



Common unemployment insurance scheme for the euro area

Cost of Non-Europe Report

STUDY

EPRS | European Parliamentary Research Service

Author: Micaela del Monte and Thomas Zandstra
European Added Value Unit
September 2014 – PE 510.984

The Cost of Non-Europe

Common unemployment insurance scheme for the euro area

AUTHOR

Micaela Del Monte and **Thomas Zandstra**, European Added Value Unit

ABOUT THE PUBLISHER

This paper has been drawn up by the **European Added Value Unit** of the Directorate for Impact Assessment and European Added Value, within the Directorate-General for Parliamentary Research Services of the Secretariat of the European Parliament.

To contact the Unit, please email eava-secretariat@ep.europa.eu

LANGUAGE VERSIONS

Original: EN

Translations: DE, FR

This document is available on the internet at: www.europarl.europa.eu/thinktank

DISCLAIMER

The content of this document is the sole responsibility of the author and any opinions expressed therein do not necessarily represent the official position of the European Parliament. It is addressed to the Members and staff of the EP for their parliamentary work. Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the European Parliament is given prior notice and sent a copy.

Manuscript completed in June 2014. Brussels © European Union, 2014.

PE 510.984

ISBN: 978-92-823-5456-8

DOI: 10.2861/54562

CAT: QA-04-14-208-EN-C

On 17 May 2013, the coordinators for the Committee on Employment and Social Affairs (EMPL) requested a Cost of Non-Europe report with regard to a possible Unemployment Insurance Scheme for the euro area.

This paper has been drawn up by the **European Added Value Unit** of the Directorate for Impact Assessment and European Added Value, within the European Parliament's Directorate-General for Parliamentary Research Services. Its aim is to help improve understanding of the subject by providing evidence of the specific benefits that could be achieved through the introduction of such a scheme.

This assessment builds on expert research commissioned for the purpose and provided by:

- The Centre for European Policy Studies (CEPS) - a simulation exercise for an Unemployment Insurance Scheme for the euro area. The lead author, Miroslav Beblavý, was aided by Ilaria Maselli. Matthias Busse and Elisa Martellucci, who provided research assistance and some drafting of the text. Daniel Gros provided intellectual oversight and several key ideas.
- Dr Mathias Dolls (ZEW Mannheim and IZA), Prof. Dr Clemens Fuest (ZEW Mannheim, University of Mannheim, CESifo and IZA), Dr Dirk Neumann (CORE, Université catholique de Louvain and IZA), Prof. Dr Andreas Peichl (ZEW Mannheim, University of Mannheim, IZA, ISER and CESifo) and Martin Ungerer (ZEW and University of Cologne) - the Cost of Non-Europe in respect of the absence of an Unemployment Insurance Scheme for the euro area.

Abstract

The European Parliament has called for a “social dimension” to the Economic and Monetary Union to tackle unemployment and restore growth following the recent economic crisis. Among various alternative options, automatic stabilisers could potentially be means of stabilising the Eurozone, while at the same time addressing social problems associated with the financial crisis. This study explores the prospects for introducing an automatic stabilizer in the form of an Unemployment Insurance Scheme for the euro area, which will provide the monetary union with greater stability in the medium and long term.

The experience of the recent crisis appears to have strengthened the case for a common Unemployment Insurance Scheme, and has fed into the debate regarding its establishment to counterbalance asymmetric shocks.

Analysis of its potential benefits, had it existed during the recent crisis, shows that such a scheme would have reduced the fall in GDP in the most affected Member States by 71 billion euro in the period between 2009 and 2012.

Note on methodology

Cost of Non-Europe (CoNE) reports are designed to study the possibilities for gains and/or the realisation of a 'public good' through common action at EU level in specific policy areas and sectors. They attempt to identify areas that are expected to benefit most from deeper EU integration, in other words where the EU added value is potentially significant.

The specific aim of this Cost of Non-Europe report is to ascertain what are the prospects of introducing an Unemployment Insurance Scheme for the euro area, presenting the institutional dimensions of such an instrument and quantifying the benefits in terms of economic growth (thus, a range of estimates of the stabilisation effects of such a system are presented).

The report also briefly examines some of the benefits but also some of the risks that can be expected from the introduction of an Unemployment Insurance Scheme. Where risks are identified, corrective measures to address or reduce them are also considered.

In order to develop a better notion of key issues and to understand what happens in a typical case, a number of examples or hypothetical case studies are presented.

Where it has not been possible to quantify all the costs and effects, a qualitative complementary approach has been used with a view to providing insight.

Finally, the report proposes a simulation of different scenarios based on alternative approaches. The intention is not to recommend the creation of any particular scheme, but, rather, to help policymakers understand what are the feasible options and what are the relative benefits and drawbacks of each.

Contents

List of figures	6
Executive summary	7
Introduction.....	8
Background and current trends	10
A social dimension for the EU Monetary Union	13
Economic recovery in the US	16
The Cost of Non-Europe for the Unemployment Insurance Scheme.....	19
Simulation exercise.....	26
Conclusion	32

Annexes

- I - **Simulation exercise for an Unemployment Insurance Scheme for the euro area**
by the Centre for European Policy Studies (CEPS)
- II - **Cost of Non-Europe due to the absence of an Unemployment Insurance System for the euro area**
by Dr Mathias Dolls, ZEW Mannheim.

List of figures

Figure 1: The long road toward a social dimension of the European Monetary Union.....	9
Figure 2: Unemployment benefit and social assistance schemes.....	11
Figure 3: Configuration of unemployment benefits systems in the EU Member States	13
Figure 4: Risk-sharing / insurance against income shocks in EMU remains low	15
Figure 5: Key elements of the US unemployment insurance system	16
Figure 6: Total unemployment insurance benefits paid by month and type of programme in the US	17
Figure 7: A case study - economic recovery in California	18
Figure 8: Engler and Voigts scenario.....	20
Figure 9: Country-specific shocks in the euro area	21
Figure 10: Added value of an unemployment insurance scheme at EU level.....	23
Figure 11: Summary of main risks of an unemployment insurance scheme at EU level	25
Figure 12: Matrix of scenarios explored in this section.....	29
Figure 13: Size of stabilisation impacts in the relevant literature	30
Figure 14: Example of stabilisation effect of the unemployment insurance scheme at EU level in selected countries	31
Figure 15: Stabilisation effect of the unemployment insurance scheme.....	31

Executive summary

The uneven impact of the crisis between Member States and policies of budgetary discipline have led to rising inequality. This kind of social pressure hits the Member States directly affected, but also spills over on to those more resistant to the effects of the crisis, through reduced aggregate demand, eroded confidence, and contagion via the financial markets. The consequence is that divergence and spillover effects may threaten core objectives of the European Monetary Union.

Experience shows that the current functioning of the European Monetary Union has been suboptimal first of all for economic growth. This is why the European Parliament¹ considers that employment and social outcomes are among the decisive factors for the sustainability and legitimacy of the monetary union, and that in particular automatic stabilizers could certainly play an important role.

While such a scheme would not solve of itself any future crisis, it could certainly provide greater stability and would offer clear added value from both economic and social points of view. From an economic perspective, it would provide a counter-cyclical stabilisation mechanism for the economy, and from a social perspective, it would alleviate the pain of unemployment by providing income security.

This Unemployment Insurance Scheme could represent to a certain extent a safety net at the eurozone level for the welfare systems of individual Member States. It could provide a limited and predictable short-term stimulus to economies undergoing a downturn in the economic cycle, something that every Member State is going to experience sooner or later and that can no longer be expected to be countered by national fiscal capacities on their own.

In a recent resolution² the European Parliament noted that social protection policy, in particular unemployment benefits initially helped to reduce the depth of the recession and stabilised to a certain extent labour markets and consumption. However, the capacity of these crucial economic and social stabilisers has been worryingly and progressively reduced in those Member States in which such stabilisers were most needed.

This is why, the Parliament considers that an EU-level mechanism could potentially act as a shock absorber to cushion both asymmetric and symmetric shocks to the economy, and thus overcome coordination failures and individual Member States' crisis-related budget constraints.

¹ European Parliament resolution of 21 November 2013 on the Commission communication entitled 'Strengthening the social dimension of the Economic and Monetary Union (EMU)', 2013/2841(RSP)

² European Parliament resolution of 25 February 2014 on the European Semester for economic policy coordination: Employment and Social Aspects in the Annual Growth Survey 2014 (2013/2158(INI))

Introduction

The current economic crisis has forced many Member States to further cut expenditure or increase taxes in the attempt to restore confidence on the financial markets. The argument according to which countries within a monetary union, such as the European Monetary Union (EMU), can use their fiscal policy to stabilise the business cycle has consequently been called in question.

Against this background, the question as to how to improve the capacity of Member States to cope with cyclical fluctuations and asymmetric shocks has gained importance.

It is worth mentioning that the idea of accompanying the European Monetary Union with shock absorption mechanisms has been on the table for many years. As early as 1977, the European Commission, in its 'McDougall report', advocated the introduction of fiscal stabilisers at EU level to control short-term and cyclical fluctuations in economic activity³. Later, in 1993, the Commission reflected on the introduction of a shock absorption instrument, based on changes in national unemployment rates that would provide a cushion against adverse developments in the Member States in the way that automatic stabilisers do in the United States. According to the Commission's 1993 estimates, average annual expenditure on such a mechanism would have been in the order of 0.2% of Community GDP⁴.

In 2012, both a Commission blueprint⁵ and a Council report⁶ called for an improved architecture for the European Monetary Union, including a tool with a stabilisation function for shock absorption, as well as a microeconomic approach. The idea of an Unemployment Insurance Scheme was suggested.

The European Parliament's Committee on Employment and Social Affairs drew up an opinion entitled 'Towards a genuine Economic and Monetary Union', calling for the establishment of automatic stabilisers at EU or euro area level⁷. This opinion stated that the recent economic crisis had highlighted the lack of coordinated policies within the euro area, and accordingly called for further investigation into feasible options for limiting crisis-induced shocks.

³ Available at:

http://ec.europa.eu/economy_finance/emu_history/documentation/documentation_chapter8.htm

⁴ 'Stable money – Sound finances' - Community public finance in the perspective of EMU, N° 53, 1993.

⁵ 'A blueprint for a deep and genuine economic and monetary union - launching a European debate', COM(2012)0777/2.

⁶ 'Towards a genuine economic and monetary union', Presidency of the European Council, 5 December 2012.

⁷ 2012/2151(INI)

Indeed, economic fluctuations and divergences between Member States are, paradoxically, further reinforced by the currency union. In the current economic downturn, within a monetary union the shock waves might lead to higher unemployment, lower household income levels and growing poverty. Indeed, such shocks do not only affect the weaker Member States on the periphery but, through their impact, might also affect those Member States with a relatively stable economy.

Even a country with a stable and booming economy cannot survive alone, as the system is constituted in a manner that excludes unilateral adjustment of its member economies by means of exchange rates or interest rates (by definition), or by inflation or fiscal expansion (by design)⁸.

In September 2013 a report published by the International Monetary Fund (IMF)⁹ argued that advancing fiscal integration would help address a number of gaps in the euro area's architecture. In particular, ex ante risk-sharing could reduce the need for costly support afterwards. Thus, provided there is better disciplining of national fiscal policies, all euro area countries would benefit from transnational fiscal insurance mechanisms.

The IMF mentioned a number of options, including creating, variously, a euro area-wide 'rainy day fund', a common unemployment insurance scheme, or a budget for the euro area.

In spite of the strong political pressure supporting an active social dimension for the EMU, the Commission decided not to include any concrete legislative proposal for an EU Unemployment Insurance Scheme in its communication on strengthening the social dimension of the Economic and Monetary Union¹⁰.

Figure 1: The road toward a social dimension of the European Monetary Union

- **November 2012:** The Blueprint for a deep and genuine EMU calls for medium-term strengthening of coordination and surveillance of the social and employment dimension in EMU governance, as well as a degree of convergence in this area. The European Parliament in its own-initiative report reiterates that supervision of fiscal discipline in EMU must combine fiscal and macroeconomic standards with social and employment standards. It calls inter alia for the establishment of automatic stabilisers at EU or euro area level.
- **December 2012:** The European Council identifies the reinforcement of the social dimension of EMU, including social dialogue, as a short-term priority for strengthening EMU.

⁸ Commissioner László Andor, 'Developing the social dimension of a deep and genuine Economic and Monetary Union', European Policy Centre, 13 September 2013.

⁹ Available at: <http://www.imf.org/external/pubs/ft/survey/so/2013/CAR092513A.htm>

¹⁰ COM(2013)0690

- **February 2013:** France and Germany publish a document calling for a stronger role for the Employment and Social Policy Council, for social dialogue and for better governance of social Europe. The Commission agrees to develop a scoreboard in the framework of the European semester, and considers including the social dimension in ex ante coordination of major economic reforms.
- **June 2013:** The European Council simply reiterates that the social dimension of EMU must be strengthened.
- **July 2013:** The first ministerial discussion is held on the idea of a scoreboard on the social and employment situation, at the informal Employment and Social Policy Council held in Vilnius. In parallel, the EP's Committee on Employment and Social Affairs organises a public hearing on reasons for and means of establishing an Unemployment Insurance Scheme for the euro area.
- **September 2013:** The EP's Committee on Employment and Social Affairs calls for a feasibility study to be incorporated in the 2014 budget to assess the viability and the advantages of introducing an Unemployment Insurance or Benefit Scheme. The ultimate aim would be to pave the way for the concrete implementation of this idea, as a key component of the social dimension of EMU. On the other side of the Atlantic, the IMF argues that ex ante risk-sharing could reduce the need for costly support afterwards and mentions several possibilities, including a common Unemployment Insurance Scheme.
- **October 2013:** The Commission adopts its communication on strengthening the social dimension of the EMU.
- **January 2014:** The 31 January 2014 plenary of the Committee of the Regions votes all but unanimously in favour of the inclusion of social indicators in the European semester¹¹, and calls on the Commission to come forward with a Green Paper on the issue of automatic stabilisers in order to identify those most relevant to the euro area.

Background and current trends¹²

The consequences of the crisis for the Member States' economies have been twofold. First, increasing numbers of workers have been losing their jobs, and this has fuelled demand for support from the state through compensatory income and social protection. Second, public finances have been put under severe strain, further reducing the government's ability to intervene. The result is that the decreasing flow of social contributions caused by rising unemployment and lower wages has in

¹¹ ECOS-V-050, Opinion on the social dimension of the Economic and Monetary Union, January 2014.

¹² Data source: 'Social partners' involvement in unemployment benefit regimes in Europe', Eurofound 2012.

many cases increased the pressure on the financial sustainability of national unemployment benefit schemes.

Generally speaking, expenditure on labour market policies comprises two types of intervention, namely:

1. **active labour market policies** aimed at helping jobseekers return to employment; and
2. **passive labour market measures** aimed at guaranteeing security of income for those temporarily outside the labour market.

For the latter, a Eurofound report identifies different types of unemployment benefit and social assistance schemes (see Figure 2 below).

Figure 2: Unemployment benefit and social assistance schemes¹³

	MSs	Main qualifying conditions	Benefits	Funding
Unemployment Insurance (UI)	All	- involuntary unemployment - employment record - actively looking for work	(usually) earnings-related	contributions from employer and, sometimes, also employees, often topped up by public expenditure
Unemployment Assistance (UA)	AT, DE, FI, EL, ES, IE, NL, SE, SI, UK	record unemployment insurance expired or not eligible for it - (often) short employment-actively looking for work	social minimum (with exceptions), partly means-tested	contributions from employer and employee and/or public expenditure
Social Assistance (SA)	All except EL	unemployment insurance expired or not eligible for it - (for most categories of claimants) actively looking for work	social minimum, comprehensively means-tested	Taxes

¹³ See above footnote.

Unemployment Insurance (UI) refers to the main unemployment benefit schemes providing insured unemployed persons with some form of replacement income, whether earnings-related or not (in countries such as Poland and the UK benefits take the form of a flat-rate allowance which is not earnings-related).

Unemployment Assistance refers to additional unemployment protection schemes which may complement the main ones. They provide the unemployed who do not qualify for unemployment insurance with either a social minimum, or an allowance based on the recipient's previous income.

Accordingly to the same report, **all Member States, with no exceptions, have modified their unemployment benefits systems** over the last decade. Among these changes, the report identifies six fields:

- **Coverage:** the categories of those who can receive benefits have been changed to a certain extent in almost half of all Member States. These are **changes clearly linked to the onset of the economic crisis and increasing unemployment**, as indicated by the timing and content of the measures adopted. All were introduced after 2007, with the exception of the Netherlands, Bulgaria and Romania, where changes had been made earlier;
- **Eligibility criteria:** in the majority of cases more restrictive criteria for eligibility under the schemes were introduced (e.g. Germany, Austria, Belgium, the Netherlands, Sweden, Spain, Greece, Malta and Slovenia);
- The **duration** of benefits has been prolonged in seven Member States (Bulgaria, the Czech Republic, Lithuania, Romania, Italy and Portugal) and reduced in ten (Denmark, France, Germany, Hungary, Latvia, the Netherlands, Portugal, Romania, and Slovakia).
- **The amount of benefit** has become **more generous** in seven cases (Estonia, Lithuania, Latvia, Romania, Slovenia, Italy and Portugal) and has been lowered in ten (Greece, Hungary, Ireland, Lithuania, Latvia, Portugal, Romania, Slovakia, Sweden and Bulgaria). In Bulgaria, however, it was later restored to its previous level.
- The **financing** of the system has been changed in nine Member States. In five (Cyprus, Estonia, France, Luxembourg, and Sweden) the level of employers' and/or employees' contributions was raised, while in four (Bulgaria, Ireland, the Netherlands and Romania) it was lowered.

In summary, in a context of rising unemployment and given the need to seek a sustainable equilibrium between financial constraints and social pressure, the aim of the changes introduced was primarily to extend coverage while somewhat reducing its generosity.

Therefore, according to the Eurofound report, the configuration of the unemployment benefits systems in the EU Member States could be summarised as follows (not taking account of unemployment insurance schemes, however, since they are present everywhere):

Figure 3: Configuration of unemployment benefits systems in the EU Member States

		Unemployment assistance	
		YES	NO
Social Assistance	YES	AT, EE, FI, FR, HU, IE, LV, NL, PT, ES, SE	BE, CY, CZ, DK, DE, LT, LU, PL, RO, SK, SI, UK
	NO	EL, IT, MT	BG

It is worth mentioning that a significant proportion of Member States are characterised by the operation of two-pillar systems under which the insurance-based form of protection against involuntary unemployment (unemployment insurance) is combined with a universal social protection scheme (social assurance).

Against this background, one may conclude that while the current characteristics of unemployment benefits systems continue to be highly differentiated across Member States (in terms of coverage, duration, replacement rate and funding of schemes) some common features can be certainly identified, notably:

- the dual character of the systems , i.e.: a) insurance-based, funded from contributions; and b) assistance-based, government-funded and intervening only where the person is not entitled to insurance-based benefits;
- means of funding and calculating benefits;
- eligibility criteria (being involuntarily unemployed; having accumulated a minimum amount in contributions; being available to participate in active labour market measures);
- development of active labour market policies to complement unemployment benefits.

A social dimension for the EU Monetary Union

In recent years, academics and researchers have extensively discussed the strengths and weaknesses of a monetary union. In theory one of the main benefits of having a common currency is that exchange rates no longer apply and therefore business transactions should be easier. On the other hand, a monetary union, under certain conditions, is particularly affected by so-called ‘asymmetric shocks’.

Shocks of this kind happen when some countries in a monetary union experience a crisis while others continue to boom. The reasons why these shocks happen might be different (e.g. because production is collapsing in a single country or an incident is affecting one country but not another), but basically they cause capital to be moved from the affected region into those which are experiencing a boom, and this cannot be balanced out by the realignment of exchange rates. The result might be a cyclical trend with countries in crisis being pushed even deeper into recession while the booming ones overheat and might develop bubbles.

Whether a monetary union functions properly or not depends inter alia on how well it can absorb asymmetric shocks, i.e. the extent to which it has the appropriate tools to balance such cyclical trends across its different regions.

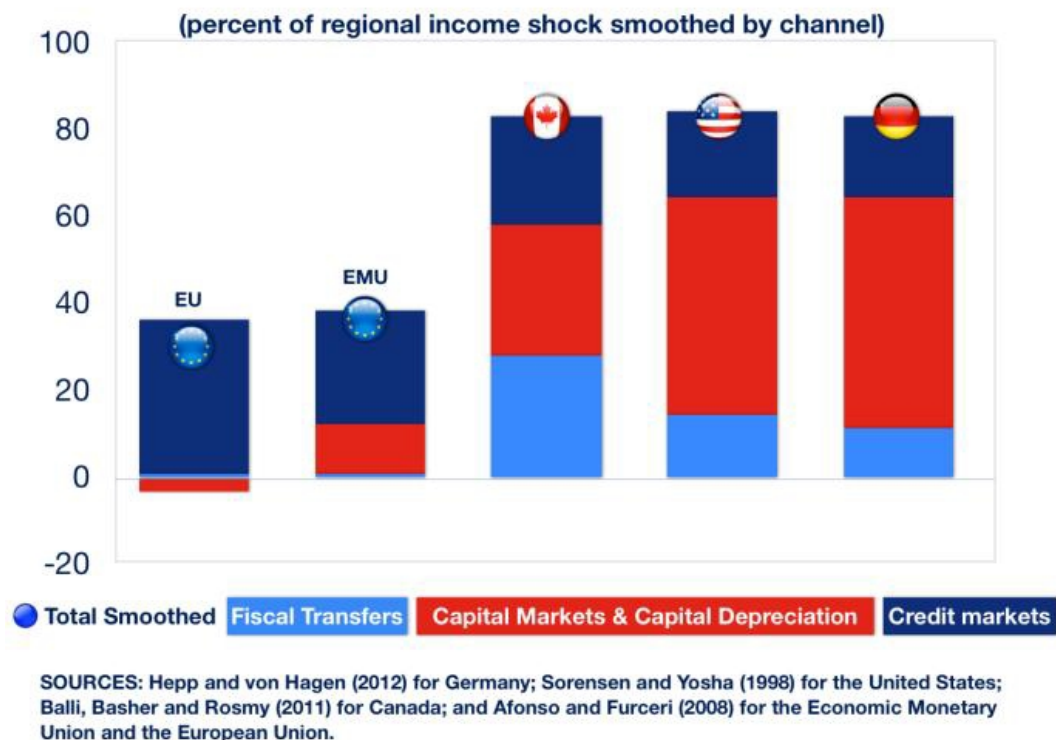
When asymmetric shocks damage an individual country and unemployment rises in a given region, those residents there pay less in tax while at the same time receiving more funds via the social safety net. By contrast, regions experiencing growth pay higher taxes and have lower social expenditure. In theory, the common budget should enable transfer from the booming regions to those in crisis. The rules are established by the government in advance and thus when the crisis happens no further political decisions are generally required. This explains why economists refer to taxes and social expenditure as automatic stabilisers.

At the EU level, automatic stabilisers are lacking: the Union budget is too small, and the existing transfer mechanisms (such as the structural or regional funds) are too rigid to react to cyclical economic downturns, and often apply in practice only after the crisis has severely impacted the economy.

A recent IMF discussion note¹⁴ argues that, contrary to expectations, the launch of the single currency did not make euro area economies more similar over time or more resilient to shocks. Indeed, the euro area lacks the degree of risk-sharing seen in existing federations. While federations such as the US or Canada manage to smooth about 80 % of regional shocks, the euro area only manages to insulate half of that amount, meaning that if GDP contracts by 1 % in a eurozone country, households' consumption in that country is depressed by as much as 0.6 %, as opposed to 0.2 % in the US or Canada.

¹⁴ 'Toward a Fiscal Union for the Euro Area', IMF staff discussion note, September 2013.

Figure 4: Risk-sharing / insurance against income shocks in EMU remains low¹⁵



The IMF paper also notes that ex ante risk-sharing reduces the need for costly support afterwards. So, provided there is better disciplining of national fiscal policies, all euro area countries would benefit from transnational fiscal insurance mechanisms. The paper also suggests a number of options, including setting up a common Unemployment Insurance Scheme.

It is worth noting that, unlike in federal systems such as that of the US, internally mobile labour represents only 3-4 % of the population of the euro area (for a number of reasons, including language and cultural barriers and institutional factors), with the result that labour mobility cannot be expected to significantly alleviate high unemployment in peripheral countries. The consequence is that Member States are left with fiscal policy as the main means of stabilising their economies when hit by country-specific shocks.

Indeed, the 2009 crisis has revealed deficiencies in the current design of the monetary union and has magnified the economic and social consequences of rising unemployment. Insufficient income insurance in the event of unemployment increases the social costs of joblessness, but also has reinforced the downturn via its effect on consumption and aggregate demand. Further problems are likely to arise,

¹⁵ 'Toward a Fiscal Union for the Euro Area', IMF staff discussion note, September 2013.

since a prolonged crisis inevitably implies that increasing numbers of people will be long-term unemployed and will thus see their benefit eligibility expire.

One should also mention the permanent risk that in the absence of exchange rate flexibility, social standards may be used as factors of adjustment in a case of asymmetric shock, eventually leading to an EMU-wide 'race to the bottom' (with those Member States with the lowest social standards becoming the most competitive in terms of production costs).

Economic recovery in the US

The Commission communication on the social dimension of the EMU adopted in October 2013 did not include a project for an Unemployment Insurance Scheme project for the euro area, but did present the theoretical premise of such a system. This communication drew inspiration from the US unemployment insurance system which was created a few years after the 1929 stock market crash, to illustrate a vision of a future euro area with its own budget.

It has to be said that for some this vision remains an unrealistic option because substantial treaty changes would be needed.

In the US, unemployment insurance cover operates at state level. However, since 1935 a federal programme has been in place to support the authorities through the collection of local and federal taxes. In cases of severe recession, Congress can put in place temporary programmes for extending allocations, as was the case in 2002 and 2008. This allows the unemployed to continue to receive unemployment allocations even beyond the statutory period, which corresponds on average to 26 weeks. These temporary measures are funded up to a maximum of 50 % from the federal budget. This structure provides the US with a flexible automatic stabilisation instrument when crises strike¹⁶.

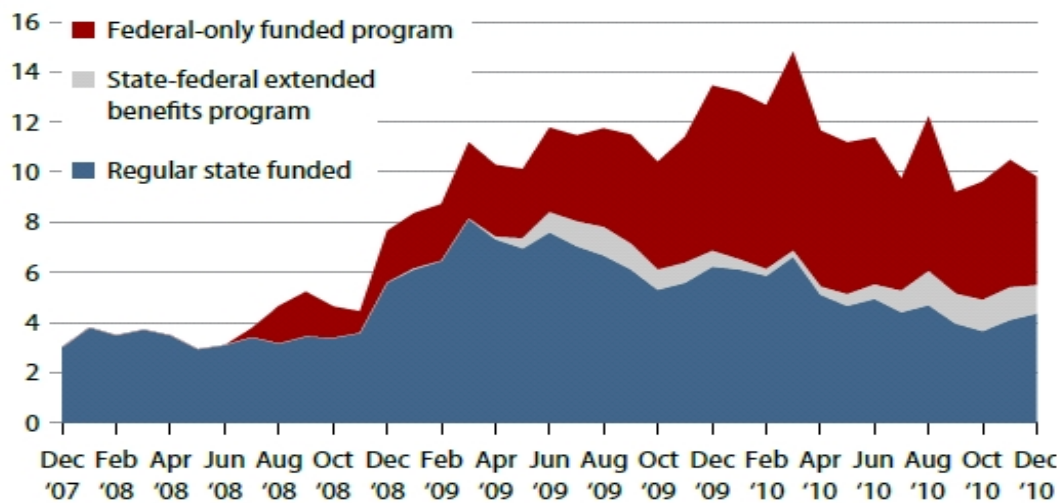
Figure 5: Key elements of the US unemployment insurance system

- States remain free to decide eligibility conditions, benefit amounts and duration;
- States pay unemployment benefits during normal business cycles while federal sources intervene to provide support during economic downturns;
- During downturns, two different schemes exist; one which is automatically triggered and another which requires a political decision to be activated;
- The risk of permanent transfers to individual states is dealt by an automatic deficit reduction mechanism in respect of state accounts at the federal level.

¹⁶ Antipoverty Effects of Unemployment Insurance, an US Congressional Research Study, 2013

Part of the added value offered by the federal system lies in the possibility of extending benefits exceptionally in case of severe recession in one or more states, i.e. when the stabilisation tool is most needed. This happens via the **extended and emergency benefits**, with the former being partially and the latter completely financed at the federal level.

Figure 6: Total unemployment insurance benefits paid by month and type of programme in the US¹⁷



If in principle this rule constitutes a safe backup for a system that is not very generous (at least by European standards), this is something that could hardly be implemented in a European context. The reason is that such extensions require quick decision-making, which is more difficult to implement in Europe given the multi-level nature of governance and the need to apply the subsidiarity principle.

A less-remarked but interesting aspect of the US system is its capacity to strike a balance vis-à-vis individual states over the cycle: each state can indeed borrow from the federal cash pot in hard times, but these remain as loans and as such need to be returned. This in principle ensures that the objective of stabilising income when most needed is not missed, but at the same time avoids free-riding. If a state is unable to repay the loan, the employers' contribution is automatically raised.

Unlike in most European countries, the US version of unemployment insurance scheme is therefore fully financed by employers. The mechanism is based on the principle that those that fire more also need to contribute more to the fund. For the firms' side of the labour market, although not perfect, the system is organised as a form of insurance, meaning that companies are obliged to provide severance

¹⁷ Source: Boushey and Eizenga, 2011.

payments to workers and, to be able to do so, insure themselves against the risk of firing a certain number of workers. From the employees' point of view the benefits appear, rather, as social assistance in the form of income protection.

All in all, the US system is particularly interesting, not only thanks to the comparability of the US and European labour markets in terms of size and skills levels, but even more so because of the mix of three compromises/results:

- stabilisation capacity based on short-term support, combined with the possibility for each state to borrow from the central cash pot if necessary;
- creation of a common minimum standard, in terms not of provision or each state being free to set its optimal level of protection, but of the level of employers' contribution required to finance the policy;
- experience rating, which punishes companies that fire more.

Figure 7: A case study - economic recovery in California¹⁸

The recent economic crisis was the longest on record since the Great Depression. In California, nearly seven out of ten unemployed workers received unemployment insurance benefits which covered on average about one-third of a worker's weekly pay. This insurance safety net was crucial for families to be able to pay for basics such as rent or mortgage payments, food or heating bills. A research carried out by the Institute for Research and Labour Employment at the Berkeley University in California found that unemployment insurance benefits provided one of the most effective and efficient means to address economic woes imposed by joblessness. In particular, unemployed workers quickly receive funds to help make ends meet, and aggregate unemployment insurance spending acts as an automatic stabiliser for the larger economy.

In California, unemployment insurance benefits:

- helped approximately **1.5 million workers and their families afford basic necessities** in 2009;
- **kept nearly 500 000 Californians out of poverty**; and
- resulted in spending that **supported 161 000 jobs in the state**.

According to the research, without this safety net the severity of the crisis would have been deeper, unemployment would have been greater, state and local tax revenue would have been lower, and the economic hardship faced by families would have been more severe.

Indeed, unemployment insurance benefits not only helped families but also served as stimulus for the broader economy. The research estimated that **every additional USD 1 spent on unemployment insurance benefits in California increased state GDP by USD 1.56**.

¹⁸ S. Allegretto and L. Lucia: Unemployment Benefits Critical to Jobless Workers and Economic Recovery in California, University of California, Berkeley, 2011

The Cost of Non-Europe for the Unemployment Insurance Scheme

In the specific context of this report, the cost of non-Europe has been considered from two main perspectives: **economic** and **political**.

The **economic perspective** usually refers to the costs incurred by reason of a number of shortcomings - not achieving economies of scale, not tackling market failures, not appropriately supporting public goods, etc.

The **political perspective** considers the legitimacy of policy choices and the interests of different stakeholders, and may be grounded in considerations that relate less to economic efficiency (e.g. not all interventions that deliver EU public goods are cost-effective) than to political needs, such as solidarity or the need to reinforce EU global leadership.

From a purely economic point of view, the purpose of an unemployment insurance scheme is to provide a counter-cyclical stabilisation mechanism for the economy in order to alleviate the pain of unemployment by providing income security.

Empirical evidence suggests that the exact design of such a scheme matters, but it is also of the utmost importance to complement the scheme by active labour market policies. Indeed, the exact design is important, and careful consideration should at least be given to such elements as the coordination issue, fiscal constraints, and the triggering of the instrument.

Economic theory suggests that problems arise in a monetary union when an asymmetric shock occurs. When an asymmetric shock has a negative impact in country A but a positive impact in country B, unemployment increases in the former and goes down in the latter. In such a case, two mechanisms can potentially lead to automatic re-equilibration, namely wage flexibility and mobility of labour.

How, then, does unemployment insurance interfere with each of those two factors? Will it facilitate or hinder wage flexibility and labour mobility? Would this change if such insurance were organised at the European level?

