Debates and policies

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TOWARDS A BETTER GOVERNANCE IN THE EU?

edited by
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Publication
Jean-Luc Gaffard et Henri Sterdyniak (directeurs de la publication),
Gérard Cornilleau (rédacteur en chef), Laurence Duboys Fresney (secrétaire de rédaction),
Najette Moummi (responsable de la fabrication)

Contact
OFCE, 69 quai d'Orsay 75340 Paris cedex 07
Tel. : +33(0)1 44 18 54 87
mail : revue@ofce.sciences-po.fr
web : www.ofce.sciences-po.fr

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MACROECONOMIC ISSUES

TOWARDS A BETTER GOVERNANCE IN THE EU?

Catherine Mathieu and Henri Sterdyniak

The 10th EUROFRAME[1] Conference on economic policy issues in the European Union was held in Warsaw on 24 May 2013. The Conference topic was: "Towards a better governance in the EU?". Twelve of the papers given at the Conference are released in this issue of the *Revue de l'OFCE/Debates and Policies*.

The euro is a unique experience in modern economic history. Can a single currency be shared between countries with different cyclical situations, structural problems and economic strategies? Is a single currency consistent with independent domestic fiscal policies? In 1992, EU countries answered 'yes' to these questions by signing the Maastricht Treaty. Starting from then, euro area governance was characterized by independent domestic fiscal policies however constrained to fulfil several criteria (public deficit below 3% of GDP, public debt below 60% of GDP), a single monetary policy entrusted to an independent central bank, the absence of public debt guarantee and fiscal solidarity between member states.

This framework was a failure. Prior to the crisis, disparities widened between member states (MS), northern countries taking advantage of fixed exchange rates to implement policies aiming at gaining competitiveness and increasing external surpluses, at the cost of strong wage and social austerity and low growth, while southern countries were taking advantage of low interest rates to enjoy a strong growth, based on housing bubbles and leading to an unsustainable external deficit. The European Commission and the MS were not able to implement a satisfactory economic policy. The European Commission pursued

1. EUROFRAME is a network of ten independent European research institutes: WIFO (Austria), ETLA (Finland), OFCE (France), DIW and IFW (Germany), ESRI (Ireland), PROMETEIA (Italy), CPB (Netherlands), CASE (Poland), NIESR (United Kingdom).

endless efforts against countries with higher than 3% of GDP deficits without seeing that the danger was coming from rising external deficits in Southern countries and more generally from financial and housing bubbles.

The world financial crisis was followed in Europe by a sovereign debt crisis in euro area countries, when financial markets realised that these debts were no more safe assets. Investment funds' fears and speculation from many financial bodies widened interest rates disparities in Europe and weakened the single currency notion, since now euro area companies do not borrow at the same rate depending on their location.

European institutions and MS states tried to tackle the crisis in setting up new rules and institutions:

— Fiscal discipline was strengthened through the six-pack, two-pack and the fiscal compact. But we may argue that the current crisis is not due to fiscal indiscipline. The measures and mechanisms introduced since the beginning of the crisis strengthen rules lacking economic rationale and prevent from implementing appropriate fiscal stabilization policies. They will probably be unenforceable.

— Member states were constrained to fulfil the Stability Pact, through implementing fiscal austerity policies from 2011, in a situation of economic recession and mass unemployment. These policies brought the economic recovery underway to an end and plunged the euro area in depression again in 2012-13. Southern economies reduced their external imbalances, although through falls in domestic demand and output, and large increases in unemployment rates. Today these countries seem to be deprived of any economic and social dynamism. In 2013, the euro area had lost almost 10 percent of GDP due to the crisis, without the EU institutions recommending any economic recovery strategy, outside fiscal austerity and liberal structural reforms, strategies which have failed so far to bring the euro area out of the crisis.

— The surveillance of MS economic policies was strengthened and broadened through the introduction of a first European semester and of the macroeconomic imbalance procedure, without any true MS economic policy coordination.

— Solidarity mechanisms between MS were introduced (EFSF, EFSM, ESM), the central bank intervened (SMP – securities market programme) or announced it would be ready to do so if needed (OMT programme). But the price of solidarity was high

for countries agreeing to receive support from the Troika, and this did not restore public debts unicity in the euro area.

— EU institutions now advocate further steps towards federalism in banking or fiscal areas (automatic transfer mechanisms, EU common unemployment insurance system).

In May 2013, when the EUROFRAME Conference was held, the euro area seemed to be saved, speculation had calmed down, but growth had not resumed and southern economies were remaining depressed without clear improvements prospects. Was the euro area saved at the expense of member states?

A variety of analyses were expressed at the EUROFRAME Conference, like in the EU debate:

— According to some authors, Europe should stick to the original Treaty, abolish solidarity mechanisms, prevent the Central bank to buy MS government bonds, make it compulsory for governments to issue bonds on financial markets. But is this consistent with the single currency? Do markets have expertise in macroeconomic areas? Should euro area countries be considered as countries without monetary sovereignty and issuing risky public bonds?

— Other authors consider that Europe should move towards a federal Europe, where European authorities would be responsible for fiscal policy at least for the stabilisation component, but also more in more in incentives and allocation functions (redistribution being so far not considered). This requires more democratic instances in the EU and possibly some form of political union. But can countries with different economic conditions, different economic and structures, be managed centrally? The euro area is too heterogeneous. Can each county agree to submit its domestic social and economies choices to European trade-offs?

— Some authors consider that public debts should become safe assets again, guaranteed by the ECB, within a real economic policy coordination process within MS, targeting explicitly full-employment and the reduction of imbalances in the area. Is such a co-ordination a myth? Can a country agree to modify explicitly its economic policy objectives so as to help improve its partners' economic situation? Is the lack of trust between EU countries too strong to allow each MS to guarantee its partners' public debts?

— Last, according to some other authors, a single currency cannot be shared by too heterogeneous countries; unconditional debt

guarantee will be refused by Northern countries, even though it is a prerequisite to maintain euro area unity; Europe is unable to organise a common but differentiated strategy; that differentials accumulated in terms of competitiveness require large exchange rate adjustments in Europe. Exchange rates variations should remain possible to reflect disparities between MS: strong exchange rate falls in southern countries, strong rises in northern countries. Each country should face their own responsibilities: Northern countries will have to raise domestic demand; Southern economies will have to use their competitiveness gains to rebuild an export-oriented sector.

Therefore, the advocates of the single currency have to make a choice. Can governance in the euro area be designed in a way which would strengthen the economic robustness of the area, would give MS the rooms for manoeuvre needed within a coordinated economic strategy, albeit forbidding both excessive competitiveness gains and excessive rises in debts or deficits? How to strengthen the economic and monetary union between remaining heterogeneous economies? How to bring the economic and financial crisis to an end, with the implementation of a euro area governance while allowing member states to follow economic policies adapted to their needs?

EU governance

In "**The Fiscal or Bailout Union**: *Where Is the EU/EMU's Fiscal Integration Heading*?", Marek Dabrowski criticises the view according to which closer fiscal and political integration is a condition for the common currency to survive. The author recalls that the EU is based on the principle of subsidiarity. The author refuses fiscal federalism, eurobonds or lender of last resort facility, which would lead to moral hazard behaviour. The author advocates a return to the Maastricht principles: enforcing fiscal rules, no bail-out and market discipline.

The paper by Catherine Mathieu and Henri Sterdyniak: "**Redemption?**", recalls that, before, during and after the crisis, euro area governance was not satisfactory. The paper shows that the problem is not a lack of fiscal discipline in Europe, but general drifts in financial capitalism and an inappropriately designed euro area economic policy framework (non-guarantee of public debts, no real economic coordination, and liberal strategies to impose lower social public expenditure and structural reforms). EU member states should not be requested to pay for past sins through austerity measures, and should not strengthen fiscal discipline through rules lacking economic rationale. The paper criticizes recent proposals made with a view to improve euro

area governance (redemption fund, European debt agency, fiscal federalism). European public debts should become safe assets again, and should not be subject to financial markets' assessment. The paper advocates for a full guarantee of government bonds for the member states commit to an economic policy coordination process, which should target GDP growth and coordinated reduction of imbalances.

The paper by John FitzGerald: "**The new EU governance arrangements**" recalls that the fiscal rules of the Stability and Growth Pact were not effective before the crisis. They did not prevent some MS to maintain an economic strategy whose drawbacks were revealed by the crisis. Some drawbacks of euro area governance were corrected since the beginning of the current crisis. However John FitzGerald is critical on the methods used to estimate potential output and how they are used to assess MS fiscal policies. The author considers that when output is significantly below or above potential, a counter-cyclical policy should be undertaken at the euro area level, but also that in normal times, member states may be able to choose their own fiscal policy.

The paper by Paolo Onofri and Tsvetomira Tsenova: "**Engine for European growth and stability**" explains that EMU faces a critical trilemma: a slow death by asphyxiation, a sudden collapse or a new building yard for EMU, which supposes an efficient implantation of the banking union, a grace period to enable peripheral countries to restructure and contribute to the European recovery, and institutional reform to allow public debts to become again risk-free assets.

Fiscal policy in the EU: Some Assessments

In the paper "**Primary balance and debt projections based on estimated fiscal reaction functions for euro area countries**", Martin Plödt and Claire Reicher use fiscal rules based on estimated fiscal policy reactions functions to project the path of public debt and primary balances for bigger euro area countries. The paper shows that Italy will need an extremely high primary public surplus to succeed to rapidly reduce its debt/GDP ratio; the situation is less worrying for Germany, Spain and France. A more rigid fiscal rule like the "1/20" rule may destabilise the economy, as restrictive fiscal policy may increase the debt ratio in the short time. The required policy strongly depends on the potential growth projections, which is problematic for some countries like Spain (or Ireland or Greece).

The paper by Matti Viren: "**How different are the fiscal policy effects?** *Assessing the importance of cyclical situation, policy coordination, composition of policy measures and country specific features"* uses different

methods to estimate fiscal policy effects. It appears that fiscal multipliers depend on countries, are larger for bigger than for smaller countries, larger also during economic recessions, and larger for euro area generalized policies, especially for smaller countries. These effects are to be taken into account when a fiscal coordinated policy in considered.

The paper on "**Fiscal consolidation in times of crisis: is the sooner really the better?**" by Christophe Blot, Marion Cochard, Jérôme Creel, Bruno Ducoudré, Danielle Schweisguth, and Xavier Timbeau gives a survey of the recent literature which rediscover, after the monetarist, rational-expectations, DSGE models counter-revolutions, that the fiscal multiplier is positive, is higher in periods of high unemployment and low level of capacity utilisation, higher when a zero-lower-bound constrains monetary policy, higher for expenditures than for taxes. Using a small model of euro area countries, where the multiplier varies according to the output gap, the authors show that implementing large fiscal austerity policies in a depressed economic context is costly and inefficient. It would have been better to postpone fiscal consolidation in the euro area until a period where MS output gaps are less negative. However we can note that such a strategy would require a strong confidence between the MS, the ECB and financial markets: the ECB would have to accept to guarantee MS public debts, financial markets would have to refrain from speculating on MS commitments to reduce their debt in the future.

Governance and Banking issues

The paper by Maylis Avaro and Henri Sterdyniak: "**Banking union: a solution to the euro zone crisis?**" analyses this new project expected to help to solve the euro area crisis. The banking union would break the link between the sovereign debt crisis and the banking crisis, by asking the ECB to supervise banks, by establishing common mechanisms to solve banking crises and to guarantee deposits. The article expresses the fears that banking union is a new and uncontrolled step towards more technocratic federalism. Structural choices on the European banking system will be left to the ECB. Banks' solvency and ability to lend would depend primarily on their capital ratios and thus on financial markets' sentiment. The links between the government, firms, households and domestic banks would be cut. The paper suggests that banking union should be accompanied by the introduction of a tax on financial activity and by isolating retail banking activity from risky activities.

The paper by Ewa Miklaszewska, Katarzyna Mikołajczyk and Małgorzata Pawłowska: "**Do safe banks create a safe system?** Central and Eastern European banks' perspective" describes banks' situation in the CEE-5. In the CEE-5, banks remained in the traditional model of banking intermediation, they were not strongly hit by the financial crisis and did not need fundamental restructuring. Nevertheless, the banking union will establish complex new rules and regulatory bodies, which may increase moral hazard behaviour, bank concentration, away from the CEE stable and healthy banking model.

Macroeconomic issues

Paavo Suni and Vesa Vihriälä, in: "**Euro – How big a difference: Finland and Sweden in search of macro stability**" compare the economic developments in Finland (which in the euro area) and Sweden (which decided not to join the euro area). It appears that Sweden has achieved a better price stability improvement and a better resistance to the global shock in 2009-10, due to its independent monetary regime. Nevertheless, part of the recent bad performance of the Finnish economy is due to a specific factor: the decline of the Nokia cluster.

The paper by Hubert Gabrisch and Karsten Staehr: "**The Euro Plus Pact: Competitiveness and external capital flows in the EU countries**" analyses the relationship between competitiveness, trade balances and capital flows. Contrary to the prevailing opinion according to which competitiveness differentials generate differentials in trade balances which should be financed by capital flows, the paper gives econometric results showing that there is no obvious causality between competitiveness and current accounts, and conclude the opposite: countries attracting external capital flows in a monetary union will see increases in their wages and prices, and consequently competitiveness losses and current account deficits. This leads the authors to be critical about the surveillance of unit wage costs introduced in the euro plus pact. Does this mean that wages should have risen in Spain (to lower domestic companies' profitability) and that wages should have decreased in Germany?

The paper by Margit Schratzenstaller: "**Reform Options for the EU's System of Own Resources**" shows that fiscal procedures currently used to build the EU budget lead each member state to account for their financial rewards only instead of supporting projects benefiting the whole EU. This could be corrected via allocating own resources to the EU. The paper discusses which taxes could become immediately EU based (financial transactions tax, financial activities tax, flight tax, tax on carbon dioxide emissions, tax on energy, CIT, VAT).

Our conclusion

The financial crisis and the debt crisis are major challenges for the euro area. There is clearly a need to improve euro area governance. Several mechanisms have been introduced since 2010. They failed so far to bring the euro area out of recession: they widened disparities between member states and among citizens. Europe has become unpopular, is seen more and more as running blind and inappropriate austerity policies, undermining social protection, under technocratic and distant governance. We do not think that European construction should be abandoned, that it should be weakened in abandoning the single currency. But Europe should strengthen as a "champion of world governance", against the domination of finance, promoting the social model, and taking the leadership against climate change and favouring environmental transition. This cannot be done as long as Europe remains a low growth area, leaving southern economies in recession. The implementation of a new governance in the euro area requires both institutional changes (public debts should become safe assets again, economic policies should be truly coordinated) and new targets: growth, employment, social standards. This requires restoring a certain degree of confidence and solidarity between member states and citizens; launching new European big projects, like social Europe or green Europe, economic recovery in southern economies, catching up in central and eastern countries. Further steps towards a political union may be taken only once peoples' confidence in Europe has been restored.

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Part 1

EU GOVERNANCE

FISCAL OR BAILOUT UNION
WHERE IS THE EU/EMU'S FISCAL INTEGRATION HEADING?[1]

Marek Dabrowski
CASE

The European debt crisis triggered a debate on the lacking components of the EU and EMU integration architecture. Many believe that a common currency requires closer fiscal and political integration as a condition for its survival. This opinion is not necessarily supported by the experience of other monetary unions, especially those created by sovereign states. On the other hand, the current EU integration architecture already contains several elements of fiscal union. Furthermore, in several important policy areas such as financial supervision, defense, security, border protection, foreign policy, environmental protection, and climate change, the centralization of tasks and resources at the Union level could offer increasing returns to scale and a better chance to address pan-European externalities. This applies to the entire EU, not only to the Eurozone.

Each variant of fiscal integration must be based on sound foundations of fiscal discipline. Market discipline, i.e., the danger of sovereign default, supplemented by clear and consistently enforced fiscal rules is the best solution to this problem. Unfortunately, since 2010, the "no bail out" principle has been replaced by a policy of conditional bailout of governments in fiscal trouble. Some proposals, such as eurobonds or the lender of last resort to governments, go even further in this direction, and threaten to build a dysfunctional fiscal union.

Keywords: monetary union, common currency, fiscal union, European Union, Eurozone, EU budget, fiscal federalism, fiscal discipline

1. An earlier version of this paper was presented at the 10th EUROFRAME Conference on Economic Policy Issues in the European Union on *Towards a better governance in the EU?* in Warsaw, May 24, 2013. The current version largely benefits from discussions held at this conference and from post-conference comments provided by Joshua Aizenman, Jorgen Mortensen, Luca Barbone, Markku Kotilainen, Charles Wyplosz and Guntram Wolff. However, the author accepts sole responsibility for the content and quality of this paper as well as the presented opinions, conclusions and recommendations which reflect his personal views and not necessarily those of CASE.

e-mail: Marek.Dabrowski@case-research.eu

The sovereign debt crisis on the periphery of the Economic and Monetary Union (EMU) and the danger of at least a partial disintegration of the Eurozone has brought back a debate around the lacking components of the European integration. This debate has emerged on various occasions in the past, for example, during the negotiation of the Maastricht Treaty and before launching the EMU (late 1980s and 1990s) or during work on the so-called Constitutional Treaty in the first half of the 2000s. One of its dimensions is related to the role of fiscal integration, particularly within the common currency area (CCA). Furthermore, most participants of this debate assumed, in our opinion, correctly, that greater fiscal integration would also mean more political federalism at the European level (including its institutional dimension like a greater role for the European Parliament) because fiscal policy historically belonged to the core responsibilities of sovereign nations and their democratically elected legislatures.

In particular, the debate on the Euro project has continuously asked the question of how much political federalism and fiscal centralization is needed to ensure sustainable monetary integration. The argument about a "twin" integration, i.e., a monetary integration going hand in hand with a political one, have been raised in academic debate by both advocates of the common currency (who consequently proposed to advance political union or at least the so-called economic government – see e.g. De Grauwe, 2006; Alphandéry, 2012) and its skeptics who have doubted whether truly federal solutions might ever be feasible in a Europe dominated by the tradition of sovereign nation states (e.g. Feldstein, 1997, 2012). The same approach is very much present in the official document on a "Deep and Genuine EMU" published by the European Commission (2012), which proposes directions of deeper economic, fiscal and political integration seen as a remedy to the Eurozone financial and economic crisis.

Yet, when one looks more closely at both the empirical experience of various monetary unions and the theory of an optimum currency area (OCA), the "twin integration" argument becomes less obvious; at least it deserves careful consideration before being accepted as *a priori* paradigm. It appears that the debate on the

interrelation between monetary and political integration/fiscal federalism has often been too general and superficial and lacking sufficient clarity to be instrumental for discussing and elaborating concrete institutional solutions. In particular:

— It tends to overlook those elements of a fiscal union which are already in place in the European Union (EU) and the EMU institutional architecture, of which there are quite a few.

— It is one-sided in the sense that it concentrates on the role of fiscal union as the safeguarding mechanism of successful monetary integration while it disregards other potential rationales for fiscal integration such as the implementation of common policies and projects at the EU level, the provision of European public goods, or safeguarding the Single European Market (in particular, its financial market segment).

— Most suggestions of further fiscal integration are rather general and do not specify which particular elements and mechanisms should be added to the existing integration architecture and how those new elements can ensure a greater sustainability of monetary integration.

— It lacks a sufficiently broad comparative and historical perspective. For example, the frequently used comparison is with the US but most of the arguments overlook the process of historical evolution of the US federation. Other historical and contemporary experiences of monetary unions, heterogeneous in their economic and political architecture and operational details (see e.g., Deo, Donovan and Hatheway, 2011), are rarely analyzed.

— It frequently ignores elementary lessons which can be drawn from both the theory and practice of fiscal federalism, especially in respect to the danger of moral hazard and free riding behavior arising from having the wrong incentives in place.

This paper is going to fill in at least some of the above-mentioned gaps and discuss the rationale for a pan-European fiscal union and its various components in a more systematic way. In particular, we are going to analyze the following issues:

1/ The definition of a fiscal union and identification of its various components

2/ The interlinks between a monetary union and fiscal union, in particular, the extent to which the stable monetary union requires far-going fiscal integration

3/ Other arguments in favor of fiscal integration (other than the interlinks between monetary and fiscal union)

4/ The size of the EU budget, its revenue sources, and decision making mechanisms

5/ The mechanism of fiscal discipline based both on market incentives and formal fiscal rules

6/ Practical conclusions to the debate on fiscal integration within the EU and EMU (including the question of which elements of fiscal integration should apply only to members of the EMU and which to the entire EU)

We start by defining a fiscal union (Section 1) and then we analyze the interrelations between monetary and fiscal unions (Section 2), which are some of the central issues investigated in this paper. This is followed by a discussion of other potential arguments in favor of closer fiscal integration, besides those justified by a common currency (Section 3). The next three sections analyze the size of the EU budget, its structure and the mechanism of its adoption (Section 4), its revenue sources and EU tax policy (Section 5) and institutional setup within the EU executive body, i.e. the European Commission (Section 6). Section 7 addresses another key issue of the EU/EMU fiscal federalism, i.e., the mechanism of fiscal discipline at the national level. Finally, Section 8 presents the conclusions of our analysis.

1. Various practical meanings of fiscal union

Unfortunately, there is no single and clear-cut definition of a fiscal union in economic literature. More interestingly, many of the authors who advocate building a fiscal union within the euro zone (e.g., Marzinotto, Sapir and Wolff, 2011) do not offer an explicit definition. In the current debate on the causes of the European debt crisis and possible remedies, various practical meanings of fiscal union are assumed by individual authors depending on

their personal/ institutional views and opinions and which particular issues their analyses focus on. Thus, in various proposals related to changes in EU/EMU governance architecture, the notion of fiscal union may involve:

— a higher degree of centralization of fiscal resources at the Union level;

— the development of European revenue sources for the EU budget (instead of the contributions of member states);

— a harmonization of taxation/ entitlements within the EU/ EMU;

— a mechanism of fiscal discipline at both the Union and national levels, including the mechanism of orderly sovereign default;

— the build up of Union-wide insurance mechanisms against financial turbulences (bailout facilities), including a debt mutualization mechanism;

— the creation of institutions with fiscal authority on a supranational level (for example, creating an EU/EMU Ministry of Finance).

In our opinion, all of these proposals constitute elements of fiscal union, which can be defined, in very broad terms and for the purposes of this particular analysis, as the integration of national fiscal policies at the EU/ EMU level.

However, such a general definition does not determine *a priori* which degree and forms of fiscal integration can be beneficial for the EU/EMU as a whole and individual member states and can help avoid financial distress in future or minimize its negative impact. In the subsequent sections we will try to discuss arguments both in favor and against various dimensions of fiscal union and analyze the degree of complementarity between them.

2. Interrelations between monetary and fiscal union

In the debate on the current debt and financial crisis in the EMU, both supporters and opponents of the Euro project agree it must be accompanied by a fiscal and political union in order to survive. However, while the former (e.g. Wolff, 2012; De Grauwe,

2013[2]) believe this is both possible and desirable, the latter (e.g. Feldstein, 1997; 2012) doubt it will ever happen due to a long historical tradition of sovereign nation states in Europe.

Unfortunately, the arguments in favor of political and fiscal integration as the condition for the monetary union's sustainability are rarely provided. More frequently, especially in the current crisis-dominated hot debate, they are taken as given. As a result, the claim for political and fiscal union sounds more like a creed rather than something based on well-founded academic arguments.[3]

Furthermore, a closer examination of the interlinks between monetary and fiscal union on both theoretical and empirical ground provides us with a more nuanced picture.

According to the OCA theory as developed by Mundell (1961) and McKinnon (1963), which serves as the key theoretical framework for analyzing the economic rationale of a monetary union, fiscal policy can cushion the consequences of asymmetric shocks in cases where free mobility of production factors (labor and capital) is not sufficient to do so.

However, this part of OCA theory may be interpreted in two ways: either as the retention of fiscal capacity and sufficient fiscal buffers in territories participating in CCA to enable them to respond to idiosyncratic shocks in a decentralized way (in the absence of monetary accommodation) or the necessity to arrange centralized fiscal transfers between respective territories. The first interpretation was behind the original design of the Maastricht Treaty and the Stability and Growth Pact (SGP) (see Mortensen, 2004; De Grauwe, 2006). The second one seems to dominate in the post-2010 debate (e.g., Wolff, 2012) and the official proposals of reforming the EMU's governance architecture (e.g., European Commission, 2012).

2. De Grauwe (2013) presents himself as a skeptic of the common currency project in 1990s. However, as dismantling the Eurozone now would mean …*profound economic, social and political upheavals throughout Europe,* he is in favor of building a fiscal union to supplement the lacking component of monetary integration.

3. De Grauwe (2006), who offers an in-depth discussion on interrelations between monetary and political/fiscal union, and Aizenman (2013), who underlines the importance of a banking union (with its fiscal implications) for the stability of a common currency, are prominent exceptions here.

Empirical analysis of historical and contemporary cases of monetary unions also provides us with mixed results. It is true that most historically known CCAs have matched with the territory of sovereign states, either unitary or federal. Furthermore, most historical episodes of monetary unification followed political unification, which was in most cases involuntary, being the result of war, conquest, colonization, etc. Nevertheless, there are also examples of the voluntary monetary union of sovereign states, i.e. when a common currency unit and common central bank are established, but are not accompanied by a meaningful delegation of political sovereignty in other areas (like fiscal policy) to a supranational entity and building a political superstructure.[4]

For example, the West African Economic and Monetary Union (WAEMU) or Central African Economic and Monetary Community (CEMAC) have virtually no political or fiscal integration but they have used a common currency (the CFA franc) since 1945, i.e., for almost 70 years. Only at the end of the 1990s did member countries of both monetary unions start to develop other segments of economic integration, i.e., custom unions, common markets and some soft forms of supranational macroeconomic policy coordination and fiscal surveillance, following the EU/EMU experience. However, the pace of those integration processes is rather slow, especially in the case of CEMAC. Nevertheless, both monetary unions have proved sustainable so far in spite of numerous asymmetric shocks (see IMF, 2013 for a contemporary analysis of the WAEMU challenges), divergent macroeconomic trends, violent political conflicts (both internal and regional), limited trade and financial integration, etc.

Other contemporary examples of monetary unions with no or weak political integration components include the Eastern Caribbean Currency Union and the Common Monetary Area in Southern Africa.

If we broaden our definition of monetary union by including permanently fixed exchange rate regimes (against other currency

4. Please note that in the contemporary world, no country enjoys full sovereignty and each form of international cooperation (explicit or implicit) involves some limitations on national sovereignty.

or common metallic standard), we obtain more cases in which monetary "federalism" has not been accompanied by the political and fiscal one. This concerns, in first instance, the period of the international gold standard in the second half of the 19th century and the beginning of the 20th century, when most independent (and sometimes politically antagonistic) countries shared the same monetary rules and, in fact, remained in a quasi-monetary union (see Eichengreen, 1998; Cesarano, 2009).

Summing up, monetary unions between sovereign states or within relatively loose political federations or confederations are not a new phenomenon and the EMU is not as unique a historical case as suggested by some authors.

For instance, Bordo, Markiewicz and Jonung (2011, p. 26) claim that "*The euro area is the first case in the history of monetary unions where monetary policy-making is centralized under one central bank while fiscal policy-making is decentralized in the hands of the national governments of the member states. This institutional framework is new for economists and policy-makers alike.*"

Somewhat surprisingly, the European Commission (2012, p. 2) presents a similar opinion: "*The EMU is unique among modern monetary unions in that it combines a centralised monetary policy with decentralised responsibility for most economic policies, albeit subject to constraints as regards national budgetary policies. Unlike other monetary unions, there is no centralised fiscal policy function and no centralised fiscal capacity (federal budget)*". Perhaps these are just examples of "Europe's centrism" in the perception of economic history and contemporary experience.

What may be more important but is rarely explicitly discussed, the EMU seems to be unique in terms of the depth of its monetary, financial and trade integration and the sophistication of its financial sector,[5] which makes it different from monetary unions in Africa and the Caribbean region. Also, the scale of international capital flows has increased in recent decades as compared to the era of the international gold standard.

5. These arguments have been raised by Aizenman (2013). The European Commission (2012) also makes reference to the negative consequences of the "renationalization" of the financial sector and the financial market within the EMU as a result of the financial crisis.

Even taking into account the potential EMU specifics, historical and contemporary lessons of other monetary integration projects cannot be ignored and can broaden perspective of the debate on the future of the EMU. Unfortunately, most of the available comparative analyses concentrate on comparing the EMU with the US, sometimes selectively and not always with due attention to the historical evolution of the US federation. Today's United States of America represent a mature and quite centralized form of federation but it took almost two centuries to get to this stage (Aizenman, 2013). Looking back, until the 1930s, the US was much less politically, fiscally and financially centralized.[6]

While the comparison of EMU with the US has some merit due to their similar sizes and development levels, the experiences of other federal states, sometimes less centralized fiscally than the US (for example, Canada or Switzerland – see Bordo, Markiewicz and Jonung, 2011; Wolff, 2012), may broaden the debate on the perspectives of EU/EMU fiscal integration, not to mention the experience of monetary unions of sovereign states, which seem to be the most relevant to this debate but which are largely ignored.

3. Arguments in favor and against fiscal integration

Even if a monetary union does not necessarily require the existence of a fiscal union as discussed in Section 2, there may be other arguments in favor of closer fiscal integration within the EU and EMU, such as pooling resources to carry out common policies and provide supranational public goods. This leads us to the theory of fiscal federalism which helps us understand "*which functions and instruments are best centralized and which are best placed in the sphere of decentralized levels of government*" (Oates, 1999, p.1120).

Thus, the discussion about the perspective of closer fiscal integration in Europe should start from a functional analysis aimed at identifying those policy areas and public goods where the centralization of competences and resources could either offer increasing returns to scale or help address cross-border externalities.[7]

6. A comprehensive and well-balanced analysis of the evolution of fiscal federalism in the US since the Revolutionary War is presented by Henning and Kessler (2012).
7. The examples of such analyses are provided by Berglof *et al.* (2003) and Wyplosz (2007).

While building a complete list of tasks which could be centralized is beyond the agenda of this analysis, we can mention some policy areas where a transfer of competences and resources to the European level offers potential benefits. Financial market regulations and supervision, pan-European deposit insurance and crisis resolution mechanisms in the case of bank failures seem to be the number one candidates in the sphere of economic policy. And such an integration has obvious fiscal consequences in terms of the greater centralization of public resources at the European level.

Interestingly, the idea of a banking union" has broad support in the context of the debate on strengthening the Eurozone institutional architecture and is seen as an important measure to save the common currency (see e.g. Aizenman, 2013; European Commission, 2012). However, in our opinion, its main rationale relates to completing the single market of financial services, which will face a continuous danger of fragmentation and renationalization (especially in a time of financial distress) as long as regulatory and supervisory power and crisis resolution resources remain in national hands. For this reason, the "banking union" should not be limited to EMU members (the biggest EU financial center, the City of London, is located outside the Eurozone) and should not necessarily engage the European Central Bank (ECB) whose jurisdiction is limited to the EMU.[8]

Some authors (e.g. De Grauwe, 2006; Wolff, 2012) also suggest conducting supranational countercyclical fiscal policy based on the findings in fiscal federalism's literature which tend to assign this function to the federal level (see Oates, 1999; Begg, 2009; Bordo, Markiewicz and Jonung, 2011). Leaving aside the discussion on the effectiveness of countercyclical fiscal measures (especially discretionary ones) in smoothing the business cycle in an open economy and against various political traps (see Dabrowski, 2012), one may agree that they have more of a chance to work at the supranational level than the national level due to collective action problem, the risk of free riding and cross border "leakages" of demand (Dabrowski, 2010). On the other hand, it would require building a much bigger fiscal capacity at the European level (probably in the

8. Another argument against mandating the ECB with the banking supervision task relates to its potential conflict with the price stability mission (see Cukierman, 1996).

range of at least of 10% of the Union's GDP), including far-going tax, social transfers and other expenditure responsibilities.

Not only is such a far-going fiscal centralization politically unrealistic in any foreseeable future (also within the EMU), but it may also be economically dysfunctional. First, it can contradict the basic principle of fiscal federalism, i.e. assigning responsibilities to the level of government which can most effectively carry out a given task. Taking into consideration the internal political, economic, social and cultural diversity of the EU, the optimal degree of its fiscal centralization may be lower than other "mature" and more homogenous federal states. Second, taking into consideration the remaining huge productivity differences across the EU centralization of social and income policies (one of the most frequent federal mandates which is often the reason for the substantial size of federal budgets and their countercyclical capacity) may lead to the excessive convergence of labor and social costs and, as a result, make the labor market even more rigid than it is now.

For example, Wolff (2012), who supports the idea of moving part of the countercyclical fiscal policy from the national to the Eurozone level, including the creation of a Eurozone budget in the range of 2% of GDP, recognizes the risks associated with building a single unemployment insurance system within the Eurozone. Some risks are also seen by Dullien & Fichtner (2013), who strongly advocate such a common unemployment insurance scheme.

In most historical cases, the countercyclical role of the federal budget has come as a result of the prior centralization of various responsibilities: public pension systems, unemployment benefits, deposit insurance, federal infrastructure projects, and general public services (which include defense, public order, foreign policy, public health, education, justice administration, federal taxation, etc.), rather than building explicitly countercyclical fiscal facilities.

Interestingly, in the debate on a "Deep and Genuine EMU," the political appetite for transferring more responsibilities (and accompanying resources) from the national to the Union level seems to be very limited apart from the idea of a "banking union".[9] Instead

9. Which also raises a lot of resistance at the national level, especially those components which may involve fiscal redistribution (a European deposit insurance system or single resolution mechanism).

there is a proposal to build a centralized Eurozone fund which would provide member states with automatic but temporary fiscal transfers in the case of adverse idiosyncratic shocks (repaid in "good" times), a kind of a countercyclical insurance mechanism (Wolff, 2012; European Commission, 2012).

This is a highly controversial idea[10] founded on some doubtful if not naïve assumptions. The first question is how often EMU economies experience asymmetric business cycles and suffer from idiosyncratic supply shocks which, according to the OCA theory (see Section 2) can provide justification for such transfers.[11] Second, if transfers are to be neutral over the medium term as expected in those proposals it means an implicit assumption of a perfect regularity and symmetry of business cycles, which is far from the contemporary reality. Third, it underestimates difficulties with the *ex ante* identification of a given phase of the business cycle and the character of the shock (supply *vs*. demand, asymmetric *vs*. symmetric). Finally, it ignores the political economy and politics of any such redistribution mechanism which most likely will make transfers permanent rather than temporary and repayable.

If we go beyond the economic policy sphere we can find more cases of potential benefits coming from centralizing decision making and pooling fiscal resources at the European level. This may relate to, for example, defense and security policy (see Briani, 2013), the protection of external borders, common consular services, environmental policy and many others.

However, the economic rationale for the centralization of certain new functions will always have to be confronted with political considerations such as national sovereignty concerns (Begg, 2009), the interests of the incumbents at the national level[12] and a limited appetite for cross-border fiscal redistribution.[13] As a result,

10. See the critique of Gros (2012), who argues that redistribution mechanisms in federal states such as the US may help decrease income disparities between regions rather than cushion asymmetric shocks. In his opinion, the US banking union seems to be the most effective instrument for addressing asymmetric shocks.
11. Contrary to some popular views, current account imbalances between Eurozone countries cannot be considered sufficient evidence of idiosyncratic supply shocks.
12. Examples include political reluctance to build European institutions of financial supervision or the trade unions' resistance to the creation of European air traffic control
13. Buiter (2013) argues that a similar reluctance to cross-regional redistribution is observed within national states in Europe, resulting in secessionist tendencies in some of them.

the EU has been historically built around the principle of subsidiarity enshrined in Article 5 of the Treaty on European Union (TEU). According to this principle, the functions of higher levels of government should be as limited as possible and should be subsidiary to those of lower levels (see Mortensen, 2004).

It is also worth noticing that not all currently existing common EU policies necessarily meet the test of optimal assignment of functions and resources as suggested by the theory of fiscal federalism. This concerns, in first instance, the Common Agriculture Policy (CAP), which represents a clear case of overregulation leading to market distortions and resource mismanagement.[14]

4. The size of the EU budget and its major components

In spite of some extreme opinions on the total absence of fiscal integration within the EU/EMU (e.g. Bordo, Markiewicz and Jonung, 2011 or Aizenman, 2013), there are already several components of genuine fiscal union in place, i.e., the EU budget, the newly created off-budget bailout facilities, the European Investment Bank (which plays several quasi-fiscal functions), the EU's own revenue sources, some harmonization of national indirect taxes, fiscal rules and their surveillance. Ironically, the quasi-fiscal operations of the ECB since May 2010 (see Dabrowski, 2012) also add to the complex picture of fiscal federalism in the Eurozone.

The size of the EU budget has oscillated around 1% of the EU's Gross National Income (GNI) for a long time and its own revenues are not allowed to exceed 1.23% of the EU's GNI.[15] Its expenditures must be closely matched by revenues. The EU is neither allowed to borrow nor accumulate budget surpluses (the latter must be returned to member states). However, in the Multiannual Financial Framework (MFF) for 2014-2020, there will be a possibility to move unspent money between budget lines to finance other underfunded commitments in a given fiscal year.

Some proposals of a countercyclical Eurozone budget include its capacity to borrow on the financial market (Wolff, 2012). However, to be accepted by financial markets as a credible

14. See Bureau (2012) on CAP evolution and remaining challenges.
15. See http://ec.europa.eu/budget/explained/budg_system/financing/fin_en.cfm#other

borrower, the EU authorities would have been granted respective revenue collection powers (i.e., the right to introduce federal taxes – see Section 5) or obtain guarantees of national governments (debt mutualization – see Section 7).

The EU budget in its current structure is dominated by cross-country transfer programs such as the CAP, cohesion and structural funds, and foreign aid, plus the costs of functioning EU institutions. Financing European public goods such as research or environmental programs plays a secondary role (see Swidlicki, Kullmann and Persson, 2012 for a detailed analysis).

This is the result of a strong path dependence, i.e., the impact of past decisions which, in turn, resulted from the necessity to reach a compromise on some key integration steps. For example, the Cohesion Fund was a by-product of negotiations on the Maastricht Treaty in early 1990s, the price of convincing less economically advanced member states to back the idea of the EMU and address their concerns that fiscal discipline required by the Treaty changes could result in insufficient investment in public capital (see Mortensen, 2004; OECD, 2007). The adoption of the MMF requires a unanimous decision by all member states,[16] which additionally narrows the room for any radical changes in the budget size and its expenditure structure.

The dominance of cross-country transfers makes net donor countries additionally reluctant to increase the EU's budget size, which was clearly demonstrated during political negotiations on the MFF for 2014-2020. On the other hand, the net recipient countries, especially those from Southern and Central and Eastern Europe, are interested in continuing transfers on the previous or even increased levels. In some cases, net transfer inflows have approached 5% of their GDP (Heinen, 2011).

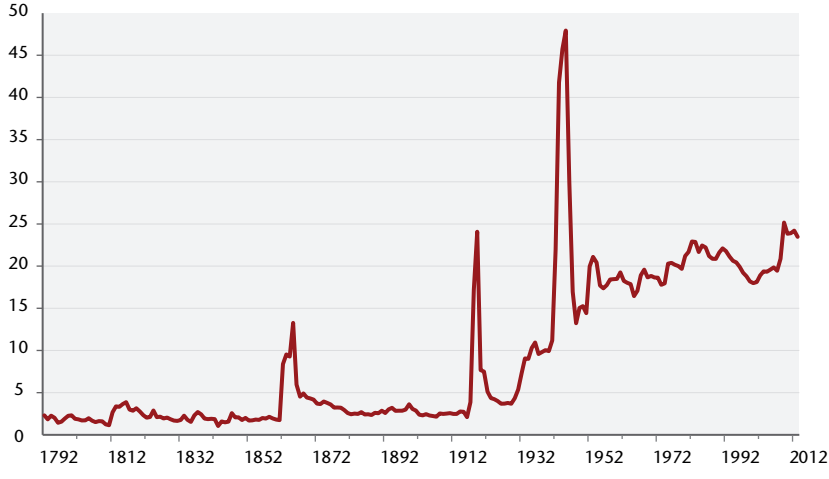
The above picture has changed with the creation of the European Financial Stability Facility (EFSF) in 2010, which was replaced

16. Formally the MFF is subject to co-decision procedure of the Council (representatives of all member states) and the European Parliament. Usually the European Parliament is in favor of a larger EU budget but the effective veto power of each individual member state in the Council makes its bargaining position weaker. The adoption of an annual EU budget is also subject to co-decision but requires only a qualified majority in the Council (instead of unanimity as in the case of MFF), which gives the European Parliament more room to influence the eventual decision.

by the European Stability Mechanism (ESM) in 2012, as a result of the sovereign debt crisis in several Eurozone countries. The ESM's lending capacity is EUR 500 billion, and the combined lending ceiling of EFSF/ESM is set at the level of EUR 700 billion (ESM, 2013), i.e., ca. 5 and 7% of Eurozone's annual GDP respectively.[17] The EFSF and ESM have substantially increased the fiscal power of the EU institutions in respect to EMU countries.

If one looks for historical comparison, in peace time, the US federal budget amounted to 2-3% of GDP until the beginning of the 20th century (Figure 1) and started to grow substantially only after the Great Depression in the 1930s. However, unlike the EU budget, it was concentrated on the provision of typical federal public goods such as general government services and national defense, with almost no redistribution and transfers.

Figure 1. US total federal spending as a % of GDP, 1792-2013



Source: http://www.usgovernmentspending.com/spending_chart_1792_2013USp_13s1li011mcn_F0f_Spending_In_20th_Century

17. However, the maximum EFSF/ESM lending capacity cannot be mechanically compared with the size of EU regular budget because the former represents a one-off stock granted by the member countries and the latter – regular annual flow.

5. The EU's budget revenue and tax policy

Although formally its "own resources" form 99% of the revenue of the EU budget,[18] only the so-called "traditional own resources" (i.e. 75% of customs duties on imports from outside the EU and sugar levies[19]) can be considered a sort of "federal" taxation. The two other "own resources", i.e. from value added tax (VAT) and the one based on GNI are calculated according to complicated country-specific formulas. "Other revenue" includes taxes on salaries of EU staff, contributions from non-EU countries to certain programs, and fines, for example, on companies for breaching EU competition law. In addition, some net donor member states (the UK, Sweden, Netherlands, Germany, and Austria) enjoy various kinds of rebates.

Summing up, most of the EU budget revenue comes from the financial contribution of member states, an amount that was individually negotiated in the process of adopting a MFF (which requires unanimity of all member states). Any substantial increase in the size of the EU budget in the future beyond the current range of 1% of GNI will probably require change in these proportions, i.e. developing direct revenue sources such as pan-European taxes. In turn, this will have to increase the role of the European Parliament (see Section 6).

At this stage of the debate on the EU/EMU fiscal federalism, it is difficult to predict which kind of "federal" taxes may emerge in the future. Most likely, it may be new forms of indirect taxation on activities having a strong cross-border spillover such as a financial transaction tax or a carbon tax.[20] Interestingly, the proposals for using the Eurozone budget as an instrument of countercyclical fiscal policy and accommodating asymmetric shocks discussed in Section 3 (e.g., Wolff, 2012; European Commission, 2012) assume the fiscal contribution of member states rather than federal taxes.

Looking for historical comparison, the US federal government had very limited tax power (collection of import tariffs and part of excises – see Henning & Kessler, 2012) until the adoption of the

18. http://ec.europa.eu/budget/explained/budg_system/financing/fin_en.cfm#other
19. The remaining 25% goes to national budgets to compensate for the cost of collection.
20. The debate on economic and social rationale of such taxation is beyond the agenda of this paper.

16th Constitutional Amendment in 1913 which created the legal opportunity to introduce federal income taxation.

The EU *acquis communautaire* also includes a certain degree of harmonization of national taxation. This relates to indirect taxes such as the VAT and excises and involves setting minimum and maximum rates, rules of adopting reduced rates and exemptions, principles of taxation in cross-border trade, etc. However, the purpose of these regulations is the elimination of the Single Market's internal barriers rather than the revenue considerations of the EU budget.

The same concerns the ongoing debate on the potential harmonization of direct taxation within the EU, especially corporate income tax (CIT).[21] On the one hand, this is an attempt to eliminate cross-border obstacles for businesses and citizens and ensure an equal playing field across the Single European Market and get rid of "unfair" or "harmful" tax competition.[22] On the other hand, advocates of tax competition among various tax jurisdictions underline its role in supporting the competitiveness of the entire common market and putting a disciplining pressure on public finances at the national and subnational levels (see e.g., Issing, 2013).

The existing federal states represent various degrees of harmonization of subnational tax rules – from high (as in Germany) to rather limited (as in the cases of the US and Canada) (Vaillancourt, 1992).

6. Institutional setup of the EU/EMU fiscal federalism

As discussed in Sections 4, 5 and 7, the EU/EMU "federal" prerogatives are shared, in various proportions, among the European Parliament, Council and European Commission. Within the European Commission, individual commissionaires and directorates-general (DGs) deal with various aspects of EU fiscal federalism. This concerns, among others, DG for Budget (responsibility for EU budget), DG for Economic and Financial Affairs (surveillance of member states fiscal policies), DG for Taxation and Custom Union, and others.

21. See Zodrow (2003) for an overview of the earlier stage of this debate.
22. See http://ec.europa.eu/taxation_customs/taxation/company_tax/harmful_tax_practices/index_en.htm

Expanding the size of EU budget, moving more competences and policies to the European level, creating more European taxes, initiating new cross-country transfer programs, etc. would have to lead to the modification of the current power balance in favor of the European Parliament, at the cost of national legislatures and executives, and the Council which represents national governments. The role of the European Commission would also have to increase accordingly, however, under the democratic control of the European Parliament.

From this point of view, the new names of administrative bodies as suggested by some authors (e.g., Marzinotto, Sapir, and Wolff, 2011 who propose creating a Eurozone finance ministry) have a rather symbolic character. (Currently this role is performed by the DG for Economic and Financial Affairs). In some cases, these suggestions disregard the principles of collective responsibility of the European Commission and the proper balance between EU executive and legislative bodies.

7. Fiscal discipline vs. fiscal solidarity in times of distress

Fiscal discipline is very important for currency stability and, more broadly, financial and macroeconomic stability in any country/ territorial entity. However, it becomes critically important within federations, confederations and closely integrated economic blocks due to intensive cross-border spillovers and contagion, more opportunities to free ride at the cost of neighbors, and the moral hazard problem (expectation of bailout). Thus fiscal discipline should be considered an important common public good for the entire EU but even more importantly, within the EMU due to the obvious negative impact of fiscal imbalances on currency stability.[23]

Fiscal discipline may be ensured by market mechanisms (danger of sovereign default) and formal fiscal rules (formal constraints), or a combination of both. In turn, fiscal rules can be divided into fiscal targets and fiscal procedures, which are either imposed by a

23. Interestingly, the high level of public indebtedness in the EMU (92.9% of GDP in 2012) and the danger of sovereign default in several EMU member states has not had a negative impact on euro stability so far (see Dabrowski, 2012).

federal center, self-imposed by a sub-federal entity, or negotiated by both (Eyraud and Gomez Sirera, 2013).

Table 1. General government net lending/borrowing

In % of GDP

Country	2007	2008	2009	2010	2011	2012
EU	-0.9	-2.4	-6.8	-6.5	-4.4	-4.2
Eurozone	-0.7	-2.1	-6.4	-6.2	-4.2	-3.7
Austria	-1.0	-1.0	-4.1	-4.5	-2.5	-2.5
Belgium	-0.1	-1.1	-5.6	-3.9	-3.9	-4.0
Bulgaria	3.9	2.8	-0.6	-3.7	-1.7	-0.1
Croatia	-0.5	0.1	-2.5	-3.2	-3.0	-1.2
Cyprus	3.5	0.9	-6.1	-5.3	-6.3	-6.3
Czech Republic	-0.7	-2.2	-5.8	-4.8	-3.3	-4.4
Denmark	4.8	3.3	-2.8	-2.7	-2.0	-4.2
Estonia	2.8	-2.3	-2.0	0.4	1.7	-0.2
Finland	5.3	4.3	-2.7	-2.8	-1.1	-2.3
France	-2.8	-3.3	-7.6	-7.1	-5.3	-4.9
Germany	0.2	-0.1	-3.1	-4.2	-0.8	0.1
Greece	-6.8	-9.9	-15.6	-10.8	-9.6	-6.3
Hungary	-1.2	0.0	-0.5	-0.5	8.0	2.0
Ireland	0.1	-7.3	-13.8	-30.5	-13.1	-7.6
Italy	-1.6	-2.7	-5.4	-4.3	-3.7	-2.9
Latvia	0.9	-7.4	-7.2	-6.5	-2.2	1.3
Lithuania	-0.5	-2.8	-8.3	-5.5	-3.7	-1.4
Luxembourg	3.7	3.2	-0.8	-0.9	-0.2	-0.8
Malta	-2.3	-4.6	-3.7	-3.6	-2.8	-3.3
Netherlands	0.2	0.5	-5.6	-5.1	-4.4	-4.1
Poland	0.4	-1.5	-4.8	-5.2	-2.3	-1.1
Portugal	-3.2	-3.7	-10.2	-9.9	-4.4	-6.4
Romania	-2.6	-4.2	-6.2	-5.1	-2.8	-0.7
Slovakia	-1.6	-2.0	-8.0	-7.7	-5.1	-4.3
Slovenia	0.3	-0.3	-5.5	-5.4	-5.6	-3.2
Spain	1.9	-4.5	-11.2	-9.7	-9.6	-10.8
Sweden	3.6	2.2	-1.0	0.0	0.0	-0.7
UK	-2.8	-5.0	-11.3	-10.0	-7.8	-7.9

Source: IMF, *World Economic Outlook* database, October 2013.

The EU/EMU mechanism of fiscal stability has been based on both market discipline and fiscal rules. The former was built around the "no bail out" clause in Art. 125 of the Treaty of the

Functioning of the European Union (TFEU) and the ban on debt monetization by the ECB (national central banks in the case of member states which have not yet introduced the euro) – Article 123 of the TFEU. Fiscal rules have been imposed by Article 126 of the TFEU, the accompanying Protocol No. 12 and the EU's secondary legislation, i.e. the Stability and Growth Pact (SGP). They include numeric criteria on the maximum fiscal deficit and debt level (the so-called Maastricht criteria) backed by administrative and financial sanctions for breaching them, i.e., the Excessive Deficit Procedure (EDP).

This mechanism proved inefficient as demonstrated by high deficits and a rapidly growing public debt burden (Tables 1 and 2) and the danger of insolvency faced by several EMU member states (Greece, Ireland, Portugal, Spain, Italy, Cyprus, perhaps Slovenia) since 2010.

Financial markets have never seemed to take the "no bail out' clause seriously, as demonstrated by very low yield spreads prior to the 2008/2009 global financial crisis, in spite of big differences in the fiscal positions of individual countries.[24] And they proved right because this clause was *de facto* suspended with the adoption of the first financial assistance package to Greece and building a temporary (EFSF) and then permanent (ESM) bailout facility (see Section 4). Before the first rescue program for Greece, in 2008-2009, the EU provided the so-called balance-of-payment support to three non-EMU member states, Hungary, Latvia and Romania. Thus the "no bail out" principle has been replaced by a policy of conditional bailout (financial assistance in exchange for a country's commitment to fiscal adjustments and necessary reforms).

Fiscal rules imposed by the TFEU and SGP also did not ensure sufficient fiscal discipline. They were frequently breached (sometimes by a large margin) and no financial sanctions were ever adopted. Even in the short one-year testing period prior to admission to the EMU, when each candidate country has to demonstrate

24. There are also other possible interpretations of very low spreads such as *ex ante* expectations of fiscal consolidation in countries with higher deficits and debts based on rapidly decreasing borrowing costs, the potential impact of EU fiscal rules and the impact of a lax US monetary policy which has led to abundant global liquidity (see Dabrowski, 2012; Issing, 2009). However, these interpretations do not necessarily contradict the hypothesis on the low credibility of the "no bail out' clause.

its compliance with the Maastricht criteria, the rules only partially worked. Most EMU candidates missed either the debt or the deficit criterion, or both, but were nevertheless admitted. This was the case with Austria, Belgium, Cyprus, France, Greece, Ireland, Italy, Malta, Netherlands, Portugal and Spain.

Table 2. General government gross public debt

In % of GDP

Country	2007	2008	2009	2010	2011	2012
EU	59.3	63.7	74.2	79.9	82.6	86.8
Eurozone	66.5	70.3	80.1	85.7	88.2	93.0
Austria	60.2	63.8	69.2	72.3	72.8	74.1
Belgium	84.0	89.2	95.7	95.6	97.8	99.8
Bulgaria	18.6	15.5	15.6	14.9	15.4	17.6
Croatia	32.9	29.3	35.8	42.6	47.2	53.7
Cyprus	58.8	48.9	58.5	61.3	71.1	85.8
Czech Republic	27.9	28.7	34.2	37.9	41.0	45.9
Denmark	27.1	33.4	40.7	42.7	46.4	45.6
Estonia	3.7	4.5	7.1	6.7	6.0	9.7
Finland	35.2	33.9	43.5	48.7	49.2	53.6
France	64.2	68.2	79.2	82.4	85.8	90.2
Germany	65.4	66.8	74.5	82.4	80.4	81.9
Greece	107.2	112.9	129.7	148.3	170.3	156.9
Hungary	67.0	73.0	79.8	81.8	81.4	79.2
Ireland	24.9	44.2	64.4	91.2	104.1	117.4
Italy	103.3	106.1	116.4	119.3	120.8	127.0
Latvia	7.8	17.2	32.9	39.7	37.5	36.4
Lithuania	16.8	15.5	29.5	38.4	39.4	41.2
Luxembourg	6.7	14.4	15.3	19.2	18.3	20.8
Malta	60.7	60.9	66.5	67.3	70.0	71.6
Netherlands	45.3	58.5	60.8	63.4	65.7	71.3
Poland	45.0	47.1	50.9	54.8	56.2	55.6
Portugal	68.4	71.7	83.7	94.0	108.4	123.8
Romania	12.7	13.6	23.8	31.1	34.4	38.2
Slovakia	29.4	27.9	35.6	41.0	43.3	52.1
Slovenia	23.1	22.0	35.1	38.7	46.9	52.8
Spain	36.3	40.2	54.0	61.7	70.4	85.9
Sweden	40.2	38.8	42.6	39.4	38.6	38.3
UK	43.7	51.9	67.1	78.5	84.3	88.8

Source: IMF, *World Economic Outlook* database, October 2013.

Not surprisingly, after adopting the euro, member states' incentives to follow the EU's fiscal rules became even weaker. As most of them breached the rules in the early 2000s, including the two biggest EMU members (France and Germany), no effective enforcement mechanism of the SGP could be expected. Furthermore, the coalition of "bad boys" led to a substantial softening of GDP in 2005 by adding several exemptions which could justify non-compliance with the TFEU and SGP.

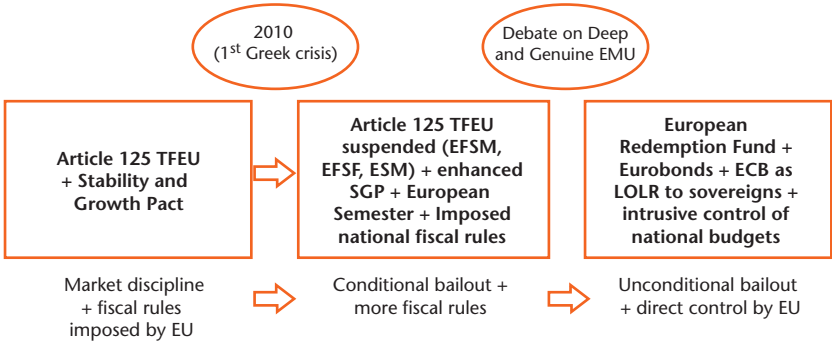
The same kind of coalition (and political economy mechanism behind it) seems to continue after the 2008/2009 global financial crisis, despite the serious reinforcement and strengthening of formal fiscal rules, especially within the EMU. The latter concerns both the "preventive" and "corrective" arms of the SGP (which now include automatic and meaningful sanctions) and other EU secondary legislation which obliges EU member states towards enhancing their national fiscal rules and institutions either through constitutional changes or equivalent legislation. The new fiscal rules are backed by the new intergovernmental Treaty on Stability, Coordination and Governance in the Economic and Monetary Union.

Nevertheless, the effectiveness of the reformed fiscal rules in practice remains unclear. The SGP provisions continue to contain numerous exemptions and ambiguities related, in first instance, to the *ex-ante* estimation of potential output and other characteristics of the business cycle. In addition, most of the EU and EMU member states continue to be subject to the EDP,[25] which makes them reluctant to impose peer pressure on other "brothers in trouble." As a result, the Commission's deadlines to bring countries' fiscal positions back under the TFEU and SGP targets are frequently postponed and no financial sanctions have been adopted yet.

Summing up, the EU and EMU have moved definitively from a "no bail out" principle to a conditional bail out policy with a parallel attempt to strengthen formal fiscal rules of disputable efficiency (Figure 2).

25. 15 member states in mid-2013. Between 2009 and 2012 this number frequently exceeded 20.

Figure 2. Evolution of fiscal arrangements within the EU/EMU



Source: Author's own analysis.

It is worrisome that the dominant tone of the debate on the Eurozone's fiscal union seems to go even further in this direction. The European Commission (2012) suggests the creation of a European Redemption Fund, an idea originally developed by the German Council of Economic Advisors, which means a step further towards a conditional bailout policy as compared to the current solutions. On the other hand, the European Commission (2012) would like to further increase its prerogatives to monitor national budgets, including some kind of veto power in respect to national budget decisions.[26] This would make EU fiscal rules increasingly intrusive and rather incompatible with the dominant political and legal architecture of the EU (a sort of limited federation or confederation).[27]

Some authors suggest even more, i.e., moving from conditional towards unconditional fiscal and monetary bailout policies. Their two main proposals are: debt mutualization and creation of a lender of last resort (LOLR) facility for governments.

Debt mutualization should be achieved by issuing Eurobonds, which would be jointly guaranteed by EMU members. The first

26. Since 2011 the procedure of the European Semester has been in place, which is a kind of "soft" coordination and monitoring mechanism of the economic and fiscal policies of EU member states (discussion of draft national budgets and accompanying economic policy assumptions).

27. Referring to Eyraud and Gomez Sirera's (2013) classification of arrangements aimed at constraining fiscal policy's room for maneuver of sub-federal entities, this would mean moving from the fiscal rules imposed by the center (the current regime) to direct controls by the center.

time this proposal was analyzed publically soon after launching the euro in Giovannini *et al.* (2000) report. The main concern at that time was the creation of an integrated and liquid financial market within the Eurozone. The idea came back at the end of 2000s and early 2010s, in the context of the global and European financial crisis, this time with a clear intention to help countries in trouble. Some of those proposals can still be considered a form of conditional bailout, e.g., the Blue Bond proposal of Delpla & von Weizsaecker (2010). Others represent either an unconditional bailout or a bailout with very weak conditionality (see e.g., Soros, 2012; De Grauwe, 2013).

The LOLR proposal calls for the unlimited and unconditional commitment of the ECB to purchase debt instruments issued by Eurozone governments in case of market distress (see e.g. Bofinger and Soros, 2011; Layard, 2012).

Both proposals have been justified on the grounds of arresting the irrational behavior of financial markets, avoiding cross-country contagion, and helping governments that are temporary illiquid but fundamentally solvent survive. Unfortunately, assumptions and intentions behind those proposals are often naïve (as they tend to overestimate the fiscal sustainability of some Eurozone countries), difficult to operationalize in practice (distinguishing illiquidity from insolvency[28]), and largely ignore the moral hazard problem. In addition, the idea of the LOLR to governments is deeply flawed and based on dubious theoretical foundations. It confuses, intentionally or unintentionally, the governments with commercial banks (Dabrowski, 2012). If taken seriously it means abandoning central bank independence which has been considered as a basic institutional guarantee of price stability in the world of fiat currencies.

Unfortunately this part of the debate on the EU/EMU fiscal federalism either ignores or wrongly interprets other countries' lessons, including those of the US. The US federal authorities have not bailed out any state since the 1840s and this has created one of the strongest incentives for states to adopt their own guarantees of fiscal

28. Greece is an extreme case which received its first aid package in May 2010 on the assumption it was illiquid but solvent. Soon this assumption had to be revised, leading to sovereign debt restructuring in 2012.

discipline. Most US states have introduced various kinds of fiscal disciplining rules in their constitutions and secondary legislations but none of them has been imposed by the federal government. Similarly, counties and municipalities cannot expect a bailout from either the state or federal government. Thus the danger of default serves as the strongest incentive to put state and municipal finances in order (Bordo, Markiewicz and Jonung, 2011; Henning and Kessler, 2012). The similar "no bail out" practice governs the Canadian federation (Bordo, Markiewicz and Jonung, 2011).

On the other hand, those federal states which failed to ensure the fiscal discipline of their subnational governments and provided them with bailouts (such as the examples of Argentina and Brazil discussed in the analysis of Bordo, Markiewiczand Jonung, 2011) have suffered serious fiscal and monetary stability problems at the federal level.

Some advocates of Eurobonds (e.g. De Grauwe, 2013) refer to the early US experience in 1790, when the then-US Secretary of the Treasury, Alexander Hamilton, convinced Congress to pool state debt from the time of the Revolutionary War and assume federal responsibility for its redemption (matched by the assignment of import duties and part of excise taxes on alcohol to the federal budget), which led to building the foundation of fiscal federalism in the US. Yet this comparison is flawed as correctly pointed out by Gros (2010) because there is a large political difference between pooling responsibility for debt accrued during the common war on independence (the case of US) and the debt accumulated as a result of imprudent national fiscal policies and excessive welfare states in peace time (the case of the European debt crisis).

8. Conclusions

The European debt and financial crisis in the early 2010s triggered a debate on the lacking components of the EU and EMU integration architecture. The frequently expressed opinion is that the very existence of a CCA requires a more advanced stage of fiscal and political integration between their members. Consequently, the sustainability of the common currency depends on how quickly progress in this area can be accomplished.

However, an analysis of both historical and contemporary experiences with monetary unions, especially those initiated by sovereign states, gives a more nuanced picture. In some cases, integration has been limited to the adoption of a common currency/ common monetary standard and has not been followed by fiscal and political integration. Despite this deficit, monetary union can work successfully for several decades. Also the OCA theory does not provide an unquestionable argument in favor of the necessity to complement monetary integration with the centralization of fiscal resources. Thus the question of how much fiscal and political integration is needed to save the Euro project requires further discussion based on a more fact-based comparative analysis and a less emotional approach.

On the other hand, the current integration architecture of the EU/ EMU already contains several elements of fiscal union, for example, the EU budget and off-budget bailout facilities, the EU's own revenue sources, harmonization of indirect taxes at the national level, substantial cross-country transfers, and fiscal rules and their surveillance. Furthermore, in several important policy areas such as financial supervision, defense, security, border protection, foreign policy, environmental protection, and climate change, the centralization of tasks and resources at the Union level could offer increasing returns to scale and a better chance of addressing pan-European externalities. These are not necessarily related to a common currency and, in most cases, the potential benefits of further integration will not be limited to the Eurozone but will cover the entire EU. Thus the debate on fiscal and political union cannot be limited to EMU members.

Ideally, reforming European fiscal federalism should involve all EU member states and should use the community method rather than concluding new intergovernmental agreements formally outside the EU (the latter leads to decreasing transparency and effectiveness of EU governance).

A functional analysis based on the theory of fiscal federalism can provide a useful tool in the exact specification of those policy areas, which are the best candidates for integration at the EU/EMU level. However, in each case, the economic rationale of potential centralization must be confronted with political constraints and the principle of subsidiarity, the basic constitutional rule governing the EU.

If additional tasks and mandates are to be moved to a supranational level, this would have to lead to a larger EU budget, exceeding the current level of ca. 1% of EU's GNI. If this happens, it will have an impact on revenue sources and the decision making process. More fiscal centralization will require the introduction of European taxes, and the increasing political power of the European Parliament, at the cost of individual member states, whose veto power in EU budget process will have to be reduced.

Harmonization of national taxation is a separate issue related to the Single European Market rules rather than EU budget and fiscal power of EU governing bodies. Here the attempt to create an equal playing field for business activity and eliminate cross-border barriers must be balanced against the rationale of tax and regulatory competition between member states.

However, regardless of how far the future process of fiscal integration within the EU and EMU will progress, it must be based on sound foundations of fiscal discipline at all government levels. As national budgets play and, most likely, will continue playing the most important role in the entire EU budget system, ensuring prudent national fiscal management seems to be the number one challenge, especially in the context of the sovereign debt crisis experienced by several member states.

Historical experience demonstrates that market discipline, i.e., the danger of sovereign default, supplemented by clear and consistently enforced fiscal rules, is the best solution to this problem. And this was the founding principle of the EMU at the time of the adoption of the Maastricht Treaty. Unfortunately, it was changed in 2010 when the "no bail out" principle was replaced by conditional financial assistance to countries in fiscal troubles, accompanied by building a permanent bail out facility within the EMU. This was the result of giving in to financial market pressure and fear of sovereign default and the resulting financial contagion, including the potential disintegration of the Eurozone. The latter proved unjustified: the *de facto* default of Greece in the spring of 2012 did not result in its exit from the CCA.[29]

29. Similarly, the default of Detroit in July 2013 did lead to exit of this city from the US dollar monetary area.

The parallel effort to strengthen the fiscal rules imposed by the EU secondary legislation and the new intergovernmental Treaty on Stability, Coordination and Governance in the Economic and Monetary Union cannot compensate for a weakening market discipline, especially since national policymakers are not enthusiastic to internalize those rules in practice. As far as most member states, including the largest ones, experience problems with meeting the TFEU and SGP fiscal targets, the peer pressure mechanism assumed in the SGP and surveillance procedures (including the European Semester) will not work effectively.

Unfortunately, several proposals floated in the name of building "genuine" economic and monetary union with a strong fiscal component (such as Eurobonds, LOLR or centralizing Eurozone funds and providing member countries with temporary fiscal transfers) could lead to weakening market discipline even further. And they could not be compensated by even more intrusive control of national budgets by the European Commission or other EU governing bodies as suggested in some proposals.

If implemented, such proposals will lead to building a dysfunctional fiscal union which encourages moral hazard behavior by both national authorities and financial markets. Economic history provides us with numerous examples of dysfunctional fiscal federalism, which resulted in deep fiscal imbalances on the federal level and currency instability. These are the lessons which must be taken very seriously in the debate on the future of European integration, especially its fiscal component.

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REDEMPTION?[1]

Catherine Mathieu and Henri Sterdyniak
OFCE

The economic crisis which started in 2008 led to a strong rise in public debts. The sovereign debt crisis in euro area southern countries broke the unity of the euro area and weakened the "single currency" concept. The paper shows that this situation is not due to a lack of fiscal discipline in Europe, but to drifts in financial capitalism and to an inappropriately designed euro area economic policy framework. Public debts homogeneity needs to be resettled in Europe. European public debts should become safe assets again, and should not be subject to financial markets' assessment. EU Member States should not be requested to pay for past sins through austerity measures, and should not strengthen fiscal discipline through rules lacking economic rationale. The paper deals with recent proposals made to improve euro area governance (redemption fund, European Treasury, eurobonds, public debt guarantee by the ECB). The paper advocates for a full guarantee of government bonds for the Member States who commit to an economic policy coordination process, which should target GDP growth and coordinated reduction of imbalances.

Keywords: EU fiscal policy, EU governance.

The 2008 crisis led to a strong rise in public debts, by around 30 percentage points of GDP in terms of Maastricht debt for the euro area, 50 percentage points for the UK, 45 for the US, 60 for

1. Preliminary drafts of this paper were presented at the Thematic Meeting of the French Economic Association (AFSE): "The Crisis of EMU: theoretical issues and prospects for economic policy?," Orléans (15-16 May 2013), at the 10th EUROFRAME Conference on economic policy issues in the European Union, Warsaw (24 May 2013), and at the 19th Conference on Alternative Economic Policy in Europe, London (20-22 September 2013). We thank Paolo Onofri, Wim Suyker, and all participants the Conferences for their comments and discussions. All errors are our own.

e-mail: catherine.mathieu@ofce.sciences-po.fr; henri.sterdyniak@ofce.sciences-po.fr

Japan (Table 1). At the end of 2013, almost all euro area countries will run higher than 60% of GDP public debts. This is also the case for the UK, Japan, and the US.

There is no specificity in the euro area as a whole. However, public debts rose very strongly in some countries: Ireland (by 100 percentage points), Greece (by 70 percentage points), Portugal and Spain (by 55 percentage points).

Table 1. Public debts in 2007 and 2013

% of GDP

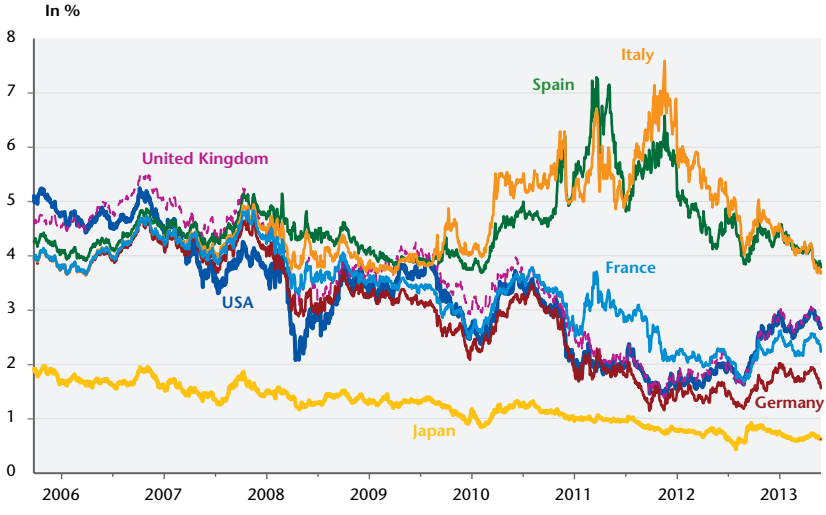
	Gross debt, Maastricht definition		Net debt	
	2007	2013	2007	2013
Germany	65	80	43	49
France	64	95	36	73
Italy	103	133	91	117
Spain	36	95	18	67
Netherlands	45	75	27	45
Belgium	84	100	73	83
Austria	60	75	31	51
Greece	107	176	86	123
Portugal	68	128	50	90
Finland	35	58	-73	-52
Ireland	25	124	0	89
Euro area	66	95	43	68
United Kingdom	44	94	26	74
United States	64	105	44	82
Japan	183	243	81	144

Sources: European Commission DG-ECFIN, AMECO, autumn 2013; OECD, *Economic Outlook*, December 2013.

Over the crisis, monetary policies have become strongly expansionary, with central banks' interest rates having been cut down to almost 0. In view of the depth of the recession, markets expect interest rates to remain durably low, and hence long-term interest rates have fallen (Figure 1). Thus, the 10-year government bond rate decreased from 4.6% in 2007 to 1.8% in 2012 in the US, from 5% to 1.9% in the UK, from 1.7% to 0.8% in Japan, despite the rise in public deficits and debts. In the euro area, interest rates fell also in Germany (from 4.2% to 1.5%), in France (from 4.3% to 2.6%), but financial markets fearing or betting against sovereign debt default in Southern economies requested exorbitant interest rates,

i.e. on average in 2012: 5.5% for Italy, 5.9% for Spain, 6.3% for Ireland, 11% for Portugal, 22.9% for Greece. Markets are self-fulfilling; these requested interest rates weighing on public finances stability and economic growth. They break the unity of the euro area, and destroy the "single currency" notion: a Spanish company cannot borrow at the same rate as a French one. The interest rates that European countries have to pay are now conditional to financial markets fears or speculation.

Figure 1. 10-year government interest rates



Source: Financial markets, Datastream.

Should States pay back their past sins by a redemption period? How to re-establish public debt homogeneity within the euro area? Should States aim to bring debts back to their pre-crisis levels? How to stop the rise in public debts? The answers to these questions depend on the diagnosis made on the roots of the crisis: is the crisis due to a general lack of fiscal discipline, to drifts in financial capitalism or to a euro area inappropriate framework? Section 1 criticises the lack of fiscal discipline diagnosis. Section 2 deals with the drawbacks of the euro area framework. Section 3 discusses the reforms introduced since the beginning of the crisis: Fiscal Pact, European Semester, ESM, OMT, consolidation strategy. Section 4 deals with the different recent proposals made with a view to bring the debt crisis in euro area countries to an end: more federalism, a

European redemption fund, a European Treasury, eurobonds, public debt guarantees by the ECB. It is difficult, not to say impossible, to have simultaneously solidarity and autonomy. We advocate for a full guarantee of government bonds for the MS who commit to an economic policy coordination process, which should target GDP growth and coordinated reduction of imbalances.

1. A lack of fiscal discipline?

In order to assess public finance management before the crisis, one must go back to 2007. According to the OECD assessment released in the June 2008 *Economic Outlook*, the euro area output gap was nil in 2007; most euro area countries were close to potential output. Euro area inflation was stable at 2.1% per annum; the euro area unemployment rate had come down to 7.4%. In autumn 2012, the OECD revised its assessment: the euro area was now considered to have been running at over full capacity in 2007 with a positive output gap of 3.3%. But in 2007, there was no element on which such an assessment could be based; there was no sign of such imbalances.

