances in the selected countries and pay particular attention to the key issues they are facing. In-depth analyses will thus help to assess the drivers of productivity, competitiveness and trade developments, the implications of the accumulated level of indebtedness, the adjustment in relative prices, including housing prices, and the progress in and speed of adjustment in the real economy. If corroborated by the findings of the in-depth reviews, policy recommendations will be issued to Member States under the preventive arm of the MIP or the corrective arm will be activated.

### 1.7. Conclusions

The MIP represents a major improvement in the economic governance framework in the EU. By covering the issue of macroeconomic imbalances, it will fill a gap in the surveillance of macroeconomic policies. While it is a promising tool for improving the coordination of economic policies in the EU and the euro area, only the effectiveness of implementation can ultimately determine its true value.

As 2012 will be the first year of implementation, the process is likely to evolve and develop over the years to come. In the case of the Stability and Growth Pact, targeted efforts to develop analytical approaches and tools have been made over time, guided by the requirements of the procedure in a learning-by-doing process. The toolkit supporting fiscal surveillance is much more advanced today than 10 years ago. In this sense surveillance under the MIP should also evolve over time and ultimately prove to be a useful tool not only in this ongoing crisis but also in helping to avoid the next.

<sup>(6)</sup> See Ecofin conclusions of 13 March 2012 on the first AMR.





## II. Special topics on the euro-area economy

### *The contribution of taxes to fiscal consolidation in the euro area*

*This section assesses the contribution that taxes could make to ongoing fiscal consolidation processes in the euro area. The analysis draws on a set of indicators to identify Member States with a need and room for tax increases, bearing in mind that the appropriateness of any tax reform hinges on country-specific factors. In a first step, countries are screened for their consolidation needs by focusing on the sustainability of their public finances. The second step assesses the availability and extent of ‘tax space’ to address consolidation needs, as indicated by a relatively low tax-to-GDP ratio. The ‘tax space’ criterion is further qualified by controlling for (i) whether the tax-to-GDP ratio has already risen significantly over the recent past, and (ii) whether there is scope for increasing tax categories least detrimental to growth, i.e. mainly consumption and property taxes. Based on this mechanical screening for 2011, which does not take into account announced or planned policy measures for 2012 and beyond, some euro area Member States appear to have room for higher tax revenues to support fiscal consolidation.*

### *Capital flows into vulnerable countries: official and private funding trends*

*Current account disparities among euro-area Member States have been large and persistent since the euro’s introduction. Vulnerable euro-area Member States showed comparatively large current account deficits and have undergone only partial external rebalancing since the crisis. Continued deficits were financed through market-based, decentralised capital flows prior to the crisis. These were then sharply disrupted in late 2008, as sovereign and banking sector fears in vulnerable countries caused private investment capital to flee to safe havens, including to the ‘core’ euro-area countries. The external financing gap that emerged as a result was bridged through liquidity drawn from the Eurosystem, including through TARGET2 claims, and in the later stages through EU/IMF loans under financial assistance programmes. In the absence of these backstops private capital flight would probably have caused a ‘sudden stop’, with a potentially dramatic impact on foreign debt service and domestic consumption and investment. Nevertheless, current account rebalancing continues to be necessary, aided by structural reforms and a real internal devaluation.*

### *The euro-area sovereign CDS market*

*Concerns about the potentially aggravating role of credit default swaps (CDS) markets have featured prominently in the public debate since the start of the crisis. This special topic attempts to provide a broad and accessible overview of developments in the sovereign CDS market. The main conclusions from the analysis are that the sovereign CDS market seems to be fairly well structured and functioning, although still maturing. While the sovereign CDS market has developed and grown in the past few years, market participants’ exposures only pose a limited amount of risk as they are comparatively small. However, transparency is still lacking in some aspects of CDS, although this is also true of the sovereign bond market. With the objective of increasing transparency and reducing systemic risk arising from derivative markets, the Commission has taken several regulatory initiatives, e.g. the European Market Infrastructure Regulation (EMIR) and the Regulation on short selling and certain aspects of CDS.*

## II.1. *The contribution of taxes to fiscal consolidation in the euro area*

The consequences of the financial and economic crisis are deeply reflected in Member States' government revenues. Having implemented a wide range of stimulus measures over the period 2008-10, Member States have clearly shifted focus towards much-needed consolidation of public finances. While experience from successful consolidations suggests that fiscal adjustment should primarily come from the expenditure side of the budget,<sup>(7)</sup> some Member States could consider raising tax revenues – alongside expenditure control – to consolidate public finances. This is particularly relevant for countries that show unsustainable budgetary situations but, at the same time, have room for potential tax revenue rises. Research shows that revenue-based consolidation is more likely to be successful when the initial tax-to-GDP ratio is low. The focus in this section is on possible permanent increases in tax revenues to safeguard fiscal sustainability, rather than on addressing short-term consolidation needs through temporary tax hikes.

When economically justified, the need to increase tax revenues might be addressed first by improving tax compliance and administration rather than by discretionary tax hikes. Where tax compliance is already high and/or revenue-raising needs cannot be met by enhancing tax compliance alone, raising the efficiency of taxation through base-broadening measures such as reviewing tax breaks and reduced VAT rates should be considered. As a last option, lifting tax rates or introducing new taxes might be unavoidable in some cases. This should, however, be done with a view to minimising possible detrimental effects on growth.

Against this background, this section subjects euro-area Member States to horizontal quantitative screening — against common criteria and indicators — to identify scope for tax policy measures in the area of fiscal consolidation. The methodology used here is presented in more detail in the European Commission's latest report on tax reforms in EU Member States.<sup>(8)</sup>

## Main screening principles

The aim of the indicator-based analysis presented in this section is to identify general options for increasing tax revenues, rather than recommending tax increases in any definitive way. Against this background and acknowledging that country-specific factors and the overall policy setting are key elements in gauging the appropriateness of any tax reform measures, raising tax-to-GDP ratios may be recommendable if specific criteria related to consolidation needs and the availability of tax space are met.<sup>(9)</sup> These criteria are discussed in more detail in the following paragraphs.

### *A sizeable consolidation need*

The first necessary condition is a need for sizeable fiscal consolidation, which suggests that, apart from reining in expenditure, increasing government revenues might be required. This potential scope for revenue-raising measures is gauged on the basis of the S2 indicator, which is part of the family of sustainability gap indicators. The sustainability assessment is based on the solvency condition for general government through its inter-temporal budget constraint. The latter is satisfied if the projected outflows of the government are covered by the discounted value of all future revenue. This is equivalent to saying that the government must run sufficiently large primary surpluses going forward to cover the cost of servicing its debt. It is a long-term concept and differs from liquidity, which is concerned with the immediate (short-run) ability of a country to issue debt to finance its expenditure.

The S2 indicator shows the permanent adjustment to current policies for the structural primary balance to fulfil the infinite horizon inter-temporal budget constraint, including paying for any additional expenditure arising from an ageing population. The indicator has two components: the 'initial budgetary position' component (the structural adjustment needed to stabilise debt) and the required additional adjustment due to long-term changes in government expenditure (mostly related to ageing).<sup>(10)</sup>

<sup>(7)</sup> See European Commission (2010), 'Public finances in EMU — 2010', European Economy No 4/2010. One major risk inherent in tax-side consolidation is that it can create disincentives to engage in serious expenditure-based consolidation focusing on inefficiency in public spending.

<sup>(8)</sup> European Commission (2011), 'Tax reforms in EU Member States 2011 — Tax policy challenges for economic growth and fiscal sustainability', European Economy No 5/2011

([http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2011/ee5\\_en.htm](http://ec.europa.eu/economy_finance/publications/european_economy/2011/ee5_en.htm)).

<sup>(9)</sup> See European Commission (2011), op. cit., Box 5.2, for a schematic overview of the screening approach.

<sup>(10)</sup> The required adjustment given by the initial budgetary position is the gap (in % of GDP) between the initial structural primary balance and the debt-stabilising primary balance (primary balance required to ensure the long-term sustainability of public finances under no policy change

As such, a high sustainability gap arising primarily from an initial budgetary position that is insufficient to stabilise debt could be addressed by either tax increases or spending cuts. However, when combined with a high value of the age-related component of S2, it points to an additional need to substantially reduce public expenditure over the medium to longer term which may limit the political feasibility and pace of expenditure cuts in the short term. Therefore, while the focus of the present analysis remains on consolidation measures needed in the short to medium term, considering both components of S2 is useful in order to identify potential needs for raising taxes to supplement expenditure control.

**Table II.1.1: Tax-to-GDP ratio versus fiscal sustainability indicators (1)**

Country	Tax-to-GDP ratio in (2011,%)	S2 sustainability gap indicator (2011, % of GDP)			Primary balance indicators (% of GDP)	
		Total	of which:		Primary balance (in structural terms - 2011)	Average primary balance (2000-07)
			Initial Budgetary position	Ageing component		
BE	43.7	5.8	0.7	5.0	0.2	4.7
DE	39.0	4.1	0.6	3.4	1.2	0.7
EE	32.4	1.0	1.5	-0.5	0.0	1.4
IE	28.8	15.5	7.1	8.4	-5.6	2.8
EL	32.5	5.7	3.0	2.7	1.8	-0.1
ES	31.9	8.5	3.2	5.4	-2.7	2.7
FR	43.6	4.4	2.3	2.1	-2.1	0.0
IT	42.3	1.4	-0.1	1.5	1.8	2.3
CY	34.9	8.9	2.9	6.0	-3.5	0.9
LU	38.4	13.3	-0.2	13.5	1.0	2.6
MT	33.5	7.3	1.2	6.1	0.1	-1.5
NL	38.4	7.6	2.4	5.1	-1.3	2.1
AT	42.1	5.6	1.6	3.9	-0.4	1.4
PT	33.0	5.8	2.7	3.0	-2.6	-1.0
SI	38.4	12.5	1.9	10.6	-1.1	-0.4
SK	28.7	6.1	4.3	1.8	-3.4	-2.4
FI	43.3	3.6	-0.8	4.4	1.2	6.1
EA-17	39.5	5.1	1.7	3.4	-0.3	1.4

(1) The primary balance is taken from the Commission's 2011 autumn forecast. The average primary balance for the years 2000-07 serves as a pre-crisis benchmark.

*Source:* Commission services.

The potential need for using taxes to help consolidation is assessed on the basis of the two components of S2 for 2011, with a particular emphasis on the first. It must be noted that the S2 calculations are based on the Commission's spring 2011 forecast. They thus provide a snapshot of the situation in 2011, assuming unchanged policies thereafter. In the case of countries receiving financial assistance this means that adjustment measures for 2011 are reflected in the calculations (but not those for 2012 and beyond) <sup>(11)</sup>

assumptions, i.e. without ageing-related fiscal adjustment). See European Commission (2011), Box 5.1 for a more detailed presentation of S2.

<sup>(11)</sup> The projections are thus conditional on full implementation of adjustment measures for 2011. Programme measures for 2012 and onwards are not taken on board. The pension reform in Greece, that was already legislated in spring 2011,

Regarding the initial budgetary position component, a value of over 2.5 pp of GDP is considered as significant given the EU and euro-area averages of 2.2 and 1.7 pp of GDP (see Table II.1.1). Regarding the ageing component, a value of over 3.5 pp is considered as significant, as the EU and euro-area averages stand at 3.2 and 3.4 pp respectively. Together this leads to a high value of at least 6 for the composite sustainability gap indicator S2.

The (structural) primary deficit in 2011 (based on the Commission's autumn 2011 forecast) will be used to corroborate the screening results.

### *Availability of 'tax space'*

The second necessary condition is the availability of some 'tax space', as approximated by a relatively low tax-to-GDP ratio. While using the euro area as a natural benchmark, it has to be borne in mind that some countries, especially those with less advanced economies and less developed welfare systems, may require lower tax ratios. <sup>(12)</sup>

Moreover, given that the impact of a possible tax increase on the economy is greatly influenced by past developments in the tax-to-GDP ratio and the current composition of the tax mix, the 'tax space' criterion needs to be qualified by controlling for the following criteria.