In principle, a national unemployment insurance scheme will hamper both adjustment mechanisms. The existence of the benefit will keep the reserve wage at a certain level, higher or lower depending on the replacement rate. The national unemployment insurance scheme will also limit cross-border mobility by reducing the incentive to look for a job in another country, as to do so unemployed workers may need to give up their benefits.

This problem would be solved if a European system were in place: unemployed workers could receive benefit independently of the country in which they are looking for a job. With regard to the first issue – the reserve wage – it does not matter for purposes of adjustment in the recession country whether the benefit is paid at national or European level.

Figure 8: Engler and Voigts scenario¹⁹

A recently published article by P. Engler and S. Voigts analyses how a transfer mechanism would affect different economies. The authors looked at different scenarios: a) countries pursuing an independent monetary policy and operating flexible exchange rates; and b) countries in a monetary union, with their economies more integrated in real economic terms and, ultimately, a compensation mechanism existing between countries.

The study shows that a monetary union formed by economies that are not perfectly integrated may experience high volatility and asymmetric business cycles when those economies are hit by asymmetric shocks. Such shocks are much more effectively absorbed when a transfer system is introduced, by comparison with a scenario in which countries operate a purely national fiscal policy. Thus, the authors propose a transfer mechanism that can limit those effects, arguing that this option might function pending the achievement of deeper trade, financial and labour market integration.

This transfer mechanism is very similar to an unemployment insurance scheme. Indeed, when country A booms while country B contracts, a transfer from A to B sets in. According to this analysis, assuming that country-specific shocks are random in nature, each Member State would be both recipient and donor over the business cycle, so that over time payments made and payments received would eventually be balanced out.

However, to what extent are asymmetric shocks actually likely to occur in Europe?

The academic literature suggests that this is a recurrent issue in Europe. Asymmetric shocks seem to be a matter of regularity, and it is only their significance that varies. Indeed, the differences between European economies (e.g. specialisation of production, labour market regulation, demographics, and national macroeconomic policies) make national economies react differently to external shocks.

¹⁹ P. Engler and S. Voigts, 'A Transfer Mechanism for a Monetary Union', Freie Universität Berlin, 2013

While the evidence suggests that booms and busts occur very regularly in an unequal pattern across Europe, it is also true that the dispersal of national- specific growth does not tend to create a common approach to the issue at European level. Thus, it is not excluded that the still considerable differences between economies could easily cause new imbalances in the future.

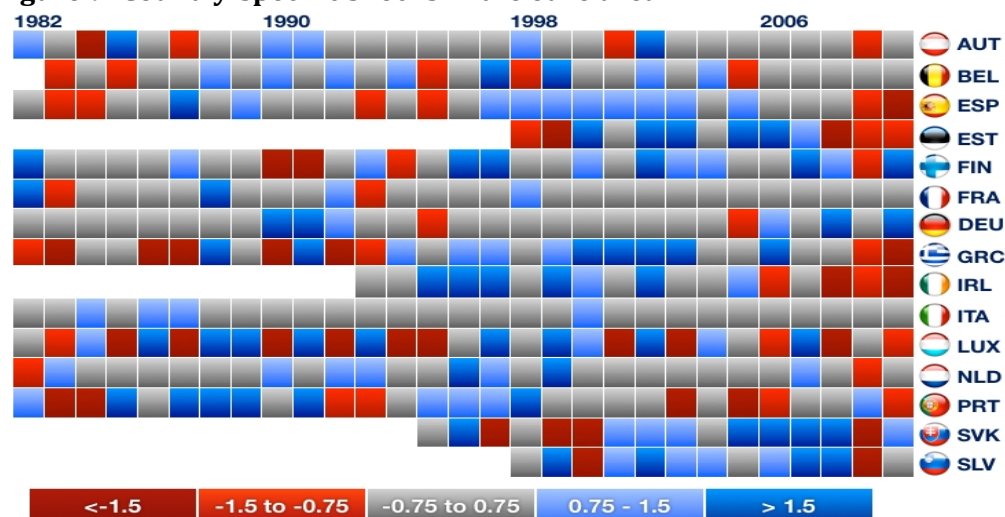
Even though the common currency has increased integration, there remain many potential sources of asymmetric shocks.

Against this background one could think about more coordination at euro area level, or far-reaching structural reforms that may lower the risk of asymmetric shocks.

In 2013, P. De Grauwe observed that while monetary policy has been centralised, the rest of macroeconomic policy has remained in national hands and has produced idiosyncratic movements unconstrained by the existence of a common currency:

‘Hence, there are few policy options to bring national booms and busts into line with any kind of European development. Even worse, the common interest rate that may be too low for booming countries and too high for countries in recession even exacerbates asymmetric developments. Therefore, at first the convergence process in Europe has to be finished. And already that process appears to be asymmetric itself’.²⁰

Figure 9: Country-specific shocks in the euro area



SOURCE: OECD and IMF staff calculations

NOTE: The idiosyncratic growth shocks are derived as the part of the country-specific growth shocks that are not explained by euro area-wide growth shocks. Growth shocks (both for the euro area and individual countries) are computed as the residuals of the growth rate regressed over two lags.

Source: Allard et al. (2013).

²⁰ P. De Grauwe, 'The legacy of austerity in the Eurozone', CEPS, October 2013

The case of symmetric shocks is more straightforward and poses fewer challenges to policymakers. In case of recession, the main decision to be taken is whether to take measures to reduce government spending or to take measures which use fiscal or monetary stimulus (or a combination of the two) such as the establishment of an unemployment insurance scheme. Yet, because of the specific nature of the European set-up, suboptimal equilibria may also be the outcome in this case owing to the fact that the former stimulus (fiscal) is decided at the national level and the latter (monetary) by a supranational institution – the European Central Bank – with an independent mandate. A euro area unemployment insurance scheme could therefore solve this coordination problem by relying on an automatic stabiliser.

According to Annex I to the present report, alongside risk of asymmetric shocks and coordination failures there is a third macroeconomic argument which may justify the need for EU/EMU-wide automatic stabilisers, namely tough budget constraints.

The euro area crisis showed that risk premiums on sovereign debt can diverge significantly. Starting from 2010, it became not only difficult but also very expensive for sovereigns on the periphery of Europe to borrow on the market. High interest rates therefore make the financing of public expenditure, which can easily include expenditure on labour market policies in times of high unemployment, very expensive. A government facing tough fiscal constraints may consequently be obliged to cut income support measures at a time when they are needed the most, that is, when unemployment is increasing and vacancies are limited. Moreover, there is a possibility for large shocks to become self-sustaining through pro-cyclical fiscal policy and a negative feedback loop. Backstopping national systems could be a way of preventing such a feedback loop from developing.

The creation of a supranational fund (in whatever form) whereby countries and/or workers and employers contribute during good times could avoid such a trap. In this case, the funding of passive labour market policies would come from a supranational authority and would therefore not be a burden on national budgets, as countries would have to contribute to it only during upswings.

In addition to the purely economic aspects, one also needs to consider political and social concerns, and specifically the existence of a form of European solidarity and redistribution within the European Union. Would the scheme also have a **political and social added value**?

The introduction of an unemployment insurance scheme would demonstrate European solidarity in a visible and tangible way for EU citizens on a permanent basis (unlike some other more abstract European interventions). Indeed, the crisis has been a testing time for European ideals and for the credibility of both national and European institutions in the eyes of EU citizens.

Moreover, in monetary union countries cannot cut the exchange rate in order to regain competitiveness, and are thus often tempted to cut direct labour costs. Therefore, the risk of social dumping is high and may lead to a 'race to the bottom' situation in which Member States seek to boost growth by competing inter alia to reduce social standards. Indeed, recent experience shows that in an economic and monetary union affected by asymmetric shocks the risk of social dismantling has dramatically increased²¹.

One should also consider that, by comparison with what happens in the case of national unemployment insurance alone, an additional stabilisation of economic activity occurs because national public finances are retrieved. Without payments from the EU unemployment scheme, national social security contributions would have to be increased during a downturn, or else other government spending would have to be cut.

The cycle-smoothing effect of the mechanism permits stabilisation of the social situation in the Member States affected by the crisis and helps fiscal policy to focus on structural balances, since a significant part of the cycle is thus removed.

Indeed, with a downturn in a given economy and a rise in unemployment, the contributions of the country concerned to the EU unemployment insurance scheme would decrease because aggregate wages would have fallen. At the same time, payments from the unemployment insurance scheme to the affected country would increase because of rising numbers of short-term unemployed.

Finally, one could also mention the issue of common standards in social policy. This issue remains controversial in European affairs and is in the end a political choice. In the case of the EU unemployment insurance scheme, the issue of common standards can cut both ways. One could argue for minimum standards in order to prevent social dumping and guarantee equal social rights. By the same token, one could argue for 'maximum' standards to prevent hysteresis and moral hazard.

Figure 10: Added value of an unemployment insurance scheme at EU level²²

- transnational insurance;
- balancing the effects of the completion of the single market in order to avoid social competition between Member States;
- limiting severe economic crisis: automatic stabilisers contribute to stabilisation of the aggregate economy via its stabilising effect on disposable income and hence private consumption and aggregate demand;

²¹ S. Fernandes and K. Maslaukaite, 'A social dimension for the EMU: Why and How?', Notre Europe - Jacques Delors Institute, September 2013

²² S. Fernandes, and K. Maslaukaite: 'A social dimension for the EMU: Why and How?', Notre Europe-Jacques Delors Institute, September 2013

- propping up demand in the regions in crisis and preventing the development of bubbles in the booming regions;
- ex ante support, i.e. support before shocks become funding crises;
- limiting unemployment support to a cut-off point in time (12 or 18 months) would ensure that the EU unemployment insurance scheme only funds short-term unemployment caused by the economic cycle (thus not leading to permanent financial transfers to certain Member States);
- well-targeted stimulus, as the insurance scheme would intervene in areas where unemployment is higher;
- automatic stabilisers cushion individual disposable income, and therefore serve an insurance function which has a direct positive welfare effect for risk-averse agents;
- an unemployment insurance scheme would reduce pressure to use social policies as an adjustment variable in the case of asymmetric shocks (avoid 'race to the bottom');
- in a context of economic downturn, it would demonstrate European solidarity in a visible and tangible way to EU citizens.

All these arguments could be applicable at EU-28 level. Indeed all Member States except the UK and Denmark are expected to join the monetary union sooner or later. Therefore, from a long-term perspective the debate on the social dimension of the EMU might concern 26 out of 28 Member States.

The current economic and political situation explains why the attractive properties of unemployment insurance schemes, at the level of both the individual (insurance) and society (aggregate stability, distribution) have become a source of renewed interest. However, in order to ensure that policymakers are informed the **potential risks** of such a scheme should also be mentioned.

One of the most important risks is certainly linked to the willingness of the Member States to introduce costly or unpopular reforms of the labour market (just to mention one example), given the fact that short-term unemployment costs would be met (partially or totally) by the newly created mechanism. In such cases, the key question would be to what extent it's functioning should be based on conditionality. One can certainly imagine that any transfer to a recipient country could carry with it an obligation to pursue active labour policies, for instance by strengthening public employment services.

Some argue that this risk seems unlikely to occur because introducing such a scheme for short-term unemployment only would to an extent ensure that national governments could not neglect essential measures for reducing structural unemployment.

The other risk to be mentioned is the possible permanent transfer between individual countries within the monetary union that would not balance out over the economic cycle. This could be avoided by introducing a condition of contributing to the mechanism for a period of time before being able to benefit from it. However, it is worth mentioning that the main purpose of the scheme should be to dampen asymmetric shocks, and not to achieve balance of income or living standards among the Member States. Indeed, in the latter case the risk is high that certain Member States would systematically become recipient countries and that the incentive for implementing structural reforms would be severely reduced.

There is also a strong concern that any debt mutualisation would lead to moral hazard (i.e. the risk that recipient countries may behave irresponsibly in the future in the belief that they will again receive help in case of need), thus sapping Member States' motivation to undertake prudent domestic policies in the future.

Another risk is that Member States would not spend the amounts saved in their national unemployment systems, for example on growth-inducing reforms aimed at tackling the causes of their high unemployment rates, but would use them instead to consolidate their budgets.

Figure 11: Summary of main risks of an unemployment insurance scheme at EU level

- In the absence of any conditionality, 'free-riding' would remain a risk (i.e. Member States may be tempted to implement riskier policies);
- A result could be permanent transfers between individual countries within the monetary union that would not balance out over the economic cycle;
- Member States could be less inclined to implement difficult reforms or adjustment measures if they knew that the unemployment insurance scheme would provide support;
- Member States would be tempted to spend the savings achieved not on financing growth measures but on consolidating their budgets.

Having considered the benefits and possible risks of an unemployment insurance scheme, we will now examine what the scheme might actually look like.

The objectives of unemployment insurance appear to be similar in many countries; it provides income support in the form of weekly/monthly payments to recently laid-off workers to enable them to seek new employment. Yet despite this common ground, unemployment insurance schemes can vary substantially in such aspects as eligibility conditions, level and duration of benefits, type of administration, etc. Therefore, the design and practical implementation of such a scheme will have to be discussed in great detail by policymakers.

The purpose of this 'Cost of Non-Europe' report is certainly not to replace policy decisions. However, on the basis of the extensive literature available on the subject a number of theoretical conclusions can be drawn.

Ideally, any unemployment insurance scheme would be:

- ✓ **limited in time** (e.g. up to 12 or 18 months);
- ✓ **linked to prior contribution** (e.g. Member States should contribute to the scheme before they can benefit from it);
- ✓ **designed around the average national wage level**: indeed, a fixed amount would be suboptimal, *inter alia*, from an incentive perspective²³;
- ✓ **designed to avoid permanent financial flows between Member States** (e.g. from northern to southern Member States);
- ✓ **designed to avoid moral hazard** through a link to conditionality principles (e.g. to labour market reforms or other structural reforms);
- ✓ **simple**, in order to avoid a disproportionate increase in the administrative burden on Member States' existing systems;
- ✓ **linked to an economic indicator** such as the short-term unemployment rate or the output gap;
- ✓ **automatic (i.e. able to react quickly to changes in the labour market situation)**, meaning that time-gaps will not occur because of a need to take and implement political decisions;
- ✓ **robust**, meaning that Member States should not be able to induce payment flows by altering certain details such as their national labour statistics;
- ✓ **broad**, meaning that the scheme should cover as many workers as possible so as to maximise the stabilisation effects;

Finally, **transfers should be earmarked for expenditure on unemployment benefit**, because unemployment responds quickly to the economic cycle, and benefit recipients are more likely to reinforce aggregate demand in the real economy. Moreover, if the amounts are not earmarked Member States might use them to reduce their debt or deficit or spend them on actions which are not supportive of economic recovery.

Simulation exercise

In order to show in practice how an unemployment insurance scheme could work at EU level, this section presents a range of estimates of stabilisation effects for episodes of major distress of sufficient severity to trigger assistance.

With a view to offering a design for a possible scheme and before starting with the calculation of possible benefits (if any), some key elements are analysed in depth in

²³ 'A euro-area wide unemployment insurance as an automatic stabilizer: who benefits and who pays?' - paper prepared for the Commission by S. Dullien, revised version, January 2013.

Annex I. Indeed, the choice of indicator to trigger the scheme, the possibility of setting common standards, the fiscal rule, and, obviously, funding are all of major importance, not only from a theoretical point of view but also for purposes of calculation.

That said, the concrete design of the unemployment insurance scheme remains ultimately a policy choice: the objective of this document is accordingly limited purely to presenting the various options with their advantages and drawbacks, and in no way does it recommend any of them in particular.

For the purpose of the report two main options for a European system of unemployment benefits have been considered.

- Option 1 is a system of harmonised European unemployment benefit, which would cover all eligible EU citizens and would at least partially replace current national unemployment insurance.
- Option 2 is a system of catastrophic unemployment insurance for Member States, whereby national unemployment insurance systems would remain intact and Member States would receive financial assistance from the EU system only if they were experiencing a large negative unemployment shock.

Regarding the key elements mentioned above, the main conclusions of the analysis carried out in Annex I can be summarised as follow:

On the indicator to trigger the scheme:

Indicator	Pros	Cons
Short-term unemployment rate	Clear and unambiguous; fast response to shock	Higher variability across European countries
Unemployment gap	Better captures longer- term impact of the shock	Ex-post revisions; difficulty in setting up benchmark
The simulation uses the unemployment gap for the catastrophic insurance option and short-term unemployment for the harmonised system option.		

On the funding of the scheme:

	Pros	Cons
Funding by labour taxation	Direct link between revenue and benefits, both individually and nationally	Can increase labour tax wedge in countries with already high labour taxation
Funding by national fiscal contribution	Does not contribute to increasing labour tax wedge	Does not provide a direct link between revenue and benefits

The simulation offers two alternative approaches, in line with the logic of the two basic options - the harmonised unemployment benefit option relies on direct labour taxation; the catastrophic insurance option is based on general subsidy from national governments.

On the **fiscal rule**:

	Pros	Cons
Annual balance	Simplicity; no need to deal with borrowing capacity	Unable to respond to the frequent combination of symmetric and asymmetric shocks; consequently likely to provide least support when most needed
No fiscal rule	Simplicity Strongly anticyclical, especially in sustained downturns	Open-ended commitment for Member States – difficult both politically and technically
Balanced over the economic cycle	A combination of countercyclical policy with constraints on overall cost and contribution	Technically more complex than the other two options
The simulation will work with two options: 1) no fiscal rule; 2) balanced over the economic cycle.		

On the extent to which there should be **harmonisation of the national standards** for unemployment benefits and **conditionality** for recourse to the EU scheme:

	Pros	Cons
Common unemployment benefit standards	Clarity Strong signal of Social Europe for citizens	Requires politically challenging unification Provides less scope for incorporating national preferences
Conditionality of use of EUI	Strong anticyclical impact guaranteed Higher political/social support	Alternative uses by national governments might be more efficient Can create imbalances in generosity/coverage between the European system and other national parts of a benefit system Lack of democratic accountability of the authority imposing reforms
The simulation provides two alternative approaches in line with the logic of the two basic options: the harmonised unemployment benefit option relies on common standards and conditionality; the catastrophic insurance option provides leeway for national governments on both fronts.		

The calculations are made only for major²⁴ shocks, as national governments are considered able to weather minor shocks on their own. The stabilisation effects are obtained by combining the net inflow from the unemployment insurance scheme with a multiplier. Indeed, since the time of Keynes economists have believed that public expenditure generates an input to growth that is higher than the expenditure itself due to the so-called ‘multiplier effect’. This multiplier varies with the type of expenditure as well as the characteristics of the economy.

For the calculations, the six Member States which suffered most during the recent recession (Estonia, Greece, Ireland, Latvia, Lithuania and Spain) were examined. This approach makes it possible to calculate the added value which would have been brought by the European mechanism had it existed at the time.

For both unemployment benefits systems, a basic version (a) and an alternative version (b) with long-term country-level budgetary neutrality were considered. This second version refers to schemes accompanied by fiscal rules allowing deficits and surpluses each year but with the obligation to restore a fiscal balance over the cycle.

Figure 12: Matrix of scenarios explored in this section²⁵

	No long-term country-level budgetary neutrality	Long-term country-level budgetary neutrality
Harmonised European unemployment benefit	Option 1a	Option 1b
Catastrophic unemployment insurance	Option 2a	Option 2b

How was the multiplier fixed?

Deciding on the multiplier is not a straight forward task. As shown in the figure below, estimates provided by the literature on this issue vary between USD 0.7 and USD 3 for every USD 1 spent on unemployment insurance. One should also consider that most studies analyse the US example, which is the closest to the European one in terms of size among advanced economies, but cannot be considered identical given that the US economy is structurally different. Despite such complications, a multiplier of 1.5 was considered to be safe, being a conservative estimate close to the studies selected for the purpose of this report.

²⁴ A major shock is considered to be a downturn that results in an unemployment rate higher than 2%+ the country's non-accelerating wage rate of unemployment (NAWRU).

²⁵ Data source: Annex I - CEPS, Cost of Non-Europe of the absence of an Unemployment Insurance Scheme for the euro area, March 2014.

Figure 13: Size of stabilisation impacts in the relevant literature²⁶

According to recent literature, among the different categories of public expenditure unemployment benefits emerge with significant positive impacts.

First, they kick in automatically, as soon as unemployment starts soaring and workers who lose their jobs apply for them.

A second key advantage is that this type of expenditure goes where it is most needed: to support the consumption capacity of households whose labour income has suddenly vanished.

Quantifying the effect on economic growth, however, is extremely challenging, as witnessed by the fact that studies do not agree, inter alia, on the multiplier enabling quantification of effects.

In 2008, Zandi calculated that in the United States, a USD 1 increase in unemployment benefits could generate USD 1.64 in near-term GDP.

In 2010, Vroman considered this impact to be larger: every USD 1 spent on unemployment insurance would increase economic activity by USD 2.

An older study by the US Department of Labor estimates that on average USD 1 of unemployment insurance benefit generated GDP growth of USD 2.15.

In 2010, Monacelli et al. confirmed that ‘in response to an increase in government spending normalised to 1 % of GDP, we estimate an output multiplier well above one, in the range of 1.2-1.5 (at one-year and two-year horizon respectively)’.

Less precise is a recent estimate by the US Congressional Budget Office (2010) according to which increasing aid to the unemployed by USD 1 had the result of increasing GDP by between USD 0.7 and 1.9 during the period 2010-2015.

This multiplier was then combined with the hypothetical net inflow from the European unemployment insurance fund (the two options presented) for the period 2008-2012.

Episodes of major distress were analysed, where the value added of the European unemployment insurance scheme would have been most relevant. Since the net inflow during such episodes is identical for the harmonised and the catastrophic options, the differences between Option 1 (harmonised scheme) and Option 2 (catastrophic insurance) were not looked at: under the circumstances of major

²⁶ Annex I - CEPS, Cost of Non-Europe of the absence of an Unemployment Insurance Scheme for the euro area, March 2014.

shocks they would produce identical results. The results of the calculations are shown in the figure below.

Figure 14: Example of stabilisation effect of the unemployment insurance scheme at EU level in selected countries²⁷

Country	2008	2009	2010	2011	2012	SUM
Estonia	0.00	1.15	0.89	-0.15	-0.15	1.74
Greece	0.00	0.00	-0.15	0.81	0.95	1.60
Ireland	0.00	0.85	0.55	0.41	0.37	2.19
Latvia	0.00	1.34	0.86	0.20	0.19	2.59
Lithuania	0.00	1.09	0.60	0.21	0.14	2.04
Spain	0.00	1.79	1.54	1.26	1.49	6.08

The case of Spain is emblematic, since for that country the net inflow, multiplied by the fiscal multiplier of unemployment benefits, would have generated an additional output equal to between EUR 13 and 19 billion every year, starting from 2009. This is equal to 1.3 % to 1.8 % of GDP.

Another interesting case is that of the Baltic states, where the combined effect of the European unemployment insurance scheme and its (assumed) multiplier would have stood at just above 1 % of GDP in 2009. However, this figure declines faster than in Spain thanks to the faster recovery of the three Baltic economies. In Greece, the European mechanism would have kicked in later, and, owing to the increase in unemployment, the total impact on the economy would have been just under 1% of GDP.

Figure 15: Stabilisation effect of the unemployment insurance scheme

Country	Sum (% GDP)	EUR Million
Estonia	1.74	303
Greece	1.60	3093
Ireland	2.19	3590
Latvia	2.59	576
Lithuania	2.04	672
Spain	6.08	62 536
Total		70 770

Thus, on the basis of the scenario developed such a scheme **would have reduced GDP loss in the most affected Member States by EUR 71 billion** over the period 2009-2012 (a reduction equivalent to EUR 17 billion per year).

²⁷ Annex I - CEPS, Cost of Non-Europe of the absence of an Unemployment Insurance Scheme for the euro area, March 2014.

Conclusion

This Cost of Non-Europe report points to clear added value, in economic and social terms, for a European Unemployment Insurance Scheme.

The simulation exercise which was carried out shows that an Unemployment Insurance Scheme for the euro area could have positive stabilisation impacts amounting to **EUR 17 billion per year**.

What the scheme would look like in detail and to what extent it can contribute to the sustainability of the EU Monetary Union and its democratic legitimacy are questions which need to be addressed by policy makers. The practical design of such a system (including such aspects as eligibility conditions, duration, financing, level of benefits and the possibility of running deficits) needs to be discussed and clearly defined.

An Unemployment Insurance Scheme for the euro area will not of itself solve future financial crises. Its aim is, rather, to provide greater stability for the EU Monetary Union in the medium and long term. Fiscal discipline, banking union and a sufficient level of competitiveness remain the crucial elements for avoiding asymmetric shocks and preventing output losses.

The Cost of Non-Europe

Common unemployment insurance scheme for the euro area

ANNEX I

Simulation exercise

**Study
by CEPS**

Abstract

An EU-level unemployment insurance mechanism could act as a shock absorber to cushion both asymmetric and symmetric shocks to the economy, and thus overcome coordination failures and individual country's crisis budget constraints. From a political and social point of view, it could also demonstrate European solidarity in a visible and tangible way to EU citizens, introduce a mechanism for permanent/ long-term redistribution across the EU and common standards for unemployment support, and support labour mobility within the EU/euro area.

Our proposals address the shock absorber rationale as the principal rationale for a European unemployment insurance system (EUI), though to provide variety on more contested issues, some proposals address the rationales of demonstrating European solidarity for EU citizens and providing common standards. The proposals do not seek, as an overriding rationale, to promote permanent/long-term redistribution across the EU, and the issue of supporting labour mobility within the EU/euro area is largely left out of this analysis.

AUTHOR

This study has been written by **CEPS**, at the request of the European Added Value Unit, of the Directorate for Impact Assessment and European Added Value, within the Directorate-General for Parliamentary Research Services (DG EPRS) of the European Parliament. The lead author, **Miroslav Beblavý**, was aided by Ilaria Maselli. Matthias Busse and Elisa Martellucci, who provided research assistance and some drafting of the text. Daniel Gros provided intellectual oversight and several key ideas.

RESPONSIBLE ADMINISTRATOR

Micaela Del Monte, European Added Value Unit

To contact the Unit, please e-mail eava-secretariat@europarl.europa.eu

LINGUISTIC VERSIONS

Original: EN

DISCLAIMER

The content of this document is the sole responsibility of the author and any opinions expressed therein do not necessarily represent the official position of the European Parliament. It is addressed to the Members and staff of the EP for their parliamentary work. Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the European Parliament is given prior notice and sent a copy.

Manuscript completed in June 2014. Brussels © European Union, 2014.

ISBN: 978-92-823-5450-6

DOI: 10.2861/54453

CAT: QA-02-14-276-EN-C

Contents

List of abbreviations	7
Executive summary.....	7
1. Introduction.....	15
2. Existing situation	17
2.1 Brief summary of national systems	17
2.2 Coordination of existing national systems	20
2.3 European funds.....	23
2.4 The US system of unemployment insurance	26
2.5 Potential economic, political and social rationale for EU action on unemployment benefits	30
2.6 Summary of existing proposals	35
3. Outline of main trade-offs and challenges	39
3.1 What situations should it cover? What should be the trigger?	40
3.2 What should be the fiscal rule for the EUI and the country contributions? ...	44
3.3 Should there be common EU standards for unemployment benefits?	46
3.4 Additional technical issues.....	48
4. European unemployment insurance: Simulation results.....	53
4.1 Option 1: Harmonised European unemployment benefit.....	57
4.2 The catastrophic unemployment insurance system.....	66
4.3 Comparisons of options.....	75
4.4 Impact of the EUI on stabilisation and growth	86
Selected references	89

List of figures

Figure 1. Out-of-work income maintenance and support, as % of GDP (average 2005-2011).....	19
Figure 2. Total unemployment insurance benefits paid by month and type of programme in the US	29
Figure 3. Country specific shocks in the euro area	32
Figure 4. Net contributors to EU budget 2012, as % of GDP	34
Figure 5. Out-of-work income maintenance and support, % of GDP (average 2005-2011).....	39

Figure 6. Short-term unemployment in Europe	42
Figure 7. Tax wedge by family type, 2012.....	50
Figure 8. Revenue and expenditure at the EU level as % of GDP.....	62
Figure 9. Annual and cumulative balance at the EU level as % of GDP	63
Figure 10. Revenue and expenditure at the EU level, % of GDP.....	66
Figure 11. Annual and cumulative balance at the EU level, % of GDP	66
Figure 12. EUI annual revenues for each country, % of GDP	68
Figure 13. Revenue and expenditure at the EU level, % of GDP.....	71
Figure 14. Annual and cumulative balance at the EU level, % of GDP	72
Figure 15. Revenue and expenditure at the EU level, % of GDP.....	75
Figure 16. Annual and cumulative balance at the EU level, % of GDP	75
Figure 17. EUI revenues and expenditure under various options, as % of GDP	76
Figure 18. EUI annual and cumulative balance of the EU under various options, % of GDP.....	77
Figure 19. EUI revenues and expenditure paid by and to Spain under various options, as % of GDP.....	78
Figure 20. EUI annual and cumulative balance of Spain under various options, % of GDP.....	79
Figure 21. EUI revenues and expenditure paid by and to Greece under various options, as % of GDP.....	79
Figure 22. EUI annual and cumulative balance of Greece under various options, % of GDP.....	80
Figure 23. EUI revenues and expenditure paid by and to Latvia under various options, as % of GDP.....	81
Figure 24. EUI annual and cumulative balance of Latvia under various options, % of GDP.....	81
Figure 25. EUI revenues and expenditure paid by and to Ireland under various options, as % of GDP.....	82
Figure 26. EUI annual and cumulative balance of Ireland under various options, % of GDP.....	83
Figure 27. EUI revenues and expenditure paid by and to the Netherlands under various options, as % of GDP	83
Figure 28. EUI annual and cumulative balance of the Netherlands under various options, % of GDP	84
Figure 29. EUI revenues and expenditure paid by and to Austria under various options, as % of GDP.....	84
Figure 30. EUI annual and cumulative balance of Austria under various options, % of GDP.....	85

Figure 31. EUI revenues and expenditure paid by and to Germany under various options, as % of GDP.....	85
--	----

Figure 32. EUI annual and cumulative balance of Germany under various options, % of GDP.....	86
--	----

List of tables

Table 1. Gross replacement rates (GRR).....	18
Table 2. Number of applications received 2007 – 2013 (Up to 12 August 2013)	25
Table 3. European Social and Adjustment Funds.....	26
Table 4. Revenue and Expenditure Associated with Unemployment Compensation, FY2001 – FY2011.....	27
Table 5. Matrix of scenarios explored in the chapter:	53
Table 6. Comparison of proposed EUI with actual national unemployment insurance systems as of 2010.....	55
Table 7. EUI annual revenues by country, minimum, maximum and mean value, % of GDP.....	59
Table 8. EUI annual expenditure by country, minimum, maximum and mean value, % of GDP	60
Table 9. EUI average annual balance and cumulative balance by country, % of GDP.....	61
Table 10. EUI annual revenues by country, minimum, maximum and mean value, % of GDP.....	64
Table 11. EUI average annual balance and cumulative balance by country, % of GDP.....	65
Table 12. EUI annual expenditure by country, overall, since 2009 and the maximum value, % of GDP.....	69
Table 13. Annual balance overview	70
Table 14. EUI annual revenues by country, mean value, % of GDP.....	72
Table 15. EUI average annual balance and cumulative balance by country, % of GDP.....	73
Table 16. Matrix of scenarios explored	78

Boxes

Box 1. Experience rating.....	28
Box 2. A review of the literature on the multiplier effect of unemployment benefits	87

List of abbreviations

AMECO	Annual Macroeconomic Database
CAIF	Cyclical Adjustment Insurance Fund
EB	Extended Benefit programme
EUC08	Emergency Unemployment Compensation 2008 programme
EC	European Commission
EFTA	European Free Trade Association
EGF	European Globalization Adjustment Fund
ESF	European Social Fund
EMU	Economic and Monetary Union
EU	European Union
EUI	European unemployment insurance
FUTA	Federal Unemployment Tax Act
GDP	gross domestic product
ILO	International Labour Organization
IMF	International Monetary Fund
MS	member states
NAWRU	non-accelerating wage rate of unemployment
OECD	Organization For Economic Cooperation and Development
SMEs	small and medium enterprises
SUTA	State Unemployment Tax Acts
TEC	Treaty of the European Community
TFEU	Treaty on the Functioning of the European Union
UC	US unemployment compensation programme
UTF	Unemployment Trust Fund

Executive summary

This report was commissioned by the European Parliament as one of the analytical resources to be used in discussion of the possible creation and shape of European-level unemployment insurance. The basic concept arises from the idea that if a member state is affected by slower growth for a period, it is likely to have higher unemployment. Further problems are likely to arise since a prolonged crisis inevitably implies that an increasing number of people will be unemployed over the long term. If the funding of the compensation paid to unemployed workers is at the euro area level, it is more likely to come from the more prosperous areas and better off citizens. It is thus a redistributive tool that could contribute to stabilisation.

The purposes of the unemployment insurance are, from a purely economic point of view, to provide a counter-cyclical stabilisation mechanism to the economy, and from a social point of view, to alleviate the pain of unemployment by providing income security.