Table 2 shows that in 2007, most Member States (MS) were running a primary government surplus, i.e. a 1.9% of GDP surplus for the area as a whole. France and Portugal were the only countries running a primary balance slightly below the level requested to stabilise the debt-to-GDP ratio. The euro area primary balance stood 1.8 percentage point above this level. In fact, some countries like Spain, Ireland, and even more Greece benefited from very low interest rates as compared to their robust GDP growth. Their public debts were stable, but this was fragile, because it was relying on the spread between interest rates and GDP growth. The crisis led to a strong and rapid deterioration in government balances, but this deterioration results from the fall in output. Current public deficits do not reflect pre-crisis structural fiscal imbalances.

In 2012, the depth of the recession made it difficult to estimate potential output growth, if this concept makes any sense, and hence to assess structural government balance levels. According to the EC estimates, euro area potential output growth would be 0.5% only per year in 2012-13 and the euro area output gap would be -2.3%. All countries except Germany still have to make fiscal

Table 2. Public debt stability in 2007

	Government balance, % of GDP	Primary government balance, % of GDP	Net debt, % of GDP	Real interest rate less trend GDP growth, Percentage point	Stability gap, Percentage point
Germany	0.2	2.7	42.5	2.0	1.8
France	-2.7	-0.2	35.7	0.3	-0.3
Italy	-1.6	3.1	87.1	0.9	2.3
Spain	1.9	3.0	17.7	-2.5	3.4
Netherlands	0.2	1.8	27.8	0.2	1.7
Belgium	-0.1	3.6	73.1	0.0	3.6
Austria	-1.0	1.0	31.4	0.1	1.0
Greece	-6.8	-2.3	82.4	-2.8	0.0
Portugal	-3.2	-0.6	49.7	0.5	-0.9
Finland	5.3	4.7	-72.6	0.1	4.8
Ireland	0.1	0.7	-0.3	-4.0	0.7
Euro area	-0.7	1.9	40.1	0.3	1.8
United Kingdom	-2.8	-0.8	28.3	-0.3	-0.7
United States	-2.9	-1.0	48.0	-0.6	-0.7
Japan	-2.1	-2.1	80.5	0.9	-2.2

Explanatory note: the stability gap is measured as the difference between the primary government balance and the balance required to stabilise debt (net debt*long-term interest rate corrected from trend growth).
Sources: OECD *Economic Outlook*, 2008/1 and 2012/2, authors' calculations.

efforts in order to meet the objective of structural budgets in balance (Table 3). According to us, under the assumption that the financial crisis did not affect potential growth, the output gap is around -11 percentage points of GDP; the objective should be to run a primary structural budget in balance, which will be sufficient to stabilise the debt-to-GDP ratio, if the interest rate equals (or is lower than) the nominal GDP growth rate. Under the assumption that countries will be able to recover half of the output loss due to the crisis (Table 3, column 4), only Spain and Ireland need to make budgetary efforts, while most MS (Germany, Italy, Greece) run excessive structural balance surpluses. The priority is to recover the output lost since the beginning of the crisis. Euro area countries are in a better fiscal position than the US and Japan. The euro area does not suffer from past insufficient fiscal discipline. The roots of the crisis lie in the drift in the wage/profit shares in value added and in the rise in inequalities which have led some MS to increase government deficits to support output. Deficits have risen since

2008 because of the magnitude of the crisis and of the inappropriate euro area economic policy framework.

Table 3. Government balances in 2012

% of GDP

	Gov. balance*	Structural balance* (EC)	Primary balance*	Structural primary balance**
Germany	0.1	0.1	1.9	3.0
France	-4.8	-3.6	-2.4	0.0
Italy	-2.9	-1.3	2.3	5.3
Spain	-8.0	-6.0	-4.5	-0.7
Netherlands	-4.0	-2.7	-2.8	0.1
Belgium	-3.4	-2.7	0.3	2.0
Austria	-2.5	-2.4	-0.8	1.0
Portugal	-6.5	-4.8	-2.4	0.9
Finland	-2.2	-0.8	-1.5	2.5
Ireland	-8.1	-7.6	-5.2	-1.2
Greece	-7.0	-1.2	-2.1	5.6
Euro area	-3.4	-2.3	-0.7	2.1
United Kingdom	-8.6	-4.7	-5.8	-2.6
United States	-9.3		-7.4	-5.6
Japan	-9.5		-8.6	-6.7

*Corrected for one-off measures.
**Authors' estimates. Assumption: Countries will be able to recover half of the output loss due to the crisis.
Source: European Commission, *Winter Forecasts, European Economy*, February 2013.

A single monetary policy for countries where GDP growth rates and inflation rates structurally differ inevitably generates imbalances. Before the crisis, disparities had been growing in the euro area between two groups of countries implementing unsustainable macroeconomic strategies: Northern countries (Germany, Austria, and the Netherlands) implemented neo-mercantilist strategies which allowed them to accumulate competitiveness gains and large current surpluses, while Southern economies were accumulating large current account deficits due to robust growth strategies boosted by negative real interest rates (Deroose *et al.*, 2004; Mathieu and Sterdyniak, 2007). The economic policy framework of the Maastricht Treaty was unable to prevent the rise in imbalances which became unsustainable when the crisis burst.

In 2007, several euro area countries were running large current account surpluses (Table 4): The Netherlands (8.1% of GDP),

Germany (7.9%), Finland (4.9%), Belgium (3.5%), and Austria (3.3%), while other countries were running large deficits: Portugal (8.5% of GDP), Spain (9.6%), and Greece (12.5%). The 230 billion euros surplus in Northern economies initiated and financed the 180 billion euros deficit in Mediterranean countries. There is a relationship in the euro area, between one the one hand "Germany-Netherlands-Austria" and on the other hand "Spain-Portugal-Greece" which is similar with the "United States" *versus* "China" relationship at the world level and involves similar unsustainability. It raises the same question: how to convince "virtuous" countries to spend more and increase their real exchange rates so that "sinner" countries can reduce their external deficits without depressing domestic output? The financial crisis put the debt accumulation process to an end.

Table 4. Current account balances in 2007

	Billion euros	% of GDP
Luxembourg	3.8	10.1
Netherlands	48.6	8.1
Germany	192.1	7.9
Finland	7.3	4.9
Belgium	12.8	3.5
Austria	9.1	3.3
Denmark	1.6	0.7
Italy	-27.7	-1.7
France	-43.0	-2.2
Slovenia	-1.6	-4.6
Slovakia	-2.8	-4.7
Ireland	-10.1	-5.3
Portugal	-16.0	-8.5
Spain	-105.1	-9.6
Greece	-33.4	-12.5
Total	**39.4**	**0.4**

Source: IMF.

2. The euro area drawbacks

The single currency suffers from seven original sins, which are difficult to correct:

— According to economic theory, there cannot be a single currency between countries with different economic situations and independent economic policies. The single currency entails introducing precise, well-defined and binding constraints, solidarity mechanisms or economic policy coordination. How to prevent otherwise the emergence and persistence of imbalances between some countries running large external deficits and some others running large surpluses? How to handle such situations?

— These mechanisms cannot consist in rigid numerical rules enshrined in a Treaty (such as: public deficits should not exceed 3% of GDP, public debts should not exceed 60% of GDP, structural government budgets in balance in the medium-term). These mechanisms must be both soft (the objectives should be agreed between countries accounting for the current economic context) and binding (everyone must comply with decisions agreed in common). But how may governments with necessarily different interests and analyses reach agreement on economic policy strategies? How to convince a country to change its economic policy in order to meet common rules?

— The rules of the game should have been set by clearly considering all possibilities of symmetric or specific shocks, accounting for different objectives. What should be done if a country wishes to build current account surpluses? What should be done after a common or a specific shock? How to define the nature of the shock? But no such rules were settled and it is difficult for rules to fit all situations. For instance, no one could imagine in 1997 a situation where monetary policy would not be able to cut nominal interest rates, where public debts would have risen due to banking rescue packages, etc.

— On the one hand, there cannot be unconditional solidarity between countries with different social and economic systems. For example, Northern countries may refuse to support Southern countries, blaming them for not having undertaken the necessary structural reforms, for having let imbalances grow and for being unable to meet their commit-

ments. On the other hand, such solidarity is a prerequisite for the single currency to be guaranteed.

— According to the EU Constitution, the ECB is not entitled to finance directly governments (Article 123, TFEU); financial solidarity between MS is forbidden (Article 125, TFEU). Thus, each MS has to borrow on financial markets without any guaranteed support from a central bank acting as a "lender of last resort". This raises the risk that some MS may not be able to fulfil their commitments and may default. MS public debt is no longer a safe asset. Financial markets started to realise this from mid-2009. After the experience of the Greek default, they requested unsustainable interest rates to countries in difficulty, which increased further their difficulties.

— Euro area MS are now under financial markets' judgement and they do not control anymore their interest rates unlike Anglo-Saxon countries or Japan. But financial markets have no macroeconomic expertise, they are – and know that they are – self-fulfilling. However, Northern countries refuse a collective guarantee of MS public debts. They consider that the discipline imposed by financial markets is necessary. But disparity among interest rates is arbitrary and costly. In the long term, for instance, a country like Italy, with a 2 percentage points interest rates spread with France, would pay financial markets a premium of around 2.4% of GDP as a guarantee to an alleged default risk.

— The 2007-2009 crisis is a deep crisis of financial capitalism, which would have requested a strong policy response from governments to reduce the weight of finance and the reliance on public and private debts, to implement a macroeconomic strategy aiming at full employment (see Mathieu and Sterdyniak, 2009). But European authorities have denied any questioning of the pre-crisis strategy. This strategy is based on three postulates: the power of national governments should be reduced and handed over to European authorities; fiscal policies should be paralysed; growth should be sought through liberal structural reforms. This strategy has not delivered so far: the euro area remains in depression.

3. Reforms: the EC strategy

The EC strategy has consisted so far in four pillars:

1) Strengthening fiscal discipline

The Commission persists in saying that the functioning of single currency requires structurally budgetary positions in balance. On 29 September 2010, the Commission released a set of six directives (the Six-Pack) aiming at "strengthening economic governance", in other words the SGP fulfilment, without questioning the relevance of the latter. The Six-Pack contents were involved in the Fiscal Pact, ratified on 2 March 2012.

This Pact is a new step forward from liberal views against Keynesian economic policies and from EU authorities against domestic fiscal policies. Article 3.1 states that: "The budgetary position of the general government shall be balanced or in surplus. This rule shall be deemed to be respected if the annual structural balance of the general government is lower than 0.5% of GDP. The MS shall ensure rapid convergence towards their respective medium-term objective. The time frame for such convergence will be proposed by the Commission [...]. The MS may temporarily deviate from their medium-term objective or the adjustment path towards it only in exceptional circumstances. A correction mechanism shall be triggered automatically in the event of substantial deviations from the adjustment path. The mechanism shall include the obligation to implement measures to correct the deviations over a defined period of time".

Thus, running budgetary positions close to balance is enshrined in the Pact although it has no economic rationale. The true "golden rule of public finances" justifies on the contrary that public investment is financed through borrowing, since investment expenditure will be used over many years. Besides, households, insurance companies, financial institutions wish to own public debt. If the desired public debt stands at around 80% of GDP and if nominal GDP grows by around 3.5% per annum (i.e. by 1.75% in volume and 1.75% in prices), it is justified to run a public deficit of around 2.8% of GDP. Besides, a public deficit is necessary when it allows reaching a satisfactory demand level leading to the highest output level not accelerating inflation, at a real interest rate close to GDP growth. There is no guarantee that

running a government budget in balance is optimal. Since countries do not control anymore interest rates and exchange rates, they need degrees of freedom in the conduct of their fiscal policy.

The Pact requests MS to converge rapidly towards this objective, at a pace defined by the Commission, without accounting for the cyclical context. A temporary deviation would be allowed in case of exceptional circumstances, if "the deviation from the reference value results from a negative growth rate or from a cumulated fall in output over a prolonged weak period of growth as compared to the potential growth rate" but corrective measures should be taken rapidly. The Commission refuses to recognise that most euro area countries have been in such a situation since 2009, and persists to require the implementation of policies intended to cut rapidly deficits.

The Pact is based on the structural deficit notion, i.e.: "deficit corrected from the cyclical component, excluding one-off and temporary measures". But measuring such a deficit is problematic, especially in the event of strong macroeconomic shocks. In practice the estimates and methods of the Commission will have to be used. But they have two drawbacks. First, these estimates are always close to observed output, since the methods used consider as structural the fall in capital resulting from the investment fall during the crisis: this underestimates the cyclical deficit and will impose pro-cyclical policies. This will oblige MS to implement pro-cyclical policies, as we could observe since 2010.

Second, the estimates vary strongly over time. Hence, potential output estimates for 2006 were revised substantially downwards in 2008. In spring 2007, the Commission estimated that there was a negative output gap of 1% in France in 2006, i.e. the French economy was operating at below its potential. France had not yet reached back its potential output level since the 2002-2005 slowdown. Estimated potential growth for 2008 was 2.3%. In autumn 2011, the Commission considered that France had in 2006 a significantly positive output gap of 2.3% and that potential growth in 2008 was 1.6%. The French economy was therefore at a peak of activity. The potential output level estimate for 2006 was revised downwards by 3.3%. For 2012, what is the French output gap? The Commission (spring 2013) estimates it at -2.8%, implying that, due to the crisis, the French potential growth rate decreased from 2% to

1.2%. The OECD estimate is -3.4%. If one assumes that the crisis did not affect potential growth, then the output gap is -8%. With the Commission's estimates, the French structural government deficit is 3.1% of GDP in 2012 and therefore France should pursue at least four years of budgetary efforts of around 0.75% of GDP per annum. These efforts will weigh on GDP growth and the 1.2% potential growth estimate will probably be validated. With an output gap estimate of -8%, the structural deficit is only 0.5% of GDP, well below the 2.4% of the "true golden rule"; clearly, the objective today should be to support output so that it reaches its potential level.

According to paragraph 3d, the structural deficit target can be lowered to 1% if debt stands below 60% of GDP. Let us consider a country with GDP growing by 2% per year and inflation rising by 2% per year. If this country runs permanently a 1% of GDP deficit, its debt will come down to 25% of GDP. But nothing guarantees that the macroeconomic equilibrium may be ensured with *a priori* set values: government debt = 25% of GDP; deficit = 1% of GDP.

According to article 3.2, MS should introduce in their constitution the balanced budget rule and an automatic correction mechanism if the public balance deviates from its target, or, if this cannot be done, a binding and permanent correction mechanism. The correction mechanism must be based on principles proposed by the Commission. Thus, unenforceable, vague and lacking economic rationale rules would have to be enshrined in the Constitution.

MS will have to set up independent institutions in charge of verifying that the balanced budget rule and the adjustment trajectory path are met. This is one more step towards full technocratic management of fiscal policy. Will these independent institutions be entitled to question the fiscal rule or the adjustment path if they do not match the cyclical needs of the economy?

Article 4 repeats the rule according to which public debts should come down below 60% of GDP. This rule was already part of the SGP, but the Commission could not impose it. Thus, a country running a higher than 60% of GDP debt ratio will have to reduce this ratio by at least one twentieth of the gap with 60% each year. This rule assumes that a 60% of GDP ratio is optimal for and

can be reached by all countries. But in Europe, countries like Italy or Belgium have run for a long time public debts of 100% of GDP (without mentioning Japan where it has reached 200% of GDP), without imbalances because these debts correspond to high domestic households savings (see also Box 1). However, for a country with a debt-to-GDP ratio of 90% and a nominal growth of 3% this implies that the public deficit is less than 1.115% of GDP. Hence this does not introduce additional constraints in the medium-term as compared to the balanced budget target.

Box 1. A Keynesian perspective

From a Keynesian perspective, a certain level of debt and deficit are necessary to ensure that demand equals potential output.

If $y = g + d + cy - \sigma r + kh$, with y, GDP, g public deficit, d, private demand, r, real interest rate, h, public debt, full stabilisation implies that in the short-run: $g = -d + \sigma r$

If this policy is implemented and if stabilisation is perfect, there is no link *ex post* between the deficit and the output gap. Let us note also that, in this case, g, government borrowing, is considered as structural according to the OECD or the EC methods, which makes no sense.

In the long run, $g = 0$ and $h = -(d - \sigma r)/k$

The long-term public debt level is not arbitrary, but depends on private agents' wishes: debt must equal desired debt at the optimal interest rate, i.e. the rate equal to the growth rate.

This simple model shows that a fiscal rule like: $g = g_{\circ} - \lambda y - \mu(h - \bar{h})$ cannot be proposed, since it would not allow for full stabilisation and since the government cannot set a debt target regardless of private agents' saving behaviour.

According to article 5, a country under an EDP will have to submit its budget and its structural reform programmes for approval to the Commission and the Council who will also exert surveillance on their implementation. This article is a new weapon to impose liberal reforms to MS populations. A country under an EDP has to follow the expected adjustment path for its nominal deficit. Therefore it has to implement all the more restrictive policies than domestic growth is low.

According to article 7, the Commission's proposals will be automatically adopted unless there is a qualified majority against them, the country concerned not voting. Thus, in practice, the Commission will always have the last word.

The Treaty does not introduce effective economic policy coordination, i.e. an economic strategy using monetary, tax, fiscal and wage policies to reduce economic imbalances in the MS and to come closer to full employment.

The Pact obliges MS to run quasi-automatic fiscal policies, prohibiting any discretionary fiscal policy. But the latter are needed to reach full stabilisation. Let us assume that the tax rate is 50% and that the propensity to spend is 1; then the multiplier equals 2. If private spending falls by 10 e*x ante,* GDP will fall by 20 and the public deficit will rise by 10 without active fiscal policy response. An active expansionary policy, which increases public spending by 10, leads to the same public deficit, but prevents the output fall. This is prohibited by the Pact, which is based on an implicit but wrong theory: automatic stabilisers must play, but discretionary fiscal policies to support growth should be prohibited.

According to the Pact, each country should run restrictive measures without accounting for the domestic economic situation and policies in the other MS. The Pact assumes implicitly that the Keynesian multiplier is zero, that restrictive policies have no impact on GDP. If we consider the situation in early 2013, this implies that all countries should run austerity policies even if their public deficits are due to insufficient output levels following the burst of the financial bubble. Also, the Pact may impose austerity policies in Europe for a long time, which will impede euro area growth and will increase imbalances in the most vulnerable MS.

The Commission has been pursuing its efforts to control domestic policies, and has been trying since November 2011 to have two new directives adopted (the Two-Pack). According to the first one, the Commission would be entitled to criticise euro area MS budgets before they are passed by the Parliament, and could publicly ask for budget amendments. Fiscal policies' supervision will be permanent for MS under an EDP. Countries could be requested to introduce Independent Budget Committees; budgets should be based on independent macroeconomic forecasts.

According to the second directive, the Commission will be entitled to put a MS under strengthened surveillance and the Council could impose it to request financial support.

Some economists and even ministers in Germany or the Netherlands requested that a country not fulfilling the SGP may be condemned by the European Court of Justice. Fiscal policy would be submitted to the judiciary power. Other voices requested that the concerned country may be deprived of structural funds or voting rights. The ECB president had suggested that a EU Commissioner be responsible of public finances in the euro area and may control MS budgets.

So there is a strengthening of binding and without economic rationale fiscal rules, inconsistent with macroeconomic governance needs. This is a failure of today's EU construction: better economic policies coordination is necessary, but a strict numerical constraint on public deficit levels is not economic policy coordination and goes in the wrong direction.

2) Improving economic policy coordination

In 2011 a first "European semester" was introduced, during which MS present their fiscal plans and structural programmes to the Commission and the European Council, who both give their opinion before the vote in their national parliament in the second semester of the year. Such a process could be useful if the objective was to define an agreed economic strategy, but, in fact, this semester increases the pressure on each MS to implement austerity measures and liberal reforms. No agreed plans to reduce imbalances between MS or to support growth have been implemented in 2012 or 2013.

The Six-Pack allows the Commission to exert surveillance on the excessive macroeconomic imbalances in each country by following a scoreboard of relevant variables (competitiveness, external current account, public and private debts). A Macroeconomic Imbalance Procedure (MIP) has been introduced. Recommendations will be sent out to countries running imbalances. Fines may be decided. So far the Commission does not recommend coordinated strategies to support growth or to reduce imbalances. Until 2013, countries are criticised for running exces-

sive public or external deficits, but not for running surpluses. In November 2013, for the first time, the external surpluses of Germany and Luxembourg were questioned by the Commission.

In June 2012, the Growth and Jobs Pact could be seen as re-orientation of the European Strategy, but it was not included in the EU major policies. A 120 billion euros amount is mentioned, i.e. 1% of euro area GDP, but these measures apply to an undefined time period, while fiscal consolidation policies amount to 2% of GDP per year. The European Council decision in January 2013 to cut the EU budget (in percentage of GDP) brought the hope of fiscal expansionary measures to an end.

3) Implementing some degree of financial solidarity

Financial solidarity has increased progressively since the beginning of the crisis, despite the reluctance of Northern economies, especially of Germany. However, solidarity remains conditional and limited. In 2013, three mechanisms are in place.

The European Stability mechanism (ESM) launched in October 2012 introduces some degree of financial solidarity between the MS, but this solidarity is limited and has a very high price. The ESM can lend up to 500 billion euros. It may lend to governments or buy public debt on primary and secondary markets. Countries may benefit from the ESM if they have adopted the Fiscal pact and have fulfilled it. The ESM support will be conditional: a country needs to commit to fulfil a drastic fiscal adjustment programme imposed by the Troika, and will therefore lose all domestic fiscal autonomy and have to accept a long austerity period. The Greek example shows that this type of plan is not the way out of the crisis. The solidarity which is being implemented does not consist in donations but in loans.

The ESM debt will be considered prior to private ones. Public bond issuance should involve a collective action clause, i.e. in case of default, stated by the Commission and the IMF, the country will be entitled to agree with creditors on a change in payment conditions, the agreement applying to all creditors if a majority agrees. Euro area government debts will become speculative as was the case for developing economies, and will not be considered anymore as a safe asset by financial institutions. The interest rate

on public debt will rise, be more volatile and less easy to control. Why build the euro area to reach such a situation?

On 29 June 2012, it was agreed in the case of Spain that the ESM will be allowed to intervene to recapitalise banks, to abandon its status of preferred creditor and to help a country which makes the necessary efforts, but is still under financial markets' attack, by a simple agreement "memorandum".

On 6 September 2012, the ECB announced a purchasing bonds programme on the secondary markets, for short-term bonds (1-3 years), the so-called OMT (outright monetary transactions). No quantitative ceiling has been set. The ECB does not set a target in terms of acceptable interest rate spreads. The ECB announces that it will not be a preferred creditor in order to show that it takes the same risks as private creditors. But the ECB interventions will be subject to strict conditionality. Countries will have to agree on an adjustment programme with the Commission and the European Stability mechanism, the programme being coordinated by the IMF. The ESM will support the country through buying bonds on the primary market. Supported countries will have to make commitments in terms of fiscal consolidation and structural reforms. Since the bonds concerned have short-term maturities, the ECB will be able to stop buying them if the countries concerned do not fulfil their commitments.

Financial markets' fear was self-fulfilling: markets were afraid that Spain would default. Thus, they were refusing to lend to Spain or were requesting high interest rates, which was reinforcing default risks. Since these rates were also applying to companies, this was contributing to deepen the recession in the country. In putting no ceiling to its interventions, the ECB reassured markets on default risks in the concerned countries, on the risks of a euro area break-up. The ECB broke the spiral of self-fulfilling expectations, so that finally it did not have to intervene. Lower interest rates can help to boost activity. Conversely, countries will have to pursue severe austerity policies. The ECB imposes its views on the economic strategy to be implemented. It requests product and labour markets structural reforms; the full commitment to government balance targets despite the recession; the rapid implementation of the Fiscal Pact. There is a risk that austerity

implemented simultaneously in the euro area leads the area to remain durably in crisis.

Although the OMT has not been used in practice, the simple fact that it exists has been sufficient to reduce substantially interest rates spreads to (considering the Dutch rate as a benchmark) 1.65 percentage points for Spain and 1.75 percentage points for Italy in January 2014. But this decrease in risk premia remains fragile. The cost of financial markets' distrust remains heavy (more than 2 percent of GDP for Italy). The euro area remains in permanence under the threat of financial markets' renewed defiance after election results or the release of a fiscal imbalance.

Moreover some German economists (see Doluca *et al*, 2012) consider that the ECB has gone beyond its mandate in committing itself to support public debt in some countries, that this is not an incentive for countries to implement the necessary reforms, and that the ECB should focus strictly on price stability.

Table 5. 10-year government interest rates

	February 2012	February 2013	May 2013	January 2014
Greece	40.8	11.1	9.6	7.9
Portugal	12.3	6.9	5.5	5.1
Spain	5.05	5.15	4.2	3.7
Italy	5.5	4.45	3.9	3.8
Ireland	7.8	3.1	3.45	3.2
Belgium	3.65	2.3	2.05	2.35
France	2.95	2.2	1.85	2.2
United Kingdom	2.1	2.1	1.9	2.8
Sweden	1.8	2.0	1.8	2.4
United States	2.0	1.95	1.85	2.8
Austria	2.85	1.9	1.7	2.1
Netherlands	2.2	1.8	1.6	2.05
Finland	2.3	1.8	1.5	1.95
Germany	1.9	1.6	1.35	1.75
Japan	1.0	0.7	0.6	0.7

Source: Financial markets.

In practice transfers between euro area banks are done through the **Target 2 system balances**. If a country runs a current account deficit which is not financed by capital inflows, or if it suffers from

capital flights, its banks will have an imbalance which they will be able to finance through borrowing from the ESCB. Conversely, countries running surpluses become lenders to the ESCB. However, this system does not work directly for public debts, since governments have the obligation to issue debt on markets, and at markets' conditions. On the one hand, this mechanism guarantees automatic financing of national banking systems; questioning it more or less significantly would make the euro fragile, either through introducing debt ceilings by country or higher refinancing interest rates for banks in some countries. This mechanism compensates money transfers between banks of different countries inside the area. On the other hand, this mechanism leads countries running surpluses to use their surpluses for not very productive purposes, while Northern countries could use their surpluses to finance foreign direct investment, or to lend to Southern euro area countries or countries outside the euro area. It is their choice not to do so.

Table 6. Net position in the Target 2 system

In billion euros

	October 2012	November 2013
Germany	719	544
Netherlands	118	59
Luxembourg	109	103
Finland	61	67
Slovenia	-4	-2
Cyprus	-10	-8
Belgium	-39	-10
Austria	-40	-42
Portugal	-70	-61
France	-46	-60
Ireland	-91	-57
Greece	-108	-50
Italy	-267	-211
Spain	-380	-264

Source: ECB.

4) Fiscal austerity in the euro area

In 2012, the output gap remained significantly negative in all euro area countries. At the euro area level, the estimates varied at

that time from -2.2% according to the Commission, to -3.7% for the OECD and -11% for OFCE. At the beginning of 2013, the Commission estimated euro area potential GDP to have grown by around 0.5% per year since 2009 (see EC Winter 2013 forecast). Such estimates suggest that Europe has no other choice but accept low growth and high unemployment. But there is no explanation as to how supply factors would have induced such a reduction in potential growth. If the only explanation is: "potential growth was affected by effective growth", then a growth recovery would lead to higher potential growth. Hence the potential growth concept has no meaning and is not useful for the conduct of economic policy.

Notwithstanding economic developments since the beginning of the 2007 crisis, the Commission pursues its strategy: requesting MS to maintain restrictive fiscal policies, independently of the economic situation, and to boost growth by structural reforms. Although this strategy failed to deliver, the Commission refuses to change its orientations, even though partly due to them, growth has fallen. Euro area GDP was forecast to grow by 1.8% in 2012 according to the Spring 2011 EC forecasts but turned out to fall by 0.6%; for 2013, GDP was forecast to grow by 1.3% in the Spring 2012 EC forecast, versus -0.4% in the Spring 2013 forecast (see Table 7). It may also be noted that the EC has revised downwards once again potential growth estimates in the recent period, for instance for 2012: from 1.1% according to the Spring 2011 forecast, to 0.8% one year ago and 0.3% in the Spring 2013 forecast. No explanations are given for these revisions which are very surprising as many MS did undertake the required structural reforms supposed to increase their potential growth.

Table 7. Euro area GDP growth forecasts, according to DG ECFIN Forecasts

	2010	2011	2012	2013	2014
Spring 2011	1.8	1.6	1.8		
Autumn 2011	1.9	1.5	0.5	1.3	
Spring 2012	1.9	1.5	-0.3	1.0	
Autumn 2012	2.0	1.4	-0.4	-0.1	1.4
Winter 2013	2.0	1.4	-0.6	-0.3	1.4
Spring 2013	2.0	1.4	-0.6	-0.4	1.2

Source: *European Economic Forecast*, European Economy, European Commission.

Under the pressure of financial markets, of the European Commission (and of the Troika as concerns Greece, Ireland, and Portugal), all euro area MS have implemented fiscal consolidation policies starting from either 2010 or 2011. According to our estimates based on pre-crisis trend output and on the latest EC Forecast, these policies amount on average to around 1.7% of GDP in 2011, 2.0% in 2012 and 1.1% in 2013 (see Table 8). From 2010 to 2014, the cumulated negative fiscal impulse will reach about 24.5% of GDP in Greece, 14% of GDP in Portugal, 12% in Ireland and in Spain. Fiscal tightening weighs mainly on the expenditure side: 80% at the euro area level, with two exceptions, Belgium and France, where tax increases are more substantial.

Table 8. Fiscal impulses

In % of GDP

	2010	2011	2012	2013	2014	Total	Spending	Receipts
DEU	1.5	-1.4	-1.2	-0.4	0.0	-1.5	-1.4	0.1
FRA	-0.5	-1.8	-1.5	-1.4	-0.8	-6.0	-2.1	3.9
ITA	-0.7	-1.2	-3.3	-1.2	-0.7	-7.1	-5.5	1.6
ESP	-2.6	-2.2	-4.3	-2.2	-0.7	-12.0	-11.2	0.8
NLD	-0.6	-1.3	-1.8	-1.7	-1.4	-6.8	-4.2	1.6
BEL	-1.3	-0.1	-1.9	-0.7	-0.4	-4.4	-1.4	3.0
AUT	0.3	-1.7	-0.2	-0.9	0.0	-2.5	-2.0	0.5
PRT	0.8	-6.1	-3.5	-3.7	-1.8	-14.3	-12.4	1.9
FIN	0.1	-1.9	-0.9	-1.7	-0.8	-5.2	-3.8	1.4
IRL	-3.8	-2.0	-2.1	-3.0	-1.3	-12.2	-12.5	0.2
GRC	-8.4	-6.8	-4.5	-2.5	-2.2	-24.4	-17.5	6.9
EUZ	-0.7	-1.7	-2.0	-1.1	-0.8	-6.3	-4.5	1.8
GBR	-1.8	-2.7	-0.3	-0.9	-1.3	-7.0	-5.9	1.1
USA	0.1	-2.0	-1.1	-2.1	-1.2	-6.3	-4.1	2.2
JPN	0.4	-0.5	0.5	0.4	-2.0	-1.2	-1.0	0.2

Explanatory note: Fiscal impulses are calculated as changes in structural primary balances, based on pre-crisis trend GDP growth.
Source: Authors' estimates.

Table 9 shows the impacts of the tightening fiscal plans as described in Table 8, using a small model. The model accounts for the "direct impact" of these policies, on the basis of domestic multipliers (slightly above 1 for the larger economies). It also accounts for the impact through external demand of fiscal plans announced in the euro area countries, the UK, the US and Japan

(the global multiplier is 1.4). It assumes that interest rates will not be affected as these restrictive policies will not improve strongly debt ratios. The cumulated negative GDP impact would reach 8.0 percentage points for the euro area, but 16 percentage points in Spain, 17 percentage points in Portugal, 32 percentage points in Greece. The ex-ante favourable impact of restrictive fiscal policies on public balances would be strongly reduced by this depressive effect. The public debt-to-GDP ratio would increase in many countries, due to the strong fall in output.

Table 9. Fiscal impulse impacts on GDP, public deficit, and public debt 2011-2013

	GDP growth in %						Public balance *% of GDP*	Public debt *% of GDP*
	2010	2011	2012	2013	2014	Total	2014	2014
DEU	1.2	-1.7	-1.6	-0.7	-0.2	-3.0	+0.2	+2.6
FRA	-0.7	-2.4	-2.2	-1.9	-0.8	-8.0	+1.6	+2.2
ITA	-0.9	-1.8	-4.0	-1.6	-1.0	-9.3	+2.6	+3.8
ESP	-3.1	-3.2	-5.65	-3.0	-1.1	-16.1	+4.8	-0.7
NLD	-0.55	-1.3	-1.8	-1.7	-1.2	-6.3	+3.6	-3.2
BEL	-1.0	-0.5	-1.8	-0.85	-0.5	-4.7	+2.0	-2.2
AUT	0.35	-1.9	-0.7	-1.0	-0.1	-3.4	+0.8	0.0
PRT	0.4	-6.7	-4.4	-4.2	-2.0	-16.9	+6.7	+2.1
FIN	0.0	-2.0	-0.9	-1.7	-0.8	-5.4	+2.3	-2.6
IRL	-3.1	-2.0	-3.0	-2.6	-1.2	-11.9	+7.4	-9.7
GRC	-9.2	-7.9	-9.5	-3.1	-2.6	-32.3	+9.9	+12.6
EUZ	-0.7	-2.25	-2.9	-1.4	-0.8	-8.0	+2.3	+0.7
GBR	-2.15	-3.5	-1.0	-1.45	-1.7	-9.8	+2.6	-0.2

Explanatory note: The fiscal impulses, as shown in Table 7, reduce euro area GDP growth by 0.7% en 2010, …, 0.8% in 2014. In 2014, the cumulated impact on euro area GDP is -8.0%; the public balance is improved by 2.3 percentage points of GDP, but the debt/ratio increases by 0.7 percentage point.
Source: Authors' calculations.

Countries having to implement restrictive fiscal policies suffer from large output falls and high unemployment. In such circumstances, government deficit targets are not met, which will justify additional restrictive measures, etc. Each quarter, governments are required to introduce additional austerity measures, mainly cuts in social and public expenditures, which depress consumption and activity.

Before the crisis, the development of neo-classical or DSGE models at the expense of *old* Keynesian models, in particular in

international institutions (IMF, ECB, EC) spread out the idea that the fiscal multiplier is very low, even in a rather closed economy, in the order of 0.5 in the short-term and nil after 2-3 years. In many of these models, restrictive policies do not have any detrimental impact on output, thanks to three assumptions (see also Creel *et al.,* 2005). Households anticipate that a permanent decline in public expenditure will reduce their taxes in the future and therefore they immediately increase their consumption, which offsets the decline in public expenditure (Barro-Ricardian effect). Sometimes, the expected decline in taxes leads households to anticipate that labour supply (and then GDP) will increase: the rise in consumption is higher than the cut in public spending, which induces a negative multiplier. The economy is always operating at full capacity, or very close to it, thanks to price flexibility and monetary policy: a decline in output would induce a strong fall in inflation, and then a strong decline in interest rates which supports activity.

The crisis has shown that the output level depends on the demand level, that a strong decrease in demand, like in 2008, is not offset by automatic mechanisms. Economists (and international institutions) have re-discovered that the Keynesian multiplier is large, in the order of 1 to 1.5; that the multiplier is larger in a situation of high unemployment than when the economy operates at full capacity (but why implementing a fiscal stimulus in a full employment situation?); that the multiplier is higher for public consumption, investment and social transfers than for tax cuts.[2]

In the historical expansionary-fiscal consolidation episodes, described by some economists, restrictive fiscal policies where accompanied by elements which are not available today for euro area MS, such as exchange rate depreciation, interest rates cuts, increase in private borrowing thanks to financial deregulation, or a strong rise in private demand due to economic shocks (such as joining the EU).

In a depressed economic situation, restrictive fiscal measures have no impact on inflation and interest rates. Barro-Ricardian

2. See *repentance* papers: Coenen *et al*. (2012); Holland and Portes (2012); IMF, *World Economic Outlook* (October 2012); Blanchard and Leigh (2013).

effects are unlikely in this context since austerity measures reduce households' incomes, since liquidity constraints are heavy on firms and households, since banks will not lend massively to private sectors in a low-growth/high uncertainty situation, and since austerity strategies imply that governments consider that potential output growth will be durably lower, which contributes to depress investment. There is no certainty that risk premia will decrease since public debt ratios will not decrease substantially and since fiscal policies implemented make the euro area fragile and worries markets. In a depressed situation, high unemployment puts downwards pressure on wages, which lowers households' incomes and thus their consumption. Low wages do not strongly increase profits because the fall in demand induces overstaffing. Higher profits do not induce firms to invest, given the weakness of production perspectives. No country benefits from competitiveness gains if the depression hits the whole area.

In his 13 February 2013 letter,[3] Olli Rehn, the vice-president of the European Commission refuses to recognise that fiscal multipliers are stronger than the Commission considered. He pretends that the euro area depression results more from the high interest rates imposed by financial markets than from the restrictive fiscal policy imposed by the EC. It is difficult to see how this can apply to the French case or, outside Europe, to the US for instance. In any case, the EU authorities have not taken the strong measures needed to restore the unity of MS debts. Olli Rehn refuses to recognise that consolidation policies should be stopped in times of economic recession, even if he accepts that they can be slowed down. He does not see that the increase in public debt may be necessary if the private sector wants to reduce its debt. Austerity policies failed to reassure financial markets. Structural reforms have not offset the impact of consolidation policies. Olli Rehn claims that current restrictive policies will enhance medium-term growth, but the risk is that the euro area never ends with the current depression and never reaches this medium term.

Policies aiming at reducing the social security system are socially and economically dangerous. They increase households' savings rates. It is a paradox that the crisis caused by financial

3. See http://ec.europa.eu/commission_2010-2014/rehn/documents/cab20130213_en.pdf

markets will lead to oblige households to use financial markets for retirement and health insurance purposes. It would be disastrous for Europe that the European authorities use the threat of financial markets to impose on citizens restrictive economic policies, liberal reforms and substantial social spending cuts.

In addition, there is big risk that fiscal austerity undermines the effort required to support future growth (research, education, health, infrastructure, family policy), to enhance the growth potential, to help the European industry to maintain current activities and develop innovative and green sectors.

Can fiscal exit strategy ignore the causes of the crisis? The crisis is due to growth strategies based on downwards pressure on wages and social benefits. The fall in demand was offset by competitiveness gains in neo-mercantilist countries, by rising financial and real estate bubbles and households borrowing in Anglo-Saxon and Southern Europe countries. The failure of these two strategies has forced to use public deficits to support growth. Reducing public deficits requires the implementation of another growth strategy based, on the one hand on wages and social incomes distribution, on the other hand on a new industrial policy, on implementing and financing investment geared towards an environmentally sustainable economy. Before the crisis, public finances also suffered from tax evasion and tax competition. Restoring public finances requires to combat tax evasion and tax havens, to raise taxes on the financial sector, on higher incomes and wealth.

3.1. Towards a real and deep economic and monetary union?

The proposals made by the Commission in November 2012 in *A blue print for a deep and genuine monetary and economic and monetary union* suggest new steps towards federalism:

— "All major economic and fiscal policy choices by a MS should be subject to deeper coordination, endorsement and surveillance process at the EU level". The possibility of different economic or social strategies is forgotten or prohibited.

— The needs for strengthened fiscal discipline and for *ex ante* fiscal coordination are asserted. But, after the fiscal pact, what remains to be coordinated since all fiscal policies have to be run in autopilot mode?

— The Commission wants to have the power to suspend programmes payments to MS not taking the corrective action that the Commission requires.
— The euro area could have a fiscal power to absorb asymmetric shocks (with is rather ironic once national governments have been deprived of the ability to implement specific fiscal policies).
— The EMU could be entitled to support structural reforms, i.e. to have a "convergence and competitiveness instrument", within the pseudo "golden rule" framework, i.e. balanced budgets. A country could sign an agreement with the Commission, according to which it would implement structural reforms (concerning, according to the Commission, the performance of labour and products markets, the efficiency of the public sector, employment and social inclusion, ...) and would therefore get a financial reward from other MS. But can we imagine that a country would get subsidies in order to abolish its minimum wage, or its public pensions system? Can we imagine that France would have to pay to subsidise the implementation of such measures in Spain or in Italy? Can we even imagine a country to agree to finance vocational training or education programmes in another MS ?[4]
— The Commission wants to be able to oblige a MS to revise its national budget or to change its budget execution.
— The Commission considers the possibility for the euro area to have its own resources and to issue bonds.
— Short-term debts (Eurobills) could be mutualised under a EMU Treasury.
— A common European Redemption Fund (ERF) could be introduced to amortise public debts, with strict conditionality (see below).
— The role of the vice-president of the Commission in charge of economic and social affairs in the euro area should be strengthened; he will be in charge of the euro area Treasury;

4. Faced with the reluctance of many MS, the European Council of 19-20 December 2013 indicated that these "mutually agreed contractual arrangements" will be concluded between voluntary MS; they will not introduce obligations for non-participating countries; they will not become an income equalization tool.

a Euro Committee should be settled in the European Parliament, the Euro-Group should be strengthened.

— The proposal to issue euro-bonds guaranteed by all MS or by the ECB has not been considered. Germany refuses to make unlimited and unconditional commitments to support the other MS. But how to strengthen the euro area without such commitments?

Many questions remain:

— Can we imagine all major economic and social decisions being made at the EU level, by the Commission without accounting for national votes and debates? Such a denial of democracy would rapidly be sanctioned by citizens through votes in favour of anti-European parties.

— Can we image a federal power able to account for domestic specificities in a Europe made of heterogeneous countries? Can we imagine a single policy implemented in different countries? Or different policies implemented through a central process? These are probably two impossible ways.

We do not think that EU powers should be strengthened as long as the EU works as it currently does, as long as the EU does not implement a growth strategy, as long as it remains focused on liberal structural reforms, on public expenditure cuts and on absurd public finance criteria. EU institutions must show first that they can implement an efficient strategy before peoples and MS agree to enlarge their power.

3.2. Can the Euro be achieved? A recent French proposal.

The French "Economic Analysis Council" (*Conseil d'analyse économique*, CAE, 2013) recognises the euro area institutional weaknesses, but believes that this can be addressed by increasing its technocratic, federalist and liberal features.

Hence, the CAE proposes to set up an independent European Fiscal Committee. The latter would coordinate national committees, would set limits to MS public government deficits, and so would be a new technocratic institution which would reduce further MS autonomy. The CAE does not find it useful to specify the objective of the Committee: a growth strategy or the arbitrary norm of the Fiscal Treaty? This Committee should alert the European Court of

Justice (should fiscal policy be set by the judiciary power?); his proposals should be validated by a euro area European Parliament.

The CAE recognises that fiscal consolidation policies have strong recessive effects, before suggesting looking for growth through structural reforms, albeit recognising that such measures are "politically costly". This is the strategy which has failed to deliver over the last 12 years. Labour market rigidity is of course responsible for weak growth. The CAE naively proposes that each worker in each country can "freely" choose a European employment contract, more flexible than the domestic one, in exchange of a European unemployment insurance, which would come on top of the national unemployment insurance. This proposal lacks realism. The CAE proposes to introduce a transfer system between countries, built on the difference between the unemployment rate of each country and their structural rate of unemployment. But how will the structural rate of unemployment be assessed?

The CAE proposes to offset the balanced budget requirement by setting up a euro area budget, which could be allowed to run cyclical imbalances. But how will it work in the case of specific shocks? The lessons of the 2007-2009 crisis are not drawn: MS should be able to let automatic stabilisers play and to make discretionary decisions, without having a constraint based on a structural balance impossible to measure, without having to wait for European financial support based on non- measurable concepts (structural deficit or structural unemployment).

3.3. Another federalist view

Aglietta and Brand (2013) recall that a State must have the ability to monetize its debt. The euro area must go back to the principle: one currency, one State. Rather than the dissolution of the euro, they offer a fiscal and political union in Europe. The euro area needs to organize fiscal transfers and to put an end to autonomous fiscal policies. They propose to create a European Fiscal Institute (EFI): a "chimera" involving parliamentarians and officials from European countries. They assign two contradictory roles to the EFI. The EFI would implement an anti-crisis policy (expansionary fiscal policies in Northern countries, European investment in Southern countries); the EFI would coordinate fiscal policies "according to a criterion of public debt long term consolidation".

But this long-term criterion does not define the policies effectively implemented each year. The EFI would manage the MS common policies. But the extent of these common policies is unclear. "The EFI should deal with the content of the fiscal union, so with policies to achieve a sustainable consolidation of public finances", as if fiscal policy was restricted to consolidation. "We must commit to a medium-term programme to keep public finances on a sustainable path… Fiscal consolidation requests two decades". The authors recognise that fiscal policy should have a stabilising role, but they draw no consequences of this role for the fiscal policies framework. They do not give evidence that a common budgetary policy can be implemented between countries with different economic situations and strategies.

Later, the authors offer another mechanism: in each MS, an independent fiscal committee will assess the sustainability of fiscal policy; these committees would work in harmony with the EFI. Domestic fiscal policy would be based on a five-year law with macroeconomic assumptions provided by the fiscal committee. The EFI would assess the consistency of national projects. The European Parliament would make binding recommendations. The EFI would publish public debt ratings to financial markets (which is inconsistent with the proposal according to which the ECB should guarantee MS public debts). It is difficult to understand who would be the ultimate decision-maker between the EFI, the European Parliament and national Governments. The project is based on a myth: a European body could set fiscal policies for each MS, even if these policies must be differentiated.

The ECB would intervene to set an upper limit on the interest rate on the public debt of countries in difficulty. The authors propose to differentiate monetary policy by country, but they do not provide the differentiation criteria: would a country in recession with a large public debt have a lower interest rate (to support its activity and to reduce its debt burden) or a stronger rate (to facilitate government bonds selling)? Is differentiation possible if public debts are guaranteed? Finally, the authors propose to issue eurobonds with an insurance premium to impose high-risk countries to pursue a consolidation strategy and to reward low-risk countries for the protection they bring to others. The rate will depend on fiscal adjustment progresses. There again, there is no

critical analysis on fiscal adjustment and consolidation notions: should a country be punished for running a fiscal deficit in times of recession?

3.4. Towards fiscal federalism?

Since the Fiscal Pact prevents in theory MS to implement stabilisation fiscal policies, some economists and the Commission have proposed to implement at the European level a system of transfers between MS to ensure that countries in good economic situation finance the MS in depression (see European Commission, 2013). In the spirit of these promoters, this system should avoid permanent transfers, each country should alternatively be paying or receiving transfer. Some (like Enderlein *et al.,* 2013) propose to base these transfers on output gap differentials, since, for a given country, the sum of output gaps is nil, by construction, over a long time period, forgetting that it is a vague concept, with a questionable and variable over time measurement: should there be refunds whenever the Commission revises its estimates? Should a country in depression wait for European funds to support its output and, meanwhile, run a restrictive pro-cyclical policy? Some propose the unification of unemployment allowance systems, since they are pro-cyclical public expenditure, but national systems are currently very diverse and are often managed by social partners. The unemployment concept should be standardised (what about vocational training, disability pensions, or early retirement beneficiaries?). A country having made efforts to reduce its unemployment rate will refuse to pay for high unemployment rates countries, and will blame the latter for not having undertaken the necessary reforms. Others propose transfers between countries based on differences in unemployment rates levels or variations: this raises the same problems. The proposed transfers are generally of small size and vanish if depression is widespread. According to us, MS do no need fiscal federalism, but they need to regain full freedom to undertake stabilization fiscal policies.

4. Redemption?

Public debts in advanced economies have strongly risen during the crisis (Table 1). This results from the depth of the crisis itself

and not from over-expansionary fiscal policies which would have been implemented before or during the crisis, except in the case of Greece. There is no reason to exert redemption for implemented policies. The rise in public debts was implicitly desired (by households who wish to own safe assets, who do not want to bear financial markets risks while companies wish to deleverage), it is useless to try and reimburse debt as long as the factors which have caused the debt to rise remain. Given the current interest rates levels on public debt for major countries, it cannot be said that the public debt level induces any rise in interest rates.

The rise in public debt increases the risk that public finances will be under financial markets supervision in the years to come. But this supervision is not satisfactory: financial markets have no macroeconomic perspective; they are pro-cyclical (they will impose efforts in bad times); their opinions are self-fulfilling which they are aware of; they do not try to incorporate all relevant piece of information, but mainly the piece of information which are "in the mood of time"; they are schizophrenic, they request consolidation and growth policies at the same time. They have their own judgement on the needed appropriate economic policy, but is this necessarily the relevant one? There is a big risk that MS set the objective of trying to escape financial markets' surveillance in cutting too rapidly and too massively government borrowing which would postpone the economic recovery indefinitely. MS ability to run active fiscal policies will be reduced. What would have happened if countries had refused to rescue banks in 2009, in order to avoid them to borrow on financial markets? Can financial markets be given the responsibility to assess public debt sustainability and the usefulness of public deficits?

Two strategies can be implemented today. We advocate for a first strategy: the possibility to run fiscal stabilisation policies should be maintained (or rather re-established), monetary policy should remain expansionary, public debt guarantee by the ECB should allow to bring interest rates down to 2% in all euro area countries; wages should be increased in countries where the wage share in value added has substantially decreased; specific measures designed to support both public and private investment, as part of the environmental transition should be implemented. The debt-to-GDP ratio will fall thanks to growth recovery.

The second strategy consists in setting a binding agenda in terms of debt-to-GDP ratios with a view to bring the ratios back to their pre-crisis levels (see IMF, 2010). This raises three issues: it requests a substantial negative fiscal shock, which will be substantial in the first years in order to be in line with the requested strategy, but such a shock leads GDP to fall which leads debt to rise (see Box 2). The debt reduction path is inconsistent with short term fiscal stabilisation needs, and may lead the commitment to be out of reach, or at a very high cost. There is no guarantee that the final debt ratio target, set *a priori*, is consistent with macroeconomic equilibrium.

Box 2. The public debt norm in the short run

Let us consider an economy in a Keynesian situation. Output is determined by demand as: $y = g + c(1–t)y$, where t is the tax rate. Debt varies as:$h = h_0 + g – ty$. If g falls by 1, y falls by $1/1–c(1–t)$. A restrictive policy will lead the debt ratio to rise if: $h_0 / y_0 > (1–c)(1–t)$.

For instance if c=0.5 et t=0.5, $h_0 = y_0 = 100$, cutting the public deficit by 1 will lead output to fall by 1.33 (from 100 down to 98.67), *ex post* the deficit will fall by 0.33. Debt will fall down to 99.67. The debt-to-GDP ratio will rise from 100% to 101%. In the short term the debt-to-GDP ratio cannot be cut through a restrictive policy.

The German Council of economic experts (2012) suggested the introduction of **a European Redemption Pact**, i.e. to set a redemption fund (RF) in order to guarantee the repayment of the share of the debt above 60% of GDP. Countries where debt exceeds 60% of GDP (Germany, Austria, Belgium, Cyprus, Spain, France, Malta and the Netherlands), at the exception of countries under an adjustment programme (Greece, Ireland, and Portugal), would place in the redemption fund the share of their debt over 60% of GDP and, in counterpart, would transfer tax revenues allowing for a debt repayment over 25 years. France, for instance, would thus be able to transfer a debt share amounting to 27% of GDP, transferring revenues of 1.3% of GDP. Countries would transfer guarantees to the fund, like some part of their gold resources. Moreover, they would have to implement structural reforms programmes. This

would reassure markets, who would agree to own this debt at an interest rate below current market rates (the authors consider a 4% interest rate, which is pessimistic since France borrowed in February 2013 at 2.3% for 10-year government bonds). Besides, countries should commit to the Fiscal Pact, i.e. bring rapidly their structural deficit to 0.5% of GDP. Thus the debt ratio would rapidly fall: in 2035, it would stand at 58.5% in Belgium (against 97% today), 53.5% in France (against 88%), 50% in Germany (against 82%), 60% in Italy (against 120%). However, countries would commit to strongly restrictive policies in 2012-2015, amounting to, according to the authors' calculations, 6.3% of GDP for Spain, 4.2% for France, 4% for the Netherlands.

The paper assumes that the Pact will allow interest rates to fall, as compared to a catastrophic basis scenario, where countries would implement similar austerity measures, while markets would continue to request high interest rates. Thus, it can be claimed that RF would have expansionary effects as compared to the catastrophic basis scenario. But it does not draw any lesson from the effects on past austerity policies on output, assuming implicitly that the fiscal multiplier is nil. What will happen if MS are unable to cut the public deficit by as much as initially requested, due to the impact of these generalized restrictive policies on growth and on fiscal revenues? The German Council of economic experts' paper does not consider the possibility that Europe goes through economic slowdown episodes in the next 25 years, which may require to soften restrictive policies and to abandon the Fiscal pact. What would happen then with the redemption pact? MS fiscal policies would have to negotiate their fiscal policy with the RF, in addition to the Commission and Council monitoring. During the RF existence, the coexistence of national debts with the RF debt will allow speculation on the capacity of individual MS to fulfil their commitments.

The Pact does not question the factors which led public debts to rise. Are these sins that MS have to pay for? Or were these increases necessary because of the economic crisis? And how to be sure that, in some future, another crisis will not require public deficits and higher public debts?

We do not see what a redemption pact would add to the fiscal pact, since the fiscal pact already implies public deficits to be cut to

0.5% of GDP as long as debt is higher than 60% of GDP, 1% if debt falls below 60% of GDP, which, assuming a potential nominal growth rate of 3% per year would already lead the debt-to-GDP ratio to converge towards 33%.

On December 2012, the Commission Communication (2012) envisages the creation of such a fund, although its annex 3 criticizes its principle (in particular, a temporary fund cannot solve a structural issue: the integration of euro area government bond markets). On 12 march 2013, nevertheless, the EU parliament agreed to vote the "Two-Pack" in exchange of a commitment of the European Commission to settle a high level experts group to assess the feasibility of such a European Redemption Pact. There is a risk that new *a priori* constraints on fiscal policies are thus added.

4.1. The eurobonds and debt agency proposals

The euro area needs to choose between two frameworks: relying on markets to implement fiscal discipline or introducing measures to re-establish the unity of public debts. The first option has several drawbacks: maintaining interest rates spreads in Europe for an undefined time period, undermining the impact of fiscal policies and letting financial markets play an excessive role. On the one hand, Europe would declare that: the Greek case was an exception, from now on, no euro area country will default. On the other hand, it would rely on markets to judge how serious this commitment is. The second option can be implemented in two ways: either through an ECB guarantee of always refinancing public debts or by issuing eurobonds. It requires an issue to be settled first: according to which criteria and up to which level can a MS public debt be guaranteed by its partners? Several projects have not entirely made a choice between the two frameworks.

The simplest solution consists in introducing a European debt agency (EDA) which would be in charge of issuing a common debt for all euro area countries. This debt would be guaranteed by all euro area countries; it would be considered as a safe asset by financial markets; it would be very liquid, with a wide market, hence it could be issued at low interest rates. The difficult point is that the EDA council would supervise domestic fiscal policies and would be entitled to deny financing *too lax* countries, which would then have to issue bonds on markets. The EDA would raise the same

problems as the SGP. What would be its assessment criteria? What would be the democratic and economic legitimacy of its Council? How would the EDA decide that a country runs an excessive deficit, if the country considers that such a deficit is necessary to support activity (like in Germany and France in 2002-2005) or to rescue banks? Would it implement strict rules (a country would be entitled to loans from the EDA up to 60% of its GDP) or softer ones? The EDA would benefit neither virtuous countries (which have no difficulty to get financing) nor countries in difficulty, which the EDA would refuse to finance and which would have to issue domestic bonds, without any European guarantee, without any potential financing from the ECB, in other words risky assets, bearing a high interest rate. The EDA makes sense only if it accepts to consider all public debts, but then what to do against lax countries?

Delpla and von Weisäcker (2010) have suggested the introduction of a "blue debt, collectively issued and guaranteed, with a ceiling at 60% of GDP". Each year, national parliaments will have to vote on new public debt issuance (which means that the German parliament would have to agree on the French deficit for instance and vice versa). Each MS would also be allowed to issue a red debt under its own responsibility. Since such a red debt would bear a high interest rate, this would be a strong disincentive to issue public debt above 60% of GDP. This proposal would generate permanent tensions between euro area MS if each country has to make judgements on their neighbour's deficits. It is almost similar to the EDA proposal and does not account for economic stabilisation needs. The 60% level is arbitrary and breached in 2013 by 10 of the original euro area MS (except Luxembourg and Finland). The gap between blue and red debts would allow financial markets to speculate in permanence. De Grauwe (2012) suggested than each country would have to pay a different interest rate on its blue debt, according to its debt level, as if public debt was always a sin which must be punished.

Palley (2011) suggests creating a European public finance authority, which would issue eurobonds and lend to governments. Thus, a limited part of the debt would be mutualised. The ECB would be able to buy such bonds in order to influence the interest rate level. The euro area Council of finance ministers would decide on debt issuance. What would be the assessment criteria? Besides,

countries would still issue national bonds, which would be subject to financial markets' moods.

Schulmeister (2013) suggests introducing a European Monetary fund (EMF) which would finance member states though issuing eurobonds guaranteed by the MS and the ECB. The EMF would maintain long-term interest rates slightly below GDP growth. Each MS financing would not be subject to a numerical constraint, but would be decided within the EMF by the MS Finance ministers. The same questions may be raised again. This project hands over to finance ministers the responsibility of agreeing on public deficit targets for each country, which is problematic (what should be done in case of macroeconomic strategies divergences between countries?), not democratic (each finance minister would impose to its national Parliament the fulfilment of the target set at the European level), difficult to implement (what to do in case of a specific or global shocks?).

4.2. Can the single currency contradictions be overcome?

For developed countries, the system which worked until 1999 lied on unity between the government, the central bank and commercial banks. The central bank is the lender of last resort for the government and banks. The government guarantees banks; it can issue unlimited public debt. This debt is considered as safe and benefits from as low as possible market interest rates. Of course this unity was to some extent undermined by the independence of the central bank, which could have generated conflicts between the government (caring about supporting output or specific spending) and the central bank (caring about maintaining low inflation). These conflicts could have led public finances to become unsustainable (see, for instance, Sterdyniak *et al.,* 1994). But such situations did not occur before 2007. They did never question government solvency.

The introduction of the euro area led to a particularly difficult situation. On the one hand, countries need to run more active fiscal policies because they have lost control over their interest rates and exchange rates. It can also be added that, since 1973, the macroeconomic equilibrium has been requiring a certain level of public deficit and debt. Each country needs to run some equilibrium government deficits. The 2007 crisis strengthened this

need. On the other hand, due to the single currency, current imbalances in one country affect the other countries of the area. Therefore excessive deficits (or surpluses) should be avoided. What is acceptable in the national framework where some "instinctive" solidarity prevails is no more acceptable at the EU level, where citizens from Northern countries have no spontaneous solidarity with unemployed people in Southern economies, where most EU citizens have no solidarity with Spanish, Irish, UK or Cypriot banks. Last, financial markets' functioning makes it necessary for public debts to become safe assets again, while at the same time Northern countries deny to give unlimited guarantee to their partners. Europe is also paralysed by the German constitutional court decision, which forbids any guarantee not expressively agreed by the German Parliament.

The solution adopted so far by Europe, i.e. the Fiscal pact consists in ensuring solidarity to countries agreeing to implement an absurd fiscal rule: keeping structural deficits below 0.5% of GDP. But such a target is not optimal, and there is no certainty that it can be reached.

Euro area countries should be able again to issue safe sovereign debt, at an interest rate controlled by the ECB. They should be able to run a public deficit in line with their macroeconomic stabilisation needs.

Public debt mutual guarantee by the ECB or by eurobonds must be entire for countries accepting to submit their economic policies to a coordination process. Therefore the procedures implemented since 2010 should be reviewed and their aims should be modified.

Economic policy coordination cannot consist in fulfilling automatic rules (like the SGP rules), and so a coordination process needs to be organised between MS. Coordination should target GDP growth and full employment; it should account for all economic variables; countries should follow an economic policy strategy allowing to meet the inflation target (at least to remain within a target of around 2%), to meet an objective in terms of wage developments (in the medium-run real wages should grow in line with labour productivity), in the short-run adjustment processes should be implemented by countries where wages have risen too rapidly, or not sufficiently; increases or cuts in social contributions may be

used to facilitate the adjustment process; countries should announce and negotiate their current account balance targets; countries with high external surpluses targets should agree to lower them or to finance explicitly industrial projects in Southern economies. The process should always reach a unanimous agreement on a coordinated but differentiated strategy. As shown in Box 3, it is not so easy to define such a strategy. Public deficits resulting from this process should be financed through debt issuance guaranteed by all euro area countries and by the ECB. The Treaty needs to maintain an effective process in the event where no agreement is reached. In that case, the new debt issued by countries outside the agreement would not be guaranteed, but such a case should never occur. Europe's survival requires that the European project becomes popular again, therefore is a source of growth, social progress and solidarity. It is only within this framework that institutional progresses could be made.

Box 3. Fiscal policy in a closed or in an open economy

1) Let us consider first a closed economy. The IS equation is:, $y = g + d - \sigma r$ with y, the output gap, r, the interest rate (in difference with the rate of growth), d, private demand, g, public demand. The optimal fiscal policy after a purely demand shock is therefore to maintain: $g = -d$ and $r = 0$. The government balance should offset private demand shocks.

If households are Ricardian and offset any increase in the public deficit by lowering their consumption, then the economy cannot be stabilised:

$y = g + d - \sigma r$ with $d = d_0 - \lambda g$ and $\lambda = 1$

The same applies if markets request excessive risk premia:

$y = g + d - \sigma r$ with $r = r_0 + \mu g$ and $\mu > 1/\sigma$

Households' or markets' expectations on fiscal policies being inefficient are then self-fulfilling.

2) Let us now consider an open economy. The equilibrium in the goods market and the trade balance are written as:

$y = g + d - \sigma r + b \quad b = n(y^* - y) - n\delta(w - s - w^*) + b_0$,

with w, the wage level, s the exchange rate.

The country should have a trade balance target, b_l. A small country in the world does not have to worry about its partners' balance. It should therefore implement:

$g = -d - b_l \quad w - s = w^* + (b_0 - b_l)/n\delta$

If the country wishes to run a trade balance in surplus, it must cut public spending and the level of its wages, either through exchange rate depreciation or through a period of high unemployment.

3) Let us now consider a monetary union with two countries. The model is written as:

$$y_1 = g_1 + d_1 - \sigma r + b$$
$$y_2 = g_2 + d_2 - \sigma r - b$$
$$b = n(y_2 - y_1) + n\delta(w_2 - w_1)$$

In the event of a domestic demand shock, each country must be able to stabilise domestic output using fiscal policy. If the interest rate is at its optimal level, fiscal stabilisation is a better strategy than monetary policy, as the shock is specific. If demand is excessive in Spain, Spain should implement a restrictive fiscal policy rather than having the ECB raising its rate, implying that Germany would need to run an expansionary fiscal policy.

The problem is the compatibility between the current account targets of the two countries. If country 1 targets a trade surplus, while country 2 aims at maintaining full employment, this leads to the pre-2007 crisis situation: Germany cut domestic wages and demand in order to reach a certain level of external surplus, which meant that Spain had to raise its domestic demand.

$$d_1 = -b_I\,;\ d_2 = b_I\,;\ w_2 - w_1 = b_I / n\delta.$$

No equilibrium can be reached if Spain wishes to run a current account in balance.

Conversely, a country can choose to run a trade deficit, imposing his partner to run a surplus which needs to be offset by a restrictive fiscal policy.

Fiscal policy coordination is required, but trade balances (and not the public deficit) should be the target and the wage level would be the instrument.

4) Let us now consider a monetary Union consisting of two countries in the world. The model is written as:

$$y_1 = g_1 + d_1 - \sigma r + b_1$$
$$b_1 = n(y_2 - y_1) + m(y^* - y_1) + n\delta(w_2 - w_1) + m\delta(w^* - s - w_1)$$
$$y_2 = g_2 + d_2 - \sigma r + b_2$$
$$b_2 = n(y_1 - y_2) + m(y^* - y_2) + n\delta(w_1 - w_2) + m\delta(w^* - s - w_2)$$

Let us assume that country 1 wishes to run some trade surplus. It will therefore cut domestic wages. Its trade surplus will be achieved on the rest of the world and on country 2. Country 2 will therefore have to choose between running permanently a certain deficit and lowering its domestic wages. This contributes to insufficient demand at the world level.

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THE NEW EU GOVERNANCE ARRANGEMENTS

John FitzGerald[1]
The Economic and Social Research Institute

Until the economic crisis hit in 2008, the euro area operated with a single set of fiscal rules – the Stability and Growth Pact (SGP). In the first decade of operation of EMU the rules were broken by Germany but this breach did not threaten the stability of the euro area. However, this set of rules did not prevent the crisis occurring in 2008 and it did not prove adequate to manage the subsequent fall-out for governments and EU institutions.

Since the crisis, a series of additional rules and directives have been implemented, both by national governments and by the euro area. These new rules have been developed in a period of crisis and they have been implemented relatively quickly to deal with specific aspects of the crisis. However, they were not subjected to an extensive evaluation process, nor were they based on a comprehensive analysis of the long-term needs of the euro area. Thus, while they address some current problems, they leave others unaddressed. It is also unclear how relevant these rules will be in guiding the day to day operation of policy in the euro area if, and when, it reaches calmer waters.

The current crisis in the EU has varied origins. Both Ireland and Spain complied with the Stability and Growth Pact rules up to the beginning of the crisis. The impending problems in these two countries were manifested in large and growing current account deficits, which were the counterpart to exceptional levels of

1. *email:* John.FitzGerald@esri.ie

investment in domestic property markets (EUROFRAME, 2006; Conefrey and FitzGerald, 2010). When these bubbles burst there were catastrophic effects on the banking system in the two countries. In turn, the resulting collapse in these two economies resulted in huge deficits appearing in the public finances, even though they had been in surplus prior to the crisis. With the benefit of hindsight, instead of merely observing the SGP rules, these two economies should have run increasing government surpluses in the middle years of the decade to keep actual output closer to potential and prevent a bubble occurring. Even more important, rigorous regulation of the domestic financial systems would have minimised the risks to these economies from a property bubble. Thus the SGP rules, which concentrated on the public finances, did not prevent the crisis in Ireland and Spain. It was only in the case of Greece that the origins of the crisis lay in a disguised contravention of the SGP rules.[2]

In the run up to the crisis the SGP rules themselves posed a different set of problems, especially in the case of Ireland and Spain. O'Leary (2010) looked at the advice proffered by the EU Commission and the IMF over the period to 2008. He found that the dangers inherent in the Irish situation were not adverted to by the international oversight teams. The fact that Ireland was obeying the "speed limit" of the SGP meant that they could not give Ireland a speeding ticket. In this case rules, which did not cover all sources of danger, were part of the problem rather than part of the solution; they restricted the scope of external oversight. This experience should be part of any analysis of the new set of policy rules that the EU has adopted. In the future, undue focus on a specific set of fiscal policy rules could obscure dangerous developments elsewhere in the economy.

The key elements of the additional set of rules put in place in the euro area over the last few years relate to the public finances of individual member states and the process whereby national budgetary policy is formulated and implemented. A number of changes have been made which make national budgetary processes more transparent. These changes also provide for enhanced powers

2. In the case of Portugal there was an earlier problem with government borrowing which was being addressed when the crisis in the world economy erupted.

for the Commission to oversee national fiscal adjustment programmes. The focus of these rules is primarily on limiting government borrowing and reducing current levels of indebtedness to return economies to a long-term sustainable level of debt.

While most of the attention is focussed on the fiscal rules, the new macro-economic imbalance procedure does focus on a range of indicators of problems other than the public finances, in particular on the current account. However, the breath of these indicators and the absence of a framework for prioritising may make the procedure relatively ineffective. If all member states are simultaneously in breach of one or more of the many indicators these breaches are not going to serve as an effective wake-up call to policy-makers.

The EU Commission has begun a procedure to consider the position of Germany, which has a large current account surplus. However, it remains to be seen how this turns out. Because the indicators of imbalances are backward looking, and because of the time that the procedure would take to implement, it may well be the case that the problems that this imbalance highlights could be over before any remedial action is taken.

What the new rules ignore is the desirability of taking counter-cyclical fiscal action where the euro area economy is operating significantly above or below its potential. While it is clear that counter-cyclical fiscal policy was neither appropriate nor possible for countries such as Portugal, Spain, Ireland or Greece in the current crisis, at the level of the euro area it would have been desirable in the period 2010-13 to implement a euro area fiscal stimulus (in 't Veld, 2013). Even if, as some would argue, the level of government indebtedness was too high in the euro area to allow this to happen in this crisis, in the future, when debt levels have fallen, the implementation of a euro area counter-cyclical fiscal policy would be appropriate. However, the new rules do not provide a mechanism to produce co-ordinated counter-cyclical fiscal policy action at the level of the euro area, should the euro area economy be operating well below or above potential.

A further significant problem with the current EU governance arrangements on fiscal policy is the defective nature of the methodology used to estimate potential output and the related

structural deficit in individual countries, key concepts in assessing fiscal stance. These concepts have been enshrined in law but their definitions are subject to much debate.

The official EU methodology uses a production function, with a very simplistic model of the labour market, to derive the labour input into that production function. However, for potential output to be sustainable there should simultaneously be equilibrium in key markets – on the current account (the goods market), in the labour market (full employment consistent with stable inflation), households should have adjusted their consumption (and savings) so that their debt to income ratio is sustainable, companies should be operating at the minimum of their long run average cost curve and the housing market should also be in long-term equilibrium. The government accounts must then be on a sustainable path when the economy is in equilibrium – e.g. in balance or showing a small surplus. In the EU approach to modelling potential output these equilibrium conditions are not necessarily all guaranteed or imposed. In fact, in many cases the measure of potential output defined by the EU methodology would not be consistent with equilibrium in some or even most of these other markets.

In the approach currently used by the EU to estimate potential output a particular definition of labour market equilibrium is used which purports to estimate the level of unemployment consistent with an absence of inflationary pressures. In the EU methodology a Non-Accelerating Wage Rate of Unemployment (NAWRU) is derived using a filter process. This approach gives much more weight to recent observations so that, in times of high unemployment, it produces a NAWRU that is also high. The method for calculating the NAWRU leads to exceptional volatility in the number arrived at. The estimate of potential output for 2008 which is produced by this methodology today is dramatically different from that which it produced for 2008 when applied in the years 2007 or 2008. As such, it is not a good yardstick for deriving robust policy recommendations. In the standard EU approach no attempt is made to use a structural model of individual country labour markets and no attempt is made to derive the equilibrium labour input consistent with optimising behaviour by firms. This latter approach would be likely to provide a more stable benchmark for policy-making.

The result of using the filter process to derive the NAWRU is that today it suggests that the permanent level of unemployment in Ireland is well above 10 per cent of the labour force. When these estimates for the NAWRU are used in the production function to estimate potential output, they suggest that the Irish economy is today operating above potential.[3] On this basis the structural balance of the government sector is estimated using a fairly simple model relating potential output to government borrowing.

In the case of Ireland, if action were taken today to eliminate the structural deficit, defined in this way, the surplus on the current account of the balance of payments would rise to over 11 per cent of GDP (Bergin *et al*., 2013). Such a rate of deleveraging by the private sector would not be a stable long-term equilibrium.[4]

If the structural balance is to play a significant role in guiding policy a more suitable methodology for estimating it will need to be developed. The methodology will need to take account of the specificities of individual countries. However, this would inevitably make oversight difficult for the EU Commission. The current situation involves a single simple model that is reasonably transparent. Once the idiosyncrasies of individual economies are modelled the process will be less transparent, even if it is more realistic. The problem would then be that much more reliance would have to be put on the expertise and judgement of those estimating the potential output and structural balance, something that will inevitably result in discussion and controversy. There would be no clear "right" answer. However, this would more appropriately reflect the challenges of developing appropriate fiscal policy responses to ever changing economic circumstances across many different economies.

3. In the *Irish Stability Programme Update*, April 2013, the Irish department of Finance refer to this result as counterintuitive. In the *Irish Stability Programme Update* published in the 2004 Budget they provide a detailed critique of the methodology highlighting the volatility in the EU Commission estimates of the NAWRU.
4. It would also trigger action by the EU Commission under the macro-economic imbalances procedure.

Conclusion

We have learned to our cost that EMU has changed the environment for economic policy-making; the scope for inappropriate policy in one country to damage its EMU partners is much greater than was the case in the pre 1999 era. This has necessitated the development of new rules to guard against such negative externalities. These rules have now been developed to deal with what, we hope, are the exceptional circumstances of the last five years. However, many commentators believe that EMU will require a move towards a fuller fiscal union in the future if it is to survive.

It remains an open question how much of the recent crisis was attributable to EMU. The fact that countries such as Estonia and Latvia outside the euro area suffered from the crisis at least as severely as Ireland, Spain and Portugal inside EMU, suggests that the causes of the crisis were more complex than the mere existence of EMU. However, what EMU did was to enhance the dangers to all members of the EMU from a crisis in one or two member states.

If the new rules, and the advent of banking union, are successful in restoring the euro area economy to sustainable growth and if they prevent future economic and financial crises, then it is not clear to me that we need to go down the road of a full fiscal union. It seems possible that, in calmer times in the future, individual member states may be able to choose their own fiscal policy stance, provided it does not put the common good at risk. However, in times when output in the euro area economy is significantly below or above potential, the failure to implement a counter-cyclical fiscal policy at the level of the euro area would be a loss. A more decentralised approach would avoid the major political problems that fiscal union would involve and also avoid the problem of providing an appropriate level of democratic accountability for such a fiscal union.