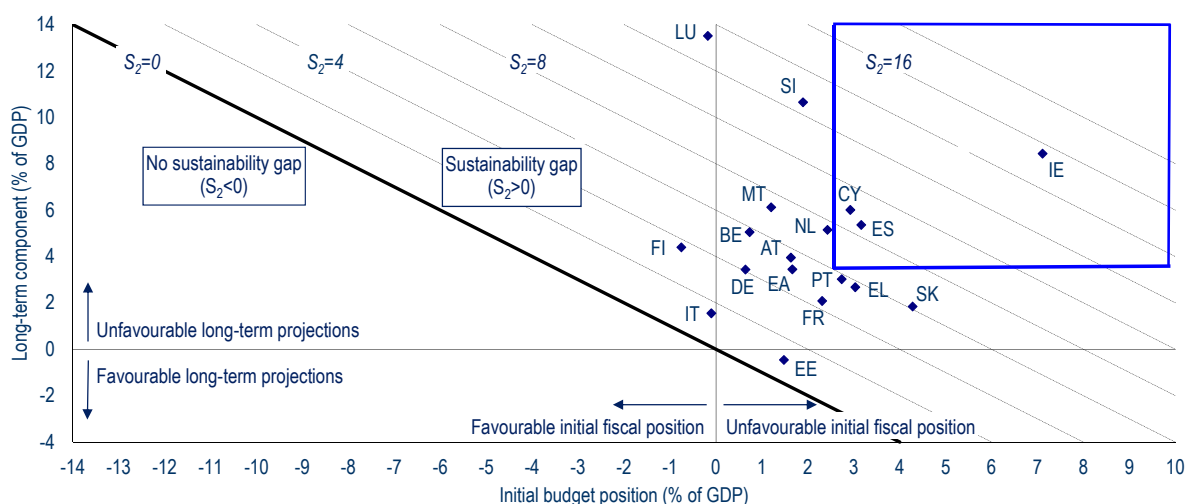
- Revenue-raising measures have not yet been utilised extensively in the recent past, i.e. the tax-to-GDP ratio has not risen significantly over the past few years due to new discretionary measures.
- The analysis of the tax structure shows that there is scope for increasing tax categories least detrimental to growth (mainly consumption and property taxes). <sup>(13)</sup>

is reflected in the long-term projections, while the Spanish pension reform is not.

<sup>(12)</sup> A fully informed analysis would clearly need to control for the ratio of primary expenditure to GDP, with a particular focus on public investment in growth-enhancing areas. However, this is beyond the scope of this focus section.

<sup>(13)</sup> A high ratio of efficient taxes (i.e. of taxes least detrimental to growth) relative to other countries does not by itself imply that the ratio could not be increased even further. However, in cases where the ratio is low, policy measures to increase efficient taxes are likely to entail relatively limited distortions and implementation risk, such as leakage effects of VAT hikes to neighbouring countries. In that sense the criterion (in combination with the availability of overall tax space) is sufficient but not strictly necessary.

Graph II.1.1: Decomposition of the S2 indicator



Source: Commission services

- In addition, low tax-to-GDP ratios accompanied by high tax rates are indicative of inefficiently narrow tax bases, poor tax collection and/or large tax avoidance. In such cases, tax revenues could thus be increased without resorting to rate hikes, thereby minimising distortive effects on economic activity.

**Application of screening criteria**

**Fiscal sustainability and consolidation needs**

Table II.1.1 and Graph II.1.1 summarise the estimates of the S2 indicator and its components, based on the Commission services’ spring 2011 forecast. <sup>(14)</sup>

In the graph, the contribution of the initial budgetary position to the sustainability gap (in % of GDP) is measured on the horizontal axis, while the contribution of the projected increase in age-related expenditure is measured on the vertical axis. The value of the S2 indicator can be seen from the diagonal ‘iso-gap’ lines.

Applying the conditions set out above yields three euro-area Member States where the sustainability gaps are of such an extent and nature that some scope for higher tax revenues is indicated with a view to addressing the severe consolidation needs:

these are Ireland and, to a lesser extent, Spain <sup>(15)</sup> and Cyprus. These countries are shown in the rectangle in the upper right-hand corner of Graph II.1.1. Portugal and Greece appear as close borderline cases, with initial budgetary positions clearly worse but ageing components slightly better than the respective thresholds set out above. The relatively benign value of 2.7% of GDP for the ageing component of S2 in Greece mirrors the effects of the 2010 pension reform. Before the adoption of the pension reform the ageing-related gap was estimated to be 11.5% of GDP.

The Netherlands can also be found on the border of the rectangle. With an initial budgetary position just below the threshold, the country’s position is mainly characterised by high long-term projections for ageing-related costs. An exclusive focus on the size of the initial budgetary gap (regardless of the comparably benign ageing-related sustainability gap) would place Slovakia as a further euro-area country with a significant fiscal sustainability gap that might call for policy action on the revenue side of the budget. <sup>(16)</sup>

In all countries mentioned so far, the overall S2 value is above, or in the case of Portugal and Greece, very close to 6. With overall S2 values above 12, the sustainability gaps in Luxembourg and Slovenia are of a comparable magnitude to that of Ireland. Despite its comparably low initial

<sup>(14)</sup> The output gap is assumed to close by 2015, after which the potential growth rates converge linearly to the Ageing Working Group baseline scenario by 2020. Beyond 2020, the AWG baseline scenario as agreed by the Commission and the AWG/EPC is applied. Neither the 2010 pension reform in Spain nor the pension reform under way in Italy is reflected in the data.

<sup>(15)</sup> The projections underlying the ageing-related component of S2 for Spain do not yet include the effects of the 2010 pension reform (see previous footnote).

<sup>(16)</sup> In addition, recent recalculations of S2 based on the 2011 autumn forecast and updated projections for age-related expenditure, to be published in the May 2012 Ageing Report, point to a more problematic long-term position for Slovakia.

budgetary component of S2, the overall sizeable sustainability gap would suggest Slovenia as a further country with a potential need for policy action on the revenue side of the budget, in addition to necessary structural reforms.<sup>(17)</sup>

The composition of the gap in Luxembourg suggests that the focus of the policy response should be placed on structural reforms of social protection systems (such as phasing out early retirement schemes, and pension and health care reforms) rather than tax increases.

Benchmarking individual countries' structural primary balances (see Table II.1.1) against the euro-area average corroborates the findings of the screening exercise. For the three countries within the above-mentioned rectangle, the structural *primary deficit* shows above-average values, particularly for Ireland but also for Cyprus and Spain. As to the borderline cases in Graph II.1.1, the structural primary deficit is clearly above the euro-area average for Slovakia, Portugal and, to a lesser extent, Slovenia.<sup>(18)</sup>

While the 2011 structural primary deficit for the Netherlands is somewhat higher than for Slovenia, the Commission's autumn 2011 forecast projects the structural primary balance to improve in 2012 and to turn into a small surplus. The Netherlands is therefore not considered to be among the countries with significant fiscal sustainability challenges that might call for increasing tax revenues.

### *Availability of tax space*

In terms of *tax space*, most of the new euro-area Member States display tax-to-GDP ratios clearly below the euro-area average. Only Slovenia displays a tax burden close to the euro-area average. Ireland<sup>(19)</sup>, Greece, Spain and Portugal also display tax ratios well below the euro-area average. Some 'gross' potential for raising the tax-to-GDP ratio, relative to the euro-area average, thus seems to be available in all new

Member States having adopted the common currency, with Slovenia being a borderline case, and four old Member States (Greece, Spain, Ireland, Portugal).

As an additional factor for evaluating the potential for raising the tax-to-GDP ratio, tax hikes implemented in the recent past need to be taken into account. The assessment of the development of tax burdens over time should remain cautious, given the varying impact of the business cycle on tax revenues. Yet, the estimated tax revenue elasticity with respect to the output gap is very close to unity in almost all Member States.<sup>(20)</sup> Therefore, the *ratio* of tax revenues to output is in principle relatively stable over the cycle (bar the impact of tax windfalls and shortfalls generated by swings in asset prices).<sup>(21)</sup> Table II.1.2 compares the tax-to-GDP ratio in 2011 to that in 2008 (as a pre-crisis benchmark), to that in 2009 (as a post-crisis benchmark) and to the ten-year average ratio over 2000-2009. It suggests that among the countries where tax space appears available, tax ratios have not risen significantly recently. While tax ratios have rebounded markedly from their 2009 lows in Greece, Spain, Portugal and, to some extent, Ireland, tax ratios in 2011 were still below or very close to their pre-crisis levels, and, except for Portugal, also below their average values over the past decade.

The increase in the tax-to-GDP ratio over 2009-2011 also appears fairly modest in the case of Greece, Spain and Ireland compared with the size of the total consolidation effort over that period, as measured by the change in the primary structural balance. Given that substantial policy measures such as broadening tax bases and hiking tax rates have been put in place in Greece, this tax space appears to point in particular to remaining severe deficiencies in tax collection and tax administration.

<sup>(17)</sup> Again, recalculations of S2 (see previous footnote) point to a more problematic initial budgetary position for Slovenia.

<sup>(18)</sup> According to the Commission's autumn 2011 forecast, the structural primary deficit in 2012 is projected to remain at a significant 3% of GDP in Slovakia, and to increase to 1.7% of GDP in Slovenia.

<sup>(19)</sup> The Irish gap with respect to the euro-area average is markedly reduced if taxes are computed as a percentage of gross national product (GNP), instead of GDP. Nonetheless, the ratio remains significantly below the euro-area average. In any case GNP is not an ideal denominator for computing tax ratios, as it excludes important parts of the tax base (e.g. output generated by domestic non-national agents).

<sup>(20)</sup> The overall elasticity of revenues is estimated at 1.04 for the euro area, being an average of the above-unity elasticities for personal and corporate taxes, the unit elasticity for indirect taxes and the below-unity elasticity for social security contributions; see Girouard, N. and C. André (2005), 'Measuring cyclically adjusted budget balances for OECD countries', OECD Economics Department Working Papers, No 434, OECD Publishing. For individual euro-area countries the estimates vary between 0.88 for Estonia and Slovakia and 1.17 for Italy.

<sup>(21)</sup> The results presented in Table II.1.2 and discussed below are indeed qualitatively unchanged when the tax-to-GDP ratios are cyclically adjusted using the official revenue elasticities and output gaps used in the Commission's fiscal surveillance framework. The absolute difference with the actual figures presented in the table is on average 0.1 pp and in any event no bigger than 0.4 pp.



In Portugal, the tax-to-GDP ratio has contributed more than half of the consolidation effort so far as measured by the change in the structural primary balance from 2009 to 2011.

In Cyprus, where tax space is comparably limited, the 2011 tax-to-GDP ratio was only slightly above its 2009 low. However, it has increased markedly compared to the average over 2000-2009. In Slovakia, the country with the lowest tax burden in the euro area in 2011, the tax-to-GDP ratio has further decreased since 2009. In Slovenia, where tax space is very limited, a rising tax burden has contributed around one half to the consolidation effort over recent years. However, the increase over the 2000-2009 average is somewhat more limited, in particular when compared to Cyprus.

A final factor to be taken into account to assess the potential for raising tax-to-GDP ratios is the structure of the current tax burden. Various studies have shown that the composition of the tax structure is relevant to growth and that taxes on property and consumption (including environmental taxes falling on consumption) are the least detrimental to growth. Direct taxes, namely personal income taxes and corporate income taxes, appear to be the most detrimental. For a discussion of this 'tax and growth ranking' see European Commission (2011).