An EU-level mechanism could act as a shock absorber to cushion both asymmetric and symmetric shocks to the economy, and thus overcome coordination failures and individual country's crisis budget constraints. From a political and social point of view, it could also demonstrate European solidarity in a visible and tangible way to EU citizens, introduce a mechanism for permanent/long-term redistribution across the EU and common standards for unemployment support, and support labour mobility within the EU/euro area.

Our proposals will address the shock absorber rationale as the principal rationale for a European unemployment insurance system (EUI), though to provide variety on more contested issues, some proposals will address the rationales of demonstrating European solidarity in a visible and tangible way for EU citizens and providing common standards. However, the proposals will not seek, as an overriding rationale, to promote permanent/long-term redistribution across the EU, though potential persistent transfers are indeed possible. By the same token, we will largely leave the issue of supporting labour mobility within the EU/euro area out of our analysis.

In this chapter, we dig into the economic, political and practical challenges relating to the creation of a supranational automatic stabiliser. The pros and cons of possible solutions are summarised in the following tables.

We start with the choice of indicator to trigger the European unemployment insurance system.

Trigger	Pros	Cons
Short-term unemployment rate	Clear and unambiguous, fast response to shock	Higher variability across European countries
Unemployment gap	Captures longer-term impact of the shock better	Ex-post revisions Difficulty in setting a benchmark
Conclusion: The simulation uses the unemployment gap for the “catastrophic insurance” and short-term unemployment for the “harmonised system”.		

The second issue to deal with is the fiscal rule for the system.

Fiscal rule	Pros	Cons
Annual balance	Simplicity, no need to deal with borrowing capacity.	Unable to respond to the frequent combination of symmetric and asymmetric shocks, consequently likely to provide least support when most needed.
No fiscal rule	Simplicity Strongly anticyclical, especially in sustained downturns.	Open-ended commitment for member states – difficult both politically and technically.
Balanced over the economic cycle	A combination of countercyclical policy with constraints on the overall cost and contribution.	Technically more complex than the other two options.
Conclusion: The simulation will work with two options: no fiscal rule and balanced over the economic cycle.		

The third issue is the extent to which there should be harmonisation of the national standards for unemployment benefits under the European system and conditionality for use of the newly established EU funds in this area.

Coordination of rules	Pros	Cons
Common unemployment benefit standards	Clarity Strong signal of Social Europe for citizens.	Requires politically challenging unification. Provides less scope for incorporating national preferences.
Conditionality of use of EUI	Strong anticyclical impact guaranteed Higher political/social support.	Alternative uses by national governments might be more efficient. Can create imbalances in generosity/coverage between the European system and other national parts of a benefit system Lack of democratic accountability of the authority imposing reforms

Conclusion: The simulation will provide two alternative approaches consistent with logic of the two basic options: **the harmonised unemployment benefit option will rely on common standards and conditionality; the catastrophic insurance option will provide leeway for national governments on both fronts.**

The last table presents the pros and cons of possible solutions to two additional issues: which countries should participate, and how the mechanism should be funded.

Additional issues	Pros	Cons
EU28 participation	Higher stabilisation capacity	Politically more challenging to approve
Euro area participation	Easier political link to monetary union	Less stabilisation capacity
Funding by labour taxation	Direct link between revenue and benefits, both individually and nationally	Can increase labour tax wedge in countries with already high labour taxation
Funding by national fiscal contribution	Does not contribute to increasing labour tax wedge	Does not provide the direct link between revenue and benefits
<p>Conclusion: The simulation will be based on the EU28 to demonstrate stabilisation effects for all EU economies, particularly given the ever-expanding euro area membership.</p> <p>The simulation will also provide two alternative approaches consistent with logic of the two basic options: the harmonised unemployment benefit option will rely on direct labour taxation; the catastrophic insurance option will be based on general subsidy to and from national governments.</p>		

This leads us to **present simulation results for two options with two variants, or four scenarios in total.**

Option 1 in the simulation is the harmonised European unemployment benefit. The harmonised system applies automatically to every eligible unemployed person. Under our scenario, this joint European benefits system would have the following features:

- It would apply to short-term unemployed workers. Therefore our reference unemployed population does not include all unemployed workers, but only those that have been unemployed for less than one year. We set the maximum duration of benefit to 12 months. However, our calculation is based on an average duration of six months, so we expect a symmetric pattern of people leaving the register. In the absence of data on duration profiles of the unemployed across European countries, this appeared to be the best option.
- The coverage ratio is set at 75%, meaning that among those unemployed for less than a year, three quarters are eligible to receive benefits.

- The benefit is equivalent to 40% of the average monthly national nominal compensation. It should be noted that 40% of nominal compensation is not as low as it sounds, since it is calculated not from a gross wage, but from nominal compensation, which also includes employer social security contributions.

Each member state would be free to set eligibility rules and replacement rates. If the cost were less than the formula below, the member state would receive the actual amount. If the cost were higher than the formula, the member state would receive an amount equivalent to the $75\% \times 40\%$ formula. This would avoid difficult-to-achieve formal harmonisation while ensuring that there would be *de facto* harmonisation, since member states would be incentivised to set up the system in such a way to be close to the $75\% \times 40\%$ formula. In other words, more generous systems would be allowed, but on top of the harmonised one.

$$\text{Gross Expenditure} = 0.75 U_{12\text{months}} \times 0.4 \text{ MNCE} \times 6 \text{ months}$$

where U stands for unemployment and MNCE indicates the monthly nominal compensation per employee.

How would be the system financed? We choose as the source of funding a dedicated labour taxation equivalent to 0.5% of nominal compensation. The rate was set up to roughly balance the system as shown in this section.

$$\text{Gross Revenue} = (LF - U) \times 0.5\% \text{ MNCE} \times 12 \text{ months}$$

We present two versions of this system. In the first (Option 1a), the system does not require a country-level neutral budgetary position. In other words, countries can be permanently in deficit or surplus vis-à-vis the system without any corrective mechanisms. This represents a truly European system that essentially ignores boundaries in the fiscal sense and is able to redistribute resources in case of shocks.

We modify such a system in Option 1b, in which each country needs to restore a neutral budgetary position. Fiscal neutrality would be achieved by doubling the contribution rate from 0.5% to 1% of the base for countries that have a cumulative deficit with the system of at least 1% of GDP. The double contribution rate would stop once the cumulative deficit falls below 1% of GDP.

We call **Option 2 “catastrophic unemployment insurance”**. The insured entities are not single workers at risk of unemployment, as in Option 1, but member states, or more precisely, national insurance funds. The basic idea is to transfer funds to finance unemployment benefits from the centre to the periphery when unemployment is measurably higher than normal.

In our simulation, assistance is triggered when the unemployment rate is higher than the non-accelerating rate of unemployment (NAWRU) by two percentage points in a certain country. This choice of trigger is arbitrary and smaller values could be chosen. However, such a value is consistent with the idea of the

catastrophic system intervening only in exceptional circumstances, in other words, a major increase in unemployment rates.

The payout is a subsidy for the national budget equivalent to the sum of all unemployment benefits for a six-month benefit period, calculated on the same basis as Option 1 (40% of nominal compensation, 75% of unemployed of less than one year covered). The payout would not be conditional; gross transfers from the EUI can be used as national governments see fit (though of course if conditionality were to be imposed, this would have no impact on the fiscal calculations that follow).

The insurance would be funded by member state contributions. These would amount to 0.1% of GDP annually until 0.5% of EU GDP is accumulated. Then contributions would stop, to be restarted again if the fund fell under 0.5% of EU output.

On the expenditure side, we model the following rule: if the difference between the annual unemployment rate and NAWRU in each country is higher than 2%, then the country in question receives a payout equal to 75% of unemployed workers (under 12 months) multiplied by 40% of their average nominal compensation.

$$\text{if } U_{t,i} - \text{NAWRU} > 2 \Rightarrow \text{Country pay} - \text{out}_{i,t} = 0.4 \text{ MNCE} \times .75 U$$

As with Option 1, we present results for two versions of this second option. In Option 2a, no fiscal rule is applied. In other words, countries can be permanently in deficit or surplus vis-à-vis the system without any corrective mechanisms. This represents a truly European system, which essentially ignores boundaries in the fiscal sense, and also a real insurance based on the idea that such a shock is randomly distributed.

In Option 2b, countries are required to maintain a neutral budgetary position. The system would aim to be balanced in the medium-to-long run for each member state. This would be achieved by setting an additional contribution of 0.2% of GDP payable annually by countries that have a cumulative deficit with the system of at least 1% of GDP. The additional contribution is due every year, regardless of whether the regular contribution is being paid, and would stop once the cumulative deficit falls below 1% of GDP.

We compare the four combinations with regards to revenues, expenditure, annual balance and cumulative balance.

We start with **revenues**. The left panel of the figure below shows stark differences between Options 1 and 2. Option 2, despite an initial five-year period to build up the fund, is much less costly than Option 1 since it is a form of catastrophic insurance for member states, whereas Option 1 is a form of permanent redistribution. Of course, Option 1, unlike Option 2, can replace the national schemes to some extent so this does not imply that the overall public revenue and expenditure in member states and the EU would be increased. It may simply be transferred from member states to the supranational level.

In the 14-year period we simulate, differences between the a and b options appear to be relatively small for Option 2 but more significant for Option 1, where the need to rebalance a country's relationship with the system if the accumulated deficit exceeds 1% of GDP leads to a more sustained increase in revenues.

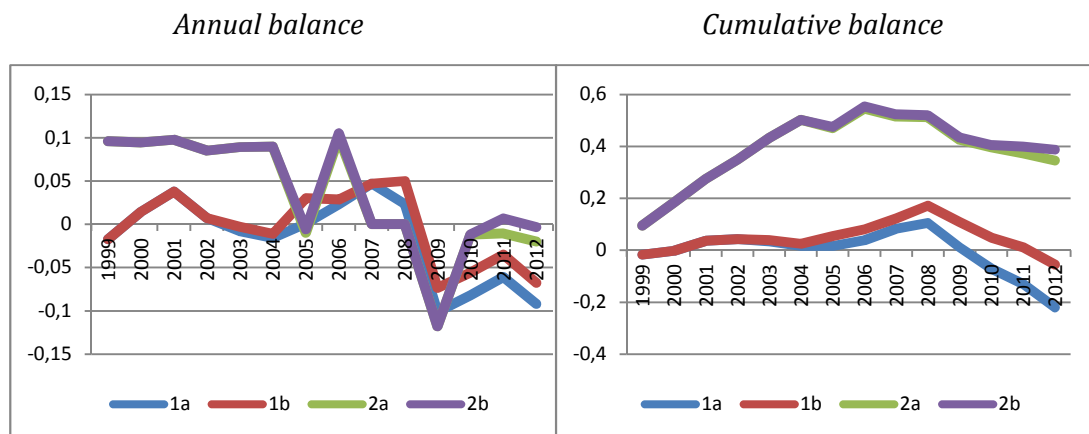
EUI revenues and expenditure under various options (% of GDP)



Source: Own elaboration based on AMECO data.

Expenditure does not differ between options *a* and *b*, as the difference is on the revenue side. Therefore, we can only compare expenditure overall under Options 1 and 2. What we can see in the right panel of the figure above is the same as in the revenue panel, only more pronounced. The catastrophic insurance option lies essentially dormant (helping an individual member state here and there) until the Great Recession, when it kicks into action. Expenditure for Option 1 is also effectively anti-cyclical at the EU level – expenditure ranges from 0.25% of GDP to 0.4%, but it has a baseline component which distributes significant amounts even at the best of times.

The most complicated figure so far is the comparison of **annual balances**. In good times, Options 1 and 2 are both neutral, as assistance to individual countries is not sufficiently large to significantly influence the overall system balance. The only exception is the initial build-up of funding under Option 2. However, in difficult times after 2009, both options initially go deeply into deficit in 2009. After this, their reactions differ. At one end of the range, Option 2b quickly regains balance at the EU level, while at the other end, Option 1a continues with a deficit of 0.05% to 0.1% of GDP until 2012. Therefore, the desirability of the various options at the EU level also depends on what policy-makers view as a preferable approach.

EUI annual and cumulative balance of the EU under various options (% of GDP)

Source: Own elaboration based on AMECO data.

Different annual balances also translate into different **cumulative balances**. For Option 2, the differences between 2a and 2b lead to a small cumulative difference. The real difference occurs between Options 1 and 2, where Option 1 goes into cumulative deficit, which becomes a system-wide deficit under both 1a and 1b by 2012 (though the b option, by increasing revenue, results in a much smaller deficit). The calibration of various options is only an illustration, of course, but it shows that for Option 1, policy-makers would need to have a financial backstopping facility of some kind (e.g. an extraordinary contribution or loans).

We also present **a range of estimates of stabilisation effects of the European unemployment insurance system**. We present the estimates for national episodes of major distress that are sufficient to trigger assistance under both options. We use a simple estimate of the stabilisation effect: every year starting from 2008, we multiply the net inflow coming from the EUI fund by a fiscal multiplier. The rationale is that this allows us to calculate the value added of the European mechanism if it had existed at the time. We propose the calculation only for major shocks¹ because for minor shocks, the shock absorption value is non-existent; national governments are more than able to weather them on their own. This does *not* exclude other rationales for creating an EUI even for minor shocks (as presented by the harmonised unemployment insurance system compared with the catastrophic insurance).

Since we look at episodes of major distress, the net inflow during such episodes is identical for the harmonised and the catastrophic options. Therefore, we do *not* show differences between Options 1 (the harmonised scheme) and 2 (the catastrophic insurance), because they produce identical results in our simulation.

¹ We consider as a major shock, a downturn that results in an unemployment rate higher than 2%+ the country's NAWRU.

Given our strong preference for it, we consider the case of a fiscal rule that allows deficit and surpluses each year, with the obligation to restore fiscal balance over the cycle. Calculations are showed in the table below.

Example of stabilisation effect of the EUI during the Great Recession, selected countries

	2008	2009	2010	2011	2012	SUM
Estonia	0.00	1.15	0.89	-0.15	-0.15	1.74
Greece	0.00	0.00	-0.15	0.81	0.95	1.60
Ireland	0.00	0.85	0.55	0.41	0.37	2.19
Latvia	0.00	1.34	0.86	0.20	0.19	2.59
Lithuania	0.00	1.09	0.60	0.21	0.14	2.04
Spain	0.00	1.79	1.54	1.26	1.49	6.08

Source: Authors.

We start with the Spanish case, which is in the limelight during the current crisis due to skyrocketing unemployment figures. The net inflow, multiplied by the fiscal multiplier of unemployment benefits, generates an additional output equal to 13 to 19 billion euros every year starting from 2009. This is equal to between 1.3% and 1.8% of GDP. Another interesting case is that of the Baltic countries, where the combined effect of the EUI funds and their (assumed) multiplier is slightly above 1% of GDP in 2009. However, compared to Spain, it declines faster due to the faster recovery of the three economies. In Greece, the European mechanism kicks in later due to the deterioration of the NAWRU that accompanies the increase in unemployment. The total impact on the economy over the entire recession (up to 2012) is 1.6% of GDP. Finally, in Ireland, the EUI funds are provided between 2009 and 2011 and, combined with their multiplier effect, generate an additional output equal to between 0.4% and 0.9% every year.

2. Introduction

This report was commissioned by the European Parliament as one of the analytical resources to be used in discussion of the possible creation and shape of European-level unemployment insurance.

Specifically, the Terms of Reference for the study stated: “The current economic crisis has revealed inside the Euro-zone deficiencies and/or inadequacies in social safety net and more specifically that national unemployment schemes are jeopardized in the current crisis, not allowing them to play their counter-cyclical role. Against this background and following the hearing organized by the Employment and Social Affairs Committee on 9 July 2013, the European Parliament has decided to commission a research paper on the Cost of Non-Europe (CoNE) of the absence of a minimum unemployment allowance. The basic concept arises from the idea that if a member state is affected by slower growth for a period then, it is likely to have higher unemployment. Further problems are likely to arise since a prolonged crisis inevitably implies that an increasing number of people will be long-term unemployed. If the funding of the compensation paid to unemployment workers is Euro zone wide than, it is more likely that it comes from the more prosperous areas and better off citizens. It is thus a redistributive tool that could contribute to stabilisation. However at this stage several questions remain open namely; the extent, the coverage, the replacement rate the funding, and the access conditions to a minimum unemployment allowance, (just to mention few of them) and need to be clarified.”

The scope of the paper is as follows: “Analyse the basic characteristics of the unemployment benefits in EU MS, ascertain what are the prospects of introducing an unemployment insurance scheme for the Euro-zone; presenting in details the institutional dimensions of such instrument and, developing a simulation exercise (based on the information and data available the contractor will present at least three scenarios)”.

The resulting paper was drafted between November 2013 and February 2014 and is structured into three parts:

Chapter 2 analyses briefly the existing situation, including a summary of the existing US unemployment insurance systems and a list of existing proposals for the European system. Chapter 3 outlines the main trade-offs and challenges in designing such a system Chapter 4 then presents results of our simulation of four scenarios

Additionally, the paper contains an executive summary, introduction and bibliography.

Given the existence of several high-quality studies of the existing situation and even of the trade-offs and challenges in designing a new European system (including, but not limited to, several excellent papers commissioned by the European

Commission), we decided to focus on practical simulation. Therefore, Chapter 4 makes up the bulk of the paper and Chapters 2 and 3 are as succinct as possible.

The report was written by a research team from the Centre for European Policy Studies. Miroslav Beblavý was the lead author, together with Ilaria Maselli. Matthias Busse and Elisa Martellucci provided research assistance and some drafting of the text. Daniel Gros provided intellectual oversight and several key ideas.

This is a final version as of 14 March 2014. It includes responses to comments on the draft version by the relevant staff of the European Parliament as well by the relevant Members of the European Parliament.

3. Existing situation

The objective of this chapter is to analyse what exists in European countries in terms of unemployment benefits. We map the situation based on four main characteristics and we compare this with the situation in the United States. We discover that a high level of heterogeneity exists in Europe as a result of different durations, coverage ratios and replacement rates. As a result, expenditure varied on average over the period 2005-2011 between 0.2% and 2.1% of national outputs.

We also map measures that exist at the supranational level, specifically the European level, in terms of both harmonisation of different systems and policies implemented by the EU. Our conclusion is that the existing attempts of the Council of Europe to coordinate automatic stabilisers or funds managed by the EU are of a much smaller scope than the idea of creating a European unemployment insurance system.

3.1 Brief summary of national systems

Unemployment insurance schemes exist in one way or another in all European countries. However, no one could claim that Europe is united on this front, since as soon as one starts looking at figures, large differences emerge between national frameworks. To understand these differences, we look at the four main characteristics of unemployment insurance schemes:

- Coverage ratios, meaning the share of unemployed workers covered by the insurance.
- Coverage levels, expressed as income replacement ratios, which is the share of the previous wage provided by the system.
- Duration, normally in terms of weeks or months.
- Eligibility requirements, often expressed in numbers of weeks/months of contributions to the common fund.

As shown in this section, a great level of variation exists in Europe for each characteristic. This is not the only source of diversity since, as a consequence of the different mixes, expenditure on income support varies, together with the organisation of the insurance.

3.1.1 Design

Coverage ratios

Coverage ratios are defined as the percentage share of unemployed workers covered by the insurance. If in principle this is a simple measure, in practice no unequivocal numbers exist due to the different definitions of benefits and unemployment in different surveys.

Taking the European Union Statistics on Income and Living Conditions (EU-SILC) as a reference, it has been estimated that among euro area countries, more than two-thirds of workers are covered by the insurance in five countries: Austria, Belgium, Finland, France and Germany. In Greece, Italy, Slovenia and Slovenia, in contrast, only one-third of unemployed workers are entitled to receive benefits. The remaining countries are distributed somewhere in between one- and two-thirds (EC, 2013).

Coverage ratios estimated via the Labour Force Survey have a downward bias compared to EU-SILC, but leave the ranking of countries practically unchanged (EC, 2013).

Income replacement rates

The level of income protection is defined in most EU member states as a percentage of the previous (gross)² wage, with percentages often being higher for lower earners. The reference period for this calculation also differs across countries, ranging from 3 to 24 months (EC, 2013).

According to European Commission estimates, taking as a reference a single person earning an average wage, gross replacement rates can range from 20% in the UK and Malta to more than 70% in Luxembourg, the Netherlands, Portugal and Slovenia, but with rates in most countries in the range of 40% to 60%.

Table 1. Gross replacement rates (GRR)

GRR < 40%	Austria	Ireland	Malta		
40% < GRR < 60%	Slovakia	Spain	Germany	Finland	Cyprus
	Estonia	Belgium	Greece	Italy	France
GRR > 60%	Netherlands	Portugal	Luxembourg	Slovenia	

Source: European Commission (2013).

Duration

The lowest durations are in Slovakia and Malta, which ensure benefits for no more than six months. Still below one year are Austria and Cyprus (7 months), Italy (8), Ireland and Greece (10), and Portugal (11). Duration reaches 12 months in Estonia, Germany, Luxemburg and Slovenia, 17 in Finland, and 24 in Spain and France. It goes up to 38 months in the Netherlands and it is unlimited in Belgium (EC, 2013).

Eligibility

In order to be entitled to the benefit, the unemployed worker needs to contribute to the insurance during time in employment. This qualifying period is often expressed in terms of months of contribution over a reference period. Both vary greatly

² In three euro area countries (Austria, Finland and Germany) the net is used. In Ireland and Malta, it is a flat rate.

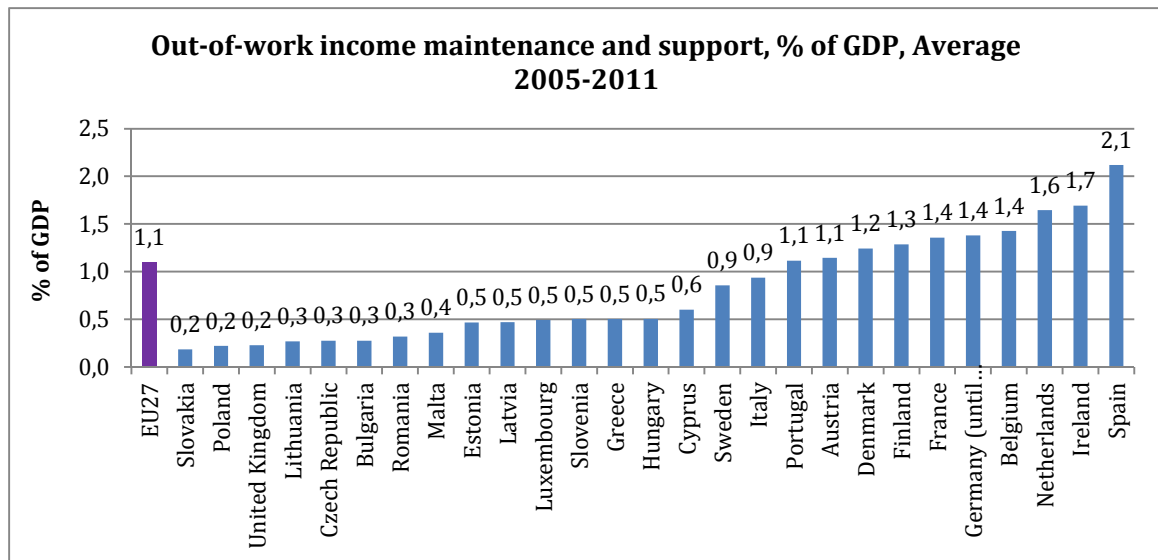
between EU countries, ranging from 6 months of contribution over the previous 24 in the UK to 12 months over the previous 18 in Belgium. Aside from Belgium, the countries that are very strict on this ground include the Netherlands, Slovakia, Poland and Latvia. At the opposite side of the scale, alongside the UK, are Spain, Ireland and France.

3.1.2 Financing and expenditure

The unemployment benefits system originated as an insurance to protect workers' income from the risk of unemployment due to the business cycle. In almost all European countries, the contribution to the system is split between the employer and the employee. Only in Denmark is the cost entirely borne by the insured, while in the Czech Republic, Lithuania and Poland it is entirely financed by the employer (EC, 2013). In most cases, such contributions turn out not to be sufficient to cover the expenditure on benefits, and therefore the state intervenes to subsidise the system or to cover the deficits. This happens in all countries, with the exception of Estonia, France, the Netherlands, Portugal, Bulgaria and Hungary, where no role is foreseen for the state.

All elements summed up, out-of-work income maintenance support (as officially recorded by Eurostat) amounts to slightly more than 1% of GDP in the EU, with obvious variation due to the cycle. Once more, the average is hardly representative of the member countries, since expenditure can constitute less than 0.5% of GDP (in Slovakia, Poland, the UK, Lithuania, Czech Republic, Bulgaria and Romania) or more than 1.5% (in the Netherlands, Ireland and Spain).

Figure 1. Out-of-work income maintenance and support, as % of GDP (average 2005-2011)



Source: Eurostat.

3.2 Coordination of existing national systems

Given the large variation across national systems, one of the few fields where no attempt has been made in the past to reach a level of harmonisation is passive labour markets policies for the unemployed. Yet a form of coordination exists, even though it exclusively originates from the need to facilitate cross-country mobility and therefore *de facto* affects only a small share of workers in Europe.

The degree of social security coordination between the different national systems at the European level is one of the key determinants of intra-EU labour migration. The EU regulation on the coordination of national systems and the European Social Charter contribute most in this regard at the European level.

3.2.1 EU regulation on the coordination of national systems

The coordination of national unemployment benefits is organised via a subsection within Regulation (EC) No 883/2004 on the coordination of social security systems. The aim of the provision in the Regulation is to improve the standard of living and conditions of employment through the simplification and advancement of the free movement of persons. Earlier, in 1971, the Council Regulation (EEC) No 1408/71 had been put in place to ensure equivalent treatment and protection of social security benefits of all EU workers, irrespective of current residence in the EU and the employment. The new Regulation is built on the fundament of the previous Council Regulation of 1971.

The Regulation does not transfer directly any powers from the national to the supranational level, as it bases its influence on Article 308 TEC (now 352 TFEU). The Regulation was aimed at amending the nationally determined social benefit entitlements or the condition under which they are granted within each domestic framework, thus leaving domestic systems intact. Various divisions of the social security system are covered, among them the unemployment benefits claimable within an EU member state. The provisions in the Regulation state that periods of employment spent in one EU member state need to be taken into account when the person moves to another EU member state and thereby switches to another national social security system. The applicable legislation is that of the member state in which in person is pursuing 'a gainful activity'. With regard to unemployment insurance, this means that the member state whose system the person is currently paying into or receiving benefits from must allow for the periods of insurance and the duration of employment (whether regular employment or self-employment) that they have accomplished in other EU member states "as though they were completed under the legislation it applies".

Furthermore, if a previously insured person becomes unemployed, thus having claims on unemployment benefits, and is applying for jobs in another member state, that person has the right to move to the other member state to facilitate the

application while retaining his claim on unemployment benefit entitlements from the member state of his/her previous employment for a minimum of three months, which can be extended to six months if the institutions in charge deems it appropriate. The regulation only applies if the total entitlement period has not been exceeded during the job-seeking time spend abroad. In any case, after the imparted three to six months grace period, the claim is no longer valid should the person not return to the member state in which he is entitled to unemployment benefits.

Generally, all employment benefits are claimed from the institution of the country where the person has worked last and was residing. This regulation is targeted to the needs of “frontier workers” who regularly cross the border, and prevents burden-shifting among neighbouring states. This rule only applies for full unemployment, as partial unemployed is dealt with in the country where the part-time work is carried out.

The regulation also applies, beside the EU member states, to the EFTA countries: Iceland, Liechtenstein, Norway and Switzerland. In the Annex to the Regulation, several references to predating bilateral agreements which need to be honoured and specific acts with regard to individual countries are made; however, these must not impede the framework described above.

Particularly since the start of the Great Recession, such regulation has raised fear among policy-makers of the possibility to exploit the system, thereby giving rise to the so-called “welfare tourism” debate. The truth is that the fear of social welfare tourism with regard to unemployment benefits is very limited, since a person is only entitled to the benefits that he/she has accumulated in the unemployment insurance fund in the country of employment. The fact that previous periods of work in another country are taken into account does not pose a significant threat to the social system of the last hosting country, since the person has to have obtained a job in the host country before having a claim thereafter. Hence, simply moving to another country without work will not induce transfers based on unemployment benefits.

There is of course the possibility to create a dummy firm or fake employment which could entitle “labour” migrants to unemployment benefits, though the risk is low as they would have to show income to be entitled to a percentage of their previous salary. Job-seeking abroad for the period of three (theoretically possible to be extended six) months could create an incentive to cash in on purchasing power differences, i.e. a euro spent in Luxembourg has less purchasing power than in Latvia. However, overall studies have not clearly shown substantial welfare tourism within in the EU (Guild et al., 2013). Jobseekers are more likely to stay where they have already settled down or move to a region where they intend to find employment rather than where their purchasing power is maximised for the next three months.

3.2.2 Other European systems of unemployment benefit coordination

European Code of Social Security

The European Code of Social Security was initiated as early as 1949 and was highly influenced by the Social Security Minimum Standards (Convention No 102) published by the International Labour Organization (ILO) in 1950. It is a product of the Council of Europe and therefore not part of the *acquis communautaire*. After years of negotiations, the “code” was adopted by the Council of Ministers in 1964 and came into force two years later. The aim of the code and its protocol was to protect minimum standards of social security which must be adhered to within the signatory countries. The duration and quality of social benefits are regulated in terms of the minimum, but each signatory can decide what services or extended durations that country provides in excess of the minimum. The protocol sets these minimum standards in a manner which allows the individual signatory to maintain the specificities it has taken to fit national circumstances.

With regard to unemployment benefits (Article 19-24), the code defines the conditions under which the person whose contract has been terminated is entitled to unemployment benefits and it further states that benefits should be paid in periodical cash transfers. The protocol explicitly mentions that at least 50% of all employees must be covered by the insurance system in place. The code further emphasises that a jobseeker (whose work pay has previously been suspended) is entitled to unemployment benefits if she/he has been unable to find “suitable” work. The minimum duration was set at 13 weeks during any 12-month period in the original code, but was enhanced to 21 weeks in the Addendum 2 of 2008. Overall, the code introduces an absolute minimum while leaving room for interpretation on issues such as “suitable work”, thus circumventing firm restriction with regard to details for domestic policy-makers.

The European Social Charter

The European Social Charter, introduced through the Council of Europe Treaty, is another example of an instrument coordinating unemployment benefits and protecting social as well as human rights. The Treaty was introduced in 1961 but was amended in 1996 and came into force in 1999. The revised Charter guards the right to social security, including benefit systems, which must not be discriminatory to any part of society. The Charter itself sets the framework within which unemployment insurance functions. Article 12 postulates the right to social security in general and making reference to the European Code of Social Security as “to maintain the social security system at a satisfactory level at least equal to that necessary for the ratification of the European Code of Social Security”. The relevant Article 24 deals with the rights of employees in case of termination of employment, but it does not specify any requirements to be made in case of unemployment beside

the reference to the European Code of Social Security. Complaints against violations can be brought before a special committee evaluating the accused infringements.

3.3 European funds

The Structural and Cohesion Funds represent the main financial instruments to foster economic, social and territorial cohesion in the EU.

One fund is particularly important when it comes to measures related to the labour market – the European Social Fund (ESF), which is based on multi-annual programmes. Among the “special instruments” – outside the multi-annual programming routine – the European Globalisation Adjustment Fund (EGF) was recently set-up. These more flexible mechanisms are intended to enable the EU to mobilise the necessary funds to react to unforeseen events, such as crisis and emergency situations.³

EGF and ESF measures are sometimes used to complement each other. While the EGF provides tailor-made assistance to redundant workers in response to a specific, large-scale redundancy event, the ESF supports strategic, long-term goals (e.g. increasing human capital or managing change).⁴

The two funds therefore do not try to create an income support system for the unemployed, but rather to create complementary activation measures such as training, job-search assistance and occupational guidance.

European Social Fund

The ESF represents over 10% of the total EU budget. For the period 2007 to 2013, the ESF budget amounted to €75 billion, or close to €10 billion per year.

The ESF supports a number of actions to enhance access to employment such as (ESF Expert Evaluation Network, Final Synthesis Report on Access to employment, October 2012):

- the modernisation and strengthening of labour market institutions, in particular employment services;
- the implementation of active and preventive measures ensuring the early identification of needs with individual action plans and personalised support, such as tailored training, job search, outplacement and mobility, self-employment and business creation; and
- specific action to increase the participation of migrants and reduce gender base segregation.

³ http://ec.europa.eu/budget/mff/introduction/index_en.cfm

⁴ COM (2011) 608 final.

ESF funding is available through the member states and regions. ESF programmes are implemented through individual projects run by participating organisations, such as public administrations, companies, NGOs and social partners active in the field of employment and social inclusion (European Commission, 2012).

In the next period (2014 to 2020), the ESF will continue to be the main EU instrument for investing in human capital.