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ENGINE FOR EUROPEAN GROWTH AND STABILITY

Paolo Onofri[1]
University of Bologna and Prometeia Association

Tsvetomira Tsenova
Bulgarian National Bank

> "A relationship, I think, is like a shark. You know? It has to constantly move forward or it dies. And I think what we got on our hands is a dead shark. "
>
> Woody Allen, "Annie Hall" (1977)

1. A creative crisis?

The groundbreaking of the original building yard for the European Monetary Union (EMU) dates back to 1970 with the Werner Plan envisaging the gradual introduction of a single currency in member states of the European Union. The dollar and oil crises of 1971-1973 imposed a suspension to the construction process of almost ten years, followed by another decade of "learning by trial and error" within the European Monetary System (EMS), an alternative governance framework for defying costly exchange rate risk. The real final steps for the introduction of the Euro were enacted only several years after the multiple crises brought up by the breakdown of the EMS in the beginning of the 1990s.

1. The opinions expressed are those of the authors and do not necessarily reflect the official views of the Bulgarian National Bank and the European System of Central Banks.

e-mail: paolo.onofri@prometeia.com; tsenova.ts@bnbank.org

In a nutshell, the launch of the euro and its underpinning institutional infrastructure were held back by one crisis, while accelerated by another one, the latter also being uplifted by the euphoria of German unification. Now the question is whether the current crisis would break the EMU of the European Union (EU) or deepen it. Furthermore, the worldwide encompassing nature of the current economic and financial crisis turns rescue by external events or by further welfare-enhancing widening of the Union unlikely. The experience during the past six years of crisis leads us to believe that the EMU is facing a critical trilemma: either a slow death by asphyxiation, or sudden collapse, or initiation of a new building yard for the EMU in particular and EU in general.

2. A backward view

But let us first remind ourselves of how we arrived at this point of a "do or die situation". In August 2007 the Euro area's interbank market was frozen with fear, rightfully justified by counterparty default risk stemming from exposure to US mortgage-backed securities, which were previously classified as risk-free. The ECB was the first to react by fully satisfying interbank demand for liquidity becoming virtually its sole provider. The next year revealed that this is not a temporary episode of a "financial markets turmoil", as initially downplayed in ECB´s official communication, but a deeply rooted structural problem encompassing the financial sector, real economy, state finances and governance in the euro area, as well as globally. New problems were constantly surfacing prompting the recurrent re-evaluation of risks and downward adjustment of expectations for future prospects. Banks in countries like Germany, the Netherlands and Belgium with considerable private savings and efficient liquidity management heavily reliant on global financial innovation happened to be worst affected. Fighting simultaneously deep and persistent recession, as well as strengthening the banking system through bank recapitalisations strained government finances leading to the emergence of sovereign debt vulnerabilities in Greece, Ireland, Portugal, Cyprus and more recently Spain and Slovenia.

When growth is missing for a considerable period of time, the hope about the future prospects, which nourishes economic

activity and social consensus, is replaced by heated discourse on fair redistribution of scarce sources of incomes. In the US context, the public support to the financial sector during the initial phases of the crisis brought more hostility and scrutiny towards the banking sector. In the euro area's governance framework, the great danger is to intensify the discussion on burden sharing and limits to solidarity to a point where the general public starts doubting the viability of the single currency.

The current governance framework revealed problems in terms of incentive compatibility. It could neither prevent imprudent accumulation of debt above the 60 per cent target, nor could it avoid core countries benefiting both from installing doubts in their solidarity and commitment to the Euro project, and from enjoying too low sovereign debt rates. The latter being justifiable only on the grounds of "flight to quality" given the perceived instability of the euro as a currency. [2] A prolongation of such perverse incentives could solely produce some short-term Pyrrhic victories and defeats.

Another governance issue was the confrontational way in which the sovereign debt crisis was approached in 2010 which, as a consequence, could have been pushing the EMU into a bad equilibrium for both debtor and creditor countries. From a political point of view, the euro enthusiasm could be lost and replaced by euro scepticism, which might become a true obstacle for finding agreement for necessary reforms, to starting a new building so to say. And what is a new building worth for if its inhabitants are living affluently but in mistrust and bitter arguments with each other?

3. Other irreversible small steps or a leap forward?

In the process of this new building, the EU governance institutions and member states' leaders could distract themselves from the main challenge, namely improving the EU's growth potential. Furthermore, in a general equilibrium framework with rational expectations, partial default risk and circular feedback effects between economic decisions of governments, banks and the wider

2. Note that even countries exemplary on fiscal prudence such as Germany had debt to GDP ratio of over 80% in 2012; the Netherlands and Austria were at 70 per cent debt to GDP ratio.

economy, any fiat currency, including the euro, is as good as the economies behind it, as well as the credibility of governments as ultimate guarantee providers (see Shubik, 1999; Tsomocos, 2003 and Tsenova, 2013). Banks and other financial intermediaries are central in the transmission of monetary policy, aimed at affecting both prices and real output, while at the same time they can generate their own real effects. The central banking authority with the key tasks of providing price and financial stability (see Goodhart, 2010) should be able to have all necessary monetary and macro-prudential tools to install the right incentives for banks to smoothly transmit monetary policy, hence to support growth and stability (see Calomiris, 2011).

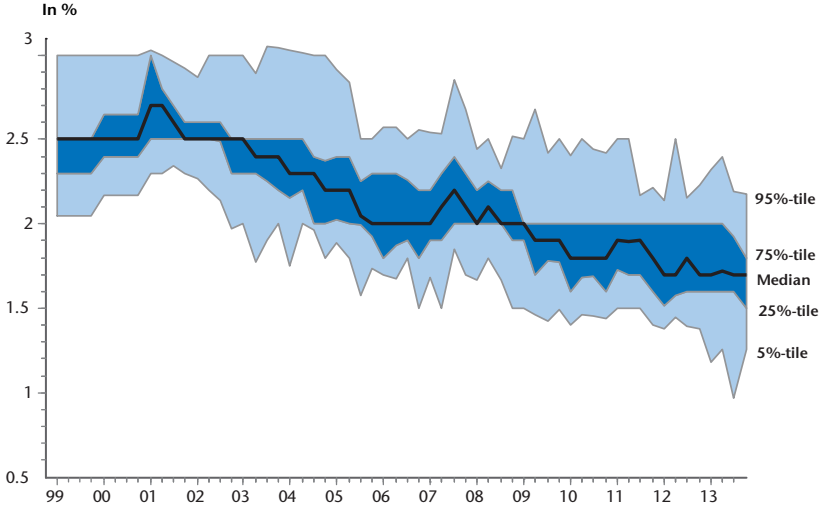
Given the global structural transformation induced by the crisis, the EU would be better relying also on own home-grown solutions, inclusive of prudent financial system, production, consumer markets and welfare enhancing internal trade. World trade growth could not go on at the pre-crisis rates for decades (see Khazin 2008). There is a persistent drive for more safety, transparency and fairness within the different banking systems with the natural consequence of reaching a less efficient in the short run, but more sustainable and prudent livelihood. There are underlying movements for future import substitution with home manufacturing. In addition, there are indications for re-industrialisation in the US also enhanced by its recent energy independence.[3]

The evolution of euro area's prospects delivered by its governance institutions could be observed from the views of the professional forecasters depicted on Figure. The long-term output growth forecasts indicate the equilibrium level towards which output would converge, after the impact of initial conditions and shorter-term shocks had vanished and structural policies directed towards the medium-term had become fully effective. They also represent indicators of credibility or ability of responsible institutions to enhance economic efficiency and welfare. Apparently the euro area has been on a declining path of long-term natural rate of growth ever since 2001: from 2.7 per cent in the first half of 2001

3. See for example "In U.S., Steps Toward Industrial Policy in Autos" by Steve Lohr, 19 May 2008, *New York Times* and "US manufacturers "reshoring' from China" by Ed Crooks, *Financial Times*, 24 September 2013.

the median long-term growth is at 1.7 per cent in 2013. The last two quarters of the sample have seen further deterioration in the whole distribution. The lower confidence interval of the distribution (5-th percentile) even reached 1 per cent. One wonders how would the euro area manage to function without a pivotal breakthrough in governance.

Figure. Long-term output growth expectations in the euro area (cross-sectional probability distribution)



Source: Survey of professional forecasters.

In June 2012 there were first promising signs that the euro institutions would be starting on a road towards the latter alternative of the above trilemma, a new building yard for EMU. This road may be hard, but it is the only viable option to which Europe is bound in its shared destiny, as declared by Mrs Merkel in her speech to the German Parliament in June 18, 2012: "we are convinced that Europe is our destiny and our future". Later in July the President of the ECB Mario Draghi clarified and confirmed the full institutional commitment to the euro by all stakeholders with the statement "the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough".[4] In September the same year this

4. Speech by Mario Draghi, President of the ECB at the Global Investment Conference in London, 26 July 2012.

commitment statement was supported by announcing the Outright Monetary Transactions (OMT) which proved to be fully incentive compatible, because of preventing self-destructive behaviour creating doubts in the irreversibility and unity of the euro area, and calming financial markets without even being used so far.

A systemic crisis could be overcome by a considerable change in the system of governance, taking into account not only the desired objective to be achieved for the functioning of the EMU in the "new normal" times, but also the orderly transition towards that aim. It would be really misfortunate if the target could never be achieved in practice and the euro area would be stuck indefinitely in a deflationary liquidity trap of misery, with inadequate inflation, meagre output and credit growth, because of mutual mistrust leading to dogmatism and inflexibility in implementing the systemic changes. Given the demanding times, in which we live, the construction of the new institutions must be more ambitious than those in 1999.

The objective is set at creating a Banking Union and all its underpinnings with the broader purpose to weaken the feedback effects between the sovereign debt of the member states and banks holding that debt in order to guarantee the continuous smooth monetary transmission and safeguard the deposits of the population. In a press release, the European Council provided a firm commitment for this on 29 June 2012: "We affirm that it is imperative to break the vicious circle between banks and sovereigns." It seems that since then only a gradual progress is being made.

The pace of building the new institutions might eventually turn out to be insufficient to pull Europe out of the current Long Recession. The Single Surveillance Mechanism (SSM) is expected to be operational only at the beginning of 2015. In the meantime, the Asset Quality Review (AQR) of the 130 banks to be supervised by ECB is likely to be conducted without having constructed a uniform definition of the Non-Performing Loans (NPL). The AQR will be followed by stress tests to be released in the second half of 2014. The Single Resolution Mechanism (SRM) has not been fully agreed upon yet. The direct recapitalisation of banks by ESM is no longer envisaged, and the single resolution authority is still under discussion. Not to mention the European Deposit Insurance system and the necessary common guarantee fund.

The main background obstacle is the fear by some member states that a Banking Union might work as a Trojan horse, i.e. a disguised way of bringing up a Fiscal Union and mutualisation of member states' debt, or, at least, sprouts of them. Moreover, in designing the transition to the new institutions there is undue emphasis on problems of moral hazard or free-riding, i.e. that in expectation of support from the others, weaker member states would behave irresponsibly generating risks for themselves and the system. Avoiding such problems is important, but we should not forget that meeting the currently unprecedented global challenges and exiting the Long Recession on a sustainable growth trajectory requires immense effort, taking of risks, strong confidence and a leap of faith. One could wonder how Europe would have developed if the Marshall Plan was not implemented to avoid problems of moral hazard and free-riding.

It is clear that the full process of implementation of the Banking Union will be a long one, which is consistent with the EU's implicit rule of taking small but irreversible steps. The issue is that this strategy might be too slow and inappropriate for the current challenges. Indeed, a breakthrough from an institutional point of view seems to be necessary in order to eradicate those self-fulfilling negative expectations that locked Europe in such a bad equilibrium. Furthermore, a U-turn is needed in the implementation of the rules to allow much more flexibility to help single countries to get out of the recession. Deep structural reforms are not easily implemented while the economy is imploding, and that is why the European Council decided in 2003 not to enforce the Treaty law for the persistently breached deficit rules by France and Germany even if that was not a period of general crisis.

The numerous reasonable discussions on how to avoid the next crisis should not distract our focus from agreeing on real operational measures to emerge from the current one, and by doing so avoiding the perilous options of asphyxia or a sudden breakdown mentioned above. The only implicit measure that seems to be followed in the EU to prevent the current crisis from further deterioration is to allow countries in difficulties both on growth, and on budget deficit not to enact more austerity in order to take care of the negative effects of past austerity on the government budget. As previously stated, we need governance not only for the normal

times, but also for crisis times: extra ordinary governance. In fact, the potential growth in EMU will remain subdued as long as sovereign debts and banking systems' problems do not find a solution. For instance, in connection with the AQR process and the conduct of stress tests a coordinated solution at the European level on the NPL (perhaps through a European bad bank) could help not only peripheral countries, but also boost internal EU trade reversing the process of credit crunch, goods and financial markets fragmentation, thus enhancing the welfare of the European citizens.

The member states' current accounts have strongly improved mainly in the peripheral countries as a result not only of higher growth of exports, but also due to substantial decline of their imports. This cannot be considered the "new normal" for Europe; it is, instead, a result of fragmentation of the financial markets with corresponding reduction of capital movements, which required adapting the current account to the new size of the foreign financing.

The EMU governance should aim at eradicating the currently observed market fragmentation, thus enabling the peripheral countries to become the new engine of growth in Europe. According to the Prometeia international model, a one-percentage point of GDP shock on domestic demand in the peripheral countries (Ireland, Italy, Greece, Portugal and Spain) would produce an increase of EMU's GDP of 0.39 per cent. The same shock on German domestic demand would generate an increase of 0.26 per cent.

4. Epilogue

Summing up, the future prosperity of the EMU depends on its governance successfully resolving two main challenges. Firstly, letting the engine of European growth re-start through speedy and efficient implementation of the Banking Union, as well as providing a grace period to enable peripheral countries to restructure and positively contribute to the European recovery. Secondly, implementing institutional reform to ensure the safety of government debt to provide risk-free assets necessary for the financial industry in an ageing European society.

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Part 2

FISCAL POLICY IN THE EU: SOME ASSESSMENTS

PRIMARY BALANCE AND DEBT PROJECTIONS BASED ON ESTIMATED FISCAL REACTION FUNCTIONS FOR EURO AREA COUNTRIES

Martin Plödt and Claire Reicher[1]
Kiel Institute for the World Economy

We project the path of the public debt and primary balances for a number of countries in the euro area under a fiscal rule based on a set of estimated fiscal policy reaction functions. Our fiscal rule represents a fiscal analogue to a well-known monetary policy rule, and it is calibrated using country-specific as well as euro area-wide parameter estimates. We then forecast the dynamics of the fiscal aggregates under different convergence, growth, and interest rate scenarios and investigate the implications of these scenarios in projecting the future path of fiscal aggregates. We argue that our forecasting methodology may be used to deliver insights into the medium-run effects of different fiscal policy rules and to provide some early warning of future fiscal pressures.

Keywords: fiscal rules, fiscal policy, euro area, forecasting.

The failure of the Stability and Growth Pact (SGP) and the European sovereign debt crisis have brought the implementation of fiscal rules to the fore of many policy discussions. In several countries, a clear constitutional agreement concerning targets for or restrictions on fiscal aggregates has been proposed in order to ensure sustainable government finances. The German "debt brake"

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e-mail: martin.ploedt@ifw-kiel.de; claire.reicher@ifw-kiel.de

is one example of a fiscal rule; Snower, Burmeister, and Seidel (2011) propose another fiscal rule which would allow for a high degree of anti-cyclical policy and a nonzero long-run debt ratio. For any proposed fiscal rule, it is important to develop projections about the future path of the public debt and primary balances, in order to understand the effects that such a rule might have. In this paper, we project the path of the public debt and primary balances in four large euro area countries, based on a fiscal rule calibrated to an estimated fiscal reaction function under a set of different consolidation scenarios. We argue that our forecasting methodology could be used to compare the future paths of fiscal aggregates implied by different fiscal rules and to provide an early warning of impending pressure to run large primary surpluses.[2]

We start by formulating a fiscal rule where the primary balance automatically adjusts to the output gap and to the public debt. This rule represents a fiscal analogue to a well-known monetary policy rule, and it corresponds with a set of estimated fiscal reaction functions presented by Plödt and Reicher (2014). These estimated fiscal reaction functions are compatible with other estimates from the empirical fiscal policy literature.[3] We then set up a forecasting model which consists of the fiscal rule, a law of motion for the debt, and a simple multiplier relationship between the primary balance and output. Based on the forecasting model, we simulate the projected debt and primary balance paths of Germany, Italy, Spain, and France following different specifications of the fiscal rule. We find that a fiscal rule that encourages a strong reduction in debt levels within twenty years would result in substantial pressure for Italy to run large primary surpluses. Germany, Spain, and France face less pressure in this regard. For countries such as Spain, the transition from primary deficits to primary surpluses would occur gradually. As to be expected, a stronger than expected growth scenario results in less pressure to run large primary surpluses, while a weaker than expected growth scenario or a higher than expected interest rate results in worse fiscal pressure.

2. We define a "fiscal reaction function" as a positive description for how fiscal policy may behave, while we refer to a "fiscal rule" as a normative constraint on the conduct of future fiscal policy. We focus on fiscal rules calibrated to resemble a set of estimated fiscal reaction functions.
3. See, for example, Girouard and André (2005) on the cyclicality of fiscal policy and Afonso and Hauptmeier (2009) on the response of fiscal policy to the debt.

Our forecasts aim at delivering an insight into the medium-run effects of this particular type of a fiscal rule and at providing some early warning of future fiscal pressures according to the desired degree of fiscal consolidation, which is important since fiscal consolidation itself has macroeconomic effects. The forecasting methodology that we set up in this paper may also serve as a framework to analyze the effects of other types of fiscal rules, in conjunction with previous studies. While we leave a detailed analysis of the revised SGP to future work, we compare our results with the debt paths implied by that Pact. We find that our fiscal rules promote a slower rate of consolidation than the SGP at the outset, while allowing for a strong rate of consolidation in later periods.[4] In this vein, our positive forecasting methodology might also facilitate the implementation of a normative fiscal rule and enhance the credibility of a country's commitment to it.

1. Specification

Following the specification of fiscal reaction functions in Plödt and Reicher (2014), our fiscal rule allows for a response of primary balances to fluctuations in output and to the previous period's end-of-period debt-GDP ratio $B_{t\text{-}1}/Y_{t\text{-}1}$. The output response of the fiscal rule, governed by the coefficient a, reflects the automatic adjustment of the primary balance to the output gap due to automatic stabilizers along with any other systematic anti-cyclical policy actions typically undertaken by individual governments. For instance, if the change in the output gap is minus one percent following a recession, the primary balance would fall by a times the fall in output. The debt response of the fiscal rule, governed by c, reflects the systematic response of the primary balance to the debt-GDP ratio. Here, we model our rule based on the version of the fiscal reaction function estimated by Plödt and Reicher (2014) in first differences, such that:

4. See Barnes, Davidsson, and Rawdanowicz (2012) for a practical evaluation and critical discussion of the revised SGP, which may encourage a very low steady-state debt ratio. Additionally, Barnes, Davidsson, and Rawdanowicz (2012) assume that the future path of output is exogenous, while we assume that output is endogenously determined through a simple multiplier mechanism. In fact, we have faced significant problems with stability and existence in simulating the effects of the debt path target under the revised SGP, to the extent that fiscal multipliers significantly deviate from zero.

$$\Delta \frac{P_t}{Y_t} = a\left(\frac{1}{1+\bar{g}_t} - \frac{Y_{t-1}}{Y_t}\right) + c\Delta \frac{B_{t-1}}{Y_{t-1}} + \varepsilon_t, \quad (1)$$

where $\bar{g}_t$ is the potential growth rate of the economy. We focus on such a parsimonious rule because it captures the twin objectives of fiscal policy to stabilize output and to stabilize the debt level. Bénétrix and Lane (2013) and others look at more extensive fiscal reaction functions, finding some response of the government balance to the financial cycle. Since we assume that the financial cycle (and also inflation and interest rates) are exogenous in our model, we instead use a relatively simple fiscal rule in order to focus on the issues related to different consolidation speeds.

While the proposed rule of Snower, Burmeister, and Seidel (2011) is specified in levels, we find in Plödt and Reicher (2014) that a specification in levels (with a proper allowance for persistence in residuals) and a specification in first differences both deliver similar coefficients to each other. Both specifications indicate that fiscal impulses have a high degree of extrinsic persistence. In practical terms, this set of results implies that the debt-GDP ratio has a unit root or a near-unit root. This persistence needs to be taken into account when making forecasts or designing alternative fiscal rules which resemble past behavior. We use the specification in first differences because it is more parsimonious than the specification in levels, and small refinements on our specification lead to a gradual transition toward more contractionary fiscal policy in the medium run. As Barnes, Davidsson, and Rawdanowicz (2012) point out, a specification in levels without an allowance for a slow transition, such as a "1/20" rule, would force a sharp contraction of fiscal policy upon impact. Seemingly minor issues related to the specification of a fiscal rule can yield vastly different policy prescriptions when put into application.

In addition to our baseline rule, we also consider a rule of the form:

$$\Delta \frac{P_t}{Y_t} = a\left(\frac{1}{1+\bar{g}_t} - \frac{Y_{t-1}}{Y_t}\right) + c\Delta \frac{B_{t-1}}{Y_{t-1}} + d^{CR}\left(\frac{B_{t-1}}{Y_{t-1}} - b^{CR}\right)_+ + \varepsilon_t\,. \quad (2)$$

The additional term $\left(\frac{B_{t-1}}{Y_{t-1}} - b^{CR}\right)_+$ equals the excess debt ratio,

i.e. the extent to which the debt-GDP ratio in the previous period exceeds the critical level b^{CR}. Following Snower, Burmeister, and Seidel (2011), we set b^{CR} to 0.6 to reflect the 60 percent debt limit laid out by the SGP. The coefficient d^{CR} captures the degree to which the primary balance is expected to incrementally adjust in response to the excess debt ratio, in order to bring the long-run debt-GDP ratio back below its critical value.

2. Calibration of the fiscal rule

We base our calibration on the estimates presented by Plödt and Reicher (2014) of a fiscal reaction function that corresponds with the fiscal rule (1). The estimates are based on yearly data from the European Commission's AMECO database, extended with data from the OECD for Italy and Spain. Most time series begin in the late 1960s or early 1970s and always end in 2007, in order to allow us to focus on fiscal policy before the Great Recession. We use country-specific estimates as well as a panel estimate based on an unbalanced panel of all euro area countries excluding Luxembourg. We estimate (1) using two-stage least squares to deal with the possible endogeneity of output. Please see Plödt and Reicher (2014) for all details concerning the data and estimation procedure.

Table 1 contains the estimated coefficients governing the fiscal reaction function for our subset of countries. The panel estimates indicate a relatively strong average reaction of primary balances to the business cycle for the euro area, with a response of the primary balance to the output gap between 0.4 and 0.5. Primary balances in the euro area also respond strongly, on average, to past debt levels, with a coefficient of about 0.09. Responses for individual countries vary, with Germany showing an especially strong degree of fiscal consolidation in response to the debt and France showing a particularly strong degree of anti-cyclicality in fiscal policy. Italian fiscal policy, meanwhile, is nearly acyclical, and it responds moderately to the debt level. It is worth noting that estimates at the country level come with a considerable degree of noise, and so we consider the euro area estimates as well, since these estimates potentially provide useful information about the conduct of fiscal policy at the country level.

Table 1. Estimation results for a fiscal reaction function in first differences

Country	*const.*	*c*	*a*
Germany	-0.006 (0.004)	0.526 (0.171)	0.470 (0.353)
Italy	-0.001 (0.003)	0.129 (0.079)	0.074 (0.317)
Spain	0.001 (0.002)	0.026 (0.049)	0.629 (0.203)
France	-0.004 (0.002)	0.216 (0.092)	1.039 (0.390)
Panel	0.000 (0.001)	0.087 (0.021)	0.443 (0.110)

This table corresponds to table 5 in Plödt and Reicher (2014).
Standard errors are given in parentheses.
Source: Authors' estimates.

We start with the estimated fiscal reaction functions as a baseline. We then vary the degree in our rule to which normal fiscal policy must be augmented by consolidation when the debt-GDP is above a certain ratio. By doing this, we can see the extent to which different required degrees of fiscal consolidation in levels result in different debt and output paths. These different possible versions of our rule represent a starting point for thinking about this issue, and they do not represent the final word on this issue.

3. Forecasting methodology

We set up a simple framework for medium-run projections under different assumptions regarding the coefficients governing the fiscal rule as well as regarding a handful of key parameters. To do this, we first derive the counterfactual level of output that would prevail in the absence of meaningful fiscal policy. We assume that output is related to the primary balance and to the baseline level of output through a simple multiplier relationship. Then, based on the fiscal rule and the law of motion for debt, we jointly derive the equilibrium primary balance, level of debt, and level of output through time. By comparing the paths of these objects under different sets of assumptions, we can understand the role which different assumptions may play in affecting the likely future path of fiscal policy.

3.1. Deriving the baseline level of output

To account for the endogeneity of output, we derive a "zero-fiscal" baseline level of actual and potential output featuring no debt or primary net lending or borrowing. Zero-fiscal output is the

level of output that would prevail in the absence of any fiscal interventions. We assume that zero-fiscal output is exogenous to the fiscal policymaker.

First, we assume a simple multiplier relationship, where output is equal to zero-fiscal output Y^*_t plus the effects of the primary balance P_t mediated through a multiplier m, such that:

$$Y_t = Y^*_t - mP_t \tag{3}$$

Similarly, potential output is equal to zero-fiscal potential output $\overline{Y}^*_t$ plus the effects of the long-run (potential) primary balance $\overline{P}_t$ mediated through a multiplier m, such that:

$$\overline{Y}_t = \overline{Y}^*_t - m\overline{P}_t. \tag{4}$$

where $\overline{P}_t$ is given by the formula:

$$\overline{P}_t = \left(\frac{(1+\overline{\imath}_t)}{(1+\overline{\pi}_t)(1+\overline{g}_t)} - 1\right) B_{t-1}, \tag{5}$$

where $\overline{\imath}_t$ and $\overline{\pi}_t$ equal the assumed trend interest rate and trend inflation rate, respectively.

We calculate zero-fiscal actual and potential output in this manner through 2014, based on forecasts published by the European Commission. We then calculate the zero-fiscal log output gap, which is equal to $log(Y^*_t/\overline{Y}^*_t)$. We assume that in the years beyond 2014, the zero-fiscal log output gap is equal to 0.8 times its previous value, and that zero-fiscal potential output grows at its trend rate $\overline{g}_t$. We then calculate the path of zero-fiscal output Y^*_t implied by these two laws of motion. This value is used as an input into the next step.

3.2. Forecasting the primary balance and output level

Equations (2) and (3) jointly determine the equilibrium fiscal balance in the years after 2014. By combining the two equations and using our forecast values of Y^*_t, we generate our forecast value of P_t which satisfies the condition:

$$P_t = \frac{1}{1+mj_t}(Y^*_t j_t - aY_{t-1}), \tag{6}$$

where:

$$j_t = \frac{P_{t-1}}{Y_{t-1}} + c\Delta\frac{B_{t-1}}{Y_{t-1}} + d^{CR}\left(\frac{B_{t-1}}{Y_{t-1}} - b^{CR}\right) + a\left(\frac{1}{1+\bar{g}_t}\right) + \varepsilon_t. \quad (7)$$

We assume that the white noise process ε_t is set to zero in the future. Given a value of P_t from (6), we calculate Y_t using (3). Finally, we calculate the end-of-period debt stock using the law of motion:

$$B_t = \frac{(1+i_t)}{(1+\pi_t)}B_{t-1} - P_t. \quad (8)$$

We iterate through these steps beginning in 2015 (the year in which we assume the fiscal rule to take effect) and then for every following year in the subsequent two decades.

4. The effects of different fiscal rules

4.1. Specification of convergence scenarios

We first simulate the path of the debt-GDP ratio and the primary balance-GDP ratio under our rule in first differences using potential output as a structural indicator, for both country-specific and euro area-wide fiscal rule coefficients. We then conduct an exercise to see what role the choice of different coefficients d^{CR} on the excess debt level may play, for a range of realistic values for that coefficient in conjunction with the euro area-wide fiscal rule coefficients. We argue that the choice of d^{CR} faces a tradeoff between medium-run debt stabilization and the desire for an accommodative fiscal policy path in the medium run. We choose coefficient values of d^{CR} that are in line with the euro area-wide estimates of Plödt and Reicher (2014). Estimates for individual countries of d^{CR} are not available due to the limited experiences of many individual countries above the 60 percent threshold.

We always assume a debt criterion of $b^{CR} = 0.6$ and a fiscal multiplier of $m = 0.9$. We allow the other parameters to vary. We calibrate our other parameter values to reflect the recent experiences of the countries in question. For the baseline values of $1+\bar{g}_t$ and $1+\bar{\pi}_t$ we use the geometric mean of gross growth in potential GDP and in the GDP deflator over the period 1999-2012, which includes periods both before and after the crisis. In the same vein,

we assume that the trend interest rate $\bar{i}_t$ equals its mean over the period 1999-2012. Table 2 summarizes the baseline calibration. We investigate the effects of different assumptions regarding these quantities in the subsequent section.

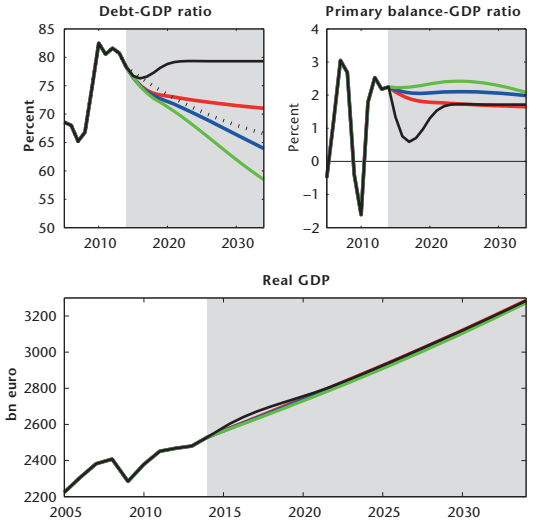
Table 2. Baseline calibration of additional parameters

Country	$(1+\bar{g}_t)$	$(1+\bar{\pi}_t)$	$(1+\bar{i}_t)$	$\frac{(1+\bar{i}_t)}{(1+\bar{\pi}_t)\,(1+\bar{g}_t)}$
Germany	1.0129	1.0089	1.0440	1.0216
Italy	1.0069	1.0207	1.0493	1.0210
Spain	1.0235	1.0274	1.0463	0.9950
France	1.0155	1.0180	1.0433	1.0092

Source: Authors' estimates.

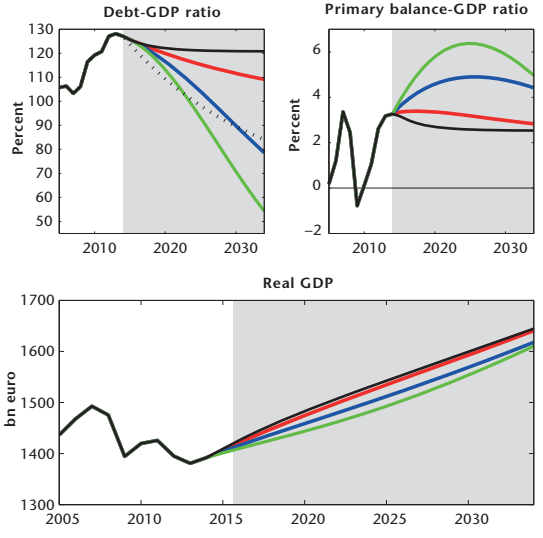
Figures 1 through 4 show the projections for Germany, Italy, Spain, and France, respectively, under four calibrations of the fiscal rule. For each of these figures, we plot the path of the debt-GDP ratio in the upper left panel and the path of the primary balance-GDP ratio in the upper right panel. Projections for real GDP are displayed in the bottom panel of each figure. In addition, we compare the implied debt paths with those given by a simple "1/20" rule according to the Fiscal Compact. We have attempted to compute paths of the primary balance and of output which would support the "1/20" debt path. Unfortunately, for high debt-multiplier combinations such as those encountered in our simulations, we find that such paths do not in general exist. The main problem lies in that the debt-GDP ratio consists of two parts – a debt part and a GDP part. Above a certain debt threshold, an attempted fiscal contraction actually raises the debt ratio on impact, through multiplier effects on output. For realistic parameter values, a strict adherence to the "1/20" debt path in fact leads to explosive oscillations in output, the primary balance, and the level of the debt. We hope to address this important issue in future work related to the design and implementability of fiscal rules, restricting our current exercise to a simulation of a primary balance rule calibrated to past data.

Figure 1. Projections for Germany under fiscal rule
Implications of different designs of the fiscal rule



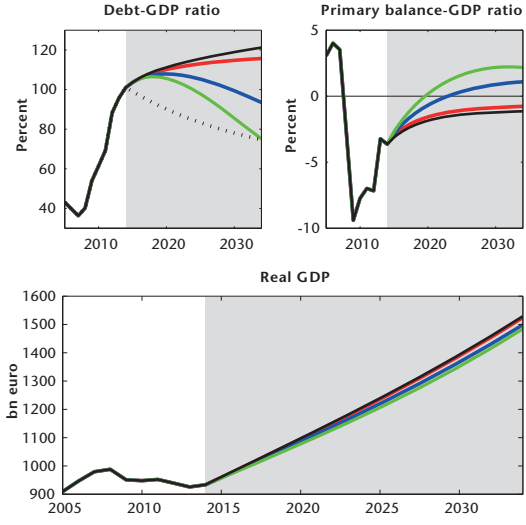
Black, solid line: Country-specific estimates of a and c, no correction factor (scenario 1). *Red, solid line:* EA-wide estimates of a and c, no correction factor (scenario 2). *Blue, solid line:* EA-wide estimates of a and c, d^{CR}=0.005 (scenario 3). *Green, solid line:* EA-wide estimates of a and c, d^{CR}=0.01 (scenario 4). *Black, dotted line:* "1/20" rule.

Figure 2. Projections for Italy under fiscal rule
Implications of different designs of the fiscal rule



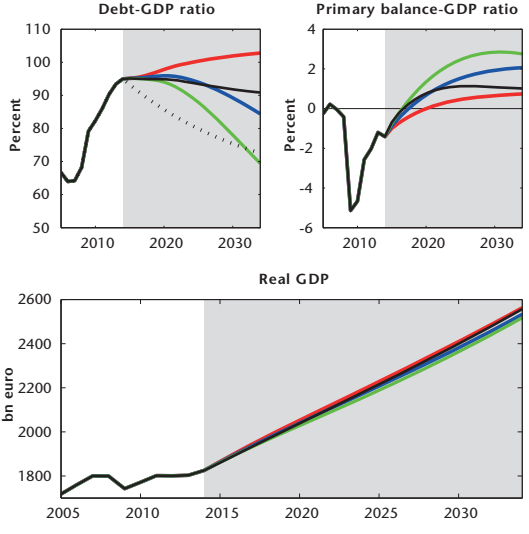
Black, solid line: Country-specific estimates of a and c, no correction factor (scenario 1). *Red, solid line:* EA-wide estimates of a and c, no correction factor (scenario 2). *Blue, solid line:* EA-wide estimates of a and c, d^{CR}=0.005 (scenario 3). *Green, solid line:* EA-wide estimates of a and c, d^{CR}=0.01 (scenario 4). *Black, dotted line:* "1/20" rule.

Figure 3. Projections for Spain under fiscal rule
Implications of different designs of the fiscal rule



Black, solid line: Country-specific estimates of a and c, no correction factor (scenario 1). *Red, solid line:* EA-wide estimates of a and c, no correction factor (scenario 2). *Blue, solid line:* EA-wide estimates of a and c, d^{CR}=0.005 (scenario 3). *Green, solid line:* EA-wide estimates of a and c, d^{CR}=0.01 (scenario 4). *Black, dotted line:* "1/20" rule.

Figure 4. Projections for France under fiscal rule
Implications of different designs of the fiscal rule



Black, solid line: Country-specific estimates of a and c, no correction factor (scenario 1). *Red, solid line:* EA-wide estimates of a and c, no correction factor (scenario 2). *Blue, solid line:* EA-wide estimates of a and c, d^{CR}=0.005 (scenario 3). *Green, solid line:* EA-wide estimates of a and c, d^{CR}=0.01 (scenario 4). *Black, dotted line:* "1/20" rule.

In our current simulations, we distinguish between the following different scenarios in terms of the design of the fiscal rule:

1. Country-specific estimates for the pre-crisis response to the business cycle a and to debt growth c (see Table 1). The debt level correction factor d^{CR} is set to zero. This baseline scenario is intended to illustrate a fiscal rule based on the individual characteristics of each euro area country's fiscal policymaking process.
2. Euro area-wide estimates for the pre-crisis response to the business cycle a and to debt growth c (see Table 1). The debt level correction factor d^{CR} is set to zero. This scenario allows for a comparison between the fiscal policy paths implied by country-specific fiscal policy and an average euro area-wide fiscal policy process.
3. Euro area-wide estimates for the pre-crisis response to the business cycle a and to debt growth c (see Table 1). The debt level correction factor d^{CR} is set to 0.005, which is within the confidence bands presented by Plödt and Reicher (2014).
4. Euro area-wide estimates for the pre-crisis response to the business cycle a and to debt growth c (see Table 1). The debt level correction factor d^{CR} is set to 0.01, which is double the value from the previous scenario.

4.2. Results for different convergence scenarios

Projections for all four countries suggest a high sensitivity of the path of the debt-GDP ratio to small changes in d^{CR} over a twenty-year forecast horizon, with the larger differences coming later in the horizon. Projections for Germany (Figure 1) suggest that a fiscal rule calibrated to scenario 1 or scenario 2 would result in a rapid stabilization of the debt-GDP ratio at a level near 80 percent (scenario 1) or 70 percent (scenario 2). The difference between these two debt paths comes about because Germany would be expected to reduce its primary surplus more rapidly under scenario 1 than under scenario 2 in response to a rapid fall in the debt-GDP ratio early during the forecast period. Increasing d^{CR} from zero to 0.005 (scenario 3) would result in a debt-GDP ratio of about 65 percent in twenty years, while increasing d^{CR} to 0.01 (scenario 3) seems sufficient to reduce the debt-GDP ratio to below 60 percent within the next twenty years. All four scenarios imply a path for the primary

surplus that does not exceed three percent of GDP, with longer-term primary surpluses all relatively close to their current values.

For Italy, the different fiscal rule scenarios would imply a much wider range of variation in the paths of future debt and primary balances (Figure 2). Scenarios 1 and 2 would result in a debt-GDP ratio in twenty years' time of about 120 percent and 110 percent, respectively, with a primary surplus stabilized at about three percent of GDP. The future path of the debt-GDP ratio is extremely sensitive to d^{CR}. A value of 0.005 (scenario 3) would reduce Italy's debt-GDP ratio to about 80 percent in twenty years, and a value of 0.01 (scenario 4) would result in a debt-GDP ratio below 60 percent. However, both of these rules would require a primary surplus ratio of about five percent and over six percent of GDP, respectively. Were Italy to credibly reduce its debt-GDP ratio below 60 percent in twenty years, it would require an ambitious degree of fiscal austerity in the medium term. Note that the medium-run debt-GDP ratio implied by scenario 4 would be relatively close to the ratio based on a simple "1/20" rule, with the "1/20" rule requiring a more aggressive rate of debt reduction in the shorter run.

Projections for Spain (Figure 3) all point toward a persistently high debt-GDP ratio in the medium run, as Spain must first slow the growth in its debt-GDP ratio before actively working to reduce it. Scenarios 1 and 2 would result in a debt-GDP ratio which would level off at about 120 or 110 percent, respectively, in twenty years. Even with larger consolidation coefficients (scenarios 3 and 4), the debt ratio does not fall below 60 percent within twenty years, although it begins to fall rapidly in the later years. Spanish fiscal consolidation is accomplished at first with a slow move toward small primary surpluses from large primary deficits. While Italian fiscal consolidation faces challenges from the size of the surpluses required to significantly reduce the debt-GDP ratio, Spanish fiscal consolidation faces fewer challenges along that particular dimension. Under all four scenarios, Spain would be allowed to run substantial primary deficits in the short run.

Projections for France (Figure 4) depend strongly on assumptions regarding d^{CR}. Projections without an explicit level component (scenarios 1 and 2) seem to result in debt-GDP ratios which stabilize around 90 or above 100 percent of GDP, respectively. Under scenario 3, the debt-GDP ratio remains near

85 percent after twenty years, while under scenario 4, the debt-GDP ratio falls to nearly 70 percent. While none of these scenarios results in a debt-GDP ratio below 60 percent, scenario 4 results in a significant reduction of the debt-GDP ratio. Scenario 4 would require a primary surplus ratio of about three percent of GDP in the medium run while allowing for short-run deficits.

Altogether, based on the four scenarios, a debt reduction coefficient d^{CR} of 0.01 would substantially set the debt ratio onto a sustained downward path in all four countries. For two of the four countries, the debt ratio would not reach 60 percent after twenty years, although it would fall significantly from current levels. For Italy, such a degree of consolidation would come at the cost of a primary balance in excess of six percent of GDP, which is extremely high compared with historical experience for advanced countries. For the other three countries, consolidation would not have nearly such drastic implications for the primary balance. For France and especially Spain, consolidation would happen gradually, with a slow transition from primary deficits to primary surpluses occurring over several years. Differences in the level of real GDP are relatively minor across scenarios, with Italy again being the main exception. Here, the medium-run level of real GDP under scenario 4, would be around 2 percent smaller than under scenario 1.

5. Effects of growth and interest rate scenarios

5.1. Specification of growth and interest rate scenarios

To illustrate the relationship among fiscal policy, growth, and interest rates, we first note that the law of motion (8) implies the following law of motion for the debt-GDP ratio:

$$\frac{B_t}{Y_t} = \frac{(1+i_t)}{(1+\pi_t)(1+g_t)}\frac{B_{t-1}}{Y_{t-1}} - \frac{P_t}{Y_t}, \tag{9}$$

where $1+g_t$ equals the gross growth rate of output Y_t/Y_{t-1}. In order to maintain a constant debt-GDP ratio, the primary balance ratio must be given by:

$$\frac{P_t}{Y_t} = \left(\frac{(1+i_t)}{(1+\pi_t)(1+g_t)} - 1\right)\frac{B_{t-1}}{Y_{t-1}}. \tag{10}$$

Based on equation (10), the primary balance ratio necessary to maintain a stable debt ratio is increasing in the debt ratio and interest rates and decreasing in inflation and growth.

Based on the logic of equation (10), we quantitatively evaluate three additional scenarios, using scenario 1 as a baseline. To the degree that different growth and interest rate scenarios affect the constraints faced by governments, future fiscal policy must adjust to accommodate these realities. The additional scenarios are as follows:

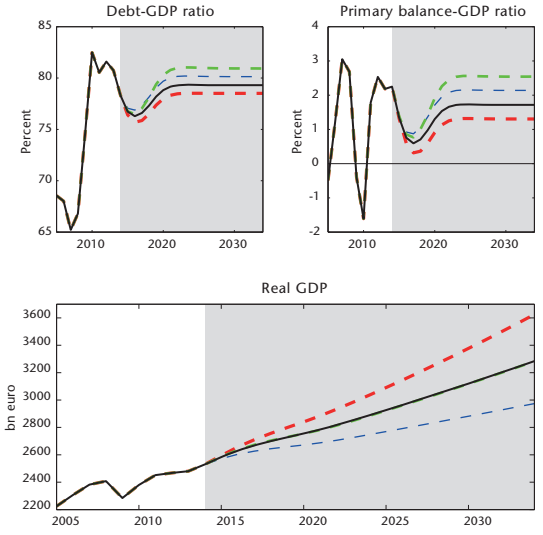
5. Scenario 1, but with potential growth 0.5 percentage points higher than previously projected.
6. Scenario 1, but with potential growth 0.5 percentage points lower than previously projected.
7. Scenario 1, but with trend interest rates 1 percentage point higher than previously projected.

Given the obvious uncertainty particularly with regard to long-run growth paths, scenarios 5 through 7 might offer some information about the robustness of the fiscal policy projections under scenario 1.

5.2. Results for different growth and interest rate scenarios

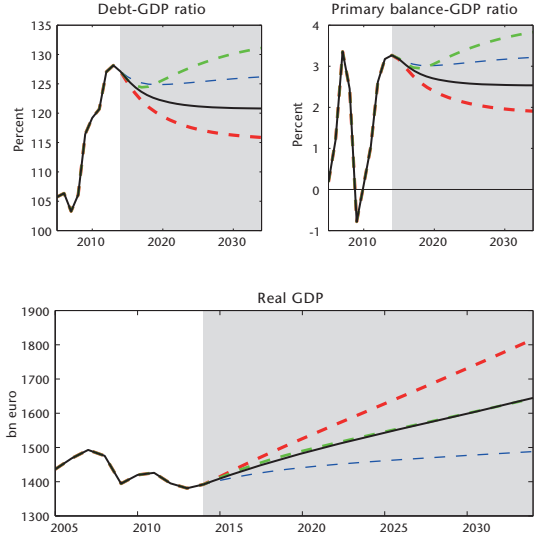
Figures 5 through 8 examine the effects of these three different scenarios in comparison with scenario 1. In all four cases, as expected, a higher growth projection results in a somewhat lower debt-GDP ratio with a somewhat lower primary surplus. A lower growth projection results in a somewhat higher debt-GDP ratio with a somewhat higher primary surplus. The effects are somewhat larger in absolute terms in countries with a higher debt ratio, such as Italy, and somewhat smaller in countries such as France and Germany. As with lower growth, a higher interest rate also affects the future path of fiscal policy in all four countries. Not surprisingly, a higher interest rate will result in a higher debt-GDP ratio and a higher primary balance required to stabilize that ratio. Again, the effects of higher interest rates are larger in absolute value for countries with a higher debt level, with a one percentage point higher interest rate pushing the Italian primary surplus by the end of the forecast period up toward a level close to four percent of GDP. This is in the absence of any meaningful consolidation in debt levels. In contrast, a higher interest rates only marginally affects countries' future path of real GDP.

Figure 5. Projections for Germany under fiscal rule
Implications of different macroeconomic projections



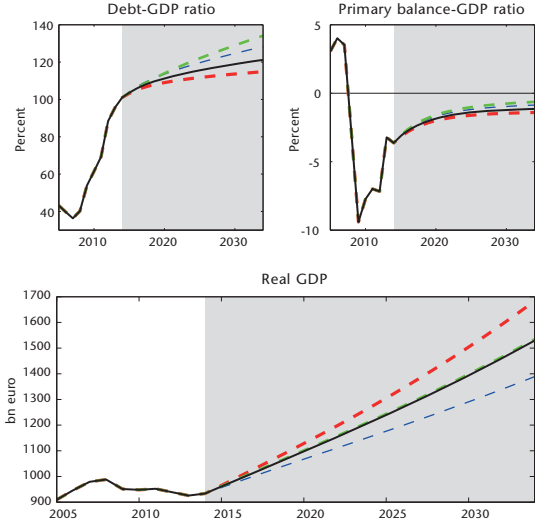
Black, solid line: Country-specific estimates of *a* and *c*, no correction factor (scenario 1). *Red, dashed line:* Growth projections 0.5 percentage points higher (scenario 5). *Blue, dashed line:* Growth projections 0.5 percentage points lower (scenario 6). *Green, dashed line:* Interest rate projections 1 percentage point higher (scenario 7).

Figure 6. Projections for Italy under fiscal rule
Implications of different macroeconomic projections



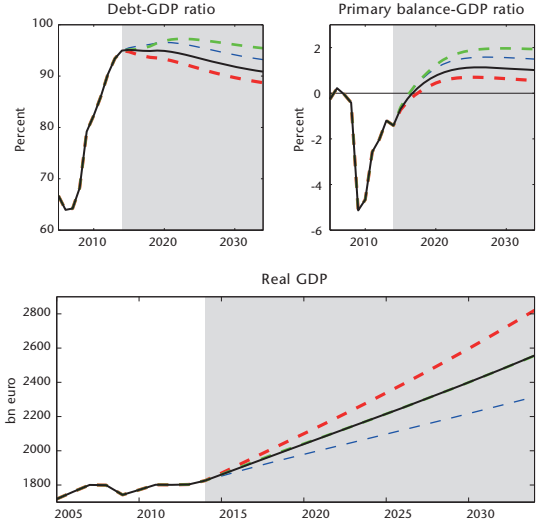
Black, solid line: Country-specific estimates of *a* and *c*, no correction factor (scenario 1). *Red, dashed line:* Growth projections 0.5 percentage points higher (scenario 5). *Blue, dashed line:* Growth projections 0.5 percentage points lower (scenario 6). *Green, dashed line:* Interest rate projections 1 percentage point higher (scenario 7).

Figure 7. Projections for Spain under fiscal rule
Implications of different macroeconomic projections



Black, solid line: Country-specific estimates of *a* and *c*, no correction factor (scenario 1). *Red, dashed line:* Growth projections 0.5 percentage points higher (scenario 5). *Blue, dashed line:* Growth projections 0.5 percentage points lower (scenario 6). *Green, dashed line:* Interest rate projections 1 percentage point higher (scenario 7).

Figure 8. Projections for France under fiscal rule
Implications of different macroeconomic projections



Black, solid line: Country-specific estimates of *a* and *c*, no correction factor (scenario 1). *Red, dashed line:* Growth projections 0.5 percentage points higher (scenario 5). *Blue, dashed line:* Growth projections 0.5 percentage points lower (scenario 6). *Green, dashed line:* Interest rate projections 1 percentage point higher (scenario 7).

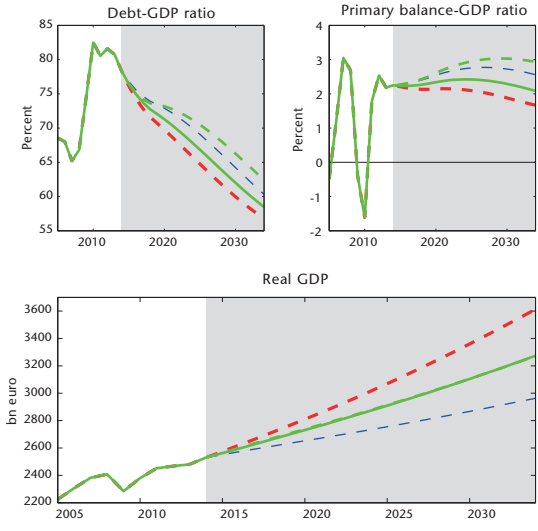
Scenarios 5 through 7 reflect the effects of different growth and interest rate outcomes on countries under a situation where they do not seek to consolidate the debt-GDP ratio to a level below 60 percent. To the extent that this remains a goal, we evaluate three more analogous scenarios taking this goal into account. Under these three scenarios, we start with scenario 4 (the euro area-wide fiscal rule with a consolidation coefficient d^{CR} of 0.01) as a baseline. These scenarios are as follows:

8. Scenario 4, but with potential growth 0.5 percentage points higher than previously projected.
9. Scenario 4, but with potential growth 0.5 percentage points lower than previously projected.
10. Scenario 4, but with trend interest rates 1 percentage point higher than previously projected.

These scenarios enumerate the constraints faced by policymakers who wish to significantly reduce their debt levels under different possible growth and interest rate outcomes.

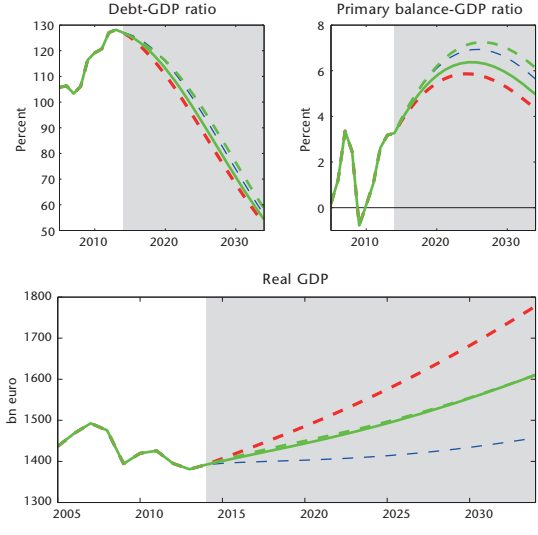
Figures 9 through 12 describe the different paths of the debt-GDP ratio and primary balance-GDP ratio under scenarios 8 through 10 against a baseline of scenario 4. As expected, a higher growth rate again puts less pressure onto fiscal policymakers to run primary surpluses, while a lower growth rate or higher interest rate would result in higher primary surpluses required to reduce the debt. Under all of these scenarios, the debt-GDP ratio follows a similar path relative to scenario 4, for all four countries. What differs is the primary balance required to support these debt paths. In Germany, Spain, and France, the primary surplus required to support these debt paths remains below four percent of GDP throughout the forecast horizon. For Italy, the situation is different. Scenario 4 already requires a primary surplus above six percent of GDP at its peak. A more favorable growth path (scenario 8) would result in primary surpluses below those under scenario 4, though still in excess of five percent of GDP at its peak. A less-favorable growth path (scenario 9) or interest rate path (scenario 10) would put yet more pressure on Italy to run extremely large primary surpluses. To the extent that governments face constraints against running such large primary surpluses, Italy may experience difficulties in implementing a fiscal rule that features strong consolidation in the level of debt if potential growth were to fall below its baseline rate.

Figure 9. Projections for Germany under fiscal rule
Implications of different macroeconomic projections



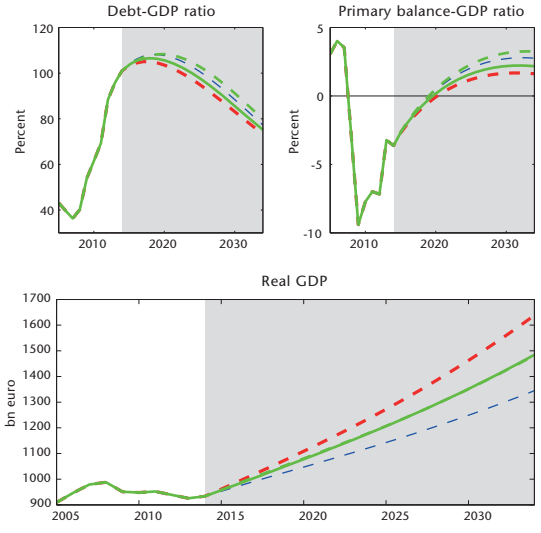
Green, solid line: EA-wide estimates of a and c, d^{CR} = 0.01 (scenario 4). *Red, dashed line:* Growth projections 0.5 percentage points higher (scenario 8). *Blue, dashed line:* Growth projections 0.5 percentage points lower (scenario 9). *Green, dashed line:* Interest rate projections 1 percentage point higher (scenario 10).

Figure 10. Projections for Italy under fiscal rule
Implications of different macroeconomic projections



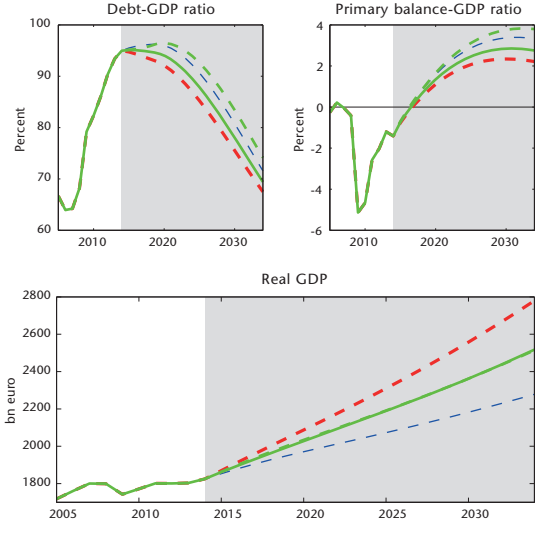
Green, solid line: EA-wide estimates of a and c, d^{CR} = 0.01 (scenario 4). *Red, dashed line:* Growth projections 0.5 percentage points higher (scenario 8). *Blue, dashed line:* Growth projections 0.5 percentage points lower (scenario 9). *Green, dashed line:* Interest rate projections 1 percentage point higher (scenario 10).

Figure 11. Projections for Spain under fiscal rule
Implications of different macroeconomic projections



Green, solid line: EA-wide estimates of a and c, d^{CR} = 0.01 (scenario 4). *Red, dashed line:* Growth projections 0.5 percentage points higher (scenario 8). *Blue, dashed line:* Growth projections 0.5 percentage points lower (scenario 9). *Green, dashed line:* Interest rate projections 1 percentage point higher (scenario 10).

Figure 12. Projections for France under fiscal rule
Implications of different macroeconomic projections



Green, solid line: EA-wide estimates of a and c, d^{CR} = 0.01 (scenario 4). *Red, dashed line:* Growth projections 0.5 percentage points higher (scenario 8). *Blue, dashed line:* Growth projections 0.5 percentage points lower (scenario 9). *Green, dashed line:* Interest rate projections 1 percentage point higher (scenario 10).

6. Conclusion

We have explored a number of different scenarios regarding the future path of fiscal policy in four major euro area countries using a simple and flexible fiscal rule, based on the past behavior of fiscal policy. This rule features a strong degree of anti-cyclical fiscal policy, consolidation in debt growth, and possibly consolidation in debt levels. Our results with respect to different fiscal rules indicate that subtle differences in the debt level consolidation coefficient d^{CR} may have large effects on the path of the future debt-GDP ratio over a horizon of twenty years. For countries such as Italy, a high rate of debt consolidation would come at the cost of an extremely high ratio of the primary surplus to GDP. For Germany, Spain, and France, consolidation in the debt level toward the 60 percent cutoff would not require such large primary surpluses. In all four countries, under the rule that we analyze, consolidation would occur incrementally, so that a rapid increase in primary surpluses does not occur at the outset.

The level of the primary surplus needed in order to stabilize and reduce the debt ratio varies positively with the interest rate and negatively with the growth rate of real GDP. However, even if potential growth were to improve by 0.5 percentage points per year, a rapid pace of consolidation in Italy would still require a primary surplus ratio above five percent of GDP. Under a variety of growth and interest rate assumptions, Germany, Spain, and France would still require a primary surplus below four percent of GDP. We caution that our results assume away any other fiscal policy shocks or business cycle shocks. Our forecasts, therefore, should be viewed as a rough guide as to the characteristics of different consolidation scenarios based on past behavior, rather than as providing a full set of stochastic confidence intervals.

A useful set of extensions to our exercise would be to compare our results with those from alternative fiscal rules, in order to illuminate the tradeoffs policymakers face when choosing the form of a fiscal rule. Our attempts to simulate the "1/20" rule indicate that a poorly-designed rule might actually destabilize the economy at worst or be unenforceable at best. We believe that given that a fiscal rule is desired, a flexible, simple rule that substantially resembles past behavior would be more likely to succeed. Our results also indicate that an accurate reading of the potential growth rate in

the economy may help to produce significantly more precise projections of future primary balances. The accurate estimation of potential growth is a particular issue in countries such as Spain (as well as Ireland and Greece). The difficulty of measuring potential growth and the level of the output gap in real time may lead to misleading inferences regarding future fiscal pressures.

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HOW DIFFERENT ARE THE FISCAL POLICY EFFECTS?

ASSESSING THE IMPORTANCE OF CYCLICAL SITUATION, POLICY COORDINATION, COMPOSITION OF POLICY MEASURES AND COUNTRY-SPECIFIC FEATURES

Matti Viren[1]
University of Turku, Bank of Finland

It is well-known that estimates of fiscal policy effects differ a lot. In this paper we try get some idea of the magnitude of these differences and the underlying reasons for these differences. In the European Monetary Union we face wide cross-country differences in fiscal institutions and key fiscal parameters, some of which may also vary over time (business cycle). Moreover, these effects may also depend on trade spillover effects and thus on the extent of policy coordination. Our empirical analyses make use of data for 15 EU countries, mainly for the period 1970-2011. The results clearly indicate that fiscal multipliers are much larger during economic recessions. By contrast, the policy coordination-effects appear to be more homogenous, although it turns out that small countries may benefit more from coordination. Still, cross-country differences seem to dominate these average features of the results.

Keywords: fiscal policy, policy coordination, government deficit, EMU

Fiscal policy in the EU faces a number of challenges. In the first place there are longer run pressures due to ageing and to the competition from countries such as China with low wage rates and

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e-mail: matti.viren@utu.fi.

seemingly abundant labor reserves. Second, several structural problems in terms of the function of the labor markets, production of public services and changing the industrial structure of the economy have hindered economic growth. Finally, the recent financial crisis has shown the vulnerability of the fiscal position of several EU countries due to problems of banking crisis, loss of competitiveness in the foreign trade, and an inability to control public expenditures and revenues.

We often pretend that we know pretty well how fiscal policies affect the economy, but if we spend some time in figuring out what are really the right values we easily find some problems. Although a simple Keynesian textbook model seems to give an unambiguous answer we have keep in mind that even that model provides different set of results depending on openness of the country, exchange rate arrangements and monetary policy not to speak about possible capacity constraints in terms of labor and capital. Government budget constraint makes also a lot of difference even in the case where we do not literally demand a balanced budget. The case becomes much more complicated if we consider intertemporal extension of the model and deal with expectations and beliefs. Another sort of complications is caused by possible time-invariances of basic relationships. The effect of policies can be very different in the case of normal times and great depressions when consumers and firms face more stringent budget and liquidity constrains due to rationing e.g. in the labor market. So even without the possibility of things like debt neutrality we would end up with a large menu of possible values for fiscal parameters (see e.g. Bénassy-Quéré *et al*. (2010) as a useful summary of the basic models and their properties).

It is not only the economic environment which makes the difference. Also the way of modeling the fiscal policy transmission mechanism shows up in the results. The most striking example is a prototype DSGE model into which the debt neutrality property is typically imposed. Even though we may soften the impact of debt neutrality in the short run this property dominates in the long-run. Thus it is really no point of using a DSGE model to evaluate the size of the fiscal multiplier unless one wants just to demonstrate the properties of some specific model. Other models are not, of course, free of this kind of *a priori* constraints. Already the way in

which long-run growth is modeled is important. In other words the question is, do we only model deviations from equilibrium growth path or actual growth.

Clearly, we need up-to-date estimates of the effectiveness of fiscal policy in different countries and different times. As for the size of the multipliers, we have several estimates which at least point roughly to the same direction; see Giavazzi and Pagano (1990), Blanchard and Perotti (2002), Romer and Romer (2010), Coenen *et al.* (2010), Barro and Redlick (2011). Of these, Romer and Romer (2010) and Giavazzi and Pagano (1990) represent the two extremes whereas the others come close to one in the short run and converge to zero in the long run. Because the underlying models are so different, this comparison is not fair but even so the truth is that the differences are strikingly large. This is also confirmed by a recent meta data study by Gechert and Will (2012).

It is more difficult to say whether the multipliers are time-invariant. Then at least from a single country perspective the most compelling question is, whether the fiscal multipliers are the same in booms and recessions. We already have quite fair amount of evidence that the multipliers are not constant; see Auerbach and Gorodnichenko (2012) for striking differences between boom and bust values. Ilzetzki *et al.* (2011) and Corsetti *et al.* (2012) provide ample evidence of violations of invariance, especially in terms of exchange rate arrangements, level of debt and financial crises. It is also evident that the composition of taxes and spending can make a big difference Alesina and Perotti (1997) as can the manner in which the fiscal actions are carried out (gradual or one-for-all changes in relevant policy parameters; see IMF, 2010; Broadbent and Daly, 2010).

Another issue that remains largely unexplored concerns policy coordination: how much of a difference does it make if certain types of policies are pursued in several countries instead in a single country? Of course we know something of the consequences of policy coordination (see e.g. Branson *et al.*, 1990; Canzoneri and Minford, 1988; Kehoe, 1987-1988; Oudiz and Sachs, 1984; Rogoff, 1985) for some key references and Bénassy-Quéré *et al.* (2010) for a nice summary of basic results), but we know little of the empirical facts. This is mainly due to the difficulty of evaluating the benefits from coordination. We would really need a multi-country model

to obtain the relevant estimates. Unfortunately, we have relatively few models that can be used for this purpose. In this study we tackle this problem by using (in addition to a multi-country structural model) a set of reduced form models that include cross-country dependencies.

Thus far, the EU has not attempted fiscal coordination in the strict sense – there are no directives telling the member states how fiscal policy is to be set as part of some annual "plan" – albeit we do have what the European Commission (2002) describes as "weak co-ordination" *via* the Broad Economic Policy Guidelines (BEPG). There are also rules on budgetary balances laid out in the SGP (described by the European Commission (2002) as "strong co-ordination"). The BEPG has no legal force and relies on peer pressure for the achievement of budgetary balance. In contrast, the SGP has in principle some coercive powers but in fact no penalties have been imposed despite a deluge of breaches, and the whole pact has become a dead letter. The new 2011 Treaty (European Union, 2011) on stability, coordination and governance promulgates a definite change in the degree of coordination (even though it cannot be characterized as coordination but rather an attempt to speed up convergence) and creates the potential for a full convergence of fiscal policies. This treaty may also signal a convergence to a fiscal union in which government debt would be common to the union and some taxes could be federalized.

Here, we do not consider these presumably remote possibilities but concentrate instead on more technical findings on effects of coordinated fiscal policy effects. When we do this, we have to use historical data to estimate the relevant parameters. And then we have a problem which sounds like the Lucas critique. It boils down to questions such as: can we assume that the historical data just reflect purely non-coordinated fiscal policies in different countries and can we assume that the structure and parameters of the models is invariant in terms of the degree of policy co-ordination. These are tough questions and it is not at all obvious that the answer is yes.

All in all, the contribution of the paper is in the joint analysis of asymmetries in fiscal multipliers and policy coordination. Thus, we want to extend the single-country analysis towards an open-economy setting. In addition to these issues, also the nature of

cross-country differences (e.g., small vs. large countries) is scrutinized in the paper. Several different models are used to ensure that the results are not just model-specific. Model comparisons may also tell something about the level of uncertainty that is caused by the choice of the particular model. We try to get a reasonably good idea of the range of values of the relevant fiscal policy effects. If nothing else, this range may be used in assessing the nature of optimal policies in the Brainard uncertainty framework (Brainard, 1967). In the empirical analysis, we use data even up to 2012 and thus we can control the effects of the recent financial and debt crisis.

The structure of paper is straightforward. In section 1, we scrutinize the simple VAR model estimation results, mainly to quantify the cross-country differences and possible cyclical asymmetries (1.1), then make use of the multi-country model of the NIESR called NiGEM to examine the dependence of multipliers on country size and coordination (1.2), after which we use the IMF (2010) model to compare different consolidation strategies and also to scrutinize the asymmetry and coordination effects within this model (1.3). Finally we use the simple structural equations (reaction functions) for different fiscal variables to test for the asymmetry (invariance) property. Some concluding remarks follow in section 2.

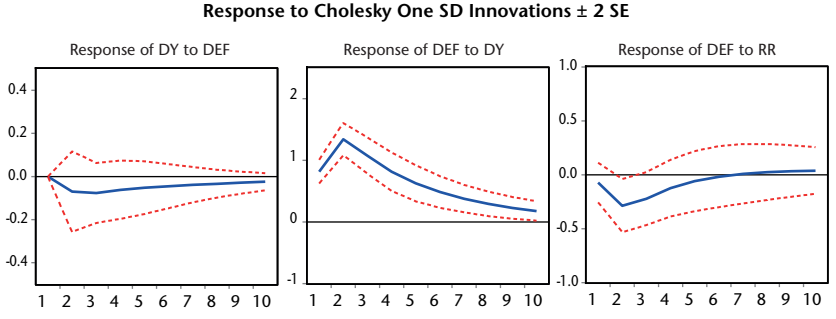
1. Empirical analyses

1.1. Time-series analysis

In analyzing the nature of asymmetry and coordination effects we used a set of slightly differing models to ensure that the results are reasonably robust in terms of model specification. As pointed out above, first we use relatively simple three-variable VAR models. Then we turn to the NiGEM multi-country model, to estimate the multipliers and scrutinize the effects of policy coordination. As an alternative to NiGEM we employ the recent IMF model (IMF, 2010) which is also used in Stehn *et al.* (2011) with the data from Devries *et al.* (2011). To examine the asymmetry issue, we also estimate a set of simple nonlinear (threshold) models for main fiscal variables from the data set of EU countries (using the same approach as in Mayes and Viren, 2011).

As a start, we specify and estimate a simple VAR model that has been used e.g. in Viren (2000). Our aim is not so much to get new multiplier estimates but rather to get an idea of the nature and magnitude of cross-country differences in fiscal policy transmission mechanisms. For this purpose, we estimated a three-variable VAR with output growth (DY), the real interest rate (RR) and the deficit-GDP ratio (DEF). Impulse responses were computed by the Cholesky decomposition (using variables the above ordering). The panel-data-based IRF values for 10 periods are presented in Figure 1 (estimates are based on annual data from EU15 countries for the period 1971-2011). We also estimated the models for each single country and computed average values for the impulse response functions. In the latter case, the results were virtually identical to the results illustrated in Figure 1; to save space we do not show them here.

Figure 1. Selected impulse responses from panel data



These are derived from a three-variable VAR that is estimated from cross-country panel data. The data consist of 15 EU countries and cover years 1971-2011.

By and large, the IRFs make sense in indicating that fiscal contraction does indeed reduce output substantially, though the multiplier appears to be less than one. On the other hand, a one percentage point (positive) shock to GDP growth increases the surplus to GDP ratio by more than a half percentage point in the short run. It is interesting to compare the IRFs over countries, especially because they appear to differ hugely for certain variables. This is especially true for the effect of government surplus/deficit on GDP growth. The average value of the correlation coefficients is practically nil (0.011). Slightly higher values are obtained for the correlations for real interest rate effects on output growth (0.145)

and real interest rate effects on government deficit (0.269) but only for the impulse responses of government deficit to output growth do we see reasonable similarity (the average value of IRF correlations is 0.779).

Clearly, the results tell us that fiscal policy transmission mechanisms do indeed differ widely as they reflect deeper differences in fiscal institutions, fiscal rules and structure of the economy. Again this fact emerges in the end of section 1.4 (Figure 8).

As for the sizes of the fiscal multipliers, they appear to be relatively small and time-variant. In this respect they are quite similar to those in Corsetti *et al.* (2012) who in summarizing their evidence point out "Output multipliers are virtually zero in our baseline" (p. 533). Indeed, when we estimate the value from the panel data representation for $\Delta y > 0$, the maximum value of the cumulative response multiplier is only 0.11. But when we scrutinize the negative values of output growth, $\Delta y < 0$, the corresponding maximum value of the multiplier is actually 1.18, which is obviously close to the "standard" value.[2,3]

1.2. Multi-country model simulations

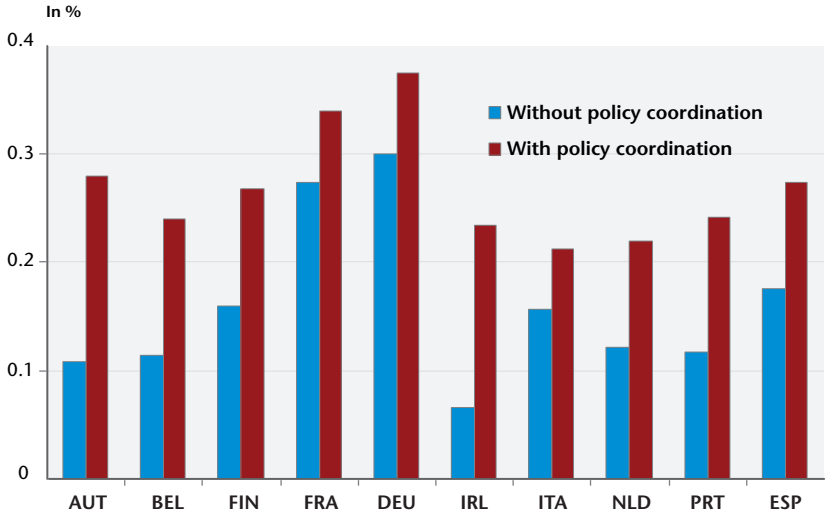
To assess the importance of policy coordination for policy effectiveness we used the NiGEM multi-country model to compare the effects of different fiscal policy actions in the single country setting and in the case of collective policy action.[4] In the simulations public consumption was first increased in all EU countries in an un-coordinated way (country-by-country).

In all cases the coordinated fiscal expansion produces an almost twice as large increase in output as does an uncoordinated fiscal expansion in the form of an increased volume of government consumption (Figure 2). As expected we find that, with uncoordi-

2. See Bénassy-Quéré *et al*. (2010) for more extensive comparison.
3. In comparing fiscal multipliers, we have to be somewhat cautious because some of them are based on the level of income, some on the growth rate of income and some on output gap which itself can computed in several different ways.
4. NiGEM is an estimated quarterly New-Keynesian macro model for almost all OECD countries and country blocks outside OECD (NIESR (1999). In evaluating the effects of fiscal policy, an obvious analytical framework is provided by (structural) VAR models (see Blanchard and Perotti,2002; Dalsgaard and De Serres,1999; Viren, 2000 and Ilzetzki *et al*., 2011). But because we concentrate here on the policy coordination problem, structural multi-country models are more convenient.

nated policy actions, small countries are not able to achieve much (mainly because of import leakage).

Figure 2. Maximum effects of a one per cent increase in public consumption on GDP with and without policy coordination



Source: NiGEM model simulations.