Where tax categories least detrimental to growth still suggest room for increases, raising the overall tax burden is likely to be associated with less economic distortions and meet less implementation risk. In cases where the tax burden is relatively low due to e.g. a low tax burden on labour, while more growth-friendly tax sources are already extensively used, increasing the share of labour taxation is not recommendable.<sup>(22)</sup> However, consumption taxes might still be raised further where country-specific circumstances so allow, depending inter alia on current VAT rates relative to neighbouring countries (leakage effects), the VAT rate structure, the efficiency of current VAT collection, the share of consumption in GDP and tax elasticities. The horizontal screening based on macro-indicators of current tax structures can thus only deliver first indications of the relative feasibility of tapping available overall tax space.

<sup>(22)</sup> It might be argued that advising against increasing low labour tax ratios should logically also imply advising countries with high labour tax ratios to reduce them. However, the focus here is on addressing consolidation needs. Revenue-neutral tax shifts from labour to consumption have been addressed in section 5.2 of European Commission (2011).

**Table II.1.2: Developments in tax burdens and total consolidation efforts**

Country	Change in tax-to-GDP ratio (in pp)			Change in structural primary balance (in pp of GDP)	
	10y avg to 2011	2008-11	2009-11	2008-11	2009-11
BE	-0.8	-0.4	0.5	-1.5	0.3
DE	-0.4	-0.1	-0.5	-0.8	-0.2
EE	1.1	0.7	-3.5	4.5	0.5
IE	-1.1	-0.8	0.6	0.3	2.3
EL	0.1	0.3	2.1	6.6	12.0
ES	-2.5	-1.1	1.2	0.0	4.0
FR	0.1	0.3	1.5	-1.0	1.7
IT	0.8	-0.4	-0.5	0.1	1.2
CY	2.8	-2.3	0.2	-6.0	0.2
LU	0.8	2.8	0.7	-1.1	-0.6
MT	1.2	-0.4	-0.8	2.3	0.4
NL	0.0	-0.8	0.1	-3.0	0.4
AT	-0.8	-0.6	-0.6	-1.1	-0.4
PT	1.4	0.2	1.9	-1.1	3.2
SI	0.6	1.2	0.8	2.7	1.6
SK	-2.6	-0.6	-0.2	-0.1	3.1
FI	-0.9	0.3	0.4	-2.7	-0.5
EA-17	-0.3	-0.2	0.3	-0.6	1.4

*Source:* Commission services.

The detailed analysis of tax structures across Member States in section 5.2 of European Commission (2011) identified the countries with relatively low shares of consumption and/or (other) indirect taxes. Of the countries discussed above in the context of S2, Spain in particular appears to have some room for (further) increasing the share of consumption and other indirect taxes in total tax revenues. The analysis of the implicit tax rates on consumption underlines the scope for raising consumption taxes in Spain, and points to Greece, Portugal and, to some extent, Slovakia and Cyprus as further countries that could increase consumption taxation relative to other euro-area countries.<sup>(23)</sup> All of these additional four countries appear to have some overall tax space relative to the euro area and have been identified as countries where higher tax revenues might be called for to meet consolidation needs.

Based on OECD data on housing taxation for 2009, there is particular scope for increasing taxation on immovable property in several countries.<sup>(24)</sup> Partly overlapping with the countries mentioned above as having below-average shares of revenues from consumption and/or indirect taxation in general, Slovakia, Slovenia and Greece appear as countries with relatively low receipts from recurrent real estate taxation in a cross-country perspective. In these

<sup>(23)</sup> While the share of consumption taxes in total tax revenues is relatively high in these countries, the actual tax burden that falls on consumption is relatively low, reflecting low overall tax-to-GDP ratios.

<sup>(24)</sup> For a more detailed discussion, see European Commission (2011), op. cit.



## II. Special topics on the euro-area economy

countries, the revenues from recurrent real estate taxes account for less than 0.6% of GDP and there is no tax on imputed rents. According to updated OECD data for 2010, Portugal would also fall into the category of countries with relatively low revenues from recurrent property taxes. <sup>(25)</sup> In Ireland, the available tax space is not due to relative under-taxation of consumption or other indirect tax bases, including property. However, as mentioned above, a high share of relatively growth-friendly taxes does not preclude increasing such taxes further.

Finally, among the countries discussed above, Portugal, Greece and Spain emerge as cases where rather low tax-to-GDP ratios go along with above-average tax rates on at least two of the three main tax bases (personal income, consumption (VAT), corporate income). <sup>(26)</sup> In these countries, cutting tax expenditure in direct taxation, increasing the efficiency of VAT collection and enhancing tax administration would thus be preferable to rises in tax rates for generating higher revenues at relatively low economic costs. <sup>(27)</sup>

### Summary of screening results

The mechanical screening analysis presented in this section, albeit consistent across countries, is inevitably of an essentially macroeconomic nature. An in-depth assessment of the microeconomic effects of increasing specific types of tax, including the specific impact on particular groups of taxpayers, would have to be carried out before firm tax policy conclusions can be drawn. However, such detailed country-specific scrutiny of the possible room for increasing specific categories of taxes lies clearly beyond the scope of this section.

Bearing this caveat in mind and not taking into account policy measures implemented or planned in 2012 (and beyond), Spain, Ireland and Cyprus emerge as countries where the mechanical screening analysis suggests scope for potential tax increases to support consolidation efforts (Table II.1.3). A similar indication applies to the borderline cases in terms of the S2 indicator,

Portugal and Greece. <sup>(28)</sup> A focus on the initial budgetary component of the sustainability gap would point to Slovakia as an additional country displaying both the need and scope for raising tax revenues. Slovenia could be considered as another borderline case. However, the tax space is relatively limited, also reflecting some increase in the tax-to-GDP ratio in past years.

Table II.1.3: Overview: fiscal consolidation challenges (1)

Country	Potential need for higher tax revenues to help consolidation (based on S2)	'Tax space' available (compared to EA avg)	No significant increase in tax-to-GDP ratio in recent years	Scope for (further) increasing least distortive taxes
BE			X	X
DE		(X)	X	X
EE		X	X	
IE	X	X	X	
EL	(X)	X	(X)	(X)
ES	X	X	X	X
FR			X	(X)
IT			(X)	X
CY	X	X		(X)
LU		(X)	(X)	X
MT		X	X	
NL		(X)	X	(X)
AT			X	
PT	(X)	X	(X)	(X)
SI	(X)	(X)	(X)	
SK	(X)	X	X	X
FI			X	(X)

(1) (X) depicts borderline cases, i.e. where the applied criteria are either not strictly met (for the S2 criterion), or the assumed values remain very close to the thresholds (as for tax space in DE, LU, NL, SI), or other indicators not presented in detail in this section suggest the need for some qualification. For a detailed analysis, see European Commission (2011).

Source: Commission services.

<sup>(25)</sup> OECD (2011), 'Revenue statistics 1965-2010: 2011 edition', OECD Publishing, Paris. Since the latest available data refer to 2010, they do not yet reflect reforms of real estate taxation implemented or adopted in 2011.

<sup>(26)</sup> Based on statutory (top) tax rates in 2011 compared to the arithmetic euro-area average.

<sup>(27)</sup> For an in-depth analysis of tax policy challenges related to tax expenditure, increasing VAT efficiency and tax administration in euro-area countries, see section. 5.3 of European Commission (2011), op. cit.

<sup>(28)</sup> The borderline position for Greece is largely due to the fact that the positive effects of the 2010 pension reform are reflected in the long-term component of S2.

## II.2. Capital flows into vulnerable countries: official and private funding trends

### Introduction

With regard to the macroeconomic performance of the euro area since the beginning of the economic and financial crisis, two remarkably different perspectives are notable. On the one hand, the euro area has shown relative stability in terms of the euro's external value and its aggregate current account balance with the rest of the world.<sup>(29)</sup> On the other hand, numerous Member States witnessed major falls in economic output and employment during this period, as well as suffering large rises in sovereign financing rates on the back of a near-ubiquitous fiscal deterioration across the euro area.

Against this background of the euro area's relative external stability in times of such macroeconomic upheaval, this section investigates current account and financial investment flows in the euro area since the start of the crisis. It aims to answer two main questions: Given the current account imbalances and their nascent correction in the euro area, what have been the financial counterparts to these current account flows? And what role have institutional arrangements in the euro area played in supporting current account positions and preventing their disorderly unwinding?

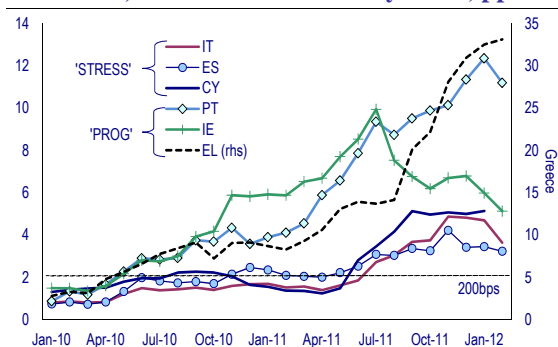
### Widening of country risk premia

After years of relatively steady (though divergent) growth across euro area Member States, the crisis has brought both cyclical and structural differences between Member States to the fore. A clear reflection of such differences is also found in financial markets' pricing of sovereign credit risk, following years of near-indiscriminate credit risk valuation for advanced economies. Graph II.2.1 illustrates this reappraisal using sovereign yield spreads over 10-year Bunds, showing a remarkable dispersing of implied credit risk over a relatively short period of time. The depicted risk premia also signify a wider country risk divergence that goes well beyond the general

government sector, as fiscal positions, banking sector health, and growth prospects became increasingly interdependent during the crisis.

Grouping euro-area Member States according to their average sovereign yield spreads since between January 2010 and February 2012, three main risk groupings are apparent. While corresponding to low, medium and high risk categories, these are labelled 'core', 'stress' and 'programme'.<sup>(30)</sup> The 'stress' group is so named due to the acute market stress that affected Italy, Spain and Cyprus in the summer of 2011 and that has exerted lasting upward pressure on yield spreads. These groupings will serve throughout the section as focussing concepts for the analysis of capital flows, which one can hypothesise to be related to macroeconomic (including sovereign) risk factors. On occasion a fourth category for new euro-area members (Estonia, Slovakia, Slovenia, Malta) will be added for illustration.

Graph II.2.1: Sovereign yield spreads over 10y Bunds, 2010 - Feb '12 monthly mean, pps.



Source: EcoWin

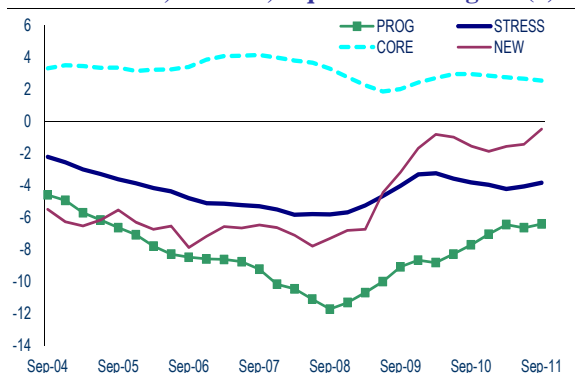
### Current accounts showed limited change

Current account imbalances across Member States are one of the principal manifestations of macroeconomic heterogeneity within the euro area, in particular of the differences in saving and investment patterns. Graph II.2.2 shows the development of current account balances across the four aforementioned groups.

<sup>(29)</sup> Between September 2008 and February 2012, the euro consistently remained within a  $\pm 12\%$  fluctuation band from its 10-year average (nominal effective basis, 12 partner countries), and during the crisis period was on average 3% above this long-term average. The quarterly current account for the EA-17 fluctuated between +0.7% of GDP and -1.8% between 2008 Q4 and 2011 Q3, with a lower standard deviation than over the 1999-2008 Q3 period.

<sup>(30)</sup> Dividing lines between the three categories are drawn at average 10y yield spreads of 200 bps and 500bps respectively during the 2010-12 period. 'Core' countries with low average yield spreads are Austria, Belgium, Germany, Finland, France, Luxembourg and the Netherlands. The medium-risk 'stress' group is so named due to the acute bond market stress that affected Italy, Spain and Cyprus in the summer of 2011 and that has exerted lasting upward pressure on yield spreads. It should not come as a surprise that the 'high risk' group (Greece, Ireland, Portugal) is identical with those countries under EU/IMF financial assistance programmes. The remaining EA-17 Members (Estonia, Slovakia, Slovenia, Malta) are treated as a separate category.