European Globalization Adjustment Fund

The EGF is one of the special instruments not included in the EU's multi-annual financial framework, with a maximum total amount from January 2014 to 31 December 2020 of €3 billion. It may not exceed a maximum annual amount of €429 million. EGF was initially established for the duration of the programming period 2007 to 2013 "to provide the Union with an instrument to demonstrate solidarity with, and give support to, workers made redundant as a result of major structural changes in world trade patterns caused by globalisation where these redundancies have a significant adverse impact on the regional or local economy".⁵ The EGF co-funds active labour market policy measures which aim to facilitate the re-integration of workers in areas, sectors, territories or labour markets suffering a shock of serious economic disruption.⁶

The Council and the European Parliament have recently agreed for the EGF to continue in the 2014 -2020 period (European Commission, 2013).

The EGF shall apply to applications by the member states for financial contributions to be provided to workers made redundant mostly:

- as a result of major structural changes in world trade patterns due to globalisation; or
- as a result of a serious disruption of the local, regional or national economy caused by an unexpected crisis.

Until 2009 the threshold for the number of redundancies required to trigger access to the EGF was 1,000. This number has now been reduced to 500. This amendment was welcomed due to the particular features of countries where the industrial structure is composed of small and medium enterprises (SMEs) (GHK, 2011).

The measures financed under the EGF may include in particular:⁷

- a) job-search assistance, occupational guidance, advisory services, mentoring, outplacement assistance, entrepreneurship promotion, aid for self-employment and business start-up or for changing or adjusting activity (including investments in physical assets), co-operation activities, tailor-

⁵ COM(2011) 608 final.

⁶ COM(2011) 608 final.

⁷ COM(2011) 608 final.

- made training and re-training, including information and communication technology skills and certification of acquired experience;
- b) special time-limited measures, such as job-search allowances, employers' recruitment incentives, mobility allowances, subsistence or training allowances (including allowances for carers or farm relief services), all of which are limited to the duration of the documented active job search or life-long learning or training activities;
- c) measures to stimulate in particular disadvantaged or older workers to remain in or return to the labour market.

Since its creation in 2007, the EGF has dealt with a total of 110 cases. Spain is the country that has requested EGF assistance for the greatest number of workers, followed by Italy, Germany and Ireland.

Table 2. EGF: Number of applications received, 2007–13

2007	2008	2009	2010	2011	2012	2013*
8	5	28	29	24	10	6

* Note: up to 12 August 2013.

Source: EC 2014.

How important are the two funds?

As previously shown, the two funds together constitute more than 10% of the EU budget. But what is their incidence in member state economies? Two observations can be made in terms of size. The first is that the ESF and the EGF are hardly comparable. Even in Estonia, which is the country that has benefited the most from the EGF, the aid provided by the fund amounts to only 0.01% of GDP. Therefore, even though it may be very useful in dealing with micro adjustments and providing relevant support for a local economy, in macroeconomic terms it has a minor impact.

The ESF, on the other hand, not only has a longer tradition but also greater firepower. As indicated in Table 3, funds can go up as high as 0.78% of GDP⁸ (as in the case of Portugal during the last budget period).

Yet, the ESF cannot be considered a stabilising tool. As a matter of fact, it serves the opposite purpose: it is used to finance supply-side measures for the labour market, such as active labour market policies and job centres, and therefore it is meant to improve the functioning of the labour market in the long run.

⁸ The allocated budget for 2007-2013 is divided by the cumulated GDP over the same period.

Table 3. European social and adjustment funds

	ESF allocated (2007-2013)		EGF allocated (2007-2011)	
	Million euros	% of GDP	Million euros	% of GDP
Czech Republic	4,451	0.43	0.3	0.00
Estonia	461	0.41	7	0.01
Ireland	750	0.06	10.1	0.00
Greece	5,133	0.34	2.9	0.00
Spain	11,271	0.15	43.7	0.00
Italy	14,475	0.13	66.2	0.00
Poland	11,773	0.47	400.3	0.00
Portugal	9,245	0.78	1.2	0.00
Romania	4,334	0.48	3.2	0.00

Source: <http://ec.europa.eu/esf/main.jsp?catId=443&langId=en> and EGF statistical portrait, p. 69.

3.4 The US system of unemployment insurance

The US federal unemployment compensation (UC) programme provides income support to workers that lose their jobs for up to a maximum of 26 weeks in most states. Approximately 130 million jobs are covered by the programme. As at the end of the week 17 August 2013, 2.9 million unemployed workers were receiving unemployment compensation with an average weekly compensation of \$307. Estimated expenditure on regular unemployment benefits in 2014 amounts to \$40.5 billion (Whittaker and Isaacs, 2013).

In case of severe recessions and consequent high unemployment in a state, extended benefits can be launched, funded 50% by the state and 50% by the federal government (and exceptionally 100% by the federal government in the 2009 stimulus package).

The US system constitutes an obvious point of comparison for the potential European system, given that the UC centralises part of the organisation but still allows each state the possibility to personalise certain features and requirements.

The UC is in fact a joint federal-state programme financed by federal taxes under the Federal Unemployment Tax Act (FUTA) and by state payroll taxes under the State Unemployment Tax Acts (SUTA). The FUTA tax rate for employers is 6% of labour cost, but a credit of 5.4% is granted for employers coming from states that have a national system in place, which is all US states. The provision served as an incentive for all states to create an insurance, as it constituted a minimum floor for employers coming from every state.

Most businesses are subject to state and federal unemployment taxes. An estimated \$6.7 billion in federal unemployment taxes (FUTA) and \$44.47 billion in state

unemployment taxes (SUTA) should have been collected in FY2011 (Whittaker and Isaacs, 2011). Part of the former is used by each state to cover the administrative costs of its system and the other part finances the extended benefits when needed. It is worth noting that the employers' contribution is subject to experience ratings; firms that fire more also pay more.

Unlike in most European countries, the US version of an unemployment insurance scheme is therefore fully financed by employers. The mechanism is based on the principle that those that fire more also need to contribute more to the fund. For the firms' side of the labour market, although not perfect, the system is organised as insurance: companies need to provide severance payment to workers and in order to do that, insure themselves against the risk of firing a certain number of workers (see Box 1). The same is not true for employees who do not contribute to the fund. From their point of view, the benefits rather qualify as social assistance in the form of income protection.

The system is administered by the U.S. Department of Labor (DOL). Federal law sets broad rules that the state programmes must follow, including the broad categories of workers that must be covered by the programme, the method for triggering the Extended Benefit (EB) and Emergency Unemployment Compensation 2008 (EUC08) programmes, the highest state unemployment tax rate to be imposed on employers (5.4%), and how the states will repay Unemployment Trust Fund (UTF) loans. If the states do not follow these rules, their employers may lose a portion of their state unemployment tax credit when their federal income tax is calculated. The federal tax pays for both federal and state administrative costs, the federal share of the EB programme, loans to insolvent state UC accounts, and state employment services (Whittaker and Isaacs, 2011).

Table 4. Revenue and expenditure associated with unemployment compensation, FY2001 – FY2011

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011 ^a
UC revenue, total	27.8	27.5	33.2	39.3	41.8	43.0	41.2	39.4	37.8	44.7	51.4
FUTA tax	6.9	6.6	6.5	6.6	6.7	7.1	7.3	7.2	6.7	6.4	6.7
State UC taxes	20.8	20.9	26.7	32.7	35.1	35.9	33.7	32.2	31.1	38.3	44.7
UC outlays, total	28.1	50.9	54.3	42.5	32.6	31.7	32.7	43.0	119.7	156.1	129.5
Regular benefits	27.3	42.0	42.0	36.9	31.2	30.2	31.4	38.1	75.3	63.0	61.0
Extended benefits	^b	0.16	0.32	0.16	0.00	0.20	0.00	0.02	4.1	7.8	9.5
Emergency UC	—	7.9	11	4.1	—	—	—	3.6	32.7	72.1	55.4
Federal Additional Compensation	—	—	—	—	—	—	—	—	6.5	11.7	1.9
UCFE/UCFX ^c	0.5	0.5	0.6	0.8	0.8	0.8	0.7	0.7	1.0	1.3	1.5
Trade Benefits	0.3	0.3	0.4	0.5	0.6	0.5	0.6	0.6	0.1	0.2	0.2
Administrative costs	3.6	3.7	4.1	3.9	3.8	3.9	3.7	3.9	4.3	5.5	5.5

Source: U.S. Department of Labor, *UI Outlook*, January 2001–February 2011, and updates.

a. Estimated for 2011.

b. Less than \$5 million.

c. UC benefits for federal employees (UCFE) and former military servicemembers (UCFX).

Source: Whittaker and Isaacs (2011b).

Maximum benefit levels vary enormously, from \$133 per week in Puerto Rico to \$625 in Massachusetts.⁹ States can get loans from the Federal Unemployment Account should they run low on funds, but the deficit needs to be cleared in the long run.

How was the system created? The origin of the system dates back to the mid-1930s. The Great Depression had made it clear that an income support mechanism was necessary, and a number of states started to investigate and make proposals in this direction. The main obstacle, however, remained the employers' fear of losing competitiveness with respect to neighbouring states. This made the intervention at the federal level necessary. Witte (1936) explains that "[t]hroughout the history of the unemployment compensation provisions of the Social Security Act, there was general agreement regarding the necessity for federal legislation. It was recognized by everyone who believed in the desirability of unemployment insurance that little headway could be made unless employers in all states would be subject to the same (or substantially the same) costs, whether their respective states enacted unemployment insurance laws or not".

Box 1. Experience rating

Unemployment insurance in the United States is financed via a tax for employers that amounts to 5.4% of labour cost. The tax is not a fixed amount for each employer, however, since those that tend to fire less also pay less. This is called "experience rating" and it is based on the idea that the existence of unemployment insurance reduces the cost of firing and therefore an instrument is needed to eliminate the perverse incentive of increasing the number of redundant workers (Mongrain and Roberts, 2004).

Experience rating is said to be perfect when firms pay the full cost of their layoffs. The type applied in the US is imperfect since lower and upper bounds exist, meaning that firms that are less volatile in terms of employment end up subsidising the more volatile firms (Wang et Williamson, 2002).

The tax is based on a formula and each US state is free to decide how to apply it. In more than half of states, this is based on the reserve ratio. The second most common formula applied is the benefit ratio.

The *reserve ratio* is the ratio between the company's unemployment insurance account (contributions paid minus benefits) and total gross wages. The reserve is cumulative over the lifetime of the company, whereas total wages refer to the last three years. As a result, the tax increases when more unemployed workers receive the benefit and decreases when higher contributions are paid into the fund. The *benefit ratio* is the ratio of benefits divided by total payrolls over the past three years; the more benefits are withdrawn by unemployed workers, the higher the tax for the employer.

The concept of experience rating is also applied at the national level: in case of a lack of liquidity, a state can borrow from the federal funds. States are charged interest on loans that are not repaid by the end of the fiscal year in which they were obtained. States facing troubles in financing their own insurance can therefore ask for help from the federal fund, but only in the form of a loan that needs to be repaid based on an agreement with the US Secretary of Labour. If the firm fails to restore the balance

⁹ 2011 data.

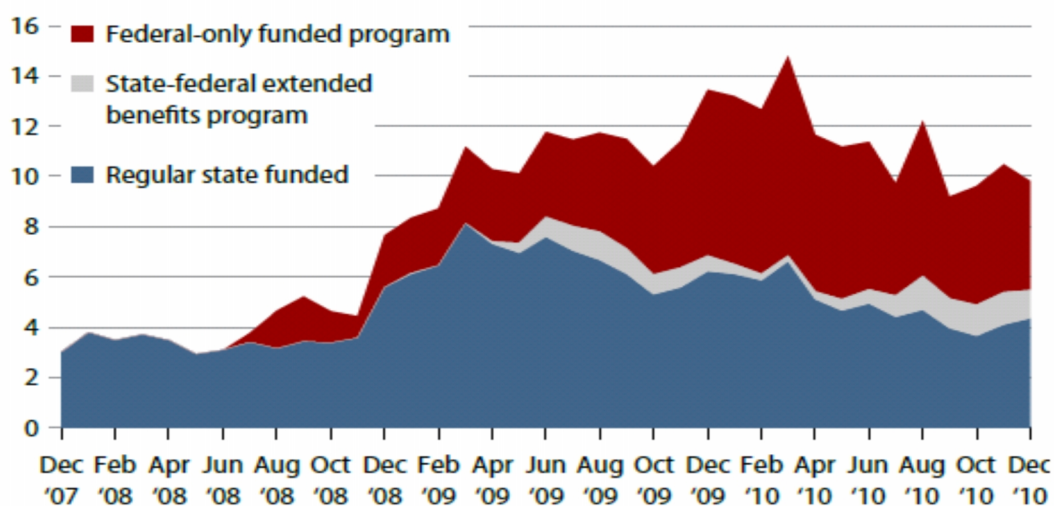
between revenues and expenditure of national funds in the medium run, the federal authority can raise firms' contribution.

Can the US system be a model for Europe?

A major concern related to the creation of a European unemployment insurance system is the incentive for people to move to collect benefits in more generous countries, so-called welfare mobility or welfare tourism. Does it happen in the US, where a strong incentive to do just that is provided by the large dispersion in the weekly benefit granted by different states? In other words, can an unemployed Texan worker collect benefits in Massachusetts, where he/she can receive up to \$674 per week? The eligibility rules of the Massachusetts government explicitly state that "if you worked in another state, you should apply for unemployment insurance in that state".¹⁰ There are residency requirements in place in individual states, though as far as we were able to tell, there is no federal requirement. However, given the shape of the US system, states have incentives not to attract unemployed recipients of the benefit.

One of the added values of the federal system lies in the possibility to extend benefits exceptionally in case of severe recessions in one or more states, i.e. when the stabilisation tool is most needed. This happens via the extended and emergency benefits, with the former partially and the latter completely financed at the federal level. Extended benefits are the geographical redistributive part of the system.

Figure 2. Total unemployment insurance benefits paid by month and type of programme in the US



Source: Boushey and Eizenga (2011).

¹⁰ <http://www.massresources.org/unemployment-eligibility.html>

If in principle the rule constitutes a safe back-up for a system that is not very generous (at least compared to European standards), this is something that could hardly be implemented in a European context. The reason is that such extensions require quick decision-making, which is more difficult to implement in Europe given the multi-level governance and the necessity to apply a subsidiarity principle.

A less remarked upon but interesting aspect of the US system is its capacity to strike a balance vis-à-vis individual states over the cycle: each state can indeed borrow from the federal cash pot in hard times, but these remain as loans and as such need to be returned. This in principle ensures that the objective of stabilising income when most needed is not missed, but at the same time avoids free-riding. If a state is unable to repay the loan, the employers' contribution is automatically raised. This is what happened recently in California, for example, where the fund currently runs a deficit of almost \$10 billion (Employment Development Department, 2013).

All in all, the US system is particularly interesting, not only for the comparability of its labour market to the European market in terms of size and skills levels, but even more so because of its mix of three compromises/results:

- The stabilisation capacity based on the short-term support combined with the possibility for each state to borrow from the central cash pot if necessary.
- The creation of a common minimum standard, not in terms of provision where each state is free to set its optimal level of protection, but in terms of employers' contribution necessary to finance the policy.
- The experience rating, which punishes companies that fire more.

3.5 Potential economic, political and social rationale for EU action on unemployment benefits

The purpose of unemployment insurance is, from a purely economic point of view, to provide a counter-cyclical stabilisation mechanism to the economy, and from a social point of view, to alleviate the pain of unemployment by providing income security. Economic theory suggests that higher insurance can increase wages and extend the unemployment spell by raising the reservation wage, which is the lowest wage rate at which a worker would accept a job. Empirical evidence suggests that the exact design of such policy matters, in particular how benefits decrease with duration and to what extent they are complemented by active labour market policies (Blanchard et al., 2013). The exact design is important from the microeconomic point of view, but what about the macroeconomic aspects? In a monetary union especially, they are at least as important to justify the adoption of such policy.

Three considerations are important in an international-macro perspective:

- the coordination issue;
- fiscal constraints; and
- the trigger of the policy – symmetric and asymmetric shocks.

To the purely economic considerations, one needs to add the political and social concerns: the existence of a form of European solidarity and redistribution within the continent.

3.5.1 The economic theory

(A) symmetric shocks and coordination failures

Problems arise in a monetary union when an asymmetric shock occurs. A textbook case is provided by De Grauwe (2007): an asymmetric demand shock – negative in France and positive in Germany. As a consequence, unemployment increases in the former and goes down in the latter. Two mechanisms can potentially lead to automatic re-equilibration: wage flexibility and mobility of labour.

How does unemployment insurance interfere with each? Will it facilitate or hinder wage flexibility and labour mobility? Would this change if such insurance is organised at the European level?

In principle, an unemployment insurance scheme will hamper both adjustment mechanisms. The benefit will keep the reservation wage at a certain level, higher or lower depending on the replacement rate. The national unemployment insurance will also limit cross-country mobility: it lowers the incentive to look for a job in general, but even more so in another country because the unemployed workers may need to give up their benefits.

The latter problem would be solved should a European system be in place: unemployed workers could collect the benefits independently of the country in which they are looking for a job. With regard to the first issue – the reservation wage – it does not matter for the adjustment in the recession country whether the benefit is paid at the national or European level.

But how likely are actually asymmetric shocks in Europe? The academic literature gives the impression that this is a steady issue in Europe. The differences in the European economies (different specialisation of production, different labour market regulations, different demographics, different national level macroeconomic policies, etc.) make economies react differently to external shocks. Asymmetric shocks therefore seem to be a matter of regularity, and it is only the significance of these shocks that varies.

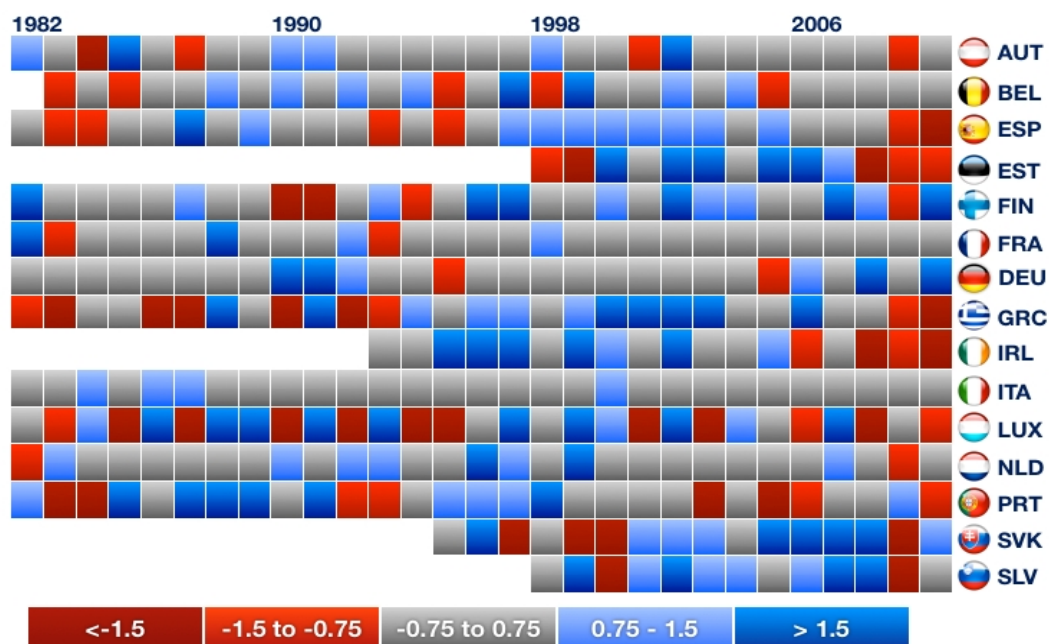
The OECD (2010: 72) underlines that recent asymmetric shocks in Europe were mainly attributable to the catching-up processes of certain economies. However, there are still considerable differences between economies that could easily cause new imbalances. Even though the common currency has increased integration, there remain many potential sources of asymmetric shocks. These could be different demographic developments, asymmetric production trends, remaining inequalities in the regulation and flexibility of wages and prices, or differences in employment protection. The OECD therefore recommends the euro area-wide coordination of

such issues, or far-reaching structural reforms that may lower the risk of asymmetric shocks.

In a recent publication from the IMF (Allard et al., 2013), the authors argue that booms and busts occur very regularly in an unequal pattern across Europe and that this dispersion of national specific growth is not really showing a tendency to approach a common European level.

De Grauwe (2013) observes that while monetary policy has been centralised, the rest of the macroeconomic policies have remained in national hands, “producing idiosyncratic movements unconstrained by the existence of a common currency. Hence, there are few policy options to bring national booms and busts into line with any kind of European development. Even worse, the common interest rate that may be too low for booming countries and too high for countries in recession even exacerbates asymmetric developments. Therefore, at first the convergence process in Europe has to be finished. And already that process appears to be asymmetric itself.”

Figure 3. Country specific shocks in the euro area



SOURCE: OECD and IMF staff calculations

NOTE: The idiosyncratic growth shocks are derived as the part of the country-specific growth shocks that are not explained by euro area-wide growth shocks. Growth shocks (both for the euro area and individual countries) are computed as the residuals of the growth rate regressed over two lags.

Source: Allard et al. (2013).

The case of symmetric shocks is more straightforward and poses fewer challenges to policy-makers. In case of recession, the main decision to be taken is whether to use the fiscal or monetary stimulus, or a combination of the two. Yet, because of the

specific nature of the European construction, suboptimal equilibria can be also reached in this case due to the fact that the former is decided at the national level and the latter by a supranational institution – the ECB – with an independent mandate. An EMU-wide (or eurozone-wide) unemployment insurance scheme could therefore solve the coordination problem by relying on an automatic stabiliser.

Budget constraints

Together with the risk of asymmetric shocks and coordination failures, a third macroeconomic argument may point to the need for EU/EMU-wide automatic stabilisers: tough budget constraints.

The euro area crisis showed that risk premia on sovereign debt can diverge significantly. Starting from 2010, it became not only difficult but also very expensive for sovereigns in the periphery of Europe to borrow on the market. High interest rates therefore make the financing of public expenditure, which can easily include expenditure on labour market policies in times of high unemployment rates, very expensive. A government that faces tough fiscal constraints may consequently be faced with the choice of cutting income support measures at a time when they are needed the most, that is, when unemployment is soaring and vacancies are limited. Moreover there is a possibility for large shocks to become self-sustaining through pro-cyclical fiscal policy and a negative feedback loop. Backstopping national systems could be a way of preventing such a feedback loop from developing.

The creation a supranational fund (in whatever form) whereby countries and/or workers and employers contribute during good times could avoid such a trap. In this case, the funding of passive labour market policies would come from a supranational authority and would therefore not be a burden on the national budgets, as countries would have to contribute to it only during upswings.

3.5.2 Political and social rationale

Demonstrating European solidarity in a visible and tangible way for EU citizens

The crisis and its aftermath has been a testing time for the European ideals and for the credibility of both national and European institutions in the eyes of European citizens. The introduction of an EUI system could demonstrate European solidarity in a way that is visible and tangible to citizens (unlike some of the more abstract European interventions) on a permanent basis. Of course, the desirability of such a step is a matter for political decision.

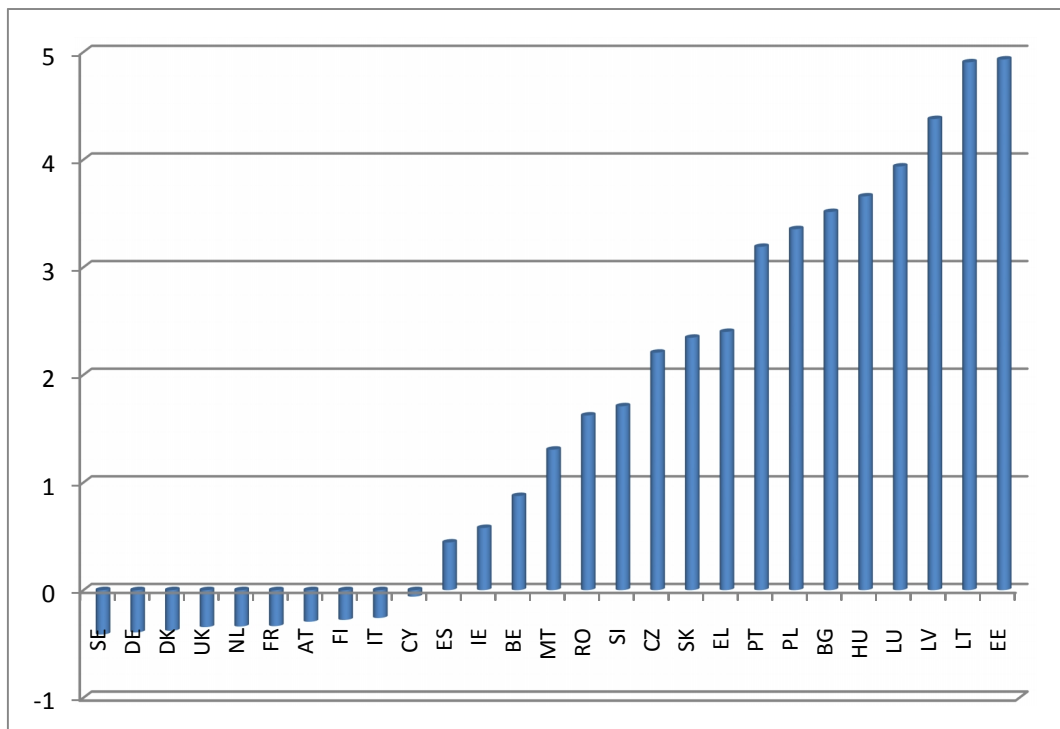
Permanent/long-term redistribution across the EU

The EU already has limited fiscal redistribution mechanisms, though they are small and their redistributive roles are not explicitly geared towards reducing disparities

between member states. The national balance vis-à-vis the EU budget can be substantial for a small set of small and poor countries. The *de facto* list of net contributors and net beneficiaries also appears to be relatively stable.

Under this rationale, the EUI would be an additional special case of a permanent or long-term redistribution mechanism between countries of the Union. Consultations during the preparation of this paper made it clear that while a degree of persistency in EUI transfers might not be always avoidable, permanent or long-term redistribution is *not* one of the rationales for creating such a scheme. Indeed, it could be even seen as a problem to avoid if possible.

Figure 4. Net contributors to EU budget 2012, as % of GDP



Source: European Commission 2013 EU, Budget Financial Report 2012.

Desirability of common standards

The desirability of common standards in social policy is a contested issue in European affairs and is, in the end, a political choice. In the case of the EUI, the issue of common standards can cut both ways. One could argue for minimum standards in order to prevent social dumping and guarantee equal social rights. By the same token, one could argue for “maximum” standards to prevent hysteresis and moral hazard.

Supporting labour mobility within the EU/euro area

A relatively uncontested goal of EU policy is to stimulate labour mobility within the Union. This could, therefore, be a *prima facie* rationale for a joint unemployment insurance system. However, as explained in this chapter, the current EU regulation for coordinating social security systems already ensures that:

- qualification periods from various countries are cumulated; and
- the unemployed can move to a different country and still receive unemployment benefits (for up to three months, with a possible extension to six months)

The EU regulation could be beefed up on the second issue and thus stimulate mobility, but this could be done through amendment of the existing regulation if needed. So further support of labour mobility can be a consequence of the EUI (if it strengthens equality of rights/portability), but not an important one.

Consequently, all of our proposals will address the shock absorber rationale as the principal rational for an EUI. However, to provide variety on a more contested issue, some proposals will address the rationales of demonstrating European solidarity in a visible and tangible way for EU citizens and providing common standards. However, the proposals will not seek, as overriding rationales, to promote permanent/long-term redistribution across the EU, though potential persistent transfers are indeed possible. By the same token, we will largely leave the issue of supporting labour mobility within the EU/euro area out of our analysis.

3.6 Summary of existing proposals

With the establishment of EMU, demands have been voiced for a common European unemployment insurance system, in one form or another, to provide a feasible mitigation of asymmetric shocks. These proposals have varied from a small fiscal budget freely used in domestic spending, to funds based on the output gap, to true mutual unemployment schemes. The selection of proposals below provides a broad overview of existing ideas that are directly or to some extent related to the EUI proposal.

❖ In 1993, Majocchi and Rey delivered a proposal within the MacDougall report advising the implementation of a “conjunctural convergence facility” once more mitigating asymmetric shocks (Majocchi and Rey, 1993). In contrast to other schemes, this system is not triggered automatically, thus is dependent on the evaluation of fellow member states to rule out idiosyncratic causes unrelated to external shocks. The fund would provide loans and grants to the struggling state, which in turn could pay benefits or invest, for example, in additional training, hence bringing down unemployment rates.

❖ At the same year Italianer and Vanheukelen (1993) developed the idea of a stabilisation mechanism based on the national deviations in the annual change of the unemployment rate from the EMU average. Unlike Majocchi and Rey (1993), the stabilisation mechanism has an automatic feature even though the authors propose to cap the receipts to 2% of GDP. They also propose a toned-down version in which the transfers are only triggered once a certain threshold is passed in order to only activate the mechanism in case of significant asymmetric shocks, i.e. not smoothing small waves but rather “tsunamis”.

❖ Bajo-Rubio and Diaz-Roldan (2003) developed a European unemployment insurance system which functions on a monthly basis as it takes the change over the past 12 months as the reference value to trigger the dispersion of benefits. It is a redistribution scheme in which each country pays in (1% of tax revenues). Payments are made to those countries which experience a rise in their unemployment rate, however this mechanism is only set in action if at least one country is experiencing a drop in its unemployment rate, thus testifying to the source of the negative changes as an asymmetric shock. Each month, the receiving member state uses the transferred funds to support the unemployed. Bajo-Rubio and Diaz-Roldan raise another rule that could be applied to reduce the risk of moral hazard: limiting the number of consecutive months in which a country is able to receive funds.

❖ Enderlein et al. (2013) do not call directly for a European unemployment insurance fund but rather a cyclical adjustment insurance fund (CAIF), which is once more based on the output gap methodology. They do suggest, however, that the output gap as a main trigger could be complemented with indicators such as inflation rates and short-term (cyclical) unemployment. They have not included the unemployment indicator into their calculations, stating that “short-term unemployment is a problematic indicator as long as labour market institutions are in the realm of national legislation”. Of course, the output gap has its drawbacks as well and the net effect over the period 1999-2014 would have been very small (less than 0.25% of GDP).

❖ Sutherland et al. (2012) proposes to create a true EU insurance fund that is built at the EU level and paid in to by employers or employees, or alternatively an unemployment benefit system. The EU benefits would set a minimum standard for the member states, which could, in severe cases of crisis, be complemented with supplements and extensions. National channels for raising contributions and distributing the benefits should be utilised to minimise administrative costs. The paper suggests leaving the decision of the means by which to collect the contribution (e.g. tax) up to each individual member state. The authors do not provide a simulation of the impact of such a system concerning net benefits or details on either coverage or replacement rate.

❖ Depla (2012), his paper for the seminar 'EU level economic stabilizers', presents an unemployment insurance scheme for the euro area as one part of the toolkit for a wider European reform programme. His unemployment benefits scheme differs from the rest since it is not a replacement or basis for national schemes, but rather a supplement. The unemployed would only be entitled to the supplement if the European Labour Contract were adhered to and if the sum of national and euro area benefits did not exceed the maximum threshold, thus preventing a transfer from less generous states to countries with highly generous systems. The receipt would be paid from an annual contribution equal to 1% of GDP. Depla's system not only introduces the European component to the unemployment insurance scheme, as the others do, but also attaches a social component by limiting the transfers.

❖ The most comprehensive and in-depth potential architecture for a European unemployment insurance system has been proposed by Dullien (2007, 2012, 2013) with the ultimate aim of absorbing the negative budgetary effects of short-term unemployment caused by the business cycle or asymmetric shocks, though not by structural unemployment. The insurance fund would be financed through a payroll tax and the payments and contributions would be collected by the national agencies in order to use the existing framework and avoid additional bureaucratic costs. A minimal standard of unemployment benefits would be covered at the European level, while each member state would be free to choose the services/benefits that they provide, nationally, on top of the supranational coverage. He proposes a minimum of 12 weeks with a replacement rate of 50%. In his model, Dullien shows the theoretical impact such a system would have had on crisis-ridden Spain after the burst of the housing bubble. The transfer, according to Dullien, could have mitigated almost 25% of the downturn in the immediate aftermath of the collapse. The issue of moral hazard is acknowledged and perceivably alleviated in his system, since the EUI only covers a minimum far below the current replacement rate at the national level, thus maintaining the incentive structure to implement labour market reforms. The EUI is envisaged to remain balanced in the long run, without clear net receivers and net contributors. One element intended to prevent a one-way financial flow is the exclusion of seasonal unemployment within his scheme. Dullien's proposal has frequently been used as a basis for political demands by parties and other institutions (Brantner and Giegold, 2012).