The multiplier values for uncoordinated fiscal policy effects in small countries are generally only about 0.5. For large countries, the values exceed unity but only slightly. The average value for all countries is 0.72 (with four lags) and 0.63 (with eight lags), and the average maximum value is 0.85. With coordinated policies, there is not much difference between small and large countries; the average multiplier value is 1.25 (with four lags) and 1.17 (with eight lags), and the average maximum value is 1.46. This represents an improvement for all countries, but especially for the smaller ones. The multiplier values (in the coordination case) are in fact quite close to the values obtained by Cohen and Follette (1999) with the US FRB/US macroeconomic model.[5] By and large

5. The Cohen and Follette (1999) value for US data (with four lags) was 1.23 which may be compared with our average EMU10 value of 1.25. When the tax rates were set to zero in the FRB/US model the multiplier increased to 1.35, which indicates how much (or how little) automatic stabilisers will affect the multiplier. Interestingly the multiplier value of 1.25 implies a relatively small marginal propensity to consume. Assuming the average tax rate is 0.4 we come to a marginal propensity to consume of about 0.3 only (or 0.4 if we account for imports).

they agree with the more recent DSGE model predictions (see Coenen *et al.*, 2010 and Freeman *et al.*, 2009). The Coenen *et al.* (2010) paper compares the results for different models while the Freeman *et al.* (2009) paper mainly compares the results for different countries using the IMF multi-country model.

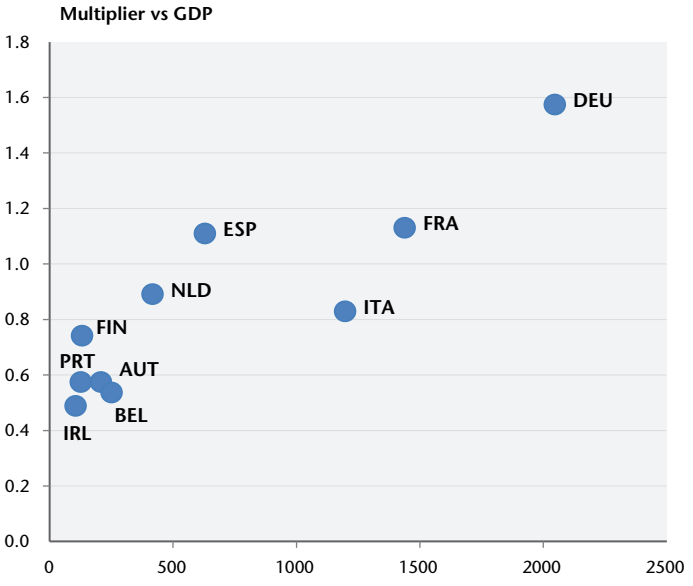
The values are a bit higher than the original SVAR values obtained by Blanchard and Perotti (1999), which are close to one. More recent analyses by Ilzetzki *et al.* (2011) with data from 45 countries find values which clearly encompass our predictions (their multiplier values are very different for closed and open economies as well as for fixed and flexible exchange rate countries). The multiplier values in the uncoordinated case are, of course very low (suggesting that the marginal propensity to spend out of income is very low and the income elasticity of imports is very high), but even for coordinated fiscal policies the multipliers are not particularly high, although they clearly indicate fiscal policies effectiveness. Note also that for coordinated policies the output effect diminishes more rapidly than for coordinated policies.

The effect of an increase in public consumption on government deficits is almost equally clear. Deficits increase, but because output also increases the effect on the deficit-GDP ratio differs from the pure deficit effect. The values for various countries are surprisingly different, reflecting the differences in output effects. In other respects, it is difficult to know why the country results differ so much (the country size and the public sector size do not seem to explain the magnitudes of the output and deficit effects).

As noted earlier, gains from coordination seem to be much larger for small countries (Figure 4) whereas large countries may manage well without coordination because of their higher multiplier values (Figure 3). This accords of course well with the textbook analysis of fiscal policy (the same result is obtained by Ilzetzki *et al.*, 2011). This country-size relationship obviously creates different incentives for small and large countries vis-à-vis policy cooperation and has interesting political economy implications for fiscal policy.

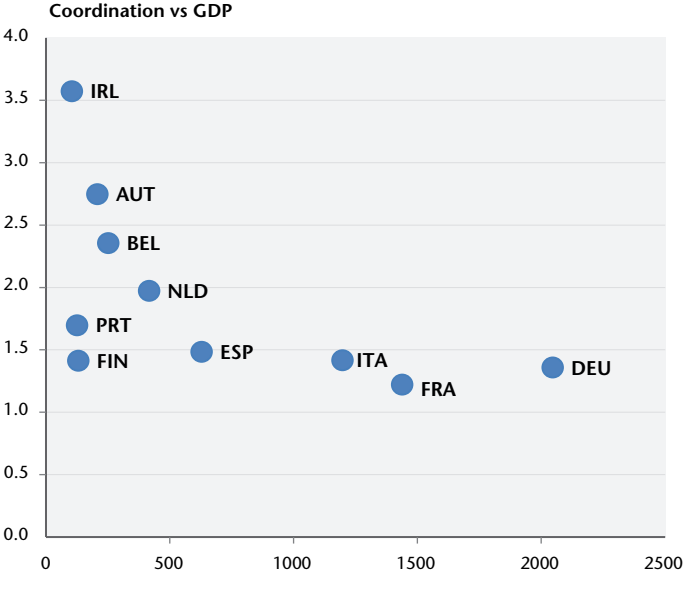
So far, we have considered only public consumption but the picture for direct taxes is very similar. Coordination makes great difference in output effects but the results are less clear for the

Figure 3. Country-size and effectiveness of fiscal policy



Values on the y-axis represent short-run (4-quarter) multipliers. GDP values (x-axis) are for year 2000.

Figure 4. Country-size and benefits of coordination



The y-axis indicates the ratio between the multipliers with coordinated and uncoordinated fiscal policies.

deficit-GDP ratio. The problem is with the output effects. When taxes are increased, output and income decrease, which eliminates part of tax revenues and – *ceteris paribus* – increases the deficit-GDP ratio because of lower output.

When dealing with fiscal policy simulation, an obvious question is what happens to interest rates. The answer provided by the NiGEM model is "not very much'. Thus, imposing the inflation targeting assumption for monetary policy produces only a five basis-point increase in long rates, with coordinated policies. In the case of uncoordinated policies, the result is virtually nil. This latter result obviously contrasts sharply with all the theory on credibility and peso effects (but not necessarily with empirical evidence; see *e.g.* Alesina *et al.*, 1992). The problem is that (with all models) it is difficult to account for direct expectations and portfolio effects. This weakness may also be crucial with regard to the assessment of policy coordination effects within the EU.

The implication of these results is interesting. On the one hand they show that it is the small countries that have most to gain from policy coordination. However, one can reverse the argument and say that the other countries have the least to lose if it is small countries which do not achieve a high level of coordination. Historically, coordination among the EU countries has been fairly weak except for the countries that track the Deutschemark. There will therefore have to be a considerable change in behavior if this is to occur in future. The (old and new) SGP may have only a limited effect here since limiting the size of deficits is only part of the problem. Indeed it is only when fiscal policy is not coordinated that this is likely to be a problem, as such anomalies occur mainly when small countries experience asymmetric shocks. Of course, small countries may have comparative advantage with other policies, take for instance wage policy.

1.3. The composition of fiscal policy measures

Now, we turn to the IMF (2010) model, which is basically a simple reduced form equation where the dependent variable is output growth and the right-hand-side variables consist of fixed country and time effects as well lagged output growth and fiscal consolidation indicators constructed separately for tax-based consolidation programs, spending-cuts-based programs and

combined consolidation programs. All of these are expressed in terms of GDP. One might argue that these data are more reliable than the conventional measures, based on the cyclically-adjusted primary balance.[6] This model has been estimated by several authors and institutes (e.g. Stehn *et al.*, 2011, and Alesina and Ardagna, 2012) using OECD data for 1979-2009. Using the original model as a point of reference, we write the estimating equation as:

$$\Delta y_t = a_0 + a_1 \Delta y_{t-1} + a_2 \Delta y_{t-2} + a_3 Fiscal_t + a_4 Fiscal_{t-1} + a_5 Fiscal_{t-2} + \textit{fixed time and cross-section effects} + u_t, \quad (1)$$

where y denotes log GDP, and Fiscal the size of fiscal consolidation – either in the form of taxes, spending cuts, or in total – all in terms of GDP. The set of equations is estimated in a panel data setting with a fixed effects specification. In the reported versions all country coefficients are set equal.

This set of equations was also re-estimated in our study with the most recent data set, 1970-2011, and the corresponding impulse responses are illustrated in Figure 5. As pointed out in the introduction, the most controversial result clearly comes from this set of impulse response functions: taxes hurt much more than spending cuts. Obviously, there are several reasons for this striking result, ranging from monetary policy effects to labor markets, importance of foreign trade and so on (see Alesina *et al.*, 2012). Here we are not, however, interested in challenging the basic results but in extending the testing equation to the open-economy setting in which several countries pursue (in a coordinated manner) similar fiscal policies and, further on, where the cyclical asymmetries are allowed to affect the estimates.

Equation (1) as such does not allow us to analyze the effects of policy coordination because the use of fixed effects makes foreign output exogenous. The nature of this effect comes clear when we compare the estimated fixed time effects with World GDP represented by the combined sum of sample country GDP's. Correlation between these two time series is as high as 0.94! Quite clearly, the fixed time effects correspond to the (omitted) World GDP! Of

6. These two alternative measures are compared by Guajardo *et al.* (2011). They find several weaknesses in the conventional measure and also that the measure may have a biased tendency to produce expansionary output effects for fiscal consolidation.

course, World GDP is not exogenous but equals the sample countries' GDP, so that we can respecify the basic model (1) as equation (2):

$$\Delta y_t = a_0 + a_1 y_{t-1} + a_2 \Delta y_{t-2} + a_3 \Delta y_{W,t-1} + a_4 Fiscal_t + a_5 Fiscal_{t-1} + fixed\ effects + u_t$$
$$with\ y_{W,t-1} = \Sigma b_i y_{it-1}, \qquad (2)$$

where the b_i's are country weights. The estimation results for equations (1) and (2) are reported in Table 1. A comparison of tax and spending simulations (impulse response functions) is shown in Figure 6.

Table 1. Estimation results with cross-country data 1970-2009

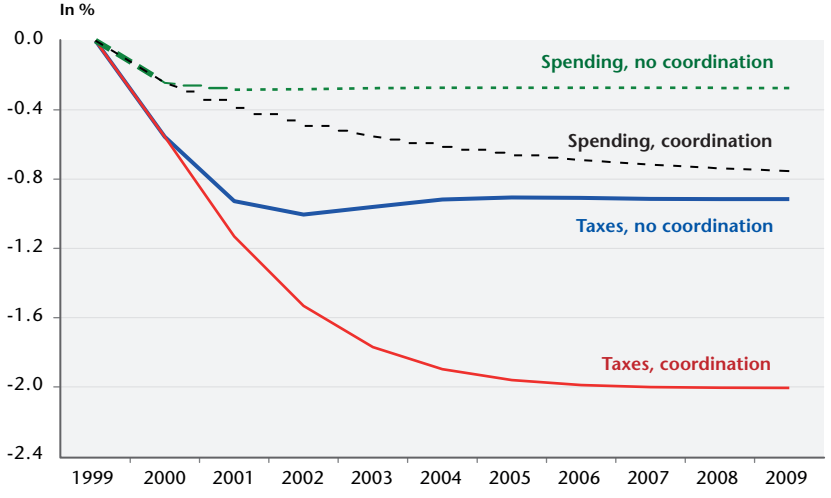
	1	2	3	4	5	6	7
Δy_{-1}	0.509	0.479	0.487	0.558	0.498	0.482	0.490
	(7.83)	*(7.57)*	*(7.81)*	*(7.53)*	*(7.81)*	*(7.62)*	*(7.77)*
Δy_{-2}	-0.122	-0.073	-0.086	-0.238	-0.099	-0.089	-0.108
	(1.46)	*(1.30)*	*(1.50)*	*(3.94)*	*(1.70)*	*(1.59)*	*(1.87)*
Fiscal	-0.337	-0.632	-0.298	-0.557	-0.245	-0.618	-0.277
	(1.86)	*(3.18)*	*(2.86)*	*(2.25)*	*(1.55)*	*(3.11)*	*(2.45)*
$Fiscal_{-1}$	-0.016	-0.456	-0.166	-0.062	0.082	-0.419	-0.057
	(0.54)	*(2.00)*	*(1.24)*	*(0.24)*	*(0.58)*	*(1.87)*	*(0.48)*
$Fiscal_{-2}$	0.223	0.130	0.235				
	(2.04)	*(0.69)*	*(2.05)*				
Δyw_{-1}				0.378	0.403	0.402	0.402
				(3.51)	*(1.62)*	*(1.62)*	*(1.61)*
R^2	0.706	0.689	0.686	0.370	0.352	0.346	0.351
SEE	1.332	1.363	1.372	1.883	1.393	1.365	1.381
DW	1.95	1.96	1.95	1.76	1.93	1.58	1.93
Fiscal	spend	tax	total	tax	spend	tax	total
Fixed effects	cf+tf	cf+tf	cf+tf	cf	cf+tr	cf+tr	cf+tr

Cf. Indicates fixed cross-section effect, tf fixed time effect, and tr in turn indicates random time effect. ΔyW is the growth rate of World GDP. Numbers inside parentheses are t-ratios. The dependent variable is the growth rate of GDP. In constructing the World variable, we used GDP weights although equal weights did make a dramatic difference. D|Δy<0 equals 1 if output growth is negative. All estimates are (nonlinear) Least Squares estimates.

The qualitative nature of results in terms of different consolidation strategies remains the same as with the simple fixed effects model, although the numerical values are somewhat different. But the interesting feature in these results is the outcome for policy coordination. As can be seen from Figure 5, policy coordination pays off; the long-run impact of consolidation is slightly more

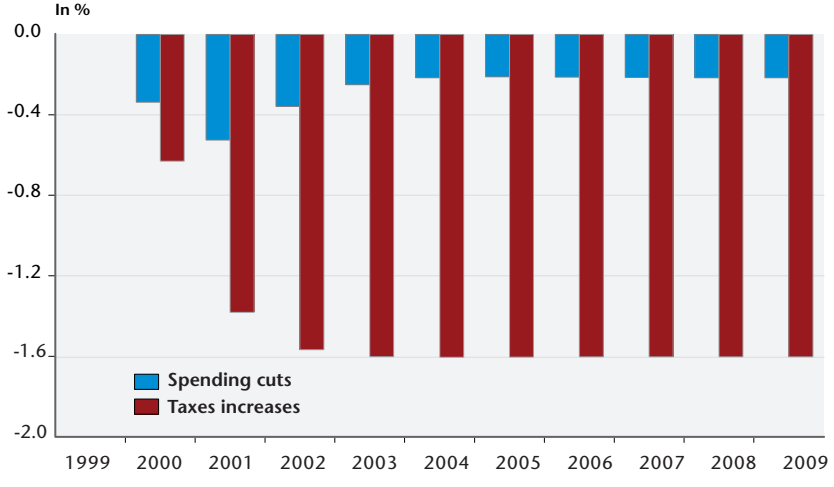
than two times bigger for coordinated policies – both with tax or spending-cut policies. In this respect, the results are quite similar to the NiGEM model results.

Figure 5. Effect of fiscal policy coordination on GDP



Values are based on equation (2).
Source: Author's estimates

Figure 6. Effect of spending cuts and taxes on GDP



Source: Author's estimates

1.4. Analysis of cyclical sensitivity

What about asymmetry with the IMF model? We tried to get an answer by using a simple threshold model structure that entitled two regimes for the fiscal consolidation effort, depending on whether GDP is increasing or decreasing. That is illustrated with simple threshold-type model estimates that are reported in Table 2. We use both a very simple single threshold for zero output growth rate, a multiple threshold with "corridor" between zero and 2 per cent output growth rates and, finally, a smooth transition threshold model (3) where the smoothing is done by a simple logistic function.[7] The parameters are selected so that they minimize the sum of squared residuals.

$$\Delta y_t = a_0 + a_1 \Delta y_{t-1} + a_2 \Delta y_{t-2} + a_3 Fiscal_t + a_4 Fiscal * (1/(1+e^{(-a5\Delta yt - a6)})) + fixed\ time\ and\ cross\text{-}section\ effects + u_t, \quad (3)$$

The result of these tests is strikingly clear. In "normal times" consolidation hurts very little whereas in economic depression the costs are very high irrespectively of the way consolidation is carried out. In fact, the coefficients of the linear "Fiscal" terms are not even statistically significant in the simple threshold specification, which also reflects the fact that in "good times" fiscal consolidation may not become overwhelmingly costly (in very good times (column 4), the cost is practically nil). Although the empirical evidence on asymmetry is not very compelling, here it nevertheless points in the same direction as the results of previous analyses and other analyses in this paper.

In our final attempt to measure the cyclical sensitiveness of fiscal policy parameters we estimate fairly simple deficit reaction equations from cross-country data. Here we deal with the following common specification for a set of fiscal variables (deficits, expenditures and revenues):

$$def/y = b_0 + b_1 def_{-1}/y_{-1} + b_2 \Delta y^- + b_3 \Delta y^+ + b_4 r + b_5 D_{-1}/y_{-1} + u \quad (4)$$

where *def* refers to the general government balance metric (positive values for surpluses and negative for deficits), *D* refers to ratio of general government debt to real GDP, *y,* and *r* the real interest rate (government bond yield minus inflation); *u* is an error term.

7. Those values (0, 2.0) minimize the sum of squares.

Equation (1) provides a characterization of fiscal behavior so that it reflects both automatic stabilizers and possible fiscal authorities' reactions. This kind of equation is often used in cross-country comparisons (see e.g. Mélitz, 1997; Buti and Sapir, 1998) because the main differences can be expressed by some key parameters that can be easily estimated. (4) is a straightforward example of a threshold model, where, in this case, the threshold is applied to the growth rate of GDP Δy. Thus, we have two regimes according to Δy (for positive (and negative) values of output growth denoted by Δy^{+} (and Δy^{-})); here it is assumed that only the coefficient of the output growth variable changes with a regime shift.

Table 2. Analysis of cyclical sensitivity of parameters

	1	2	3	4	5	6
Δy_{-1}	0.475 *(7.50)*	0.465 *(7.48)*	0.459 *(9.31)*	0.449 *(9.82)*	0.442 *(7.02)*	0.475 *(7.04)*
Δy_{-2}	-0.085 *(1.46)*	-0.065 *(1.16)*	-0.084 *(1.83)*	0.045 *(1.61)*	-0.071 *(1.20)*	-0.186 *(3.13)*
Fiscal	-0.064 *(0.52)*	-0.256 *(1.36)*	-0.116 *(1.04)*	-0.358 *(2.05)*	-1.180 *(3.27)*	-1.783 *(6.98)*
Δyw_{-1}						0.386 *(3.72)*
Fiscal* D|Δy<0*	-0.647 *(1.81)*	-1.428 *(3.04)*	-0.641 *(3.36)*	-0.471 *(2.11)*		
Fiscal* D|Δy>2				0.455 *(2.22)*		
Fiscal*ST					1.353 *(2.98)*	2.523 *(7.88)*
R^2	0.680	0.695	0.690	0.697	0.695	0.416
SEE	1.382	1.348	1.161	1.347	1.349	1.814
DW	1.95	1.97	1.95	1.95	1.95	1.68
Fiscal	spend	tax	total	total	total	total
Fixed effects	cf+tf	cf+tf	cf+tf	cf+tf	cf+tf	cf

The data and the notation is the same as in Table 1. D|Δy<0 equals 1 if output growth is negative. ST denotes thes-mooth transition threshold that here takes the form: (1/(1+exp(-66Δy -0.005))). In equation (4), the two multiplicative terms are clearly different from zero (x^2 = 24.18 (0.000)).

This set of equations is estimated from data for EU15 countries for the period 1971-2011(2012). The basic features of the data are illustrated in Figure 7.[8] The results for different definitions of defi-

8. As expected, we see a positive relationship between government balance (surplus) and output growth and, similarly between indebtedness and real interest rates. The data also shows a negative relationship between indebtedness and GDP growth (possibly even a nonlinear relationship between these variables).

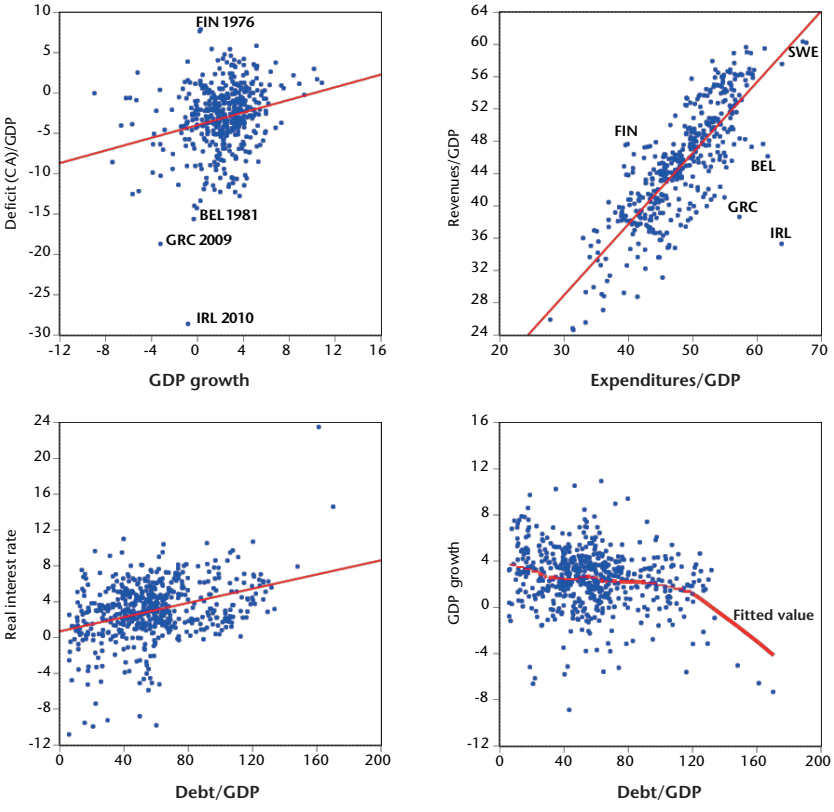
cits as well as of expenditures and revenues are reported in Table 3, which presents a comparison of linear and nonlinear models both terms of deficits and other fiscal variables (revenues and expenditures). The equations are estimated by OLS or GLS (Generalized Least squares to account for cross-country differences in error variances), with Nonlinear Least Squares (to account for the threshold in terms of output growth) and GMM (Generalized Method Moment to account for the dynamic panel effects).

Table 3. Evidence of Changing Fiscal Behavior

	Δy		Lagged def/y	$debt_{-1}$	r	R^2/ SEE	DW F(Wald)	Estimator J-stat
	0.466 *(11.02)*		0.821 *(28.82)*	0.022 *(5.52)*	-0.064 *(2.18)*	0.785 2.006	2.10	GLS
def/y	0.464 *(8.22)*		0.744 *(7.48)*	0.028 *(5.10)*	-0.106 *(2.52)*	0.789 2.032	2.00	OLS
def/y *)	0.396 *(6.69)*		0.797 *(16.61)*	0.029 *(4.62)*	-0.142 *(3.06)*	0.851 1.661	2.03	OLS
def/y **)	0.643 *(9.56)*		0.578 *(3.36)*	0.006 *(0.38)*	0.115 *(0.75)*	0.741 2.340	2.29	OLS
exp/y	-0.579 *(12.06)*		0.815 *(13.55)*	-0.017 *(2.13)*	0.121 *(3.22)*	0.932 1.850	2.11	OLS
rev/y	-0.091 (3.02)		0.867 *(38.11)*	-0.003 *(0.80)*	0.050 *(2.18)*	0.976 1.111	1.64	OLS
	Δy|Δy <0	***Δy|Δy >0***						
def/y	0.741 *(5.34)*	0.327 *(2.90)*	0.750 *(7.98)*	0.025 (4.21)	-0.104 (2.52)	0.792 2.017	2.06 0.073	OLS
def/y *)	0.983 *(4.76)*	0.265 *(3.74)*	0.795 *(16.94)*	0.028 *(4.42)*	-0.141 *(3.11)*	0.856 1.636	2.09 0.009	OLS
def/y	0.776 *(11.21)*	0.405 *(8.03)*	0.536 *(4.22)*	0.060 *(3.40)*	-0.257 *(2.12)*	.. 2.683		GMM 30.9
Cyclically adjusted data								
defa/$\hat{y}$	0.282 *(2.89)*	0.027 *(0.60)*	0.826 *(24.74)*	0.018 *(4.78)*	-0.062 *(1.79)*	0.778 1.845	2.11 0.033	GLS
defa/$\hat{y}$	0.182 *(1.51)*	0.108 *(1.42)*	0.767 *(9.05)*	0.026 *(5.19)*	-0.057 *(1.09)*	0.782 1.780	2.02 0.654	OLS
defpa/$\hat{y}$	0.308 *(2.08)*	0.127 *(1.40)*	0.750 *(8.24)*	0.027 *(4.90)*	0.092 *(1.73)*	0.741 1.929	1.97 0.393	OLS
expa/$\hat{y}$	-0.081 *(0.75)*	-0.136 *(1.65)*	0.906 *(13.93)*	-0.029 *(3.58)*	0.047 *(1.07)*	0.917 1.725	2.12 0.880	OLS
reva/$\hat{y}$	0.117 *(1.84)*	-0.130 *(3.78)*	0.840 *(34.41)*	0.008 *(2.25)*	0.033 *(1.45)*	0.970 1.137	1.87 0.006	OLS

def denotes government balance in the sense of net lending (thus positive values represent surpluses), Δy the growth rate of GDP, $\hat{y}$ trend GDP, *exp* government expenditures, *rev* government revenues, and *debt* general government debt (all three in relation to GDP). *r* is the real interest rate in terms of government bond yields. "a" denotes cyclically adjusted data in def, rev and exp (for details of the adjustment procedure, see AMECO data base). defpa denotes cyclically adjusted primary deficit. OLS (GLS) denotes panel least squares (generalized least squares) estimator with fixed cross-section effects, and GMM the Arellano-Bond GMM estimator with first differences.
The sample period is1971-2011 expect for *) when the sample period is 1971-1998 and **) when the sample period is 1999-2011. Data source: AMECO data base. The cyclically adjusted data cover 1971-2012. F (Wald) gives marginal significance values for an F test of the parameter restriction $b_2 = b_3$.

Figure 7. Relationship between key variables in the panel data



The data cover the period 1971-2012.

We use both the conventional deficit-GDP ratio and the ratio of cyclically adjusted deficit (and other fiscal variables) to trend GDP, $\hat{y}$. The cyclically adjusted deficit gives an idea of the overall stance of fiscal policy, although it is difficult to specify the appropriate cyclical adjustment. It can be computed after the event but the policy stance is a forward looking concept that depends on a forecast of what the trend is likely to be over the medium term – something that often turn out to be wide of the mark. Even so, we use a well-established definition rather than entering the debate, especially since it is this definition that is used in the official EU discussions about the stance of policy (more precisely, the change in cyclically adjusted primary deficit relative to trend (or potential) GDP, which is used as an indicator of fiscal consolidation). Simi-

larly, while interest payments are a function of the overall stance, they too vary over the course of the cycle, with the fluctuations in interest rates and outstanding debt.

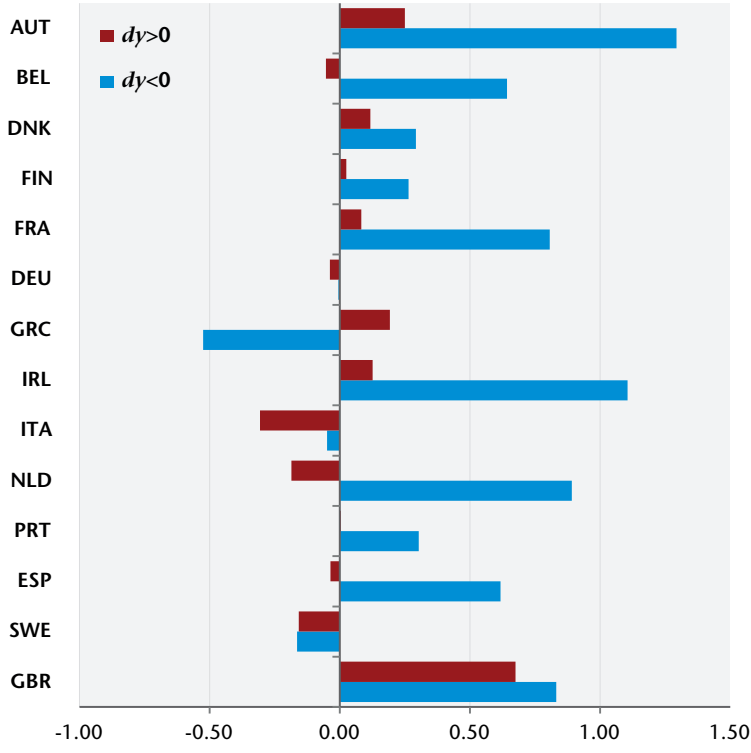
The main implications of the results can be summarized as follows. Fiscal policy seems to respond strongly to business cycles. Thus, the deficit elasticities with respect to output growth appear to be around 0.3-0.6 for a one-year horizon (more than that obtained by e.g. Melitz, 1997). But what is perhaps more important, there appears to be strong evidence of asymmetric cyclical behavior in government deficits. The effects of output on deficits seem to differ depending on the business cycle phase: they appear to be much stronger in contractions (falling output) than in expansions. The hypothesis of equal coefficients over the business cycle phases can be rejected.[9] The rejection is also clearly revealed in Figure 8, which illustrates the country-specific nonlinear coefficients of the output variable for deficit, expenditures and revenues (the figure is based on single-country estimates of equations (3)). The cross-country differences are indeed large which may also explain why some of the key parameters in (3) cannot be estimated with high precision.

This combination of asymmetry and large cross-country differences pose serious challenges for common policy, as well as for policy coordination. Policy cannot be based solely on mean values of the cross-country data; and the whole distribution of country values must to be taken into account. Needless to say, this makes all coordination efforts very difficult because simple rules are no longer very useful (for more details, see Mayes and Viren, 2011).

The different cyclical effects show up in both revenues and expenditures. Revenues seem to behave quite asymmetrically in contractions and expansions. Thus, when output increases, revenues increase less than trend output, whereas in recessions revenues decrease markedly more than does trend output. This may partly reflect pro-cyclical tax policy – taxes are lowered in good times in response to higher tax incomes. With expenditures, there is no clear pattern of cyclical behavior except that the changes seem to be smaller than the changes in GDP. The direct

9. The (possibly nonzero) threshold estimated by the maximum likelihood procedure was close to zero, so those results are not reported.

Figure 8. Country-specific nonlinear coefficients of output growth in the deficit equation



Values are GLS estimates from equation (3) for individual countries with cyclically adjusted AMECO data for 1971-2012.

effect of interest rates on deficits can be clearly discerned. The effect is particularly strong for net lending, but it also shows up in the primary deficits. The net lending effect obviously follows from the direct interest expense effect, whereas the primary deficit effect presumably reflects the need for an offsetting increase in revenues. More interestingly, the effect of government debt also turns out to be both significant and "correct" in sign and magnitude. Larger debt leads to some correction in the form of lower deficits.

We do however have to be cautious in interpreting these results, as the reverse impact of the fiscal balance on output has not been taken into account in the estimation on the grounds that it occurs with a lag (while the effect of growth on the deficit is contemporaneous). Omission of expectations effects raises another caveat.

2. Concluding remarks

Country differences, asymmetry of key policy parameters and size of possible policy coordination effects pose some clear challenges for fiscal policy. The problems may be particularly important in the presence of downward pressures of the economy. Policy needs to be asymmetric itself in order to counteract the slide. Put simply, downside threats require much stronger policy reactions.

Policy coordination may pose smaller problems, but still small and large countries are clearly in different positions in terms of common policies. Regarding fiscal policies, large countries have always an advantage because of larger multipliers while small countries may achieve such values only with coordinated policies. This does not of course mean that policy coordination would simply be a matter of country size: clearly other country characteristics and political economy issues also matter.

It is very hard to characterize the effects of fiscal policy with a single value of fiscal multiplier, and the difference between some polar values is very large so that policy uncertainty in Brainard sense may question attempts to pursue ambitious policies. Policy coordination surely affects the values of fiscal multiplier, at the same time increases overall uncertainty of the true parameter values and increases pressures to much more ambitious policies. There would even be temptation to use fiscal policies in an excessive amount.

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FISCAL CONSOLIDATION IN TIMES OF CRISIS: IS THE SOONER REALLY THE BETTER?

Christophe Blot*, Marion Cochard*, Jérôme Creel, Bruno Ducoudré*, Danielle Schweisguth* and Xavier Timbeau***

** OFCE (Centre de recherche en économie de Sciences Po)*

*** OFCE and ESCP Europe*

Recent evidence has renewed views on the size of fiscal multipliers. It is notably emphasized that fiscal multipliers are higher in times of crisis. Starting from this literature, we develop a simple and tractable model to deal with the fiscal strategy led by euro area countries. Constrained by fiscal rules and by speculative attacks in financial markets, euro area members have adopted restrictive fiscal policies despite strong negative output gaps. Based on the model, we present simulations to determine the path of public debt given the current expected consolidation. Our simulations suggest that despite strong austerity measures, not all countries would be able to reach the 60% debt-to-GDP. If fiscal multipliers vary along the business cycle, this would give a strong case for delaying austerity. This alternative scenario is considered. Our results show not only that delaying austerity would improve growth perspectives and would not be incompatible with public debt converging to 60% of GDP.

Keywords: public debt, fiscal multipliers, growth

Between the late 1970s and the outbreak of the global financial crisis, many economists and policymakers denied fiscal policy a role in stabilising output. After a long period of fiscal (or Keynesian) dominance in Western economies, until stagflation arose in the 1970s, monetary policy was finally considered as the most effective and flexible tool to dampen business cycle in the

e-mail: christophe.blot@ofce.sciences-po.fr (corresponding author).

short run while achieving price stability in the medium term.[1] Except under exceptional circumstances (the case of a liquidity trap), the consensus seemed to be that fiscal multipliers were low (i.e. below unity). Some empirical papers even argued that expansionary fiscal consolidation might occur when fiscal restriction was mainly based on expenditures cuts rather than on tax increases (Alesina and Perotti, 1996, Perotti 1996 or Afonso, 2010).[2] Although these views were partly reversed in 2009 when the financial turmoil led industrial countries in the deepest recession since the Great Depression, the Keynesian revival rapidly faded away. European countries reversed their fiscal policy stance in 2010-2011 and engaged in fiscal contraction although output gaps were still strongly negative. Austerity measures were first implemented in Spain, Ireland and Greece. They followed the outbreak of the Greek crisis and were fueled by fears of a possible sovereign default. Since 2011, austerity has been generalised in most euro area countries. As shown by De Grauwe and Ji (2013), austerity programmes were partly driven and intensified by financial market pressures. Until recently, the economic models used by the European Commission relied on the Ricardian equivalence hypothesis assigning only a minor role to fiscal policy. Despite growing literature emphasizing that fiscal multipliers may not be low, the European Commission forecasts clearly illustrated the view that consolidation would not be very costly or, if it were, only temporarily.[3]

Besides, existing fiscal rules constrained the use of fiscal policy. The 3% of GDP deficit ceiling for public deficit was breached in 2009 under what was deemed to be exceptional circumstances. But in 2010, almost all euro area economies started to recover and the European Commission decided to launch excessive deficit procedures. Consolidation was then endorsed by the European Commission and approved by the Council. Although early fears of

1. See Allsopp and Vines (2005) or Angeriz and Arestis (2009) for a detailed description and criticism of this "consensus".
2. This view was however debated notably by, e.g., Creel *et al.* (2005).
3. Resorting to a narrative approach, IMF (2010) challenged the view that fiscal consolidation might be expansionary and found multipliers significantly above unity. De Cos and Moral-Benito (2013) argue that estimates of the real effects of *pure* fiscal contractions, when endogeneity issues have been rigorously corrected for, point to negative figures. Finally, Christodoulakis (2013) reviews the real costs of fiscal contraction in Greece and pledges for a slowdown in fiscal retrenchment.

a possible double-dip were expressed (e.g. OFCE, 2011), the strategy of synchronized front-loading austerity was amplified in 2012 and 2013.

The efficiency of such a strategy was debated. It regained momentum with new views on the size of fiscal multipliers and was reinforced by disappointing performance of the euro area. The literature which has re-emerged since 2009 reached two main conclusions:

1. The multiplier is higher in "times of crisis" (in the short term or as long as the crisis lasts).[4] "Times of crisis" mean periods of high unemployment and/or wide output gap. Another symptom may be a situation where safe long-term interest rates are very low (i.e. negative in real terms), suggesting a flight to safety (radical uncertainty) or a liquidity trap (expectations of deflation). Two theoretical interpretations are consistent with these manifestations of the crisis. Firstly, price expectations are moving toward deflation, or radical uncertainty makes it impossible to form an expectation, which is consistent with very low safe interest rates and leads to the paralysis of monetary policy. Or secondly, more economic agents (households, firms) are subject to short-term liquidity constraints, perpetuating the recessionary spiral and preventing monetary policy from functioning. In one case or another, fiscal multipliers are higher than in normal times because the expansionary fiscal policy (resp. restrictive) forces the economic agents to take on debt (resp. shed debt) collectively instead of individually.

2. The multiplier is higher for expenditures than for taxes. The argument in normal times is that higher taxes act as a disincentive whereas spending cuts act as an incentive on labour supply. In a small open economy, when monetary policy also induces real currency depreciation, fiscal contraction can increase activity, a result advocated by supporters of fiscal discipline. But in times of crisis, in addition to the fact that multipliers are high, the logic applicable in normal circumstances is reversed. The reluctant use of taxes, because of disincentive effects, and the preferred spending cuts do not produce the expected effects in an economy with

4. Parker (2011) recalls that this view dates back, at least, to Keynes "General theory" and he calls it the "(old) Keynesian view".

involuntary unemployment or overcapacity. It is in fact the expectations of a recession or of deflation that act as disincentives, which is another factor behind high multipliers.

Starting from this literature, it clearly appears that front-loaded austerity can be an ill-designed strategy. The economic and social costs can indeed be very high. It logically calls for an alternative strategy where it would be optimal to delay consolidation until economic growth has resumed. Implementing austerity measures when the output gap is close to zero may reduce consolidation costs and may also mitigate the requirements for a negative fiscal stance since all or part of the deficit would be already reduced thanks to automatic stabilizers.

The aim of this paper is first to assess the impact of fiscal consolidation on European economies. To this end, we present the results from simulations based on a simple reduced-form model representing 11 euro area countries (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal and Spain). The model takes into account the most recent evidence on the size of fiscal multipliers. We adopt a flexible approach where the fiscal multiplier varies according to the business cycle. By doing so, we do not only highlight the costs of implementing austerity when the output gap is negative but we also seek for alternative and less costly strategies to reduce public debt. We define a simple algorithm to search the optimal dynamic fiscal stance in order to minimise the cost of austerity while seeking to reach a 60% debt-to-GDP ratio in 2032, in accordance with existing fiscal rules in the euro area.

The rest of the paper is organised as follows. In the first section, we review the literature on the fiscal multiplier. The main features of the model, which is used for simulations, are presented in the second section. The third section analyses the actual path of consolidation and shows that it is ill-designed. Finally, the fifth section analyses and discusses the consequences of delaying fiscal contraction.

1. Fiscal multiplier in times of crisis: a short overview

During the Great Recession, most industrial countries have implemented fiscal stimulus packages aiming at stabilising the

business cycle. But the fiscal stance was then rapidly reversed with most EMU countries rapidly engaging in a fiscal consolidation strategy. Therefore, the instrument of fiscal policy has been used intensively since the onset of the crisis. This naturally raises the issue of the efficiency of fiscal policy; hence, it questions the value of fiscal multipliers which lay at the heart of the assessment of the output costs or benefits of consolidation.

An abundant literature has recently discussed not only the value but also the stability of fiscal multipliers.[5] Economists from the IMF (IMF, 2012; Blanchard and Leigh, 2013) recognized that their hypothesis on the value of fiscal multipliers were certainly underestimated, which explained why the economic forecasts during the 2008 crisis often turned wrong. Their reassessment showed that fiscal multipliers have ranged from 0.9 to 1.7 since the Great Recession. Having values above unity indicates clearly that fiscal consolidation is costly. As a consequence, a gradual and smooth fiscal consolidation process is certainly preferable to a strategy of fast and sharp reduction of public imbalances. The size of the fiscal multiplier appears a crucial issue in the current context. Moreover, a recent literature has highlighted that this size is path-dependent, as well as instrument-dependent (see Parker, 2011, for a survey of measurement issues and Michaillat, 2012, for a theoretical rationale).

Corsetti, Meier and Müller (2012) explain that in "times of crisis" more and more economic agents (households, firms) are subject to very short-term liquidity constraints, thus maintaining the recessionary spiral and preventing monetary policy from functioning. The value of the multiplier may reach 2 in times of crisis whereas it is supposed to be closer to 0.5 in normal times. Auerbach and Gorodnichenko (2012), corroborate the idea that the multipliers are higher in recessions than in periods of expansion. These authors argue that the impact of a shock on public expenditure would be 4 times higher when implemented during an economic downturn (2.5) than in an upturn (0.6). This result has been confirmed for the US data by Fazzari *et al.* (2012) and by Mittnik and Semmler (2012), but Owyang *et al.* (2013) do not find such evidence with a dataset encompassing the entire 20th

5. Some parts of this literature review draw on Heyer (2012).

century.[6] This non-linearity was also found with German data by Baum and Koester (2011) and conceptualized by Creel, Heyer and Plane (2011) in a simulated model drawing on French data. Karras (2013), studying a panel of 61 countries, both developed and developing, between 1952 and 2007, concludes that the fiscal multiplier is twice as large during downswings than expansions.

The stance of monetary policy also matters. Hall (2009) concludes that the size of the multiplier doubles and is around 1.7 when the real interest rate is close to zero (zero lower bound), which is characteristic of an economy undergoing a downturn, as is the case today in many developed countries. This view is shared by a number of other researchers, including DeLong and Summers (2012), Erceg and Lindé (2012), OECD (2009), and Boussard *et al.* (2012). It was also highlighted in some recent theoretical work, notably by Carrillo and Poilly (2013), Christiano *et al.* (2011), Woodford (2011). When nominal interest rates are blocked at the zero lower bound, anticipated real interest rates rise. Monetary policy can no longer offset budgetary restrictions and can even become restrictive, especially when price expectations are anchored on deflation.

Coenen *et al.* (2012) analyse the instrument-dependence of the effectiveness of fiscal policy. On the basis of 8 different macroeconometric models (mainly DSGE models) for the United States, and 4 models for the euro area, they show that the size of many multipliers is large, particularly if public expenditures and targeted transfers are used. The multiplier effects exceed unity if the strategy focuses on public consumption or transfers targeted to specific agents and are larger than 1.5 for public investment. For the other instruments, the effects are still positive but range from 0.2 for corporation tax to 0.7 for consumer taxes. This finding is also shared by the European Commission (2012), which indicates that the fiscal multiplier is larger if fiscal consolidation is based on public expenditure, and in particular on public investment. These results confirm those published about fiscal stimulus by the OECD (2009), Creel *et al.* (2009), Burriel *et al.* (2010), and Baum and Koester (2011). Without invalidating this result, a study by Fazzari *et al.* (2012) nevertheless introduced a nuance: according to

6. Owyang *et al.* (2013) find some above-unity fiscal multipliers only for Canada.

their work, the multiplier associated with public spending is much higher than that observed for taxes only when the economy is at the bottom of the cycle. This result would be reversed if the economy were closer to full-employment.

Furthermore, in their specific assessment of the US economy, Ilzetzki *et al.* (2013), highlight a high value for the fiscal multiplier for public investment (1.7), i.e. higher than for public consumption.[7] This is similar to the results of Freedman *et al.* (2009).

In the recent literature, only a few papers seem to break the consensus among economists on the size of fiscal multipliers. For instance, after examining 107 fiscal consolidation plans, conducted in 21 OECD countries over 1970-2007, Alesina and Ardagna (2010) and Alesina *et al.* (2012) conclude, first, that the multipliers can be negative and, second, that fiscal consolidations based on expenditure are associated with minor, short-lived recessions, while consolidations based on taxation are associated with deeper, more protracted recessions. These findings raise two critiques. First, Alesina *et al.* (2012) usually emphasize rather substantially the experiences of fiscal restraint of some Scandinavian countries or Canada which are highly specific (planned entry into the European monetary system and financial liberalisation in Scandinavian countries, unexpected increases in oil and gas receipts for Canada) and cannot be easily generalized. By the way, when these experiences are included within a larger dataset including all experiences of fiscal restriction (or expansion), no strong results emerge. Second, the empirical work of Alesina *et al.* (2012) suffers from an endogeneity problem in the measurement of fiscal restraint. Once De Cos and Moral-Benito (2013) correct for this problem, fiscal contractions give… contractionary effects. The notion of a narrative record of fiscal impulse also helps to avoid this endogeneity. For example, in the case of a real estate bubble (and more generally in cases of large capital gains), the additional tax revenues from real estate transactions result in a reduction in the structural deficit, as these revenues are not cyclically-based (the elasticity of revenues to GDP becomes much higher than 1). So

7. Ilzetzki *et al.* (2013) also show, using VAR estimates performed with a dataset of 44 countries, that the effectiveness of fiscal policy depends on the exchange rate regime, quite consistently with the properties derived from Mundell-Fleming models.

these revenues are associated with an expansion (in conjunction with the housing bubble) and with a reduction in the structural deficit: thus, it strengthens artificially the argument that reducing the public deficit may lead to an increase in activity, whereas the causality is actually the reverse.

Beyond Alesina *et al.*'s contributions, Corsetti *et al.* (2013a, 2013b) have studied the incidence of public debt growth (and possible sovereign defaults) on the fiscal multiplier. Through the "sovereign risk channel", fiscal multipliers would tend to be smaller when sovereign risk (or public debt) is high than otherwise.[8] Müller (2013) draws on this argument to oppose the self-defeating approach that Gros and Maurer (2012) and Holland and Portes (2012) attributed to current European fiscal austerity. Denes *et al.* (2013) and Bi *et al.* (2013) rather oppose Corsetti *et al.*'s conclusions. The former attribute the effectiveness of fiscal policy to a clear management of public finances in the short, medium and long run: the success of a fiscal stimulus is dependent on the policy regime and on the confidence by the public that a change in the policy regime would lead the fiscal stance to change as well. The latter share a similar view, although they broaden the determinants of a successful fiscal consolidation to the public debt level, to fiscal consolidation duration, likelihood and composition.

Apart from the contributions by Alesina, Corsetti and their colleagues, a relatively broad consensus has emerged: a policy of fiscal restraint is preferable in periods of expansion, but is ineffective and even pernicious when the economy is at a standstill; if such a policy were to be enacted during a downturn, then tax increases would be less harmful to activity than public spending cuts.

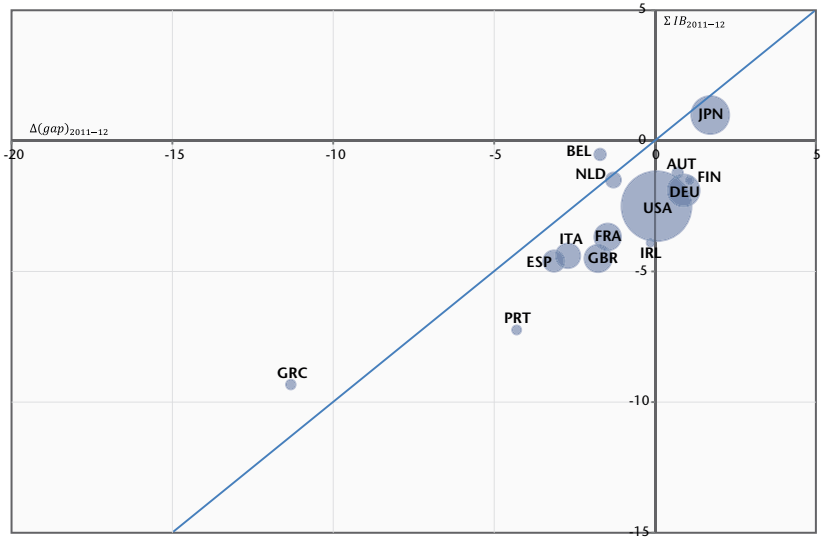
Taking these views into consideration is crucial to assess fiscal consolidation episodes: The higher the value of the multiplier, the costlier is fiscal consolidation. Such an assessment should rely on a careful analysis of the economic, financial and monetary context. Looking at the situation of euro area economies in 2012 certainly gives credit to the hypothesis of a high multiplier. Monetary policy rates have indeed rapidly decreased to the zero lower bound. The unemployment rate has reached record levels in the euro area. For

8. Using a dataset of EU-26 countries, Vranceanu and Besancenot (2013) find empirical results in line with Corsetti *et al*'s analysis.

all countries but Germany, it stands well above estimated NAIRUs. It is not always easy to disentangle between countries resorting to consolidation based on expenditures cuts or tax increases. Finally, the synchronization of fiscal consolidation across countries may also certainly tend to raise the value of the multiplier.

This hypothesis is confirmed when taking together 2011 and 2012, years of very strong fiscal impulses. Figure 1 compares, on the one hand, changes in the output gap from end 2010 to 2012 (on the x-axis) and, on the other hand, the cumulative fiscal impulse for 2011 and 2012 (y-axis), based on OECD *Economic Outlook* data. We obtain the short-term impact of fiscal consolidation. Figure 1 depicts this relationship, showing a close link between fiscal restraint and economic slowdown.

Figure 1. Fiscal impulses 2011-2012 and changes in the output gaps



Source: OECD, *Economic Outlook* 91, June 2012. The year 2012 is a projection (OFCE forecast October 2012). The area of the bubbles is proportional to real GDP in 2011 ($ PPP).

For most countries, the "apparent" multiplier is less than 1 (the lines connecting each of the bubbles are below the bisector, the "apparent" multiplier is the inverse of the slope of these lines). Figure 2 refines the assessment. The changes in the output gap are corrected for the "autonomous" dynamic of the closing of the output gap (if there had been no impulse, there would have been a

closing of the output gap, which is estimated as taking place at the same rate as in the past) and for the impact of each country's budget cutbacks on the other partners through the channel of foreign trade. The bubbles in this chart therefore replace the bubbles in Figure 1, integrating these two opposing effects, which are evaluated here while seeking to minimize the value of the multipliers. In particular, because the output gaps had never been so large, it may be the case that they are closing faster than in the past 30 or 40 years, which would justify a more dynamic counterfactual and therefore higher fiscal multipliers.

Austria and Germany are exceptions. As these two countries enjoy a more favourable economic situation (lower unemployment, better business conditions), it is not surprising that the multiplier is low there. Despite this, the "corrected apparent" multiplier is negative. This follows either from the paradoxical effects of the incentives, or more likely from the fact that monetary policy is more effective and that these two countries have escaped the liquidity trap. But the correction provided here does not take into account any stimulus from monetary policy.

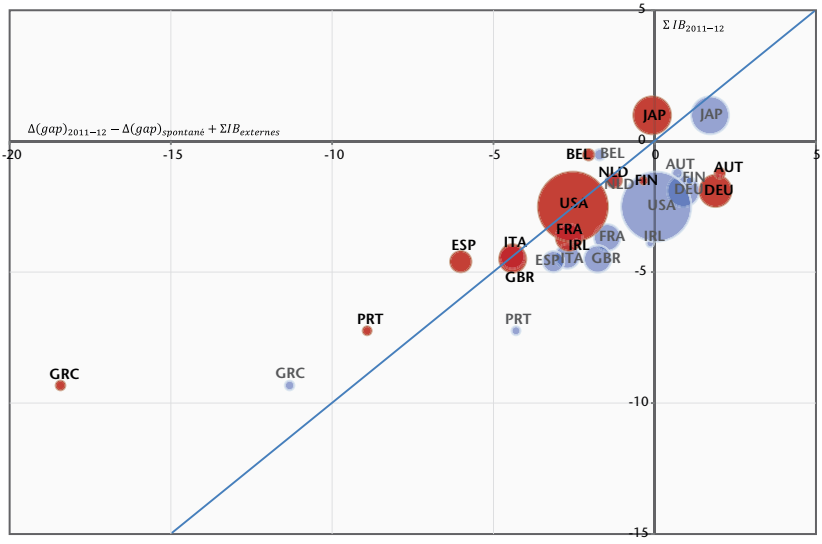
In the United States, the "2011-2012 corrected apparent" multiplier reaches 1. This "corrected apparent" multiplier is very high in Greece (~ 1.5), Spain (~ 1.3) and Portugal (~ 1.2). This suggests that if the economic situation deteriorates further, the value of the multiplier may increase, exacerbating the vicious circle of austerity.

For the euro area as a whole, the "corrected apparent" multiplier results from the aggregation of "small open economies". It is thus higher than the multiplier in each country, because it relates the impact of fiscal policy in each country to the whole area and not only to the country concerned. The aggregate multiplier for the euro area also depends on the composition of the austerity packages, and more especially on the countries where the measures are being implemented. However, the biggest negative fiscal impulses take place in areas where the multipliers are highest or in the countries in deepest crisis. The result is that the aggregate multiplier for the euro area is 1.3, significantly higher than the multiplier derived for the US.

A comparison of the fiscal plans for 2011 and 2012 with the economic cycle in those years yields a high estimate for the fiscal

multipliers. This confirms the dependence of the multiplier on the cycle and is a serious argument against the austerity approach.

Figure 2. Fiscal impulse 2011-2012 and adjusted changes in the output gap



Source: OECD, *Economic Outlook* 91, June 2012. The year 2012 is a projection (OFCE forecast October 2012). The area of the bubbles is proportional to real GDP in 2011 ($ PPP).

2. Short description of the model and calibration

The simulations are done with a macroeconomic model that combines structural and reduced-form non-linear equations. An exhaustive presentation of the model and its calibration is available in the appendix of iAGS 2013 Report.[9] It is a simple reduced-form equation model to analyse complex supply and demand mechanisms that can be heterogeneous across countries. In contrast with DSGE models which are linearised around a single equilibrium, our model notably allows for variable fiscal multipliers over the business cycle. Indeed, the value of the fiscal multiplier is endogenous and determined according to the size of the output gap. The parameters of the model are calibrated to allow the analyses of various scenarios. It is far more tractable than DSGE models and given the current context, it may better capture the

9. http://www.iags-project.org/documents/iags_appendix2013.pdf.

effect of fiscal policy on the output gap. It does not rest on structural hypotheses regarding agents' behaviour (representative rational agent), hypotheses which are today largely debated.[10] By the way, it may be more consistent with recent empirical developments regarding the size of fiscal multipliers. It enables to reflect more accurately the current economic situation which may be better described by a Keynesian environment. Yet, the model is also sufficiently tractable to allow for alternative hypotheses. It is easy to modify the parameters defining the fiscal multiplier and to account for New Classical hypotheses where fiscal policy has only a limited impact on output. Hence, this kind of model is helpful to shed some lights on the effects of various economic policy shocks according to a given set of transparent hypotheses.

The key features of the model are the following:

— It allows for an explicit representation of the main euro area countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal and Spain. An aggregated euro area is also computed.

— On the demand side, an open economy aggregate demand function is represented, with fiscal and monetary policy, external demand (a channel for intra EU interdependencies) as well as exogenous shocks on the output gap (the gap between actual and potential GDP). The equation is written as an error-correction model. It may also take into account possible long run effects of macroeconomic policies such as long term fiscal policy, debt-related threshold effects and hysteresis on potential output. The stabilization of the economy stems from adjustments in the long-term interest rates and competitiveness, which have feedback effects on the output gap. The stabilisation may then hinge on private demand (through interest rates adjustment and monetary policy) and on external demand (through the decrease in relative prices). The calibration allows to simulate standard hypotheses as well as alternatives, checking the dependence of results on different sets of hypotheses. Furthermore, the size of fiscal multipliers is allowed to vary along the business

10. These issues are notably discussed by Fagiolo and Roventini (2012).

cycle. The ineffectiveness of monetary policy is made possible when the economy hits the zero lower bound (ZLB).

— External demand is modelled using a bilateral trade matrix representing interdependencies between countries. The trade matrix is also used as a basis for imbalances analysis.

— We model prices by a generalized Phillips curve relating current and expected inflation to the output gap, imported inflation and other exogenous shocks. Expectations can be modelled as adaptive (backward-looking) or rational (forward-looking).

— A Taylor rule sums up monetary policy, except under the zero lower bound.

— Changes in the short term monetary policy rate are then passed through the long-term interest rates. Hence, according to the expectations theory, the long-term interest rate for German public bonds is set equal to the expected sum of future short term interest rates (Shiller, 1979), with short-term interest rates set by the (European) central bank. The long-term public rate for Germany is considered risk free, and long-term public rates for other countries include a risk premium that is set exogenously. We also temporarily set exogenously the long-term rate for countries that entered the EFSF to account for a lower interest rate on debt refinancing. Finally, for each country the long-term interest rate on private bonds is equal to the public one plus a risk premium that is set exogenously.

— The stance of monetary policy remains expansionary as long as the euro area aggregate output gap is negative and if inflation is below the 2% target. In case of a negative idiosyncratic demand shock, the convergence to the potential growth rate hinges partly on the effect of common expansionary monetary and on a competitiveness effect. Due to hysteresis effect, the output level may be permanently affected by a negative demand shock. But trend growth will always converge to an exogenously set path. The hypothesis regarding long run growth rates are presented in table A1 in the appendix.

— We call $\tilde{y}_c$, the gap between the log of real GDP Y of country c, and a baseline trajectory for the output growing at a constant growth rate. A distinction is then made between

potential GDP and this baseline. This gap is noted y^*_c. Then, y_c is the output gap of country c, i.e. the difference between $\tilde{y}_c$ and y^*_c. The real GDP growth rate is given by potential GDP growth and the output gap.

— The public balance separates interest payments, cyclically-adjusted balance and cyclical components, in order to properly assess the fiscal stance, *i.e.* the part of fiscal policy which is under the direct control (discretion) of current governments. We then derive public debt projections for euro area countries.

The structural primary surplus evolves according to the fiscal impulse (which is set exogenously, at levels given by Stability programmes, except otherwise stated) and to changes in taxes due to variations in the gap between potential output and the baseline. A permanent downward shift in potential output relative to the baseline entails a permanent fall in taxes, hence a permanent fall in the structural primary surplus. The average interest rate on debt varies according to the long-term nominal interest rate on newly issued public bonds. The average maturity of public debt is assumed to be constant. The inverse of average maturity gives the share of debt refinanced every year. Public debt (in % of nominal GDP) varies according to its usual law of motion.

We introduce a state-dependent fiscal multiplier, in accordance with the consensus mentioned in the former section of the paper. The fiscal multiplier μ_t is modelled as follows:

$$\text{If } y_{t-1} < y_{min} \text{ then } \mu_t = \mu_{max}$$

$$\text{if } y_{t-1} > y_{max} \text{ then } \mu_t = \mu_{min}$$

$$\text{if } y_{inf} \leq y_{t-1} \leq y_{sup} \text{ then } \mu_t = \mu_0$$

$$\text{if } y_{min} \leq y_{t-1} \leq y_{inf} \text{ then } \mu_t = \mu_{max} + (\mu_0 - \mu_{max})/(y_{inf} - y_{min}) * (y_{t-1} - y_{min})$$

$$\text{if } y_{sup} \leq y_{t-1} \leq y_{max} \text{ then } \mu_t = \mu_0 + (\mu_{min} - \mu_0)/(y_{max} - y_{sup}) * (y_{t-1} - y_{sup})$$

The value of the multiplier is maximal in very bad times, whereas it is minimal in very good times (see Figure 3). We define normal times as economic states in which the output gap stands between -1.5% and 1.5%. In that case, we set the *ex ante* instantaneous fiscal multiplier to 0.5 for large countries (Germany, France, Italy and Spain), and to 0.3 for other countries, accounting for the fact that fiscal multipliers are generally smaller for small open

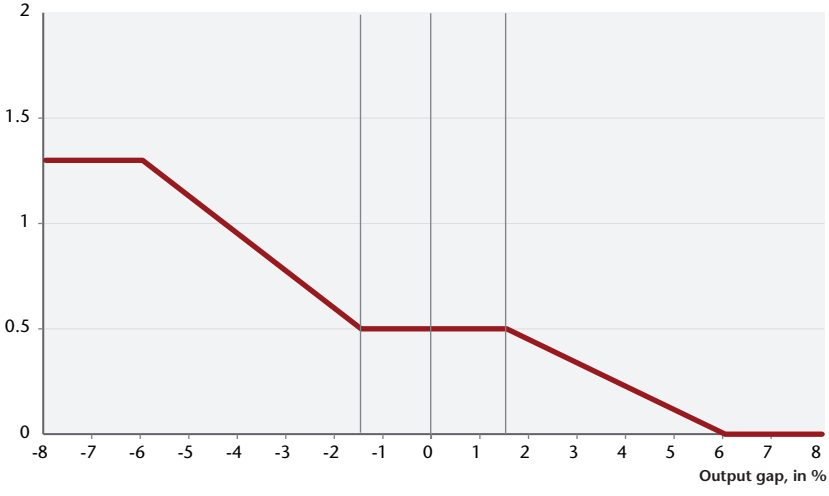
economies than for large countries (Ilzetsky *et al.*, 2013). When the output gap is larger than 1.5%, the *ex ante* instantaneous fiscal multiplier linearly decreases down to 0 when the output gap reaches 6%. In bad times, the *ex ante* instantaneous fiscal multiplier increases as the output gap deteriorates. We set its maximum value between 1 and 1.3 when the output gap reaches -6% (Table 1).

Table 1. Fiscal multipliers

	DEU	FRA	ITA	ESP	NLD	BEL	GRC	PRT	IRL	AUT	FIN
Fiscal multiplier μ_0	0.4	0.5	0.5	0.5	0.5	0.3	0.5	0.5	0.3	0.6	0.5
Maximum multiplier μ_{max}	1.0	1.3	1.2	1.3	1.3	1.3	1.5	1.3	1.0	1.0	1.0

Source: Authors' estimates.

Figure 3. Example of the value of the multiplier according to the output gap



Note: μ_{max} = 1.3, μ_0 = 0.5, μ_{min} = 0, y_{min} = -6%, y_{inf} = -1.5%, y_{sup} = 1.5% and y_{max} = 6%. Values are illustrative and may vary across countries.
Source: Authors' estimates.

Drawing on exogenous fiscal impulses, we compute an effective fiscal impulse, representing the *ex ante*[11] cumulative real effect of current and past fiscal impulses at time *t*. We retain 7 lags to account for the possibility of long lasting effects of fiscal impulses

11. It is an *ex ante* multiplier in the sense that it does not take into account monetary policy effects and external trade feedback effects on GDP following a fiscal impulse.

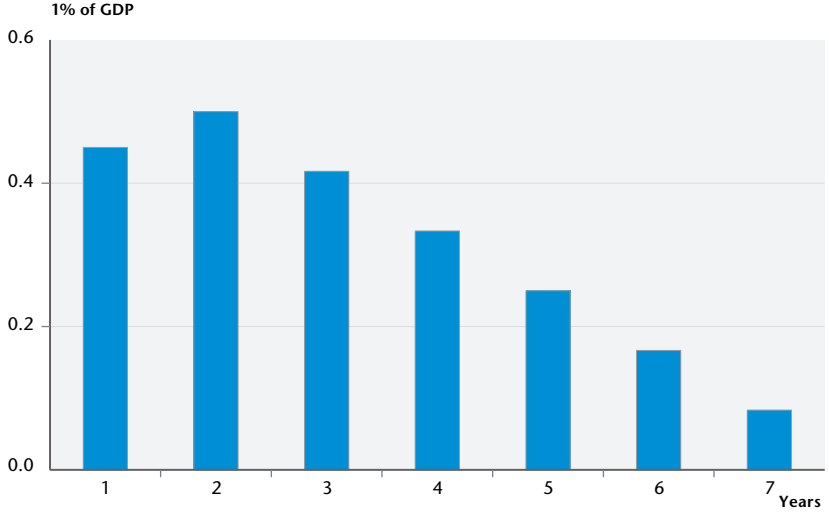
(Figure 4). With $\psi_k.\mu_{t-k}$, the fiscal multiplier at time t of a fiscal impulse that occurred k years ago, we can write:

(1) $$\Delta EFI_t = \psi_0.\mu_t.FI_t + \psi_1.\mu_{t-1}.FI_{t-1} + \psi_2.\mu_{t-2}.FI_{t-2} + \psi_3.\mu_{t-3}.FI_{t-3} + \psi_4.\mu_{t-4}.FI_{t-4} + \psi_5.\mu_{t-5}.FI_{t-5} + \psi_6.\mu_{t-6}.FI_{t-6} + \psi_7.\mu_{t-7}.FI_{t-7}$$

(2) $$\Sigma FI_t = \Sigma FI_{t-1} + \mu_t.FI_t$$

Equation (1) ensures that the fiscal impulse impact depends on the fiscal multiplier which prevailed when the fiscal impulse occurred. We also assume that *EFI* can take into account long run effects of fiscal policy. It is the case if $\psi_\alpha = \Sigma_{k=0}^{7} \psi_k \neq 0$, since in that case *EFI* is not necessarily null in the long run. The long run impact of a sequence of fiscal impulses is then computed using the accumulation of fiscal impulses times the multiplier (Equation (2)); the long run impact on potential GDP is: $\mu_\alpha.\Sigma FI_t$.

Figure 4. Effective fiscal impulse in normal times with $\mu_t = 0.5$ following a positive fiscal impulse



Source: Authors' estimates.

3. The costs of fiscal consolidation

We use our model to simulate the path of output gap and public debt according to the consolidation plans. The aim is twofold. First, we assess the cost of consolidation, in terms of the

output gap. The maximum negative value for the output gap as well as the time needed for output gaps to get back to zero provide insights on the consequences of austerity. Second, as the aim of implemented consolidation measures is to bring back the debt-to-GDP ratio to 60% by 2032, which is the horizon of the 1/20th debt rule incorporated in the revised SGP and in the Fiscal Compact, we pay attention to the ability of member states to reach this target, and to comply with existing fiscal rules. A full discussion on the rationale of this objective goes beyond the scope of this paper. It is indeed not clear that there is a need for some or most euro area countries to consolidate. A significant part of the deficit may be cyclical. Besides, it must be stressed that it does not match any theoretical definition of fiscal sustainability[12] nor does it correspond to the equilibrium value for public debt. This may only be seen as an institutional objective that euro area members have to comply with.

The first six columns of Table 2 report the public debt and the structural balance respectively in 2012, 2017 (5-year horizon) and 2032 (20-year horizon). The cumulated fiscal impulse for 2013-2015 sums up the short-term fiscal stance in the euro area as it cumulates forecast variations in structural primary government spending and taxes.[13] We report the average annual growth rate of real GDP for 2013-2017 and 2018-2032, and the sovereign interest rate spread vis-à-vis Germany in 2013-2015. A description of the main underlying hypotheses is given in the Appendix.

Table 2 reports how tough austerity will be all over the euro area: between 2013 and 2015, all member states except Germany and Finland will improve their cyclically-adjusted primary public deficit by at least 2% of GDP. Spain, Portugal, Ireland and Greece will make even stronger efforts. This highly contractionary fiscal stance will make it ever harder to achieve an output gap at or above

12. The issue of public debt sustainability is theoretically and empirically unsettled, between promoters of investigating the statistical properties of public finances' variables on the one hand, and, on the other hand, promoters of investigating the macroeconomic incidence of public finances (Bohn, 2007, calls it "a return to economic thinking"). Stated briefly, sustainability refers to the ability of the general government to pay back the domestic public debt. This ability depends on the future available scope for spending cuts and tax hikes, but also on future economic growth.

13. Government spending is net of interest payments and spending and taxes are adjusted for cyclical variations.

zero in our simulations: countries will not fully recover from the crisis until 2019 (Austria, Finland), 2020 (Germany, France, Italy, Spain, Portugal) or 2021. Meanwhile, the aggregate euro area output gap will reach -4.8%. Hence, the cumulated fiscal impulse, starting already from negative output gaps and associated large fiscal multiplier effects, will lead to gloomy growth prospects for the euro area. Germany and Austria will be exceptions, since they will face almost no further real cost with their forecast fiscal strategy thanks to milder consolidation plans.

Table 2. Baseline scenario

	Public debt (% of GDP)			Structural balance (% of GDP)			Cumulated fiscal impulse (% of GDP)	Average annual growth		Maximum negative output gap reached	Sovereign rate spread to Germany
	2012	2017	2032	2012	2017	2032	2013-2015	2013-2017	2018-2032	2013-2032	2013-2015
Germany	82	67	26	0.3	0.9	1.8	-0.3	1.4	1.3	-0.7	0.0
France	90	91	52	-1.4	-0,2	0,2	-2.9	1,9	2.2	-6.8	0.0
Italy	127	109	18	0.3	2.4	5.5	-2.1	1.6	1.4	-6.5	0.7
Spain	86	101	83	-3.7	-2.1	-2.2	-4.3	1.7	2.3	-9.7	0.8
Netherlands	69	68	48	-2.9	-0.8	-0.8	-2.9	2.0	2.1	-2.8	0.0
Belgium	100	91	38	-0.9	0.6	1.8	-2.2	2.1	2.1	-4.3	0.2
Portugal	119	133	79	-2.8	-0.8	0.7	-4.7	0.9	1.8	-10.1	1.2
Ireland	118	140	105	-5.0	-2.4	-2.3	-5.7	1.0	2.6	-10.9	1.0
Greece	177	199	93	-0.6	1.3	3.0	-7.5	0.2	2.5	-17.1	1.1
Finland	53	45	8	0.2	0.1	1.9	-1.3	2.4	2.2	-1.9	0.0
Austria	75	68	40	-2.5	-0.3	0.3	-1.9	1.7	1.6	-0.9	0.0
Euro area	94	88	43	-1.0	0.3	1.2	-2.2	1.6	1.8	-4.8	0.3

Sources: Eurostat, iAGS model.

Regarding public debt-to-GDP ratios in 2032, the simulations suggest that even though some countries (Spain, Portugal, Ireland and Greece) do not reach the 60% threshold, debt ratios are substantially lowered. For instance, Greece would halve its debt ratio and Ireland's debt would decrease by 35 percentage points of GDP between 2017 and 2032. Nevertheless, the social costs as well

as the cost in terms of fiscal balance could make this adjustment unrealistic. Christodoulakis (2013) shows that fiscal austerity in Greece has been self-defeating. For Greece, Italy, Portugal and Belgium, austerity measures planned would indeed require structural primary surpluses above 3% of GDP for many years, which has rarely been achieved in history of fiscal consolidation.

Besides, our simulations show that the long-run debt-to-GDP ratio in many euro area countries is astonishingly low: 26% in Germany, 18% in Italy, even 8% in Finland. There is no reason to consider that this figure is consistent with preferences in these countries notably because public bonds are highly demanded on financial markets, especially "risk-free" bonds like German *Bunds*. Consequently, this outcome questions the relevance of fiscal austerity in these countries. The baseline scenario may then go too far in terms of fiscal sustainability. To sum up, this scenario considers fiscal restrictions that go beyond the requirements of fiscal sustainability. Debt sustainability is a relative concept which should not be assessed regardless of the cost of achieving it. Consolidation also goes beyond the requirements of EU fiscal rules – for a country under an excessive deficit procedure, the minimum improvement in public finances per year is an increase of 0.5% in the cyclically-adjusted balance – and, undoubtedly, beyond the social resilience of European citizens.

We introduce a first variant where we consider a strict implementation of current fiscal rules, and we compute a sequence of fiscal impulses over 2015-2032 that allows to reach the 60% target in each member state, assuming that fiscal impulses for the years 2013 to 2015 remain unchanged. Thus, we aim at gauging if all countries can reach the public debt target in 2032. For countries which already achieved this threshold, we implement *positive* fiscal impulses after 2015 so that debt-to-GDP is equal to 60% in 2032. For simplicity, we set fiscal impulses at -0.5 or +0.5 depending on the gap *vis-à-vis* the target: the fiscal impulse is negative (resp. positive) if actual debt is above (resp. below) the target. The cumulated fiscal impulse is larger than in the baseline scenario for countries which cannot achieve 60% in this scenario, whereas it is lower for the other countries. Comparisons between the baseline scenario and this variant, based on structural balances and average annual growth rates, indicate the costs or gains of sticking to the debt

target at 20-year horizon in all countries. The question of fiscal sustainability is crucial for Greece, Ireland, Portugal and Spain since they do not reach this targeted debt level in the baseline scenario, whereas the question of the costs of fiscal retrenchment is crucial for countries which go beyond EU fiscal legislation requirements in the baseline scenario.

Results are reported in Table 3. Striking results are threefold. First, two countries – Ireland and Greece – are still unable to achieve the debt-to-GDP target. It does not preclude fiscal sustainability *per se*, but it entails further social unsustainability of public finances: the fiscal stance over 2013-2032 produces a cumulative fiscal impulse which is highly negative and twice as high (in absolute values) as in the baseline scenario. Such a fiscal stance is entirely unrealistic and inefficient: economic growth in the medium-run would be lowered substantially, and the maximum negative output gap would be even larger. This outcome ensues from the high value of the fiscal multiplier when the output gap is strongly negative, from inertial processes in economic growth once hysteresis is introduced, and from the relatively insufficient decrease in real interest rates, since these two countries suffer from low or negative inflation rates until 2020.

Second, Spain and Portugal achieve the debt target in 2032, but under substantially more restrictive fiscal stances. Fiscal adjustment under such conditions seems unrealistic and unreasonable: between 2013 and 2017, both countries would experience slower economic growth than in the baseline, hence postponing until 2025 (Portugal) and 2027 (Spain) the return to a zero output gap.