Graph II.2.2: Current account balances in euro area, % GDP, 4 quarter moving av. (1)



(1) weighted by national GDP; PROG = (EL, PT, IE); STRESS = (CY, ES, IT); CORE = (AT, BE, DE, FI, FR, LU, NL) NEW = (EE, SK, SI, MT)

Source: Eurostat

A clear deteriorating trend is evident for both 'programme' and, to a lesser degree, 'stress' countries between 2004 and the outbreak of the crisis in late 2008. This was driven by sharp declines in real interest rates and capital costs which made borrowing and investment relatively attractive and led to significant inflows of foreign capital to these countries. New euro-area Members (accession of whom was not certain for much of the pre-crisis period, however) show only a limited deficit widening over the period. While generally the appearance of (transitory) current account deficits is consistent with convergence processes at work that channel foreign investment into faster-growing economies, new Members with the greatest convergence potential nonetheless showed comparatively lower – and indeed more temporary – current account deficits. This underscores the possible misallocation of foreign capital to a number of Member States including programme countries. <sup>(31)</sup>

The crisis marks a turning point for the three groups of deficit countries, as current accounts improved on average in all three, though much more so for new members, who also showed a more limited deterioration in the pre-crisis period. There are, however differences in the adjustment process across countries. While new Member States have adjusted significantly by bringing domestic saving and investment rates close to balance, programme and stress countries still show sizable deficits even after several years of crisis. The surplus countries of the core (barring France) recorded a steadier current account

position on average. Overall, the sizeable current account deficits run by programme and stress countries to date correspond to a continuous need for net external funding inflows from other countries.

### EU/IMF financial assistance and Eurosystem financing as a market surrogate

By definition, the sum of current account, capital account and financial account balance equals zero, in the absence of errors and omissions in the balance of payments. <sup>(32)</sup> Capital account balances are typically small for advanced economies, therefore financial account surpluses are the main counterpart to current account deficits. Up until the crisis, virtually all financial account flows in the euro area consisted of 'market-intermediated' flows while virtually no official multilateral lending and only limited transfers of central bank deposits between Eurosystem members took place. Since the Lehman collapse in September 2008, growing market concerns about solvency and liquidity – initially of banks, but increasingly of their sovereigns as implicit guarantors – left a number of euro-area Member States faced with sudden and large withdrawals of private funding and an inability to finance themselves at affordable interest rates on international capital markets.

Institutional arrangements in the euro area had to be adjusted to dampen the impact of a 'sudden stop' of foreign capital inflows that might have otherwise triggered sovereign defaults and posed a risk of contagion for the euro area as a whole. This initially included temporary facilities such as the Greek loan facility, the EFSF (European Financial Stability Facility) and the EFSM (European Financial Stability Mechanism). Greece (starting in May 2010), Ireland (January 2011) and Portugal (May 2011) have drawn external funding from these facilities. The programmes were designed by the European Commission and IMF, in liaison with the ECB, to cover financing needs and to address country-specific vulnerabilities of the Member States concerned in the structural, fiscal and financial domain. The European Stability Mechanism (ESM), the permanent rescue fund with an

<sup>(31)</sup> External rebalancing mechanisms within the euro area are examined further in European Commission (2011), "Sectoral implications of external rebalancing", *Quarterly Report on the Euro Area*, Vol.10 No. 3.

<sup>(32)</sup> An economy's balance of payments measures economic transactions between residents and the rest of the world, and is divided into three principal accounts: The current account, (measuring goods and services trade, investment income and current transfers), the capital account (transfers of fixed assets and debt cancellations) and the financial account (transactions in financial assets and liabilities).

effective lending volume of €500bn, will be operational in mid-2012. <sup>(33)</sup>

Moreover, banking sectors in the euro area have benefited from the liquidity-providing operations by the Eurosystem. Euro-area membership implies that banking sectors in Member States can obtain funding via national central banks at the current ECB refinancing rate. During the crisis, the provision of liquidity was expanded by the ECB through a number of operative measures in order for monetary policy objectives to be achieved in the challenging economic and financial environment. For instance, full allotment at the policy rate was offered under main as well as long-term refinancing operations. Requirements for participating in the Eurosystem's collateralised operations were lowered, while at the same time certain safeguards such as larger collateral margins were applied to protect the ECB's balance sheet. In addition, some National Central Banks (NCBs) had to provide emergency liquidity assistance. As a result, euro-area banks could cover a larger share of their financing needs through refinancing operations with the Eurosystem, instead of market funding.

These institutional adjustments to the economic policy arrangements in the euro area allowed the public sector to offset a large part of private foreign funding outflows and thereby also allowed for the continued financing of trade flows within the euro area. Graph II.2.4 illustrates this for the three programme countries, where current account deficits were among the highest in the euro area and the crisis has had the largest impact on external financing flows.

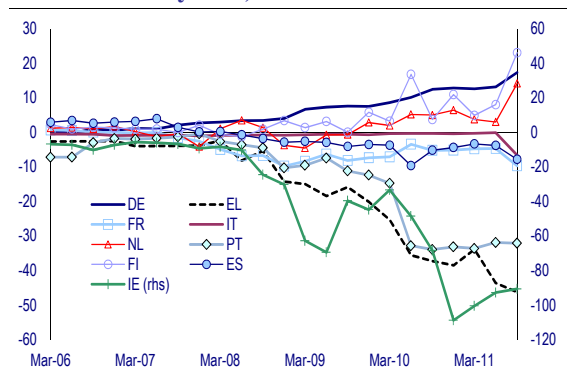
In all three countries current account deficits were in the pre-crisis period almost exclusively covered through 'private' financial flows, without involving major multilateral lending or creating significant net asset or liability positions of NCB's vis-à-vis the Eurosystem. When the first ripples of financial turmoil originating in the US began affecting European banks in early 2008, an outflow of private funding set in that accelerated until 2010. Liquidity provided by the Eurosystem was transferred through the so-called 'TARGET2' payments system to offset these outflows of

private funding.<sup>(34)</sup> The continued net external financing need represented by the current account deficits of the three countries was therefore initially also largely covered by such transfers of central bank liquidity. By contrast, official lending related to EU/IMF financial assistance programmes only became effective at a later stage, although as of the third quarter of 2011 it has now become the (near-)dominant source of external financing for the programme countries.

### TARGET2 balances as an indicator of severe funding strains

Prior to the crisis the net TARGET2 balance of any given NCB vis-à-vis the Eurosystem was relatively small, as depicted in Graph II.2.3. Since 2008 these balances have risen very sharply, in the case of Germany, Netherlands and Finland amounting to some €700bn at end-2011.

Graph II.2.3: Net TARGET2 Balances in Eurosystem, % of national GDP



(1) Positive figures indicate a net asset position vis-à-vis the Eurosystem. TARGET2 balances proxied by monetary authorities' international investment positions (IIP) in the 'loans and deposits' division of Other Investment, see also note (2) of Graph II.2.4.

Source: Commission services

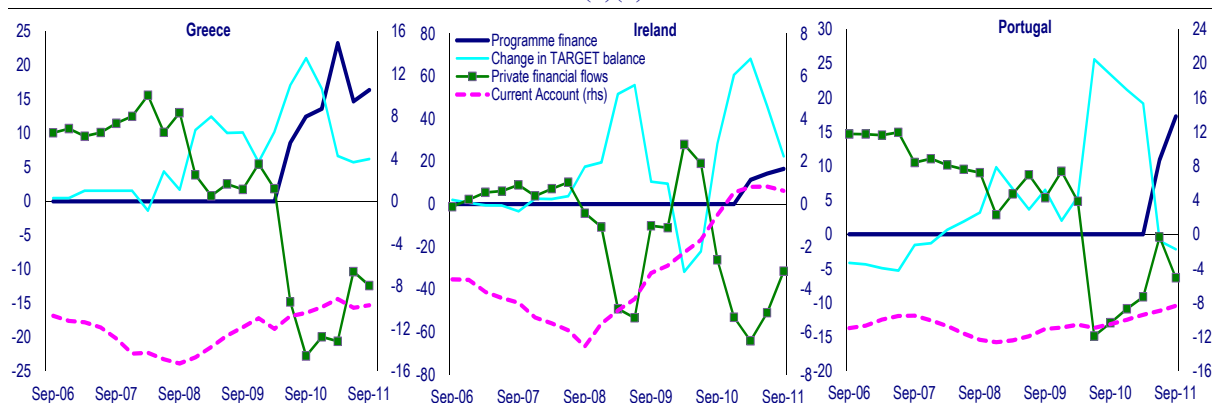
The counterpart to these large absolute net asset positions is a large combined net liability position

<sup>(33)</sup> From a balance of payments perspective, EU-IMF financial assistance programmes are loans from non-residents to national governments (even if the government uses it to support domestic banks), which appear in the financial account of the BoP as a liability under 'other investment', which comprises foreign loans and deposits.

<sup>(34)</sup> The Eurosystem's 'TARGET2' system is an integrated payment platform that records and manages all cross-border transfers of Central Bank liquidity between two countries in the Eurosystem. Any cross-border payment between banks in two euro area MS through the TARGET2 system thus automatically generates balancing credit claims between the national central bank and the ECB. If a national central bank is a net claimant from these payments, the claim appears as an asset on its own balance sheet under the entry "other claims within the Eurosystem". If a NCB has made net outgoing payments to another NCB, it shows up as a liability on its balance sheet under the entry "other liabilities within the Eurosystem". The accumulated claims and liabilities impact on the International Investment Position, their (transactional) changes are recorded in the balance of payment in the category "other investment". An increase in a Member State's net liabilities to the Eurosystem is therefore recorded as a net inflow of capital.



Graph II.2.4: Balance-of-payments developments in Programme countries, 4 quarter moving av., % GDP (1)(2)



(1) Positive figures signify net inflows of capital for all categories except the current account, where a positive figure denotes a current account surplus. The three components of "programme financing", "change in TARGET balances" and "private financial flows" do not always sum to the current account balance due to errors and omissions in the balance of payments, which can be large. (2) The variable "change in TARGET balances" is defined as the annual change in a country's net position in the International investment position (IIP) for "other investment position in loans and deposits of the monetary authority". While this category almost exclusively captures positions in the TARGET2 system vis-à-vis the Eurosystem, it is a slightly wider definition than the TARGET balances alone that have been quoted in the associated public debate. Using the aforementioned official IIP category ensures that other non-TARGET liquidity transfers are also captured and ensures data consistency across countries. "Private financial flows" are defined as a residual in the following way: Financial account + capital account – Programme finance – change in TARGET balance = private financial flows. It includes some transactions that can be considered as official and/or multilateral financing flows, such as EU funds and budget contributions. Such transactions are typically stable and relatively small compared to programme and TARGET funding since the crisis.

Source: Commission services

of the programme countries and of Italy and Spain. Relative to these countries' economic output, net TARGET liabilities have been very large only in the case of the programme countries, in Ireland even reaching 100% of GDP at end-2010. Germany's total TARGET assets equate to a more moderate – though undoubtedly significant – 17% of GDP at Q3 2011, with Finland and the Netherlands showing similar net asset positions.

TARGET balances were low prior to the crisis because private financing for, say, import-related payments was on aggregate provided by non-resident investors generating mutually-offsetting liquidity flows within the system.<sup>(35)</sup> However, the massive withdrawal of such foreign funding during the crisis period resulted in largely one-way flows through the TARGET system, meaning that growing net TARGET liabilities are accumulated by the NCBs of countries experiencing severe financial market tensions. This underscores the inextricable links between the financial systems of Eurosystem Member States that euro-area membership entails, and that

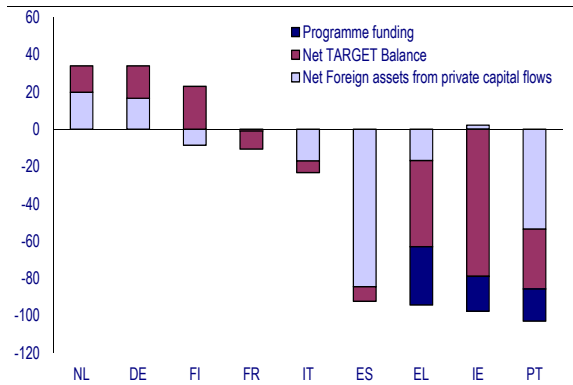
can absorb the potentially severe macroeconomic consequences associated with sudden capital flow reversals.