❖ Pisani-Ferry et al. (2013), pursue a European (EMU) unemployment insurance scheme for the same reason as Dullien, i.e. as a fiscal stabiliser. Contrary to Dullien, they propose an insurance system levied on a corporate income tax fully covering the expenditures. A euro area-wide applied corporate tax rate of 12.6% is estimated to be sufficient to cover the average euro area costs for unemployment insurance (1.8% of euro area GDP). Unemployment benefits could be covered in full by this budget, with each member state transferring revenues from the first 12.6% of tax on corporate income. The distributional effect could potentially be significant,

since revenues collected from the 12.6% tax may not suffice to cover domestic unemployment benefits. Pisani-Ferry et al. show that this would have been the case for Ireland in 2010. In another exercise, the authors calculate the magnitude of unemployment benefits in the new common system if receipts are dependent on a set base value (1.5% of GDP) plus a factor of the deviation of the individual unemployment rate from the euro area average. Consequently, Portugal (with a less generous national unemployment benefits system) would receive more financial resources than needed to cover the benefits, thus creating a fiscal stimulus package, whereas Ireland would experience the opposite. The common unemployment insurance is not covered directly in the paper, but rather moved to the appendix and does not give details of extent to which benefits are covered at the supranational level.

❖ Gros et al. (forthcoming) suggest the creation of a European re-insurance scheme for major deviations from long-term unemployment rates. The basic idea is to transfer funds from the centre to the periphery to finance unemployment benefits when unemployment is measurably higher than normal. The system therefore qualifies as catastrophic insurance for national unemployment benefits funds.

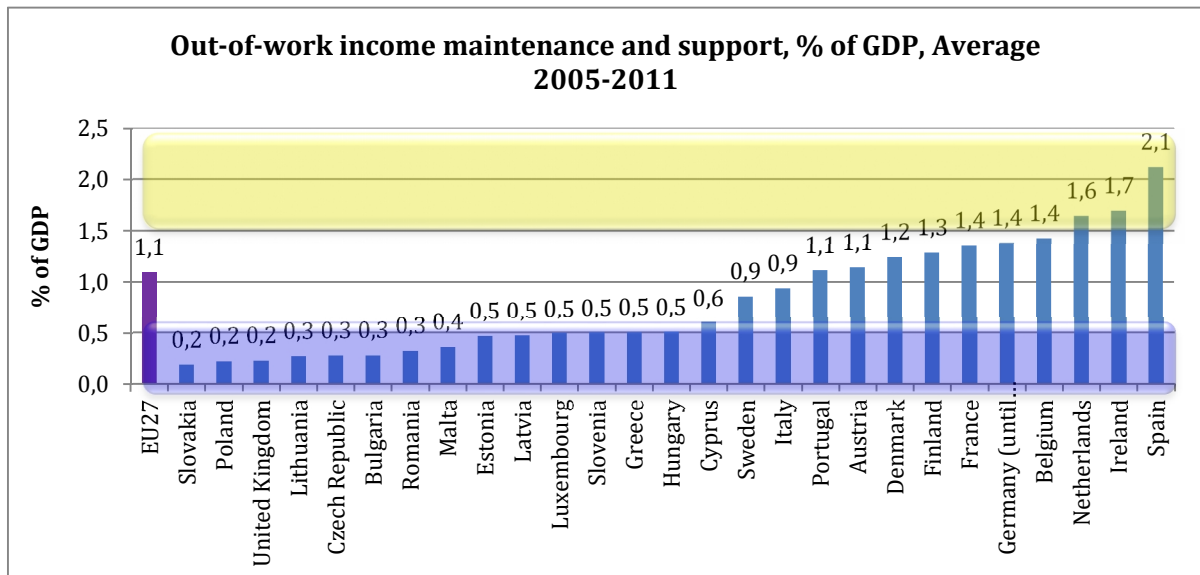
4. Outline of main trade-offs and challenges

In the first chapter of this report, we provided a general overview of existing passive labour market policies in Europe and compared them to the United States. We also listed existing EU contributions in the field and summarised political and economic arguments behind the creation of a European unemployment insurance system. We concluded by summarising existing proposals.

We now focus on two main proposals: the harmonised European unemployment benefit, developed by Sebastian Dullien, and the catastrophic insurance scheme, proposal put forward by CEPS (Gros et al., forthcoming). The harmonised scheme consists of an insurance fund financed through a payroll tax (collected by national agencies) and spent on a minimum standard of unemployment benefits that applies in the same fashion to all eligible European workers. Catastrophic insurance is a radically different system based on a re-insurance fund which will be used only in case of severe recessions, in light of the fact that “business as usual” downturns are already well covered by existing policies.

The two proposals are conceptually extremely different. The first is meant to cover “business as usual” shocks; it creates a fund for rainy days. The second covers instead the “tail risks”, or in other words creates a shelter for very stormy days and tornados.

Figure 5. Out-of-work income maintenance and support, % of GDP (average 2005-2011)



Source: Eurostat.

In this chapter we dig into the economic, political and practical challenges related to the creation of a supranational automatic stabiliser. The chapter is divided into two main parts. In the first, we look at three key policy dimensions:

- **The threshold and a ceiling for its activation.** Any system of unemployment insurance needs to define under what conditions it is triggered. This also means that an indicator needs to be chosen for this purpose.
- **Common standards for the EU.** Should they be enforced? If so, what would they be?
- **Fiscal rule.** Should the EUI have a balanced budget on an annual basis, cyclically, or not necessarily at all?

In the second part of this chapter, we discuss three additional technical issues:

- **Participation.** Should the scheme involve all EU or euro area countries compulsorily, or be voluntary?
- **Funding.** How should it be organised? What is the source?
- **Implications for other labour and EU policies.** Should the EUI also be concerned with active labour market policies? Is there any overlap with, for instance, the European Social and Globalisation Adjustment Fund?

4.1 What situations should it cover? What should be the trigger?

Deciding under which circumstances the EUI should be activated represents an important step in designing the European unemployment insurance scheme. The EUI could either be applied with a “business as usual” approach or be activated only in exceptional circumstances. If the “harmonised option” is put in place, it would be activated whenever a worker becomes unemployed for a given number of weeks. Conversely, the catastrophic insurance proposal would kick in only under exceptional economic shocks, such as severe recessions, where public finances are put under stress by a larger demand for unemployment benefits.

During the last crisis, expenditure on passive labour market policies climbed up to approximately 3% of GDP in Spain and Ireland, from 1.5% and 0.9% in 2007, respectively.

The setting-up of the “catastrophic” option would imply the adoption of a reference set of indicators. We analyse the possible options among the following list of indicators: the output gap, the unemployment rate, the unemployment gap and the unemployment ratio.

4.1.1 Unemployment rate and short-term unemployment (rate)

The unemployment rate is *prima facie* the most natural choice of indicator, because it is indeed meant for the assessment of employment policies. In addition, it is a solid indicator, given that it is based on a head-count.¹¹ However, it presents some issues.

First, an old debate exists among labour economists on the solidity of this indicator, which is considered by many experts inappropriate for measuring the temperature of the labour market. The reason is that the unemployment rate does *not* measure the share of people that do not have work in the population, but the share of those in the labour force who do not have a job *and* are also actively looking for one. Therefore all those who are available to work but are not actively job-seeking are not recorded by the statistics.

Second, it is important to note that a significant part of the unemployment rate is unrelated to short-term shocks and is of a structural nature. The group of unemployed which it measures is made up of two main subgroups: those whose unemployment duration is a small natural transition from one job to another, and those with a longer unemployment duration due to the fact that their skills do not match existing vacancies. The former has a short-term nature, whereas the latter is much more persistent and requires enormous effort to be curbed. A policy that does not take structural differences into account would, as a consequence, give rise to a rather unbalanced flow of funds over time. This is a problem if one focuses on the redistribution rationale rather than the cushioning of shocks rationale. However, since the cushioning argument appears to be among the key arguments for the creation of an EUI, we do not recommend using a headline unemployment rate.

For this reason we propose to consider not the overall unemployment rate, but the short-term rate. This would be consistent with the fact that unemployment benefits generally do not cover the entire unemployment spell, but instead have a maximum length of eligibility.¹² An unlimited duration constitutes a disincentive to look for a job, especially if the income subsidy is generous.

The EU short-term unemployment rate, defined as up to 12 months of unemployment, was on average 4% during the period 2003-2012. In the following cases, it exceeded 6%:

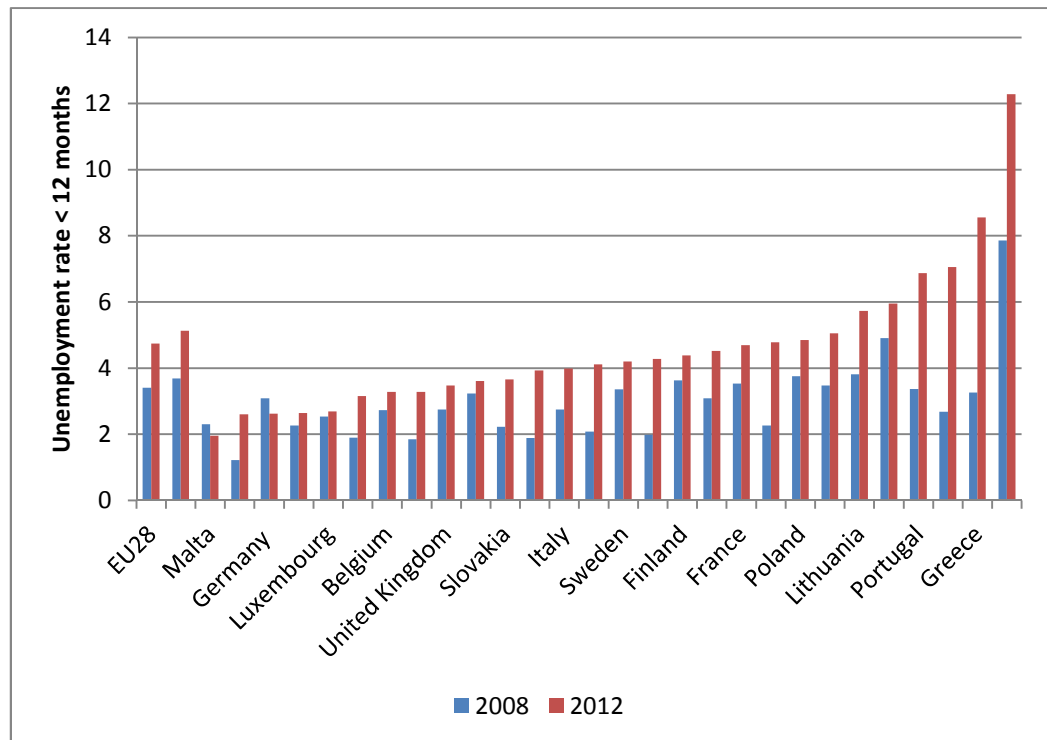
¹¹ The head-count is not based on the entire working population, only a small share of the population is interviewed for the Labour Force Survey. However, the methodology is solid and agreed at the EU level via Eurostat.

¹² Belgium, where unemployment benefits are provided until the worker finds a new occupation, is an exception. In all countries during the past two decades, systems have become less and less generous in order to create the incentive to reduce the length of the work-to-work transition.

- Greece in 2011-2012
- Spain before 2004 and since 2008
- Estonia in 2009-2010
- Latvia between 2009 and 2012
- Lithuania between 2009 and 2011
- Poland up to 2004
- Cyprus and Portugal since 2012

Interestingly enough, the list does not include the Irish Great Recession.

Figure 6. Short-term unemployment in Europe



Source: Eurostat, Labour Force Survey.

In the case of the harmonised unemployment benefit system, we use short-term unemployment (not the rate, but the headcount) for the simulation, i.e. the number of people without a job and actively looking for one, and in their first 12 months of the unemployment spell.

4.1.2 Unemployment gap

Another option is to use distance from the national “norm”. In other words, the EUI would be activated if the difference between actual unemployment and the norm exceeds a certain value.

The reference value could be either a long-term historical average or some measure of structural unemployment, such as the NAWRU. While these two options might appear similar, they are conceptually distinct. Moreover, each has obvious advantages and disadvantages.

Using an historical average minimises uncertainty or interpretation issues, but it brings a difficult trade-off. If the reference period is fairly short (say, 5-10 years), then the "norm" can be influenced upwards by a prolonged economic slump and thus limit the impact and rationale of the EUI. If the reference period is longer than this, then it brings penalisation for successful labour market reform during the crisis.

These issues could be resolved by using a measure of structural unemployment, like the NAWRU, that would correct/augment the long-term average with a more nuanced assessment.

This option also comes with a downside. On the one hand, it introduces a degree of contestability and discretion due to the fact that the NAWRU is more difficult to estimate than the simple unemployment rate and as such, it is subject to ex-post revisions.¹³ On the other hand, discretion is created with regard to the choice of the reference value. Should it be NAWRU plus 1%, 2% or something else?

4.1.3 Which trigger for the EUI? Pros and cons of the different options

We summarise the pros and cons linked to the selection of one indicator or the other in Table 5. Our preference is for the unemployment gap in our simulation. The reason is that it captures well the impact of the shock by focusing on the distance from a certain level (we choose a measure of the structural unemployment rate). The downside for this choice is the difficulty of setting a benchmark which is, to a certain extent, discretionary. What is an "emergency level" of unemployment? The structural unemployment rate plus 2%? Plus 3%? Nonetheless, we consider this option preferable and therefore when we model the "catastrophic insurance", we use NAWRU + 2% as a trigger for the policy.

In the model for the harmonised system, however, we use short-term unemployment rate, i.e. the percentage of people without a job and actively looking for one, in their first 12 months of the unemployment spell. These are the unemployed workers entitled to receive an income-support benefit.

¹³ A similar problem has been documented for the estimation and subsequent series of revisions for the output gap.

Table 5. Indicator to trigger EUI, pros and cons compared

Indicator to trigger EUI ¹⁴	Pros	Cons
Short-term unemployment rate	Clear and unambiguous, fast response to shock	Higher variability across European countries
Unemployment gap	Better captures longer-term impact of the shock	Ex-post revisions, difficulty in setting up benchmark
Conclusions: The simulation uses the unemployment gap for the “catastrophic insurance” and short-term unemployment for the “harmonised system”.		

Source: Authors' elaboration.

4.2 What should be the fiscal rule for the EUI and the country contributions?

In the previous sections of this chapter, we have analysed two key technical aspects that accompany the conception of a cross-national system of unemployment insurance: the trigger and the reference indicator. The next important step consists in dealing with the fiscal side of the system. First of all, should a rule exist at all? Or should expenditure be balanced at an annual level? Is an intermediate option possible? Additionally, how should the system treat a country that is in persistent deficit vis-à-vis the system?

4.2.1 A system balanced annually

We start by analysing one extreme option: a system that is balanced every year. In other words, whatever is collected during the year is redistributed across countries during the same year. As a consequence, the system would not run any deficit and neither any surplus.

This option has one main attraction: it would avoid problems related to the capacity of the EUI to borrow in case of deficit.

But apart from this, the case for an annually balanced fund is weak, especially given the technical complications. An annual distribution would be in principle possible, but highly problematic in practice. Such an approach, in fact, would require permanent calibration of the system on an annual basis, leading to unpredictability and uncertainty at the national level, thus eliminating to some extent the very rationale for an EUI.

A further argument against this option is the risk of symmetric shocks (e.g. the Great Recession). Without the possibility to borrow or use reserves, the system would end up transferring resources between countries undergoing difficulties.

¹⁴ Relevant only for Option 2 – catastrophic insurance. Option 1, harmonised European unemployment benefit, does not require a trigger.

4.2.2 A flexible system: No fiscal rule

The second extreme option is the rule of not imposing a rule. The EUI would not be subject to an *ex ante* decision on its fiscal rule. Deficits and/or the possibility to resort to extra funding, beside the national annual contributions, are therefore not ruled out. The main advantage is the possibility of ensuring the greatest flexibility to deal with a variety and different combinations of (symmetric and asymmetric) shocks.

Yet, an open-ended commitment remains difficult to impose. It would hardly be considered politically acceptable, and it would impose technical challenges in terms of consistency with the existing EU seven-year budgetary framework.

4.2.3 Fiscal balance over the economic cycle

We consider a third intermediate option in which the system would be balanced, but only over the economic cycle. In other words, the fund would be able to run surpluses annually, but would need a fiscal balance over the medium term.

Such an approach could be materialised in two ways:

- An account in the fund, which has to be balanced over the medium term, corresponds to each country. In case of necessity the fund would intervene to contribute to the expenditure on unemployment benefits, but under the condition that the loan is paid back based on an agreement with the central authority that manages the system.
- Alternatively, countries would be allowed to run deficits/surpluses vis-à-vis the EUI, even over the medium term, as long as the fund as a whole is in balance over the cycle.

We recommend the first approach, the reason being that it strikes a fair compromise between two needs: being strongly anti-cyclical, and limiting the scope for permanent transfers across countries.

How could the balance be achieved? This could be done on the revenue as well on the expenditure side. In the first case, rebalancing would occur via an automatic increase in each country's contribution after a certain number of years of deficit. Alternatively, it could be achieved on the expenditure side by automatically limiting EUI transfers, again, after a certain time. The US experience strongly pushes in favour of the former: a balancing path based on an automatic increase of the national contribution. In the US, as explained in Chapter 2, states can borrow from the federal account if needed, meaning that they do not receive permanent transfers from the central account. Moreover, if they fail to repay the loan, the federal system is authorised to increase the employers' contribution for that state in order to accelerate the speed of the rebalancing path.

4.2.4 Which fiscal rule for the EUI? Pros and cons of the different options

We summarise in Table 6 the pros and cons outlined in the previous sections for the three options: an unemployment benefit scheme that is either balanced annually, or is fully flexible, or is balanced but only over the cycle.

Our preference, for both the “harmonised scheme” and the “catastrophic insurance”, is for the latter: each country can borrow in stormy years, but needs to compensate with a surplus in sunny ones. Even though more complex, this option strikes a good balance between the need for a system that is counter-cyclical and the risk of redistributing towards countries with structurally higher levels and rates of unemployment.

For the sake of comparison, however, we also model a fully flexible system with no fiscal rule.

Table 6: A fiscal framework for the EUI

Fiscal framework	Pros	Cons
Annual balance	Simplicity, no need to deal with borrowing capacity	Unable to respond to the frequent combination of symmetric and asymmetric shocks, consequently likely to provide least support when most needed
No fiscal rule	Simplicity Strongly anticyclical, especially in sustained downturns	Open-ended commitment for member states – difficult both politically and technically
Balanced over the economic cycle	A combination of countercyclical policy with constraints on the overall cost and contribution	Technically more complex than the other two options
Conclusions: The simulation will work with two options – no fiscal rule and balanced over the economic cycle		

Source: Authors' elaboration.

4.3 Should there be common EU standards for unemployment benefits?

As explained in Chapter 1, automatic stabilisers exist in all EU countries. Europeans can actually claim to have invented them; the first law to set up a public compulsory unemployment insurance system was passed in Germany under Bismarck's government in the 1880s. Differences exist in terms of generosity and coverage

ratios, for example, but what is certain in Europe is that a form of income protection is granted to a majority of workers in case they become unemployed for reasons independent of their own will.

There is more than one argument in favour of harmonisation. Aside from simplicity, harmonisation would substantially increase Europe's visibility and support thanks to the creation of a strong and perceptible social standard. Harmonisation could happen *de jure*, for example via a regulation on minimum standards for unemployment benefits, or *de facto* by setting up a unified European benefit system partially or completely replacing national systems. Either way, common standards would need to be agreed upon for the key dimensions of unemployment insurance: coverage rates, replacement ratios, duration and eligibility.

Harmonisation also presents significant challenges. Just in terms of duration, the provision of such a benefit for one year would impose a change in the systems of eight countries where the duration is currently between 6 and 11 months.¹⁵ Moreover, harmonisation under the Council of Europe instruments was possible only because of the lowest common denominator (21 weeks).

A potential compromise would be to set a framework that would provide some flexibility to member states. For example, similarly to that suggested by the European Commission (EC 2013), a possible standard could be: 75% of short-term unemployed workers covered, with a replacement rate of at least 50% of gross wage for one year.

A related issue to be considered on this front is whether conditionality should be applied in the use of funds. Should the supranational authority link the supply of EUI funds to, for example, the implementation of labour market and welfare reforms? The possibility for the supranational authority to have a say on how common funds are used would help more reluctant countries to accept the creation of a common system, especially in a situation where there is high cross-country heterogeneity in the provision of income support in case of unemployment. A distinction needs to be made based on the type of system. Under the harmonised European unemployment benefit proposal, there would be no need to apply conditionality as the creation of an EUI would go hand-in-hand with a form of harmonisation of national systems via the creation of a common minimum standard. Under the catastrophic insurance, conditionality could be applied. We do not recommend its application, however, in light of the fact that it would not alter calculations on the volume of fiscal transfers anyway, but would only influence how these are used. We leave the discussion open.

The pros and cons of the pan-European harmonisation of benefit schemes on the issue of conditionality are summarised in Table 7.

¹⁵ Slovakia and Malta (6 months), Austria and Cyprus (7), Italy (8), Ireland and Greece (10), Portugal (11).

Table 7. Standards and conditionality applicable to the EUI

Unification of national UB	Pros	Cons
Common UB standards	Clarity Strong signal of Social Europe for citizens	Requires politically challenging unification Provides less scope for incorporating national preferences
Conditionality	Strong anticyclical impact guaranteed, Higher political/social support	Alternative uses by national government might be more efficient Can create imbalances in generosity/coverage between the European system and other national parts of a benefit system Lack of democratic accountability of the authority imposing reforms
Conclusions: The simulation will provide two alternative approaches consistent with logic of the two basic options. The harmonised unemployment benefit option will rely on common standards and conditionality. The catastrophic insurance option will provide leeway for national governments on both fronts.		

Source: Authors' elaboration.

4.4 Additional technical issues

Three cornerstones of the EUI system have been analysed deeply in the previous two sections: the trigger and the indicator, common standards, and the fiscal rule. In this last section we discuss three additional points. The first is participation: is the EUI meant for all EU countries, or just the euro area? Is participation compulsory or voluntary? The second is funding: should it be pay-as-you-go or have a funded element? The third is the interaction between the unemployment insurance and other related labour market policies, as well as other existing EU programmes related to the social domain.

4.4.1 Participation: EU28 versus the euro area

An issue to be discussed in the conceptualisation of a supranational unemployment insurance mechanism is its membership. Which EU countries are entitled to participate? And should membership to the system be considered compulsory or voluntary? An answer to this question is possible but, again, not simple.

Statistically speaking, the larger the group the better; a bigger group of contributors/potential users would make the fund more solid by the simple law of large numbers. A large group of contributors would imply that over a long period of time, if shocks occur randomly, everyone will benefit from participation and

therefore have an interest in joining. An EU-wide scheme would also be logical from a legislative point of view, as the same rule would apply to all countries.¹⁶

Nonetheless, we are aware that enhanced cooperation is possible and in case of a lack of agreement among 28 countries, it remains a valid option. In such a case, the second-best outcome would be an agreement between countries that are part of the monetary union. Such a group needs to include member states that, as part of their accession agreement, are deemed to join the EMU (Sweden, Poland, Czech Republic, Hungary, Romania, Bulgaria and Croatia) plus Denmark and Lithuania, given that they have a fixed peg with the euro.

On the issue of voluntary versus mandatory participation, economic theory would strongly recommend putting in place a mandatory system. Such a system, independently of how it is organised technically, would work as a supranational insurance between existing national insurances. In case of voluntary participation, a problem of adverse selection would arise as only those with a higher probability of requiring it will participate. To avoid this basic microeconomic trap, we therefore recommend a mandatory EU- or euro area-wide of system.

One exception could be made, again borrowed from the US experience. In the 1930s when the US system was put in place, no country was obliged to set up a national unemployment insurance policy. Yet all states did so over time because wherever no system was in place, a payroll tax was imposed on employers in any case. This created a strong incentive for all states to set up their own system and collect that tax to finance a policy they could design.

4.4.2 Revenues

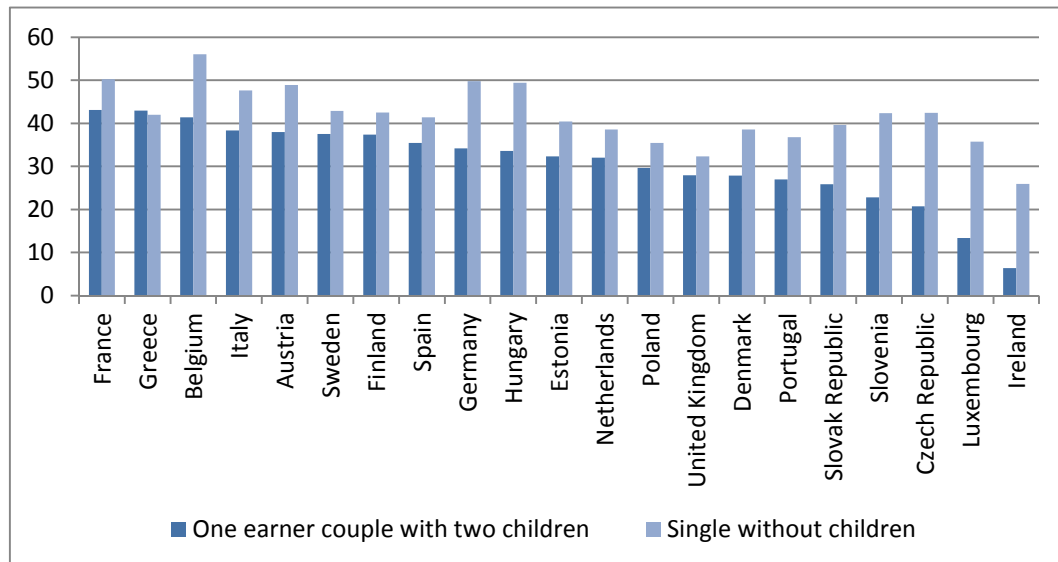
For the sake of the design of sound public policies, the discussion on the revenue of the system deserves as much attention as spending. We divide this into two sub-questions: the first concerns the type of taxation that should finance it; the second is whether the fund should be “pay-as-you-go” (PAYG) or funded.

The necessary revenue to finance the EUI can be generated via three forms of taxation. One option is a dedicated tax on consumption or on labour. The second main alternative is a contribution from national governments not directly linked to a specific tax. Given the heavy labour taxation in some member states, it is questionable whether additional labour taxation is advisable. Figure 6 shows that the tax wedge is particularly high in euro area countries with high unemployment. Of course, one could argue that EUI labour taxation will only replace a national one. However, an EUI funded through labour taxation would tend to increase labour taxation, at least in countries with high unemployment, because the higher

¹⁶ For this reason, we base our simulation on the assumption that all EU countries join the system.

generosity of the common system as well as their higher unemployment would tend to lead to higher rates of taxation.

Figure 7. Tax wedge by family type, 2012



Source: OECD (2012).

On the other hand, this option creates intuitive and robust proportion between benefits and contributions. For this reason, we will base the simulation of Dullien's (2012) model on this type of financing.

A dedicated recurrent tax does not make sense for the catastrophic insurance model, where the benefits are highly irregular and a fiscal relationship exists solely between the EUI and national governments, so in that proposal, we propose to fund the EUI through contributions by national governments not specifically linked to a certain tax.

In terms of a pay-as-you-go versus a funded system, the PAYG system would be based on the following:

- A contribution equivalent to average long-term expected annual expenditure of the system.
- The system would need to make two decisions: what to do with surpluses and deficits.
- In our model, we will assume that surpluses will be retained to cover future deficits and that deficits will be covered by a bridging loan.

In other words, even a PAYG system can deliver surpluses and deficits that lead to an accumulated fund or liability, but they are incidental and temporary.

On the other hand, a funded system would be based on the following:

- An annual contribution that would be paid until a predetermined amount is accumulated.
- Contributions would be restarted only if contributions fell below the threshold again.

The accumulation of funding would thus be by design.

PAYG is less costly than a funded system during the initial period, as it does not seek to first accumulate a pile of cash. However, a funded system can be more easily anti-cyclical, both for individual countries and the system as a whole.

4.4.3 Implications for other programmes

Unemployment insurance at the national level funds not only passive labour market policy measures (i.e. unemployment benefits), but also active labour market policy measures. Therefore, a logical question is whether and how the European system should incorporate this.

For a variety of reasons, we do not recommend that the EUI incorporate active labour market policy financing. Given the role of other European financial instruments and of other European policy instruments, this would only add to complications. Therefore, our proposals are based on expectations that other programmes would continue.

Nevertheless, the creation of an EUI raises the opportunity to revisit existing instruments at the European level in the social domain and offers the possibility to discuss them again in order to create a coherent system of European social policies. It was argued in Chapter 1 that neither the European Social Fund nor the Globalisation Adjustment Fund can overlap with the EUI. If combined, however, they could create the backbone of European labour market policies in a way that is consistent with flexicurity principles. The EUI would ensure income protection, whereas the ESF would focus on protecting employment (or re-employment) by contributing to the funding of active labour market policies. The GAF would then continue to be used to facilitate structural adjustments that hit more harshly special categories of workers, such as blue-collar workers and the low skilled.

4.4.4 Pros and cons of participation and funding

We summarise in Table 8 the pros and cons related to smaller/larger participation in the fund and on how countries/workers should contribute to it.

Starting with participation, we believe that larger participation, ideally the EU28, would make the fund more stable in economic terms. We therefore model this case in our simulation. Yet, we remain fully aware of the political challenges associated with this option and for this reason, we consider a smaller set of countries as a second-best option. The natural choice falls on euro area members, which have a stronger economic case for the creation of automatic stabilisers.

What needs to be clear is that, whichever group is preferred, participation in the fund needs to be compulsory for its members in order to avoid an adverse selection trap.

As far as funding is concerned, we consider two options: a payroll tax for the “harmonised scheme”, and funding from governments not linked to a specific tax for the “catastrophic insurance”. We do not consider one better than the other. The payroll tax clearly links the costs and benefits of the system, at the individual as well as the national level. The downside is that it risks increasing the tax wedge on labour cost, already very high in most European countries.

For the “catastrophic insurance” we consider national funding without specifying its source, which would not increase the tax wedge but at the same time create a disconnection between costs and benefits, contributors and beneficiaries.

Table 8. Participation and funding, a comparison of different options

Additional issues	Pros	Cons
EU28 participation	Higher stabilisation capacity	Politically more challenging to approve
Eurozone participation	Easier political link to monetary union	Less stabilisation capacity
Funding by labour taxation	Direct link between revenue and benefits both individually and nationally	Can increase labour tax wedge in countries with already high labour taxation
Funding by national fiscal contribution	Does not contribute to increasing labour tax wedge	Does not provide the direct link between revenue and benefits
<p>Conclusions: The simulation will be based on the EU28 to demonstrate stabilisation effects for all EU economies, particularly given the ever-expanding euro area membership.</p> <p>The simulation will also provide two alternative approaches consistent with logic of the two basic options. The harmonised unemployment benefit option will rely on direct labour taxation. The catastrophic insurance option will be based on general subsidy to and from national governments.</p>		

Source: Authors' elaboration.

5. European unemployment insurance: Simulation results

In this chapter, we analyse in detail the two main existing proposals for the set up of a European system of unemployment benefits. We will show the scale of expenditure and necessary revenues these two options would entail. Before moving to this and independently of the exact design, it is worth summarising the ideal characteristics of such a system. There are obviously many trade-offs, but considering that insurance schemes have been in place in Europe for more than a century, enough has been learned from experience to design an appropriate mechanism. In our opinion, the EUI should ideally:

- be organised in such a way that each country has its funds balanced over the cycle;
- involve all EU member states; and
- be based on mandatory participation.

We present the results of our Excel-based simulations of how the European unemployment insurance system would work. We quantify four scenarios, as shown in the following table. These scenarios present two radically different versions of the EUI and then tweak them. Option 1 is the harmonised European unemployment benefit, which would cover all eligible EU citizens and at least partially replace current national unemployment insurance. Option 2 is the catastrophic unemployment insurance for states, where national unemployment insurance systems would remain intact and member states would get financial assistance from the EU system only if they experienced a large negative unemployment shock. For both options, we quantify a simple “a” version and a “b” version with long-term country-level budgetary neutrality. The second option was added to allow the avoidance of a transfer union if that is an important policy objective in setting up the system.

Table 9. Matrix of scenarios explored in the chapter

	No long-term country-level budgetary neutrality	Long-term country-level budgetary neutrality
Harmonised European unemployment benefit	Option 1a	Option 1b
Catastrophic unemployment insurance	Option 2a	Option 2b

Source: Authors' elaboration.

We focused on two principles in setting up the options: simplicity and comparability. We tried to keep the option design as simple as possible to allow readers to understand how the simulation works. We also set up both options and both approaches to country-level budgetary neutrality in a similar way and calibrating them similarly. This enables us to easily compare them and see similarities as well as differences.

The simulation is based on historical data from 1999 to 2012, which gives us 14 years of the simulation. For some countries, there are some missing values, but this does not materially influence results. Thus, the simulation shows how the EUI would have worked if these mechanisms had existed at the time. Since it is an intellectual exercise, it includes countries that joined in the 2004 and 2007 waves (and Croatia in 2013) as if they had been EU members at the time. The point is to show potential effects of the EUI based on historical data as a counterfactual, not to simulate history. The decision to start in 1999 was based on a combination of data availability (particularly for the new member states) and the symbolism of the euro area arrival in 1999.