Third, countries with public debt levels below the debt target in 2032 have fiscal leeway and then implement expansionary fiscal policies:[14] indeed, the cumulated fiscal impulse improves by 2.7 percentage points in Germany, 1 in France, 4.2 in Italy, 5.7 in Finland and 1.4 in Austria in this variant compared to the baseline scenario. Despite fiscal leeway and relatively high fiscal multipliers in the short run, the net gain in terms of economic growth is however very small. The reason lies in trade interactions within the

14. An alternative scenario would have been to suppose that these countries pursue a neutral fiscal policy. But the difference with the scenario where they adopt expansionary fiscal policy to reach the 60% in 2032 would have been very small.

euro area: the margins for manoeuvre for some countries are offset by the large real difficulties resulting from the implementation of a more restrictive fiscal stance in Southern countries and Ireland. Besides, countries that implement expansionary fiscal policies have a small output gap. The fiscal multiplier is then lower.

Table 3. Can the 60% target be reached in 2032 and what are the costs in terms of growth?

	Public debt (% of GDP)			Structural balance (% of GDP)			Cumulated fiscal impulse (% of GDP)	Average annual growth		Maximum negative output gap reached
	2012	2017	2032	2012	2017	2032	2013-2032	2013-2017	2018-2032	2013-2032
Germany	82	68	60	0.3	-0.1	-1.8	2.4	1.5	1.3	-0.7
France	90	89	60	-1.4	-1.1	-0.8	-1.9	2.3	2.1	-6.8
Italy	127	109	60	0.3	1.4	0.4	2.1	1.8	1.4	-6.5
Spain	86	104	60	-3.7	-1.3	1.3	-8.2	1.3	2.2	-9.8
Netherlands	69	68	60	-2.9	-1.6	-1.9	-2.0	2.1	2.0	-2.8
Belgium	100	91	60	-0.9	-0.3	-0.6	-0.3	2.3	2.1	-4.3
Portugal	119	137	60	-2.8	-0.1	3.7	-8.2	0.4	1.8	-10.2
Ireland	118	144	71	-5.0	-1.7	5.2	-13.7	0.5	2.5	-11.0
Greece	177	206	84	-0.6	1.9	8.9	-15.5	-0.4	2.3	-17.3
Finland	53	46	60	0.2	0.1	-4.3	3.4	2.5	2.2	-1.9
Austria	75	69	60	-2.5	-1.2	-1.7	-0.5	1.8	1.6	-0.9
Euro area	94	89	61	-1.0	-0.3	-0.5	-1.0	1.7	1.8	-4.9

Sources: Eurostat, iAGS model.

4. No pain, more gain: the case for delaying consolidation

The previous results show unambiguously that fiscal consolidation is costly. The output gap is strongly reduced by austerity and in some countries it would reach record low levels. Besides, for all euro area countries, it will take time to recover from the crisis since the output gap would not close until 2020. This is the consequence of past, current and future consolidation measures. But even countries that would reach the 60% debt ratio without additional fiscal

effort will be negatively affected by austerity implemented in other countries.

The most negative consequences are borne by Spain, Portugal, Greece and Ireland. These countries are those where the fiscal multiplier is the highest. The cost of austerity is then amplified and the effectiveness of consolidation, i.e. the ability to stick to the objectives settled in the European fiscal rules, is reduced. There is clearly a trade-off in the short term between economic growth and debt and this trade-off strongly hinges on the value of the fiscal multiplier. The higher the multiplier, the costlier consolidation and the smaller the public debt decreases. This trade-off raises the following question: is there an optimal situation where the same objective for public debt ratios may be reached while reducing output losses? If countries had the opportunity to delay austerity measures, they would benefit from higher growth, but what would be the consequences on debt? It is likely that the output gap would close more rapidly, hence implying lower values for the fiscal multiplier. By taking advantage of this time-varying feature of multipliers, it would be possible to optimize the effectiveness of fiscal consolidation. In order to compute such a variant, we seek for each country separately the date at which it would be optimal to start consolidation. This date may be different across countries as it depends on the initial conditions. It must be stressed that for each country, the simulations are done everything else equal and notably given the fiscal impulses in the other countries. Optimization is then partial as there may be feedback effects, which are ignored here. Besides, we keep interest rates spreads constant relative to the baseline scenario. This is clearly a strong hypothesis as part of the rise in sovereign yields spreads may be explained by fear of default. Then, frontloading austerity was perceived as the only way to convince financial markets that countries care about fiscal sustainability. Yet, we advocate that delaying fiscal austerity should go along with institutional arrangements ensuring that due measures will be taken in the future. The case for constant spreads may for example be warranted by the central bank playing the role of lender of last resort for sovereigns.

We consider a (small, permanent and negative) fiscal impulse at a certain year (and no fiscal impulse for any other year), and then we run the model and calculate the decrease in the public debt-to-

GDP ratio in 2032. This simulation is done at each date between 2013 and 2032 and for each country. The algorithm is simple: given the assumption of a homogeneous initial debt-to-GDP ratio across countries, given the timeframe for reducing debt to 60% of GDP (20 years), and given a maximum fiscal impulse of Imax=±0.5, it is possible to select the timing of the first fiscal impulse based on the maximum efficiency of fiscal impulse. Figure 5 suggests that when the fiscal multiplier is *constant*, austerity is more efficient (in terms of debt reduction) when the negative fiscal impulse is done in the first period (frontloading strategy). Implementing a 1 percentage point fiscal impulse in 2013 would lead to decrease by nearly 20 percentage points the public debt-to-GDP ratio in 2032. When the fiscal impulse is implemented in 2021, the debt ratio is only 11 percentage points lower in 2032 than in 2012. Since the fiscal impulse is small, this is an approximation of the first derivative of debt to GDP ratio 20 years from now relative to impulse in any year from now. If the model is linear (no hysteresis and constant fiscal multiplier), then, debt reduction is independent of initial conditions and derivatives are independent of the size of the impulse.

Things get more complicated when we consider time-varying multipliers, hysteresis effects and *different* initial conditions. Figure 6 is based on a business cycle-dependent multiplier and includes negative output gaps described above as initial conditions to the system. In such a model and for given initial conditions, multipliers are higher than a given critical value for which it is equivalent to implement fiscal restriction now or one year later, for a given amount of debt reduction. Thus postponing the negative fiscal impulse by one year or more may be more efficient for debt reduction (backloading strategy). For Germany where the output gap was close to zero in 2012, there is no gain in postponing fiscal consolidation. The maximum impact of consolidation is given when consolidation starts in 2013. However, for Greece, starting consolidation in 2013 gives poor results in terms of public debt reduction. The output gap is indeed strongly negative and the value of the fiscal multiplier is high. A fiscal impulse implemented in 2013 would thus have a strong negative impact on output. The negative feedback effect on the cyclical public deficit would mitigate the decrease in public debt. For Greece, a 1 percentage point fiscal consolidation would decrease public debt in 2032 by less

than 3 percentage points. The best year to start consolidation would be 2017 as the fall in the public debt ratio would reach nearly 13 percentage points in 2032. Using this algorithm for each euro area country, we obtain the year when it is optimal to start fiscal consolidation.

Figure 5. Debt reduction in 2032 for a 1.0 fiscal impulse on a given year

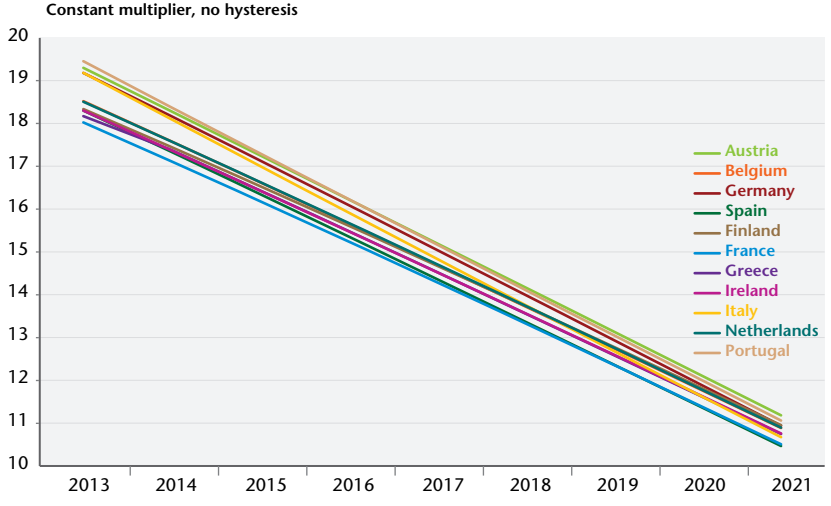
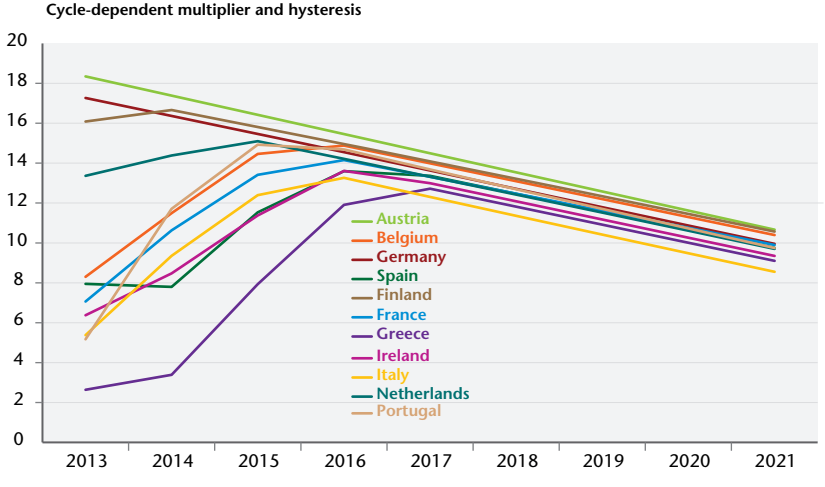


Figure 6. Debt reduction in 2032 for a 1.0 fiscal impulse on a given year, non linear model



Following the dynamics shown on Figure 6, the aforementioned algorithm states that fiscal impulses should not start in 2013 in most countries. The necessary sequence for debt reduction would thus follow a pattern of no impulse before the inflexion date and an impulse equal to Imax after the inflexion date, as long as necessary to reduce debt to 60% of GDP in 2032. Table 4 indicates the optimal date to start fiscal consolidation.

It may happen – as we describe below – that the debt target cannot be reached through this process. In this case, we compute the Imax which would allow reaching the 60% debt-to-GDP ratio.

We show that in the case of a large negative output gap, postponement is more effective to reduce public debt, because of the high current value of the fiscal multiplier. Accordingly, we find that there are 6 countries where it would be better to delay consolidation (Table 4). The effectiveness of consolidation would be increased in so far as time would be given for growth to recover. Such a strategy implicitly boils down to a 2-step approach. It stresses that it is first needed to let the cyclically-adjusted deficit be reduced in line with the closing of the output gap. Once the output gap is closed, it becomes more effective to undertake fiscal consolidation *per se*, i.e. the requested reduction of the structural deficit. Thus, for Greece, it would be more effective to start consolidation in 2017. For France, Spain and Ireland, it would be better to implement a neutral fiscal policy until 2016. Finally, for the Netherlands and Portugal, debt reduction would be optimized if consolidation started in 2015.

Comparing Table 4 to Table 2, we show that delaying fiscal consolidation leads to a higher average growth in 2013-2017 in concerned countries, and also for the euro area as a whole (2.4% for 2013-2017, against 1.7% without delaying the adjustment). Greece is again the country which would benefit the most from delaying fiscal consolidation. Yearly average growth would be 4.5 percentage points higher between 2013 and 2017. Then, as the output gap would close more rapidly, the average growth would be slightly lower from 2018 to 2032. It must be stressed again that postponing consolidation in these simulations would lead to achieve the same debt target, relatively to the situation where consolidation is only spread over time, with a cumulated fiscal impulse that would be only half as large. This is extensively

explained by the cycle-dependent multiplier, which makes austerity less painful since it is postponed until the multiplier reaches a lower value. Considering this argument, we may also argue that forward looking financial markets would also consider that it is more efficient to consolidate later. Then, if they worry about fiscal sustainability and public debt default, it is not clear whether interest rate spreads would necessarily increase. Furthermore, it may be needed to enforce the credibility of postponed austerity by appropriate institutional arrangements. The ECB should notably play a crucial role. As reminded by De Grauwe (2012), countries in monetary union are more prone to speculative attacks, which strengthens the argument for central banks in monetary union being lender of last resort for sovereigns. Similarly, Portugal, Spain, and Ireland combine a gain of 0.5 to 0.6 percentage point of growth on average over the same period

Table 4. Is it more appropriate to postpone the start of fiscal adjustment?

	Public debt (% of GDP)			Structural balance (% of GDP)			Cumulated fiscal impulse (% of GDP)	Average annual growth		Maximum negative output gap reached	Starting date of fiscal impulses (sign of FI)
	2012	2017	2032	2012	2017	2032	2013-2032	2013-2017	2018-2032	2013-2032	
Germany	82	74	60	0.3	-1.3	-1.1	1.6	1.6	1.3	-0.7	2013 (+)
France	90	86	60	-1.4	-1.2	-0.8	-1.1	2.8	2.1	-4.0	2016 (-)
Italy	127	107	60	0.3	-0.7	1.3	1.9	2.4	1.3	-3.0	2013 (+)
Spain	86	95	60	-3.7	-4.0	2.4	-7.3	3.1	1.9	-5.7	2016 (-)
Nether-lands	69	72	60	-2.9	-2.1	-1.6	-2.1	2.3	2.0	-2.1	2015 (-)
Belgium	100	90	60	-0.9	-1.3	-0.5	0.1	2.7	2.0	-3.2	2013 (+)
Portugal	119	116	60	-2.8	-1.7	1.9	-3.3	2.4	1.6	-3.3	2015 (-)
Ireland	118	123	78	-5.0	-5.1	2.7	-8.0	3.2	2.2	-4.7	2016 (-)
Greece	177	141	60	-0.6	-0.3	2.8	-1.5	4.1	1.9	-7.1	2017 (-)
Finland	53	56	60	0.2	-2.3	-2.8	1.8	2.6	2.2	-1.3	2013 (+)
Austria	75	72	60	-2.5	-1.6	-1.4	-0.9	1.7	1.6	-0.9	2013 (-)
Euro area	94	88	60	-1.0	-1.6	-0.1	-0.7	2.4	1.7	-2.9	

Sources : Eurostat, iAGS model.

when they delay fiscal consolidation and implement a bigger cut in their structural deficit. For France, average growth would be 0.2 percentage point higher compared to the situation where consolidation is spread over time. This improvement would stem from the better prospects of trade partners within the euro area. It remains to be said that this mild improvement would give a net gain of 0.5 percentage point in comparison with the baseline situation where the French government sticks to its current fiscal commitments.

For Austria and Germany, the second variant would not entail significantly less consolidation. On the one hand, those countries would benefit from a stronger growth in the rest of the euro area. But, on the other hand, interest rates would be higher as a result of a relative tightening of monetary policy, through the Taylor rule. For Germany, real interest rates would on average amount to 1.7% when consolidation is delayed in all other euro area countries against 1% in the scenario where current commitments are fulfilled.

5. Conclusion

Drawing on a reduced-form model of most euro area member states, we assess the costs of the frontloaded strategy endorsed by governments, under the auspices of the European Commission, in terms of economic growth and also in terms of fiscal sustainability. Beyond clarifying the failure of this strategy, we discuss an alternative scenario built upon simulations based on the same reduced-form model. We suggest that keeping a debt ratio target of 60% by 2032 and postponing fiscal consolidation would be almost optimal. As a matter of fact, in most countries, long-term sustainability of public finances would be fulfilled while in the short run, economic growth would be higher.

The reduced-form model, though it departs from optimal control modelling, includes major features of the so-called New Consensus (New Classical) school: (partly) forward-looking expectations by consumers, firms and financial markets, a Taylor rule to describe monetary policy setting, the introduction of risk premia on public or private bonds, reliance on the disputable concept of "output gap" and a zero-lower-bound to describe non-linear mone-

tary policy. Despite the similarity of our model with some models used in large international institutions like the European Commission, we achieve new results as regards the appropriate pace of fiscal consolidation in the euro area. Two assumptions are important: fiscal multipliers vary along the business cycle, in accordance with an abundant literature which we review, and hysteresis effects maintain the real GDP fall vis-à-vis its potential. The introduction of a delayed consolidation in the euro area certainly goes beyond the letter of the European treaties; nevertheless, this backloading strategy would significantly alleviate the social consequences of the crisis as it would reduce unemployment. For this strategy to be fully effective, a strong commitment by governments to reduce debt-to-GDP ratios in the future is a necessity: debt reduction must be planned, but only once the output gap has substantially decreased, therefore limiting the costs of consolidation. Governments should pay attention to the size of fiscal multipliers and to the level of the output gap or the unemployment rate before implementing restrictive fiscal policies.

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Appendix : Main hypotheses for the baseline simulations

Simulations begin in 2013. To do so, we need to set some starting point values in 2012 for a set of determinant variables. Output gaps for 2012 come from ECLM-IMK-OFCE forecasts. Potential growth for the baseline potential GDP is based on Johansson *et al.* (2012) projections (see Table A1). Concerning fiscal policy and budget variables, the main hypotheses are as follows:

— The public debt in 2012 comes from the European Commission's autumn 2012 forecast;

— We use the ECLM-IMK-OFCE forecasts for fiscal balances in 2012;

— We use the European Commission's autumn 2012 forecast of interest expenditures for 2012; combined with ECLM-IMK-OFCE forecasts of output gaps in 2012, and model estimates of the cyclical part of the fiscal balance, it gives the structural primary balance for 2012;

— Fiscal impulses come from ECLM-IMK-OFCE forecasts for 2013 (Table A2). For 2014-2015, we use fiscal impulses implied by the Stability and Growth Pact reported in the "Assessment of the 2012 national reform programme and stability programme" for each country.

— Sovereign spreads come from ECLM-IMK-OFCE forecasts for 2013-2015 (see Table A3). We made the hypothesis that the ECB programme of unlimited debt buying on the secondary market (Outright Monetary Transactions) is effective and achieves its goal to bring down interest rates for Italy and Spain. Regarding countries relying on the ESM for debt financing, we assume that Ireland will get direct access to financial markets as of 2014, Portugal as of 2015 and Greece as of 2016.

Table A1. Main hypotheses for 2012

In %

	Public debt	Fiscal balance	Structural primary balance	Interest expenditures	Output gap	Potential growth
Source	European Commission	ECLM-IMK-OFCE	ECLM-IMK-OFCE	European Commission	ECLM-IMK-OFCE	ECLM-IMK-OFCE
Germany	81.7	-0.2	2.7	2.4	-1.0	1.3
France	90.0	-4.4	1.2	2.6	-6.2	2.0
Italy	126.5	-2.5	5.8	5.5	-5.5	1.3
Spain	86.1	-7.4	-0.7	3.0	-8.5	2.0
Netherlands	68.8	-4.4	-0.9	2.0	-2.8	2.0
Belgium	99.9	-3.5	2.6	3.5	-4.8	2.0
Portugal	119.1	-5.5	1.7	4.5	-6.1	1.5
Ireland	117.6	-8.0	-1.0	4.0	-7.4	2.2
Greece	176.7	-6.7	4.8	5.4	-14.1	1.9
Finland	53.1	-0.9	1.3	1.1	-2.1	2.2
Austria	74.6	-3.0	0.1	2.6	-1.1	1.6

Sources: European Commission, ECLM-IMK-OFCE forecasts.

Table A2. Fiscal impulses

In % of GDP

	2013	2014	2015
Germany	0.0	-0.3	0.0
France	-1.8	-0.6	-0.5
Italy	-2.1	0.0	0.0
Spain	-2.5	-1.2	-0.6
Netherlands	-1.2	-1.2	-0.5
Belgium	-0.8	-0.6	-0.8
Portugal	-2.9	-0.6	-0.2
Ireland	-1.8	-2.1	-1.8
Greece	-3.9	-2.7	-0.9
Finland	-1.3	0.0	0.0
Austria	-0.9	-0.3	-0.6

Sources: ECLM-IMK-OFCE forecasts.

Table A3. Sovereign spreads relative to German interest rate on public debt

In %

	2013	2014	2015
Germany	0.0	0.0	0.0
France	0.1	0.0	0.0
Italy	1.3	0.8	0.0
Spain	1.5	0.8	0.0
Netherlands	0.1	0.0	0.0
Belgium	0.5	0.1	0.0
Portugal	1.4	1.2	1.0
Ireland	1.4	1.5	0.0
Greece	1.4	1.2	0.9
Finland	0.0	0.0	0.0
Austria	0.0	0.0	0.0

Sources: ECLM-IMK-OFCE forecasts.

Part 3

GOVERNANCE AND BANKING ISSUES

BANKING UNION: A SOLUTION TO THE EURO ZONE CRISIS?[1]

Maylis Avaro
ENS Cachan
Henri Sterdyniak
OFCE

In June 2012 European Council launched the banking union as a new project expected to contribute to solve the euro area crisis. Is banking union a necessary supplement to monetary union or a new rush forward? A banking union would break the link between the sovereign debt crisis and the banking crisis, by asking the ECB to supervise banks, by establishing common mechanisms to solve banking crises, and by encouraging banks to diversify their activities. The banking union project is based on three pillars: a Single Supervisory Mechanism (SSM), a Single Resolution Mechanism (SRM), a European Deposit Guarantee Scheme (EDGS). Each of these pillars raises specific problems. Some are related to the current crisis (can deposits in euro area countries facing difficulties be guaranteed?); some other issues are related to the EU complexity (should the banking union include all EU member states? Who will decide on banking regulations?), some other issues are related to the EU specificity (is the banking union a step towards more federalism?); the more stringent are related to structural choices regarding the European banking system. Banks' solvency and ability to lend, would depend primarily on their capital ratios, and thus on financial markets' sentiment. The links between the government, firms, households and domestic banks would be cut, which is questionable. Will governments be able tomorrow to intervene to influence bank lending policies, or to settle specific public banks? An opposite strategy could be promoted: restructuring the banking sector, and isolating retail banking from risky activities. Retail banks would focus on lending to domestic agents, and their solvency would be guaranteed by the interdiction to run risky activities on financial markets. Can European peoples leave such strategic choices in the hands of the ECB?

Keywords: Banking union, European Construction.

1. Preliminary drafts were presented at the 6th International Conference of the Centre d'Etudes Monétaires et Financières (CEMF) and the International Economic Policy Institute (IEPI), *Sovereign debts, economic policies and bank reforms*, Dijon (December 2012), at the Thematic Meeting of the French Economic Association (AFSE), *The Crisis of EMU: theoretical issues and prospects for economic policy*, Orléans (May 2013), at the 10th EUROFRAME Conference on economic policy issues in the European Union, Warsaw (May 2013), at the Euro memorandum meeting, London (September 2013), at the AIECE meeting, Brussels (November 2013). We thank all participants for their comments. We particularly thank Anne-Laure Delatte for her careful reading and helpful suggestions. All remaining errors are our own.

e-mail: maylis.avaro@ens-cachan.fr; sterdyniak@ofce.sciences-po.fr

Since early 2011, the European authorities have tried to find ways to solve the public debt crisis in the euro area. This crisis revealed the drawbacks in the euro area organisation; they led to a rise in imbalances between euro area countries from 1999 to 2007; they did not allow the implementation of a common economic strategy after the 2008 financial crisis. The 28-29 June 2012 European Council was a new attempt from European bodies and member states to solve the euro area crisis. A new project emerged: the banking union, which was more precisely defined at the 13 December 2012 Summit. Is banking union a necessary supplement to monetary union or a new rush forward?

The current crisis is originally a banking crisis. Prior to the crisis, European banks had fed the rise in the financial and housing (especially in Spain and Ireland) bubbles; they had invested in risky investment or in hedge funds in the US;[2] they were making a significant part of their profits on financial markets, but were risking their own funds. They experienced significant losses due to the 2007-2009 crisis and the burst of the bubbles.[3] Governments had to come to their rescue, which was particularly costly for Germany, the UK, Spain, and, above all, for Ireland.[4] The euro area sovereign debt crisis increased banks' difficulties; public debts which they held became risky assets. A dangerous resonance appeared between the difficulties of public finances and those of the banks of the same country. Doubts on public debt weaken national banks which generally own a certain amount of government bonds; markets consider that governments will have to rescue domestic banks, which increases the fears on governments' solvency and on capacity to support domestic banks (Pisani-Ferry and Wolff, 2012). Mistrust grows in an uncontrollable vicious circle. Last, the debt crisis destroyed the euro area unity and the

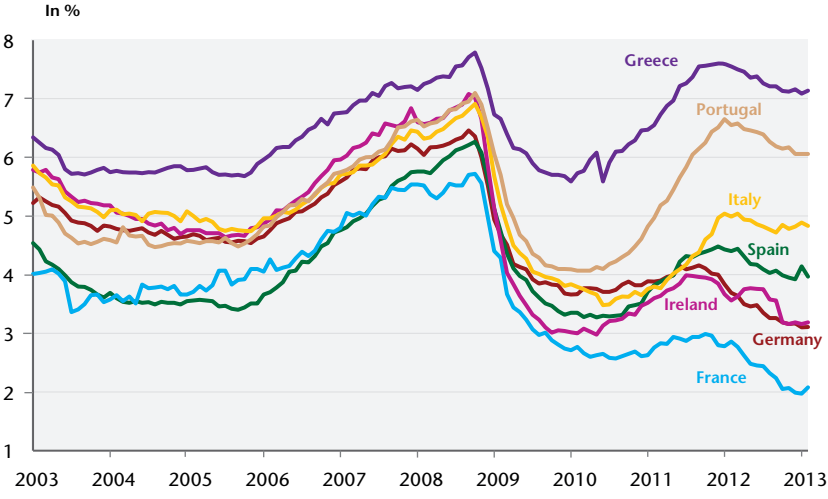
2. Euro area banks' foreign assets in US dollars reached 4 trillion dollars in 2008, four times the figure for US banks' assets in European currencies (Baba *et al.*, 2009).

3. Their writedowns related to US dollar-denominated non-bank assets are estimated at 423 billion dollars between 2007 and 2009 (McGuire and Von Peter, 2009).

4. Between 2008 and October 2012, the approved amounts of rescue packages to financial institutions reached 5.1trillion euros (40.3% of EU GDP), 365% of GDP for Ireland, 256% for Denmark, 97% for Belgium. The amounts effectively used reached 1.6 trillion euros (12.8% of EU GDP), 224% of GDP for Ireland, 66% for Denmark, 32% for Greece (European Commission, 2012 d).

notion of 'single currency': a Spanish company cannot borrow at the same interest rate as a German one (Figure 1).

Figure 1. Interest rates on short-term loans to non-financial companies



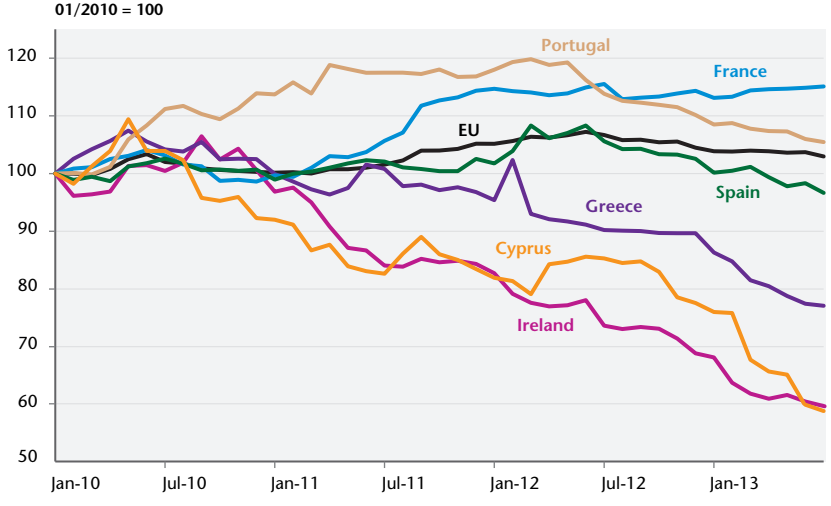
Source: ECB.

Due to the liberalisation of capital movements, small countries (Ireland, Iceland and Cyprus) developed banking systems far too big for their size, and were unable to rescue them. The issue of banking regulation is addressed at the international level (new Basel III standards), in the United States (Volker rule and Dodd-Frank Act) and in the United Kingdom (Vickers' report).

In June 2012, the robustness of European banks was once again questioned. The measures introduced since 2008 to stabilise the financial system turned out to be insufficient. When Bankia, the fourth bank in Spain requested a 19 billion euros support from the Spanish government, concerns on Spanish banks' balance sheets strongly rose. The share of bad debts in Spanish banks, whose balance sheets have been weakened by the burst of the housing bubble, rose from 3.3% at the end 2008 to 8.7% in June 2012, and 11.3% at the end of 2012 (according to the Bank of Spain). Furthermore, many European depositors reduced their domestic bank deposits fearing their country could leave the euro area: during the first half of 2012, bank deposits fell by 5.6% in Greece, 12% in Ireland, 4.5% in Portugal. From June 2012, this started also to

occur in Spain: bank deposits declined by 90 billion euros in the summer (Figure 2). The TARGET 2 system automatically re-lent to Spanish banks the Spanish deposits held in German banks, but the ESCB was thus playing a role of guarantee of Southern countries' banking systems, which could be dangerous and raised the concerns of German politicians and economists.

Figure 2. Bank deposits



Source: ECB.

In May 2012, in response to these risks, Mario Monti re-launched the objective of a European banking union, taking up projects already in preparation at the DG Internal Market and Services of the European Commission. Germany was reluctant, considering that there can be no banking union without a fiscal union. Even though Angela Merkel acknowledged the importance of having a European supervision with a supranational banking authority, she refused that Germany takes the risk of new transfers or guarantees, without enhanced budgetary and political integration. However, the banking union project received the support from the European Commission, the ECB, and several countries (Italy, France, Spain...), some wishing to accelerate the move towards a federal Europe, some looking for a lifeline emergency. Thus, the need for urgent action to save the euro area could have heavy consequences, with reforms implemented too rapidly, without fully considering their consequences.

The banking union would, according to its proponents, break the nexus between sovereign debt crisis and banking crisis, by entrusting bank supervision at the EU level, implementing common mechanisms for banking crises resolution and for deposit guarantee, and encouraging banks to diversify their activities and their loans in Europe. It would help to unify credit and deposit markets in Europe (see Dai and Sarfati, 2012, Pisani *et al.,* 2012). Conversely, it would introduce in each country a break between banks on the one hand, governments and national companies on the other hand. It would be a new step towards federalism by a new transfer of competence from the Member States to European authorities. The project raises again unresolved issues: can there be an economic and monetary union without a fiscal and political union? Is there any limit to EU integration? How to take national differences into account?

Can banking union offset four major drawbacks of the Monetary Union: the absence of a "lender of last resort", which allows financial markets to bet on the possible bankruptcy of States; the absence of rigid solidarity, control or coordination mechanisms which weakens the single currency; the inability to implement a crisis exit strategy, which has led several economies to fall and remain in recession, which weakens further their banking system; the fact that a single interest rate set by the ECB, with arbitrary risk premia requested by financial markets, leads to uncontrollable credit conditions in member countries?

Such a banking union would be based on three pillars:
— A Single Supervisory Mechanism (SSM).
— A Single Resolution Mechanism (SRM).
— A European deposit guarantee scheme.

Each of these pillars is subject to specific problems. Some of this problems are related to the complexity of the functioning of the EU (Is banking union limited to the euro area or does it include all EU countries?) some others to the crisis context (should Europe guarantee depositors against the exit of their country from the euro area? Should Europe support banks already facing difficulties?), some others linked to the EU specificity (Is banking union a step towards more federalism? How to reconcile it with national prerogatives?), finally other problems linked to structural choices on the functioning of the European banking system (should there

be a better surveillance of a European banking system, which is internationally diversified and integrated to financial markets? Should banks refocus their activity on their core business, credits and deposits?).

However on 29 June 2012, the euro area summit agreed that the Commission would make proposals for a SSM for euro area banks (European council, 2012b), which was the condition for allowing the European Stability Mechanism (ESM) to directly recapitalise banks, thus breaking the vicious circle.

On 18 October 2012, the Council launched the legislative work on a banking union while insisting on the need to strengthen the surveillance of fiscal policies (six-pack, two-pack, Fiscal Compact), by the monitoring of macroeconomic imbalances and by increasing incentives for structural reforms.

On 13 and 14 December 2012, the Council agreed on the SSM, giving the ECB the full responsibility for the European banks supervision. This allowed launching the trilogue discussion with the European Parliament. On 12 September 2013, the European Parliament agreed to set up the SSM. These powers will be effective from September 2014.

With regard to the SRM, on June 2013, the Council agreed on the Bank Recovery and Resolution Directive (BRRD), proposed by the EU Commission in June 2012. An agreement with the European Parliament was announced on 20 December 2013. An intergovernmental agreement on a Single Resolution Board (SRB) and a Single Resolution Fund (SRF) was announced on 18 December 2013, but no agreement has yet been reached with the European Parliament.

We will analyse the issues and problems of each of these three pillars, and we will then discuss the future model of the banking system in the European banking union.

1. A Single Supervisory Mechanism

The objective of setting up a single European banking supervisor is to have an independent and powerful institution supervising European banks. The arguments in favour of such a supervisor are the same as for an independent central bank. Banks, like money,

should escape from the political sphere to be entrusted to experts. Banking supervision by an independent supranational authority prevents national or political factors to influence decisions and strengthens the credibility of strict rules (Rochet, 2008). An independent supervisor will be credible when asserting that not all banks will be necessarily bailed out in the event of bankruptcy, which will encourage banks to reduce their risks. This will reduce the moral hazard of banks otherwise encouraged to take risks under the insurance of being bailed out by their State. Independence also ensures shorter delays for the implementation of bankruptcy procedures, delays that are detrimental to the effectiveness of the adopted resolution procedure and create the possibility of lobbying actions limiting the credibility of the overall scheme. The supervisor should be able to monitor banks in trouble before they become a threat to financial sector stability. Speculation on bank failures which has fed the crisis, would be substantially reduced. Confidence depends strongly on the quality of supervision. Uncertainties about the quality of the banking sector, on its capitalisation, on the amount of bad debts caused difficulties for banks to refinance themselves on the interbank market.

The European banking supervisor should facilitate the implementation of the common scheme of crisis resolution, by acting both in normal times and in times of crises for the resolution of bankruptcy procedures. Finally, it will monitor the implementation of the new Basel III standards. From 1 January 2014, banks will have to increase the level and quality of their capital: the Core Tier 1 ratio (comprising core equity: common stock and retained earnings) should increase from 2 to 4.5% of banks' assets, while the TIER 1 ratio should stand at 6% at least, versus 4% previously.

The single banking supervision should enable to set up both a single mechanism of deposit guarantee and a single mechanism for assistance to banks in difficulty (Véron and Wolff, 2013).

There has been a debate on whether the European banking authority (EBA) or the ECB should be in charge of the SSM. The EBA was founded in November 2010 to improve the EU banking system supervision and is a young institution. It already ran two series of “stress tests” on banks. In October 2011, Bankia’s tests results pointed to a 1.3 billion deficit of core capital. Five months later, this deficit was 23 billion. This weakened the EBA’s credi-

bility. Moreover, the EBA has no national correspondents; it is based in London, and has authority on the British system while the United Kingdom does not wish to be part of the banking union.

The ECB lobbied to be entrusted with this task. Hence, Mr Constancio, Vice-president of the ECB, said on 12 June 2012, that "the ECB and the Eurosystem are prepared" to receive these powers; "there is therefore no need to create a new institution". Section 127.6 of the Treaty on the functioning of the European Union,[5] quoted at the 29 June euro area summit, makes it possible to give supervisory authority to the ECB.

Financial stability is already an objective of national central banks and the latter already had a role in the banking sector supervision. In France, for example, the Prudential Supervisory Authority is responsible for the agreement and supervision of banks and insurance institutions; it an independent authority, but remains backed by the Bank of France.

The European Commission estimated that the ECB has an established reputation of political independence. The ECB's good knowledge of the interbank market, of liquidity in circulation, of the situation and reputation of each bank was an advantage over an independent agency.

So, the Commission chose the ECB to conduct banking supervision within a single supervisory mechanism (SSM) including the ECB and the existing national prudential authorities (European Commission, 2012 a). The ECB will receive the responsibility of monitoring missions for all the participating member states' credit institutions, regardless of their business model and their size. It will ensure the implementation of standards for the degree of leverage, of liquidity, of own funds and it may, in coordination with the national authorities, impose the constitution of capital buffer or the introduction of corrective measures as deemed necessary. It will be the relevant authority to approve credit institutions. It will ensure the coherent application of the EBA single rulebook.

5. Art 127.6 "The Council, acting by means of regulations in accordance with a special legislative procedure, may unanimously, and after consulting the European Parliament and the European Central Bank, confer specific tasks upon the European Central Bank concerning policies relating to the prudential supervision of credit institutions and other financial institutions with the exception of insurance undertakings."

In addition to its role as lender of last resort, the ECB would thus be responsible for supervising all banks in the banking union, but it will directly supervise banks with assets amounting to more than 30 billion euros or at least 20% of GDP of the country where their headquarters are located, as well as the banks which will request or receive assistance from the ESM, i.e. 200 banks on a total of 6 000 banks in Europe (European Commission, 2013c). It will monitor the supervision of other banks which will be conducted by national supervisory authorities, who will be accountable to the ECB. The ECB may decide, at any time, to supervise any credit institution. The SSM will benefit from the expertise of national supervisory authorities. The ECB shall have access to all the information available to national supervisors. As the ECB is an EU institution, it will be possible to appeal a decision according to the principles defined in the European treaties.

The ECB's new prerogatives as a single supervisor will have to take into account the presence of non-euro area countries in the banking union. Non-euro area EU countries are already represented in the ECB within the General Council which brings together all the governors of central banks of the EU. But currently this Council does not have any power. A fair distribution of powers between euro and non-euro area countries on European banking supervision is going to be very delicate within the ECB, this institution being primarily the Central Bank of euro area countries. So the European Parliament decided that all countries participating to the SSM are entitled to the same representativeness within the Council who will lead the supervision tasks of the ECB. In fact, in January 2014, the UK, Sweden and the Czech Republic already announced that they will not participate; no non-Euro area EU country has already decided to join the SSM.

A Supervisory Board (SB) and fully independent services will have to be created within the ECB to avoid conflict with the monetary policy objective. The SB would have six members from the ECB (the Chair, the Vice-Chair and four other members) and representatives of each national supervisor (which may be the national central bank or a separate authority). However the Board of Governors will have a right of veto on all decisions. To ensure the democratic legitimacy of the process, the Commission claims that the project ensures "strong accountability safeguards, notably vis-

à-vis the European Parliament and the Council" (European Commission, 2012 b). In practice, the ECB will have to present to the European Parliament the key points of the supervisory board's minutes and the appointment of the Chair and of the Vice-Chair of the Supervisory Board will have to be approved by the Parliament. The supervisory power of the ECB voted on 12 September 2013 will be fully effective in November 2014, one year after the entry into force of the texts.

The Commission claims that the ECB will take no mission from the EBA, whose mandate in the European monitoring mechanism was specified (European Commission, 2012b): the EBA should elaborate a common legal framework for surveillance through a single rulebook for banking supervision in Europe, including the countries which would not be part of banking union. It should also provide the texts of laws that will govern the management of banking crises in the euro area. It should ensure regular stress tests on European banks. The EBA may make decisions on the double majority (group of countries subject to the SSM, group of countries not subject to it), which in practice gives a right of veto to the UK. So the EBA existence allows the UK to maintain a link with the banking union.

The ECB and the EBA are expected to work closely within the European Systemic Risk Board, responsible for alerting the European authorities about banking and financial instability risks in Europe. It is not yet certain that this committee will have an effective role, in the absence of any established doctrine and of any strong will.

1.1. Delicate transfers of sovereignty for a single supervision

The risk is great that entrusting these issues to the ECB is a new step towards the de-politicisation of Europe. Certainly, the European authorities claim that the ECB will be subject to enhanced transparency and democratic accountability requirements. Although the President of the ECB is often heard by the European Parliament, the Parliament control remains formal; the ECB maintains a full independence vis-à-vis national governments and European institutions. Although a Monitoring Committee is created, the Governing Council will remain responsible for banking supervision and monetary policy decisions. Despite the

creation of a single supervisory mechanism including national authorities, the ECB will make decisions in full independence, and simply has to "account for" and "reply to parliamentary questions" but these decisions will not be questionable, as is the case today with monetary policy decisions.

Will the ECB be able to account for European banks diversity? The European Parliament says that it will be one of its duties but it does not explain how financial institutions diversity will be preserved (Committee on Economic and Monetary Affairs, European Parliament, 2012). The single rulebook on which the EBA works and which must serve as a code of conduct for the ECB advocates a uniform regulation for all European banks. However, should governance or the capital ratio be the same for a small German retail bank and a large European banking institution?

One should have considered a dual system: the ECB would manage large transnational banks and national regulators would supervise national and regional banks and would preserve their specificities. However, national regulators are facing today unequal risks: they are facing much bigger risks in Southern countries (Greece, Spain, and Portugal) than in Germany or Finland. A dual system would have risked accelerating the withdrawal of deposits from medium-size banks in Southern countries.

The main point is the objective for the European banking system: large transnational banks, with cross-border deposits or credits, with substantial financial markets activities, or national and regional banks of reduced sizes, well inserted into real economic activities.

Banks are encouraged to diversify internationally to reduce their risks. But the crisis showed the dangers of diversification on foreign markets where banks are not familiar with.[6] Banks lose contact with domestic firms, which deteriorate the quality of credit. Local authorities would no longer have dedicated banks.

6. For instance, studying micro-level data on 105 Italian banks over 1993–1999, Acharya *et al.* (2002) show empirical evidence of diseconomies of diversification for certain banks which expand their activities in industries where they face a high degree of competition or lack prior lending experience. This generates an increase in credit risk of loan portfolios or poor monitoring incentives.

Governments will lose their ability to influence bank credit supply, which, for many people, is desirable (no political influence on credit supply), but is dangerous in our opinion: governments will lose an industrial policy tool that could be used to finance small and medium size firms, or to promote environmental transition.

For instance, in the case of the Dexia bank, the opposition between on the one hand the European Commission and on the other hand France, Belgium and Luxembourg, has for a long time blocked the plan to dismantle the bank. This plan includes the resumption of financing activities of local French authorities of Dexia by a public bank, created by the cooperation between the *Caisse des dépôts* and the *Banque Postale*. On fair competition grounds, Brussels questioned the financing of local authorities by such a bank because Dexia received public aid for its dismantling plan. This threatens the continuity of the financing of local French authorities, could block their projects and especially forbid France to provide specific and secure mechanisms to finance local projects by local savings.

Similarly, in October 2012, the French Government rescued the BPF, *Banque PSA Finance,* the Bank financing the Peugeot group, in order to avoid that PSA can no longer provide credit to its customers. France guaranteed 7 billion euros of PSA bonds and got a commitment from the BPF's creditor banks to increase their loans. Is this compatible with a banking union?

Finally, the French project of a public investment bank (*Banque publique d'investissement*, BPI) is problematic in this context. This bank should provide credit according to specific criteria, linked with the French industrial policy. The question of the compatibility of such a public institution with the banking union will arise.

European banks will have to account for different national regulations on interest income taxation, special deposits regulation or financing circuit organisation. Is this compatible with the banking union or does convergence need to be organised? And who will decide about it?

In any case, the SSM does not address the question of how to ensure similar credit conditions in different countries sharing the same currency but in different economic situations. In the recent past, equal nominal interest rates encouraged rising debt in coun-

tries with strong growth and inflation. Today, interest rates are strongly influenced by risk premia imposed by markets, with no link to the macroeconomic situation.

It is difficult to assess if there will be (and if there should be) a Chinese wall between bank supervision and monetary policy (see Beck and Gros, 2012, for a discussion). The two functions are closely correlated when the Central Banks provide liquidity to banks, especially in times of crisis. Some economists (Goodhart, 2000 or Darvas and Merler, 2013) have raised the possibility that the Central Bank's role as banks' supervisor may enter into conflict with its objective of maintaining price stability. In the future, the ECB may decide not to raise interest rates, when necessary, in order to avoid downgrading banks' financial position. But this problem is not specific to the SSM implementation; it is always a concern for monetary policy that a strong interest rise deteriorates the balance sheet of some financial agents.

One could imagine that the ECB implements diversified macro-prudential policies imposing higher capital ratios to banks in countries in economic expansion and lower ratios for countries in difficulty. But this raises three questions: the macro-prudential logic will go in the opposite direction of the micro-prudential one; this implies that banks remain national; the ECB's strategy is likely to go in the opposite direction of the economic and fiscal strategy of the Member State (MS). Will the ECB punish a country running a too expansionary policy according to the Bank views by imposing strong capital ratios to its banks? In 2014, for instance, a MS like France may want domestic banks to increase credit supply to French firms to support an industrial recovery, but the ECB may consider this is a dangerous strategy for French banks financial stability. Diversified macroprudential policies would require a MS-well-defined coordination of European monetary policy, country-specific monetary measures and domestic fiscal policies which is not on the European agenda today.

A common vision on the banking system regulation is a prerequisite to European supervision. An agreement needs to be reached on crucial questions such as: is it necessary to separate retail banks from investment banks? Should banks be prevented to intervene on financial markets for their own profit? Should we promote the development of public, mutual, or regional banks or on the contrary

the development of internationalised banks? Should we encourage banks to supply credit primarily to households, businesses and governments of their countries of origin or on the contrary to diversify? Will macro-prudential rules be national or European? On each of these issues, the MS, the Commission, the ECB, and the EBA may have different points of view: who will decide?

Of course, in theory, it would be easier and more legitimate to rescue banks under a single supervision. But this prospect is hardly useful in the current crisis, where the problem is to help banking systems already in trouble in Spain, Cyprus, Ireland, or Slovenia.

Southern countries' current difficulties oblige the entire euro area to a rapid and full centralisation of banking regulation, the defaults of which may appear in a few years. In our view there is a major risk that euro area countries agree in emergency to enter a dangerous path, and that the banking union is as badly analysed *ex-ante* as were the single currency, the Stability and Growth Pact, the Fiscal treaty.

The Cypriot crisis has highlighted the difficulties of a European supervision. The European banking system is currently highly heterogeneous. Banks' balance-sheets-to-GDP ratios differ strongly among countries (Table 1). In some countries, banks have a significant share of deposits from non-residents. Does the SSM need to make national systems converge or can it accommodate their diversity?

The risk is that the banking union leads to conflicting situations between national strategies on banking and financial matters and the ECB, either because some countries may wish to keep certain public or regional features in their banking system, or because some others will want to maintain their predatory features (to attract foreign deposits). Economic issues will also arise: will governments still have the responsibility and the ability to influence credit policy either according to the real estate market developments, or to the macroeconomic context?

In November 2013, ECB undertook a comprehensive assessment of the euro area banking system before assuming its supervisory tasks in November 2014. The ECB's note (ECB, 2013) gives a provisional list of the 123 concerned banks and confirms that no non euro area country will participate. "The exercise will

comprise a supervisory risk assessment, an asset quality review and a stress test". Common methodologies will be developed in these three areas. The ECB may require corrective action as recapitalisation, profit retention, equity issuance, assets' sales. Capital shortfalls for viable banks should be provided by private capital or, if private capital is insufficient, by public backstops. After this exercise, the ECB will have a clear view of the situation of the European banks and will be able to take the responsibility to supervise them. The process should increase the confidence about banks' situations: if some European banks are not in a viable situation, their case should be resolved in 2014. The limitation (or maybe the strength) of this exercise is that the ECB is both judge and party.

Table 1. Banks' consolidated balance sheets-to-GDP ratios

	2007	2012
Luxembourg	27.3	20.2
Malta	6.8	7.8
Cyprus	5.8	7.2
Ireland	8.5	6.9
United Kingdom	4.8	4.9
Netherlands	3.8	4.2
France	3.6	3.8
Spain	2.9	3.5
Portugal	2.6	3.4
Austria	3.2	3.2
Germany	3.1	3.1
Finland	1.6	3.1
Sweden	2.5	3.0
Belgium	3.9	2.9
Italy	2.1	2.7
Greece	1.7	2.3
Slovenia	1.2	1.4
Latvia	1.5	1.3
Estonia	1.3	1.1
Poland	0.8	0.9
Slovakia	1.0	0.8
Euro Area	**3.2**	**3.4**

Source: ECB.

The ECB must assess the riskiness of MS public debts, which depends on its willingness to guarantee them or to respond to speculative attacks. It must evaluate the size of macroeconomic shocks that banks should be able to resist, but this size depends on the ability of the ECB to implement countercyclical policies and the banks resilience depends on the ECB's willingness to help them in a strong recession. So, the ECB evaluation is not neutral; it can be seen as a commitment to rescue the banks proclaimed healthy.

Box 1. Banking regulation in the United States

In the US, banking supervision is dual: it adapts to the two types of US banks: national banks (intervening at the federal level) and State banks (specific to each State). Supervision is carried out by the Fed and the Federal Deposit Insurance Corporation (FDIC). The Federal Reserve membership is mandatory for national banks and optional for State banks. In the event of joining, banks must subscribe to their regional reserve Bank and deposit the corresponding reserves. The Fed is independent of the government as it is ultimately accountable to the Congress which establishes the key macroeconomic objectives for monetary policy and as members of the Board of Governors and the Chairman are confirmed by the Congress. The Fed regulates and supervises the banks which are members of the Federal Reserve and the Bank Holding Companies system (12% of commercial banks and through the BHC 96% of commercial banks' assets). It sets the level of mandatory reserves. The FDIC is an independent agency of the federal government and receives no Congressional appropriations. The five members of its Board of Directors are appointed by the President and confirmed by the Senate. It is responsible for the supervision of State banks that are not members of the Federal Reserve System. It is also responsible for bank bankruptcy procedures resolutions and ensures the continuum of prudential policy and resolutions procedures.

2. A single resolution mechanism (SRM)

Until now, within the European Union, the legal provisions governing bank failures were country-specific. In some countries, like the UK, banks are submitted to the general code of firms bankruptcy and thus to a judicial procedure. Other countries, such as France have mixed regimes: an administrative procedure conducted by the banks' supervisor coexists with a judicial proce-

dure; this allows to take into account the specificity of the banking sector (for instance, to involve other banks in the procedure; to protect the smaller deposits).

In June 2012, the European Commission proposed to establish a single resolution mechanism (SRM). This SRM will be based on the Bank Recovery and Resolution and Directive (BRRD) agreed by the Council in June 2013, by the trilogue in December 2013, but not yet formally voted by the European Parliament. The scheme has five pillars. The first one is to improve prevention by requiring banks to establish *wills*, i.e. to provide strategies for recovery, or even for dismantling, in case of crisis. The second gives the European banking authorities the power to intervene to implement recovery plans and to change bank managers if the bank does not meet the capital requirements. The third indicates that, if a bank fails, national authorities will be able to take control of it and use instruments of resolution such as the transfer of activities, the creation of a defeasance bank (a "bad bank") or the bail-in. The bail-in tool will give resolution authorities the power to write down the claims of unsecured creditors of a failing institution and to convert debt claims to equity. In the event of a bank failure, shareholders will be affected first, then subordinated claims and, if necessary, claims of higher categories. These claims could be transferred in equity. Some liabilities are permanently protected: deposits below 100 000 euros, liabilities to employees, and inter-bank liabilities with a less than seven days maturity. Others deposits (from individuals or SMEs) could have a specific treatment. National resolution authorities could also exclude liabilities to avoid contagion or value destruction in some creditors. The fourth pillar requires MS to set up a resolution fund, which must amount within 10 years, to 1% of the covered deposits of all credit institutions, which would have to finance it. The fund would provide temporary support to institutions under resolution. But the share of losses between ordinary creditors, privileged creditors and the resolution fund remains uncertain. According to the fifth, Member States shall ensure that the institutions maintain, at all times, a sufficient aggregate amount of own funds and eligible liabilities expressed as a percentage of the total liabilities of the institution (European Commission, 2012) to absorb losses. This percentage is estimated to be at least 10% but will be fixed in 2016 after a recommendation by

the EBA. So, in principle, taxpayers would not have pay for the creditors of insolvent banks. The EBA will have to set out the legislative framework for these instruments of resolution. The administrative body responsible for the resolution at the national level is left to the discretion of each country: Central Bank, finance ministry or a specific institution.

On 10 July 2013, the Commission proposed to move further towards the SRM centralization (European Commission, 2013b). The ECB would signal banks in difficulty to a Single Resolution Board (SRB), consisting in representatives from the ECB, the Commission and the supervisory authorities of the relevant country). The SRB would propose a resolution procedure, which would be formally decided by the Commission (as the SRB has no constitutional existence) and implemented by the relevant country under the SRB control. If a national resolution authority does not comply with the decision of the Board, the latter could address executive orders to the bank in trouble. National resolution funds would be replaced by a Single Bank Resolution Fund. Due to the reluctance of some MS, particularly Germany, the draft adopted by the Council on 18 December 2013 states that the pooling of national resolution funds will be carried out gradually in 10 years, from 2015 to 2025. It is only at this horizon that banks financing or recapitalisation funds will be provided at the European level. The decision to place a bank under the resolution procedure will depend on the Resolution Fund Board, where sit MS representatives (and not of the Commission or the ECB). The restructuring projects will be developed by the Fund Board, submitted to the Commission and then to the Council (this procedure is not credible, taking into account the short delay required). A MS will not be required to provide funds without the approval of its Parliament. The Fund will be organised by an intra-government agreement, i.e. without the European Parliament. This project faces the reluctance of the European Parliament, which would have preferred the immediate introduction of the Single Resolution Fund at the EU level, so that the MS have no more power in this matter. But, in our view an EU organization cannot impose expenditures to MS public finances without their agreement, and MS cannot accept to lose any power on their national banks restructuring.

After an appropriate "burden-sharing" by private investors, banks may benefit, for their recapitalisation, from funds from the European Stability Mechanism (ESM), set up on October 8 2012. The ESM will borrow on financial markets at low rates (it aims to be AAA rated) and will be able to provide financial assistance to the European countries in difficulty through a European assistance under a *Memorandum of Understanding*. It will buy public debt bonds on primary and secondary markets and will thus contribute to lower interest rates. It will be able to mobilize 700 billion euros with 80 billion euros being effectively paid-up capital, the rest remaining available if needed. According to the Treaty establishing the ESM, the latter will have a status of senior creditor for public debts. When the European supervisor is in place, the ESM will have the possibility to recapitalise directly euro area banks in difficulty (and, in this case, it will intervene without the senior creditor status).

Here also, this leaves open the question of the potential intervention of the ESM for banks currently in difficulty. A choice needs to be made between two strategies: either the ESM only benefits banks subject to the SSM, which means that the ESM will only intervene in the next crisis; or the ESM rescues banks currently in difficulty because of the financial and economic crisis, which means that the ESM will play a central role quickly.

If this mechanism works effectively, if the ESM supports, recapitalises and restructures all European banks in difficulty, it will be a shareholder in a large number of banks. This would raise the issue of the management of such participations. Is it the role of the ESM?

The system introduced remains complicated, with the intervention of the ECB (*via* the SSM), of the ESM, of the national authorities of resolution and possibly of the deposit guarantee fund.

Box 2. Banking crisis prevention and resolution in the United States

This European crisis resolution scheme belongs to early corrective action policies which already exist in other countries. In the United States, following the savings and loans crisis in the eighties, the Federal Deposit Insurance Corporation Improvement Act was adopted in 1991. This text establishes a resolution framework structured in two pillars: early corrective action and resolution at low cost. The first pillar is an

"institutional response to the problem of capture of the regulator by the regulated" (Scialom, 2006): its objective is to decrease the regulators waiting propensity. Banking supervision and monitoring are done through two tools: on-site inspections and reporting obligations. The FDICIA determines the actions of the regulator and banks on the basis of their capital ratios. When banks fall below established in advance levels of funds, pre-defined corrective measures are applied. These measures are: the suspension of bonuses and dividends, a plan for the recovery of own resources, the obligation to recapitalise, the restriction of deposits remuneration, the limitation of the payment of the executives' compensation, a placing under administration or the liquidation if the bank fails its recapitalisation, the suspension of subordinated debt payments. The FDIC may decide the bank liquidation if it remained more than 90 days below the "critical undercapitalization" level. The codification of the sanctions makes predictable the choice of regulator and prevents arrangements between the bank and its regulator. The second pillar means that the method of resolution chosen for a bank in difficulty shall be the one which minimizes the cost of liquidation for FDIC.

2.1. A not-yet credible crisis resolution scheme

According to Finance Watch (2013), it is not sure that these dispositions could avoid a full taxpayer protection, if banks remain interconnected and too big. If a systemic bank is in financial difficulty, it would be difficult to report its losses on other credit institutions without creating a contagion effect. The scheme would require first to reduce the banks' size and to separate financial and market activities from credit activities.

A perverse effect of the projected crises resolution scheme is that the potential involvement of shareholders and subordinated creditors would make banks' shares and claims much riskier. Banks' reluctance towards the interbank credit and the drying up of the interbank market will persist; banks will find it difficult to issue securities and will have to increase their remuneration. Banks will be subject to financial markets' appreciation. However, Basel III standards require banks to link their credit distribution to their own funds. The risk is that banks are weakened and that credit supply is reduced, contributing to maintain the zone in recession.

Aglietta and Brand (2013) clearly approve of shareholders' involvement: "the best established principle of the market economy is that it cannot function properly if the threat of bank-

ruptcy is not effective for all private agents." But are banks private agents like any other agent? We would prefer a clear separation between banks playing a quasi-public role (management of deposits, loans to households, enterprises, public authorities) and banks with financial market activities, the first would benefit from a public guarantee directly by their State (and indirectly by the ECB), the others not.

The SRM project deprives the national authorities from all powers. They would be obliged to obey the Single Resolution Board instructions. The losses of a bank would be supported by all countries belonging to the banking union, thereby justifying a single control. According to the project, the Commission and the SRB would be able to decide to impose a resolution plan to a bank, without the agreement of the relevant governments. It is an important step toward European Federalism, which has not yet been accepted by Germany, for instance, which claimed for more political union though a constitutional reform before this hidden step.

The implementation of the guidelines of this new authority may be problematic. A banking group in difficulty may be requested to sell its shares of large national groups. But will national governments agree to expose a national champion to a foreign control? As shown in the case of Dexia, the terms of a bank restructuring can have serious consequences for the countries where it was operating. Are governments (and citizens) willing to lose all power in this area?

We cannot agree with the Finance Watch Report (2013), which writes: "a bank resolution mechanism must not be left in the hands of politicians, and even less of national interests" as if the organisation of the banking system was a purely technical matter and should not depend on economic policy choices made by the Member States.

Following the decisions of the 29 June 2012 Summit, Spain could be the first country where banks would be directly recapitalised by the ESM. However, this would not occur before 2014; the modalities of such a procedure and the impact of the ESM support on the governance of recapitalised banks still have to be specified.

The assistance to Spain agreed in summer 2012 foreshadows what could the European procedure for banking failure resolution

be. On 25 June 2012, the Spanish government requested assistance from Europe to restructure and recapitalise its banking sector. The 29 June 2012 Summit agreed to that request and entrusted this task to the ESM. The required conditions have been specified in a *Memorandum* agreed by the European Council. The document points out the weaknesses of the Spanish economy: growth boosted by strong households' and firms' borrowing, persistent external imbalances, a banking sector weakened by the burst of the financial bubble in 2007, which faces very high interest rates on the interbank market and implements credit rationing. The EU assistance is designed to clean up balance sheets of Spanish banks, which have a large amount of bad debts, to restore credit supply by allowing the return of Spanish banks on the interbank market and to improve financial sector's transparency.

The assistance programme has three steps: the detailed assessment of the situation and needs of banks; their recapitalisation and restructuring; the withdrawal of their bad debt in a *bad bank*, created for this purpose (the AMC: *Asset Management Company*). But the aid is awarded according to two sets of conditions, the first one concerning banks, the second one Spanish governance. Based on the results of *stress tests*, banks must offer recapitalization plans that will be evaluated by the Spanish authorities, the EBA, the ECB, the IMF and the European Commission. Banks had to achieve an equity ratio of 9% in December 2012. The Commission, the EBA and the ECB can examine the banks having received European aid and may choose to liquidate an institution they consider too fragile. The independence of the Central Bank of Spain and its supervisory power should be strengthened. The Spanish authorities must encourage disintermediation and financing *through* markets. Finally, the Spanish Government must reduce public and external deficits and undertake the structural reforms recommended in the context of the European semester.

The aid was spread into two parts: a first part, a 39.5 billion euros loan with an average maturity of 12.5 years has been agreed in December 2012 by the Eurogroup and the ESM to support the most vulnerable banks. All Spanish banks have run *stress tests* that assessed their recapitalisation needs; their results were published in September. Banks were then classified into four groups. The most solid (without recapitalisation need) will be in group 0; Banco

Santander, BBVA, La Caixa, Sabadell, Kutxabank, Bankinter and Unicaja are part of this group according to the report by Oliver Wyman's firm. The four banks already nationalized by the Fund for Orderly Bank Restructuring (FROB) are classified in Group 1. Other Spanish banks are either in Group 2 (for those unable to recapitalise on their own) or in Group 3 (for those which obtained a delay until June 2013 to raise capital by themselves). Banco Popular, MNB and the merged group between Ibercaja, Liberbank and Caja 3 benefited from a delay until 2014 to recapitalise while Catalunya Banco, NGC Banco, Banco de Valencia and Bankia must present a restructuring plan and transfer their unsafe assets to the bad bank, the Sareb. This institution, created on 1 December 2012, will be able to buy assets up to 90 billion euros. According to Fernando Restoy, the FROB president, haircuts applied to the loans transferred to the *bad bank* will be 45.5% on average and haircuts applied to real estate assets will reach 63% (see Birambaux, 2012). Junior and hybrid debts will be converted into equity or will be redeemed with a high discount.

Spanish banks received the second part of 1.9 billion euros for the recapitalization of the second group of banks in difficulty. The Commission report from March 2013 (see, European Commission, 2013) is optimistic about the recovery of the sector and does not expect other recapitalizations for the moment.

This ambitious assistance plan did not receive investors' full confidence: Spanish banks soundness is tested via *stress tests*. However these *stress tests* had failed in 2011 to foresee Bankia's difficulties: are they really able now to assess the needs of Spanish banks? Besides, this project monitoring is extremely complex. In the absence of a European supervisor, Spanish public authorities are responsible for the resolution: they are supported by the FROB, the public fund introduced in 2010 to reform the banking sector. The European Commission, the ECB, the EBA and the IMF monitor the proper conduct of the proceedings and may intervene on site. The difficulty of coordination of such an organisation diminishes the credibility of the project. The drastic recapitalisation that Spanish banks will have to perform may decrease credit availability, which will deepen recession in Spain. Spain has benefited from a substantial drop in the interest rate it has to pay: from 6.5%

in summer 2012 to 4.3% in April 2013, but Spanish GDP decreased until middle 2013.

In order to set the bases of the future European banking union, the European banking crisis management could extend to all European banks balance sheets the withdrawal of bad loans to an *Asset Management Company*. Since 2008, the United States has implemented such a measure through their TARP: *Troubled Asset Relief Program,* which was intended to clean the financial sector from its toxic assets. The US Treasury also purchased preferred shares for 205 billion dollars in the benefit of 707 companies, in order to strengthen financial institutions' and banks' own funds. On the whole 389 billion dollars were mobilized for this project; banks and other beneficiaries have currently refunded 80% of this amount.

Note that the *Bad bank* strategy, which was successful in Sweden in the beginning of the 90's, has its dangers. In 1995, the Credit Lyonnais, owned by the French State, was split into a healthy entity pursuing the bank activity and a bad bank responsible to sell all non-performing assets and activities of the Credit Lyonnais (Blic, 2000). However the pooling of assets within this bad bank generated a global fall in the value of transferred assets, the sale of which was an additional cost for taxpayers.

The Cypriot crisis led to the first implementation of the new method of banking crises resolution. European institutions refused to go beyond an aid of 10 billion euros to Cyprus, considering that this would have induced an unsustainable debt. They refused to help directly a banking system they judge oversized for the country, badly managed, specialized in money laundering and securing dubious Russian assets. Thus, the new method has been implemented: deposits are guaranteed up to 100.000 euros (after an initial version of the plan, which awkwardly planned to tax deposits under this level). Shareholders and creditors of Laiki, the second bank of Cyprus, which will be closed down, lose all their assets. The amounts of less than 100.000 euros deposits will be transferred to the Bank of Cyprus. The amount of deposits in excess of 100.000 euros is frozen and will be refunded according to the results of the Bank's assets liquidation (losses are estimated to be of 60%). Debts and deposits over 100,000 euros at the Bank of Cyprus, which is restructured, are frozen and will be partly

converted into shares to recapitalize the Bank (in application of the bail-in principle); their losses should amount to 40%.

However, this implementation of the new European scheme of crisis resolution revealed its weaknesses: banks have faced huge withdrawals from depositors and were forced to close for several days. Capital flows controls had to be introduced when banks reopened. Frozen assets and losses for large deposits have affected SMEs and some households doing real estate transaction, having just received an inheritance or saving for their retirement. Above all, Jeroen Dijsselbloem, the Eurogroup President, who said that the model applied in Cyprus corresponded to the future practice of the banking union, had to step back and pretend that the case of Cyprus was unique. The Eurogroup and several leaders of the ECB made similar statements, in full contradiction with on-going projects, thus weakening the choice of bail-in as the method of resolution.

3. The European deposit guarantee scheme

The banking union should include a European deposit guarantee scheme. A deposit guarantee system protects savers in case of bank failure by refunding their deposits up to a certain ceiling. It is one of the sovereign tasks of the State to provide citizens with a risk free instrument of payment and saving. Customers do not exactly know their bank's financial health; the majority of depositors, with deposits not exceeding a certain amount, cannot be asked to be interested in that; they are subject to information asymmetries which, in normal times, promote confidence in credit institutions. On the other hand, in a banking crisis, information asymmetries between depositors and towards banks strengthen the contagion of panic and cause a rush of investors seeking to withdraw their deposits massively. Then liquidity crises turn into solvency crises threatening to spillover to the entire banking system. A bank failure deteriorates stakeholders' confidence on the interbank market and decreases credit supply; therefore, it has a negative impact on the real economy halting activities that depend on these credits and causing a sudden stop of investments. However, it is necessary to distinguish between relatively small deposit amounts, with interest rates incorporating no risk premium, which must be guaranteed and other deposits, with

interest rates incorporating risk premia for, deposits that should rightfully bear the risk of losses.

The Diamond and Dybvig's model (1983) shows that a bank run is an undesirable equilibrium of the deposit contract in which all depositors panic and withdraw their deposits, even if they would prefer not to do so, pushing even healthy banks to fail. So a government deposit insurance which guarantees that the promised return will be paid to all who withdraw their funds, has a key social benefit because it allows banks to follow a desirable asset liquidation policy, separated from the cash-flow constraint imposed by the panic of depositors.

The harmonisation of the deposit guarantee level in Europe would avoid that some countries attract deposits from their neighbours by offering a full guarantee of deposits, a strategy implemented by Ireland during the crisis, knowing that this full guarantee may have heavy consequences for the population of the country concerned. On the other hand, given the differences in standards of living, the share of guaranteed deposits would widely differ from one country to another.

There were, in 2010, 40 different deposit guarantee regimes in the 27 EU countries (European Commission, 2010). Depending on countries, these schemes are managed by the government, by banks or by both. A group of banks may decide to create a common private fund to guarantee their deposits according to specific rules of their choice. EU lawmakers have developed the deposit guarantee *via* several directives: in 1994 [Directive 1994/19/CE] a first legislative text set a minimum level of guarantee corresponding to 20.000 euros per depositor; it requires that each MS sets up officially a guarantee fund and that all credit institutions subscribe to a guarantee scheme. The minimum level of guarantee was raised to 50.000 euros in 2009 and to 100.000 euros on 31 December 2010 [Directive 2009/14/CE].

In 2010, the European Commission put forward the idea of a pan-European deposit guarantee system by 2014 [European Commission, 2010]. It called for a networking of existing systems by proposing the establishment of a mutual borrowing facility between all funds and a gradual harmonisation of procedures. But the European Parliament and the Council disagreed on how to

harmonise the systems. The Member States wanted to reduce the financing rate of funds paid by banks, while MEPs wanted to make risky banks contribute more significantly *via* a system of risk premium. An agreement was reached in December 2013: in each MS, the target level for *ex ante* funds of DGS is 0.8% of covered deposits to be paid by member banks. The target fund level must be reached within a 10-year period. In case of insufficient *ex ante* funds, DGS will collect immediate *ex post* contributions from the banking sector, and, as a last resort, they will have access to alternative funding arrangements such as loans from public or private third parties. Bank contributions to DGS will reflect individual risk profiles. The Commission wishes now to launch discussions on the establishment of a pan-European guarantee scheme.

It is necessary for the Scheme to guarantee all European banks because if it covered initially only the strongest large transnational banks, depositors would rush to guaranteed banks and this would immediately increase the risk of a euro area break-up. Under the assumption of a 100.000 euros guaranteed ceiling, the amount of covered deposits would be 6.655 billion euros (European Commission, 2011). Compared to 2007 when regulations in Europe requested a guarantee of 20.000 euros only, the amount of guaranteed deposits would be increased by 18% (+ 994 billion euros) and the number of fully guaranteed deposits by 8% (+ 3 million deposits) but, in the event of a funding through a levy of a certain percentage of eligible deposits paid by banks, it would cost banks 815 million euros per year for 10 years on average in the EU which corresponds to a 4% decrease in their annual profit for 10 years as compared to 2007.

The crisis has shown the contradiction between the more and more internationalised structure of European banks and the deposit guarantee which remained at the national level. The problem turned out to be especially acute for countries like Ireland or Cyprus where banking systems were oversized. This can be prevented in two ways: setting the deposit guarantee at the European level or, on the contrary, setting limits to the size of each country's banking sector, to prevent credit bubbles and the accumulation of cross-border deposits, which are source of instability. The first solution is preferred in Europe today. But the Cypriot crisis will perhaps reopen the debate.

The Spanish banking crisis recalled the need to protect public finances in the event of bank failure, but in 2013, two issues remain problematic. According to Schoenmaker and Gros (2012), a banking union should be created under a "veil of ignorance", i.e. without knowing which country exhibits more risks: this is not the case in Europe today.

As the risk of a euro zone exit of a MS has not entirely disappeared, the question is: what guarantee would be provided by the banking union for euro denominated deposits in case of a conversion into national currency? A European guarantee on deposits in euros is needed to prevent the capital flight away from countries believed to be likely to leave the euro area. But in the current situation, given the risk that such a guarantee would have to apply for some countries (Cyprus, Greece, Portugal or even Spain), it is difficult to implement due to the opposition of Northern countries.

The European Commission has not chosen between a uniform rate of contribution to the guarantee scheme and a variable rate depending on the risk level of guaranteed institutions. The majority of countries have a uniform assessment system, but Canada and France have a variable risk pricing, which tends to reduce banks' moral hazard.

Box 3. The bank deposits guarantee in the United States

In the US, the deposit guarantee is provided by the Federal Deposit Insurance Corporation (FDIC), an independent federal agency created in 1933 by the Glass Steagall Act, whose managers are appointed by the President of the US and confirmed by the Senate. The FDIC mission is to maintain public confidence in the US financial system. Almost all US banks are affiliated with the FDIC even if membership is required only for the bigger ones. UCITS and other collective funds are not insured. Deposits are covered up to an individual amount of 100.000 dollars. The FDIC guarantees more than half of the total amount of deposits in the US. It also intervenes to limit bank failures: it inspects and controls directly more than 53.000 banks, of which more than half are in the US. It has means of resolutions of failures; the most common means is the sale of deposits and credits to another institution. The FDIC resources come from premiums by banking institutions and insured savings, and from the certificates of association signed by the members at their membership and from earnings on investment in US Treasury bills.

Since 1993, the premium of credit institutions is based on their risk level (Morel and Nakamura, 2000): with capital ratios (Cooke and Tier 1 ratios) and a rating (determined according to five criteria: asset-liability management, asset quality, management quality, results and liquidity), the FDIC sets the institution's premium. Thus, until late 1995, the premium of institutions to the guarantee fund varied between 0.09% and 0.49% of deposits as determined by the FDIC depending on the risks of each institution. In the 2010-2011 period, 249 banks went bankrupt in the US, which divided by three (from 17.7 billion to 6.5 billion) the reserve available for possible losses of the guarantee Fund. The current reserve fund represents 0.17% of covered deposits. The FDIC plans to return to its long-term target, a reserve of 1.35% of deposits covered by 2018 (FDIC, 2012).

3.1. A European deposit guarantee scheme difficult to settle

The European Commission has worked for several years on the networking of European Union banking schemes. With the banking union project being focused on the euro area, the area of implementation of the guarantee fund remains undetermined; the harmonisation of existing systems is tricky. If the fund is rapidly introduced, there is a risk that it will have to deal with Southern Europe countries' difficulties, Germany or Finland possibly refusing to contribute to this fund in order to avoid an increase in wealth transfers from Northern to Southern Europe. Current projects do not specify if the fund will be financed by banks' contributions *ex ante* or if it will be based on a State guarantee and banks' refund *ex post*.