### Sudden withdrawal of private funding reverses years of strong inflows

Graph II.2.5 illustrates the impact of these three types of funding flows on Member States' net international investment position by approximating net foreign assets based on private funding flows as all those net external financial assets that result neither from: a) changes in monetary authority's net international investment position in other investments (largely driven by TARGET2 balances), nor b) from official programme-related lending. It reveals that a sizeable part of the net foreign liability positions of the programme countries is now represented by net liabilities of their monetary authorities and official programme-related borrowing by governments. Shares vary between countries, from around half of net external liabilities to the entirety of Ireland's net foreign debt stock. Though arguably vulnerable in other respects, Spain and Italy remain predominantly market-financed in net terms. The net foreign creditors Germany and the Netherlands hold sizeable net TARGET assets, although private assets are still dominant.

<sup>(35)</sup> In TARGET2, the cross-border payment for e.g. a foreign car purchase by an Italian resident from a German manufacturer would lead to a claim of the German Bundesbank on the Banca d'Italia, which would then be transferred onto the Eurosystem's books and generate an asset for the Bundesbank vis-à-vis the Eurosystem. A corresponding loan of a German bank (or any other foreign entity) to the Italian buyer would involve a transfer sent the other way, thus creating a claim of the Italian CB on the BB, and so on to the Eurosystem.

Graph II.2.5: Net foreign asset position: breakdown by type of funding, end-Q3 2011, % GDP (1)

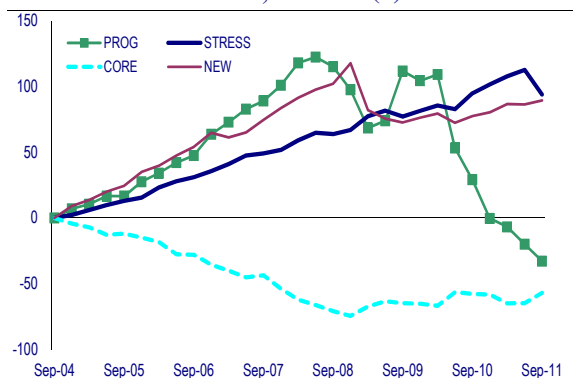


(1) Positive values indicate a net asset position vis-à-vis the rest of the world. Programme lending only includes completed disbursements up to 30 September 2011. Programme funding only shown for recipient countries, as large parts of programme lending are funded via the EFSF/EFSM, which represents a contingent liability for creditor Member States. Net TARGET Balances as defined in note (2) of Graph II.2.4.

Source: Commission services

The sudden and sharp reversal of private capital flows to programme countries that was offset by an increase in public sector liabilities represents a sharp reversal of previous trends. Graph II.2.6 shows cumulative private capital flows by group of country, indicating that pre-crisis inflows were strongest in relative terms for programme countries and new members, although only in the former group the flows reversed significantly. Some slowing of private capital flows trends is evident for the stress group, while core countries are beginning to repatriate private capital in net terms.

Graph II.2.6: Cumulative net private capital inflows, % GDP (1)



(1) Weighted by national GDP; 2004 Q3 as starting point. For definitions of country groupings see notes to Graph 2.

Source: Commission services

### Components of capital flight

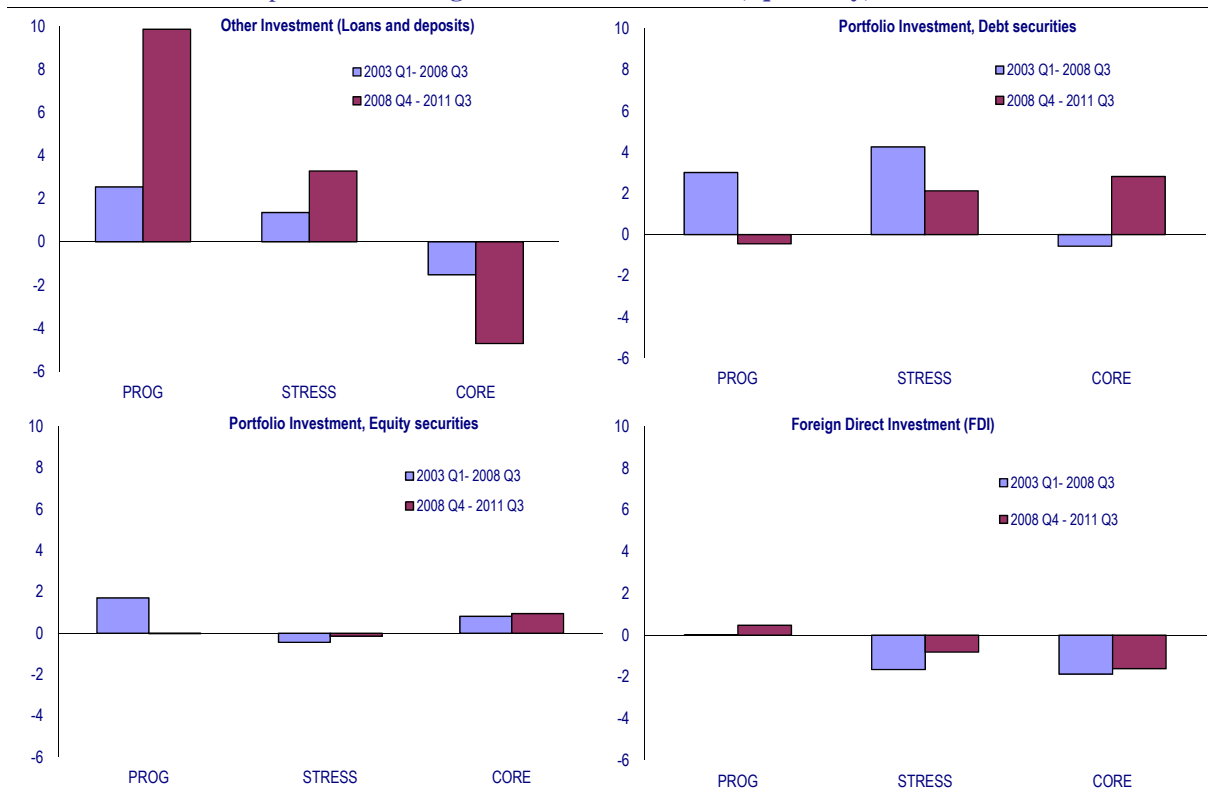
Further insights into the nature of this private capital flight from vulnerable countries can be gained by looking at a breakdown of the major financial account categories, which are 'other investment', 'portfolio investment' (split into debt and equity instruments), and foreign direct investment (FDI). Graph II.2.7 presents financial account flows before and since the crisis according to these categories.

Ireland is excluded from the group of programme countries, as its financial account flows in 2010 Q4 were majorly distorted by large transactions of IFSC banks to a euro-area government-sponsored special purpose vehicle as part of its EU/IMF adjustment programme. This quasi-debt-equity swap contributed to a fall of Irish banks' foreign loan and deposit liabilities of €160bn (107% GDP) over the quarter, partly counterbalanced by a rise in portfolio equity liabilities of €111bn (75% GDP).

From an economic point of view the exclusion of Ireland for this reason does not detract from overall dynamics in the programme countries, as Ireland's total net financial flows in the particular quarter were affected much less by the aforementioned swap, and because all three programme countries show broadly similar external financing trends otherwise. More generally, financial account flows show a changing risk appreciation between the various country groups in all sub-components, to an almost surprising degree.

**Other investment** comprises loans and deposit liabilities and assets of both public and private sector entities. Although typically a private-sector-dominated asset class, both TARGET2 balances and EU/IMF programme-related lending are captured in this category. Given the aforementioned crisis developments, other investment represents the most dynamic of asset classes since the start of the crisis. Previously, both programme and stress countries were net recipients of other investment to a moderate extent, but since then net inflows of other investment have massively risen, due mainly to a combination of growing TARGET2 balances and official programme-related government funding. By contrast, core countries increased their net financial outflows through other investment, again due to these two factors.

Graph II.2.7: Average financial account flows, quarterly, % of GDP



(1) Weighted by national GDP; for country groupings see notes to Graph II.2.2; N.B: PROG group excludes Ireland.

Source: Eurostat

Overall, closer inspection of non-public sector loan and deposit holdings shows comparatively limited movements, notably in banks' foreign loan and deposit liabilities. This suggests that gross reductions in foreign liabilities (caused e.g. by the foreign counterparty selling the asset) were not systematically large, in particular not for programme countries.<sup>(36)</sup> Instead, the rise in 'other investment' financing has allowed portfolio investment into programme countries to fall from significantly positive territory prior to the crisis to near-zero since then.

**Debt securities** represent the second-largest item in net financial account flows, and here too a significant shift in financing trends is apparent that differs according to levels of country risk. While in the pre-crisis period programme and stress countries were externally financed predominantly through net issuance of debt securities, net inflows have entirely dried up for programme countries and have halved for the stress group.<sup>(37)</sup> By contrast, the large and stable

security markets in the core group acted as a safe haven and attracted far stronger portfolio debt inflows than before the crisis, especially into France.

**Equity securities** funding from abroad shows some shifts since the crisis, though only in programme countries, where net foreign acquisitions of shares are now around zero. Compared to the pre-crisis period, this reflects a considerable drop, which is likely to be linked to the impact of a weak growth outlook and large macroeconomic risks on corporate profitability.

Finally, **FDI flows** have shown a rather more limited response to crisis developments, with programme countries showing only a minor increase in net FDI receipts, from pre-crisis net flows of zero on average. Economies in the core and stress groups have still acted as a source of FDI into other countries since the crisis, as is to be expected on the basis of their higher relative income levels.

<sup>(36)</sup> Only CY and IE (not shown) recorded major movements in foreign bank deposits, and in these cases intra-company financing (CY) and a major debt/equity swap via an SPV (IE) played a role, rather than lending dynamics with third parties.

<sup>(37)</sup> For programme countries *sovereign* debt held by foreigners has indeed fallen outright, as programme funding has mainly

financed the redemption of maturing sovereign bonds. Continued investment by foreigners in *private sector* debt instruments has partly offset the net contraction in external sovereign debt.



## Conclusion

Following the introduction of the euro, external borrowing by several euro area Member States increased sharply, forming the counterpart to large current account deficits and a rapid deterioration in these countries net external indebtedness. The boom in foreign capital inflows was then sharply disrupted by the current crisis as investment capital sought a safe haven in the 'core' euro area countries. This reversal of cross-border financing flows can be observed in all asset categories, it is however particularly pronounced for other as well as portfolio investment.

Given the size of the private funding withdrawal from peripheral euro-area Member states, the current account adjustment has so far been rather limited in most cases: funding through loans related to EU-IMF assistance programmes together with expansion of liquidity-providing-operations conducted by the Eurosystem acted as

a stop-gap and prevented a disorderly adjustment in the current account. This allowed for consumption and investment in several Member States to be sustained at levels that would not have been feasible otherwise. In the absence of crisis-related measures taken by EU and euro-area institutions, several euro-area Member States would have likely faced a very disruptive adjustment, including widespread defaults on their external liabilities.

Nevertheless, external rebalancing remains an important policy aim so as to ensure external debt sustainability. The return of the current account to balance will involve structural reforms and a real effective depreciation, which is reflected in the policy conditionality attached to official financial assistance programmes. Without such an adjustment, macroeconomic imbalances and the vulnerability to capital withdrawal will ultimately persist.