Calibration of the EUI expenditure (generosity) was based on findings in Chapters 2 and 3. Calibration of the EUI revenue was set up to achieve rough financial balance over the long run.

For each option, we show:

- the size of the contribution to the system;
- the size of the contribution paid by the system to the country;
- the annual balance at the country level, i.e. the net stimulus provided by the EUI; and
- the cumulative balance, i.e. long-term balance of each country vis-a-vis the EUI.

In addition, we also illustrate revenues, expenditures, annual and cumulative balance for the system as a whole.

From a methodological point of view, it should be emphasised that Excel-based simulation has advantages and limits. The key advantage is that we can simulate a variety of options at both the EU and country level with limited resources and quickly. It is suitable for the calculation of revenues and expenditures and to give a flavour of how important the system would be compared to the existing national stabilisers.

On the other hand, it is not a general or partial equilibrium model that would show dynamic effects of such a system on the member states, or for the EU economy as a whole. Nonetheless, what emerges from the simulation is that the size of the stimulus would in any case be not large enough to have material substantial second-order effects.

As a source of data, we used AMECO, the annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs.

For some countries, we had to simulate short-term unemployment data for some years. This was done by calculating the share of short-term unemployment in overall unemployment for the available years and then extrapolating for the missing years from overall unemployment.

Before presenting the fiscal effects of the simulation, let us now present a comparison of the generosity of the simulated European unemployment insurance system with current national systems. We present this here because we use the same level of generosity for both options, though under Option 2 the national governments would *not* be required to spend the money in this way.

Table 10. Comparison of proposed EUI with actual national unemployment insurance systems, as of 2010

	Gross replacement rate*	Gross replacement rate**	Coverage (% of Labour Force)	Duration (in weeks)
Austria	0.40	0.32	0.68	30
Belgium	0.50	0.37	0.66	unlimited
Bulgaria	0.60	0.52	0.66	40
Cyprus	0.63	0.55	0.79	26
Czech Republic	0.56	0.43	0.91	26
Denmark	0.52	0.47	0.72	105
Estonia	0.50	0.37	0.74	50
Finland	0.54	0.44	1.00	100
France	0.57	0.42	0.61	104
Germany	0.42	0.34	0.67	50
Greece	0.58	0.45	1.00	50
Hungary	0.34	0.27	0.87	40
Ireland	0.47	0.44	1.00	50

	Gross replacement rate*	Gross replacement rate**	Coverage (% of Labour Force)	Duration (in weeks)
Italy	0.50	0.37	0.53	34
Latvia	0.55	0.46	0.75	40
Lithuania	0.34	0.26	0.67	21
Luxembourg	0.83	0.71	0.95	50
Malta	0.20	0.18	0.88	26
Netherlands	0.75	0.59	0.83	44
Poland	0.24	0.20	0.54	26
Portugal	0.65	0.50	0.76	78
Romania	0.27	0.22	0.43	26
Slovakia	0.46	0.35	0.57	26
Slovenia	0.70	0.60	0.80	26
Spain	0.63	0.49	0.58	102
Sweden	0.57	0.43	0.96	62
United Kingdom	0.13	0.11	0.86	26
EUI	NA	0.40	0.75	52

*Ratio with denominator gross wages (Source: SPIN).

** converted to ratio with total compensation as denominator (Source: AMECO).

Source: European Commission and SPIN database.

The table shows that the proposed coverage ratio in the EUI system is above that of most non-euro area member states, with the exception of Sweden, the Czech Republic, Hungary and the UK (and is equal to the Latvian ratio). Within the euro area, the group is split evenly with eight below and nine above the EUI's 75% coverage ratio.

The maximum duration of entitlements has been chosen to be rather high. It is based on the logic that if the EUI is supposed to cover unemployment benefits for the cyclically unemployed, then the benefit should cover all short-term unemployed.

The most controversial item, the replacement ratio, is set at 40% relative to total compensation. This is closer to the higher end than the lower end of the distribution, which within the EU is very heterogeneous.

5.1 Option 1: Harmonised European unemployment benefit

Option 1 in the simulation is the harmonised European unemployment benefit (see Chapter 1 for a summary of existing proposals). The harmonised system applies automatically to every eligible unemployed person.

We quantify the following scenario for the the joint European benefits system:

- It would apply to short-term unemployed workers. Therefore our reference unemployed population does not include all unemployed workers, but only those that have been unemployed for less than one year. We set the maximum duration of benefit to 12 months. However, our calculation is based on the average reciprocity duration of 6 months, so we expect a symmetric pattern of people leaving the register. In the absence of data on the duration profiles of the unemployed across European countries, this appeared to be the best option.
- The coverage ratio is set at 75%, meaning that among those unemployed for less than a year, three quarters are eligible to receive benefits.
- The benefit is equivalent to 40% of the average monthly national nominal compensation. It should be noted that 40% of nominal compensation is not as low as it sounds, since it is calculated not from a gross wage, but from nominal compensation, which also includes employer social security contributions.

The member states would be free to set eligibility rules and replacement rates. If the cost were to be less than the formula below, the member state would receive the actual amount. If the cost were to be higher than the formula, the member state would receive an amount equivalent to the 75% * 40% formula. This would avoid difficult-to-achieve formal harmonisation, while ensuring that there would be *de facto* harmonisation since member states would be incentivised to set up the system in such a way to be close to the 75%*40% formula. In other words, more generous systems would be allowed, but on top of the harmonised one.

$$\text{Gross Expenditure} = 0.75 U_{12\text{months}} \times 0.4 \text{ MNCE} \times 6 \text{ months}$$

where U stands for unemployment and MNCE indicates the monthly nominal compensation per employee.

How would be the system financed? We choose as the source of funding a dedicated labour taxation equivalent to 0.5% of nominal compensation. The rate was set up to roughly balance the system as shown in this chapter.

$$\text{Gross Revenue} = (LF - U) \times 0.5\% \text{ MNCE} \times 12 \text{ months}$$

As previously anticipated, we present two versions of the system. In Option 1a, the system does not require a country-level neutral budgetary position. In other words, countries can be permanently in deficit or surplus vis-à-vis the system without any corrective mechanisms. This represents a truly European system, which essentially ignores boundaries in the fiscal sense and is able to redistribute resources in case of shocks.

We modify the system in the simulation 1b, where each country needs to restore a neutral budgetary position. How? Fiscal neutrality would be achieved by doubling the contribution rate from 0.5% to 1% of the base for countries that have a cumulative deficit with the system of at least 1% of GDP. The double contribution rate would stop once the cumulative deficit falls below 1% of GDP.¹⁷

The choice of the medium-to-long run is due to the fact that a quicker adjustment would hinder the stabilisation capacity by imposing a fiscal effort on countries that are already facing difficulties due to high unemployment rates.

5.1.1 The harmonised unemployment system with no fiscal rule (Option 1a)

As previously anticipated, for each of the four scenarios we show:

- system revenues by country (who pays how much in);
- system expenditure by country (who gets how much out);
- annual balance at the country-level, i.e. the net stimulus provided by the EUI;
- cumulative balance, i.e. the long-term balance of each country with the EUI;
- and
- revenues, expenditures, and annual and cumulative balance for the system as a whole.

We start with revenues by country as a percentage of GDP for the period 1999-2012 that result from a contribution of 0.5% of nominal compensation of employees for each worker. Given that they tend to be stable over time, we do not show the annual values, but only the minimum value achieved over the entire period, the maximum value and the mean.

The mean value oscillates between 0.24 and 0.36, with Luxembourg the only exception. The total range for all countries and all years oscillates between 0.22% and 0.39% of GDP, again with Luxembourg the only exception.

Given that the contribution mechanism is set up as the same percentage of nominal compensation, differences primarily reflect different shares of labour compensation

¹⁷ Alternatively, the stop could be set to balance – 0% of GDP. This would not have much of an effect on the current simulation.

in GDP. In that sense, it is mildly cyclical as it tends to decline in periods of high unemployment, but only to a limited extent.

The countries with the highest contribution over the whole period are the Netherlands (0.36%), Austria (0.33%), Belgium, France Romania, Slovenia and the UK (all 0.31%). At the other extreme are Luxembourg (0.16%), Hungary and Lithuania (0.24%), and Bulgaria, the Czech Republic, Ireland, Latvia and Poland (all 0.25%). Figures are presented in Table 11.

Table 11. EUI annual revenues by country as % of GDP (minimum, maximum and mean values)

	Min	Max	Mean (1999-2012)
Belgium	0.3	0.32	0.31
Bulgaria	0.23	0.27	0.25
Czech Republic	0.23	0.26	0.25
Denmark	0.28	0.31	0.29
Germany	0.28	0.3	0.29
Estonia	0.24	0.29	0.26
Ireland	0.23	0.28	0.25
Greece	0.25	0.29	0.27
Spain	0.29	0.31	0.3
France	0.31	0.32	0.31
Croatia	0.28	0.31	0.29
Italy	0.27	0.31	0.29
Cyprus	0.27	0.3	0.28
Latvia	0.23	0.28	0.25
Lithuania	0.22	0.27	0.24
Luxembourg	0.14	0.18	0.16
Hungary	0.23	0.25	0.24
Malta	0.25	0.26	0.26
Netherlands	0.35	0.38	0.36
Austria	0.32	0.34	0.33
Poland	0.23	0.29	0.25
Portugal	0.28	0.3	0.29
Romania	0.27	0.39	0.31
Slovenia	0.3	0.33	0.31
Slovakia	0.22	0.25	0.23
Finland	0.27	0.3	0.28
Sweden	0.28	0.3	0.29
United Kingdom	0.3	0.32	0.31

Source: Authors' elaboration based on AMECO data.

Expenditure figures, as a percentage of GDP, are presented in Table 12. A quick glance at the data shows that expenditure oscillates much more than revenue and thus provides the main anti-cyclical element. It exceeds 0.5% of GDP in the worst year for Estonia (0.76%), Ireland (0.57%), Greece (0.73%), Spain (1.3%), Cyprus (0.58%), Latvia (0.89%), Lithuania (0.72%), Poland (0.66%) and Portugal (0.59%). However, only for Spain does this translate into mean expenditure over the period that is greater than 0.5% of GDP (0.71%). For the rest, increased expenditure is a temporary phenomenon, reflecting primarily, though not exclusively, the period of the Great Recession.

Table 12. EUI annual expenditure by country as % of GDP (minimum, maximum and mean values)

	min	max	mean
Belgium	0.18	0.3	0.25
Bulgaria	0.13	0.43	0.28
Czech Republic	0.13	0.28	0.21
Denmark	0.15	0.36	0.25
Germany	0.2	0.36	0.29
Estonia	0.13	0.76	0.36
Ireland	0.13	0.57	0.25
Greece	0.24	0.73	0.35
Spain	0.43	1.3	0.71
France	0.3	0.42	0.36
Croatia	0.16	0.44	0.33
Italy	0.18	0.35	0.24
Cyprus	0.16	0.58	0.27
Latvia	0.25	0.89	0.42
Lithuania	0.18	0.72	0.42
Luxembourg	0.07	0.15	0.11
Hungary	0.18	0.37	0.25
Malta	0.14	0.19	0.16
Netherlands	0.11	0.25	0.17
Austria	0.2	0.29	0.24
Poland	0.25	0.66	0.45
Portugal	0.16	0.59	0.29
Romania	0.14	0.3	0.22
Slovenia	0.16	0.38	0.26
Slovakia	0.15	0.46	0.3
Finland	0.28	0.46	0.37
Sweden	0.23	0.4	0.3
United Kingdom	0.19	0.34	0.24

Source: Authors' elaboration based on AMECO data.

Table 13 presents average annual and cumulative balance of each country vis-à-vis the system. The first column shows average annual balance for the whole period (1999-2012). The second column shows average annual balance for the period prior to the Great Recession (1999-2008). The third column shows the average annual balance for the Great Recession period and its aftermath (2009-2012).

Table 13. EUI average annual balance and cumulative balance by country, % of GDP

	Average annual balance 1999-2012	Average annual balance 1999-2008	Average annual balance 2009-2012	Cumulative balance (% of 2012 GDP)
Belgium	0.06	0.08	0.03	0.70
Bulgaria	-0.03	-0.03	-0.03	-0.13
Czech Republic	0.03	0.05	-0.01	0.35
Denmark	0.04	0.08	-0.04	0.48
Germany	0.00	-0.02	0.05	0.07
Estonia	-0.10	-0.05	-0.25	-0.88
Ireland	0.00	0.07	-0.18	-0.03
Greece	-0.08	0.00	-0.28	-1.16
Spain	-0.41	-0.22	-0.88	-5.36
France	-0.05	-0.03	-0.08	-0.55
Croatia	-0.04	-0.04	-0.03	-0.30
Italy	0.05	0.06	0.01	0.59
Cyprus	0.02	0.07	-0.13	0.03
Latvia	-0.17	-0.10	-0.36	-1.70
Lithuania	-0.18	-0.11	-0.33	-1.57
Luxembourg	0.05	0.06	0.03	0.45
Hungary	-0.01	0.04	-0.13	-0.27
Malta	0.10	0.10	0.09	1.05
Netherlands	0.20	0.21	0.15	2.34
Austria	0.10	0.10	0.10	1.12
Poland	-0.20	-0.23	-0.11	-1.65
Portugal	0.00	0.07	-0.17	-0.15
Romania	0.09	0.12	0.02	0.73
Slovenia	0.06	0.09	-0.03	0.63
Slovakia	-0.07	-0.07	-0.06	-0.37
Finland	-0.09	-0.10	-0.08	-1.00
Sweden	-0.01	0.01	-0.07	-0.18
United Kingdom	0.07	0.09	0.01	0.87

Source: Authors' elaboration based on AMECO data.

We see that during the good times, only Spain and Poland had larger annual negative balance – 0.22% and 0.21% of GDP. By the same token, only the Netherlands had significant average annual surplus (0.21%). After 2009, Estonia, Greece, Spain,

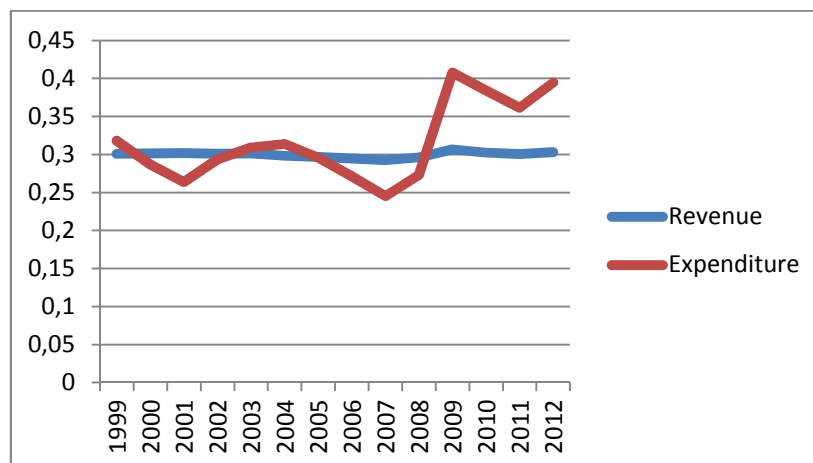
Latvia and Lithuania exceed average annual negative balance of more than 0.2% of GDP. During this period, no country has an average surplus of more than 0.2% of GDP.

However, even smaller surpluses or deficits can accumulate into larger totals over a period of more than a decade. If we set 1% of GDP as the threshold for triggering the increase in the contribution, then Greece, Spain, Latvia, Lithuania, Poland and Finland accumulate deficits of such magnitude that in option 1b turn trigger an increase in the contribution.

Malta, Netherlands and Austria instead cumulatively contribute more than 1% of 2012 GDP compared to what they pay in.

We aggregate figures to present the overall balance at the EU level. Figure 8 shows revenues and expenditures for the whole system as a percentage of GDP. We can see that while the revenues are essentially flat at around 0.3% of GDP, expenditures oscillate much more – between 0.25% just prior to the Great Recession and 0.4% during most of it. Expenditure is therefore sensitive to the business cycle, in an anti-cyclical fashion as it is supposed to be, whereas revenues are rather constant.

Figure 8. Revenue and expenditure at the EU level as % of GDP



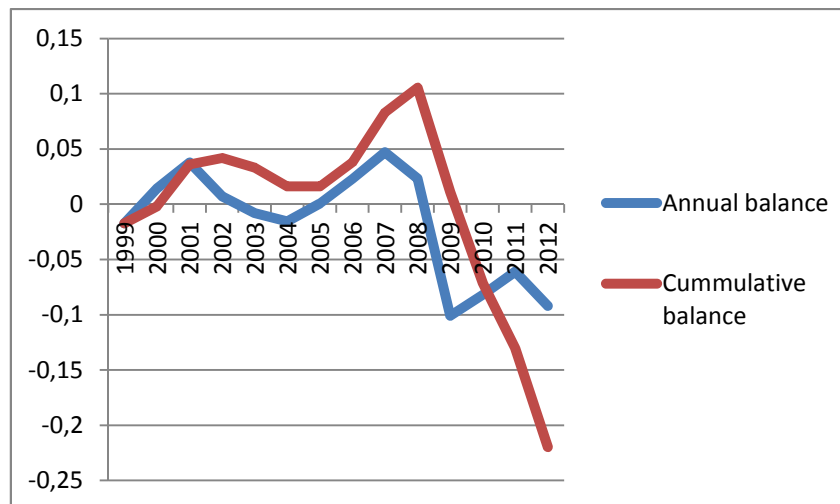
Source: Authors' elaboration based on AMECO data.

Figure 9 shows annual and cumulative balances at the EU level. The annual balance line is unsurprising as it is essentially the difference between revenue and expenditure in the first chart. It is mildly positive for most of the years before the Great Recession and then it stays in negative territory, showing annual deficits of between 0.05% and 0.1% of GDP.

A more interesting piece of information is the cumulative balance of the whole system expressed as a percentage of a given year's GDP. Had the system been in place since 1999, the EUI would not have required additional financial injection after its start. Indeed, it would have accumulated reserves all the way up to 2008. However, the reserves would then all have been spent in 2009 and the cumulative

deficit would continue increasing during the 2010-2012 period. This raises the issue of additional financing needs of the EUI under such circumstances. Given the system performance prior to 2009, there could be a reasonable expectation that the money would be recovered over the long run, but the interim period could be an extended one.

Figure 9. Annual and cumulative balance at the EU level as % of GDP



Source: Authors' elaboration based on AMECO data.

5.1.2 The harmonised unemployment system with long-term country-level neutral budgetary position (Option 1b)

We now move from Option 1a to Option 1b. The two differ in a single but crucial element: we now have a system that aims to be balanced in the medium-to-long run for each member state. This means that a state can run a yearly deficit vis-à-vis the system in case of recessions, but needs to repay the loan in the medium-to-long run. As a consequence, redistribution between countries is allowed, but only temporarily.

The rebalancing is achieved by doubling the contribution rate from 0.5% to 1% of the base for countries which have a cumulative deficit with the system of at least 1% of GDP. The double contribution rate would stop once the cumulative deficit falls again to below 1% of GDP.¹⁸

For this option, we do not provide expenditure data on the country basis since the expenditure is identical to Option 1a, the difference lies on the revenue side.

Table 14 shows revenues by country as a percentage of GDP for the period 1999-2012. As with the previous option, we show the minimum value achieved annually, the maximum value and the mean. The bottom values remain the same as in Option

¹⁸ Alternatively, the stop could be set to balance – 0% of GDP. This would not have much of an effect on the current simulation.

1a – if we take out Luxembourg, then 0.22% of GDP is the lowest any country (Slovakia) pays in any year, and 0.23% of GDP is the lowest average contribution by a country (also Slovakia).

To repeat from Option 1a, given that the contribution mechanism is set up as the same percentage of nominal compensation, the differences primarily reflect different shares of labour compensation in GDP. In that sense, it is mildly anti-cyclical as it tends to decline in periods of high unemployment, but only to a limited extent.

Table 14. EUI annual revenues by country as % of GDP (minimum, maximum and mean values)

	Min	Max	Mean (1999-2012)
Belgium	0.3	0.32	0.31
Bulgaria	0.23	0.27	0.25
Czech Republic	0.23	0.26	0.25
Denmark	0.28	0.31	0.29
Germany	0.28	0.3	0.29
Estonia	0.24	0.29	0.26
Ireland	0.23	0.28	0.25
Greece	0.25	0.29	0.27
Spain	0.29	0.62	0.43
France	0.31	0.32	0.31
Croatia	0.28	0.31	0.29
Italy	0.27	0.31	0.29
Cyprus	0.27	0.3	0.28
Latvia	0.23	0.49	0.3
Lithuania	0.23	0.44	0.28
Luxembourg	0.14	0.18	0.16
Hungary	0.23	0.25	0.24
Malta	0.25	0.26	0.26
Netherlands	0.35	0.38	0.36
Austria	0.32	0.34	0.33
Poland	0.23	0.53	0.32
Portugal	0.28	0.3	0.29
Romania	0.27	0.39	0.31
Slovenia	0.3	0.33	0.31
Slovakia	0.22	0.25	0.23
Finland	0.27	0.3	0.28
Sweden	0.28	0.3	0.29
United Kingdom	0.3	0.32	0.31

Source: Authors' elaboration based on AMECO data.

Where it becomes different and interesting, of course, is with regard to maximum values. Given their accumulated deficit of more than 1% of GDP at some point, Spain, Latvia, Lithuania and Poland have to contribute more for a period of time. For Spain, this applies to 2005 and the period from 2008 onwards. Latvia has to double its contributions in 2010 and since, and Lithuania in 2011 and 2012. For Poland, the relevant period is 2003-2006. In 2013, they would be joined by Greece, which hit a cumulative deficit of 1.16% of GDP in that year. This also shows the disadvantage of the balancing system. The 1% benchmark provides breathing space when a country pays regular contributions but receives much higher benefits, but if there is a sustained spell of high unemployment, the doubled contributions can erase the anti-cyclical impact in those later years.

The annual and cumulative balance numbers do not change for most countries, meaning that they do not cross the 1% line. Both their revenues and expenditures stay the same compared to Option 1a. However, for the four countries mentioned above, the need to contribute more improves their balance vis-à-vis the system.

Table 15. EUI average annual balance and cumulative balance by country, % of GDP

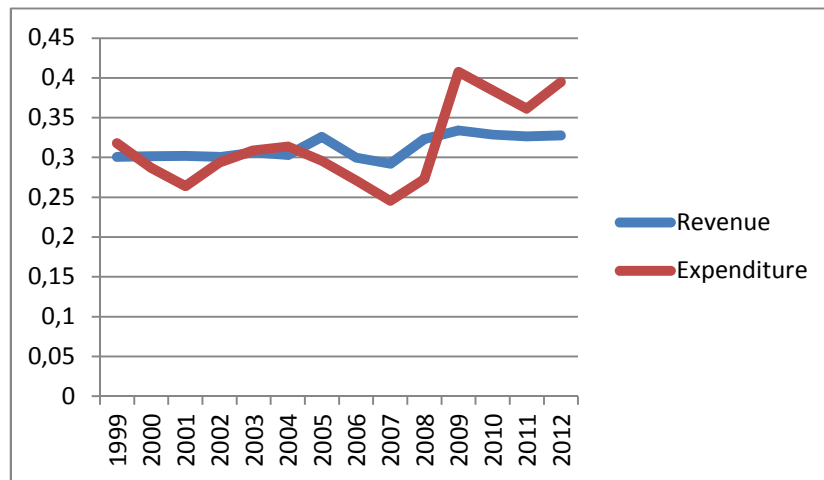
	Average annual balance 1999-2012	Average annual balance 1999-2008	Average annual balance 2009-2012	Cumulative balance (% of 2012 GDP)	Option 1a cumulative balance (% of 2012 GDP)
Spain	-0.28	-0.16	-0.58	-3.54	-5.36
Latvia	-0.12	-0.10	-0.19	-1.06	-1.70
Lithuania	-0.14	-0.11	-0.22	-1.14	-1.57
Poland	-0.13	-0.13	-0.11	-1.06	-1.65

Source: Authors' elaboration based on AMECO data.

The increased revenue ensures that, during good times, no country has an average annual deficit of 0.2% of GDP or higher (this was the case for Poland and Spain in Option 1a). It also ensures that the cumulative balance is cut from 5.36% of GDP to 3.54% of GDP for Spain, and from the 1.5-1.7% range to the 1-1.2% for the three others. Of course, the decrease would continue further in the 2013 and onwards.

The increased revenue for certain countries also increases system-wide revenues in certain years, as we can see in Figure 10. Compared to Option 1a, the expenditure profile stays the same, but we see a slight increase in revenue in early to mid-2000 due to higher Spanish and Polish contributions, and then much higher contributions starting from 2009 onwards.

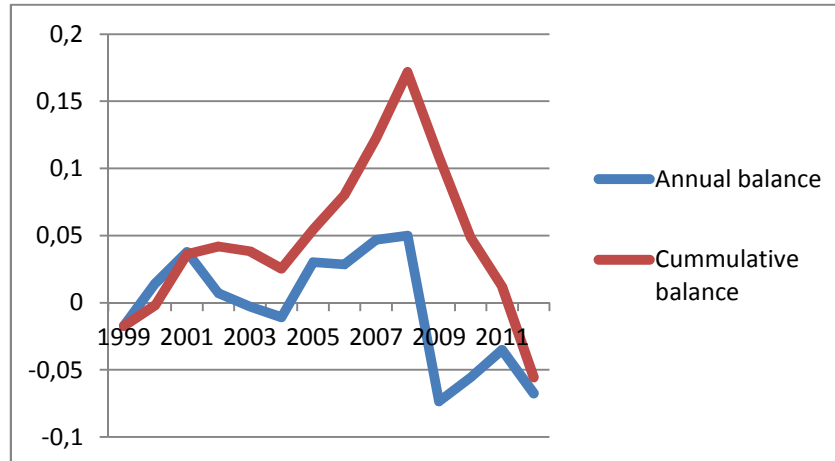
Figure 10. Revenue and expenditure at the EU level, % of GDP



Source: Authors' elaboration based on AMECO data.

This leads to higher annual surpluses in the good times and smaller annual deficits during the Great Recession, as Figure 11 shows. It also makes the system much more solvent; despite the Great Recession, it would be only in 2012 when it would require additional injection.

Figure 11. Annual and cumulative balance at the EU level, % of GDP



Source: Authors' elaboration based on AMECO data.

5.2 The catastrophic unemployment insurance system

We call Option 2 the catastrophic unemployment insurance. The insured identity is not the single worker at risk of unemployment, as in Option 1, but states or, more precisely, national insurance funds. The basic idea is to transfer funds from the

centre to the periphery to finance unemployment benefits when unemployment is measurably higher than normal.

In our simulation, the assistance is triggered when the unemployment rate is higher than NAWRU by two percentage points in a certain country. This choice of trigger is arbitrary and smaller values could be chosen.¹⁹ However, the value is consistent with the idea of the catastrophic system intervening only in exceptional circumstances, in other words, a major increase in the unemployment rates.

The payout is a subsidy to the national budget equivalent to the sum of all unemployment benefits for a six-month benefit period calculated on the same basis as Option 1 (40% of nominal compensation, 75% of unemployed for less than one year covered). The payout would not be conditional; gross transfers from the EUI could be used as national governments see fit (though of course if conditionality were imposed, this would have no impact on the fiscal calculations that follow).

The insurance would be funded by member states' contributions. These would amount to 0.1% of GDP annually until 0.5% of EU GDP is accumulated. Then contributions would stop and would be restarted if the fund fell to under 0.5% of EU output.

On the expenditure side, we model the following rule: if the difference between the annual unemployment rate and NAWRU in each country is higher than 2%, then the country in question receives a payout equal to 75% of the number of unemployed workers (below 12 months) multiplied by 40% of their average nominal compensation.

$$\text{if } U_{t,i} - \text{NAWRU} > 2 \Rightarrow \text{Country pay} - \text{out}_{i,t} = 0.4 \text{ MNCE} \times .75 U$$

As with Option 1, we present results for the two versions of this second option. In the first (Option 2a), no fiscal rule is applied. In other words, countries can be permanently in deficit or surplus vis-à-vis the system without any corrective mechanisms. This represents a truly European system, which essentially ignores boundaries in the fiscal sense, and also a real insurance based on the idea that such a shock is randomly distributed.

In the second version (Option 2b), countries are required to maintain a neutral budgetary position. The system would aim to be balanced in the medium-to-long run for each member state. This would be achieved by setting an additional contribution of 0.2% of GDP payable annually by countries that have a cumulative deficit with the system of at least 1% of GDP. The additional contribution is due every year, regardless of whether the regular contribution is being paid and stops once the cumulative deficit falls below 1% of GDP.²⁰

¹⁹ Values greater than NAWRU + 2 percentage points would instead make no sense as they would apply to an extremely limited number of cases.

²⁰ Alternatively, the stop could be set to balance – 0% of GDP. This would not have much of an effect on the current simulation.

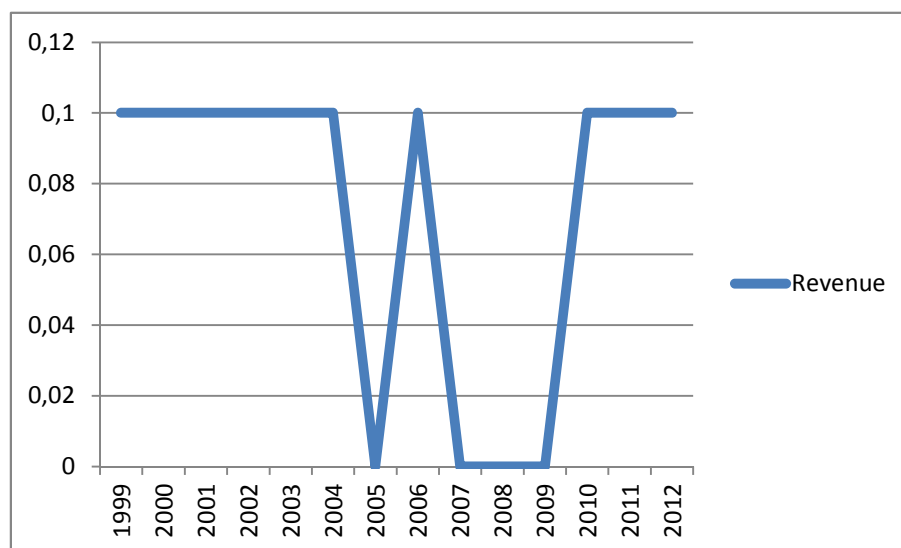
5.2.1 The catastrophic insurance scheme with no fiscal rule (Option 2a)

As with Options 1a and 1b, we show detailed results of our simulation. This includes:

- system revenues by country (who pays how much in);
- system expenditure by country (who gets how much out);
- annual balance at the country-level, i.e. the net stimulus provided by the EUI;
- cumulative balance, i.e. long-term balance of each country with the EUI; and
- revenues, expenditures, and annual and cumulative balance for the system as a whole.

Revenues are easily counted in this case since every country pays the same – zero or 0.1% of GDP, depending on the aggregate balance of the fund. Between 1999 and 2004, all countries pay to gradually build up the fund. Then between 2005 and 2009, we see the stop-start mechanism of contributions and at the same time, only minor or no payouts. The situation changes in 2010: contributions restart on a sustained basis to replenish the fund.

Figure 12. EUI annual revenues for each country, % of GDP



Source: Authors' elaboration based on AMECO data.

The clear difference between the two scenarios is that the contribution demanded for the catastrophic insurance is much smaller than under the harmonised system. We see that the mechanism is indeed much smaller – on average 0.07% of GDP annually, and that included building up the fund. In the years since the 0.5% of GDP level was reached (in 2006), it would have been only 0.05% of GDP on average.

The payouts are much more varied and many member states would not have received any during the period, since their unemployment rates stayed below the trigger. However, countries that do receive a payout receive support that is comparable in size to the harmonised scheme. As a consequence:

- the stabilising effect of the catastrophic insurance is bigger due to the fact that a similar premium is received for a smaller annual contribution; and
- the same goal is achieved at a smaller cost with the catastrophic insurance scheme.

Table 16 provides detailed information on the annual expenditure, divided into the pre- and post-crisis periods.

Table 16. Overall EUI annual expenditure since 2009 by country and maximum value as % of GDP

	Total payout 1999-2012	Total payout 2009-2012	Highest annual payout
Belgium	0.00	0.00	0.00
Bulgaria	0.80	0.00	0.43
Czech Republic	0.00	0.00	0.00
Denmark	0.36	0.36	0.36
Germany	0.00	0.00	0.00
Estonia	1.46	1.46	0.76
Ireland	1.76	1.76	0.57
Greece	1.94	1.37	0.73
Spain	4.75	4.75	1.30
France	0.00	0.00	0.00
Croatia	0.00	0.00	0.00
Italy	0.00	0.00	0.00
Cyprus	0.00	0.00	0.00
Latvia	2.43	2.43	0.89
Lithuania	3.66	2.26	0.72
Luxembourg	0.00	0.00	0.00
Hungary	0.00	0.00	0.00
Malta	0.00	0.00	0.00
Netherlands	0.00	0.00	0.00
Austria	0.00	0.00	0.00
Poland	2.27	0.00	0.66
Portugal	0.00	0.00	0.00
Romania	0.00	0.00	0.00
Slovenia	0.00	0.00	0.00
Slovakia	0.89	0.00	0.46
Finland	0.00	0.00	0.00
Sweden	0.00	0.00	0.00
United Kingdom	0.00	0.00	0.00

Source: Own elaboration based on AMECO data.