Schoenmaker and Gros (2012) propose that the European guarantee fund owns a permanent reserve representing 1.5% of covered deposits (i.e. nearly 140 billion euros). But this would only cover one or two major European banks' deposits. The credibility of such a fund in the event of a bank crisis with contagion risk is therefore limited. The fund permanent reserves are inevitably small as compared to the amount of deposits which need to be reimbursed in the event of a systemic crisis. Only a fund supported by a monetary authority can offer a full and credible guarantee in such an event. Even if the fund can raise contributions from banks *ex ante* in order to be able to intervene in the event of limited problems, the deposit guarantee will continue to depend as a last resort on the MS, on the ESM and on the ECB, these being requested to inter-

vene in turn in the short-term, depending on the severity of the problem. The guarantee should be unlimited, but the German Constitution (and German political opinion) opposes such a guarantee. Banks' contribution might intervene *ex post* to restore the level of the guarantee fund and possibly repay the first in line creditors. The difficult point remains to determine who pays for the guarantee as a last resort, between banks and States, between the country and the whole EU countries covered by the agreement. Does this mean that the banking union necessarily requires setting up a federal Treasury with a European tax (Aglietta and Brand, 2013) to cover this risk? This is probably excessive as the probability of such an event is very small.

The authority in charge of the fund is not yet settled. The ECB will supervise the banking system, but it is much more difficult to dedicate the management of the deposit guarantee scheme to it. According to Repullo (2000), the deposit guarantee must be separate from the function of lender of last resort. Otherwise, there may be a fear that the ECB uses excessively money creation to recapitalise banks, so that the monetary policy targets and support to banks could be in conflict. Therefore a deposit guarantee and crises resolution authority should be created. It should be separate from the ECB, which would necessarily have a right to look at banks behaviour, and would come in addition to the EBA, the ECB and national regulators. Such an authority was introduced by the French banking reform in 2013. On the other hand, the ECB would continue to play its role of lender of last resort. The viability of such a complicated system is unclear. We think that it should be stated that the ECB will intervene, if necessary, to guarantee deposits in a situation where States or the ESM could not do so, but that this intervention will only consist in a loan from the ECB to the bank guarantee fund or to States, which they will have to repay.

From 1979 to 2000, in France deposits were insured by the so-called "*solidarité de place*" mechanism (financial centre solidarity). In a crisis situation, the Governor of the Bank of France could "organize the participation of all credit institutions to take the necessary measures for the protection of the interests of depositors and third parties, for the proper functioning of the banking system as well as for the preservation of the reputation of the place"

(translation from: Marini, 1999) This mechanism was only implemented on one occasion, the bankruptcy of the Al Saudi Bank in 1988 (Goodhart, 1995). In case of a crisis the risk of a bank run pushes banks to show solidarity and coordinate themselves to avoid the effective implementation of this solidarity. Following the introduction of a deposits guarantee fund in 2000, the French Government chose to no longer mention this banking community solidarity, considering that the fund organised a permanent solidarity. The advantage of the *solidarité de place* is that it is not necessary to immobilise funds. Moreover the guarantee is *a priori* unlimited and the bank in difficulty could be taken over by another bank, which could be interested to do so to gain customers and market shares. But this system only worked for problems in small banks.

The Cypriot crisis has shown that the common deposit guarantee is not easy to implement as long as the banks' balance sheets are not effectively cleaned up, as long as concerns on bank failures remain and as long as banking systems are not under control in Europe. The common guarantee can only be the last stage of the banking union.

The crisis also showed the limits of the 100,000 euros ceiling. Some SMEs liquid assets, households' funds waiting to be re-allocated, etc. have been affected. Euro area countries must choose between two strategies: offering all depositors the possibility to have a fully guaranteed (at least in national currency)saving instrument, with no ceiling, but with limited remuneration; or leave depositors choose their bank, knowing that having funds in some banks implies some risks which are difficult to assess. Finally, the European institutions oblige shareholders, creditors and large depositors of banks in difficulty to pay for the deposit guarantee by aggregating the cost of this guarantee for the two banks in question. Implicitly, they called for the "*solidarité de place*", which means that the European guarantee fund will have only a decorative role.

4. What model for the euro area banking system?

There is no single banking system in the euro area today, but the juxtaposition of 18 domestic markets strongly divided by legal, economic, social, historical and tax barriers. There is a European interbank market and a competitive market for very large firms financing but retail banking remains mainly national (Table 2). Entering a domestic market goes through taking over existing entities. Until now, cross-border movements in own funds have been rare and of limited size.

Table 2. Cross-border penetration from EU countries*

In %

	2007	2012
Belgium	21	51
Germany	10	11
Estonia	99	85
Ireland	39	29
Greece	23	16
Spain	11	9
France	11	10
Italy	18	13
Cyprus	26	17
Luxembourg	76	67
Malta	37	32
Netherlands	16	9
Austria	22	16
Portugal	23	20
Slovenia	29	29
Slovakia	86	96
Finland	65	67
Euro Area	**17**	**16**

* Cross-border penetration via branches and subsidiaries from EU countries is reported as a percentage of total banking assets.
Source: Schoenmaker and Peck (2014).

A full banking union would involve direct competition between all banks in the euro area, on a unified basis. This implies to cut the links between the borrowers of a country (government, local authorities, firms and households) and national banks. This implies that the capacity of a bank to lend depends above all on its

solvency, own funds and financial markets' assessment, under the risk of blindness periods and excessive mistrust periods, which are usual in financial markets.

One could prefer the opposite strategy: a restructuring of the banking sector, where retail banks would be isolated from financial markets, should focus on their core business (credit to local agents, based on a detailed expertise, to domestic firms, households and local authorities). Their solvency would be guaranteed first by the prohibition of risky or speculative operations, and second by the State, whose debt would be guaranteed by the Central Bank. Certainly, a bank could be in trouble if its country is in a depression and if companies or households have difficulty in repaying their debt, but the State may come to his rescue, especially as the credits supplied by the bank fit into the domestic economic strategy.

4.1. The universal bank model in Europe

A choice needs to be made between two models: the universal bank or the return to banking specialisation. Will the banking union impose the separation of retail and investment banks? Will it prevent banks with guaranteed deposits to intervene on financial markets for their own account? Will it be a new step towards banks financialisation or will it signal a return to the Rhineland model?

On the one hand, the crisis has questioned the relevance of the universal bank model where deposits finance and guarantee market activities. On the other hand, the crisis has shown the fragility of specialised institutions which had an insufficient deposit base and depended heavily on markets for refinancing. Banks which in normal times used strong leverage effects to achieve high profitability levels suffered particularly. After the *Lehman Brothers* failure, banks such as *Goldman Sachs* or *Morgan Stanley* abandoned the Investment Bank model, affiliated to the Fed, strengthened their own funds, and can now collect deposits.

In Europe, the shift towards universal banks induced major structural changes. The rise in "non-banking" institutions such as insurance or pension funds (the institutional investors) occurred at the expense of the banks which had reacted by operating more and more on financial markets, for their proprietary trading or as inter-

mediates. The banking sector's connection with the financial sector increases contagion phenomena and the spreading out of the financial crisis into the real economy. According to Paulet (2000), there is an empirical link between the growing market share of institutional investors and banking fragility, the former strengthening the latter.

The universal bank model, which combines the different banking activities, has shown a better resilience during the financial crisis. The heavy losses of markets and investment banks activities have been offset by their retail bank activities. However, these losses have reduced banks' own funds. This link between banking activities destabilises retail banking activity which is essential to the financing of the economy. It has also contributed to the development of suspicion and concern on the strength and stability of the European banking system. Applying "fair value" accounting to the whole banks' balance sheet facilitates the propagation of the crisis: market fluctuations have an impact on credit supply even if they should obey different logics. Accounting rules should not be similar for so different activities: short-term for market activity and long-term for credit supply. The universal bank balance sheet is thus structurally opaque and fragile.

A better regulation of the EU banking system requires the separation within banks of activities with different logics, procedures and risks (Pollin, 2009, Scialom, 2012). The financial crisis has affected the core functions of banks (their capacity to supply credit and to manage means of payments), making it a serious crisis for the real economy. As in the 1929 crisis, the real economy financing has been interrupted. Banking regulation must be sought to avoid the occurrence of such a crisis.

4.2. Should we return to the Glass-Steagall Act?

As soon as in June 2009, the Obama administration published a draft for a financial markets reform, *the White Paper on Financial Regulatory Reform*. The United States in 2010, and the United Kingdom in 2012, have decided to implement a separation between investment and retail banking activities (Chow and Surti, 2011, Kregel, 2011).

The July 2011 US reform of the financial sector (*Dodd-Frank Wall Street Reform and Consumer Protection Act*) introduces the "Volcker Rule" designed to avoid that banks speculate against their clients. It prohibits banks protected by the FDIC deposit guarantee to run trading activities for their own account (proprietary trading) and to own participation in investment funds (hedge funds, private equity). These activities should be confined to a specific structure. Subscriptions to investment funds may not amount to more than 3% of the banks' own funds. Banks can hold more than 3% of the capital of these funds. But the activities of market-maker and hedging may remain in the bank. The rule should apply from April 2014 but the Federal Reserve Board has extended the conformance period until July 2015.[7]

In the United Kingdom, the Vickers report should be implemented in 2019. Traditional banking activities (deposits and loans to households and SMEs) will be confined in a specific structure isolated from markets and investment activities. Transactions on derivatives, market-making and market interventions will no longer be made in the same bank as retail activities. However, the classical bank could engage in some markets activities requested by customers (exchange rate or interest rate risks hedging). Retail banking should have independent governance and be separate legally, in the form of a subsidiary for example.

In Europe, the Liikanen report (Liikanen, 2012) proposed to separate risky financial activities from traditional banking activities by splitting banks into two separate entities. It contains five proposals:

— The own account and financial activities should be included in a separate legal entity. Activities for own account, positions on assets or derivatives resulting from markets activities, unsecured loans to hedge funds, structured investment vehicles (SIV), investments in capital-risk, should be separate. This would apply only if assets exceed a certain

7. From June 30, 2014, banking entities holding 50 billion dollars or more in consolidated trading assets and liabilities will be required to report quantitative measurements. This will apply to banking entities with at least 25 billion dollars, but less than 50 billion dollars, in consolidated trading assets and liabilities from April 30, 2016; and to those with at least 10 billion dollars, but less than 25 billion dollars, in consolidated trading assets and liabilities from December 31, 2016 (US Securities and Exchange Commission, 2013).

level of the bank balance sheet (in % of assets or in volume). However, the traditional bank could engage in some markets activities requested by customers (interest rate and exchange rate risks hedging). The financial institution will not be able to be financed by guaranteed deposits. However, the report does not advocate the introduction of two types of banks so that retail banks can provide financial services to their customers. The two banks will be allowed to be in a common holding, but they will have separate capitalisations.

— Banks must develop banking crises resolution plans controlled by the EBA.

— Banks must hold a large amount of own funds and junior debt (which can absorb losses). Banks' managers will have to hold junior debt to be concerned by potential losses.

— Own funds requirements should be strengthened, accounting better for the risk, particularly for market activities and real estate loans.

— Banks governance should be reformed through accounting better for risk management, lowering bankers' compensation, and tougher sanctions.

Some European countries have taken the lead without waiting for the potential introduction of European legislation based on this report. Thus, in July 2013 France adopted a "law of separation and regulation of bank activities", intended to implement François Hollande's commitment "to separate the activities of banks that are useful for investment and employment from their speculative operations".

However, the French government refused to question the universal bank French model. Speculative activities, narrowly defined, will not be banned from retail banks, but will have to take place in a subsidiary.

Thus, the law obliges banks to put in separate bodies their "without any link with the service to customers" market activities. Banks can continue to run operations "that are useful for the economy". But the notion of utility is not questioned. Is the development of financial activities useful? Should non-financial agents be encouraged to go to financial markets, to use toxic loans, structured investments, derivatives? Similarly, the customer's concept

has not been specified in order not to apply to hedge funds and to speculative investment funds.

Banks have argued that this project could reduce credit availability. It's a strange argument as credit creates deposits. Banks would have to lend directly to firms and not through financial markets or hedge funds. The prohibition of speculative activities would sharply reduce banks capital requirements.

In theory, activities for own account are prohibited, but the provision of financial services to customers (risk hedging), the coverage of the own risk of the establishment (interest rate or credit risk), market-making activity, the prudent management of cash and long-term investments remain permitted. Hedge funds ownership is prohibited, as well as unsecured loans to these funds, but so-called secured loans are allowed. Packaging and marketing of structured financial products like derivative products remain at the level of retail banks. In total, the project isolates only 2% of banking activity.

Speculative activities must be restricted within an autonomous financial subsidiary. The latter will not be guaranteed by its parent (and thus by public authorities), should finance itself independently, can go bankrupt, and will need to develop a resolution scheme showing that its bankruptcy may be borne by creditors.

However, a prudential control and resolution authority (the ACPR, *Autorité de Contrôle Prudentiel et de Résolution*) will be settled. It may prohibit certain activities. The Finance Minister may require banks to limit the size of market operations carried out by the parent company.

The ACPR will manage a deposit guarantee and resolution fund (FGDR). Banks will have to develop a banking resolution plan which will have to be approved by the ACPR. A bank may be brought before the ACPR by the Bank of France Governor or by the Treasury Director-general. The ACPR will be able to remove the bank managers, to transfer the establishment, to make the FGDR intervene, to make losses be borne by shareholders or creditors (subordinate or junior), to ask them to bring new funds, to prohibit the distribution of dividends, to appoint a provisional administrator, to suspend managers compensations.

The Financial Regulation and Systemic Risk Council becomes the Financial Stability Board. It will have the right to increase the capital requirements imposed on banks to prevent excessive credit growth or to prevent a risk of instability of the financial system. It will be able to set standards for the evolution of credit to avoid increases in assets prices or excessive indebtedness.

The French government refused to prevent banks from having activities in tax or regulatory havens, but banks will have to publish a list of their subsidiaries abroad and the amount of their activities.

This French law may look strange insofar as it addresses issues which should be no longer under national legislation in two years, if the banking union is introduced. This law raises once again the issue of the link between national choices and decisions to be taken at European level. For example, the law gives the right to the ACPR to prohibit some too speculative activities, but will this be enforceable if these activities remain authorized at the level of the banking union. Will the French Finance Minister still have any authority on banks in two years?

France is not the only country to have taken the lead. On 6 February 2013 the German government adopted legislation on separation of banking activities (*Trennbankengeset*). Retail activities should be split from the activities for own account when the latter amount to more than 20% of the balance sheet or more than 100 billion euros; banks will have to deposit a will. This law applies mainly to the largest two banks: Deutsche Bank and Commerzbank. It should be enforced from 2014, but banks will have an additional one and a half year to proceed to the separation.

In view of these national initiatives and of the Liikanen report, the Commission of economic and monetary affairs of the European Parliament urged the European Commission to propose a European legislation for a separation of a Vickers' type of banking activities: activities necessary to the real economy must be protected in a legally independent framework subsidiary.

4.3. A European regulation proposal

Under the initiative of the European Commissioner Michel Barnier, the European Commission proposed on 29 January 2014 a

regulation (European Commission, 2014) aiming to limit and to supervise financial activities for systemic-sized banks (i.e. about 30 of the 8000 banks in the European Union, representing 65% of European banking assets).

This project is more demanding than the Liikanen report or French or German laws. Like the Volker rule, it prohibits negotiations for own account on financial instruments and raw materials as well as investments in hedge funds. The supervisory authorities will have the power to impose banks to separate in a subsidiary body trading operations (such as market-making, complex derivatives and securitization operations, that would be deemed too risky, i.e. which induce too big positions financed by leverage). In our view, it is a shame that this separation is a possibility open to supervisors and not a strict obligation.

This reform proposal raises strong criticisms from some MS and banking lobbies. France and Germany claim to have already made their own banking reform. But the logic of the banking union is that the same rules apply everywhere. These countries have chosen to reform banking at the minimum to pre-empt the content of the European law. This is not an acceptable behaviour at European level. For the UK, the Barnier's project opens a way out: the regulation shall not apply to countries where legislation is more binding.

According to the banking union project, the ECB supervises European banks and the EBA sets regulations and rules of the supervision. The Commission can be accused to intervene in an area that is no longer of its jurisdiction. Conversely, the crisis clearly demonstrated that banking regulations are not only banks' matters. It is legitimate for political authorities (Commission, Council and Parliament) to be involved.

Christian Noyer, Member of the Board of Governors of the ECB, considered these proposals as "irresponsible". According to the European Banking Federation and the French Banking Federation (FBF), the universal banking model must be preserved. They criticize the obligation to separate the market-making (including the firms' debts market). According to the FBF, this regulation will "lead to a considerable increase in the cost of debt financing and risk-hedging services for firms". However, this requirement could be waived if banks prove that their interventions in markets do not

induce risks for them. Thus, banks could continue to play a role as market-maker, provided that they set strict limits on their own positions; they could provide simple hedge operations, by hedging themselves.

Certainly, European banks were right to point out that this reform comes in addition to the establishment of the SSM, the SRM, and banks scoring by the ECB. A more coherent schedule should have been established.

However, the separation advocated by the project would increase the credibility of the banking union and of its three pillars. The establishment of a consistent framework would simplify the SSM (the ECB should monitor 'normal' banking activities and ensure that speculative activities do not disturb them. The SRM would gain credibility: the losses from market activities would not affect banks credit and would not be supported by the taxpayers. By reducing the risk of failure of retail banks, it reduces the risk to have to activate the deposit insurance. In this sense, regulation could become the fourth pillar of the banking union. However, it will not be discussed before the election of a new parliament and the establishment of a new Commission. It will have to overcome the opposition of the big European banks.

4.4. Two European projects?

On 28 September 2011 the European Commission adopted a proposal for a directive on a common system of financial transaction tax (FTT). The European directive proposed to tax shares and bonds transactions at 0.1% and derivative contracts transactions at 0.01%. The gain was estimated to be 57 billion euros for the whole EU.

In the absence of a European agreement, and since August 2012, France has introduced a FTT, which includes a 0.2% tax on French shares purchases, a 0.01% tax on cancelled orders within *HF trading* in France, a 0.01% tax on naked CDS (which have been prohibited in France since 1 November 2012). The FTT was expected to raise 1.6 billion euros in full year. However, according to NYSE Euronext, the amount of securities transactions subject to the FTT has declined by about 15% in two months. The French FTT does

not apply to derivatives and some operators have therefore switched to this market.

A true FTT, applying to all banks and financial institutions financial transactions, would have three advantages: it would reduce the profitability of speculative activities, it would decrease financial markets liquidity, it would oblige banks to control better the operations of their market operators.

Eleven EU countries (France, Germany, Belgium, Portugal, Slovenia, Austria, Greece, Italy, Spain, Slovakia and Estonia) plan to introduce a FTT in the framework of enhanced cooperation. The European Commission assesses the potential of the tax revenues at between 30 to 35 billion euros (incorporating a decrease by 15% in the amount of the transactions).

Of course, the risk is high that European financial transactions are relocated in London and Luxembourg, but, in this case, the euro area will have to react, which will highlight the strategic differences on financial regulation within Europe. The banking union will have to choose between being an open area, with no specific rules, or a relatively closed area, with specific rules.

Yet the Commission's text is designed to prevent delocalisation: taxation will apply if one of the parties to the transaction is established in a participating country, regardless where the transaction is made (residency principle) but also if the transaction involves a financial instrument issued in a participating country (residence principle). Will the text resist the pressure from banking and financial lobbies and from the UK? The UK has introduced a legal challenge against the FTT at the Court of Justice of the European Union. The French government is proposing a watered down version of the text that affect buyers of stocks and bonds, and not financial speculators.

European banks continue to have subsidiaries in tax and regulatory havens, particularly in Luxembourg, Switzerland, Guernsey, Jersey, Bermuda Islands, Cayman Islands… The reporting obligation (a bank must declare to the tax authorities of its residence country the financial incomes of their clients) faces opposition from Luxembourg, Austria, and Switzerland. Europe should widen the list of tax and regulatory havens countries, should prohibit European banks and firms to locate profits and operate in these

countries, unless there is a specific justification linked to non-financial activities.

On these two issues, the banking union will have to make political choices. Who will have this responsibility in Europe?

4.5. What banks? What credit?

The problem remains: what financial system does the euro area need? Should the ability of euro area banks be in a position to compete more with Anglo-Saxon institutions or should their role in financing the economy be increased? Should we build a complex and unenforceable regulation, running behind financial innovations? It would have been better that the European institutions adopt the clear objective to reduce the weight of finance in the economy. Some speculative activities should be prohibited; most speculative activities should be prohibited for the banking system; they should be confined to specialized institutions, not guaranteed by the government, their financing cost would be high, which would reduce their profitability and their operations.

Europe needs a productive and industrial recovery. But it is necessary to define carefully the nature of this recovery. It must fit with the ecological transition. Industrial choices that engage future economic development cannot be left to shareholders, to financial funds looking for short term profitability, or even to the large companies' managers. The society must guide the evolution of the industry towards green, efficient and innovative techniques, to promote energy savings, renewable energies, financing urban renewal and collective transports.

This is the industrial policy in the broad sense which must ensure productive recovery which should include:

— a product axis: to promote the production of sustainable products, compatible with ecological requirements;

— a planning axis: to collectively define the sectors to promote, to develop cooperative strategies between large companies and SMEs, between public and private research.

— a sectorial axis: to identify areas for the future and to maintain the basic economic sectors, which play a structuring role and which are rich in employment;

— a production axis: to improve the working community, the promotion and the training of employees rather than the financialisation, the business leader and the sprawl of the income hierarchy.

This ambitious strategy must be financed by national banks for sustainable development. They must develop a strong capacity for prospective; be able to take risks, on industrial, ecological and employment criteria and have a strong financial capacity both in equity and credit. Projects may be regional, national or European. The objective must be to collect a large part of European savings, rewarded at low but guaranteed rates. These banks must develop simple and short circuits between household savings and loans to productive sectors, to local authorities, and to housing. This project could give another dimension to the banking union.

5. Conclusion

The challenge is huge: the euro area needs a strong banking system, able to finance growth recovery and to bring the economy out of the crisis. However, Europe has to make a clear political choice between two options.

A liberal option focuses on markets sentiment; banks are firms like any other firm; they must maximize their profit; they must be able to intervene freely on financial markets: they must be able to provide sophisticated investment and hedging tools to their customers. A unified European financial market will contribute to the European banking system regulation (see, for instance, Sapir and Wolff, 2013). However, there is a first risk is that banks chose market activities which are more profitable than credit supply. There is a second risk that banks are weakened, suffer from a rise in the cost of their resources (due to higher risks for their creditors to loss their claims if the bank runs into difficulty), and need to reduce their credit activities under the effects of higher capital ratios constraints. The third risk is that the link kept between banks and financial markets spreads out financial markets instability into the real economy banks' lending capacity would depend on their solvency, thus on their own funds, and so on markets' assessment, with the risk of switching from blindness to excessive distrust periods.

A more interventionist point of view stresses the need to protect specific banking activities (like credit distribution and deposit management), to isolate them from financial markets, to protect them by a public guarantee, to allow them to supply credit according to the needs of the real economy.

Another choice also has to be done: a European banking system, unrelated with national agents and states, with open competition of all banks in the euro area on unified basis; or the persistence of national systems, which would maintain a strong link with their territory. Will states be able tomorrow to intervene to influence banking credit, to rescue banks which are vital for certain sectors of the economy, to develop specific public banks? These choices cannot be left to the ECB, which is more concerned with the proper functioning of financial markets than with the real economy. These choices should not be hidden by short-term requirements, like rescuing Spain. They must be the subject of a democratic debate in Europe.

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DO SAFE BANKS CREATE SAFE SYSTEMS?
CENTRAL AND EASTERN EUROPEAN BANKS' PERSPECTIVE

Ewa Miklaszewska, Katarzyna Mikołajczyk
Cracow University of Economics
Małgorzata Pawłowska[1]
Warsaw School of Economics, National Bank of Poland

The aim of this paper is to contribute to the discussion on the anticipated long-term impact of the post-crisis regulatory environment on bank stability and efficiency, with a focus on Central and Eastern European (CEE) banks. The main research question is whether relatively stable CEE banks, operating in an unstable global environment, will be negatively affected by post-crisis European regulatory architecture. To answer this question, this paper analyses how CEE banks performed in two different periods: the pre-crisis period of dynamic credit market expansion and the period of global economic slowdown after 2008 crisis. Bank efficiency and performance is measured using DEA methodology, competitive conditions' measures (H-statistics) and Z-score index.

Keywords: banking regulation, bank efficiency, bank competition, CEE banks.

Although the 2008 financial crisis affected the entire world, for the first time the leading industrialized nations were more affected than the emerging countries, for whom the crisis was largely secondary in nature, in this respect making the crisis unique (IMF, 2010a). However, its long term consequences, both direct in terms of changing strategies of foreign owned banks, and

1. The views expressed in this paper are the views of the authors and do not necessarily reflect those of the National Bank of Poland.

e-mail: uumiklas@cyf-kr.edu.pl; efmikola@cyf-kr.edu.pl;
e-mail: mpawlo1@sgh.waw.pl, malgorzata.pawlowska@nbp.pl

indirect in the form of a necessary adaptation to new global and European regulations, are borne by all countries.

Economic theory provides some contrasting evidence as to the impact of bank regulation and supervision on bank performance (e.g. Barth *et al.* 2004, 2008 and 2010). Furthermore, as noted by Chortareas *et al.* (2012) and Delis *et al.* (2011), most research in this area concentrates on banking markets in highly developed countries. Thus this paper concentrates on the long-term impact of new, post-crisis regulatory architecture, on a relatively homogeneous group of Central and Eastern European Countries (CEE-5): Poland, Hungary, Czech Republic, Slovakia and Slovenia. These countries have been EU members since 2004, with two of them, Slovenia (2007) and Slovakia (2009), also in the euro zone. They are at a similar stage of institutional development, financial and macroeconomic reform, and banking sector depth (IMF, 2010b). Before the global crisis of 2008, their banking sector enjoyed rapid growth, largely due to the increased presence of foreign banks and the adaptation to the EU legal and institutional framework. However, the global financial crisis has hampered the dynamics of CEE banking sectors' growth.

Thus the aim of the paper is to contribute to the discussion on the anticipated long-term impact of post-crisis regulatory and supervisory architecture, focusing on banks operating in CEE. We pose the following questions: what were the factors contributing to the efficiency of CEE banks before the crisis, and consequently, what will be the long-term impact of the post crisis architecture for for bank stability and efficiency in CEE countries? The empirical part of the paper is based on the non parametric Data Envelopment Analysis (DEA) technique, measures of market competition and bank stability index Z-score, using Bankscope Database. The paper is organised as follows: the first part describes the foundation of post-crisis European regulatory and supervisory architecture. Following this, we discuss its possible consequences on banks in CEE. Analyzing the impact of the financial crisis on CEE banks, we present an empirical analysis of CEE bank efficiency before and after the crisis (2002-2011), using DEA methodology, market competition measures and Z-score calculations. In the concluding section we present the anticipated long-term consequences of the post-crisis regulatory and supervisory architecture on CEE banks.

1. Building post-crisis regulatory architecture

Financial supervision should ensure systemic stability, safety and soundness of financial institutions, an efficient and transparent way of conducting transactions and financial consumer protection (Kuppens *et al.,* 2003). To carry out these functions effectively, its organizational structure must evolve, so that just as in real life, form follows function (Acharya *et al.*, 2009). Historically, banks have accepted tight regulations in exchange for market stability and strong protection, and as a result there were almost no OECD banking crises till the 1970s (IMF, 2013). Banks were safe, but inefficient, and losing market share to non-banking firms. The period of liberalisation and deregulation from the 1980s aimed at restoring bank profitability and facilitating expansion and, in consequence, dramatically influenced the scale and complexity of banking firms. The increasing complexity of banks and the expansion of conglomerate structures generated synergies between banking (regulated) business and relatively unregulated investment activities and offered both new sources of income and new areas of risk (Allen *et al.*, 2011). In the pre-crisis period, the dominant source of bank efficiency stemmed from expansion into new markets, non depository funding and non interest-based sources of profits (Demirgüç-Kunt and Huizinga, 2009), and the adoption of new models for conducting banking activities, based on product synergies, scale and scope benefits and global coverage. Table 1 demonstrates how dramatically the biggest banks' assets have expanded in the deregulation period.

Changes in bank scale and scope of activities were facilitated by the new regulatory philosophy, as exemplified by the shift from the Basel 1 to Basel 2 regulatory framework, where market discipline and bank self-regulation were intended to replace tight supervision. The 2007-2009 crisis demonstrated that Basel 2 was built on many optimistic assumptions and incorrect trade-offs, namely that regulators do not understand the complexity of banking activities and that tight supervision should be replaced by market discipline. Moreover, Basel 2 facilitated the growth of the so called shadow banking system (Masera, 2010). Consequently, Basel 2 which looked at isolated areas of risk and focused on partially recognized threats to financial stability, turned out to be

an inadequate regulatory regime and was largely responsible for the subsequent bank systemic failures in major countries.

Table 1. The largest global banks by assets, $ bln, in selected years

1985		1995		2009	
Top banks	Assets	Top banks	Assets	Top banks	Assets
Citicorp	167	Deutsche Bank	503	BNP Paribas	2 965
Dai-Ichi Kangyo B.	158	Sanwa Bank	501	RBS	2 750
Fuji Bank	142	Sumitomo Bank	500	Crédit Agricole	2 441
Sumitomo Bank	135	Dai-Ichi Kangyo B.	499	HSBC	2 364
Mitsubishi Bank	133	Fuji Bank	487	Barclays	2 235
BNP	123	Sakura Bank	478	Bank of Am.	2 223
Sanwa Bank	123	Mitsubishi Bank	475	Deutsche Bank	2 162
Crédit Agricole	123	Norinchukin Bank	430	JP Morgan	2 032
Bank of America	115	Crédit Agricole	386	Mitsubishi FG	2 026
Credit Lyonnais	111	ICBC	374	Citigroup	1 857

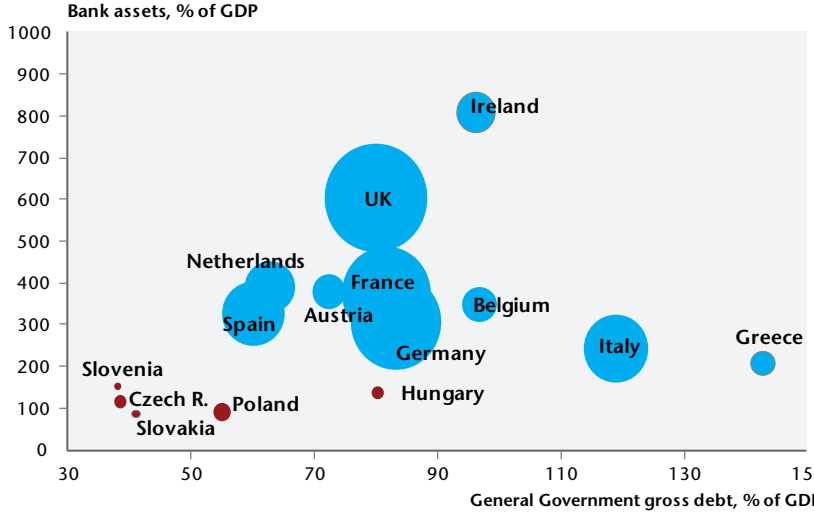
Source: Data for 1985 and 1995: *The Economist*, 2006; for 2009: *The Banker*, 2010.

The global financial crisis of 2007–2009 forced banks and regulators to rethink strategic and competitive issues in banking. Banks, which for decades had been leaders in global efficiency or expansion, turned out to be most affected, requiring massive public stabilization funds and in some cases rescue by direct government intervention (Demirgüç-Kunt and Huizinga, 2011). The most frequent restructuring pattern for global banks turned out to be partial or total nationalization (World Economic Forum, 2010). As a result, large global banks contributed to inflated budget deficits and dramatically growing public debts in major countries, posing the danger of systemic risk (Allen *et al.*, 2011). Figure 1 illustrates that in CEE, relatively small banks operate in relatively safe macroeconomic environment (moderately indebted countries). However, some European countries have inflated banking sectors' assets, and a limited possibility of further government stabilizing intervention, due to large budget deficits.

By raising new issues, such as systemic risk and the failure of market discipline, the 2008 crisis resulted in the adoption of a new regulatory philosophy: that of strengthening and tightening regulatory supervision (Beck, 2010). Basel 3 focused on strengthening prudential regulations, mostly by requiring more and better capital

and better loss absorption capacities by large banks (BIS, 2010). EU and US authorities have supplemented Basel 3 by instituting complex supervisory infrastructures, based on a number of newly created institutions together with a redefinition of the objectives and prerogatives of those already in existence (Masciandaro *et al.*, 2011). The complexity of banking regulation, plus overlapping prerogatives on newly created institutions, have considerably increased regulatory costs on banks. Moreover, in the EU, the new institutional safety net has not been implemented consistently and has been modified according to changes in macroeconomic priorities: from financial stability (EBA–based framework) to financial growth (ECB-based framework), which has led to increased organisational uncertainty.

Figure 1. The size of banking sector (2009) vs. general government debt (2010) in selected EU and CEE countries



Source: Based on data from Eurostat and ECB, 2010.

2. New European supervisory architecture and the CEE

The New European Supervisory Architecture was constructed upon three pillars (Masera, 2010 and Masciandaro *et al.*, 2009):

— Macro-prudential supervision, assured by the European Systemic Risk Board (ESRB). It has no legal personality and is operationally supported by the European Central Bank;

— Micro-prudential supervision, based on three sectional authorities: the European Banking Authority (EBA), European Insurance and Occupational Pension Authority (EIOPA) and European Securities and Market Authority (ESMA);

— National supervisors.

The ESRB is designed to ensure that macro-prudential and macro-economic risks are detected and dealt with. Risks to the financial system can arise from the failure of one SIFI, but also from the common exposure of large financial institutions to the same risk factors. The main tasks of the ESRB are (Giovannini, 2010 and Beck *et al.*, 2010) to establish adequate procedures to obtain information about macro-economic risks for financial stability, to identify macro-prudential risks in Europe, to provide early risk warnings to EU supervisors and other relevant actors and to determine how to achieve effective follow-up to warnings/recommendations.

The EU new institutional regulatory structure of 2010 was based on the perceived necessity to deal with systemic risk, which entails considerable costs and regulatory burdens, particularly for countries where systemic risk is not a major priority, such as CEE. Moreover, strong macro-prudential regulations are needed if we do not believe that "strong banks create a strong system", because of linkages and global interdependence. However, this view is not universally accepted, as crisis might be attributed rather to the problems with bank business models and lack of proper micro-prudential supervision of large banks (Nier, 2010).

An even more challenging task was to establish a pan-European micro-prudential supervisory structure, as the convergence of supervisory architecture among European countries is very low and the aim to harmonize the supervisory activities in the EU had to reconcile with different national objectives and institutional arrangements (Masciandaro and Quintyn, 2008). The European Banking Authority has been created as the new micro-prudential bank regulator, with much stronger prerogatives than that of its predecessor CEBS (Committee of European Banking Supervisors), which operated in the period 2004-2010. The aim of EBA was to *"safeguard public values, such as the stability of the financial system,*

the transparency of markets and financial products and the protection of depositors and investors" (CEBS, 2010). The EBA had broad competencies, including preventing regulatory arbitrage, guaranteeing a level playing field, strengthening international supervisory coordination, promoting supervisory convergence and providing advice to the EU institutions in the areas of banking, payments and e-money regulation as well as on issues related to corporate governance, auditing and financial reporting.

The main tasks of the EBA were to provide opinions and develop guidelines, recommendations, and draft regulatory standards, to contribute to a common supervisory culture, ensuring consistent and effective application of the EU Acts, to develop common reporting standards (COREP), including credit, market, operational, and equity capital adequacy ratios, to prevent regulatory arbitrage, mediating and settling disagreements between competent authorities and taking actions, in emergency situations, to improve the cooperation of supervisory authorities and to conduct peer review analyses and to foster depositor and investor protection by improving transparency and disclosure of information. However, EBA turned out to be week in a subsequent clashed with strong national regulators in the EU and the hopes placed in its role and authority have not materialized.

The views have been expressed that global financial stability and cross-border banking cannot be supported by nationally based supervision. The "financial trilemma' states that financial stability, financial integration and national financial policies are incompatible (Schoenmaker, 2011), and hence a single supervisory power and lender of last resort function should be centralised in the ECB. There has also been growing recognition that a supervisory system focusing predominantly on bank safety may actually produce lower economic growth. Consequently, the ECB seems to be better equipped to prevent banking contractions and to stimulate growth with cheaper loans and investment programmes to generate growth. These arguments were crucial to the decision by the European Council and the Euro Area Summit in June 2012 to move ahead from the coordination of national banking supervision towards an integrated system, whereby the large banks within the euro zone will come under the direct supervision of the ECB, planned initially for January 2014 and later moved to March 2014.

The Banking Union will consist of three parts: a common banking supervisor (Single Supervisory Mechanism, SSM), a common resolution framework and a common deposit guarantee scheme, the latter two to be constructed at a later date.

From 2014, the ECB will become responsible for tasks such as authorizing credit institutions compliance with capital, leverage, and liquidity requirements and carrying out supervision of financial conglomerates. The ECB will be able to take early intervention measures by requiring bank to take remedial action. Initially there was a proposal that the ECB should be directly responsible for all 6,000 euro zone banks, on the principle that during a financial crisis, even a relatively small bank may threaten the entire financial system. Under a compromise forged with national regulators, the ECB will now oversee large banks with more than 30 bn euros in assets, or with 20% of national GDP (around 200 of the biggest European banks). In addition, the Single Supervisory Mechanism is a precondition for allowing the possibility of a direct recapitalization of banks by the European Stability Mechanism (ESM) – the euro zone's permanent bailout fund. Consequently, the Banking Union confers strong powers on the ECB, with an option for non-euro countries to join it on a voluntary basis. In contrast to the European Banking Authority, which affected EU banks indirectly, setting the rules and harmonising standards, the ECB will be able to impose its will directly on the largest banks within the euro zone.

The idea of a Banking Union has sometimes been depicted as the result of a choice between either "returning to the past", where banks focus their activities on their countries of origin, or establishing a Banking Union, where banks would be encouraged to diversify across the EU and where supervision would be at the European level (Avaro and Sterdyniak, 2014). However, this alternative disregards the diverse structures of the EU banking systems and overlooks the challenges and threats which are created to smaller banks. That is why, although EU states outside the euro area may sign up to the Banking Union, in most non-euro based countries they hesitate to do this.

The stability of the financial sector depends on the ability to establish independent, strong and respected supervision. CEE countries are host markets to global banks, hence the national

regulators have already a limited powers (Lizal, 2011). Shifting decision-making powers to new European centres may further weaken domestic supervision in CEE countries. Before the crisis, there was a discussion as to whether banking supervision in the EU should be centralized in the ECB. After the crisis, one of the arguments for placing it within an independent institution (EBA) was that national supervisors in the EU follow very diverse models: independent integrated institution, supervision centralized in the central bank, or the so called "twin peaks" model with partial centralization in two independent authorities. The composition of the EBA supervisory board illustrates it well: out of a total of 27 EBA supervisory board members, 14 are national central banks and 13 are independent authorities (EBA, 2011).

All CEE-5 countries have adopted an integrated supervisory regime, although differently placed (Apinis *et al.,* 2010). In the Czech Republic, financial market supervision has been integrated into the central bank (NCB), since 2006. While the NCB has traditionally been involved in banking supervision since its establishment in 1993, the supervision of other financial market sectors (capital markets, insurance and cooperative banking) was initially carried out by separate supervisors. In order to provide synergies, the Czech Government carried out a supervisory reform which resulted in the institutional integration of the financial market supervision authorities from 2006. Further internal reorganization of supervisory departments took effect on 1 January 2008, when sector supervision was abandoned and replaced with the functional model, with a Financial Market Committee (FMC) being established as a new advisory body in matters of financial market supervision. Also in Slovakia on the 1st January 2006 the Financial Market Authority was dissolved and its powers and responsibilities were transferred to the National Bank of Slovakia. The NBS thus conducts the entire financial market supervision covering banking, capital market, insurance and pension saving.

Integrated supervision took effect in Hungary in 2000, when the Hungarian Banking and Capital Market Supervisory Authority and the Supervisory Authority responsible for the Supervision of Insurance Companies were merged and the Hungarian Financial Supervisory Authority (HU-FSA) was created. Similarly, in Poland since 2006 the Polish FSA has been the single body responsible for

matters related to the supervision of the financial market (pension funds, capital market, insurance institutions and electronic money institutions, as well as the supplementary supervision of financial conglomerates) and from 2008 also encompassed the banking market. The reasons for this trend towards building an integrated supervisory system in some CEE countries are unclear. The most frequent justification was to point out to the creation of synergies, but the financial markets in CEE are relatively small, without much scope for a synergy effect.

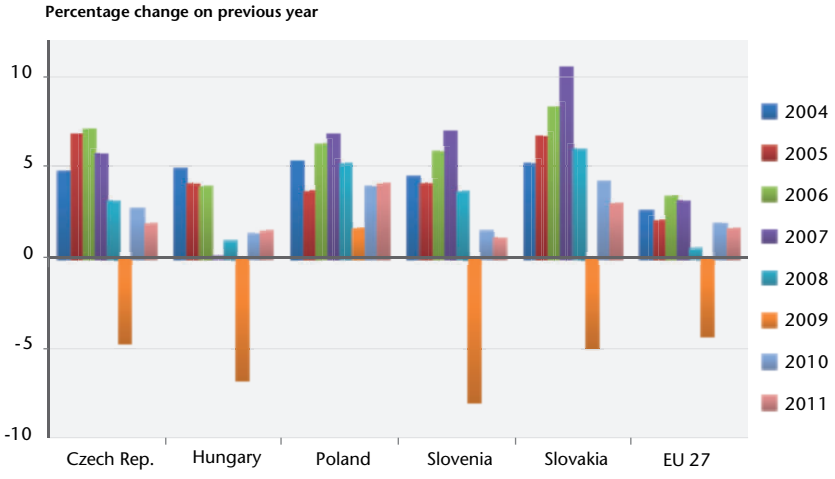
3. Banking sector in CEE-5 countries: main characteristics

CEE-5 countries are at a similar stage of institutional development, financial and macroeconomic reform, and banking sector depth. They share a number of common characteristics: they are open economies with exports contributing 60-80% of GDP (with the exception of Poland, which has the largest domestic market), they have already well established EU legal rules and standards, low wages and educated workforce and relatively fast economic growth, particularly in the pre-crisis period. The gap between these countries and developed European economies is narrowing. CEE countries were before the crisis among the top most attractive regions for foreign investment, with the share of foreign investors in the banking sector exceeding on average 80%, with the exception of Slovenia (Ernst & Young, 2007). The process of fundamental bank reforms, economic restructuring and privatization has now largely been completed in these countries. After EU accession in 2004, CEE countries enjoyed rapid economic and banking sector growth. The global crisis of 2007-2009 had a negative effect on the assessment of this region as economic growth collapsed (Figure 2). The first and most seriously affected country was Hungary; the sharpest decline in output was in Slovenia, while Poland managed to keep in positive GDP and credit growth throughout the crisis.

Before the crisis, CEE countries enjoyed dynamic banking sector growth and high bank profitability (average ROE above 20% till 2007). Despite numerous gloomy projections, the macro-economic and profitability figures remained good throughout the crisis and

bank performance in CEE-5 countries was less affected by the crisis than in the old EU countries.

Figure 2. Real GDP growth rates



Source: Eurostat.

A relatively liberal financial sector combined with large foreign ownership has been another distinguishing feature. Poland has the largest and low concentrated banking sector (the lowest C5 ratio in Table 2) with low dependence on sophisticated financial instruments and relatively low leverage: total loans to total deposits around 100%. Also in the Czech Republic banks are characterized by a very conservative funding structure, based on domestic deposits. On the other spectrum, Hungarian banks display the highest degree of risk, stemming not only from high non-depository financing, but also from high dependence on foreign currency loans: 70% of banking sector loans to the private sector in Hungary has been denominated in foreign currencies (EBRD, 2010).

In CEE-5 countries banks have remained small, following a traditional model of banking intermediation, and not presenting a significant systemic risk (Table 3). Foreign banks invested heavily in the CEE region right from the beginning of the transition period and only in Poland and Slovenia some large banks are still controlled by the State or domestic private capital.

Table 2. CEE-5: Macroeconomic and banking key figures

	Total loans as % of GDP		Total loans as % of total deposits		C5 Ratio	Bank assets (bil. EUR)	% Share of foreign banks
	2006	2009	2006	2009	2009	2009	2009
CZE	45	58	67	75	62	160	87
HUN	63	79	119	130	55	126	91
POL	35	57	79	102	44	274	63
SVK	48	49	110	142	72	54	94
SVN	69	101	119	146	60	53	37
EU 27	146	162	143	113	44	42 144	–

Source: ECB (2010) and Raiffeisen Research (2011).

Table 3. The largest banks by assets in CEE-5 countries, 2009

Bank/Country	Bank assets mln.EUR	Bank assets as % of country GDP	Main shareholder
Czech Republic			
1. Ceskoslovenska Obchodni Banka A.S. (CSOB)	32 462	23.7	KBC (BE)
2. Ceska Sporitelna a.s.	32 317	23.5	ERSTE Group (AT)
3. Komercni Banka	26 268	19.1	Societe Generale (FR)
Hungary			
1. OTP Bank Plc	36 006	38.7	Private global investors
2. MKB Bank Zrt	11 466	12.3	Bayerische Landesbank (DE)
3. K&H Bank Zrt	11 311	12.2	KBC (BE)
Poland			
1. PKO BP SA	38 109	12.3	State
2. Bank Pekao SA	31 810	10.3	Unicredit (IT)
3. BRE Bank SA	19 732	6.4	Commerzbank (DE)
Slovenia			
1. NLB dd-Nova Ljubljanska Banka d.d.	19 606	56.2	State (33%), KBC (30%)
2. Nova Kreditna Banka Maribor d.d.	5 786	16.6	State
3. Abanka Vipa dd	4 557	13.1	Domestic private investors
Slovakia			
1. Slovenska sporitel'na as-Slovak Savings Bank	11 485	18.1	ERSTE Group (AT)
2. Vseobecna Uverova Banka a.s.	9 852	15.6	Intesa Sanpaolo (LU)
3. Tatra Banka a.s.	9 014	14.2	Raiffeisen (AT)

Source: Own calculations, based on Bankscope database.

Through the 2007-2009 crisis, banks in CEE-5 countries have remained profitable and well-capitalized, except for Slovenia. On average, the Polish and Czech Republic top banks were least affected by the crisis, while the Hungarian ones were quickest in regaining stability and recapitalization. Austrian banks were among the first to enter CEE, followed by Italian, and later Belgian and French banks. Consequently, UniCredit, Raiffeisen and Erste are the largest CEE players (UniCredit, 2010). The investment in CEE-5 banks turned out to be very profitable, not only from pre-crisis, but also from the post-crisis perspective, and allowed mother companies to regain much of their initial investments. However, investment in CEE carried also potential risks, mainly connected with macroeconomic imbalances, exchange rate volatility and credit risk. As a result, major global players, such as Citigroup or HSBC, had a much lower level of involvement in the region than banks from neighbouring countries.

Foreign currency borrowing constitutes a significant risk in all East European countries. Before the crisis, many foreign-owned CEE banks refinanced themselves abroad and then passed on the currency risk to their clients. Macro-economic stability and expectation of currency appreciation after EU accession stimulated demand for such loans. However, FX exposure differs among CEE countries: in 2007, un-hedged foreign currency borrowing constituted more than 70% of all private sector loans in Estonia, Latvia, and Serbia; it exceeded domestic borrowing in Bulgaria, Hungary, and Romania, but was relatively low in comparison to GDP in Poland, the Czech Republic and Slovakia. Bank lending to un-hedged borrowers exposed CEE economies to systemic risk, but at the same time functioned as an engine for dynamic growth (Brown and De Haas, 2012).

4. CEE-5 banks' efficiency: DEA results

Efficiency is a broad concept which can be applied to many dimensions of bank activities. To analyse how the efficiency of CEE banks was affected by the pre- and post-crisis environment, technical and scale efficiency in the period 2002-09 has been investigated, using DEA technique, based on the Bankscope database. Only commercial and savings banks were analysed. DEA is a

non-parametric linear programming technique that computes a comparative ratio of outputs to inputs for each unit, which is reported as the relative technical efficiency score (Charnes *et al.,* 1998). All non-parametric methods generally yield slightly lower mean efficiency estimates and seem to have a greater dispersion than the results of parametric models (Berger and Humphrey, 1997). Technical efficiency is related to the ability of a firm to produce outputs with given inputs: a production plan is technically efficient if there is no way to produce the same output(s) with less input(s) or to produce more output(s) with the same inputs. Technical efficiency considers scale and scope economies. Among a number of DEA models, the most popular are the CCR and BCC-models. The CCR model (Charnes *et al.,* 1978) yields an objective evaluation of overall efficiency and identifies inefficiencies. It estimates efficiency on the assumption of constant return to scale (CRTS). The BCC model (Banker *et al.*, 1984) estimates efficiency on the assumption of variable return to scale (VRTS). It distinguishes between technical and scale inefficiencies by estimating pure technical efficiency at the given scale of operation.

Technical efficiency has been analysed assuming constant, variable and non-increasing returns to scale. The following symbols have been applied:

— E_crs – measure of technical efficiency under constant returns to scale assumption,

— E_vrs - measure of technical efficiency under variable returns to scale assumption,

— E_n – measure of technical efficiency under non-increasing returns to scale assumption.

For the above three efficiency measures (E_crs, E_n, E_vrs), the following property also holds: $0 < E\_crs \leq E\_n \leq E\_vrs \geq 1$. We should notice that VRTS technical efficiency scores are greater than or equal to CRST technical efficiency scores.

Following the scale properties of the two major DEA models (CCR and BCC-models) we have the definition of scale efficiency: $E\_s = E\_crs/E\_vrs$. If $0 < E\_crs < E\_vrs \leq 1$, this means that scale efficiency $e\_s < 1$ and the given bank/firm is scale inefficient (but we do not know if it is too big or too small). Based on scale efficiency measure (E_s) only, it is not possible to distinguish in which region

the given bank/firm is operating: increasing or decreasing returns to scale. To make this distinction, these measures must be compared with E_n measure. If E_crs = E_n this means that bank/firm is not scale efficient and is operating with increasing returns to scale. If E_n > E_crs, this means that bank/firm is operating with decreasing return to scale.

In order to test how bank efficiency changed over the period 2002-2009, an efficiency analysis has been carried out for the banking sectors in the Czech Republic, Slovakia, Slovenia, Hungary and Poland. The model chosen for estimation of efficiency is the expanded BCC model, output-oriented. In the technical efficiency analysis according to the DEA method, we have applied the classification of input and output based on *value added approach* (VAA) proposed by Grigorian and Manole (2002), were the input was: (x_1) – personnel expenses, (x_2) – total fixed assets, (x_3) – interest expense. The output was: (y_1) – total loans net, (y_2) – liquid assets, (y_3) – total deposits. The results of the efficiency analysis according to DEA method of E_crs and E_vrs measures in the period 2002-2011 are presented in Table 4.

Table 4. Efficiency measures of CEE-5 countries

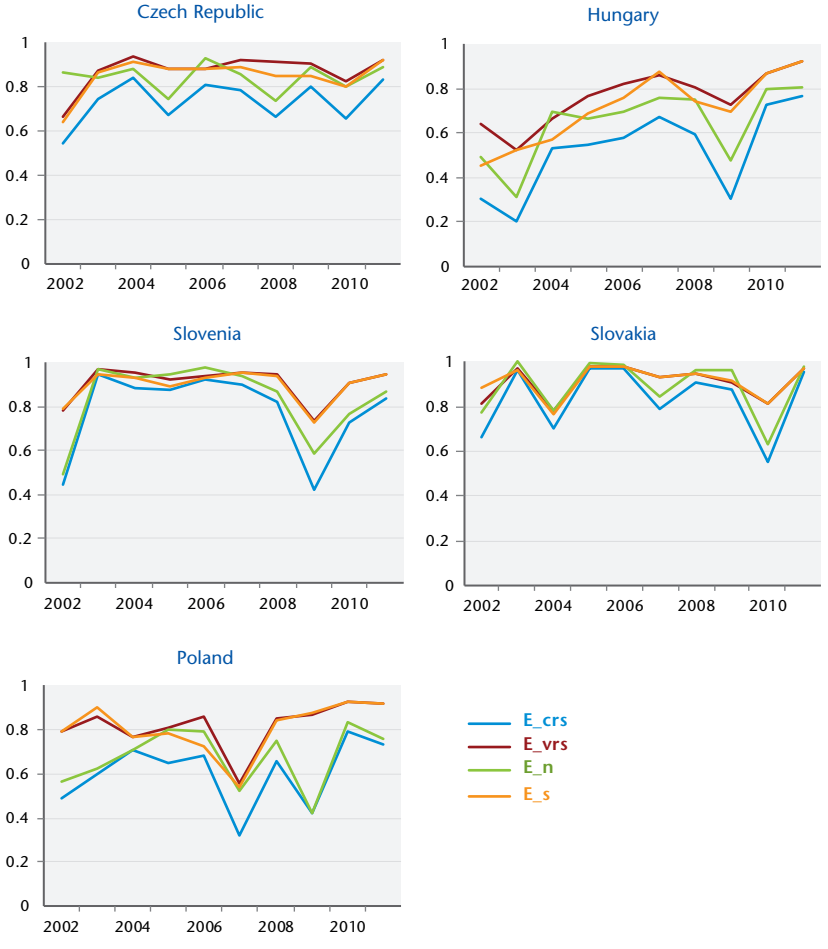
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	No. of banks
						E_crs					
Czech Rep.	0.55	0.74	0.84	0.68	0.81	0.79	0.66	0.80	0.66	0.83	**27**
Poland	0.49	0.59	0.71	0.65	0.68	0.32	0.66	0.42	0.79	0.73	**41**
Slovakia	0.65	0.96	0.70	0.97	0.97	0.79	0.91	0.87	0.55	0.95	**17**
Slovenia	0,44	0.95	0.88	0.88	0.92	0.90	0.82	0.42	0.71	0.83	**19**
Hungary	0.30	0.20	0.53	0.55	0.58	0.68	0.59	0.30	0.73	0.76	**32**
						E_vrs					
Czech Rep.	0.67	0.88	0.94	0.88	0.88	0.92	0.91	0.90	0.82	0.92	**27**
Poland	0.80	0.86	0.77	0.81	0.86	0.56	0.85	0.87	0.93	0.92	**41**
Slovakia	0.81	0.97	0.78	0.98	0.98	0.93	0.95	0.91	0.81	0.97	**17**
Slovenia	0,78	0.97	0.96	0.93	0.94	0.96	0.94	0.73	0.91	0.94	**19**
Hungary	0.64	0.52	0.67	0.76	0.82	0.86	0.80	0.73	0.87	0.92	**32**

Source: Own calculations, Bankscope database.

The results of the analysis have confirmed that the accession of CEE-5 countries to the EU has boosted the efficiency of commercial banks in the analysed period, particularly between 2004-2006.

However, efficiency in all analysed countries decreased in 2008-2009, most dramatically for Hungarian banks. In 2010-2011, efficiency increased, especially in Poland.

Figure 3. DEA indicators for banking sectors of CEE-5 countries (2002-11 means)



Source: Own analysis, BankScope database.

The process of changes of scale efficiency was also analyzed by a comparison of technical efficiency measures (E_crs, E_vrs, E_n) and scale efficiency measures (E_s) (Figure 3). The result of comparison in 2011 showed that the majority of examined banks in Poland and the Czech Republic were operating with increasing or constant returns to scale region (for the majority of banks E_n = E_crs). The

results of the analysis showed that the efficiency of CEE-5 banking sectors increased after EU accession and decreased due to the financial crisis. The majority of banks in Poland were operating with increasing returns to scale, which means that there is still room for new M&A.

5. Banking market competitive conditions in CEE-5

Anayiotos *et al.* (2010), researching the relative efficiency of East European banks using DEA technique, showed that DEA efficiency scores before the recent crisis were strongly linked to the host country level of development. Miklaszewska and Mikolajczyk (2011) pointed to the importance of bank home-country governance model: better efficiency results were recorded by banks controlled by foreign institutions govern by shareholder model (i.e. US) than those controlled by European capital (area with the stakeholder model). Lensink *et al.* (2008) indicated that domestic institutional structure did matter for bank efficiency. Thus, assuming the importance of host country conditions, our next step was to compare the competitive environment in CEE-5 countries. The level of competition of CEE-5 was evaluated using the H-statistic based on the reduced form of revenue equation of the firms (Panzar and Rosse, 1987; Claessens and Laeven, 2004; Yildirim and Philippatos, 2007; Bikker and Bos, 2008).

In order to estimate the H-statistic for the Polish banking sector, we used the reduced form of revenue equation, where the *dependent variable* IR_{it} is the natural logarithm of interest income $ln(II)_{it}$ or the natural logarithm of interest income divided by total assets $ln(II/TA)_{it}$ of bank i in time t, explanatory variables were defined for each bank i in period t, as follows: w_{1it} – price of funds (relation of interest expenses to total liabilities); w_{2it} – price of labor (personnel expenses, relation of pay and pay-related cost to net assets); w_{3it} – price of physical capital (relation of depreciation to fixed assets), oth_{it} – relation of loans to deposit, where: e_{it} – error, a_1, a_2, a_3, d – regression coefficients[2]:

$$ln(IR_{it}) = c_i + a_1 * lnw_{lit} + a_2 * lnw_{pit} + a_3 * lnw_{kit} + d * oth_{it} + e_{it} \quad [1]$$

2. The sum of regression ratios ($a_1+a_2+a_3$) determines the value of H statistic for the sector of commercial banks.

The panel data for this analysis comprises data from BankScope and cover the period from 2002 to 2009 and two variants of reduced form of revenue equation were estimated (Pawłowska, 2011). The first variant explains the natural logarithm of interest income divided by total assets *ln(II/TA)* as a dependent variable, whereas the second model explains the natural logarithm of interest income *ln(II)*. In order to analyse changes in the level of competition in the banking sectors the value of *H statistic* function was calculated for the entire period and for two sub-periods: 2002-2007 (H_1) and 2008-2009 (H_2) (Table 5). We also made additional estimation for the period from 2010 to 2011, for the two variants of reduced form of revenue equation.

Table 5. Value of H statistic for CEE-5

Estimations results with time interaction terms for overall sample:		*Dependent variable: Interest Income*				
		Czech R.	Hungary	Slovakia	Slovenia	Poland
H_1	2002-2007	0.28	0.34	0.19	0.27	0.30
H_2	2008-2009	0.07	0.003	0.11	-0.012	0.09
p (F-test)	H_0: $H_1 = H_2$	(0.037)	(0.000)	(0.612)	(0.034)	(0.002)
H_3	2002-2009	-0.25	0.35	0.28	0.30	0.16
H_4	2010-2011*	-0.16	-0.14	-0.13	-0.45	0.07
Estimations results with time interaction terms for overall sample:		*Dependent variable: Interest Income/ Total Assets*				
		Czech R.	Hungary	Slovakia	Slovenia	Poland
H_1	2002-2007	0.48	0.85	0.85	0.44	0.83
H_2	2008-2009	0.38	0.98	0.76	0.39	0.44
p (F-test)	H_0: $H_1 = H_2$	(0.290)	(0.526)	(0.276)	(0.851)	(0.003)
H_3	2002-2009	0.43	0.55	0.70	0.53	0.68
H_4	2010-2011*	0.15	0.30	0.01	0.07	0.19

* Tentative results.
Source: Own analysis, BankScope database.

The empirical results with respect to the H-statistic in the period 2002-2009, have shown that the values of H statistics were higher when the dependent variable was scaled by assets. The results of the empirical analysis demonstrated that between 2002 and 2007 (before the financial crisis) commercial banks in CEE-5 operated in the environment of monopolistic competition (values of H statistic were between 0 and 1). By estimating the different regression equations with interaction terms for two periods, significant changes

over time were found for the two sub-periods in the overall sample, which was confirmed by the test for significance of the differences between the two periods ($H_1 = H_2$) for the Czech Republic, Slovenia, Hungary and Poland, mainly when dependent variable was based on the natural logarithm of interest income *ln(II)*. In the period between 2010 and 2011 competition decrease in the CEE-5 banking sectors.

The level of competition in the Polish banking sector was similar to the euro zone countries level (Bikker and Spierdijk, 2008). A strong driver for an increase in competition in the CEE-5 banking sectors was the accession to the European Union. In the period 2008-2009, the slight decrease in competition resulted from the financial crisis' consequences.

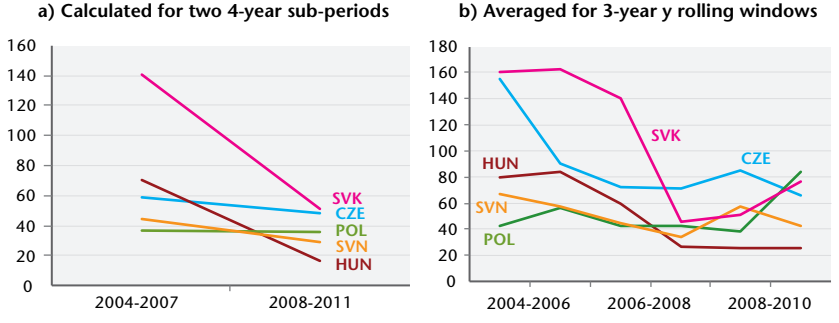
6. CEE-5 bank soundness

In the post-crisis period, bank risk/return preferences have shifted towards risk minimizing, both globally and in the CEE countries. However, assessing bank safety is even more difficult than assessing its efficiency. In this section, the Z-Score index of bank sensitivity to default has been adopted as a proxy measure of bank soundness. The index is based on the volatility of returns and the lack of adequate capital as the main sources of risk. The Z-Score is calculated as the sum of equity capital to assets ratio (CAR) and return on assets ratio (ROA), divided by standard deviation of ROA. Thus the value of the Z-Score is determined by the level of capitalization and by the level and stability of profits, and can be interpreted as the distance from a default, measured by standard deviation of profits. A high level in the Z-Score denotes bank stability, which means it has enough equity capital to cover potential losses. The key element, which has a considerable influence on the Z-Score, is the denominator. If the level of profitability is stable, it contributes to the high value of the index, but during unstable times (increase or decrease in profits) it causes a sudden decline in the Z-Score.

$$Z - Score_t = \frac{\overline{ROA} + \overline{CAR}}{\sigma(ROA)} \qquad [2]$$

The Z-Score is calculated in two different ways. Firstly, it is calculated for two 4-year periods: 2004-2007 and 2008-2011. That allows to compare the average results in two different macroeconomic conditions, pre-crisis credit-boom vs. crisis and post-crisis downturn (Figure 4a). However, in order to analyze the impact of growing instability on financial markets, the average Z-Score was also calculated in 3-year rolling windows, starting from 2004-2006 period and terminating in 2009-2011 (Figure 4b). The banks data were extracted from the Bankscope database. The original data set comprised all CEE-5 banks categorized as commercial or saving banks, but to prevent distortion banks with assets lower than 0.5% of the total domestic banking sector assets were excluded. That reduced the number of banks from 130 to 97.

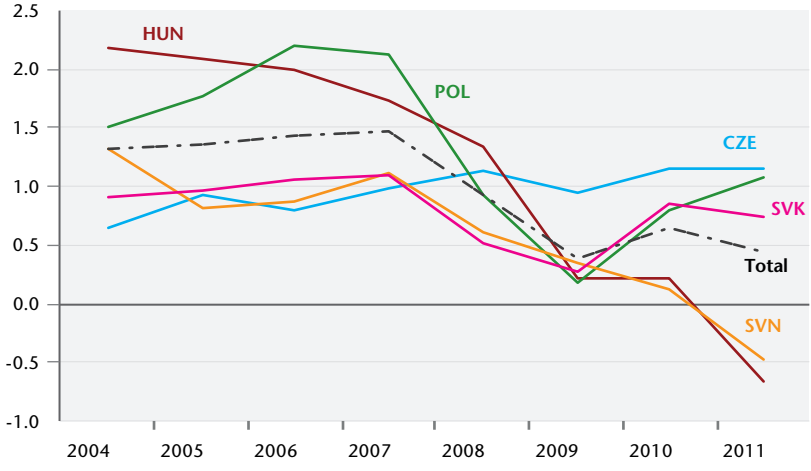
Figure 4. Z-Score for banks in CEE-5 countries



Source: Own calculations, based on Bankscope database.

When calculated for two sub-periods, Z-Score indices substantially diminished, on average from 64 to 36. The decrease could be observed in all countries, especially for the Slovak and Hungarian banks. This resulted mainly from changes in their profitability, both the lower level and higher volatility. The average return on assets for all banks included in this study was gradually rising from 1.32% in 2004 to 1.47% in 2007, then diminished to its lowest level 0.39% in 2009, and slowly increased thereafter. However, after 2009 there are two different paths for CEE-5 countries: gradual recovery for Polish, Czech and Slovak banks, and deep decrease for Slovenian and Hungarian banks (Figure 5).

Figure 5. Return on assets (%) for banks included in the study, by countries



Source: Own calculations, based on Bankscope database.

Calculations in 3-year rolling windows allow to see gradual character of changes in the Z-Sore level. Thus our results indicate a sharp decline in bank safety in CEE-5 countries in the 2007-2009 period, triggered by the crisis. Its main reason was not only a fall in profitability, which remained much higher than in most developed economies, but the high volatility of ROA, resulting from the excessive profitability in pre-crisis period. However, the restored profitability in most banks accompanied by the higher capitalization ratios after 2009 resulted in the increase of the Z-Score for the final sub-periods.

7. Rethinking bank regulation: concluding remarks

From the data presented in the empirical part of the paper, it is evident that the 2008 crisis affected CEE banks to a lesser degree than those in highly developed countries, although a short-term bank efficiency loss was clear. CEE banks entered the crisis in good shape, after their successful restructuring in the 1990s and dynamic economic growth following EU accession. Because of the high profitability generated by the traditional bank intermediary model, many global risk areas had not developed there. Consequently, the CEE-5 banks emerged from the 2008 crisis relatively unscathed and not in need of fundamental restructuring. During

the crisis, their global owners behaved responsibly, restraining from depleting bank capital, although M&A did intensify as a result of restructuring carried out by bank foreign owners.

In the light of the 2008 crisis, the traditional business model of banking intermediation, which dominates in Central and Eastern Europe, turned out to be the safest and it can be concluded that in CEE, strong banks create sound systems, which have survived the global financial crisis relatively well. Nevertheless, CEE banks will have no choice but to participate in the new European regulatory and supervisory architecture, centered on the prevention of systemic risk posed by large global banks. The newest EU proposals of creating a banking union will strengthen it even further, by giving strong supervisory powers to ECB and creating a mechanism of shared bank rescue burden for the euro zone members. Moreover, this step will weaken the current European supervisory structure based on EBA governance, before it managed to demonstrate its performance. The banking union, instead of deleveraging big banks, will create another rescue vehicle for them, increasing moral hazard behavior. For CEE banks, with small and competitive banking sectors, it may increase the tendency for bank concentration, away of the healthy and competitive banking model.

To conclude, the post-crisis complex regulatory and supervisory model, which has emerged in the EU, based on a number of new regulatory bodies with overlapping competencies and a central stabilizing role play for large banks by the ECB, may not produce the desired more efficient and stable banking system, particularly in the peripheral countries with competitive banking markets, such as the CEE.

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Part 4

MACROECONOMIC ISSUES

EURO – HOW BIG A DIFFERENCE
FINLAND AND SWEDEN IN SEARCH OF MACRO STABILITY

Paavo Suni and Vesa Vihriälä[1]
ETLA

The different monetary regime choices of two strikingly similar economies Finland and Sweden have created a particularly interesting testing ground for the benefits of the EMU. We assess the effects of the regime choice by simulating the behaviour of the Swedish economy with National Institute's Global Econometric Model (NiGEM) on the assumption that Sweden had joined the EMU in 1999. The simulation exercise suggests that the independent monetary regime reduced the impact of the global shock on Sweden, but cannot explain the growth gap between Sweden and Finland since 2012. Our results suggest that the different choices with regard to the EMU have not affected the macroeconomic outcomes very much.

Keywords: Finland, Sweden, EMU, simulation, counter factual.

The euro crisis has rekindled questions about the advantages and disadvantages of membership in the European Monetary Union. While a rather wide consensus exists that a monetary union with appropriate institutions is an overwhelmingly positive thing for the tightly integrated core countries of the European Union, there is much less agreement about whether being part of monetary integration is beneficial for EU's peripheral economies. Many people would now argue that Greece should never have joined or been allowed to join the euro.

1. *e-mail:* paavo.suni@etla.fi; vesa.vihriala@etla.fi

In the Northern periphery of the EU, the different monetary regime choices of Finland and Sweden have created a particularly interesting testing ground for the benefits of the EMU. While Sweden is somewhat bigger and its economy is more versatile than that of Finland, the countries have many similarities. In both countries manufacturing is important, highly developed and globally oriented. The core of the euro area accounts for roughly the same share for the countries' foreign trade. Both have extensive social safety nets and the associated high tax levels. Labour unions are strong and play an important role in wage formation.

Importantly, both Finland and Sweden have a history of monetary instability. Periods of rapid inflation and devaluations to restore external competitiveness have been recurrent. The boom following financial liberalisation in the late 1980s and the subsequent financial crisis and deep recession in the early 1990s in both countries underlined the difficulty of monetary management with fixed but adjustable exchange rates and free capital movements. In both countries, monetary policy proved to be impotent in preventing the unsustainable boom. Similarly, both countries were forced to float their currencies after a period of costly defence of their exchange rates with very high interest rates. In both countries the quest for monetary stability accentuated at the same time as EMU membership was on the political agenda.

In Sweden, a key study, the influential Calmfors report, about the benefits and costs of joining the EMU came to the conclusion that the Swedish economy would not adjust smoothly to asymmetric shocks without an independent monetary policy and exchange rate flexibility, at least not without important institutional changes. The political cost of staying out from the beginning of monetary union with small influence on the development of the EMU was seen smaller than the benefits from staying out (SOU, 1996). In Finland, the economic risks were recognised, but it was assumed that wage formation and fiscal policies would evolve in ways which would ensure sufficient adjustment capacity (EMU-asiantuntijaryhmä, 1997). In addition, there was a strong political will to be in the core of the European Union. As a result, Sweden decided not to seek EMU membership while Finland decided to join from the beginning.

Now there is more than a decade of experience with the relative performance of the two economies since the creation of the EMU, including a major economic recession. It is therefore interesting to compare how the two countries have fared and speculate how they would have developed had they chosen different monetary regimes. In this paper we do this by first documenting the evolution of some key macroeconomic variables and then by simulating with a macroeconomic model what might have happened in Sweden had it chosen to join the EMU in 1999.

1. Much similarity in the real economy

The evolution of GDP and its main components in the first years since the beginning of the EMU does not differ much between the two countries. GDP grew by the same 3.2 per cent a year on average from 1998 to 2006 in both Finland and Sweden (Figure 1.a).[2]

In 2007 and 2008 Finland grew faster than Sweden, driven by rapidly expanding exports in the midst of the global boom. The strong Finnish export performance reflected the specialisation of the Finnish manufacturing in investment goods which were high in demand during the global boom. Correspondingly, the crash of global demand that started in the fourth quarter of 2008 hit Finland harder: Finland lost 8.5% of GDP in 2009 against Sweden's loss of 5.0%. Taken together, there was no difference in the cumulative GDP growth of the two countries in the first decade of the EMU until 2009. Both countries grew at the average rate of 2.2%. Also the initial recovery from mid-2009 to mid-2010 was fairly similar in the two countries.

However, since 2010 Sweden has grown faster, at least until the third quarter of 2012. The better growth performance has been driven by both stronger exports and stronger domestic demand. Over the past three years Swedish exports have continued to grow moderately, while Finnish exports have been more or less flat (Figures 1.b and 1.c). As a result of the better performance over the last few years, Sweden has grown somewhat faster than Finland in the EMU area as a whole, 2.6% vs. 2.1%. In per capita terms, the difference has been smaller, 2.1% vs. 1.8%.

2. Finnish and Swedish economies are compared at length in Korkman and Suvanto (2013).

Figure 1a. GDP in Finland and Sweden, quarterly data

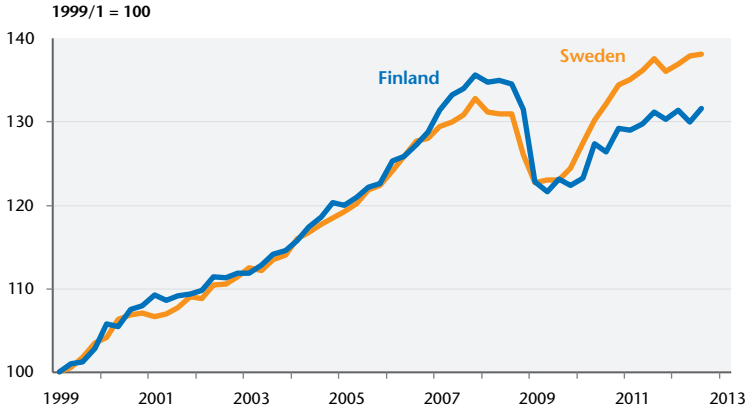


Figure1b. Exports of goods and services in Finland and Sweden, quarterly data

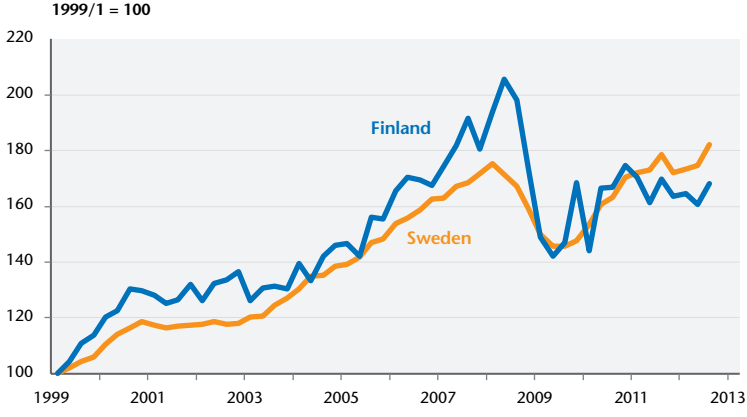
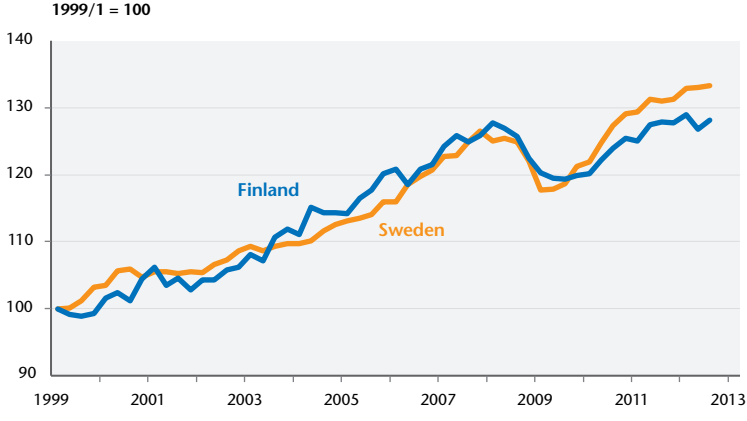


Figure 1c. Total domestic demand in Finland and Sweden, quarterly data



Sources: NiGEM, ETLA.