### II.3. The euro-area sovereign CDS market

The sovereign debt crisis is now in its third year. Already at an early stage of the crisis, concerns were raised about the possibly aggravating role of the market for credit default swaps (CDS). This special topic attempts to provide a broad and accessible view of developments in the sovereign CDS market. It also discusses some critical issues related to the CDS market.

#### CDS and their use

Credit default swaps are financial instruments that allow credit risk to be taken or transferred from one party to another.<sup>(38)</sup> Credit risk arises from the possibility of default on a pre-agreed payment, and the purchase of a CDS contract pays off when such a payment default occurs, thereby shifting the risk to the seller of the CDS. CDS markets are therefore important vehicles for reallocating risks on financial markets.

Sovereign CDS can be used for many different purposes. For example, they can be used to hedge an existing government bond position, or other exposures with a high sovereign correlation ('proxy hedging'), against losses from potential deterioration of the creditworthiness of the borrower. They can also be used to take an exposure to sovereign risk and receive a return in exchange for the credit risk assumed, or be used as trading tools for exploiting arbitrage opportunities in government bond markets. Other fields of application are portfolio and regulatory capital management. In addition, sovereign CDS are a standardised instrument for studying and comparing credit risk across countries.

The general terms of a CDS contract are laid down in standard documents, most often as proposed by the International Swaps and Derivatives Association (ISDA). For such contracts, the ISDA Credit Derivative Determination Committee determines whether a credit event<sup>(39)</sup> has occurred. The Committee has

to reach a qualified majority of 80% to resolve a Credit Event Request Resolution (a request for determining whether a credit event has occurred). The Determination Committee consists of market participants termed 'voting dealers' (10), 'consultative dealers' (2), and 'voting non-dealers' (5).

In the event of a default, an investor who has bought a CDS contract is entitled to receive a payment equivalent to the face value of the bond, less any amount recovered from the bond obligation. There are two ways of settling a CDS contract in the event of default. One involves the physical delivery of bonds in exchange for money and is termed physical settlement. The other involves only the transfer of cash and is called cash settlement.<sup>(40)</sup>

Following the exercise by Greece of collective action clauses to amend the terms of Greek government bonds, the Determination Committee unanimously resolved that a restructuring credit event occurred on 9 March 2012. The second financial assistance programme for Greece included a condition regarding private sector involvement that would allow Greece to bring its debt level down to a sustainable level. The exchange of old bond holdings for new bonds at a lower value was initially voluntary. Creditors holding more than 85% of the value of Greek bonds participated. However, to increase participation, Greece introduced and then triggered collective action clauses. As a result, this constituted a credit event.

#### CDS position trends

Since the beginning of 2009, the gross notional value for CDS contracts written for euro-area Member States has been trending upward. Notional values represent the par amount of credit protection bought or sold, and gross notional values are the sum of CDS contracts bought or

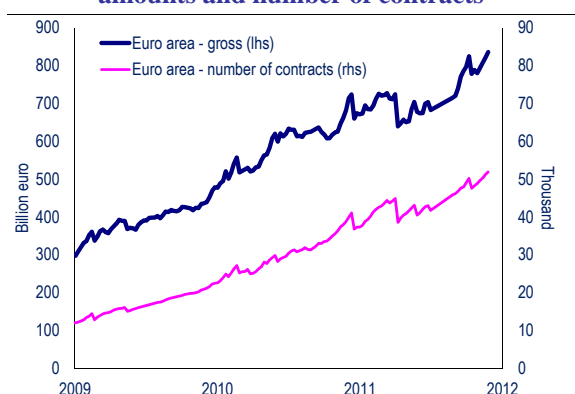
<sup>(38)</sup> Credit default swaps are over-the-counter (OTC) products and are quoted in basis points per year — the so called CDS spread. The CDS spread indicates the cost per year to either buy or sell exposure to the possibility of default or restructuring of an underlying debt security. Thus, a buyer of a CDS contract incurs a yearly cost, an 'insurance' premium to be paid, to hold the contract.

<sup>(39)</sup> A sovereign CDS contract can be triggered when a credit event occurs. There are basically three credit events for sovereign CDS:

1. *Failure to pay* — a sovereign fails to make a payment under one or more obligations, where a grace period for payment is taken into account.
  2. *Restructuring* — a sovereign changes the terms of the relevant obligation, which makes it less favourable to the holders. These events include a reduction in the principal amount or interest payable, a postponement of payment, and a change in ranking in priority of payment.
  3. *Repudiation/moratorium* — a sovereign refuses to honour its obligations and declares a moratorium and acts accordingly. This particular credit event will only trigger payment under the CDS contract if it is accompanied by an actual failure to pay or by a restructuring.
- <sup>(40)</sup> In case of a major credit event that is followed by an auction all contracts tend to be cash settled.

equivalently sold.<sup>(41)</sup> The number of contracts has increased in parallel (see Graph II.3.1). Both indicators provide information on the activity taking place. However, the gross notional value overstates the level of new activity because it represents a cumulative total of past transactions, many of which were used by dealers to make their daily adjustments to their risk positions. Furthermore, they do not represent an overall measure of the exposures involved.

**Graph II.3.1: Outstanding credit protection for euro-area Member States — gross notional amounts and number of contracts**



Source: Commission services

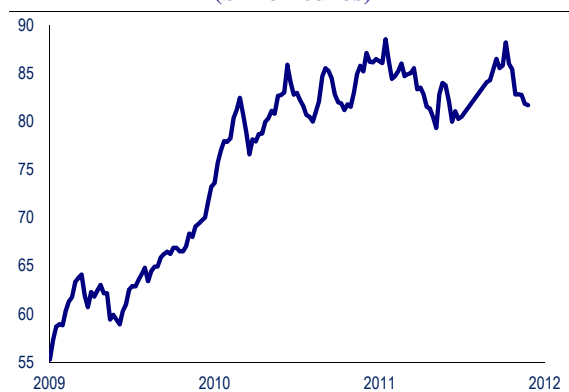
The increases in the net notional values in Member States' CDS have levelled off for the euro-area aggregate since the beginning of 2010 (see Graph II.3.2). Net notional positions generally represent the maximum possible net funds transfers between sellers of protection and buyers of protection that could be required upon the occurrence of a credit event. Actual net funds transfers are dependent on the recovery rate for the underlying bonds or other debt instruments. The net notional value is a measure of the exposures and thus the risks involved – under the condition that each counterparty fulfils the obligations under the contract as regards the country in question.

Trading in Member States' CDS and the increasing number of contracts has produced no

<sup>(41)</sup> In a market with three parties trading CDS contracts of the same reference entity, i.e. the same country, A has sold protection for EUR 100 million and bought protection for EUR 50 million; B has sold EUR 200 million and bought EUR 200 million; and C has only bought EUR 50 million. The gross notional amount is then the sum of outstanding amounts (either sold or bought), which is EUR 300 million. The net notional amount is the sum of the individual net positions, where A has sold a net amount of protection of EUR 50 million, B has a zero net position, and C has bought a net amount of EUR 50 million. The net notional amount is then the sum of outstanding net positions (either sold or bought), which is EUR 50 million.

effect on overall exposures. Market participants may enter into new transactions both for assuming new exposures and for closing old positions. The main way for market participants to close a position is for one party to enter into an offsetting transaction, which leaves the original transaction in place, but effectively cancels out its economic effect.<sup>(42)</sup> Both types of trade have added to the gross notional value and the number of outstanding contracts but net exposures have remained broadly stable. The sharp drops that occur at specific dates in the gross notional value and the number of contracts are due to trade compression, i.e. in order to reduce counterparty risks, the trade repository Depository Trust and Clearing Corporation (DTCC) organises bilateral and multilateral tear-ups (see footnote 41).

**Graph II.3.2: Outstanding credit protection for euro-area Member States — net notional amounts (billion euros)**



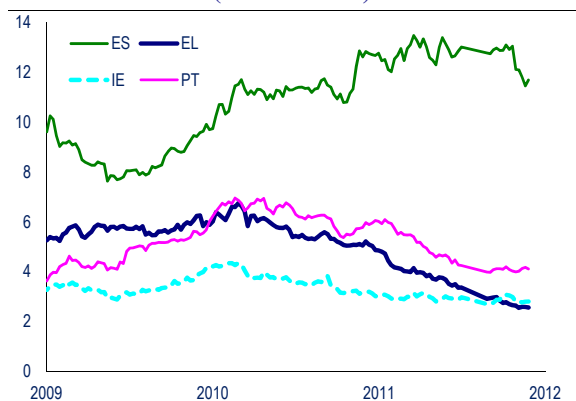
Source: Commission services

The aggregate figures hide differences among Member States. Trading in CDS and the increasing number of contracts for the programme countries Greece, Ireland and Portugal has mainly reduced CDS exposures towards these countries in recent years. The net notional values in CDS for the programme countries Greece, Ireland and Portugal have declined by between 35 % and 62 % since February 2010. Also, the net notional value in Italian CDS has declined by almost 30 % since December 2010. The decline in the net notional position in conjunction with the increase in the gross notional position and the number of contracts imply that new contracts have been traded in order to close out old positions. For

<sup>(42)</sup> There are two other ways to close a position: (i) the parties can agree to a termination (or tear-up), under which they agree to extinguish the original obligation following payment, or (ii) a party can enter into a novation, also known as an assignment, under which it transfers its rights and obligations under the transaction to a third party in exchange for a payment.

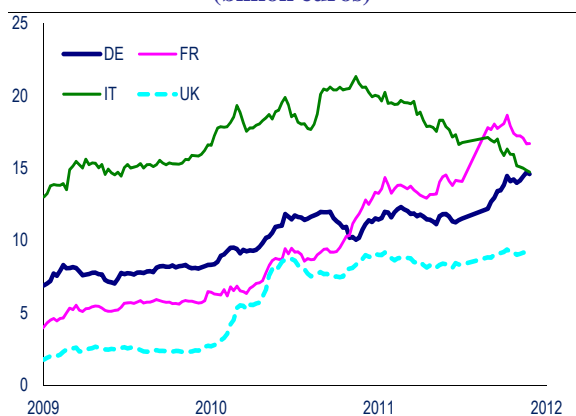
other Member States, e.g. France, Germany, Spain and the UK, trading has implied that market participants have increased their direct exposures via CDS contracts. However, it is impossible to say whether these CDS positions are used for hedging purposes or are of a speculative nature.

**Graph II.3.3: Outstanding credit protection for individual Member States — gross notional amounts (billion euros)**



Source: Commission services

**Graph II.3.4: Outstanding credit protection for individual Member States — net notional amount (billion euros)**



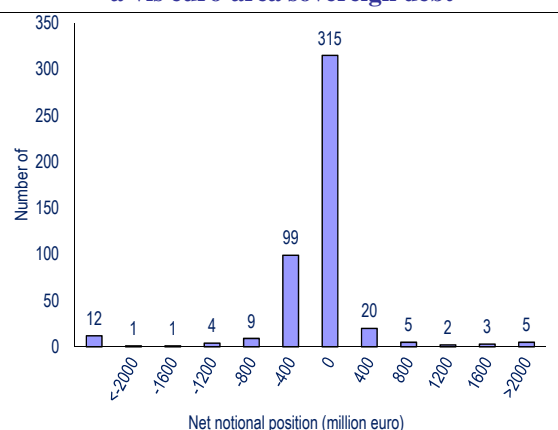
Source: Commission services

### CDS exposures

The following analysis is based on non-public information from summer 2011. The data supplied contain both detailed and aggregate information on individual firms' positions in euro-area sovereign CDS. The data provide an instantaneous picture of the stock of all positions and exposures at the time of the request. Although the data are outdated, they provide interesting information on the holdings of CDS.