The countries receiving more than 1% of GDP overall are: Estonia (1.46%), Ireland (1.76%), Greece (1.94%), Spain (4.75%), Latvia (2.43%), Lithuania (3.66%) and Poland (2.27%). The vast majority of payouts for these countries occur after 2009, but there are exceptions (Lithuania in 2000-2002, Poland in 2002-2005, and Greece in 1999-2000).

If we look at total balance, we get a similar though more sophisticated picture. Only for Spain is the total annual average balance greater than 0.2% of GDP (0.27%), and only for Latvia and Lithuania also is it more than 0.1% (0.1% and 0.19%, respectively). This illustrates how the system is less likely than Option 1 to produce significant long-term beneficiaries even without additional contributions (which will be added in Option 2b). By design, it is impossible for any country to be a net payer of the order of magnitude of 0.2% of GDP or more for any sustained period of time.

However, during the Great Recession and its aftermath, Estonia, Ireland, Greece, Spain, Latvia and Lithuania all receive on average over 0.2% of GDP more than they pay in annually. Spain (4%), Latvia (1.52%) and Lithuania (1.95%) also accumulate a total negative cumulative balance of more than 1% of GDP by 2012. No country accumulates more than 1% of GDP of cumulative surplus, though Portugal and some other countries come close. The Portuguese case also demonstrates one disadvantage of this option: a country with consistently poor performance can be in a situation where its deviation from its “normal” is never large enough to warrant assistance and it ends up as a net payer despite its significant suffering.

Table 17. Annual balance overview

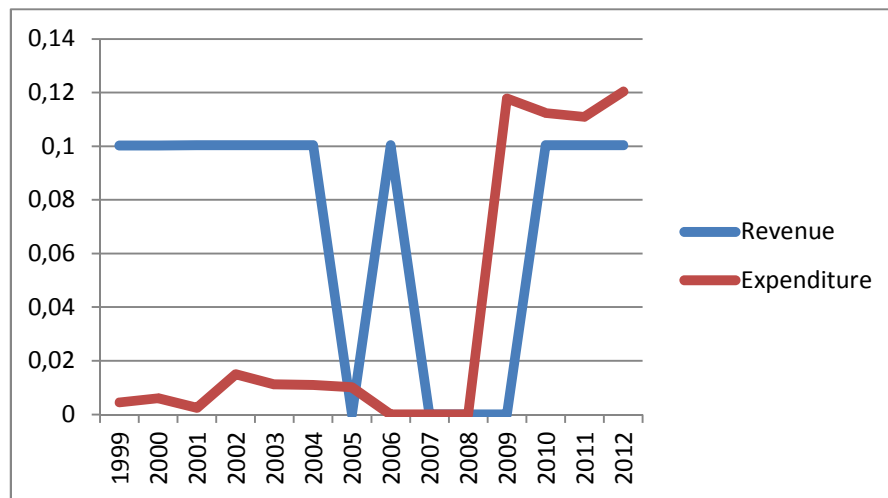
	Average	Average	Average	Cumulative
Belgium	0.07	0.07	0.08	0.80
Bulgaria	0.01	-0.01	0.08	0.28
Czech Republic	0.07	0.07	0.08	0.67
Denmark	0.05	0.07	-0.01	0.48
Germany	0.07	0.07	0.08	0.85
Estonia	-0.03	0.07	-0.29	-0.58
Ireland	-0.05	0.07	-0.36	-0.88
Greece	-0.07	0.01	-0.27	-0.91
Spain	-0.27	0.07	-1.11	-4.00
France	0.07	0.07	0.08	0.83
Croatia	0.07	0.07	0.08	0.76
Italy	0.07	0.07	0.08	0.88
Cyprus	0.07	0.07	0.08	0.75
Latvia	-0.10	0.07	-0.53	-1.52
Lithuania	-0.19	-0.07	-0.49	-1.95
Luxembourg	0.07	0.07	0.08	0.70
Hungary	0.07	0.07	0.08	0.79
Malta	0.07	0.07	0.08	0.76
Netherlands	0.07	0.07	0.08	0.84

	Average	Average	Average	Cumulative
Austria	0.07	0.07	0.08	0.80
Poland	-0.09	-0.16	0.08	-0.59
Portugal	0.07	0.07	0.08	0.90
Romania	0.07	0.07	0.08	0.58
Slovenia	0.07	0.07	0.08	0.80
Slovakia	0.01	-0.02	0.08	0.29
Finland	0.07	0.07	0.08	0.81
Sweden	0.07	0.07	0.08	0.75
United Kingdom	0.07	0.07	0.08	0.90

Source: Own elaboration based on AMECO data.

At the EU level, the system is much more volatile on both the revenue and the expenditure side than Option 1, as befits a catastrophic insurance system. The following figure shows that revenues for the whole system are identical to the national-level revenues shown above. Expenditures are quite low during the “good times”, with small payouts of less than 0.02% of EU GDP between 1999 and 2008 and a few years of no payouts. After 2009, the system would be paying out between 0.11% and 0.12% of EU GDP annually.

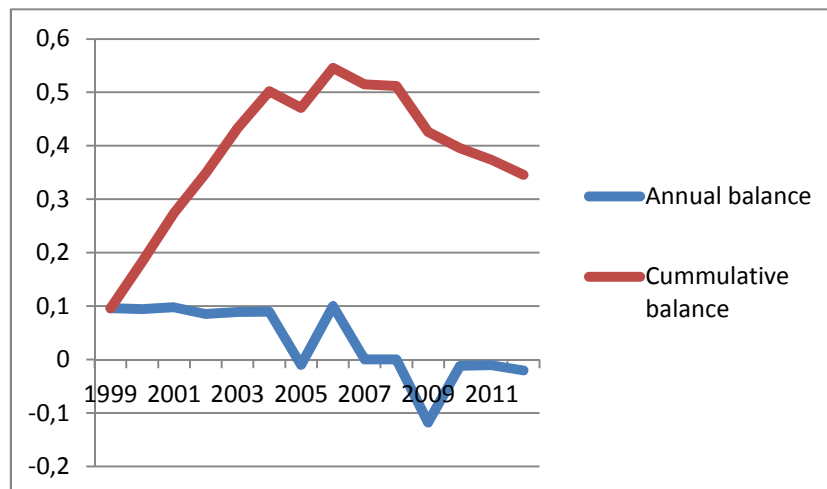
Figure 13. Revenue and expenditure at the EU level, % of GDP



Source: Own elaboration based on AMECO data.

The annual balance of the system is determined by interaction between the start-and-stop revenue system and catastrophic event-based payouts. In early years, it is mostly in surplus of close to 0.1% of GDP as member states pay to build up the fund and do not get much in return. Since then, with the exception of 2009, the balance is zero or close to zero as significant payouts is balanced or nearly balanced by restart of the contributions. As a result, the cumulative fund balance shows the initial build up to 0.5% of GDP, then stagnation, then a sharp cut in 2009 and since then a gradual mild erosion as payouts are somewhat larger than the restarted contributions.

Figure 14. Annual and cumulative balance at the EU level, % of GDP



Source: Own elaboration based on AMECO data.

5.2.2 The catastrophic insurance scheme with long-term country-level neutral budgetary position (Option 2b)

Option 2b is identical to Option 2a but with the added need for a country-level neutral budgetary position. The system would aim to be balanced in the medium-to-long run for each member state. This would be achieved by setting an additional contribution of 0.2% of GDP payable annually by countries that have a cumulative deficit with the system of at least 1% of GDP. The additional contribution is due every year, regardless of whether the regular contribution is being paid and would stop once the cumulative deficit falls below 1% of GDP.

Table 18. EUI annual revenues by country, % of GDP (mean value)

Country	Average contribution
Belgium	0.07
Bulgaria	0.07
Czech Republic	0.07
Denmark	0.07
Germany	0.07
Estonia	0.07
Ireland	0.07
Greece	0.07
Spain	0.10
France	0.07
Croatia	0.07
Italy	0.07
Cyprus	0.07
Latvia	0.10
Lithuania	0.11

Country	Average contribution
Luxembourg	0.07
Hungary	0.07
Malta	0.07
Netherlands	0.07
Austria	0.07
Poland	0.10
Portugal	0.07
Romania	0.07
Slovenia	0.07
Slovakia	0.07
Finland	0.07
Sweden	0.07
United Kingdom	0.07

Source: Own elaboration based on AMECO data.

This would mean that, unlike in Option 2a, countries would not all have equal average contributions over a longer period. As shown in the table below, most would still pay 0.07% of GDP on average (due to the fact that the contribution of 0.1% would not be payable in every year), but Spain, Latvia, Lithuania and Poland would pay more at 0.1%.

We do not provide expenditure data on the country basis since the expenditure is identical to Option 2a. The difference is on the revenue side.

What changes is the balance, of course, for the four countries that would have to pay additional revenue. By 2012, Latvia and Lithuania would be close to rebalancing their relationship with the system and Poland would have already rebalanced it. On the other hand, the on-going unemployment crisis in Spain and its severity would mean that even higher contributions would not have changed its fiscal relationship with the system by 2012 much.

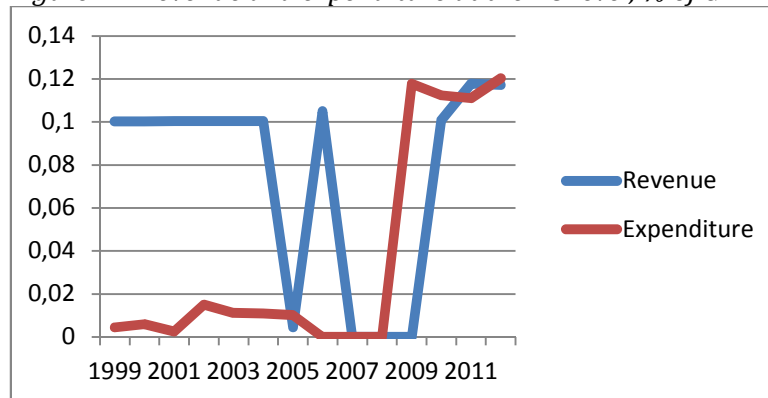
Table 19. EUI average annual balance and cumulative balance by country, % of GDP

	BALANCE 1999-2012	BALANCE 2009-2012	BALANCE 1999- 2008	Cumulative balance	Option 2A Cumulative balance (% of 2012 GDP)
Belgium	1.0	0.3	0.7	0.80	0.80
Bulgaria	0.2	0.3	-0.1	0.28	0.28
Czech Republic	1.0	0.3	0.7	0.67	0.67
Denmark	0.6	-0.1	0.7	0.48	0.48
Germany	1.0	0.3	0.7	0.85	0.85
Estonia	-0.5	-1.2	0.7	-0.58	-0.58

	BALANCE 1999-2012	BALANCE 2009-2012	BALANCE 1999- 2008	Cumulative balance	Option 2A Cumulative balance (% of 2012 GDP)
Ireland	-0.8	-1.5	0.7	-0.88	-0.88
Greece	-0.9	-1.1	0.1	-0.91	-0.91
Spain	-3.4	-4.1	0.7	-3.60	-4.00
France	1.0	0.3	0.7	0.83	0.83
Croatia	1.0	0.3	0.7	0.76	0.76
Italy	1.0	0.3	0.7	0.88	0.88
Cyprus	1.0	0.3	0.7	0.75	0.75
Latvia	-1.0	-1.7	0.7	-1.14	-1.52
Lithuania	-2.1	-1.4	-0.7	-1.39	-1.95
Luxembourg	1.0	0.3	0.7	0.70	0.70
Hungary	1.0	0.3	0.7	0.79	0.79
Malta	1.0	0.3	0.7	0.76	0.76
Netherlands	1.0	0.3	0.7	0.84	0.84
Austria	1.0	0.3	0.7	0.80	0.80
Poland	-0.9	0.3	-1.2	-0.32	-0.59
Portugal	1.0	0.3	0.7	0.90	0.90
Romania	1.0	0.3	0.7	0.58	0.58
Slovenia	1.0	0.3	0.7	0.80	0.80
Slovakia	0.1	0.3	-0.2	0.29	0.29
Finland	1.0	0.3	0.7	0.81	0.81
Sweden	1.0	0.3	0.7	0.75	0.75
United Kingdom	1.0	0.3	0.7	0.90	0.90

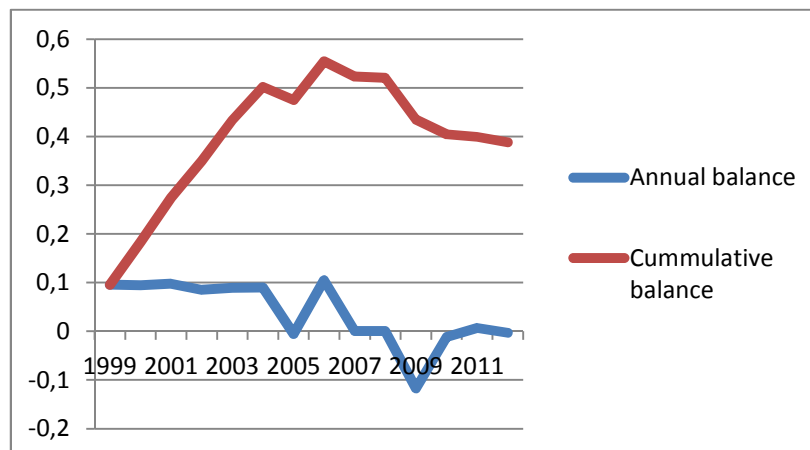
Source: Own elaboration based on AMECO data.

Looking at the revenues and expenditures at the system level, the results are similar to Option 2a: highly volatile revenues and expenditures, as befits a catastrophic insurance. The differences are on the revenue side and are relatively small. We can see that, after 2010, the overall revenue gradually rises from the standard 0.1% of GDP to 0.12% as some countries pay additional contributions.

Figure 15. Revenue and expenditure at the EU level, % of GDP

Source: Own elaboration based on AMECO data.

Looking at the fund balance, the additional revenue is sufficient to stabilise the fund at 0.4% of GDP during the Great Recession and its aftermath, but the difference is fairly small.

Figure 16. Annual and cumulative balance at the EU level, % of GDP

Source: Own elaboration based on AMECO data.

Overall, at the system level we see that the additional contributions paid by countries with deep deficits can be important for those countries' fiscal relationship vis-à-vis the system, but do not make much difference to the system as a whole. On the other hand, such statements are based on re-running a historical situation in which none of the truly largest economies (France, Germany, Italy and the UK) was eligible for the payout on a sustained basis.

5.3 Comparison of options

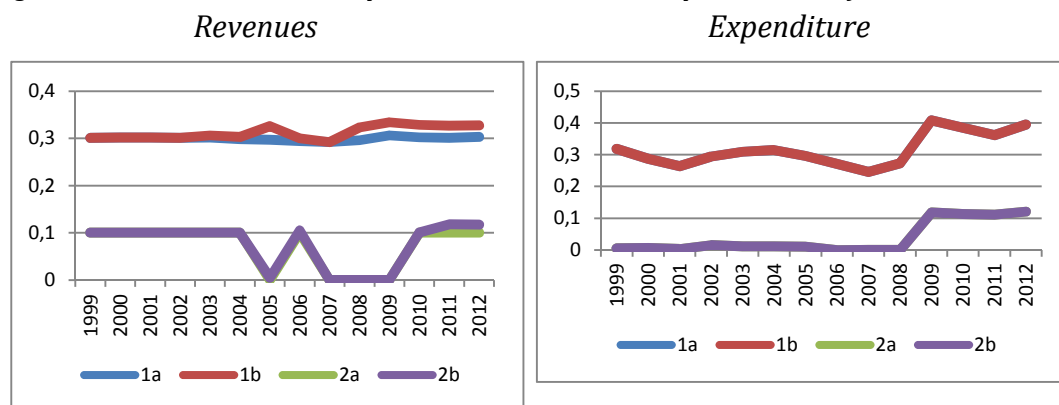
In this section, we compare the four options to better present their similarities and differences to the reader. We start with the EU level and then proceed to present the simulation for several member states as an illustration.

5.3.1 Comparison of the options at the EU level

We start with revenues. The following figure shows stark differences between Options 1 and 2. Option 2, despite the initial five-year period to build up the fund, is much less costly than Option 1 since it is a form of catastrophic insurance for member states, whereas Option 1 is a form of permanent redistribution. Of course, Option 1, unlike Option 2, can replace the national schemes to some extent, so this does not imply that the overall public revenue and expenditure in member states plus the EU would be increased. It could simply be transferred from member states to the supranational level.

In the 14-year period we simulate, differences between the a and b options appear to be relatively small for Option 2, but more significant for Option 1, where the need to rebalance a country's relationship with the system if the accumulated deficit exceeds 1% of GDP leads to a more sustained increase in revenues.

Figure 17. EUI revenues and expenditure under various options, as % of GDP



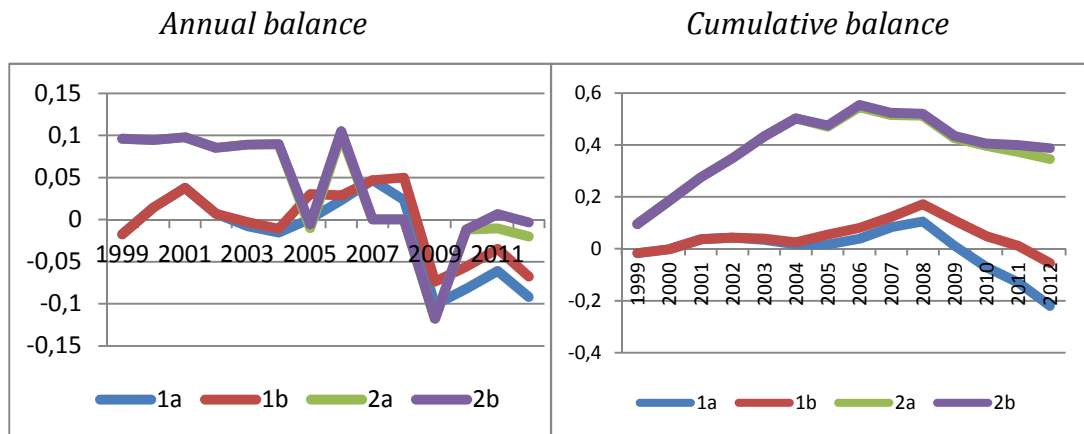
Source: Own elaboration based on AMECO data.

Expenditure does not differ between the a and b options as the difference is on the revenue side. Therefore, we can only compare expenditure overall under Options 1 and 2. What we can see in the figure is the same as in the revenue figure, only more pronounced. The catastrophic insurance option lies essentially dormant (helping an individual member state here and there) until the Great Recession, when it kicks into action. Expenditure for Option 1 is also effectively anti-cyclical at the EU level, ranging from 0.25% of GDP to 0.4%, but with a baseline component that distributes significant amounts even at the best of times.

The most complicated figure so far is the comparison of annual balances. In good times, Options 1 and 2 are both neutral as assistance to individual countries is not sufficient to significantly influence the overall system balance. The only exception is the initial build-up of funding under Option 2. However, in difficult times after 2009, both options initially go deeply into deficit. Afterwards, their reactions differ. At one end of the range, Option 2b quickly regains balance at the EU level, while at the

other end, Option 1a continues with a deficit of between 0.05% and 0.1% of GDP until 2012. Therefore, the desirability of the various options at the EU level depends also on what policy-makers view as a preferable approach.

Figure 18. EUI annual and cumulative balance of the EU under various options, % of GDP



Source: Own elaboration based on AMECO data.

Different annual balances translate also into different cumulative balances. For Option 2, the differences between a and b lead to a small cumulative difference. The real difference is between Option 1 and 2. Option 1 goes into cumulative deficit, which becomes a system-wide deficit under both a and b by 2012 (though the b option, by increasing revenue, results in a much smaller deficit). The calibration of the various options is, of course, only an illustration, but it shows that for Option 1, policy-makers would need to have a financial backstopping facility of some kind (e.g. an extraordinary contribution or loans).

5.3.2 Comparison of the options for selected countries

In this part of the report, we present a comparison of the four options for individual member states. To help the reader, we reproduce in this section the table that summarises the four scenarios analysed: the harmonised European unemployment benefit system and the catastrophic unemployment insurance, each with two different fiscal rules.

We focus on two groups where the results are likely to be of interest: countries suffering most from the Great Recession, and countries that are likely to be long-term net payers. Specifically, we look at Spain, Greece, Latvia, Ireland, the Netherlands, Austria and Germany. We present the four options for each of these countries, together with the annual and cumulative balance.

Table 20. Matrix of scenarios explored

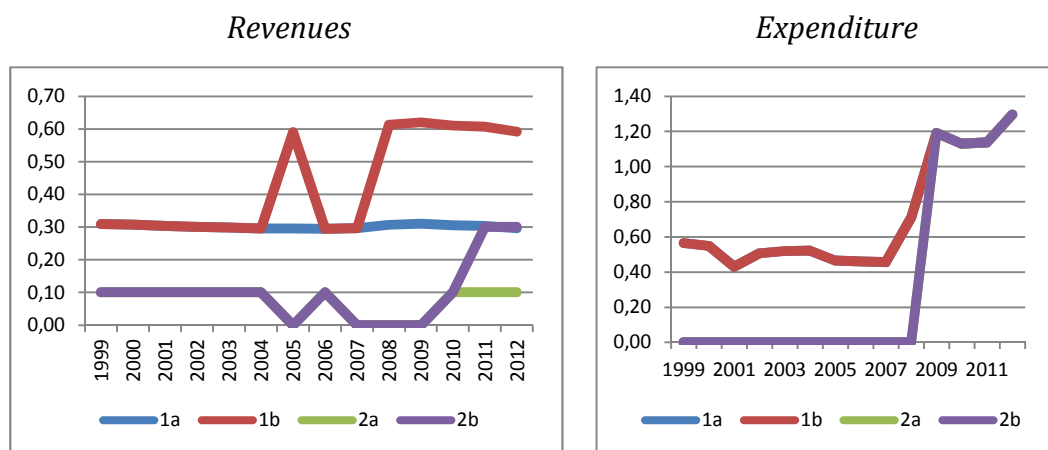
	No long-term country-level budgetary neutrality	Long-term country-level budgetary neutrality
Harmonised European unemployment benefit	Option 1a	Option 1b
Catastrophic unemployment insurance	Option 2a	Option 2b

Source: Own elaboration.

Spain

Spain is the heaviest user of the EUI under all options. It is therefore not surprising that, with the balancing requirement of option b, this leads also to higher payments into the system. Under Option 1b, this reaches approximately 0.6% after 2008. It is milder under Option 2b, but Spain would still be paying 0.3% of GDP (three times higher than most other member states since 2011).

Figure 19. EUI revenues and expenditure paid by and to Spain under various options, as % of GDP



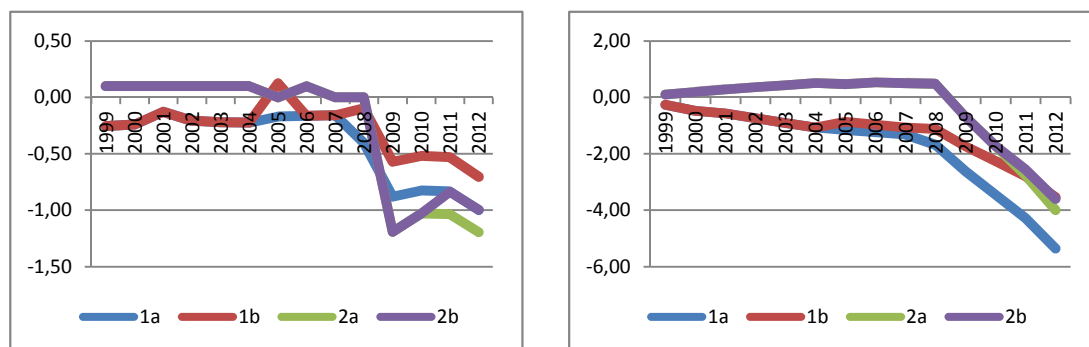
Source: Own elaboration based on AMECO data.

What Spain would receive from the EUI varies dramatically during the good times, but less so during the bad times. Until 2008, the catastrophic insurance would not pay Spain anything since its situation is not dramatic enough. Under the harmonised system, however, Spain would receive between 0.4% and 0.6% of GDP, significantly more than other member states even prior to the Great Recession. However, during the recession and its aftermath, the EUI expenditure of both systems converges at a very high level, approximately 1.3% of GDP, reflecting the dramatic deterioration in Spanish unemployment.

The heavy reliance of Spain on the EUI is also demonstrated by its annual balance, which is negative even during the good times under the harmonised system, though

not under catastrophic insurance. It becomes very negative during the Great Recession, though the balance depends heavily on the option chosen, ranging from approximately 0.6% of GDP annually under the catastrophic insurance with a tighter fiscal rule to 1-1.2% annually under the harmonised system with no budgetary neutrality.

Figure 20. EUI annual and cumulative balance of Spain under various options, % of GDP



Source: Own elaboration based on AMECO data.

Consequently, the cumulative balance of Spain with the system worsens throughout the entire period (if one discounts the initial fund-building period in Option 2). By the end of 2012, it would have been in the red to the tune of between 3.5% and 4% of GDP under all options except for 1a, where it would have been even higher (around 5% of GDP).

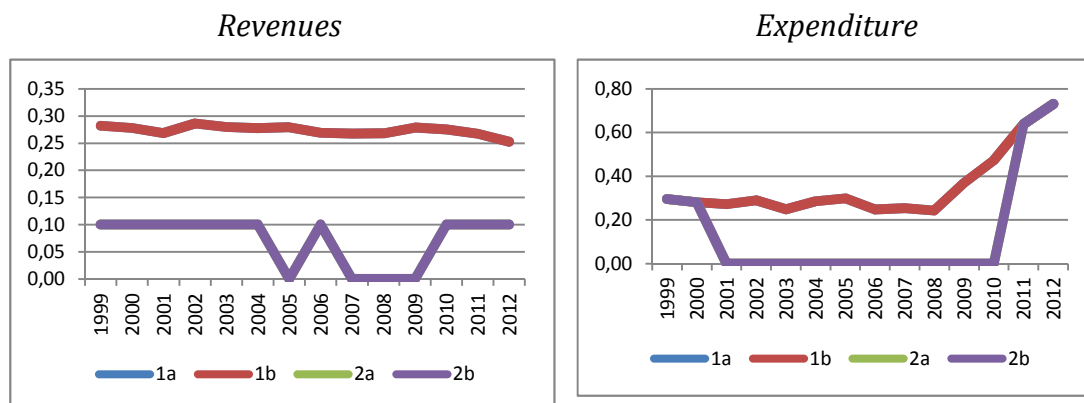
Greece

Greece pays standard revenues into the system despite its repeated use, since it did not cross the 1% accumulated deficit threshold before 2012 (though it would in the following years). We can see a gradual decline in revenues as its employment decreases during the crisis.

Greece's payout from the EUI would reach high levels of 0.6-0.7% of GDP annually during the Great Recession under both options, but it would arrive later under Option 2.

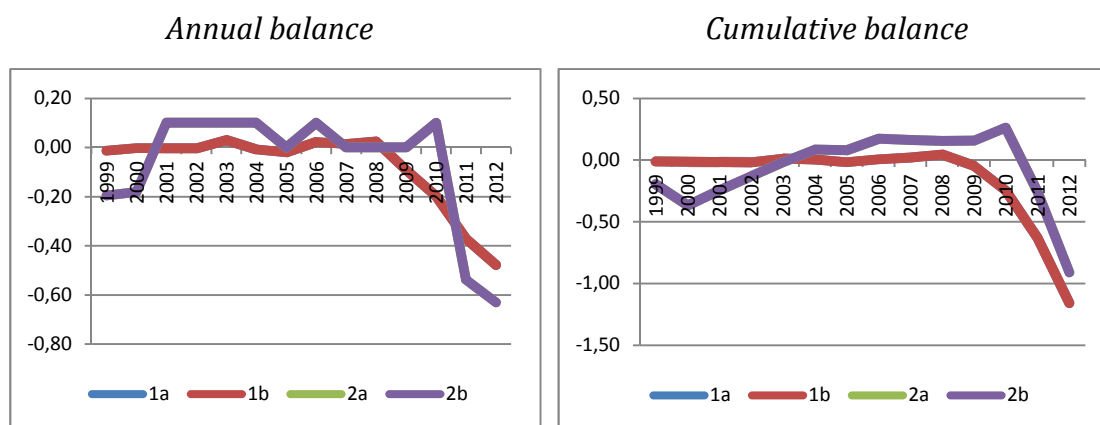
Greece's annual balance turns dramatically negative during the Great Recession as one would expect, reaching 0.5% to 0.6% of GDP annually. The main difference between the two options in terms of annual balance is when and how much. The catastrophic insurance would kick in later but with a stronger stimulative effect, due to lower revenues paid into the EUI.

Figure 21. EUI revenues and expenditure paid by and to Greece under various options, as % of GDP



Source: Own elaboration based on AMECO data.

Figure 22. EUI annual and cumulative balance of Greece under various options, % of GDP



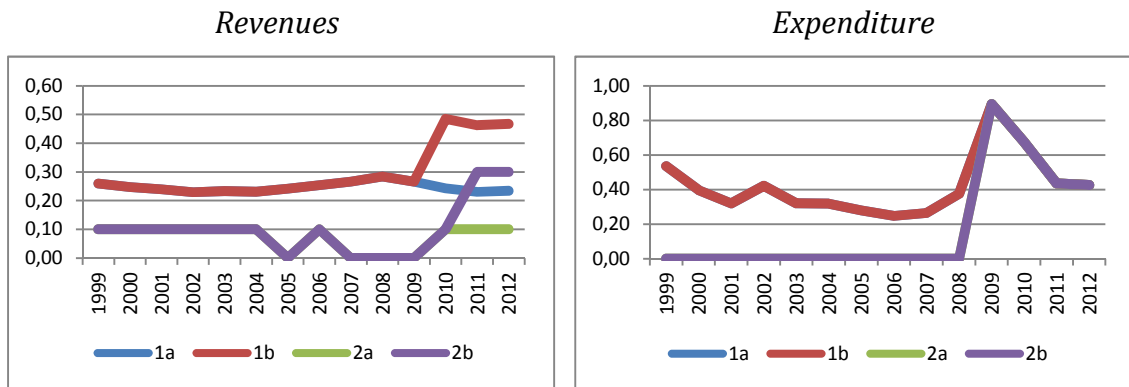
Source: Own elaboration based on AMECO data.

The cumulative balance of Greece vis-à-vis the system turns sharply negative during the Great Recession and its aftermath. There is no difference between the a and b options (with or without rebalancing) and even the difference between the two systems proposed is not dramatic, at approximately 0.2% of GDP on a cumulative basis.

Latvia

Latvia is an example of a country where the balancing requirements might make a dramatic difference. As a heavy user, it would have to, under both options, pay in much more after 2010, but the difference is between roughly 0.25% of GDP under Option 1a and 0.5% of GDP under 1b. For Option 2, it is similar: 0.1% for 2a and 0.3% for 2b.

Figure 23. EUI revenues and expenditure paid by and to Latvia under various options, as % of GDP

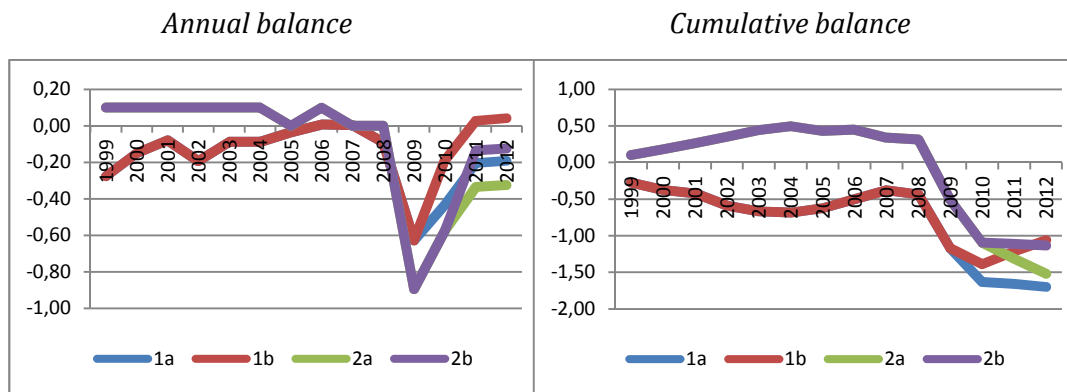


Source: Own elaboration based on AMECO data.