Thus the microeconomic benefits that Finland has been able to reap from joining the EMU in terms of reduced transaction costs and increased competition have not been large enough to compensate for other factors that have affected growth in the last 14 years. This is also consistent with the observation that Finland's trade with the (rest of the) euro area has not developed more favourably than that of Sweden. In fact, for both countries, the share of euro area exports out of total goods exports has declined by roughly the same amount in the euro period, reflecting the rapid growth of trade with the emerging economies.

Economic theory suggests that monetary policy should have little if any impact on medium-term growth but could have a more pronounced effect on output variability. Comparing the 13-year EMU period (1999-2012) with the preceding 13-year period (1985-1998), however, suggests that the change in the monetary regime was not very important in this respect, either. The standard deviation of the difference of quarterly GDP from its linear trend was almost identical for Finland (0.062 vs. 0.064) in these two periods containing a major slump each. In the case of Sweden, the standard deviation increased somewhat (from 0.032 to 0.044), but remained smaller than in Finland reflecting most likely the more diversified production structure of the Swedish economy.

2. Monetary stability has improved in both countries, but more so in Sweden

The inflation performance has also been pretty similar. Inflation was marginally faster in Finland than in Sweden in the EMU period until the third quarter of 2012 (Figure 2). Inflation was on average 1.8% in Finland and 1.5% in Sweden measured by the consumer price index and 2.0% and 1.5%, respectively, measured by the private consumption deflator.

Compared to a similar 13-year period before the EMU membership, the price stability of both countries improved. The decline in consumer price inflation was bigger in Sweden. Also the variability of inflation has declined in both countries although the degree of the decline depends on the exact inflation measure. The standard deviation of the consumer price index is almost identical in the

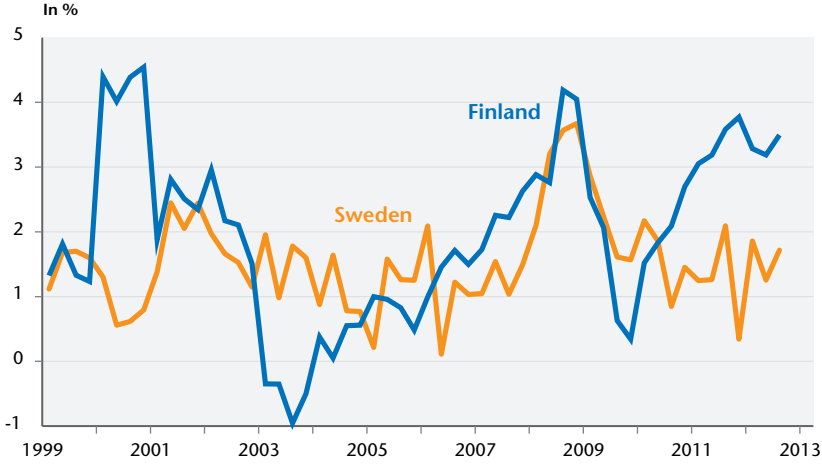
two countries in the EMU period while that of the private consumption deflator is higher for Finland (Table 1).

Table 1. Price and exchange rate stability before and after the start of EMU

		1985/1-1998/4		1999/1-2012/4	
		Sweden	Finland	Sweden	Finland
Inflation (national concept, annual change, per cent)	Mean	4.3	3.2	1.5	1.8
	Stdev	3.2	2.1	1.2	1.3
Private consumption deflator (annual change per cent)	Mean	4.9	3.4	1.5	2.0
	Stdev	3.3	2.0	0.7	1.3
Effective exchange rate, level	Stdev	6.6	6.3	4.3	4.8

Sources: NiGEM, ETLA.

Figure 2. Inflation, annual CPI change in Finland and Sweden, quarterly data



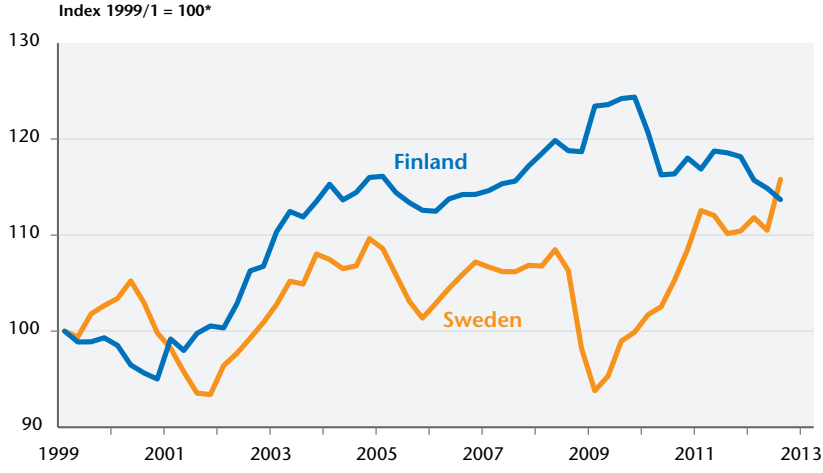
Sources: NiGEM, ETLA.

A similar overall picture emerges when looking at the external value of money. The standard deviation of the effective nominal exchange rate declined markedly in both countries from the pre-EMU period to the EMU period. Again, as with price stability, the decline was greater in Sweden.

The behaviour of the effective exchange rate is nevertheless interesting. While the overall variability as measured by standard deviation is smaller in Sweden, there is less cyclical variation in Finland. The Finnish effective exchange rate appreciated in the beginning of the EMU period quite substantially until 2004, and has remained relatively stable ever since. Coinciding with the

negative external demand shock in 2009, the Finnish effective exchange rate appreciated somewhat while the Swedish exchange rate depreciated substantially to recover more than fully in two years' time (Figure 3).

Figure 3. Effective exchange rate in Finland and Sweden, quarterly data



* Currency strengthens, when index numbers rise.
Sources: NiGEM, ETLA.

The effective exchange rate of Sweden has in fact followed very closely the bilateral exchange rate vis-à-vis the euro since the end of 2003. This suggests that the decision to remain outside the EMU has had indeed a major impact on the effective exchange rate.

3. What if Sweden had been in the EMU?

The comparison of the actual performances of the two economies above suggests that while average growth rates have been rather similar, Sweden has grown faster since the global crisis started. In terms of price and exchange rate stability Sweden seems to have fared better than Finland in the EMU period. Sweden's price and exchange rate stability also increased compared to that prevailing in the pre-EMU period.

If all other factors except the monetary regime had been the same for the two countries, one could conclude that EMU membership has not improved monetary stability or growth performance

of a peripheral Nordic country but perhaps weakened it. However, despite the many similarities all other factors cannot be assumed to have been precisely the same. One way to assess the importance of the monetary arrangement is to simulate the behaviour of the Swedish economy assuming that Sweden had joined the EMU. In what follows we do simulation exercises using the NiGEM model; a brief description of the model is provided in an Appendix 1.

Simulating Swedish EMU membership is easier and more reliable than simulating what might have happened in Finland had Finland chosen to stay outside the EMU. In a Swedish simulation, the alternative monetary policy and exchange rate reactions are fairly well known, as the likely impact of a Swedish EMU membership on both the monetary policy decisions of the ECB and the behaviour of the euro exchange rates can be assumed to be negligible. On the other hand, if we assumed that Finland had been outside the EMU, we would have to specify the monetary policy rule of the Bank Finland, make assumptions about how the markka exchange rate would have behaved and also assumptions about changes in risk premiums. None of these is straightforward.

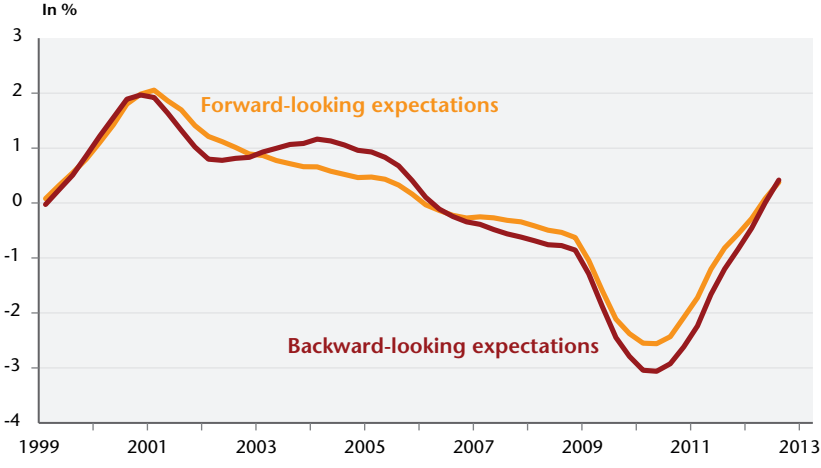
In the simulation of the Swedish EMU-membership we fixed the Swedish central bank rate at the same level as the ECB steering rate and euro exchange rate at the value prevailing in the beginning of 1999 (about 9.5 kroner per one euro). Money market rates were equalised with those of the rest of the euro area. On the other hand, we did not make any adjustments to the long-term rates; Swedish long rates have already stayed close to the German ones implying no potential for reduced risk premiums. As the exchange rates in the NiGEM are USD rates, we calculated the respective counter factual USD rate of krona by using the actual krona exchange rate vis-à-vis the USD and the fixing of the euro rate. Naturally, the evolution of Sweden's effective exchange deviates from that of Finland and other euro area countries to the extent Swedish trade patterns differ.

The simulation period was from the first quarter of 1999 to the third quarter of 2012, when we assumed backward looking economic agents. As a robustness check we also run the model with forward looking expectations, in which case the simulation period extended to 2020. Most of the reported results are based on the simulation with backward looking expectations. Using forward-

looking expectations would, in general, smooth the evolution of the economy as e.g. long-term interest rates change less. Consumers are on the other hand myopic at their best, which implies relatively small differences in consumption by expectations.

The counter factual suggest that tying the Swedish monetary policy to that of the euro area had allowed Sweden to grow somewhat faster in the first years of the EMU. The cumulative "growth gain" as a member of the monetary union is 6.6% of 2011 GDP by the first quarter of 2006, *i.e.* 0.8% per year, assuming backward looking expectations (Figure 4).

Figure 4. Simulated GDP level and deviation from the baseline in Sweden, quarterly data



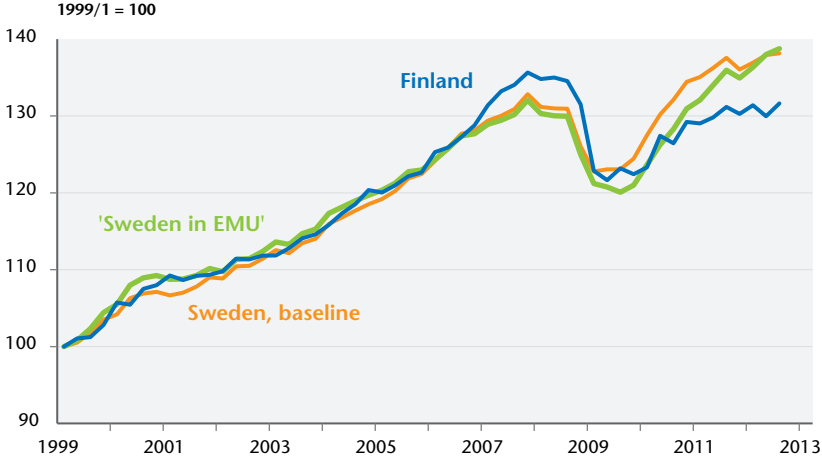
Sources: NiGEM, ETLA.

The rest of the period (after the first quarter of 2006) had been less successful for the EMU membership. The cumulative loss since 1999 was 7.7%, *i.e.* 1.2% per year. EMU membership had reduced GDP particularly in the midst at the global crisis in 2009–2010. Thus over the whole EMU period the EMU-Sweden had grown at almost the same rate as it did in reality. Assuming forward-looking expectations would smoothen the development, but the results remain qualitatively the same.

Looking at the simulated GDP and baseline GDP in levels highlights the role of the independent monetary regime (Figure 5). Retaining the krona appears to have mitigated the impact of the

global shock in 2009 somewhat and allowed Sweden to recover at a higher GDP level in 2010 and 2011. At the same time, comparing the Swedish simulated and baseline trajectories with the Finnish GDP baseline scenario suggests that other factors than the monetary regime have been the primary cause of the weaker GDP developments in Finland since mid-2010: Sweden does better in this period than Finland irrespective of the monetary regime, and the positive impact of the independent monetary regime on the Swedish GDP disappears completely by the second quarter of 2012.

Figure 5. Simulated and baseline GDP for Sweden and baseline GDP for Finland, quarterly data



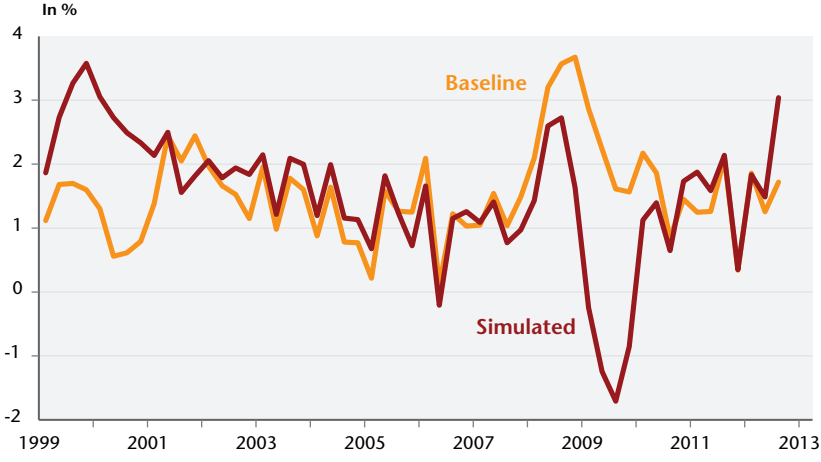
Sources: NiGEM, ETLA.

A plausible explanation for the weaker Finnish growth is the decline of the Nokia cluster and the weakening income generation capacity of the forest industry, compounded by high wage agreements just when the global crisis hit. Neither Nokia's difficulties nor the secular decline of demand for the types of paper in which the Finnish industry has specialised have much to do with the monetary regime.

Inflation had also been the same on average under the EMU scenario as with independent monetary policy; the average simulated inflation rate (private consumption deflator) in Sweden is the same 1.5% as it is in the baseline scenario. As with GDP, inflation

would have been stronger in the early years and lower in the midst of the global crisis had Sweden been part of the EMU (Figure 6).

Figure 6. Simulated and baseline inflation rate* in Sweden, quarterly data

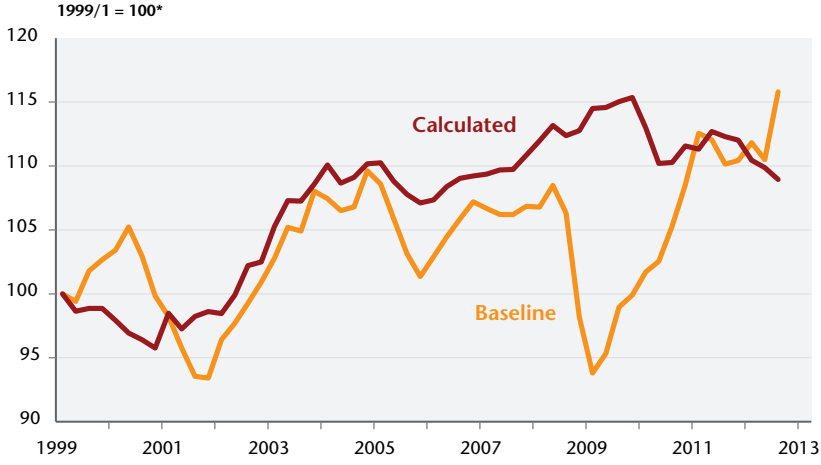


* Private consumption deflator.
Sources: NiGEM, ETLA.

The simulated effective exchange rate is stronger than the actual one for almost the whole period (Figure 7). A particularly wide gap emerges in the fourth quarter of 2008 and remains there until mid-2010. The only significant periods of a weaker simulated exchange rate are in 1999-2000 and in late 2012. On the other hand, the euro rates adopted as Swedish short-term interest rates have been in several periods both below and above the actual Swedish rates with a difference typically less than 1 percentage point (Figure 8). A membership in EMU had implied both the fixed euro exchange rate and short-term EMU interest rates.

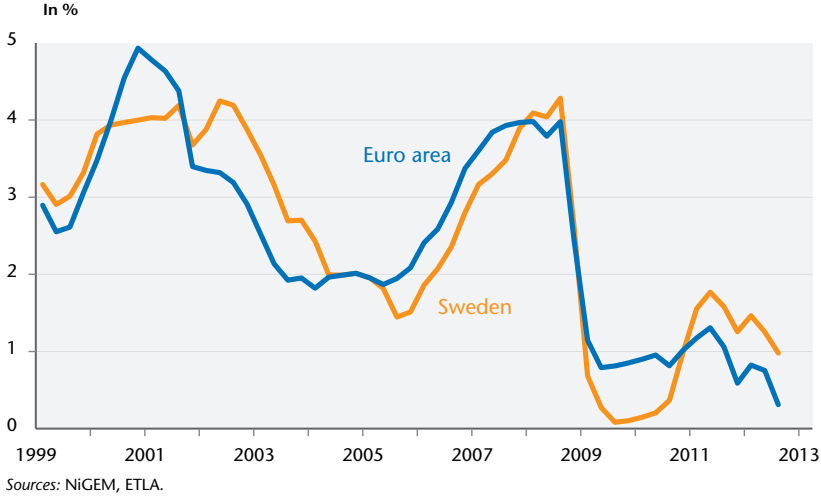
These growth patterns suggest that the stronger simulated growth until 2005/2006 is due to lower EMU interest rates. From 2006 onwards until 2011 both higher interest rates and a stronger currency contributed to the weaker growth in the counter factual. The weaker growth performance of the EMU-Sweden in 2009 through early 2011 would seem to be associated at least as much with the exchange rate appreciation as with the interest rate development.

Figure 7. Calculated and baseline effective exchange rate in Sweden, quarterly data



* Currency strengthens, when index numbers rise.
Sources: NiGEM, ETLA.

Figure 8. Three-month interest rates in the euro area and in Sweden



Sources: NiGEM, ETLA.

This last observation is important as the monetary authorities probably have less influence on the exchange rate than on short-term interest rates. It is quite plausible that the weakness of the krona from late 2008 until 2010 reflected mainly market reactions to bad news on the Swedish economy, such as the state of the car

industry and Swedish banks' exposures to the Baltic economies. Riksbank itself argued at the time that the weakening reflected the general tendency of small currencies to weaken in times of financial turbulence, and denied any attempts to target any given level of the exchange rate (Riksbank, 2009). The evolution of the krona helped to stabilise the economy on this particular occasion but it is not obvious that expectations would always work in this way.

While the simulated GDP and inflation patterns look rather sensible, the evolution of the key demand and supply components is less plausible. Exports deviate very little from the baseline scenario; they are very insensitive to the significant exchange rate changes in 2008–2010. The weak growth in the simulated counter factual in 2009–2011 is associated with both weaker domestic demand and a weaker current account. A relative increase in imports is thus associated with a weaker growth. The asymmetry of export and import reactions to the change in the effective exchange rate is doubtful and warns against drawing too far-reaching conclusions on the basis of this particular simulation.

An advantage of NiGEM over a single country model is that it allows analysing interactions between different countries. The Swedish EMU membership obviously has potential repercussions for the Finnish economy through trade reactions. The simulated impacts turned out to be modest, however. In the slump that started in late 2008, Finland had benefitted somewhat from the stronger Swedish imports.

4. Concluding remarks

The Swedish and Finnish GDP data do suggest that the different choices on the monetary regime have not been very important from a macroeconomic perspective. Until 2009 the average growth was almost identical. In 2009 and 2010, the independent monetary regime buffered the impact of the global shock on Sweden. The different monetary regimes cannot, however, explain the steadily increased growth gap anymore in 2012. Other factors, such as the decline of the Nokia cluster, are needed for that.

Our simulation exercise suggests that the stabilisation of Swedish output in 2009 and 2010 emanates at least as much from the reaction of the exchange rate as from the movements of the

short-term rates. It is not obvious that the foreign exchange market reactions would always be stabilising.

In any case, Sweden had achieved a lower average inflation rate in the EMU period and in fact improved its price stability more than Finland did, if compared to the years prior to the EMU. Thus, as a whole, monetary independence has not been detrimental to macroeconomic stability in Sweden. If anything, Sweden has fared somewhat better than it had done in the EMU and definitely better than Finland. As the Swedish economy is bigger and more versatile than that of Finland, this is not yet conclusive evidence that Finland would have achieved a similar outcome outside the EMU. Also, the proximity and closer economic links to Russia could make financial market conditions in a non-euro Finland more volatile than those in Sweden. Nevertheless, our observations do not support the argument that being part of the EMU is necessary for the macroeconomic stability of a small EU country with sound fiscal policies and resilient economic structures.

Interestingly, public opinions in both countries seem to support the monetary regime choices. In Sweden the support for joining the euro has declined strongly since the start of the Great Recession and has remained at around 10 per cent only since November 2011 (SCB 2013). In Finland, the support for the euro has at the same time been near all-time-high (Haavisto, 2013). One interpretation is that, as in the 1990s, economic arguments are predominant in Sweden and the euro crisis has added to the suspicions about the EMU, while political arguments continue to dominate in Finland.

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APPENDIX
National Institute Global Econometric Model (NiGEM)

National Institute Global Econometric Model (NiGEM) is a New Keynesian structural model describing economies in national accounts framework. It is based on estimated behavioural equations with a number of exogenous variables and identities. Demand determines production in the short-term.

Consumption is based on the real disposable income and real net housing and other wealth including foreign net assets. Investments consist of housing and business. Both depend on output, user costs, capital stock and changes in working-age population in forecasting, while in simulation it's past values.

The trade equations are function of competitiveness and demand. Exporters compete against each other *via* relative prices, while demand is given by the weighted world imports. Imports depend on import prices relative to domestic prices and on total demand. The trading system is closed so that the world trade balance sums to about zero.

Interaction between economies takes place through trade and competitiveness, interacting financial markets and international stocks of assets. Shifts in the domestic price level or the exchange rate feed into relative trade prices, allowing net trade to offset shifts in domestic demand.

The model provides number of options on expectation formation from backward-looking to forward-looking expectations on the USD exchange rate, long-term interest rates, wages and inflation. Consumption is either backward-looking or myopic looking only one quarter forward.

The model description of the Swedish and Finnish economies is similar to that of bigger economies, although less detailed.

More: http://nimodel.niesr.ac.uk/

THE EURO PLUS PACT
COMPETITIVENESS AND EXTERNAL CAPITAL FLOWS IN THE EU COUNTRIES[1]

Hubert Gabrisch
Halle Institute for Economic Research (IWH)

Karsten Staehr
Tallinn University of Technology, Bank of Estonia

The Euro Plus Pact was approved by 23 EU countries in March 2011. The Pact stipulates a range of quantitative targets meant to strengthen competitiveness and convergence with the ultimate aim of preventing the accumulation of unsustainable financial imbalances. This paper uses Granger causality tests and vector autoregressive models to assess the short-term linkages between changes in the relative unit labour cost and changes in the current account balance. The sample consists of data for 27 EU countries for the period 1995–2012. The main finding is that changes in the current account balance precedes changes in relative unit labour costs, while there is no discernable effect in the opposite direction. This suggests that the divergence in the unit labour cost between the countries in Northern Europe and countries in Southern and Central and Eastern Europe prior to the global financial crisis partly was the result of capital flows from the core of Europe to its periphery. The results also suggest that measures in the Euro Plus Pact to restrain unit labour costs may not have immediate effects on possible current account imbalances.

Keywords: European integration, policy coordination, unit labour costs, current account imbalances, economic crisis

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e-mail: karsten.staehr@ttu.ee.

The global financial crisis had pronounced effects on all European economies from as early as 2008, leading to substantial output losses in most EU countries. In a short time the crisis metamorphosed into a debt crisis as lending dried up and growth prospects deteriorated. Governments in the geographical periphery had to seek assistance from the IMF, the European Commission and other official lenders. Given this background, European economic governance structures came under scrutiny and a host of reforms were adopted with the aim of reducing the probability of future crises occurring in individual countries. Among the reforms adopted were *Europe 2020*, a new growth strategy; the *Euro Plus Pact*, in part to ensure financial stability; and the *Fiscal Compact*, setting new fiscal targets.[2] This paper discusses the core component of the Euro Plus Pact and seeks to assess its likely effectiveness.

The preparation of the Euro Plus Pact can be traced back to the autumn of 2010 when the diverging economic fortunes of European countries in the euro area became very noticeable (*The Economist,* 2011; Groll and van Roye, 2011). Consultations between the German and French governments led to the *Competitiveness Pact*, which was unveiled in February 2011. After some alterations had been made and a new name given, the Euro Plus Pact was adopted at a European Council meeting on 25 March 2011 (European Council, 2011).[3] All the euro area countries and the other EU countries except the Czech Republic, Hungary, Sweden and the United Kingdom signed up to the pact.

The goal of the Euro Plus Pact is to foster competitiveness and convergence among the participating countries with the aim of avoiding the build-up of financial and economic imbalances. The Pact stipulates a number of policy measures which should be applied for these goals to be reached, including a review of wage setting arrangements, indexation schemes, public sector wages and structural reforms to enhance productivity. There are also

2. The webpage http://www.ecb.int/mopo/eaec/ecopolicy/html/index.en.html depicts the many reforms and provides links to source material.

3. The word *plus* in the Euro Plus Pact is presumed to have two meanings. First, the Pact imposed new governance structures in addition to those in place at the time of its inception. Second, while participation in the Pact is compulsory for the euro area countries, other EU countries are also able to join.

measures to foster employment, enhance the sustainability of public finances and improve financial stability. The measures of the Pact must be applied by individual countries, but the *open method of coordination* entails the "naming and shaming" of countries that fall behind. The European Commission has been put in charge of monitoring and to that end collects and publishes various indicator variables, including movements in unit labour costs, which capture the progress of individual countries.

The rationale behind the Euro Plus Pact is evident in its original name, the Competitiveness Pact, and also in its current subtitle: "Stronger economic policy coordination for competitiveness and convergence" (European Council 2011, p. 13). Deteriorating competiveness in individual countries is seen as a source of economic and financial instability. This view is directly stated in the conclusions from the European Council meeting at which the Euro Plus Pact was adopted (European Council 2011, p. 5):

> The Euro Plus Pact […] will further strengthen the economic pillar of EMU and achieve a new quality of policy coordination, with the objective of improving competitiveness and thereby leading to a higher degree of convergence […].

The core of the Pact is the obligation of each participating country to retain competitiveness in order to avoid the build-up of financial imbalances, chiefly in the form of large current account deficits. This underlying economic "philosophy" is spelt out in Marzinotto (2011, p. 93):

> Implicit to the design of the recent economic governance reform is the idea that southern European countries have accumulated large current account deficits because poor price competitiveness impeded them to export abroad.

The same point has been made by other commentators and analysts.[4] The policy-making process meant that the Euro Plus Pact ended up including a large number of policy commitments regarding flexicurity, pension sustainability, health care, social benefits and tax policy coordination, but these measures are seen

4. One example is the succinct account in Gros (2011, p. 1): "The (relative) unit labour costs of GIP(S) countries Greece, Ireland, Portugal and Spain have increased: this is the fundamental cause of their problems as export performance must have been bad, pushing them into current account deficits."

as instruments for improving competitiveness in individual member countries.

The Euro Plus Pact has been subject to several policy-oriented analyses, especially in the months prior to and right after its adoption in March 2011. The policy discussion has brought up many important points relating to its underlying economic philosophy and to its practical implementation. Groll and van Roye (2011) argue that it is the *level* of unit labour costs, not changes in these costs, which provides the most appropriate measure of the convergence that has been achieved. Gros and Alcidi (2011) make a similar point and explain that the indices of relative unit labour costs can convey very different messages depending on the base year and the length of the sample used. They also argue that important issues have been left out of the Euro Plus Pact because measures to address the issues are politically inconvenient for the core countries in the euro area.

Gros (2011) argues that the Euro Plus Pact is based on flawed economics as competitiveness indicators are weak predictors of future export performance; Estonia, for example, has had rapidly increasing relative unit labour costs but also strong export growth over extended periods of time. Wyplosz (2011) argues that it is inappropriate to focus on unit labour costs relative to euro area countries as more informative competitiveness measures would include all trading partners. Marzinotto (2011) is also critical of the underlying rationale of the Euro Plus Pact, but points out that a solution to the economic problems in the peripheral countries must include measures to strengthen their competitiveness.

Holinski *et al.* (2012) find that the capital flows from North European to South European countries in the period 1992–2007 led to the accumulation of imbalances as they cannot be explained by fundamentals such as differentials in productivity growth. De Grauwe (2011) argues that monetary unions are especially susceptible to fiscal crises as governments do not have access to inflationary financing and are therefore exposed to sudden changes in capital flows. Krugman (2012) states that "the roots of the euro crisis lie not in government profligacy but in huge capital flows from the core (mainly Germany) to the periphery during the good years. These capital flows fuelled a peripheral boom, and sharply rising wages and prices in the [recipient] countries relative to Germany".

In the context of the Euro Plus Pact the question is whether weak competitiveness leads to capital inflows (current account deficits) or whether capital inflows lead to weak competitiveness. Obviously the policy conclusions differ depending on the answer to this question. We establish the direction of the relationship through the time dimension using Granger causality tests and vector autoregressive models comprising the two variables in question, i.e. changes in the relative unit labour cost and changes in the current account balance. In this way the paper can be seen to address the question: "What comes first, competitiveness or capital flows?"

The empirical analyses are undertaken using a panel dataset comprising approximately 15 years of data for 27 EU countries. The use of panel data makes reliable estimations possible in spite of the short time frame. The panel data estimations assume homogeneity of the slope coefficients across the countries in the sample, and the estimated slope coefficients or marginal effects may thus be seen as *average* values for all the countries in the sample. The Euro Plus Pact has been adopted by almost all EU countries and it is therefore reasonable to base assessments of the Pact on estimates of the average effects for 27 EU countries or different subsets of the 27 countries in the dataset.

This paper is the first to assess the contents of the Euro Plus Pact using an econometric analysis of the main causal assumption underlying the Pact. As such the paper contributes to the important discussion of economic governance in the euro area and the European Union at large. The issue discussed in the paper is, however, also of importance in its own right. The linkages between capital flows and the real exchange rate or other measures of competitiveness are widely debated, and there is a large literature that provides quantitative estimates of these linkages, particularly for emerging market economies (see the literature survey in Section 1). The paper contributes to this literature by providing estimates for the European Union and for different subsets of EU countries. The paper is also testing for linkages in both directions, not only in one direction as typically seen in the literature. Finally, the use of VAR models allows a more complete modelling of the dynamics, but is relatively unusual within this literature.

The rest of the paper is organised as follows: Section 1 discusses the existing literature on the links between competitiveness and

capital flows. Section 2 presents the dataset, time series properties and various crossplots. Section 3 shows the results of simple Granger causality tests. Section 4 presents different VAR models and their impulse responses. Finally, Section 5 summarises the paper and draws some policy conclusions.

1. Competitiveness and external capital flows

This section reviews and discusses contributions to the literature on the linkages between external capital flows and competitiveness. The linkage from competitiveness to capital flows is discussed first, the linkage from capital flows to competitiveness afterwards. In each case some theoretical underpinnings are reviewed, followed by brief surveys of empirical and policy-oriented studies.

It is evidently a simplification to consider the linkages between competitiveness and external capital flows in isolation. There may for instance be factors that affect both the current account balance and the real exchange rate, e.g. the net foreign asset position, energy prices or economic policies (Obstfeld and Rogoff 1995; Ostry, 1988; Lartey 2008).[5] In the discussion below it is argued, however, that there will likely be many cases in which either competitiveness or external capital flows are affected by largely exogenous or autonomous factors.

1.1. From competitiveness to capital flows

The theoretical starting point is the standard Keynesian model of an open economy in which net export is assumed to be a negative function of the real exchange rate, where the real exchange rate is defined as the price of domestic production relative to the price of foreign production measured in the same currency unit (Krugman and Obstfeld 2003, Ch. 16). The underlying assumption is that both domestic demand and export demand depend negatively – and strongly – on price. The Marshall-Lerner condition states that if the trade balance is initially in balance, the sum of the

5. The interaction between the two variables may also depend on the characteristics of the shocks affecting the economy, such as whether shocks are temporary or permanent and whether they are anticipated or unanticipated (Agenor, 1998).

numerical values of the price elasticities of domestic and foreign demand must exceed one in order for a real depreciation to improve the trade balance and hence the current account balance. The numerical elasticities might be small in the short term because of long-term contracts and sluggish substitution, which implies that the trade balance deteriorates in the short term and only improves in the longer term, the celebrated *j*-curve effect.

Changes in the real exchange rate, unit labour costs or other measures of competitiveness can be autonomous or independent in the sense that they are not influenced by changes in external capital flows. This would be the case when factors like nominal exchange rates, productivity and nominal wage rates change because of exogenous factors. An example of this is changes in trade union power or labour market institutions that may affect nominal wages and/or productivity without any impetus from external capital flows.

The link from competitiveness to the current account balance is also at the core of many concepts of an *equilibrium exchange rate* (Williamson 1985, 1994). The equilibrium exchange rate is then taken to be the real exchange rate – or another suitable competitiveness indicator – that is compatible with a desired current account balance. This is the idea behind the *Macroeconomic Balance Framework* developed by the International Monetary Fund to access misalignment of the real exchange rate (Isard *et al.*, 2001; Isard, 2007). The real exchange rate is seen to be misaligned if it differs markedly from the estimated equilibrium value over a period of time. The real exchange rate is overvalued if it is associated with excessive current account deficits.

A large number of studies have tested the hypothesis of a link from competitiveness to current account developments, using datasets from both developed and developing economies. The overall conclusion is that the effect is non-existent or very subdued in the short term, but that the effect might be more pronounced in the longer term. There seems to be some heterogeneity across the sample countries.

Rose (1991) finds that the hypothesis of a link from the real exchange rate to the trade balance gains little support in a sample of five OECD countries and conjectures that the numerical import

and export price elasticities are small. Bachman (1992) finds that measures of competitiveness have very little explanatory power for the current account balance in the USA. Bahmani-Oskooee and Kara (2003) estimate co-integration models for nine industrialised countries and reach the conclusion that there is no consistent finding; the reaction of trade flows to changes in import and export prices varies substantially across the countries. Boyd *et al.* (2008) use a sample of eight OECD countries and find that there is an effect from the real exchange rate on the trade balance in most of the sample countries, but the effect occurs after a substantial delay, providing support for the *j*-curve effect.

After the outbreak of the global financial crisis, many studies have discussed a possible link from competitiveness to the trade balance or current account balance. The results are mixed and occasionally difficult to interpret. Zemanek *et al.* (2009) argue that a lack of competitiveness led to large current account deficits in some euro area countries prior to the global financial crisis. The empirical analysis suggests that structural reforms in the deficit countries may help strengthen the current account balance.

Belke and Dreger (2011) investigate the relative importance of competiveness and income convergence for the current account in 11 euro area countries. The current account balance, the relative real effective exchange rate and the relative income level are all found to exhibit unit roots and to be co-integrated. An appreciation of the relative real effective exchange rate is associated with a worsening of the current account balance.

Some analytical studies have drawn attention to deteriorating competitiveness in countries in the geographical periphery of Europe. Fischer (2007) uses various concepts of real equilibrium exchange rates and finds that Germany gained competitiveness and several South European countries lost competitiveness between the introduction of the euro in January 1999 and the end of 2005. It is concluded that these developments to some extent reversed previously existing disparities. Dullien and Fritsche (2008) find that several South European countries experienced rapid increases in unit labour costs and, furthermore, that deviations from a long-term equilibrium level only closed very slowly. Jaumotte and Sodsriwiboon (2010) find that the real exchange rate in the South European euro countries was substantially overvalued

relative to its equilibrium value at the onset of the global financial crisis. The finding results, however, from current account balances being above levels deemed sustainable, and the analysis does not detect the direction of the linkage.

1.2. From capital flows to competitiveness

The direction from capital flows to competiveness has a long history in the literature, starting with Böhm-Bawerk's (1924) famous statement that the capital balance rules the trade balance and not *vice versa*. Keynes emphasised the destabilising effects of external capital flows. In the Keynes-Ohlin controversy on wartime reparations, Keynes referred to a *transfer paradox*: the reparations to be paid by Germany after World War I, would worsen the competitiveness of the recipient countries through an appreciation of the real exchange rate, i.e. a negative terms-of-trade effect (Keynes, 1929).[6]

A similar effect may also be the result of increased prices or production of export products. The increased export revenue may lead to a real exchange appreciation, which worsens competitiveness in other export industries and in import-competing sectors (Corden, 1984). The mechanisms underlying this *Dutch Disease* are parallel to those of the *transfer paradox* as the export revenue amounts to a capital inflow.

This paper uses the term the *transfer effect* about the short-term phenomenon that increased capital inflows lead to real exchange rate appreciation and increased capital outflows lead to real exchange rate depreciation. The main theory explaining the transfer effect is based on short-term changes in demand for non-traded products (Sy and Tabarraei, 2009; Edwards, 1988; Corden and Neary, 1982).

The models typically assume two traded goods, an import good and an export good, and one non-traded good. Inflow of capital implies *ceteris paribus* that additional traded resources are available for domestic absorption, while outflow of capital implies that less traded resources are available. Consider an inflow of capital caused by an independent factor such as lower interest rates abroad. The

6. In the early 1940s, Keynes proposed a common currency, the *Bancor*, plus a clearing union in order to deal with excessive debit balances (Keynes, 1942, p. 20).

capital inflow makes additional resources available for domestic absorption such as consumption and investment, and the increased demand will typically be directed towards both traded and non-traded goods. While the prices of the traded goods are determined from abroad, the increased demand for the non-traded good drives up the price of the product and of production factors such as labour. The result of the capital inflow is an appreciation of the real exchange rate (the price of traded goods relative to the price of non-traded goods) or deteriorating competitiveness as measured by higher unit labour costs. A capital outflow will have the opposite effect as lower demand for non-traded goods will lead to a real depreciation or lower unit labour costs.

The effect of a capital inflow will reflect the characteristics of the economy. It will depend on how the increased demand is divided between traded and non-traded goods and it may also depend on the distribution between consumption and investment and the distribution of investment between the traded and non-traded sectors. *Ceteris paribus*, the real appreciation is likely to be smaller if the capital inflow is spent on productivity-enhancing investments in the non-traded sector.

It is possible that capital flows are autonomous and independent of the state of competitiveness of the economy. The financial fragility hypothesis by Minsky (1982, pp. 117-162) suggests that boom-bust cycles in financial markets can be the result of "euphoric expectations". This may be particularly relevant in the European case, where the introduction of the euro and integration of Central and Eastern Europe can be seen as triggers for the build-up of euphoric expectations in the Minsky sense. Gabrisch (2011) points out that the euphoric expectations may lead to capital inflows directed toward financial assets and real estate and, thus, set in motion an asset price boom. This can spread to the investment sector and other industries and also to unit labour costs, depending on how the labour market functions.

The empirical evidence is mixed. Calvo *et al.* (1993) show that countries in Latin America at different times experienced episodes of substantial capital inflows and the result was real appreciations. The capital inflows occurred in countries with very diverse economic conditions, suggesting that the capital flows were in large part driven by events outside the region. Calvo *et al.* (1996)

show that developments in both Asian and Latin American countries in the late 1980s and early 1990s were consistent with the transfer effect. The papers did not apply any econometric testing. Rajapatirana (2003) uses data for the period 1985-2000 and reaches the same conclusion as Calvo *et al*. (1996), but also finds that the real appreciation following net capital inflows was much larger in Latin American countries than in Asian countries, possibly because of different compositions of the capital flows.

Bakardzieva *et al*. (2010) found for a panel of emerging market economies (including Eastern European countries) that net total capital inflows led to an appreciation of the real effective exchange rate. The effects, however, differed depending on the type of capital flow. For most types of capital (portfolio investment, loans, foreign aid, remittances or income transfers), a capital inflow led to a real appreciation, but this was generally not the case for capital stemming from foreign direct investments.

Saborowski (2009) use a broad sample of 84 countries during the period 1990-2006 to investigate the effect of capital flows on the real exchange rate. The study finds that capital inflows in the form of FDI generally lead to an appreciation of the real exchange rate. Importantly, the tendency towards real appreciation is attenuated if the recipient country has a highly developed financial sector.

Morande (1988) tests whether real appreciation came before foreign capital inflows or *vice versa* in Chile. The analysis is based on small VAR models estimated on monthly data for the period 1977-1983. The conclusion is that the direction of the linkage is from capital inflows to real exchange rate appreciation.

The importance of capital flows on competitiveness has received only little attention in the debate on European governance reform. Perez-Caldenty and Vernengo (2012) argue that the large current account surpluses in the core euro countries contributed to the misalignment of real exchange rates within Europe. Schnabl and Zemanek (2011) similarly highlight current account trends within Europe and the possible destabilising consequences.

1.3. Direction of relationship

The literature on international competitiveness and the current account balance includes simple and straightforward theories

explaining causation in either direction. It is not possible *ex ante* to ascertain the direction of the linkage; only empirical studies on a concrete sample can provide such information. There are empirical studies that find a link from competitiveness to the current account balance and numerous other studies establishing a link in the opposite direction. It is noticeable, however, that very few empirical studies include tests that allow for linkages in both directions – a notable exception is Morande (1988) – and this omission limits the policy conclusions of the studies.

2. Data and time series properties

The dataset used in the empirical analysis is a panel of annual data from 1995 until 2012 for 27 EU countries (all except Croatia which joined in 2013).

The variables used in the empirical analysis follow directly from the discussion of the Euro Plus Pact in introduction. The Pact aims to restrain the growth of unit labour costs in order to prevent current account imbalances. The analyses therefore focus on these two variables. To keep the analyses simple and easily comprehensible, no other variables except country fixed effects are used. The parsimonious specifications should be seen as reduced form models. Section 5 discusses extensions of the analyses including the use of additional variables. The panel is unbalanced as observations of unit labour costs at the beginning of the sample are missing for some countries. All data were downloaded from the Eurostat database on 4 November 2013.

As is customary in the literature, the capital flow variable is taken to be the current account balance (Reinhart and Reinhart 2009). By definition, the sum of the current account balance, the financial account balance and the *reduction* in official reserves is nil (in the absence of errors and omissions), where the financial account balance is the sum of net foreign direct investment, net portfolio investment and net other investment (loans etc.). The current account balance is typically measured more precisely and more consistently than the financial balance and its components.[7]

7. A current account deficit is financed through a financial account surplus and/or a reduction in official reserves. Reinhart and Reinhart (2009) argue that the measure of capital flows should ideally be computed as the current account balance plus the *reduction* in official reserves. One argument for removing changes in official reserves is that that they are the result of administrative, non-private, decision making.

The current account balance as a percentage of GDP is denoted CA (classifier *bop_q_gdp*). A current account surplus, CA > 0, is tantamount to a net capital outflow and indicates the accumulation of net foreign assets. A current account deficit, CA < 0, shows a net capital inflow and implies a deterioration of the net foreign asset position. In the baseline specifications, the change in the current account, DCA = CA – CA(-1), is used.

The variable GRULC denotes the percentage *growth* of the unit labour cost in the individual EU country *relative* to the percentage growth of the *unit labour cost* in the EA12, i.e. the 12 first euro area countries, with the unit labour cost is expressed in terms of common currency units (ECU/EUR). The index of the nominal unit labour cost is defined as the ratio between the nominal compensation per employee and the productivity per employee (Eurostat classifier *nama_aux_ulc*[8]). The unit labour cost is converted to common currency units (ECU/EUR) using market exchange rates.[9] An increase in the relative unit labour cost, GRULC > 0, signifies a worsening of competitiveness relative to the EA12, while a decrease in the relative unit labour cost, GRULC < 0, signifies an improvement in competitiveness relative to the EA12.

It is noticeable that the GRULC variable is a variable depicting changes in competitiveness relative to the EA12, not the entire group of EU and non-EU trading partners of a country. The CA variable, meanwhile, refers to the total current account balance of a country, not only towards to EA12. To examine the importance of the asymmetry in the country coverage of the two variables, we include real effective exchange rate indices, deflated using unit labour costs or consumer prices from the 37 largest trading partners of each country. The variable is GREER_ULC, which is the percentage change in the real effective exchange rate against

8. The unit labour cost is not available for Greece and Malta for 1996–2000 and for Romania for 1996–1999 due to missing source data. A few data points for early parts of the sample are downloaded from earlier versions of the Eurostat database.

9. For the euro area countries Eurostat expresses the nominal unit labour cost as "euro fixed" values for the years prior to the introduction of the euro, i.e. data in the national currency values are converted to EUR/ECU values using the irrevocably fixed exchange rate at the time of the introduction of the euro. The use of fixed conversion factors rules out comparison across countries and the euro fixed values are therefore converted into EUR/ECU values using the market exchange rates of the national currencies against EUR/ECU (classifier *ert_bil_conv_a*). For the 10 countries outside the euro area, the nominal unit labour cost is converted to ECU/EUR using the nominal exchange rates (classifier *ert_bil_eur_a*).

37 trading partners deflated using the unit labour cost in the total economy (classifier: *ert_eff_ic_a*). The variable is GREER_CPI which is the percentage change in the real effective exchange rate against 37 trading partners deflated using consumer price indices (classifier: *ert_eff_ic_a*).

The time series properties of the data series are important for the choice of empirical methodology. Table 1 shows the results of panel data unit root tests, with common and with country-specific roots, for the data series GRULC, CA and DCA. The result is that GRULC is panel stationary while CA has a unit root (although the PP-Fisher test suggests a borderline case), and DCA, the first difference of CA, is panel stationary. The analyses in this paper generally use the two stationary variables GRULC and DCA, but the possible borderline result for CA suggests that it is judicious to use this variable in robustness analyses.

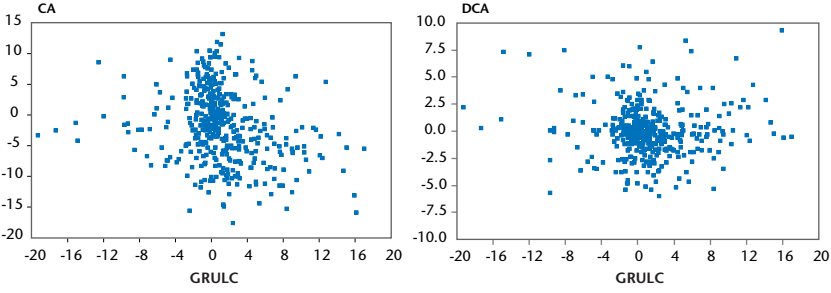
Table 1. Tests of unit roots of panel data series, 1997–2012

	Levin, Lin, Chu[a]	Im, Pesaran and Shin[b]	ADF-Fisher[b]	PP-Fisher[b]
GRULC	-12.388 [0.000]	-9.198 [0.000]	192.688 [0.000]	249.950 [0.000]
CA	-0.940 [0.174]	-0.932 [0.176]	64.896 [0.147]	57.0726 [0.339]
DCA	-7.901 [0.000]	-7.902 [0.000]	165.069 [0.000]	309.707 [0.000]

a. The test assumes a common unit root across the countries.
b. The test allows for different unit roots across the countries.
Notes: The null hypothesis is in all cases that the variable has a unit root. The tests allow for country-specific intercepts in the test regressions. The values in square brackets are *p*-values.

Figure 1 shows crossplots of the growth in the relative unit labour cost GRULC and the current account balance CA or the change in the current account balance DCA for 27 EU countries for the period 1995–2012, the scales being chosen so that a few extreme observations have been left out. Both crossplots exhibit weak negative correlations, but no clear patterns are apparent. Moreover, the possible directions of any possible linkages cannot be ascertained without econometric analysis.

Figure 1. Crossplots GRULC and CA or DCA; annual data 1997–2012, 27 EU countries



Note: GRULC is the change in the relative unit labour cost as a percentage, CA is the current account balance as a percentage of GDP, DCA is the change in the current account balance in percentage points of GDP. A small number of observations for which GRULC is below -20 percent or above 20 percent or CA is below -20 percent of GDP or above 20 percent of GDP have been omitted.

3. Granger causality tests

The discussion in Section 1 suggests that the possible effect of competitiveness on the current account is likely to occur with a time lag (*j*-curve effect) and, conversely, the possible effect of the current account on competitiveness may also appear with a time lag, especially in cases with a fixed exchange rate. It is therefore reasonable to identify the direction of causality using the time dimension, i.e. causality is associated with the lagged values of a variable having explanatory power over the other variable.[10]

This section presents the results of the Granger causality tests, which ascertain the time-based relationship between the two variables of interest, in this case between GRULC, the percentage growth in the relative unit labour cost, and DCA, the change in the current account balance in percentage points of GDP. The tests are carried out for a large number of specifications and for different country groups in order to examine the robustness of the results. The baseline Granger causality tests include annual changes in the relative unit labour costs and annual changes in the current account balance. The results therefore relate to the short or medium term horizon, while the long-term relation between the variables is not modelled.

10. Morande (1988) also tests for time-based (Granger) causality using different VAR models including variables such as the real exchange rate and external capital flows. The methodology is also related to the co-integration analysis in Belke and Dreger (2011) although the latter does not seek to identify the direction of causality.

The Granger causality test is performed in a model in which the dependent variable is explained both by one or more lags of itself and one or more lags of an independent explanatory variable (and possibly control variables). The Granger causality test is a standard Wald test with the null hypothesis that the coefficient or coefficients of the lagged independent explanatory variable are zero. The test statistic follows an *F*-distribution or, in the case of the System GMM estimation, asymptotically a χ^2-distribution. If the null hypothesis is rejected, the lagged variable is said to *Granger cause* the other variable. Granger causation implies that an independent explanatory variable precedes and helps to explain the dependent variable, but no fundamental causation can be ascertained as the independent explanatory variable will typically not be exogenous.

To avoid that outliers affect the results unduly, a few extreme observations have been trimmed from the dataset. Observations in which GRULC is below -20 percent or above 20 percent and observations for which CA is below -20 percent of GDP or above 20 percent have been omitted. These observations typically relate to episodes of extreme economic or financial instability. In total, 10 observations have been omitted due to this trimming of the dataset. The results are generally not very sensitive to the specific choice of cut-off points; the results only change marginally if instead the low cut-off point is taken to be -15 percent and the high cut-off point to be 15 percent.

Table 2 shows the results of panel data estimations used to test whether lags of DCA have explanatory power towards GRULC when one or more lags of GRULC are included, i.e. to test whether GRULC Granger causes DCA. Column (2.1) shows a simple estimation with country fixed effects and one lag of both variables. The null hypothesis of no explanatory power of GRULC cannot be rejected. The same applies in Column (2.2) in which the fixed effects are omitted and the model is estimated using ordinary least squares. It is noteworthy that the estimation results in Columns (2.1) and (2.2) are so similar. This is the result of the country fixed effects generally be very small, ranging from -0.46 to 0.54. A Wald test cannot reject the null hypothesis that the fixed effects are redundant (i.e. all 0) as the *F*-distributed test statistic is 0.159 (*p*-value = 1.000).

Table 2. Panel data Granger causality tests. Dependent variable = DCA

	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)
DCA(-1)	0.125 *(0.069)*	0.133 *(0.099)*	0.222 *(0.071)*	0.116 *(0.088)*	-0.032 *(0.123)*	0.188 *(0.117)*
DCA(-2)	..	..	..	-0.221 *(0.045)*	0.101 *(0.043)*	-0.273 *(0.054)*
GRULC(-1)	0.053 *(0.047)*	0.056 *(0.038)*	0.083 *(0.044)*	0.047 *(0.038)*	-0.016 *(0.045)*	0.053 *(0.044)*
GRULC(-2)	..	..	..	0.036 *(0.032)*	-0.046 *(0.021)*	0.055 *(0.039)*
Granger causality[a]	1.20 [0.270]	2.21 [0.138]	3.65 [0.056]	0.88 [0.427]	2.56 [0.113]	1.15 [0.359]
Time sample	1997-2012	1997-2012	1997-2012	1998-2012	1998-2012	1998-2012
Countries	EU27	EU27	EU27	EU27	EU15	CEE
Observations	408	408	408	383	220	138
Estimation	FE	OLS	System GMM	FE	FE	FE

a. The null hypothesis of the Granger causality test is that the lagged value(s) of the independent variable do(es) not Granger cause the dependent variable. The test statistic is *F*-distributed except in the System GMM estimation in which case it is χ^2-distributed; the values in square brackets are *p*-values.
Notes: Standard errors are clustered along the cross section and are shown in round brackets. A constant term is included in all estimations but not shown.

In a panel, the presence of the lagged dependent variable may lead to biased estimates when the model is estimated with OLS or fixed effects OLS (*Nickell bias*). This should not be a major problem in the present model as the coefficient of the lagged dependent variable is small and the country fixed effects are anyway economically and statistically insignificant. To assess this issue the model is estimated using the two-step System GMM methodology developed by Arellano and Bover (1995) and Blundell and Bond (1998).

The two-step System GMM estimations are undertaken using the Stata command xtabond2. The lagged dependent variable is instrumented, while the lagged independent explanatory variable is not instrumented. In the difference equation the instruments of the lagged dependent variable are, inter alia, expanding lags of its level lagged 2 and 3 years (truncated); in the level equation the instrument is the lagged difference of the dependent variable. The weighting is based on the $h(2)$ weighting matrix.

The estimated coefficients are qualitatively similar to those obtained using fixed effects least squares. The hypothesis of no

Granger causality can be rejected at the 5 percent level and the coefficient of GRULC(-1) is *positive*, which taken at face value indicates that higher unit labour costs are followed by an increase in (an "improvement" of) the current account balance. Qualitatively similar results are attained with different truncations of the instruments and if the lagged independent variable is also instrumented. This confirms a possible bias due to inclusion of the lagged dependent variable is little importance.

The conclusion at this stage is that changes in relative unit labour costs do not appear to precede changes in the current account balance and, if any effect is present, then the higher unit labour costs may be followed by an improvement of the current account balance. Moreover, inclusion of the lagged dependent variable and possibly endogeneity of the lagged independent variable does not appear to bias the fixed effect results unduly so fixed effect estimation appears to be appropriate in this case.

The next step is to allow a richer dynamic structure of the model. Column (2.4) shows the results when two lags of both variables are introduced as explanatory variables. In this case Granger causality entails the rejection of the joint hypothesis that the coefficients of GRULC(-1) and GRULC(-2) are 0. The hypothesis cannot be rejected (p-value = 0.427), suggesting that the inclusion of two lags of changes in the unit labour cost does not change the results obtained previously. Column (2.5) shows the results when the sample is restricted to the EU15 countries, i.e. the first 15 EU countries from Western Europe. The result is that the null hypothesis cannot be rejected even at the 10 percent level, but it is noticeable the estimated coefficient of GRULC(-1) and GRULC(-2) in this case that are negative although numerically small. Column (2.6) shows the results when the sample is restricted to the 10 CEE countries and the overall picture is as for the full sample and the EU15 countries. The conclusion of the models with lags up to two years is again that changes in relative unit labour costs have no apparent effect on changes in the current account in the short term.

Table 3 shows the results when the opposite direction of Granger causality is investigated. To this end, the change in the relative unit labour cost, GRULC, is explained by autoregressive terms and lagged changes in the current account balance, DCA. Column (3.1) shows the results when one lag is included and the

panel is estimated using fixed effects. The lagged current account balance has substantial explanatory power; an increase in the change of the current account balance ("capital outflow") of one percentage point of GDP is associated with 0.392 percent lower growth in the unit labour cost the following year, i.e. a considerable improvement in international competitiveness. By the same token, a capital inflow leads to deteriorating competitiveness the following year. Similar results follow from the OLS estimation in Column (3.2) and the System GMM estimation in Column (3.3).

Table 3. Panel data Granger causality tests. Dependent variable = GRULC

	(3.1)	(3.2)	(3.3)	(3.4)	(3.5)	(3.6)
DCA(-1)	-0.392 *(0.104)*	-0.381 *(0.086)*	-0.315 *(0.139)*	-0.289 *(0.105)*	-0.340 *(0.116)*	-0.312 *(0.150)*
DCA(-2)	..	..	..	-0.285 *(0.079)*	-0.344 *(0.115)*	-0.356 *(0.104)*
GRULC(-1)	0.097 *(0.059)*	0.129 *(0.059)*	0.159 *(0.053)*	0.088 *(0.045)*	0.184 *(0.073)*	0.057 *(0.053)*
GRULC(-2)	..	..	..	-0.127 *(0.051)*	-0.058 *(0.042)*	-0.150 *(0.066)*
Granger causality[a]	14.24 [0.001]	19.71 [0.000]	5.13 [0.024]	10.29 [0.001]	5.62 [0.016]	9.60 [0.006]
Time sample	1997-2012	1997-2012	1997-2012	1998-2012	1998-2012	1998-2012
Countries	EU27	EU27	EU27	EU27	EU15	CEE
Observations	408	408	408	383	220	138
Estimation	FE	OLS	System GMM	FE	FE	FE

a. The null hypothesis of the Granger causality test is that the lagged value(s) of the independent variable do(es) not Granger cause the dependent variable. The test statistic is *F*-distributed except in the case of the System GMM estimation in which it is χ^2-distributed; the values in square brackets are *p*-values.
Notes: Standard errors are clustered along the cross section and are shown in round brackets. A constant term is included in all estimations but not shown.

Column (3.4) shows the results when two lags are included. The coefficients of the two lags of the current account variable are both negative. They are highly significant in both economic and statistical terms. The null hypothesis of no explanatory power of the two lags of the current account is rejected, i.e. changes in the current account Granger cause changes in the relative unit labour costs. Column (3.5) shows the results when the sample comprises the EU15 countries and Column (3.6) shows the results for the sample of CEE countries. In these samples too, the estimated coef-

ficients of the lagged changes in the current account balance are negative; changes in current account balance are found to Granger cause changes in the relative unit labour cost.

The conclusions from the Granger causality tests in Tables 2 and 3 are clear. Lags of GRULC do not help explain DCA in estimations in which lags of DCA are included. In other words, changes in the relative unit labour cost do not Granger cause changes in the current account balance. This holds across different samples of countries and across a number of estimation methodologies. In contrast to these results, lags of DCA appear in most cases to have substantial explanatory power over changes in GRULC in models where lags of GRULC are included. In other words, changes in the current account balance Granger cause changes in the relative unit labour cost. This implies that for instance an increasing inflow of capital (a deteriorating current account balance) leads to deteriorating competitiveness.

The estimations presented in Tables 2 and 3 were carried out using the change in the relative unit labour cost, GRULC, and the change in the current account balance, DCA. As argued earlier, it may also be of interest to test for Granger causality between GRULC and the *level* of the current account balance, CA. Tables A1 and A2 in Appendix A show the results when the estimations in Tables 2 and 3 are made using the level of the current account balance, CA, instead of its change, DCA.

In qualitative terms most of the results remain unchanged. Table A1 shows the results of estimations in which changes in the current account balance are explained by autoregressive terms and lagged changes in the relative unit labour cost. Lagged changes in the relative unit labour cost do not Granger cause the current account balance, irrespective of the sample or estimation method. Table A2 presents the results of estimations where the dependent variable is the change in the relative unit labour cost. In all specifications the level of the lagged current account balance is found to Granger cause changes in the relative unit labour cost at least at the 10 percent level of statistical significance. The rejection is stronger for the CEE countries than for the EU15 countries.

Another robustness test entails replacing the change in the relative unit labour cost, GRULC, by other measures of changes in competitiveness. Two measures are available, i.e. the change in the real effective exchange rate computed using the unit labour cost as deflator (GREER_ULC) and the change in the real effective exchange rate based on the consumer (GREER_CPI). The three variables are closely correlated; the correlation coefficient is 0.86 between GRULC and GREER_ULC and 0.64 between GRULC and GREER_CPI.

Tables B1 and B2 in Appendix B show the results when the GREER_ULC is the measure of changes in competiveness. The results are qualitatively the same as when GRULC is used, i.e. competitiveness does not Granger cause changes in the current account, but changes in the current account do seem to Granger cause the competitiveness measure. The group of EU15 countries emerge as a partial exception to this picture, cf. the results in Column (B1.5), but it is noticeable that the estimated coefficients of the two lags of GREER_ULC are numerically small and take on different signs.

Tables C1 and C2 in Appendix C provide the results when the GREER_CPI is the measure of changes in competiveness. The results are again qualitatively as when GRULC is used although the results are less clear for the group of EU15 countries. The results in Column (C2.5) suggest a negative relationship between lags of changes in the current account balance, but the individual coefficients are not statistically significant and the Granger causality test of the coefficients both being equal zero cannot be rejected. Further analysis (not reported) shows that the imprecisely estimated coefficients is largely attributable to events in five euro area crisis countries in 2012; the results change markedly if these five observations are excluded from the sample.

The upshot of the robustness analyses reported in Appendices B and C is that the specific choice of competitiveness measure generally is of little importance when assessing the relation between competitiveness and external capital flows. This result is in line with other studies. Dieppe *et al.* (2012) find that different measures of competitiveness are closely correlated within the euro area. Ca' Zorzi and Schnatz (2007) find that different measures of competitiveness are equally suitable for forecasting of export performance.

4. VAR models

This section extends the analysis in Section 3 by modelling changes in relative wage cost competitiveness and the current account balance in a vector autoregressive (VAR) model. This allows a deeper investigation of the interactions between the two variables over time. In particular, the reaction of the two variables to shocks can be computed using different assumptions for the temporal relation between the variables, including no lag between the change in one variable and the resulting change in the other variable. We will focus on changes in the relative unit labour cost, GRULC, and changes in the current account balance, DCA. Both variables are panel stationary.

Even allowing for simultaneous dependence between the two variables GRULC and DCA, the system can be reduced so as to contain only lags of the two variables as explanatory variables. Estimations are made using two lags and considering three different country samples: 27 EU countries (all except Croatia), the EU15 countries and the 10 CEE countries. The results of the system estimations, presented in Table 4, correspond to the results in Columns (2.4)-(3.4), (2.5)-(3.5) and (2.6)-(3.6). The panel VAR systems are estimated using fixed effect least squares as the method

Table 4. Estimation of panel VAR models, GRULC and DCA

	(4.1)		(4.2)		(4.3)	
	DCA	GRULC	DCA	GRULC	DCA	GRULC
DCA(-1)	0.116 *(0.053)*	-0.289 *(0.077)*	-0.032 *(0.078)*	-0.340 *(0.124)*	0.188 *(0.085)*	-0.312 *(0.130)*
DCA(-2)	-0.221 *(0.052)*	-0.285 *(0.075)*	0.101 *(0.080)*	-0.344 *(0.127)*	-0.273 *(0.082)*	-0.356 *(0.125)*
GRULC(-1)	0.047 *(0.027)*	0.088 *(0.039)*	-0.016 *(0.040)*	0.184 *(0.063)*	0.053 *(0.040)*	0.057 *(0.060)*
GRULC(-2)	0.036 *(0.025)*	-0.127 *(0.036)*	-0.046 *(0.036)*	-0.058 *(0.058)*	0.0555 *(0.037)*	-0.150 *(0.056)*
Time sample	1998-2012		1998-2012		1998-2012	
Countries	EU27		EU15		CEE	
Observations	383		220		138	

Notes: Standard errors are shown in round brackets. Country fixed effects are included in all estimations but are not reported.

is generally robust when the time dimension is not too short (Canova and Ciccarelli 2013). The estimations are undertaken in Eviews which does not allow for clustering of the standard errors; the ordinary standard errors are generally somewhat smaller than the clustered standard errors which entails that the confidence intervals of the presented impulse responses are relatively small.

The coefficient estimates are identical to those of the corresponding estimations in Tables 2 and 3 and the standard errors only differ slightly. Across all three country samples, the lags of GRULC exert little explanatory power on DCA, while lags of DCA exert substantial explanatory power on GRULC, both in statistical and economic terms.

This paper seeks to ascertain the most probable direction of the linkages between the two main variables of interest, GRULC and DCA. The VAR model allows a more sophisticated identification of cause and effect than the Granger causality tests in Section 3 which assumed very simple dynamic linkages between the two variables. We will consider three different identification schemes of the VAR models, which entail different causal dynamics between the two variables of interest.

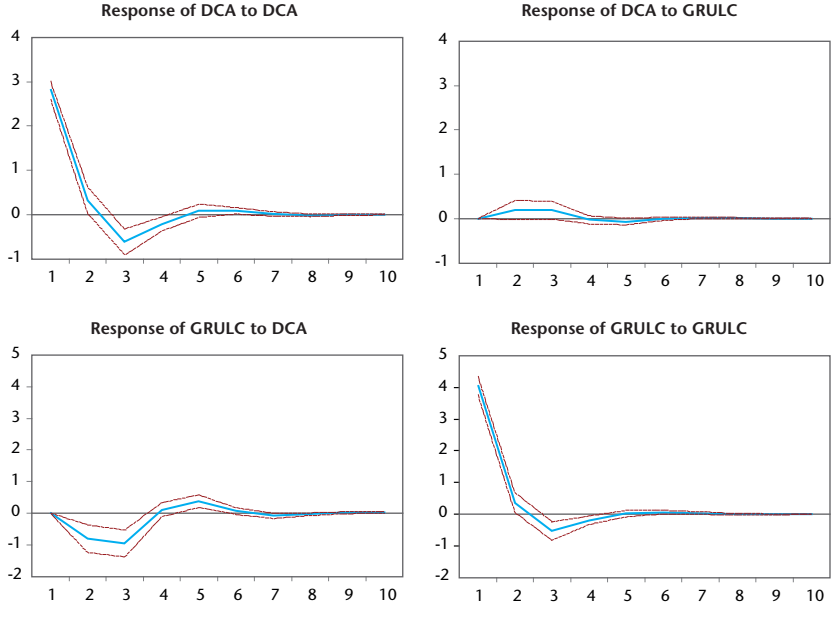
a) There are no contemporaneous effects between the two variables, only lagged effects. This is a case of over-identification as all off-diagonal elements in the variance-covariance matrix are zero (non-orthogonalisation).
b) GRULC can affect DCA contemporaneously, while DCA can only affect GRULC with a lag. This is a case of exact recursive identification based on Cholesky decomposition of the variance-covariance matrix.
c) DCA can affect GRULC contemporaneously, while GRULC can only affect DCA with a lag. This is another case of Cholesky decomposition but with the opposite direction of temporal effects from those in b).

Figures 2-3 present impulse responses for model (4.1) estimated on the full sample of 27 EU countries using the three different identification schemes a)-c).

Figure 2 shows the impulse responses for identification scheme a) in which there are no contemporaneous effects. The upper left plot shows the impulse response of DCA to a one standard devia-

tion shock in DCA in period 1. The effect of the shock dies out relatively quickly but with some overshooting in the third and fourth years. The upper right plot shows the effect on DCA of a one standard deviation increase in GRULC. It follows that the effect is very subdued in both statistical and economic terms, and possibly with the "wrong" sign, i.e. a shock implying higher growth in relative unit labour cost has a positive effect on the change in the current account balance (an "improvement").

Figure 2. Response of DCA and GRULC to innovations in GRULC and DCA, non-factorised innovations, 27 EU countries



(a) Non-factorised innovations

Note: The solid line depicts the impulse response and the dashed lines ± two standard deviations. The standard deviation of GRULC is 4.4 percentage points and the standard deviation of DCA is 2.9 percentage points.

The lower left plot shows the impulse response of GRULC to a shock in DCA amounting to a one standard deviation in period 1. The result is a reduction of GRULC for two periods of approximately one percentage point in each period. The effect on GRULC accumulated over all 10 periods is -1.3 percentage points. In other words, a one percentage point increase in net capital outflows (increased capital outflow or reduced capital inflow) leads to a

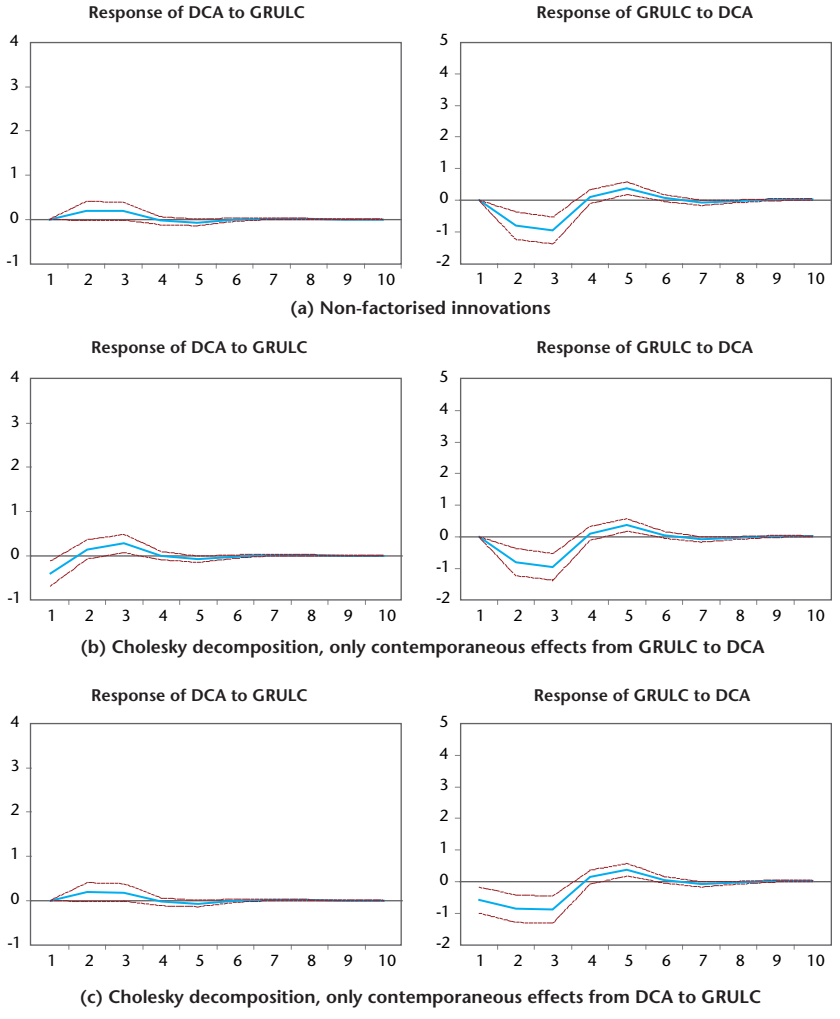
decrease of approximately 0.5 percent in unit labour costs over time. The magnitudes also seem to be significant in an economic sense. Finally, the lower right plot shows the impulse response of GRULC to a one standard deviation shock in GRULC.

Figure 3 presents impulse responses for each of the three identification schemes, a)-c), facilitating easy comparison across the identification schemes. To save space the autoregressive impulse responses are omitted as they resemble those shown in the upper left and lower right plots in Figure 2 in all cases. The upper panel depicts impulse responses for identification scheme a) in which there are no contemporaneous effects. These are the same impulse responses that were presented in upper right and lower left panels in Figure 2.

The centre panel presents the impulse responses for identification scheme b) in which GRULC can affect CA immediately, while the reverse is ruled out. The left plot depicts the response of DCA to a one standard deviation increase in GRULC in period 1. In this case the immediate response is negative, although the effect is not statistically significant at the 5 percent level, while the response is positive in periods 2 and 3 and subsequently dies out. Thus, a possible negative effect on DCA of a one-deviation-increase in GRULC is imprecisely determined and is anyway reversed already from the following period. The right plot shows the response of GRULC to a shock in DCA; the dynamics resemble the dynamics of the corresponding impulse responses in the non-orthogonalised model.

The bottom panel shows the impulse responses for identification scheme c), which assumes that DCA can affect GRULC immediately while effects in the opposite direction take place with a lag. It follows from the left plot that GRULC has little effect on DCA and the previously observed "wrong sign" also appears with this orthogonalisation. It follows from the right plot that a shock in DCA now has an immediate negative effect on GRULC, although not one that is statistically significant at the 5 percent level, and then negative effects the following two years as also observed with identification schemes a) and b).