Market participants' total net exposures towards 16 euro-area Member States' CDS (all except Luxembourg) are in general small. More than two thirds of all net exposures lie in the interval EUR -100 to +100 million (a minus sign means that the institution is a net seller of protection, see Graph II.3.5). In the dataset, the biggest net protection buyer has a total position of around EUR 8 billion and the biggest net protection seller a position of EUR 12 billion. Besides a few major investment funds, the institutions with the largest net exposures are among the biggest banks in the world and act as market makers in CDS contracts. The median net protection buyer (the median of all positive exposures in the distribution, the right tail) and the median net protection seller (the median of all negative exposures, the left tail) have positions of EUR 36 and 58 million respectively. In relation to the total face value of outstanding sovereign debt (about EUR 7 800 billion), these net exposures are very small.

**Graph II.3.5: Distribution of individual market participants' aggregate net notional positions vis-à-vis euro-area sovereign debt**



Source: Commission services

CDS exposures for any specific reference entity (i.e. for any single Member State) are significantly smaller. More than 70% of the exposures lie in the interval EUR -50 to +50 million, and the median net protection buyer and the median net protection seller have positions of EUR 20 and 27 million respectively. For all Member States, the size of the CDS market and the exposures related to it are small compared to those of the underlying sovereign debt market.

In the dataset firms are differentiated by the term 'dealer' (big banks acting as market makers) and 'buyside' (smaller banks, banks less involved in CDS and investment firms of different kinds). Both types of firms are represented in the two tails of the distribution in Graph II.3.5.

The dealers in the tails of the distribution are some of the biggest banks in the world, acting as market makers in CDS. These institutions act on both sides of the market and have large amounts of both bought and sold contracts. Their biggest individual exposures are in general vis-à-vis other dealers. It is likely — but not certain — that these exposures represent offsetting deals in order to manage market and counterparty risks. Moreover, the net exposures that CDS represent in terms of total assets managed by these firms are tiny.

Alongside the dealers, a set of (hedge) funds take active positions in CDS. These firms hold relatively few contracts and mainly take one-sided bets, although there are firms on both sides of the market — protection buyers and protection sellers. It is not possible to say whether these positions are ‘speculative’ or serve another purpose. Without data on the holdings of each fund, it is impossible to indicate the purpose of these CDS positions. Besides being purely speculative, the CDS positions may be held for hedging purposes, e.g. reducing single exposures to sovereign or corporate bonds. They may also serve as instruments in more complex, maybe even dynamic, investment strategies targeting risks other than sovereign risk. CDS contracts may also have been used to exploit arbitrage opportunities.

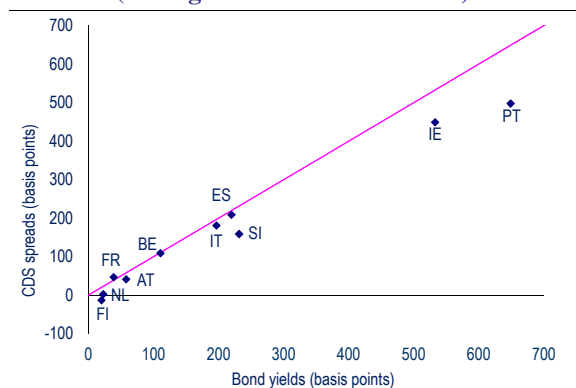
**Consistent pricing, rating and absence of arbitrage**

A first consistency test of the CDS market is to compare the theoretical implied prices with the ones established on the market. As a default swap is a derivative product, its price can be theoretically derived through a no-arbitrage argument under the assumption that markets are connected without frictions. It is possible to derive several different arbitrage conditions, i.e. different pricing formulas. For example, the yield to maturity minus the risk-free yield constitutes an upper bound for the CDS spread. <sup>(43)</sup>

<sup>(43)</sup> By forming a portfolio of a bond and the credit default swap for the same entity, an investor can eliminate most of the risks associated with default on the bond. Approximately, if  $y$  is the yield to maturity on the bond and  $s$  is the CDS spread, the net annual return on the portfolio is  $y-s$ , i.e. the yield minus the hedging cost. In the absence of arbitrage opportunities, this should be approximately equal to the risk-free yield,  $r_f$ . The CDS spread  $s$  can thus be estimated to be equal to  $y-r_f$ . To reach this conclusion, several simplifying assumptions have to be made, e.g. that the recovery rate of a defaulted bond is zero. A proper valuation of the CDS spread requires an estimate of the risk-neutral probability that the underlying bond will default at different future times and an estimate of the expected recovery rate in the event of default.

To avoid having to decide what risk-free rate to use, the arbitrage condition can be specified relative to another country. In Graph II.3.6, CDS spreads and the bond yields for the five-year maturity are plotted for 11 euro-area Member States relative to German spreads and yields. The 45-degree line constitutes the upper bound for what the CDS spread should be. As long as the points are below the 45-degree line there is no evidence of any obvious mispricing. However, this representation of the market does not rule out the possibility of prices being manipulated; it just suggests that prices are contained within the theoretical bounds.

**Graph II.3.6: Five-year CDS spreads and five-year benchmark bond yields relative to Germany (averages Jan. 2010–Dec. 2011)**



Source: Bloomberg and Ecwin

The CDS spreads are within or very close to the no-arbitrage bounds. The spreads and the yields are calculated as averages over a period stretching from the beginning of 2010 to the end of 2011. Thus the chart gives a medium-term perspective of the relationship. Overall, the picture is not changed by altering this time period. Regarding Member States that are not subject to acute financial stress, only France lies above the 45-degree line by a few basis points, which is too costly to exploit. A divergence from the arbitrage bound can be explained by recognising that Germany is not necessarily the best benchmark to substitute for the risk-free rate. In this case some countries could end up above the 45-degree line.

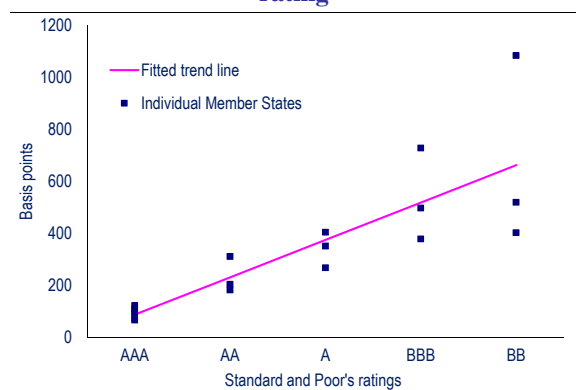
Graph II.3.6 also shows that CDS spreads for the more troubled countries are relatively cheap compared to the bond spreads. This is a first

The simple case, where  $s = y-r_f$ , is an approximation of the true spread and constitutes an upper bound for the spread, thus the relationship does not hold with equality. Another example of an arbitrage condition is what is termed the CDS-bond basis, which is the difference between the yield and the asset swap spread.



indication that CDS spreads cannot be considered as causing the high bond yields for these countries, which was a concern at the onset of the sovereign debt crisis. This finding is consistent with sufficient supply of hedging being offered for troubled countries and speculators acting as hedging (liquidity) providers at a time of distress. This could be considered to be beneficial for the cost of funding sovereign deficits, because the hedging provided allows institutional investors to take on more debt, and thus keeps the yields for troubled countries lower than would otherwise be possible. From this perspective the CDS market seems to facilitate risk sharing.

**Graph II.3.7: Average CDS spreads in 2011Q4 for individual Member States according to credit rating**



Source: Bloomberg and Ecwin

In general, CDS spreads are clustered and aligned according to the entities' rating (see Graph II.3.7), i.e. participants on the CDS market and credit rating agencies form consistent opinions concerning Member States' credit risk. In fact, the CDS spreads and ratings are very consistent with each other. The distribution for each rating category becomes wider as creditworthiness falls, implying that Member States with a higher credit rating are more homogenous in their economic performance than Member States in lower rating categories. For the lower rating categories the distribution of CDS spreads overlap somewhat, indicating that there is some ambiguity concerning which rating category some Member States should be in.

### Market linkages, price discovery, and market microstructure

The Commission has previously studied several other issues concerning sovereign CDS and bond markets, e.g. market linkages, price discovery, and market microstructure. Sometimes the approach has been broad and in other cases the

focus has been narrower, e.g. on one Member State or a particular sector. The following is a summary of selected findings.

**Market linkages.** To explore the links between the CDS and the bond market one can analyse the cross-correlations between changes in the CDS spread and changes in the asset-swap spread.<sup>(44)</sup> These correlations show that the two markets are moving close together. The vast majority of countries show no lead or lag behaviour, and when the series are not changing contemporaneously, CDS and bond markets are basically equally likely to lead or lag the other.

**Price discovery.** Analysis based on Greek data shows that credit risk price discovery also seems to occur on both markets simultaneously. One of the most important functions of financial markets is price discovery, which is the process whereby buyers and sellers arrive at a transaction price. Because buyers and sellers discover prices on the basis of uncertain expectations, transaction prices fluctuate around the 'true' market price. Both the bond and the CDS markets price credit risk equally on average, as demonstrated by the stationary CDS-bond basis. This long-term relationship justifies the use of a vector error correction model when analysing the interconnection between the two markets.<sup>(45)</sup> The

<sup>(44)</sup> Both the CDS spread and the asset-swap spread are measures of credit risk, where the asset-swap spread is considered to be priced on the bond market. The asset-swap spread is the difference between the yield of a bond and the LIBOR rate, expressed in basis points. The asset-swap spread is designed to show the credit risk associated with the bond. The difference between the CDS and the asset-swap spreads is another arbitrage condition called the CDS-bond basis. In principle the basis should be zero.

<sup>(45)</sup> A formal test of the equivalence of the price of credit risk across the CDS and the bond market can be motivated in terms of transitory and permanent price movements. If the two markets price credit risk equally in the long run, their prices should be cointegrated, suggesting a stationary basis. The CDS price and the asset swap spread for Greece are cointegrated I(1) variables and the common factor can be viewed as the implicit efficient price of credit risk. To see which of the two markets contributes most to the credit risk price discovery process, it is necessary first to estimate the following vector error correction model:

$$\begin{aligned} \Delta p_{CDS,t-1} &= \lambda_1 (p_{CDS,t-1} - \alpha_0 - \alpha_1 p_{ASW,t-1}) + \\ &+ \sum_{j=1}^3 \beta_{1j} \Delta p_{CDS,t-j} + \sum_{j=1}^3 \delta_{1j} \Delta p_{ASW,t-j} + \varepsilon_{1t} \\ \Delta p_{ASW,t-1} &= \lambda_2 (p_{CDS,t-1} - \alpha_0 - \alpha_1 p_{ASW,t-1}) + \\ &+ \sum_{j=1}^3 \beta_{2j} \Delta p_{CDS,t-j} + \sum_{j=1}^3 \delta_{2j} \Delta p_{ASW,t-j} + \varepsilon_{2t} \end{aligned}$$

If the bond market is contributing significantly to the discovery of the price of credit risk, then  $\lambda_1$  will be negative and statistically significant as the CDS market adjusts to incorporate this information. Similarly, if the CDS market is an important venue for price discovery, then  $\lambda_2$  will be

model estimation shows that price discovery occurs simultaneously on the two markets. However, during the period studied — 1 January 2007 to 19 October 2010 — the coefficients suggest that about 70% of price discovery occurred on the CDS market. This is consistent with anecdotal evidence, which says that it is easier and cheaper to trade and express views on credit risk on the CDS than on the bond market.

**Market microstructure.** The market microstructure concerns the process and outcomes of exchanging assets or contracts and how the equilibrium prices are reached. In terms of efficiency the key concepts are liquidity, volatility and transparency.

Although the notional amount outstanding is large, liquidity on the sovereign CDS market cannot be considered fully adequate. The liquidity of the market seems to differ depending on the contract being traded, where liquidity in most contracts seems to be reasonably good, especially for the larger Member States, but others are less liquid. This follows from two observations. First, the immediacy of the market — how fast a market participant can execute its trading decision and find a counterpart for the trade — should be relatively low. As the market is OTC, the trading process involves a situation where a buyer tries to find the seller with the lowest price, and this takes time. Finally, the depth of the market — how much a market participant can buy or sell without changing the price — seems to be fine, but depends on the Member State considered. In general, transactions are made on a daily basis for many Member States, but for some there are holes in the time series, an indication of low depth.