Figure 3. Response of DCA and GRULC to innovations in GRULC and DCA, different identification schemes, 27 EU countries



Note: The solid line depicts the impulse response and the dashed lines ± two standard deviations. The standard deviation of GRULC is 4.4 percentage points and the standard deviation of DCA is 2.9 percentage points.

The conclusion from the impulse responses in Figure 3 is that irrespective of the identification scheme, the main results from Section 3 also apply in the VAR model. First, changes in the relative unit labour cost generally have little effect on the current account balance. In most cases the effect appears to be positive, implying that improved competitiveness leads to larger net capital inflows,

i.e. a "worsening" of the current account balance.[11] The exception is identification scheme b) where GRULC can affect CA contemporaneously, but the negative effect is short-lived and not statistically significant. Second, changes in the current account balance seem to affect the relative unit labour cost. Increasing current account deficits, signifying increasing capital inflows, are followed by deteriorating competitiveness in the form of the unit labour cost increasing faster than it does in the core euro area countries.

The results obtained are robust not only to the choice of identification scheme, but also to the sample of countries, the time sample and the measure of capital flows. We will briefly discuss some of the robustness analyses we have undertaken.

Country samples. The impulse responses for the sample of EU15 countries and for the sample of CEE countries take the same shape as those for the full sample presented in Figures 2 and 3. This point is illustrated in Figure D1 in Appendix D in which the impulse responses for the CEE countries, cf. Column (4.3) in Table 4, are shown. It is noticeable that the effect of a one standard deviation DCA shock on GRULC is somewhat larger for the sample of CEE countries than for the full sample.

Time samples. We have re-estimated the VAR models in Table 4 using the time sample 1998-2007, i.e. the sample end before the outbreak of the global financial crisis. The lower number of observations reduces the precision with which the coefficients are estimated, but otherwise the changes are small. The impulse responses depict the previously observed pattern of directions (not shown).[12]

Measures of capital flows. We estimated a VAR model with GRULC and the current account balance CA (instead of changes in the current account balance, DCA). The impulse responses using identification schemes a)–c) are reproduced in Figure E1 in Appendix E. The results are essentially as before; changes in the

11. The impulse responses with the "wrong" sign would be consistent with an improvement in competitiveness making the country more attractive as an investment destination and leading to capital inflows. The effect is, however, statistically insignificant in all three identification schemes.

12. A further reduction of the sample to include only the EU15 countries is a partial exception as the effect on GRULC of changes in DCA is slower and less pronounced than when the full sample is used.

relative unit labour cost have no or counter-intuitive effect on the current account balance, whereas innovations in the current account balance affect changes in the relative unit labour cost. The use of real effective exchange rate indices as measures of competitiveness also leads to impulse responses entailing the same qualitative results.

5. Final comments

The Euro Plus Pact adopted in March 2011 establishes monitoring by the European Commission of a number of variables presumed to predicate financial imbalances in individual EU countries. The chief target variable of the Pact is the development of competitiveness as measured by changes in the relative unit labour cost in common currency terms.

The paper uses Granger causality tests and VAR models to analyse the short-term dynamics between changes in the relative unit labour cost and the current account balance. The conclusions of the empirical analyses are robust to a number of sample and specification changes and can be summarised in two points. First, there is little or no effect from changes in the relative unit labour cost on changes in the current account balance (or the level of the current account balance). Second, there is a relatively strong and statistically significant link from changes in the current account balance on changes in the growth of the relative unit labour cost within a horizon of 1–3 years.

These conclusions are consistent with a situation in which capital flows in large part depend on events outside the individual country, i.e. capital flows exhibit a substantial exogenous component. The results are thus in line with findings on other datasets, cf. Calvo *et al*. (1996), Kim (2000), Lipschitz *et al*. (2002) and Jaumotte and Sodsriwiboon (2010). A country may experience a positive "confidence shock" and become a major recipient of capital inflows. An inflow of capital leads to a nominal appreciation if the country has a floating exchange rate or drives up domestic wages and prices. The net result, irrespective of exchange rate regime, is a real exchange rate appreciation or deteriorating international wage cost competitiveness. The opposite may be a negative confidence shock that leads to a capital outflow, which

over time improves competitiveness through lower wages and prices and/or a depreciating nominal exchange rate. The interpretation is consistent with findings based on other dataset, *cf.* Saborwoski (2009) and Bakardzieva *et al.* (2010).

The finding that capital flows are likely to entail changes in competitiveness in the short term while the reverse effect is subdued or non-existent suggests that current account developments may be an important indicator of future macroeconomic performance. The same conclusion is reached by Giavazzi and Spaventa (2010) and Jaumette and Sodsriwiboon (2010). The findings, however, raise the question of whether the Euro Plus Pact targets the messenger of economic imbalances rather than (one of) the underlying causes. Countries subject to large capital inflows experience upward pressure on relative unit labour costs, while countries with large capital outflows will experience downward pressure on relative unit labour costs. The developments in unit labour costs are endogenous and partly determined by capital flows. This may suggest that the Euro Plus Pact may have limited ability to impact unit labour costs and even if it is possible, this may have little effect on the accumulation of current account imbalances.

The results of this paper should not be taken to imply that competitiveness does not matter for economic performance in the longer term. The relative unit labour cost or other measures of competitiveness may still signal the emergence of "imbalances" in individual economies. The argument of this paper is merely that competitiveness is an endogenous variable, which is determined by a whole range of factors in the individual economy and the surrounding economic environment. One such factor is international capital flows, proxied in this paper by the current account balance, and this factor seems to have substantial explanatory power in the sample of EU countries (see also De Grauwe, 2011; Holinski *et al.*, 2012).

The analysis in this paper provides clear results that are largely robust to different samples and specifications. Even so, the analysis may be substantiated or extended in a number of ways. First, additional variables could be included in the VAR model in order to model the adjustment processes in more detail. A richer specification of the VAR may also be a way to investigate the underlying

economic mechanisms behind the identified linkages between the two variables. Second, quarterly data might make it easier to establish the direction of the linkages and estimate the adjustment patterns for different innovations. Third, it might be possible to ascertain the linkages between international competitiveness and capital flows using other means of identification such as instrumentation and event studies. Fourth, it could be useful to divide capital flows into different components, including foreign direct investment, portfolio investment and loans etc., as this would provide information on whether different components affect competitiveness in different ways (Bakardzhieva *et al.* 2010). It may also be expedient to consider a measure of capital flows in which changes in the official reserves are eliminated (Reinhart and Reinhart 2009). Finally, it may be possible to undertake analyses of linkages between competitiveness and capital flows in individual countries in cases where long data series are available.

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APPENDIX A. Additional Granger causality tests

Table A1. Panel data Granger causality tests. Dependent variable = CA

	(A1.1)	(A1.2)	(A1.3)	(A1.4)	(A1.5)	(A1.6)
CA(-1)	0.125 *(0.069)*	0.133 *(0.099)*	0.222 *(0.071)*	0.116 *(0.088)*	-0.032 *(0.123)*	0.188 *(0.117)*
CA(-2)	..	..	..	-0.221 (0.045)	0.101 (0.043)	-0.273 *(0.054)*
GRULC(-1)	0.053 *(0.047)*	0.056 *(0.038)*	0.083 *(0.044)*	0.047 (0.038)	-0.016 *(0.045)*	0.053 *(0.044)*
GRULC(-2)	..	..	..	0.036 (0.032)	-0.046 *(0.021)*	0.055 *(0.039)*
Granger causality[a]	1.20 [0.270]	2.21 [0.138]	3.65 [0.056]	0.88 [0.427]	2.56 [0.113]	1.15 [0.359]
Time sample	1997-2012	1997-2012	1997-2012	1998-2012	1998-2012	1998-2012
Countries	EU27	EU27	EU27	EU27	EU15	CEE
Observations	408	408	408	383	220	138
Estimation	FE	OLS	System GMM	FE	FE	FE

a. The null hypothesis of the Granger causality test is that the lagged value(s) of the independent explanatory variable do(es) not Granger cause the dependent variable. The test statistic is F-distributed except in the case of the System GMM estimation in which it is χ^2-distributed; the values in square brackets are p-values.
Notes: Standard errors are clustered along the cross section and are shown in round brackets. A constant term is included in all estimations but not shown.

Table A2. Panel data Granger causality tests. Dependent variable = CGRULC

	(A2.1)	(A2.2)	(A2.3)	(A2.4)	(A2.5)	(A2.6)
CA(-1)	-0.243 *(0.080)*	-0.123 *(0.040)*	-0.136 *(0.057)*	-0.477 *(0.108)*	-0.293 *(0.125)*	-0.713 *(0.111)*
CA(-2)	..	..	..	0.199 *(0.095)*	0.324 *(0.150)*	0.151 *(0.096)*
GRULC(-1)	0.090 *(0.062)*	0.119 *(0.057)*	0.183 *(0.069)*	0.086 *(0.047)*	0.209 *(0.065)*	0.017 *(0.045)*
GRULC(-2)	..	..	..	-0.128 *(0.049)*	-0.044 *(0.042)*	-0.170 *(0.062)*
Granger causality[a]	9.23 [0.005]	9.39 [0.002]	5.61 [0.018]	10.00 [0.001]	2.74 [0.099]	24.10 [0.000]
Time sample	1997-2012	1997-2012	1997-2012	1998-2012	1998-2012	1998-2012
Countries	EU27	EU27	EU27	EU27	EU15	CEE
Observations	408	408	408	382	220	138
Estimation	FE	OLS	System GMM	FE	FE	FE

a. The null hypothesis of the Granger causality test is that the lagged value(s) of the independent explanatory variable do(es) not Granger cause the dependent variable. The test statistic is F-distributed except in the case of the System GMM estimation in which it is χ^2-distributed; the values in square brackets are p-values.
Notes: Standard errors are clustered along the cross section and are shown in round brackets. A constant term is included in all estimations but not shown.

APPENDIX B. Alternative competitiveness measure

Table B1. Panel data Granger causality tests. Dependent variable = DCA

	(B1.1)	(B1.2)	(B1.3)	(B1.4)	(B1.5)	(B1.6)
DCA(-1)	0.090 *(0.070)*	0.098 *(0.097)*	0.183 *(0.077)*	0.088 *(0.086)*	-0.002 *(0.116)*	0.177 *(0.118)*
DCA(-2)	..	..	..	-0.235 *(0.043)*	0.113 *(0.041)*	-0.283 *(0.051)*
GREER_ULC(-1)	0.041 *(0.048)*	0.045 *(0.037)*	0.065 *(0.046)*	0.032 *(0.038)*	0.041 *(0.018)*	0.046 *(0.049)*
GREER_ULC(-2)	..	..	..	0.030 *(0.036)*	-0.073 *(0.022)*	0.067 *(0.047)*
Granger causality[a]	0.73 [0.401]	1.54 [0.215]	2.05 [0.152]	0.42 [0.660]	11.58 [0.001]	1.02 [0.399]
Time sample	1997-2012	1997-2012	1997-2012	1998-2012	1998-2012	1998-2012
Countries	EU27	EU27	EU27	EU27	EU15	CEE
Observations	410	410	410	388	222	139
Estimation	FE	OLS	System GMM	FE	FE	FE

[a] The null hypothesis of the Granger causality test is that the lagged value(s) of the independent explanatory variable do(es) not Granger cause the dependent variable. The test statistic is *F*-distributed except in the case of the System GMM estimation in which it is χ^2-distributed; the values in square brackets are *p*-values.
Notes: Standard errors are clustered along the cross section and are shown in round brackets. A constant term is included in all estimations but not shown.

Table B2. Panel data Granger causality tests. Dependent variable = GREER_ULC

	(B2.1)	(B2.2)	(B2.3)	(B2.4)	(B2.5)	(B2.6)
CA(-1)	-0.344 *(0.107)*	-0.335 *(0.077)*	-0.275 *(0.145)*	-0.291 *(0.108)*	-0.234 *(0.129)*	-0.332 (0.162)
CA(-2)	..	..	..	-0.206 (0.077)	-0.258 (0.144)	-0.288 *(0.099)*
GREER_ULC(-1)	0.122 *(0.059)*	0.153 *(0.058)*	0.163 *(0.067)*	0.139 *(0.052)*	0.259 (0.052)	0.083 *(0.063)*
GR EER_ULC(-2)	..	..	..	-0.121 *(0.049)*	-0.054 *(0.032)*	-0.155 *(0.072)*
Granger causality[a]	11.38 [0.003]	19.18 [0.000]	3.60 [0.058]	7.77 [0.002]	2.88 [0.090]	9.06 [0.007]
Time sample	1997-2012	1997-2012	1997-2012	1998-2012	1998-2012	1998-2012
Countries	EU27	EU27	EU27	EU27	EU15	CEE
Observations	410	410	410	388	222	139
Estimation	FE	OLS	System GMM	FE	FE	FE

[a] The null hypothesis of the Granger causality test is that the lagged value(s) of the independent explanatory variable do(es) not Granger cause the dependent variable. The test statistic is *F*-distributed except in the case of the System GMM estimation in which it is χ^2-distributed; the values in square brackets are *p*-values.
Notes: Standard errors are clustered along the cross section and are shown in round brackets. A constant term is included in all estimations but not shown.

APPENDIX C. Alternative competitiveness measure

Table C1. Panel data Granger causality tests. Dependent variable = DCA

	(C1.1)	(C1.2)	(C1.3)	(C1.4)	(C1.5)	(C1.6)
DCA(-1)	0.082 *(0.069)*	0.089 *(0.096)*	0.173 *(0.074)*	0.091 *(0.085)*	-0.008 *(0.122)*	0.196 *(0.109)*
DCA(-2)	..	..	..	-0.250 *(0.042)*	0.128 *(0.045)*	-0.328 *(0.032)*
GREER_CPI(-1)	0.021 *(0.047)*	0.034 *(0.043)*	0.028 *(0.045)*	0.018 *(0.046)*	0.068 *(0.016)*	0.010 *(0.063)*
GREER_CPI(-2)	..	..	..	-0.018 *(0.028)*	-0.095 *(0.029)*	0.017 *(0.037)*
Granger causality[a]	0.20 [0.661]	0.65 [0.422]	0.39 [0.532]	0.25 [0.782]	19.85 [0.000]	0.13 [0.876]
Time sample	1997-2012	1997-2012	1997-2012	1998-2012	1998-2012	1998-2012
Countries	EU27	EU27	EU27	EU27	EU15	CEE
Observations	410	410	410	388	222	139
Estimation	FE	OLS	System GMM	FE	FE	FE

a The null hypothesis of the Granger causality test is that the lagged value(s) of the independent explanatory variable do(es) not Granger cause the dependent variable. The test statistic is F-distributed except in the case of the System GMM estimation in which it is χ^2-distributed; the values in square brackets are p-values.
Notes: Standard errors are clustered along the cross section and are shown in round brackets. A constant term is included in all estimations but not shown.

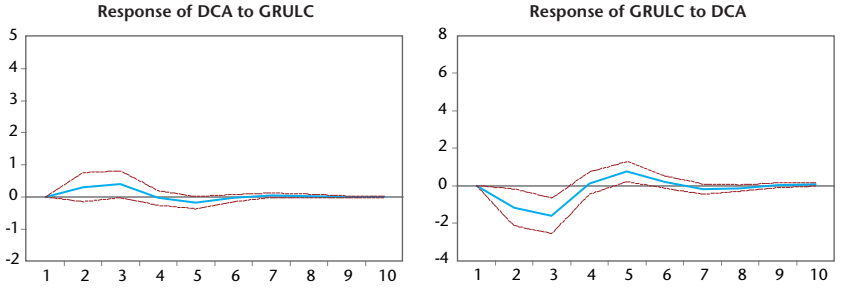
Table C2. Panel data Granger causality tests. Dependent variable = GREER_CPI

	(C2.1)	(C2.2)	(C2.3)	(C2.4)	(C2.5)	(C2.6)
DCA(-1)	-0.181 *(0.049)*	-0.177 *(0.053)*	-0.193 *(0.061)*	-0.194 *(0.046)*	-0.102 *(0.114)*	-0.226 *(0.052)*
DCA(-2)	..	..	..	-0.116 *(0.047)*	-0.035 *(0.092)*	-0.165 *(0.068)*
GREER_CPI(-1)	0.029 *(0.105)*	0.140 *(0.094)*	0.137 *(0.067)*	0.122 *(0.055)*	0.225 *(0.039)*	0.051 *(0.082)*
GREER_CPI(-2)	..	..	..	-0.099 *(0.035)*	-0.081 *(0.041)*	-0.113 *(0.059)*
Granger causality[a]	13.88 [0.001]	11.07 [0.001]	9.86 [0.002]	9.32 [0.001]	0.40 [0.679]	10.07 [0.005]
Time sample	1997-2012	1997-2012	1997-2012	1998-2012	1998-2012	1998-2012
Countries	EU27	EU27	EU27	EU27	EU15	CEE
Observations	410	410	410	388	222	139
Estimation	FE	OLS	System GMM	FE	FE	FE

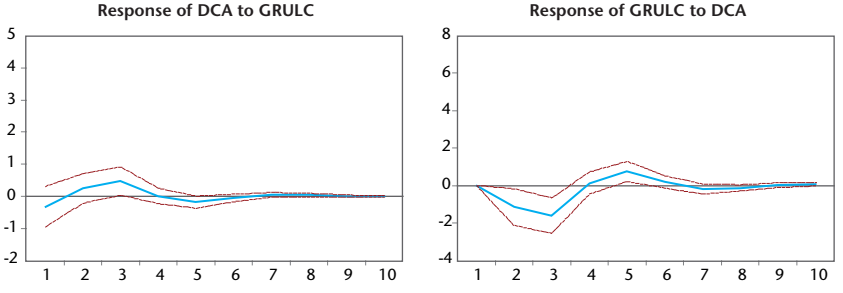
a The null hypothesis of the Granger causality test is that the lagged value(s) of the independent explanatory variable do(es) not Granger cause the dependent variable. The test statistic is F-distributed except in the case of the System GMM estimation in which it is χ^2-distributed; the values in square brackets are p-values.
Notes: Standard errors are clustered along the cross section and are shown in round brackets. A constant term is included in all estimations but not shown.

APPENDIX D. Impulse responses for VAR model with CEE countries

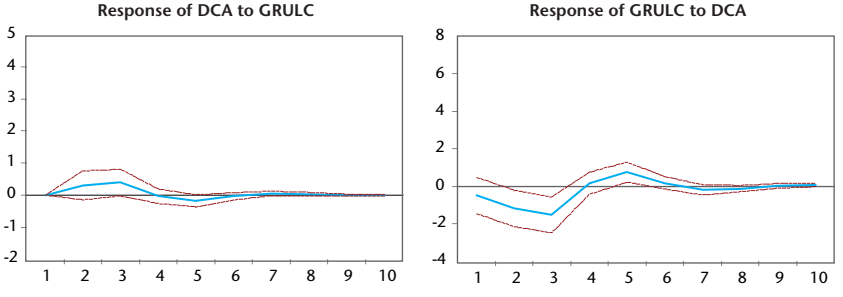
Figure D1. Response of DCA and GRULC to innovations in GRULC and DCA, different identification schemes, CEE countries



(a) Non-factorised innovations



(b) Cholesky decomposition, only contemporaneous effects from GRULC to DCA

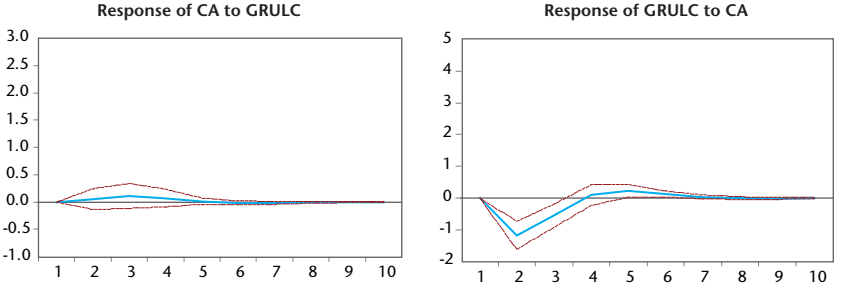


(c) Cholesky decomposition, only contemporaneous effects from DCA to GRULC

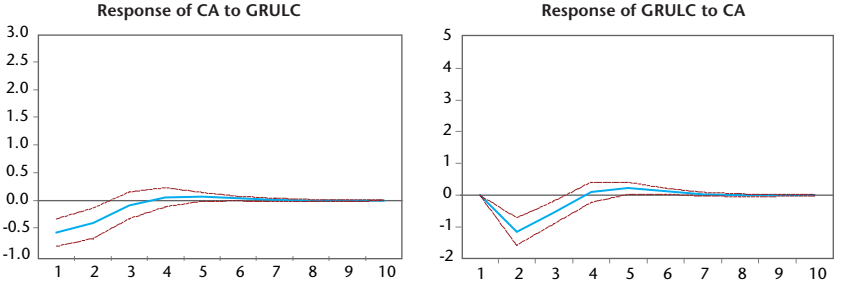
Notes: The solid line depicts the impulse response and the dashed lines ± two standard deviations. The standard deviation of GRULC is 6.2 percentage points and the standard deviation of DCA is 3.9 percentage points.

APPENDIX E. Impulse responses for VAR model with CA variable

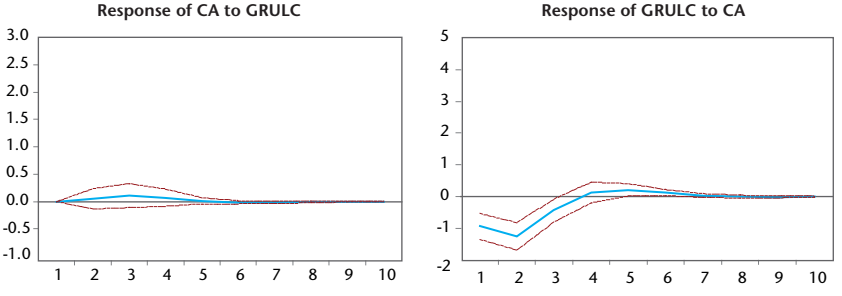
Figure E1. Response of CA and GRULC to innovations in GRULC and CA, different identification schemes, all countries



(a) Non-factorised innovations



(b) Cholesky decomposition, only contemporaneous effects from GRULC to DCA



(c) Cholesky decomposition, only contemporaneous effects from CA to GRULC

Notes: The solid line depicts the impulse response and the dashed lines ± two standard deviations. The standard deviation of GRULC is 4.4 percentage points and the standard deviation of CA is 5.8 percentage points.

REFORM OPTIONS FOR THE EU'S SYSTEM OF OWN RESOURCES

Margit Schratzenstaller[1]
Austrian Institute of Economic Research

In the negotiations on the EU's budget for 2014 to 2020 member countries almost exclusively focused on individual direct benefits in terms of net financial positions. Indirect benefits from EU membership, EU enlargement and introduction of the euro as well as benefits from EU expenditures other than direct transfers to member states (i.e. expenditures with "European value added", which indirectly benefit all member states and the EU as a whole, e.g. expenditures for research and development, education, green technologies and energy) were neglected. As a result potential indirect benefits from expanding the overall volume of the EU budget volume, to adjust it to the growing challenges the EU is facing, played a minor role in individual countries' views on a desirable EU budget: as did the "European value added" which could be realised by a shift of expenditures away from expenditure categories mainly benefiting individual countries directly (e.g. common agriculture payments) to expenditure categories which indirectly benefit member states and the EU as a whole (e.g. expenditures for research and development, education, or green technologies and energy).

A fundamental reform of EU expenditures towards a sustainable structure requires a fundamental reform of the EU's system of own resources. Only by replacing a substantial part of national contributions by own EU taxes can the narrow focus on financial flows to and from the EU budget be broadened to include also indirect benefits for individual member countries and the EU as a whole. After reviewing the most important deficits of the EU's current system of own resources, the paper establishes criteria for "good" EU taxes and applies these to a number of candidates for EU taxes (e.g. a tax on financial transactions or on carbon dioxide emissions) to assess their suitability as new revenue sources for the EU.

Keywords: EU budget, EU taxes, EU system of own resources, European public goods

1. The author would like to thank the participants of the 10th EUROFRAME Conference n Warsaw in May 2013 as well as an anonymous referee for helpful comments and suggestions. The paper was presented in a special session at the EUROFRAME conference dedicated to the 7th EU Framework Programme project WWWforEurope. A shortened version of the article was published as Schratzenstaller (2013b).

e-mail: margit.schratzenstaller@wifo.ac.at

The EU Treaty foresees an annual budgetary procedure for the EU budget. For several reasons, such as securing budgetary discipline, expenditure control or to support the implementation of longer-term spending priorities, the multi-annual financial framework (MFF), a multi-annual planning process into which annual budgets are embedded, was introduced in 1988. A unanimously adopted Council Regulation after obtaining consent of the European Parliament establishes the financial framework within which annual budgets will be set up. This procedure not only aims at facilitating budgetary planning over the longer term, but also at reining in recurrent political debates on the allocation of expenditure.

The negotiations on the EU's MFF for the period 2014 to 2020 appeared – considering, *inter alia*, the veto threats uttered by several member states at relatively early stages of the negotiation process – to be even more conflict-ridden than those on the preceding four MFFs, which were already increasingly tedious and protracted. Starting point of the negotiations was the European Commission's proposal presented in the end of June, 2011. This draft envisaged for the whole seven-years-period a total volume of commitment appropriations of € 1.025 billion (in constant 2011 prices) or 1.05 percent of EU27-GNI. This proposal was updated in July 2012, primarily to account for the accession of Croatia mid-2013, to € 1,045 billion (1.08 percent of GNI). In relation to GNI, the proposed volume of the MFF 2014-2020 would have fallen short of the preceding one for the period 2007 to 2013, which for the whole period foresaw commitment appropriations of 1.12 percent of GNI.

After several negotiation rounds in the Council of Ministers in the European Union and in the European Council a special EU summit exclusively dedicated to the EU budget, which was scheduled for the end of November 2012, should bring about the desired compromise between the European Council, the European Commission and the European Parliament. This summit, however, was interrupted without results and the negotiations were postponed to another special EU summit scheduled to the beginning of February 2013. This new negotiation round was based an alternative proposal presented by the President of the European Council,

Herman Van Rompuy, immediately before the beginning of the meeting of the European Council in November 2012 which included cutting the original European Commission's Proposal to € 80 billion. In June 2013 finally a compromise acceptable for the European Commission as well as the European Parliament could be reached. It was agreed on a total volume of commitment appropriations of € 960 billion (1.0 percent of EU-GNI) for the next MFF period. Thus, in relation to GNI, the volume of the next MFF is significantly lower than that for the period 2007 to 2013.

Most prominent and debated issues in the negotiations up to now in particular are the overall budget volume, the structure of expenditures, and the continuation of the rebates for (some) net contributor countries. Hereby fundamental need for reform concerning the composition of expenditures as well as the system of rebates is acknowledged in academia and to a large extent also in the EU institutions (European Commission, European Parliament, European Council). At the same time, however, this need for reform is ignored by many representatives of EU member countries in the European Council against the background of their country-specific interests in the concrete negotiations.

In contrast to the reform areas mentioned above, the system of own resources of the EU hardly seems to have been addressed seriously in the negotiations. It is, however, one of the most important obstacles to reform. A fundamental redesign is a central precondition to achieve a negotiation results from which individual member countries as well as the EU as a whole will benefit. In face of weak economic growth and particularly of surging youth unemployment, however, member states' agreement on a future-oriented EU budget would be an important economic impulse as well as an urgently needed signal for European policy's capacity to act to fight the current crisis.

1. The EU's expenditures: challenges and shortcomings[2]

Without doubt there is an increasing need to support national policies by effective measures on the EU level. The overall EU budget volume at least should be held constant, if not be increased

2. See for this section Schratzenstaller (2013a).

compared to the preceding MFF – in any case, a decrease of total expenditures, as finally agreed on, is inappropriate considering the increasing challenges the EU is facing, in particular, recent and imminent enlargement rounds, structural problems of the Southern peripheral countries, the financial and economic crisis and its consequences (record youth unemployment, debt crisis in some highly indebted member states), and the increasingly pressing long-term challenges (climate change and energy transition, demographic change, increasing income and wealth inequality and risk of poverty). Already the last MFF's 2007-2013 volume fell short of the preceding one. The volume of the available funds thus cannot keep up with the long-term increase of tasks and the corresponding financing needs. In this context the European Commission's top-down approach to keep the EU budget's overall volume below about 1 percent of EU GNI at the outset in their original proposal for the MFF 2014-2020 must be regarded as problematic, as it renders an agreement on a higher overall budget volume highly improbable.

Moreover restructuring expenditures is required to support a more dynamic, inclusive and ecological growth and development path for the EU (socio-ecological transition)[3] more effectively than the new MFF does. Within the last MFF 2007-2013, common agricultural policy and structural funds together accounted for almost 80 percent of total expenditures (see Table 1). Common agricultural policy (42 percent of total expenditures) predominantly preserved existing (production) structures and pursuing social goals (income support) within the so-called first pillar. Structural and cohesion policy (36 percent of total expenditures) focused too strongly on a traditional infrastructure policy favouring material (large-scale) infrastructure. Less than 10 percent of the last EU budget was dedicated to competitiveness (i.e. research and innovation) and infrastructure. As "richer" member countries to a substantial extent benefit from subsidies within common agricultural policy and cohesion policy, funds were not redistributed to the "poorer" member states in a focused and targeted way.

3. The analytical foundations of a more dynamic, socially inclusive and ecologically sustainable growth and development path for Europe are elaborated in the WWWforEurope project (www.foreurope.eu).

Table 1. Expenditure structure – MFF 2007 to 2013 and MFF 2014 to 2020 (Commitment appropriations, in current prices 2011)

	MFF 2007-2013		European Commission Proposal		Van Rompuy Proposal November 2012		Agreement June 2013	
	In billion €	*In %*	*In billion €*	*In %*	*In billion €*	*In %*	*In billion €*	*In %*
Competitiveness and Infrastructure	91.5	9.2	164.3	15.7	139.5	14.4	125.6	13.1
Cohesion Policy	354.8	35.7	339	32.4	320.1	32.9	325.1	33.9
Sustainable Growth: Natural Resources (CAP)	420.7	42.3	390	37.3	372.2	38.3	373.2	38.9
Security and Citizenship	12.4	1.2	18.8	1.8	16.7	1.7	15.7	1.6
Global Europe	56.8	5.7	70	6.7	60.7	6.2	58.7	6.1
Administration	56.5	5.7	63.2	6.0	62.6	6.4	61.6	6.4
Compensation	0.9	0.0	0.003	0.0	0.003	0.0	0.003	0.0
Total in € billion	993.6	100.0	1 045.3	100.0	971.9	100.0	960	100.0
Total in % of GNI	1.12	–	1.08	–	1.01	–	1.0	–

Source: Own compilation.

In its original proposal for the MFF 2014 to 2020, which in the updated version from July 2012 foresees commitment appropriations of € 1,045 billion or 1.08 percent of EU-GNI, the European Commission envisaged a slight reduction of the share of common agricultural policy in overall expenditures from about 42 percent in the MFF 2007-2013 to about 37 percent and a slight shift from the first pillar to the potentially more sustainable second pillar (rural development). A slightly shrinking share of total expenditures (32 percent) should be reserved for structural and cohesion funds. Thus common agricultural policy and cohesion policy were planned to still reach about 70 percent of total expenditures. The share of funds explicitly reserved for research and innovation according to this proposal should have remained below 10 percent of total expenditures; total expenditures for competitiveness and infrastructure should be increased to over 14 percent.

The new MFF for 2014 to 2020, which was agreed on in June 2013, dedicates 13 percent of the total sum to competitiveness and infrastructure, 34 percent to cohesion policy and another 39 percent to agricultural policy, which implies only minor shifts in the current composition of expenditures. In contrast, strength-

ening the EU budget's role as an instrument to support socio-ecological transition in the EU, which goes beyond the Europe 2020 strategy and is targeted more intensely on combining economic dynamics with ecological and social goals, requires the following key elements:

- Stronger reduction of the expenditure share of common agricultural policy, reinforcing the shift of agricultural expenditures to a second pillar of common agricultural policy which is based on ecological and employment goals;
- Reinforcement of "greening" of direct payments within the first pillar of common agricultural policy, i.e. linking a significant part of direct payments to the fulfilment of certain ecological conditions by the receiving farmers and cutting direct payments if these conditions are not fulfilled;
- Stronger focus of cohesion funds on "poorer" member countries and corresponding reduction of funds for "richer" member countries (Aiginger *et al.*, 2012);
- Stronger coupling of cohesion funds with climate objectives and employment goals.

Linking cohesion funds with efforts to improve competitiveness and with the indicators applied within the EU's new economic governance (macroeconomic imbalances), to create a link between the Euro crisis and the EU budget (Becker, 2012).

Stronger increase of expenditure share for research and innovation with a specific focus on ecological and social aspects.

2. Alternative revenue sources for the EU

Against the background of this reform debate, which dates back to before the current financial negotiations, some long-term trends of the level and composition of EU revenues and potential inherent problems are of immediate interest. This leads to the question of how to assess the most substantial reform proposal in the current debate, which has been advocated for years notably by the European Commission, namely to attribute own tax revenues to the EU and to finance part of the EU budget through dedicated EU taxes and to review particular taxes in the light to their possible qualification as EU taxes.

2.1. Volume and composition of EU revenues

The EU, lacking tax sovereignty, does not have the right to raise taxes or contributions in order to finance its own tasks. Rather, tax sovereignty within the EU is assigned to the member countries at the national level or in some cases the sub-national level. Some (very small) part of national tax revenues that member states raise for the financing of their own budgets is transferred to the EU. The EU currently has essentially three revenue sources: traditional own resources (agricultural tariffs, sugar customs duties, general tariffs), VAT-based own resources and GNI-based own resources.[4] EU expenditure must be financed exclusively from own resources, with the option of running a budget deficit being excluded by the EU Treaty.

The financing system of the EU has been changed six times through own resources decisions by the European Council and the European Parliament since 1970. Since then *ad hoc* national contributions by member states were increasingly replaced by a system of own resources and vanished completely in 1982 (European Commission, 2011a). These own resources accrue to the EU directly, without any further decisions required at the national level. Total revenues are limited by a ceiling for EU own resources.

Until 1980, the traditional own resources, which were introduced in 1968, were the only financial source of the EU. They are collected by member states on behalf of the EU and directly transferred to the EU budget (minus a discount of 25 percent remaining with member states to cover the cost of revenue collection[5]). VAT-based own resources were introduced in 1979, originally as a residual financing source with a uniform call rate from a harmonised tax base which is limited to 50 percent of national GNI (capping). At its introduction, the (maximum) call rate was fixed a 1 percent. In 1985 it was raised to 1.4 percent and between 1995 and 1999 reduced in steps to 1 percent again. For 2002 and 2003 it was cut to 0.75 percent and for the years from 2004 to 2006 to 0.5 percent. The MFF 2007 to 2013 provides for a call rate of

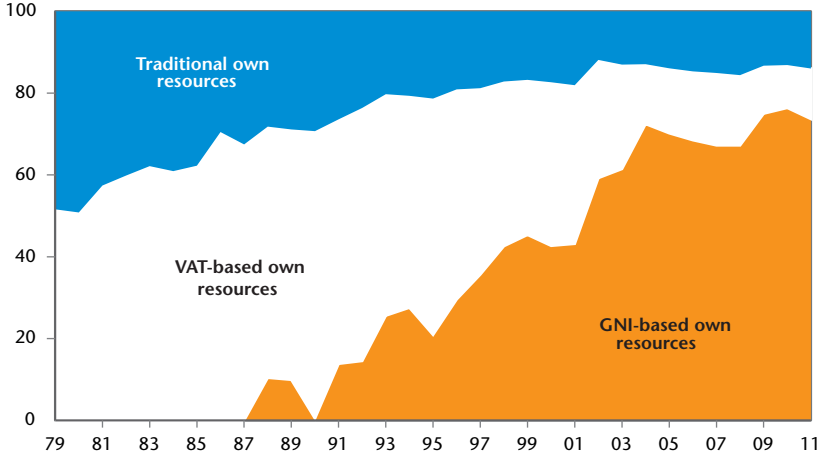
4. This revenue source was originally calculated on the basis of GNP (gross national product), but since 2002 it is determined on the basis of GNI (gross national income).

5. This flat-rate deduction was 10 percent until 2000. One of the European Commission's proposals for reforming the system of own resources is to reduce the rate from its current level of 25 percent to the original level again (*European Commission*, 2010).

0.3 percent. In the context of financing the "UK rebate", some net contributors have been granted for the period 2007 to 2013 only a reduction of the call rate (Germany 0.15 percent, Sweden and the Netherlands 0.1 percent, Austria 0.225 percent). The GNI-based own resource exists since 1988. As a residual financing source they serve to balance the budget subject to the own resources ceiling; as a consequence, the call rates (which are identical for all member states) are updated each year. Both the kind and the scope of the generation of own resources as well as the taking over of own tasks by the EU have to be voted by unanimity by the European Council and by all member states according to their respective constitutional provisions. The current EU expenditure ceiling, which is equal to the revenue ceiling, is set at 1.29 percent of aggregate EU GNI (commitment appropriations) and 1.23 percent (payment appropriations), respectively. In practice, this ceiling is never reached. As a rule, actual payments by member states fall markedly below the ceiling: In 2010, for example, they amounted to 0.97 percent of GNI; in the second half of last decade they fluctuated around 0.9 percent of GNI.

Since the end of the 1970s a remarkable structural shift can be observed for the composition of the EU's own resources (Figure 1).

Figure 1. Composition of EU revenues from own resources



Source: European Commission, 2012.

Traditional own resources received directly by the EU have greatly lost in importance due to the fall of custom revenues in the course of trade liberalisation and EU enlargement: whereas in 1980 they accounted for almost 50 percent of total revenues, their share has since fallen steadily, declining to about 20 percent in the mid-1990s to about 15 percent since 2005. Thus the financing of the EU budget is increasingly resting on direct contributions from member states' national budgets. The share of revenues from the VAT-based own resource reached its peak at 70 percent in 1986 and 1990, to shrink steadily afterwards to 12 percent in 2011. In parallel, the share of revenues from the GNI-based own increased continuously from 10 percent in 1988 to 74 percent in 2011.

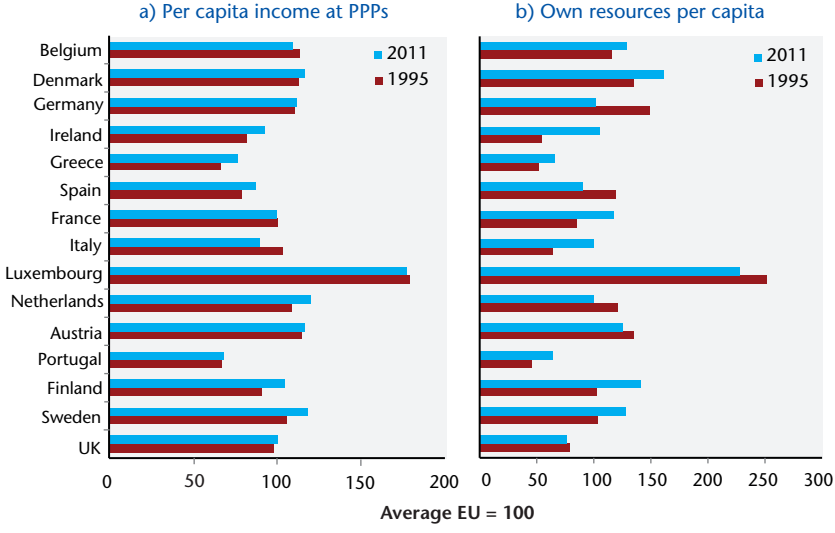
This development is caused by two Council Decisions, from 1992 (effective as of 1995) and 1999 (effective as of 2002), which have shifted the bulk of financing from the VAT-based towards the GNI-based own resource component. Part of this move were the above-mentioned stepwise cuts in the call rate for the VAT-based own resource to meanwhile 0.3 percent of the harmonised VAT base which itself had been reduced to 50 percent of national GNI over the same period. One motive of this move from VAT-towards GNI-based own resources was to widen the financial scope of the EU budget, the easing of the financial burden for the economically weaker member states another: while contributions on the basis of VAT have a tendentially regressive effect, the contributions linked to GNI better reflect a country's economic capacity (Deutsche Bundesbank, 1999).

Whether in this way the economically weaker member states have actually been exonerated cannot be examined and evaluated in detail here. However, the trend of GNI per capita is not necessarily parallel to that of national contributions per capita, as can be illustrated by the example of "old" member states (Figure 2): For 8 old member states, per capita incomes compared to the EU15 average increased (decreased), while their own resources contributions per capita decreased (increased) in 2011 compared to 1995.

Until 2011, the EU budget rose to a total of € 120 billion, compared to € 67.8 billion in 1995. Since 1995, Germany's share in total own resources fell from 31.4 percent to about 20 percent, partly because the country's share in aggregate EU GNI declined, but partly also due to a reduction of the contribution burden

through various correction mechanisms (see below). Also the contribution by France and the UK to total own resources payments have slightly fallen during the last 15 years. At the same time, the share of "poorer" countries as Spain, Italy and Portugal has (slightly) risen.

Figure 2. GNI and national contributions of EU member states, per capita



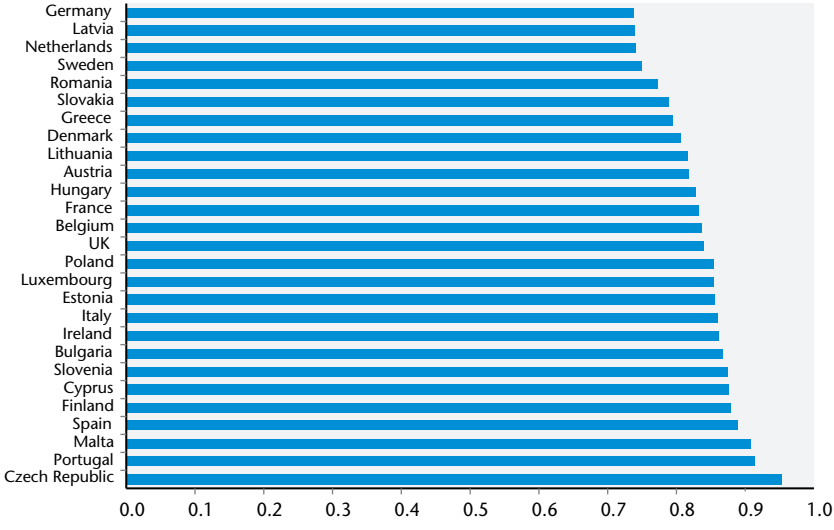
Sources: European Commission (2012), own calculations.

The gross contribution, i.e. total payments made to the EU, is the most straightforward measure of a country's contribution to the financing of the EU budget. Deducting traditional own resources delivers the national contribution, consisting of VAT- and GNI-based own resources. The national contribution (Figure 3) is more appropriate than the gross contribution for comparisons between member states, since it reflects the resources actually raised by individual member states. Figure 3 shows national contributions as percent of GNI (including the UK rebate) for 2011. The national contribution is lowest in Germany, with 0.74 percent of GNI, and highest in the Czech Republic (0.95 percent of GNI) in 2011.

In the political debate and in EU budget negotiations, the net contribution position, as recorded in the national balance of payment statistics, plays a more important role than the national contribution. As the balance of financial transfers (VAT- and GNI-

based own resources) paid to the EU and transfers received from the EU budget, it expresses a member state's financial net benefit or cost from the EU budget.

Figure 3. VAT- and GNI-based own resources (national contributions) of EU member states in 2011, as percent of GNI



Source: European Commission, 2012.

Apart from the fact that the net contribution position alone cannot by far capture the entire economic impact of European integration upon member states – beyond direct transfers from the EU budget, EU membership carries a number of indirect economic effects, such as potential access to new markets –, the calculation of this indicator is subject to a certain margin of uncertainty.[6]

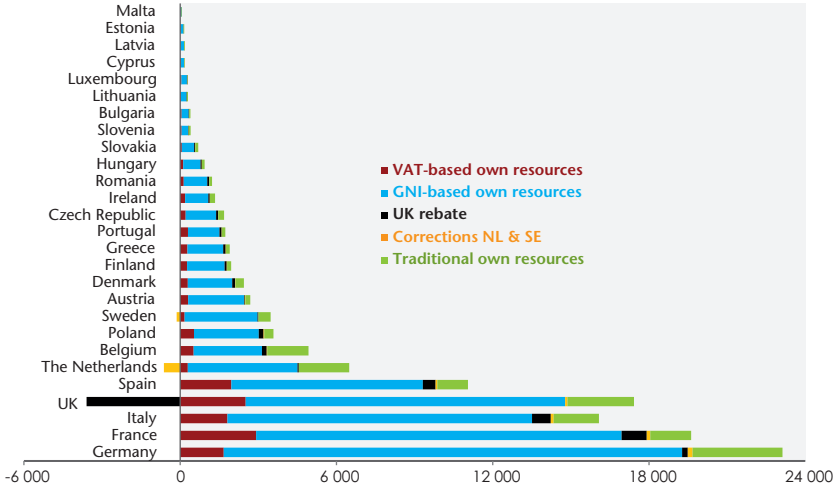
Since its introduction, the "UK rebate" has been a topical issue in the context of the net contribution position. In 2011, the rebate amounted to € 3.6 billion. Following a decision of the European Council of Fontainebleau in 1984, the UK is reimbursed two thirds of its annual net contribution. The special provision was successfully negotiated by former Prime Minister Margaret Thatcher at a time when the UK had a relatively low per capita income within the EU. Due to its comparatively small agricultural sector, the

6. See Clemens and Lemmer (2006) for details.

country received considerably less in EU agricultural payments than, for example, France. The adjustment in favour of the UK is financed by the other member states according to their levels of GNI. Since 2001, a special clause applies for the traditionally most important net contributor countries Germany, Austria, Sweden and the Netherlands, which pay only 25 percent of their normal financing share of the UK rebate (Clemens and Lemmer, 2006).

The impact of the UK rebate on the distribution of own resource payments in absolute terms is shown in Figure 4. The rebate moves the UK down from the second to the fourth largest contributor.

Figure 4. Own resources payments to the EU in 2011, in billion €



Source: European Commission, 2012, own calculations

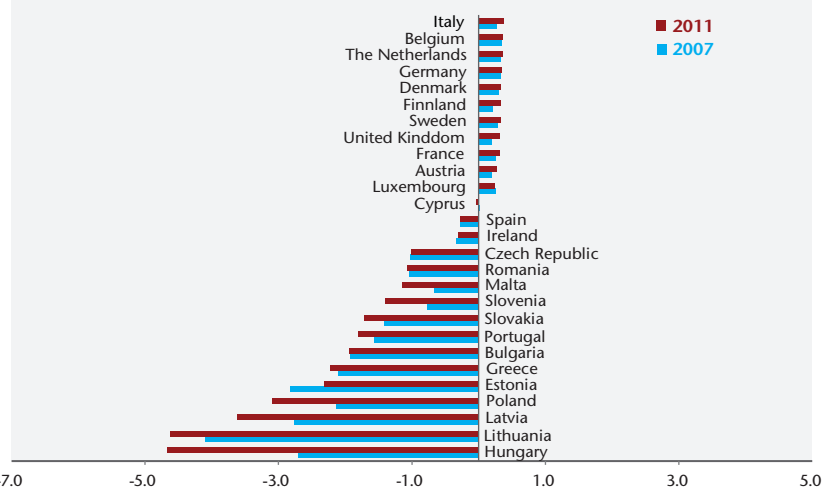
In relative terms, the UK's national contribution of 0.84 percent of GNI is on rank 14 (see Figure 3). The termination or at least reduction of the UK rebate which has been claimed for some time by almost all other member states is subject to the UK's consent which is unlikely to be obtained without a far-reaching overhaul of EU common agricultural policy.

In 2011 as well as during the period 2007 to 2011, 11 of the 27 member states were net contributors.[7] In the period 2007 to

7. Cyprus net position amounted to practically zero, with a net contribution of 0.02 percent of GNI in the period 2007 to 2011 and of -0.04 percent of GDP in 2011.

2011, the largest net contributors in relation to their GNI are Germany, Belgium, the Netherlands and Denmark (Figure 5).

Figure 5. Net contributions by member states, as percent of GNI



Source: European Commission, 2012, own calculations.

2.2. Problems and need for reform in the current system of own resources

The financing system of the EU in the design which has evolved over more than 60 years since the foundation of the European Coal and Steel Community (ECSC) in 1952 is characterised by a number of shortcomings rooted in the low and still decreasing revenue autonomy of the EU. While the correction of these shortcomings has been on the political agenda for some time, the required unanimity vote in financial matters has so far stood in the way of a fundamental reform. However, the growing resistance notably on the part of net contributors, which makes negotiations on the MFF and also on the yearly budgets increasingly tedious, adds to the pressure to seek alternatives to the existing system of own resources. This section briefly presents the most important problematic aspects and effects of the current system of own resources.[8]

8. While their presentation is structured somewhat differently, the aspects elaborated in this section are mainly those addressed in European Commission (2011a) and several related academic studies cited there.

2.2.1. Increasing controversiality of size and structure of EU budget

Since the EU can neither raise its own taxes nor (according to Article 311 of the Treaty on the Functioning of the European Union) incur debt, its revenue autonomy has been curtailed from the outset. Meanwhile, it has become negligible since the traditional own resources have greatly lost in importance. As presented in more detail above, now the own resources of the EU consist primarily of member states' contributions paid directly from national budgets. Thus the EU budget has increasingly become the subject of political conflict, as most clearly revealed by the "net contributor debate". Reaching an agreement on the MFF is becoming more and more difficult, particularly with economic divergences widening in the last (and future) enlargement rounds. This carries the risk of the EU budget becoming chronically underfinanced against the challenges facing the EU in the future. Such risk is witnessed by the current MFF 2007 to 2013 as well as by the proposal for the next MFF 2014 to 2020, each setting expenditures to decline as a ratio of EU GNI, rather than being at least held constant as warranted by the current and future tasks of the EU.

2.2.2. Increasing neglect of "European value added" and dominance of national interests

The predominance of national contributions narrows down the focus of member states on monetary net returns from the EU budget, i.e. the relation between national contributions to the budget and monetary returns from the individual policy areas (common agricultural policy, structural and cohesion policy, research and innovation, etc.) (European Commission, 2011a; Becker, 2012). Benefits of EU membership beyond pure financial flows related to the EU budget, however, do not play much of a role as evaluation and decision criteria of member states (Richter, 2013). Within the EU with its increasing divergences and therefore national interests, such a perspective focusing on individual country-specific monetary costs and benefits inevitably aggravates the EU budget's controversiality and increasingly hinders compromises. It is an essential reason that particularly net contributor countries, whose gross contributions exceed transfers received from the EU budget, urge a limitation of the EU budget's volume. Moreover it furthers the tendency of member states to support the

preservation of those expenditure categories promising to maximise individual country-specific transfers received from the EU budget, instead of pushing an expenditure structure from which a maximal benefit for the EU as a whole (what the European Commission calls "European value added", see European Commission, 2011c), may be expected. The focus on individual national interests is also enforced by the increasing public attention for questions of EU policy (Becker, 2012). The distributional conflicts as well as the "net contributor debate" more recently have been aggravated by the (potential) burden from the EU rescue package the largest part of which falls upon Eurozone countries.

In this context it should be recalled that the financial resources at the disposal of the EU also serve to finance various "European public goods", i.e. goods or activities with positive cross-border external effects[9] and with European value added (European Commission, 2011c), respectively. In particular this concerns expenditures in the areas of research and innovation, education, transport infrastructure, and climate/energy policy, decided upon at the EU level. Securing fiscal equivalence (i.e. a correspondence of revenue and expenditure responsibility) would require assigning to the EU also the taxes necessary to finance these expenditures.

2.2.3. No contribution by the system of own resources to EU policies

Moreover, the lack of tax autonomy at the EU level runs counter to the long-term trend of deeper integration. Despite an increase in negative cross-border externalities (e.g. environmental damage) caused by ever closer economic integration of member states, policy refrains from using taxes at the European level to influence economic agents' behaviour. Thus potential benefits of a rather powerful market-based policy instrument are foregone. In general, the current revenue system hardly contributes or supports EU policies (European Commission, 2011a).

2.2.4. Increasing complexity of the system of own resources and political legitimacy

In addition, the system of own resources is characterised by a considerable degree of complexity and lack of transparency. While

9. Consider in this context also the evolving debate about "global public goods" (see, e.g., Kaul *et al.*, 1999).

the three revenue sources as such are easy to understand, their implementation is not. This is mainly caused by the UK rebate and the various mechanisms for its correction. In addition, the concrete design of the VAT-based own resource, particularly the determination of the tax base, is often criticised as rather complicated.

Moreover, the structural adjustments made since the early days of the European Community are the result of political compromises (such as the correction mechanism for the financing of the "UK rebate"). Apart from the resulting administrative burden, this trend also undermines political credibility and the legitimacy for national financial contributions, since the population of the individual member states is less and less able to identify its own contribution to the financing of the EU budget and the relationship between revenue and expenditure.

2.2.5. Equity concerns

Not least, within the group of net contributing countries which in the period from 2007 to 2011 included 11 member states, a "rebate from the rebate" for the UK was granted to the 4 countries which traditionally are the most important net contributors only, despite the fact that these are not necessarily – in relative terms – carrying the largest net contribution burdens (see Figure 5). Therefore the complete elimination of the correction mechanism for the UK rebate is an important element of a more simple, transparent and equitable system of financing the EU budget: The more, as the initial reason to grant a rebate to the UK in the first place – relatively low economic prosperity and high net contributions – has disappeared during the last 30 years (Economic Commission, 2011a).

From an equity perspective it may also be considered problematic that the poorer member states which are on the one hand benefiting from cohesion policy over-proportionately contribute to financing the various correction mechanism to alleviate the net contribution burden of the richer countries on the other hand (European Commission, 2011a). It may also be criticised that capping individual VAT-based resource payments by limiting the part of the harmonised VAT base on which the call rate is applied to 50 percent of GNI does not necessarily alleviate the burden for the poorer countries, as there is no clear relationship between a country's GNI and and the size of the VAT base.

2.3. Options for a fundamental reform of the system of own resources of the EU

2.3.1. Current state of the political discussion

The MFF 2007 to 2013 has not brought about any fundamental changes for the system of own resources. The own resources ceiling was confirmed to 1.24 percent of GNI (for payment appropriations) and 1.31 percent of GNI (for commitment appropriations), respectively. Also the "UK rebate" was maintained, as well as the correction mechanisms for its financing in favour of Germany, Austria, Sweden and the Netherlands ("rebate from the rebate"). The UK therefore in principle continues to benefit from its rebate. The call rate for the VAT-based own resource was generally reduced from 0.5 to 0.3 percent, with several net contributors benefiting from a lower rate in the period 2007 to 2013 only (Austria 0.225 percent, Germany 0.15 percent, the Netherlands and Sweden 0.10 percent). In addition, Sweden and the Netherlands may reduce their GNI-based annual gross contributions by € 150 million and € 605 million (in constant 2004 prices), respectively in the period from 2007 to 2013 only.

In December 2005, the European Commission has been invited by the European Council to undertake a revision of the EU budget in the form of a "mid-term review", which should also include a review of the system of own resources, and to report to the European Council by 2008/09. This review should feed into the preparations for the next MFF. In this way, the need for reform of the EU financing system, generally felt across member states and the European institutions, has been taken up, without however an actual announcement or commitment to such reform being given. The European Commission's publication of its Communication on the EU Budget Review (European Commission, 2010) as one core principle of the EU budget puts forward a reformed financing system. According to the European Commission, new own resources could substitute the VAT-based own resource and a part of the GNI-based resource.

In its proposal for the own resources decision (part of the whole package related to the MFF) the European Commission (2011b and 2011d) suggests three elements of the reform of the current system of own resources: firstly the simplification of member states'

contributions by eliminating the VAT-based own resource, compensated secondly by the introduction of new own resources (preferably a financial transaction tax and a new VAT resource), and thirdly the reform of correction mechanisms by implementing a new system of lump sums to replace all pre-existing correction mechanisms.

The European Parliament, which according to the Lisbon Treaty for the first time has a right to co-decision on the MFF and which only after lengthy negotiations only agreed to the new MFF 2014-2020 has been demanding for some time now a reform of the system of own resources which includes the reform of the existing VAT-based own resource and the introduction of an EU tax, i.e. a genuine own resource (particularly a financial transaction tax). Up to now, however, the European Council refuses to negotiate about a reform of the system of own resources and about the introduction of an EU tax in particular.

In the longer-term perspective, budgetary leeway is to be created for the financing of tasks ranking high in the Europe 2020 strategy through further shifts in the expenditure structure, notably the already initiated restraint on agricultural spending. Given the conflicting interests of member states it is nevertheless doubtful whether such shifts will progress at sufficient speed in order to create the necessary budgetary room for manoeuvre. All the more so, since agricultural spending will (have to) remain a major responsibility for the EU, albeit with substantial adjustments towards organic farming, preservation and development of rural areas and promotion of tourism, reflecting the changing role of agriculture. Against this background, conferring a certain degree of tax autonomy upon the EU appears to be an option worth exploring, by substituting own EU tax revenues for part of national financial contributions which face growing resistance, particularly with net contributors.

2.3.2. Key elements of a reform of the system of own resources

Starting from the above criticism of the EU system of own resources, reform options have been considered for some time at the EU level. Following up on agreements reached in the context of the last few financial frameworks, the European Commission in the meantime has submitted several reports on the functioning of

the system of own resources (European Commission, 1998 and 2004); the most recent one in 2011 (European Commission, 2011a). These documents also discuss the pros and cons of various financing alternatives. In principle, two alternative reform strategies to address the existing shortcomings of the system of own resources may be envisaged (European Commission, 2004):

— Reforms within the existing system of own resources with the aim of streamlining it (in practice, this would lead to the elimination of the VAT-based own resource so that, given the ongoing loss in importance of traditional own resources, the budget would in the long run be financed almost entirely by GNI-based own resources);

— Introduction of dedicated EU taxes, as a (partial) compensation for the existing revenue sources. This option, favoured by the European Commission, would assign some degree of tax autonomy to the EU.

The criticism advanced against the current system of own resources advises in favour of the latter reform strategy conferring to the EU some degree of tax autonomy in combination with a reform of key features of the existing system of own resources along the following lines:[10]

— Elimination of VAT-based own resources;

— Attribution of dedicated taxes to the EU to compensate for the abolition of VAT-based own resources and in recognition of the arguments in favour of EU tax autonomy;

— Reinforcement of own EU tax revenues through GNI-based own resources;

— Reform of the correction mechanism to finance the UK rebate.

2.3.3. Evaluation of potential EU taxes as a central pillar of a fundamental reform of the system of own resources

Starting from these key elements, the following considerations are devoted to a crucial aspect in the debate on alternative revenue sources for the EU budget, i.e. the question what kind of taxes

10. These key features are also mentioned by the European Commission who nevertheless pleads in favour of the revenue-neutral introduction of a now own revenue source which should cover up to 50 percent of total expenditure (European Commission, 2004).

would lend themselves for the establishment of an own EU tax sovereignty (or as a supplementary or alternative revenue source) (see also Richter, 2006).

One basic assumption is that financing the EU budget entirely or at least primarily through own taxes is for the time being neither meaningful nor possible under the existing framework conditions. One argument against is the existing ban on incurring debt, which requires an additional revenue source to balance the budget in case actual tax revenues fall short of projections. In addition, financing all EU responsibilities entirely by own taxes would require much deeper integration of the EU member states than is presently the case, leading more towards a federal state.

Weighing up between dedicated EU taxes on the one hand and GNI-based own resources on the other hand is an issue beyond pure economic reasoning: It is rather a political decision of member states to what extent they see the Community eventually moving towards a federal state that in the end needs its own legal framework for fiscal relations and an own tax sovereignty. This is also a crucial factor for the degree and factual implementation of the tax autonomy conferred to the EU.[11] It may either be confined to the power to decide on how to allocate its own resources, or it may extend to legislative powers in tax matters. In the first case, the EU would receive a certain fraction of national tax revenues or be granted the right to levy a supplementary rate on a given tax base, with the right of decision on tax bases and national tax rates essentially remaining with the member states. In the second case the EU would acquire the right to determine tax base and rate, with member states possibly having the right to levy a supplement.

In its reports on the operation of the EU own resources system, the European Commission establishes seven criteria for the evaluation of own resources (European Commission, 2004):

— visibility and simplicity;
— financial autonomy;
— contribution towards an efficient allocation of economic resources;
— yield;

11. For elaboration of this point, see Becker (2005).

— cost efficiency with regard to tax administration;

— revenue stability;

— equitable gross burden.

These criteria may be applied only partially or in modified form for the following assessment of the suitability of different taxes as financial sources for the EU budget. They will be supplemented by further criteria developed by the theory of fiscal federalism as a yardstick for assigning different taxes to the different levels of government (see, e.g., Musgrave, 1983; Gordon, 1983; Inman and Rubinfeld, 1996; McLure, 2001). Thus, for the assessment of whether a certain tax may qualify as EU tax, the following criteria may be formulated (see also European Commission, 1998 and 2004):

— Degree of regional attribution: the lower the possibility to determine the share of individual member states in the tax base/tax revenues, or the lower the identity between the country where tax revenues accrue and the country of residence of tax subjects, the higher the suitability as EU tax.

— Cross-border negative externalities: the higher they are, the higher the qualification as EU tax, since the optimal tax rate from the national perspective is below the one from the European perspective.

— Mobility of the tax base: the higher it is, the higher in principle the qualification as EU tax, since centralisation may help to prevent a possibly harmful "race to the bottom".

— Short-term volatility: the higher it is, the lower the qualification as EU tax; due to the ban on EU debt, the flow of own resources should be stable in the short term and as cyclically-insensitive as possible.

— Long-term yield (revenue elasticity): the higher it is, the higher the qualification as EU tax, since with European integration and given the long-term challenges the EU is facing progressing the range of tasks and therefore the financial needs will probably rise.

— Visibility: the more visible and perceptible a tax for the tax subjects, the higher its qualification as EU tax, since the link between tax payment and return from the EU budget is made transparent.

— Equity of gross burden at the national level: the closer the link between the tax base (and therefore the tax burden) and national income, the higher the qualification as EU tax.

The report on the functioning of the system of own resources by the European Commission of 1998 discusses eight kinds of potential own resources: CO2 or energy tax; modified value added tax; excises on tobacco, alcohol and mineral oil; corporate tax; tax on transport and telecommunication services; income tax; interest income tax; and a tax on the ECB gains from seigniorage (European Commission, 1998). The European Commission's report of 2004 limits itself to three options, namely the combination of GNI-based own resources with revenues from energy tax, value added tax or corporate tax. In its latest report on the operation of the system of own resources (European Commission, 2010), the European Commission mentions taxes on the financial sector (financial transaction tax and financial activity tax, revenues form auctioning under the greenhouse gas Emissions Trading System, a charge related to air transport, an EU VAT, an EU energy tax and an EU corporate income tax) as potential candidates for new own resources; where the preferred options put forward in further documents and statements related to the MFF package are the financial transaction tax and an EU VAT. Table 2 gives an overview of the candidates for new own resources mentioned in the European Commission's various reports on the functioning of the system of own resources and options for its reform.

Table 2. Candidates for new own resources according to the European Commission

European Commission 1998	European Commission 2004	European Commission 2010
CO2 or energy tax		taxes on the financial sector (financial transaction tax and financial activity tax)
modified value added tax		revenues form auctioning under the greenhouse gas Emissions Trading System
excises on tobacco, alcohol and mineral oil	EU energy tax	charge related to air transport
EU corporate income tax	EU value added tax	EU VAT
tax on transport and telecommunication services	EU corporate income tax	EU energy tax
income tax; interest income tax		EU corporate income tax
tax on ECB gains from seigniorage		

Source: Own compilation.

Table 3 contains key features and potential revenues of the candidates (expect revenues from auctioning under the greenhouse gas Emissions Trading System) included in the European Commission's latest documents on the operation of the system of own resources and options for its reform. Altogether the potential revenues of the various candidates may contribute to a considerable extent to financing the EU budget.

Table 3. Potential EU taxes

Tax base (tax)	Key features	Potential revenues per year	In % of EU expenditures per year[1]
Financial transactions (Financial Transaction Tax – FTT)	0.1% tax rate on transactions of bonds and shares, 0.01% tax rate on transactions of derivatives, 0.1% tax rate on transactions of bonds, shares and foreign currency, 0.01% tax rate on transactions of derivatives	€ 20 billion (by 2020) € 50 billion (by 2020)	15 36
Sum of profit and remuneration of financial institutions (Financial Activities Tax – FAT)	5% tax rate on sum of profit and remuneration of financial institutions according to the addition-method FAT applied at source, no fully harmonized tax centrally collected at EU level, but revenue-sharing between member states and EU	€ 24.6 billion (2009)	18
Charge related to air transport (Departure Tax or Flight Duty Tax)	Tax on passengers flying from an EU airport, differentiated according to distance and class of travel (Departure Tax), tax on flights (Flight Duty Tax) decentralized or centralized collection possible	€ 20 billion (by 2020)	15
Consumption (EU Value Added Tax – VAT)	1% tax rate on goods and services subject to standard tax rate, decentralized collection and transfer to EU	€ 20.9 billion to € 50.4 billion (2009)	15
Energy consumption CO2 emissions (EU Energy Levy, EU CO2 Levy)	Single EU tax rate on quantities of energy products released for consumption based on their energy content. Minimum rate of CO2-related taxation defined in revised ETD. Decentralized or centralized collection possible	No estimates available	–
Profits of incorporated firms (EU Corporate Income Tax – CIT)	Less than 2% tax rate on national corporate income tax base decentralized collection and transfer to EU.	€ 15 billion	11

1. Expenditures per year calculated as average of total expenditures for the period 2014 to 2020.
Sources: European Commission (2010, 2011a, 2011b); Own compilation.

Most revenue could be created by introducing a **general Financial Transaction Tax (FTT)** of 0.1 percent on transactions of bonds, shares and currency and of 0.01 percent on transactions of derivatives. According to a conservative estimate by the European Commission, the potential yield may reach about € 50 billion per year by 2020, which would cover about one third of the EU's annual expenditures according to the European Council's agreement of February 2013. In a version exempting currency transactions the FTT would still raise about € 20 billion or 15 percent of the EU's expenditures.

A **Financial Activities Tax (FAT)** of 5 percent on the sum of profits and remuneration of financial institutions, as an alternative tax on the financial sector, is expected to yield about € 25 billion per year and could thus finance about 18 percent of the EU's expenditures.

Revenues from charges related to air transport (a **Departure Tax** or **Flight Duty Tax**) and from an EU **Value Added Tax (VAT)** of 1 percent on the goods and services subject to the standard tax rate are estimated to reach a similar size, with about € 20 billion per year (15 percent of the EU's expenditures).

An EU **corporate income tax (CIT)** of less than 2 percent on the national corporate income tax base may yield about € 15 billion (11 percent of the EU's expenditures).

The evaluation of these taxes according to the criteria specified above (Table 4) gives only rough indications since it does not allow for a possible fine-tuning of the different criteria, but only distinguishes between "rather useful" or "rather less useful" as EU tax. For further considerations on the actual design of an own resources system which is based also on EU taxes as genuine own resources, the analysis of course needs to be refined. It would also have to consider administrative costs and the question at which level (national level or EU level) revenues would be collected. None of the taxes briefly discussed below is deemed an "optimal" EU tax, since all of them miss one or more of the criteria defined above. Which of the taxes will actually be selected along these criteria, and the weight to be attributed to each of them, is a political decision in the end.

According to the above criteria, charges on air transport would qualify best as EU taxes. They may internalise negative cross-border externalities (in this case climate-damaging emissions) and thereby reduce air traffic. Assigning these taxes to the EU would rein in the possibility of tax avoidance caused by tax rate differentials between member states. Their visibility for citizens as well as short- and long-term revenue stability and tax yield are further arguments in favour of assigning them to the EU level. In particular the tax avoidance to be expected speaks in favour of earmarking charges related to air transport entirely for the EU: a uniform tax rate should be fixed at the level of the EU and all revenues be channelled into the EU budget.

Table 4. Evaluation of options for EU taxes

	Regional attribution	Negative cross-border externalities	Mobility of tax base	Short-term volatility	Long-term yield (revenue elasticity)	Visibility	Equity of gross burden at national level
Financial Transaction Tax	+	+	+	–	+	–	–
Financial Activities Tax	+	+	+	–	+	–	–
Departure/Flight Duty Tax	–	+	+	+	+	+	–
Value Added Tax	–	–	–	–	+	+	?
Energy Levy/CO2 Levy	–	+	–	+	+	+	?
Corporate Income Tax	+	–	+	–	+	–	–

+ speaks rather in favour of being used as an EU tax. … – speaks rather against being used as an EU tax.
Source: Own.

Main arguments in favour of an FTT to be assigned to the EU are the impossibility of a regional attribution of such a tax and its prospective long-term yield. Moreover, unilateral implementation would be next to impossible, and considering the far-reaching integration of the European financial market, the FTT may also internalize negative cross-border externalities. In contrast to an EU CIT or VAT, differing national tax bases would not be an issue. Unfortunately, the current negotiations at the EU level about the introduction of an FTT do not make much progress: Apart from the fact that only 11 EU member states are willing at all – in principle –

to implement an FTT, several of these countries under the pressure of the financial lobbies are pushing very strongly for a very minimalistic ("light") version of an FTT.

In favour of a partially centralised CIT may be argued that the growing disconnection between value added and corporate location on the one hand, and profit and its taxation on the other, undermines the possibility of regional attribution of the tax. Moreover, it can be expected that corporate tax competition in the EU will intensify further due to the high mobility of the tax base. The CIT is also characterised by a high yield in the longer term.

Taxes on energy consumption have the advantage of low short-term volatility and a high long-term elasticity. Moreover they can internalize cross-border externalities and are highly visible to citizens. It may be objected, however, that the use of the CO2 tax is problematic because there is no link between the desirable growth of the EU budget and the desirable growth of ecological taxation.

The VAT appears as least suitable candidate. Only its long-term revenue elasticity and high visibility for citizens speak in its favour.

Altogether the most straightforward option for an own EU tax is the FTT which as a new tax has the additional advantage that national revenues would not be affected, which would be the case for charges on air transport and energy taxes which exist at least in some member states already. Thus it can be expected that choosing the FTT as EU tax will meet with less political resistance than options which imply redirecting national revenues to the EU budget.

From an administrative point of view, the FTT has the further advantage that (in contrast to the VAT or the CIT) there are no nationally differing tax bases that would need to be harmonised beforehand. It could cover a substantial share of total EU expenditures. If the aim is to extend the contribution of EU taxes even further, charges related to air transport would be another readily available solution, considering also that only few member states levy such charges at all and that they are exposed to permanent criticism as they are regarded as severe competitive disadvantage when implemented unilaterally at the national level.[12] The same holds for a CO2 tax which some member states have introduced rather recently.

When designing a new financial framework for the EU resting on a certain degree of tax autonomy, including institutional aspects and political decision-making processes, a number of caveats need to be considered that are often emphasised by the opponents of EU taxes. A major concern is that an own tax responsibility of the EU would lead to permanent upward pressure on expenditure, all the more so as the EU budget is dominated by the goal of redistribution. Moreover, the assignment of (a certain degree of) tax autonomy to the EU would require to reinforce democratic legitimacy, i.e., to strengthen the powers of the European Parliament further as well as to tighten expenditure control and fight against fraud. It can also be expected that the process of unwinding the UK rebate system will cause considerable political controversy. Therefore, any major reform is likely to require a considerable lead time. In this context the problematic role of the unanimity rule as a major barrier for far-reaching reforms needs to be emphasised. It is one of the main reasons that member states prefer to agree on a minimum consensus and for their principally critical attitude towards ambitious reform proposals (Becker, 2012): By restricting themselves to incremental changes member states avoid the risk not to reach a final agreement.

3. Conclusions

There are many good reasons to substitute a substantial share of the existing own resources financing the EU budget by own EU taxes. Most remarkably, many proponents of a fundamental future-oriented reform of expenditure structures of the EU budget, which form the overwhelming majority among experts and politicians as well up to now appear to fail to realise that the current system of own resources is one – if not THE – most influential cause for the existing shortcomings of the expenditure side of the EU budget. Until now attempts to secure an expenditure size and structure which may more effectively than today support the EU's policy priorities as laid down in the Europe 2020 strategy and beyond has failed primarily because the influence of the design of the revenue system is widely underrated. However, without a

12. Austria therefore has just reduced the rates of its flight charge which was introduced in 2011 as part of the fiscal consolidation efforts.

reform of the system of own resources a volume and structure of EU expenditures adequate to cope with the current problems and future economic and societal challenges the EU is facing appears as improbable as the radical elimination of the existing system of rebates. Not the least advantage of those EU taxes which help to internalize negative externalities is that they would allow reducing national contributions financed by more distorting taxes levied by member states. Thus the introduction of such EU taxes may contribute to current efforts to improve the structures of national tax systems.

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Debates and policies

TOWARDS A BETTER GOVERNANCE IN THE EU?

edited by Catherine Mathieu and Henri Sterdyniak

The 2007 global financial crisis developed from 2009 into a sovereign debt crisis in the euro area. These crises highlighted weaknesses and drawbacks in terms of EU governance which were already there from the beginning. Since 2010, the EU authorities have introduced a number of new mechanisms such as the Euro plus Pact, the Fiscal Pact, the "European semester", the European stability mechanism, and more recently the banking union. Do these mechanisms improve EU governance? The EU remains so far an area of low growth and large imbalances.

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