Volatility was generally low prior to the financial crisis, after which it picked up. Still, the average standard deviation across all Member States' CDS spreads is contained at around 35 basis points (excl. Greece), which is much lower than for bank CDS. There are, however, large differences between default swaps for individual Member States. In general, the volatility of the CDS market seems to show some efficiency.

Finally, transparency can be considered low. There are few rules that govern trading or regulate information dissemination on the OTC market.

For example, volumes and trading books are not publicly available information, which potentially leads to asymmetric information and less efficient price formation. This assessment is relative to the most transparent markets, e.g. exchange-traded financial instruments. Compared to certain aspects of the bond market, transparency is higher, at least for regulators. As this special topic shows, there is a lot of information on the CDS market, but it is not always available to the general public.

### Final remarks and regulatory initiatives

The main conclusions from the analysis are that, relative to other OTC markets, the sovereign CDS market seems to be fairly well structured and functioning, but still maturing. There is no evidence of any obvious long-term mispricing, nor any evidence that developments in the CDS market cause higher funding costs for Member States. The sovereign CDS market has developed and grown in the past few years, but market participants' exposures towards euro-area Member States have been broadly stable since the onset of the sovereign debt crisis. These exposures only pose a limited amount of risk as they are generally small, both relative to the total outstanding debt and in relation to dealers' managed assets. However, transparency for market participants is still lacking in the CDS market, as shown in the previous paragraph.

With the objective of increasing transparency and further reducing systemic risk arising from derivative markets of all kinds, the European Commission has taken several regulatory initiatives. For example, the European Market Infrastructure Regulation (EMIR) requires standardised derivatives to be cleared by a central counterparty (CCP) and all derivatives transactions to be reported to trade repositories. This will provide regulators and supervisors with more information on trading in derivatives and should create a mechanism for detecting the build-up of risks in the market at an early stage. The Regulation on short selling and certain aspects of CDS introduces a disclosure regime for significant net short positions in listed shares and sovereign debt. It also places restrictions on naked short sales of these securities, and imposes a ban on CDS positions that do not serve to hedge exposure to the underlying debt or other correlated securities.

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positive and statistically significant. If both coefficients are significant, then both markets contribute to price discovery. In the estimation both parameters are significant. The Gonzalo and Granger measure  $GG = \lambda_2 / (\lambda_2 - \lambda_1)$  provides an estimate of the relative contribution of the two markets.



### III. Recent DG ECFIN publications

#### *1. Occasional Papers*

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 94. March 2012.  
The Second Economic Adjustment Programme for Greece – March 2012  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2012/pdf/ocp94\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp94_en.pdf)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 93. March 2012.  
Economic Adjustment Programme for Ireland – Winter 2011 Review  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2012/pdf/ocp93\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp93_en.pdf)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 92. February 2012.  
Scoreboard for the surveillance of macroeconomic imbalances  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2012/pdf/ocp92\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp92_en.pdf)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 91. February 2012.  
Fiscal frameworks across Member States: Commission services country fiches from the 2011 EPC peer review  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2012/pdf/ocp91\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp91_en.pdf)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 90. December 2011.  
The Balance of Payments Programme for Romania. First Review – Autumn 2011  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2011/pdf/ocp90\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp90_en.pdf)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 89. December 2011.  
The Economic Adjustment Programme for Portugal. Second review - Autumn 2011  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2011/pdf/ocp89\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp89_en.pdf)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 87. October 2011.  
The Economic Adjustment Programme for Greece, Fifth review - October 2011  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2011/pdf/ocp87\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp87_en.pdf)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 86. September 2011.  
The EU's neighbouring economies: coping with new challenges  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2011/pdf/ocp86\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp86_en.pdf)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 85. December 2011.  
Progress towards meeting the economic criteria for accession: the assessments of the 2011 Progress Reports and Opinion (Serbia)  
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EUROPEAN ECONOMY. OCCASIONAL PAPERS. 84. September 2011.  
Economic Adjustment Programme for Ireland - Summer 2011 Review  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2011/pdf/ocp84\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp84_en.pdf)

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The Economic Adjustment Programme for Portugal - First review - Summer 2011  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2011/pdf/ocp83\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp83_en.pdf)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 82. July 2011.  
The Economic Adjustment Programme for Greece - Fourth Review - Spring 2011  
[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2011/pdf/ocp82\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp82_en.pdf)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 81. July 2011.  
2011 Economic and Fiscal Programmes of potential candidate countries: EU Commission's assessment  
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- EUROPEAN ECONOMY. OCCASIONAL PAPERS. 79. June 2011.  
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- EUROPEAN ECONOMY. OCCASIONAL PAPERS. 78. May 2011.  
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[http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2011/pdf/ocp75\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp75_en.pdf)
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## *2. Economic Papers*

- EUROPEAN ECONOMY. ECONOMIC PAPERS. 451. March 2012  
Christian Buelens  
Inflation forecasting and the crisis: assessing the impact on the performance of different forecasting models and methods  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2012/ecp451\\_en.htm](http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp451_en.htm)
- EUROPEAN ECONOMY. ECONOMIC PAPERS. 450. March 2012  
Rafal Raciborski, Julia Lendvai and Lukas Vogel  
Securities Transaction Taxes: Macroeconomic Implications in a General-Equilibrium Model  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2012/ecp450\\_en.htm](http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp450_en.htm)
- EUROPEAN ECONOMY. ECONOMIC PAPERS. 449. February 2012  
Eric Ruscher and Guntram Wolff  
Corporate balance sheet adjustment: stylized facts, causes and consequences  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2012/ecp449\\_en.htm](http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp449_en.htm)
- EUROPEAN ECONOMY. ECONOMIC PAPERS. 448. January 2012  
Lukas Vogel  
Tax avoidance and fiscal limits: Laffer curves in an economy with informal sector  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2012/ecp448\\_en.htm](http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp448_en.htm)

### III. Recent DG ECFIN publications

EUROPEAN ECONOMY. ECONOMIC PAPERS. 447. January 2012  
London Economics, Patrice Muller, Shaan Devnani and Rasmus Flytkjaer  
The impact of state guarantees on banks' debt issuing costs, lending and funding policy  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2012/ecp447\\_en.htm](http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp447_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 446. October 2011  
Lourdes Acedo Montoya and Björn Döhring  
The improbable renaissance of the Phillips curve: The crisis and the euro area inflation dynamics  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2011/ecp446\\_en.htm](http://ec.europa.eu/economy_finance/publications/economic_paper/2011/ecp446_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 445. September 2011  
Narcissa Balta and Eric Ruscher  
Household savings and mortgage decisions: the role of the "down-payment channel" in the euro area  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2011/ecp445\\_en.htm](http://ec.europa.eu/economy_finance/publications/economic_paper/2011/ecp445_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 444. July 2011  
Ignazio Angeloni, Agnès Bénassy-Quéré, Benjamin Carton, Zsolt Darvas, Christophe Destais, Jean Pisani-Ferry, André Sapir, and Shahin Vallée.  
Global currencies for tomorrow: A European perspective  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2011/pdf/ecp444\\_en.pdf](http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp444_en.pdf)

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EUROPEAN ECONOMY. ECONOMIC PAPERS. 442. March 2011  
Julia Lendvai, Laurent Moulin and Alessandro Turrini.  
From CAB to CAAB? Correcting Indicators of Structural Fiscal Positions for Current Account Imbalances  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2011/pdf/ecp442\\_en.pdf](http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp442_en.pdf)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 441. March 2011  
Matteo Barigozzi, Antonio M. Conti and Matteo Luciani.  
Measuring Euro Area Monetary Policy Transmission in a Structural Dynamic Factor Model  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2011/pdf/ecp441\\_en.pdf](http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp441_en.pdf)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 440. March 2011  
Paolo A. Pesenti and Jan J.J. Groen.  
Commodity prices, commodity currencies, and global economic developments  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2011/pdf/ecp440\\_en.pdf](http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp440_en.pdf)

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Pedro Gomes  
Fiscal policy and the labour market: the effects of public sector employment and wages  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2011/pdf/ecp439\\_en.pdf](http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp439_en.pdf)

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Jordi Suriñach, Fabio Manca and Rosina Moreno.  
Extension of the Study on the Diffusion of Innovation in the Internal Market  
[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2011/pdf/ecp438\\_en.pdf](http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp438_en.pdf)

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Ronald Albers and Marga Peeters.  
Food and Energy Prices, Government Subsidies and Fiscal Balances in South Mediterranean Countries  
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### *3. Other publications*

Interim forecast – February 2012

[http://ec.europa.eu/economy\\_finance/articles/eu\\_economic\\_situation/2012-02-23-interim-forecast\\_en.htm](http://ec.europa.eu/economy_finance/articles/eu_economic_situation/2012-02-23-interim-forecast_en.htm)

European Economic Forecast – autumn 2011

[http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2011/pdf/ee-2011-6\\_en.pdf](http://ec.europa.eu/economy_finance/publications/european_economy/2011/pdf/ee-2011-6_en.pdf)

Tax reforms in EU Member States 2011– October 2011

[http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2011/pdf/ee-2011-5\\_en.pdf](http://ec.europa.eu/economy_finance/publications/european_economy/2011/pdf/ee-2011-5_en.pdf)

The 2012 Ageing Report: Underlying Assumptions and Projection Methodologies – September 2011

[http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2011/pdf/ee-2011-4\\_en.pdf](http://ec.europa.eu/economy_finance/publications/european_economy/2011/pdf/ee-2011-4_en.pdf)

Labour market developments in Europe, 2011 – spring 2011

[http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2011/pdf/ee-2011-2\\_en.pdf](http://ec.europa.eu/economy_finance/publications/european_economy/2011/pdf/ee-2011-2_en.pdf)

Public finances in EMU – 2011

[http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2011/pdf/ee-2011-3\\_en.pdf](http://ec.europa.eu/economy_finance/publications/european_economy/2011/pdf/ee-2011-3_en.pdf)

Convergence report 2010

[http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2010/pdf/ee-2010-3\\_en.pdf](http://ec.europa.eu/economy_finance/publications/european_economy/2010/pdf/ee-2010-3_en.pdf)

#### *III.4. Regular publications*

Business and Consumer Surveys (harmonised surveys for different sectors of the economies in the European Union (EU) and the applicant countries)

[http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/index_en.htm)

Business Climate Indicator for the euro area (monthly indicator designed to deliver a clear and early assessment of the cyclical situation)

[http://ec.europa.eu/economy\\_finance/publications/cycle\\_indicators/2011/pdf/4\\_en.pdf](http://ec.europa.eu/economy_finance/publications/cycle_indicators/2011/pdf/4_en.pdf)

Key indicators for the euro area (presents the most relevant economic statistics concerning the euro area)

[http://ec.europa.eu/economy\\_finance/db\\_indicators/key\\_indicators/documents/key\\_indicators\\_en.pdf](http://ec.europa.eu/economy_finance/db_indicators/key_indicators/documents/key_indicators_en.pdf)

Monthly and quarterly notes on the euro-denominated bond markets (looks at the volumes of debt issued, the maturity structures, and the conditions in the market)

[http://ec.europa.eu/economy\\_finance/publications/bond\\_market/index\\_en.htm](http://ec.europa.eu/economy_finance/publications/bond_market/index_en.htm)

Price and Cost Competitiveness

[http://ec.europa.eu/economy\\_finance/db\\_indicators/competitiveness/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/competitiveness/index_en.htm)



**Contributors to this issue are:**

Focus: The surveillance of macroeconomic imbalances in the euro area	<i>J. Fischer, A. Hobza and A. Mordonu</i>
The contribution of taxes to fiscal consolidation in the euro area	<i>C. Gayer</i>
Capital flows into vulnerable countries: official and private funding trends	<i>R. Kuenzel, R. Setzer and A. Jevcak</i>
The euro-area sovereign CDS market	<i>S. Linden</i>
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