On the expenditure side, Latvia illustrates well that the catastrophic insurance (Option 2) comes with limitations since it is essentially a binary mechanism, either activated or not. In early 2000s, when Latvia suffered from high unemployment, Option 2 would not help because the difference was not dramatic enough and the benchmark value started from a high historical level. Option 1 provides a more calibrated assistance and expenditure by the EUI gradually declines from a high level. On the other hand, in the Great Recession, both options perform similarly in terms of payouts because the shock was severe.

The annual balance of the Latvia-EUI financial relationship has a similar pattern under all options: worsening dramatically in 2009 and then recovering. What distinguished the various options is how quickly and to what extent they bring the relationship back to annual balance. Option 1b is the quickest and 2a has the most gradual return, with a deficit of more than 0.3% of GDP even in 2012.

Figure 24. EUI annual and cumulative balance of Latvia under various options, % of GDP



Source: Own elaboration based on AMECO data.

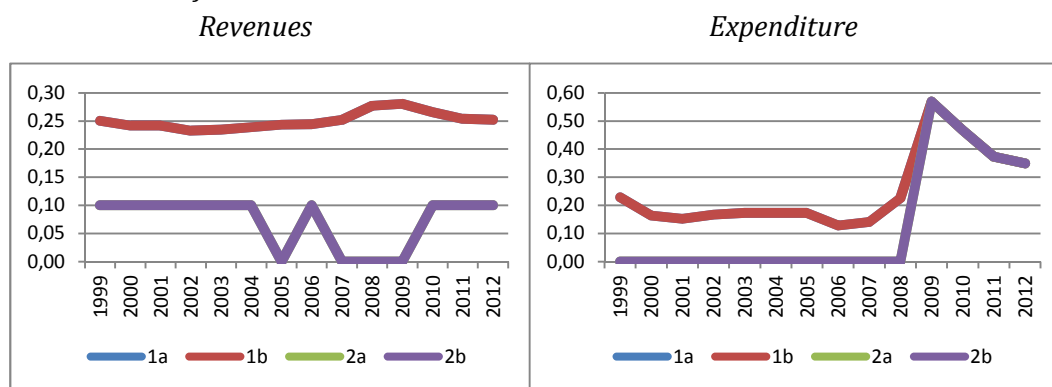
The difference in annual balance development understandably shows in the cumulative balance, where the Latvians accumulate significant deficit, but its size differs. The differences are significant – between 1% and 1.5% of GDP by 2012. Options 1b and 2b bring the cumulative balance almost back to 1%, while 2a has the highest cumulative deficit.

Ireland

Irish employees produce an annual revenue under the harmonised scheme of around 0.25% of GDP with minor fluctuations. Under the catastrophic insurance, the contribution remains fixed at 0.1% and drops to zero once the balance reaches 0.5% of GDP. Expenditure co-moves in the two systems: it is essentially zero for the catastrophic insurance and under 0.2% for the harmonised scheme up to 2008. Afterwards, with the start of the Great Recession, it suddenly peaks at 0.6% and then starts decreasing again to reach 0.35% in 2012. This increase is a natural consequence of the abrupt deterioration in unemployment figures, which multiply four-fold in less than a decade.

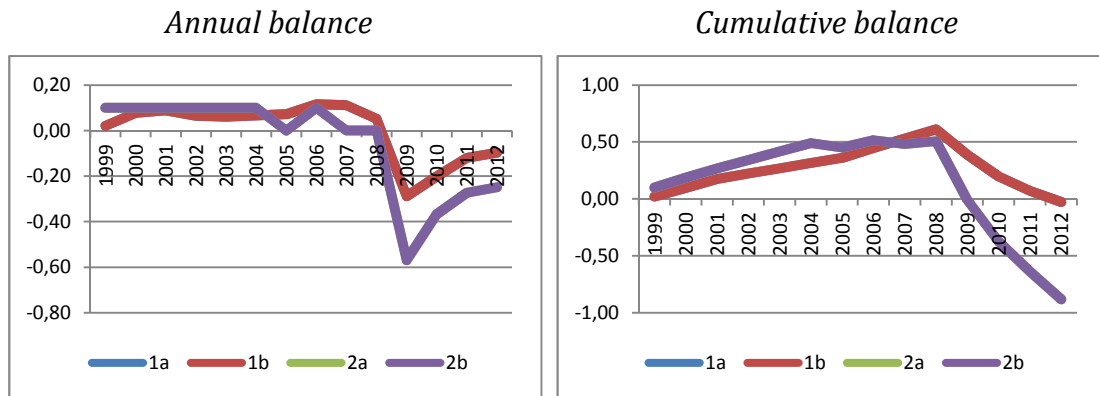
The annual balance remains positive until 2008 and then turns suddenly negative, at up to -0.3% of GDP for the harmonised case and -0.6% for the catastrophic insurance, with the latter therefore providing a stronger relief to public finances in the case of extreme need. All in all, the cumulative balance remains close to zero in the harmonised EUI, whereas it reaches -0.9% of GDP for the catastrophic insurance. Had the latter system been in place, therefore, Ireland would have been very close to the need for readjustment for the next years to restore the balance in the medium term.

Figure 25. EUI revenues and expenditure paid by and to Ireland under various options, as % of GDP



Source: Own elaboration based on AMECO data.

Figure 26. EUI annual and cumulative balance of Ireland under various options, % of GDP



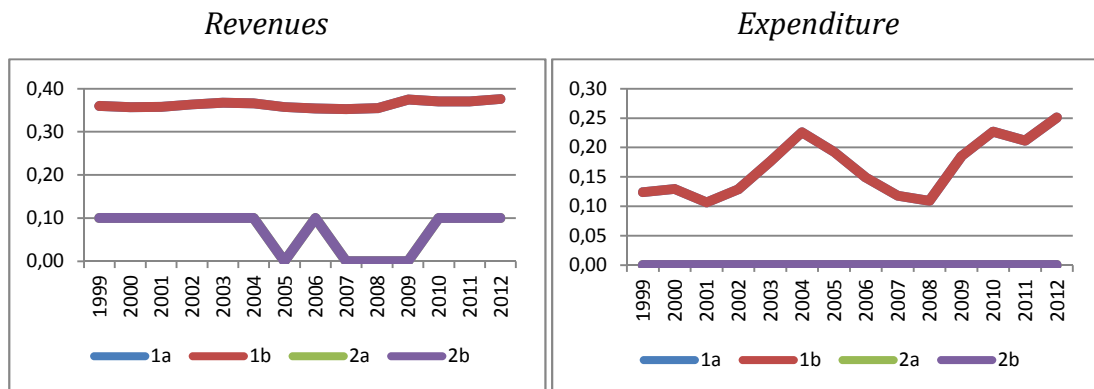
Source: Own elaboration based on AMECO data.

All in all, the Irish case illustrates well the conceptual difference between the two systems simulated: the harmonised scheme protects against all downturns up to a certain level, whereas the catastrophic insurance only intervenes in extreme cases, but with more proportional support.

The Netherlands

On the revenue side, Dutch workers generate annually a stable income of 0.35-0.38% of GDP during the period 1999-2012 for the harmonised scheme and 0.1% for the catastrophic insurance. The latter is never used during the period analysed, due to the fact that shocks fall under the “business as usual” category. The harmonised scheme, instead, follows an upward trend due to the fact that the number of unemployed workers doubles after reaching a minimum in 2001 (from 205,700 to 469,000) and despite the positive performance observed just before the start of the Great Recession.

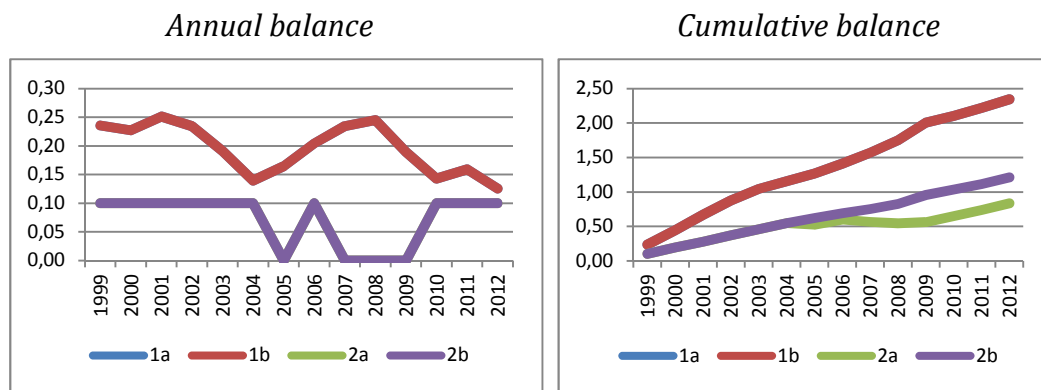
Figure 27. EUI revenues and expenditure paid by and to the Netherlands under various options, as % of GDP



Source: Own elaboration based on AMECO data.

The annual balance strongly reflects the unemployment cycle in the harmonised system but in cumulative terms as a result of the good performance of its labour market, the Netherlands would accumulate a balance of 1.2%.

Figure 28. EUI annual and cumulative balance of the Netherlands under various options, % of GDP

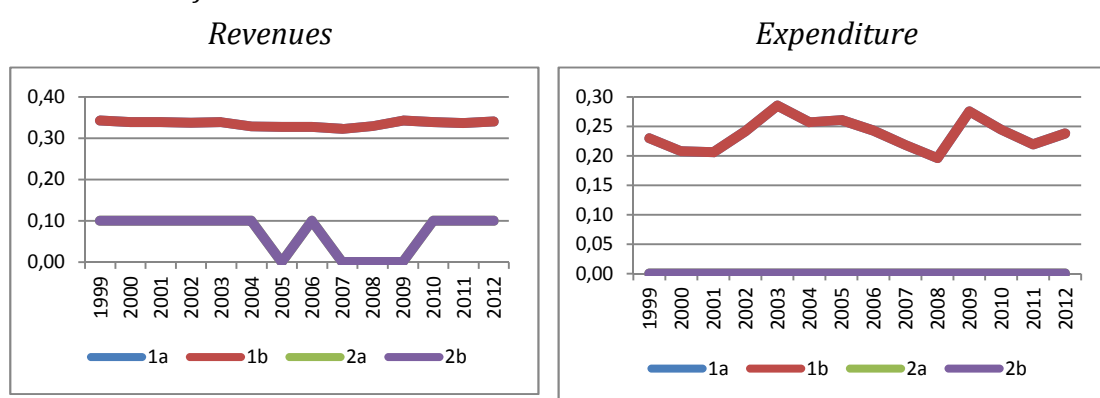


Source: Own elaboration based on AMECO data.

Austria

The Austrian case is straightforward. In terms of revenue, it produces 0.33-0.34% of GDP every year in the harmonised system and 0.1% for the catastrophic insurance, with an exception made for years where the contribution stops. Expenditure under the latter is zero between 1999 and 2012; unemployment remains well below the trigger of NAWRU +2%.

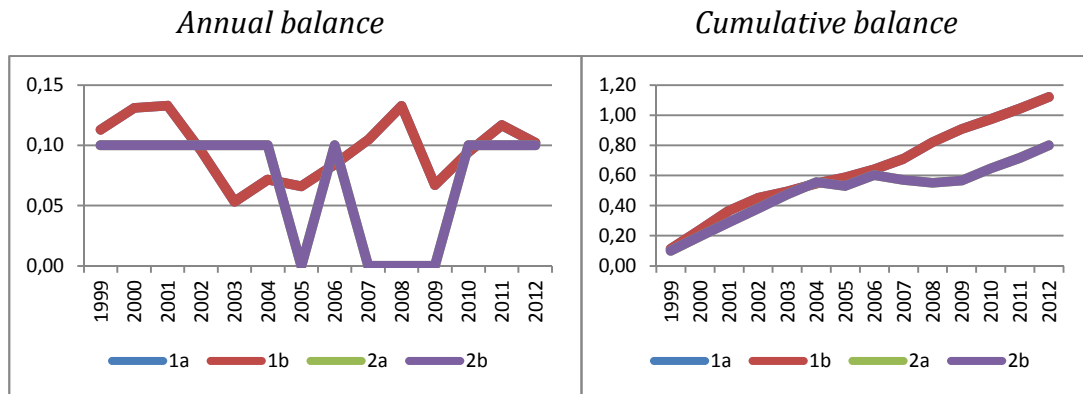
Figure 29. EUI revenues and expenditure paid by and to Austria under various options, as % of GDP



Source: Own elaboration based on AMECO data.

As a consequence of the good performance of its labour market, Austria keeps a positive balance vis-à-vis the system every year, which translates into a cumulative balance of at least 0.8% of GDP in 2012.

Figure 30. EUI annual and cumulative balance of Austria under various options, % of GDP



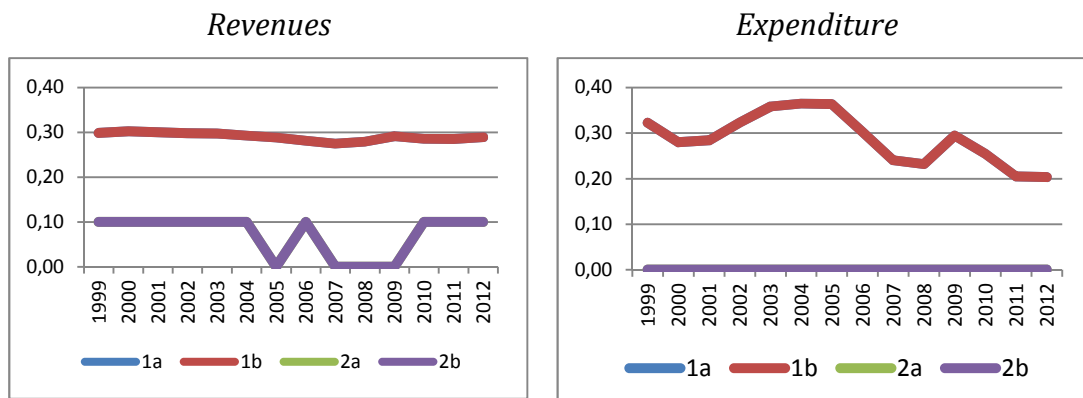
Source: Own elaboration based on AMECO data.

Germany

In both options, Germany generates stable annual revenues, amounting to 0.3% of GDP in the harmonised system and 0.1% in the catastrophic insurance (with an exception made for years where the contribution stops).

On the expenditure side, the German performance is strongly positive – no use of the catastrophic insurance is made between 1999 and 2012 – while in the harmonised unemployment benefit system, it shows an overall declining trend due to the good performance of the labour market, after a peak in 2003-2005. During the analysed period, the unemployment rate drops from 8.6 to 5.5% and so would have expenditure too under the harmonised unemployment benefits, from 0.32% in 1999 to 0.2% of GDP in 2012.

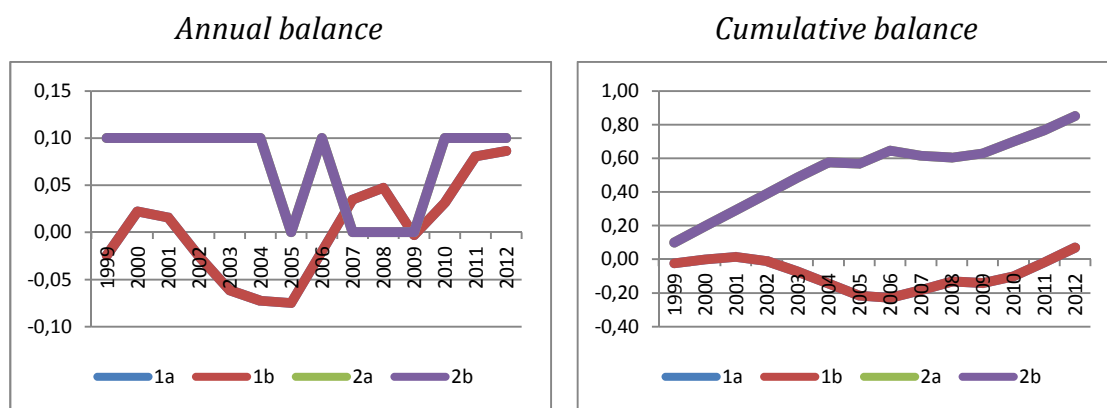
Figure 31. EUI revenues and expenditure paid by and to Germany under various options, as % of GDP



Source: Own elaboration based on AMECO data.

The overall balance remains positive at the end of the simulated period, yet with large differences between the two systems. The harmonised European unemployment benefit scheme ends up very close to zero after an alternation of positive (2000-2001 and 2007-2012) and negative contributions (1999 and 2002-2006). With the catastrophic insurance, Germany remains a net contributor over the entire period due to the fact that ups and downs in the unemployment rates exist but are in the range of a normal business cycle.

Figure 32. EUI annual and cumulative balance of Germany under various options, % of GDP



Source: Own elaboration based on AMECO data.

5.4 Impact of the EUI on stabilisation and growth

This section presents a range of estimates of stabilisation effects of the European unemployment insurance system. We present the estimates for national episodes of major distress, sufficient to trigger assistance under both options. We use a simple estimate of the stabilisation effect: every year starting from 2008, we multiply the net inflow coming from the EUI fund by a multiplier.

The rationale is that this allows us to calculate the value added of the European mechanism if it had existed at the time. We propose calculations only for major shocks because, for minor shocks, the shock absorption value is non-existent; national governments are more than able to weather them on their own. This does *not* exclude other rationales for creating an EUI even for minor shocks (as presented by the harmonised unemployment insurance system compared to the catastrophic insurance).

Deciding on the multiplier is a non-trivial and somewhat subjective exercise. As shown in Box 2, estimations provided by the literature on this issue vary between \$0.7 and \$3 for every \$1 spent on unemployment insurance. The issue is complicated further by the fact that estimates vary not only according to the methodology chosen, but also by country. An additional obstacle is given by the fact

that most studies analyse the US example, which on the one hand is the closest to the European one in terms of size among advanced economies, but on the other, cannot be considered identical due to the fact that the US economy is structurally different. We need therefore to make a choice.

Despite such complications, we consider a multiplier of 1.5 to be safe, which is a conservative estimate close to the four of the five studies selected (see Box 2). We apply this multiplier to the net inflow from the EUI funds for the period 2008-2012 to six countries as an illustration (those that suffered most during the Great Recession).

Box 2. A review of the literature on the multiplier effect of unemployment benefits

Among the different categories of public expenditure, unemployment benefits come out with the most virtues. First, they kick in automatically, as soon as unemployment starts soaring and workers that lose their jobs apply for them. A second important virtue is that this type of expenditure goes where it is most needed: to support the consumption capacity of households whose labour income has suddenly vanished.

Since Keynes' times, economists have believed that public expenditure generates an input to growth that is higher than the expenditure itself due to the multiplier effect. This multiplier varies with the type of expenditure as well as according to the characteristics of the economy (IMF, 2009).

Quantifying this multiplier is extremely challenging, as witnessed by the fact that studies do not agree on a common number. Different methodologies lead to different results, even when the same case is analysed (IMF, 2009). Zandi (2008) calculates that in the US, a \$1 increase in unemployment benefits generates an estimated \$1.64 in near-term GDP. Vroman (2010) believes this impact to be larger: every \$1 spent on unemployment insurance increases the economic activity by \$2. An older study by the U.S. Department of Labor estimates that on average (over six periods defined between 1972 and 2001) \$1 of unemployment insurance benefit generated GDP growth of \$2.15. The single multiplier effects of these six periods range between \$1.54 and \$3.07. Monacelli et al. (2010) confirm that "in response to an increase in government spending normalized to 1 percent of GDP, we estimate an output multiplier well above one, in the range of 1.2-1.5 (at one-year and two-year horizon respectively)".

Less precise is a recent estimate by the US Congressional Budget Office (2010) according to which increasing the aid to the unemployed by \$1 is estimated to increase GDP by between \$0.7\$ and \$1.9 during the period of 2010 to 2015.

As already explained, we look at episodes of major distress, where the value added of the EUI is most relevant. Since the net inflow during such episodes is identical for the harmonised and the catastrophic options, we do *not* show differences between

Options 1 (the harmonised scheme) and 2 (the catastrophic insurance), because under the circumstances of major shock they produce identical results in our simulation. Given our strong preference for it, we consider the case of a fiscal rule that allows deficits and surpluses each year, with the obligation to restore a fiscal balance over the cycle. Calculations are showed in Table 21.

Table 21. Example of stabilisation effect of the EUI during the Great Recession, selected countries

	2008	2009	2010	2011	2012	SUM
Estonia	0.00	1.15	0.89	-0.15	-0.15	1.74
Greece	0.00	0.00	-0.15	0.81	0.95	1.60
Ireland	0.00	0.85	0.55	0.41	0.37	2.19
Latvia	0.00	1.34	0.86	0.20	0.19	2.59
Lithuania	0.00	1.09	0.60	0.21	0.14	2.04
Spain	0.00	1.79	1.54	1.26	1.49	6.08

Source: Authors.

We start with the Spanish case, which in the current crisis is in the limelight due to skyrocketing unemployment figures. The net inflow, multiplied by the fiscal multiplier of unemployment benefits, generates an additional output equal to between 13 and 19 billion euros every year, starting from 2009. This is equal to 1.3% to 1.8% of GDP. Another interesting case is that of the Baltic countries, where the combined effect of the EUI funds and their (assumed) multiplier is slightly at above 1% of GDP in 2009. However, it declines faster than in Spain due to the faster recovery of the three economies. In Greece, the European mechanism kicks in later due to the deterioration of the NAWRU that accompanies the increase in unemployment. The total impact on the economy over the entire recession (up to 2012) is 1.6% of GDP. Finally, in Ireland, EUI funds are provided between 2009 and 2011 and, combined with their multiplier effect, generate an additional output equal to between 0.9% and 0.4% every year.

Selected references

- Allard, C. et al. (2013), "Toward a Fiscal Union for the Euro Area", IMF Staff Discussion Note 13/09, IMF, Washington, DC.
- AMECO, Annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs.
- Bajo-Rubio, O. and C. Diaz-Roldan (eds) (2003), *Macroeconomic Policy in an Open Economy: Applications of the Mundell-Fleming Model*, New York: Nova Science Publishers.
- Blanchard O., F. Jaumotte and P. Loungani (2013), "Labor Market Policies and IMF Advice in Advanced Economies During the Great Recession", IMF Staff Discussion Note 13/02, IMF, Washington, DC
- Brantner F., and S. Giegold (2012) The 'Fiscal Compact's' Weak Points Conclusions from the Greens/EFA group's hearing on the fiscal compact of 8 February 2012, 16 February 2012 (V.2) <http://www.sven-giegold.de>.
- Boushey, H. and J. Eizenga (2011), "Toward a Strong Unemployment Insurance System. The Case for an Expanded Federal Role", Center for American Progress, Washington, DC, February.
- Congressional Budget Office (2010), *Policies for increasing economic growth and employment in 2010 and 2011*, Publication 4077, Washington, DC: US Congressional Budget Office.
- Delpla, J. (2012), "A Euro-wide Conditional Unemployment Insurance", paper prepared for the seminar "EU Level Economic Stabilisers", 2nd July 2012, Brussels.
- De Grauwe, P. (2007), *Economics of Monetary Union*, Oxford: Oxford University Press.
- De Grauwe, P. (2013), "Design Failures in the Eurozone: Can they be fixed?", LSE Europe in Question Discussion Paper Series No.57/2013, London School of Economics and Political Science, London.
- Dullien, S. (2007), 'Improving Economic Stability in Europe. What the Euro Area can learn from the United States' Unemployment Insurance', in Working Paper FG 1, SWP, 2007/11, Berlin.
- Dullien, S. (2012), "A European Unemployment Insurance as a Stabilization Device – Selected Issues", paper prepared for brainstorming workshop, European Commission DG EMPL, 2 July 2012.
- Dullien, S. (2013), 'A euro-area wide unemployment insurance', paper prepared for the European Commission, Directorate-General Employment, Social Affairs Inclusion.

- Employment Development Department (2013), *Unemployment Insurance (UI) Fund Forecast*, Employment Development Department - State of California, October (see http://www.edd.ca.gov/About_EDD/pdf/edd-uiforecast13.pdf).
- Enderlein H., L. Guttenberg and J. Spiess (2013), *Blueprint for a Cyclical Shock Insurance in the Euro Area*, Paris: Notre Europe.
- European Commission (2012), "The European Social Fund, Investing in People, What it is and what it does", Brussels, 2012.
- European Commission (2013), Main authors of this paper are Bontout, O. and G. Lejeune, "Paper on Automatic Stabilisers", Brussels, October 2013.
- European Commission (2014), Overview of EGF applications, February 2014.
- GHK (2011), Mid-term evaluation of the European Globalisation Adjustment Fund: final report, submitted to DG EMPL European Commission, Birmingham, UK: GHK.
- Guild, E., S. Carrera and K. Eisele (2013) *Social Benefits and Migration: A Contested Relationship and Policy Challenge in the EU*, Brussels: Centre for European Policy Studies.
- Italianer A. and M. Vanheukelen (1993), "Proposals for community stabilization mechanisms: some historical applications", in *The Economics of Community Public Finance*, European Economy: Reports and Studies, no.5, Brussels: European Commission.
- IMF (2009), "Fiscal Multipliers", Position Note SPN/'9/11, 20 May.
- Majocchi A. and M. Rey (1993), "A special financial support scheme in EMU: need and nature", *Rivista di diritto finanziario e scienza delle finanze*, Vol. 52, No. 2, pp. 161-204.
- Metis (2012), European Social Fund, Expert Evaluation Network, Final Synthesis Report on Access to employment, Glasgow, October 2012.
- Monacelli T., R. Perotti and A. Trigari (2010), "Unemployment Fiscal Multipliers", NBER Working Paper No. 15931, National Bureau of Economic Research, Washington, DC.
- Mongrain S. and J. Roberts (2004), "Unemployment insurance and experience rating: insurance versus efficiency", *International Economic Review*, Vol. 46, No. 4, pp. 1303-1319.
- OECD (2010), *OECD Economic Surveys: Euro Area*, Paris: OECD Publishing.
- OECD (2012), *OECD Economic Outlook*, Paris: OECD Publishing.
- Pisani-Ferry, J., E. Vihriälä and G. Wolff (2013) "Options for a Euro-area Fiscal Capacity", Bruegel Policy Contribution, Issue 2013/01, Bruegel, Brussels.

- SPIN Database (2012), Social Policy Indicator Database, Swedish Institute for Social Research, University of Stockholm.
- Sutherland, D., P. Hoeller and R. Merola (2012) "Fiscal consolidation: How much, how fast and by what means?", OECD Economic Policy Papers No. 1, OECD, Paris.
- Vroman, W. (2010), *The Role of Unemployment Insurance As an Automatic Stabilizer During a Recession*, Columbia, MD: IMPAQ International.
- Wang, C. and S. Williamson (2002), "Moral hazard, optimal unemployment insurance, and experience rating", *Journal of Monetary Economics*, Vol. 49, No. 7, pp. 1337–1371.
- Whittaker, J.M. and K.P. Isaacs (2011), *Unemployment Insurance: Programs and Benefits*, report prepared for members and committees of Congress, Congressional Research Service, Washington, DC.
- Whittaker, J.M. and K.P. Isaacs (2013a), *Unemployment Insurance: Programs and Benefits*, report prepared for members and committees of Congress, Congressional Research Service, Washington, DC.
- Witte, E.E. (1936), "An Historical Account of Unemployment Insurance in the Social Security Act", *Law and Contemporary Problems*, Vol. 3, No. 1, pp. 157-169.
- Zandi (2008), Assessing the Macro Economic Impact of Fiscal Stimulus 2008, Moody's Economy.

The Cost of Non-Europe

Common unemployment insurance scheme
for the euro area

ANNEX II

Study

by Mathias Dolls, Clemens Fuest,
Dirk Neumann, Andreas Peichl,
Martin Ungerer

Abstract

The Great Recession and the resulting European debt crisis revived a debate about deeper fiscal integration in the Eurozone. We discuss different alternatives how an unemployment insurance system for the euro area could be designed and run counterfactual simulations based on micro data to analyze the effectiveness of a basic scheme to act as an insurance device in the presence of asymmetric macroeconomic shocks. We find that such a scheme could be implemented with a relatively small annual budget of roughly 61 billion euros over the period 2008-2013. Net benefits would have stabilized incomes in particular in Cyprus, Estonia, Greece, Ireland, Portugal and Spain whereas Austria, Germany and the Netherlands would have been the largest net contributors. With a predicted increase in output of only up to 0.2 per cent relative to a situation with existing pre-crisis national unemployment insurance systems, our results suggest that a basic euro area unemployment insurance scheme would have had only moderate growth-enhancing effects at the euro area level.

AUTHORS

This study has been written by Dr. **Mathias Dolls** (ZEW Mannheim and IZA), Prof. Dr. **Clemens Fuest** (ZEW Mannheim, University of Mannheim, CESifo and IZA), Dr. **Dirk Neumann** (CORE, Université catholique de Louvain and IZA), Prof. Dr. **Andreas Peichl** (ZEW Mannheim, University of Mannheim, IZA, ISER and CESifo) and **Martin Ungerer** (ZEW and University of Cologne), at the request of the European Added Value Unit, of the Directorate for Impact Assessment and European Added Value, within the Directorate-General for Parliamentary Research Services (DG EPRS) of the European Parliament.

RESPONSIBLE ADMINISTRATOR

Micaela Del Monte, European Added Value Unit

To contact the Unit, please e-mail eava-secretariat@europarl.europa.eu

LINGUISTIC VERSIONS

Original: EN

DISCLAIMER

The content of this document is the sole responsibility of the author and any opinions expressed therein do not necessarily represent the official position of the European Parliament. It is addressed to the Members and staff of the EP for their parliamentary work. Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the European Parliament is given prior notice and sent a copy.

Manuscript completed in June 2014. Brussels © European Union, 2014.

ISBN 978-92-823-5459-9

DOI 10.2861/54676

CAT QA-01-14-227-EN-C

Contents

1. Introduction	6
2. Data and Methodology	9
2.1 Data: EU-SILC and EUROMOD.....	9
2.2 Simulation experiment	10
2.3 Descriptive information	11
2.4 Automatic stabilization effects	12
2.4.1 Risk-sharing in federations	12
2.4.2 Automatic stabilization by taxes and transfers	12
2.4.3 Discussion on pros and cons of a euro area UI system.....	12
3. National UI systems in the crisis.....	17
4. Possible characteristics of a Eurozone-wide unemployment insurance scheme	23
4.1 A basic UI scheme	23
4.2 A benefit extension program.....	26
4.3 A fully centralized UI system.....	28
4.4 Summary	28
5. Economic effects of an unemployment insurance scheme for the euro area.....	30
5.1 Key features of a basic unemployment insurance scheme for the Euro area	31
5.2 Changes in (short-term) unemployment and coverage rates	32
5.3 Budgetary effects and financial flows.....	41
5.4 Automatic stabilization effects	47
6. Conclusions.....	53
References	55
Appendix	59

List of figures

- Figure 1: Income stabilization for unemployment shock scenario
Figure 2: Unemployment rates in selected EA member states 2001-2013
Figure 3: Share short-term unemployment rates in selected EA member states 2001-2012
Figure 4: Absolute number short-term unemployed in selected EA member states 2001-2012
Figure 5: Share of recipients of EMU-UI, 2007-2013
Figure 6: Coverage rate of EMU-UI, 2008-2013
Figure 7: Unemployment rates in the EA17, 2007-2013
Figure 8: Share short-term unemployed, 2007-2013
Figure 9: Contributions and benefits euro area UI scheme 2008-2013
Figure 10: Deficits and surpluses euro area UI scheme 2008-2013
Figure 11: EMU-UI Net contributions 2008-2013 (in billion euros)
Figure 12: EMU-UI Net contributions 2008-2013 (in % of GDP)
Figure 13: Share of net contributions relative to EMU total
Figure 14: Income stabilization EMU-UI in selected member states

List of tables

- Table 1: Average monthly gross income (2007 EUR) and growth in nominal compensation per employee (in per cent)
Table 2: Unemployment expenditure in million euros
Table 3: Unemployment benefit replacement rates
Table 4: Alternative options for a euro area UI scheme
Table 5: Unemployment rates (in % of total labour force) in the EA17, 2000-2013
Table 6: Share of short-term unemployment (less than 12 months, in % of total unemployment) in the EA17, 2000-2012
Table 7: Absolute number short-term unemployed (less than 12 months) in 1000 in the EA17, 2000-2012
Table 8: Absolute number long-term unemployed (more than 12 months) in 1000 in the EA17, 2000-2012
Table 9: Total number unemployed in 1000 in the EA17, 2000-2012
Table 10: Coverage rate of EMU-UI, 2008-2013
Table 11: EMU-UI benefits, contributions and net balance (in billion euros)
Table 12: EMU-UI benefits, contributions and net balance (in % of GDP)
Table 13: Income stabilization coefficient
Table 14: Estimated effect of euro area UI on output
Table A.1: Qualifying conditions for unemployment benefits
Table A.2: Duration of unemployment benefit receipt
Table A.3: Unemployment Insurance Contribution

Executive summary

This report presents different alternatives how an unemployment insurance (UI) system at the euro area level could be designed and discusses economic implications of these alternatives regarding the degree of shock absorption at the central level, the risk of permanent transfers and moral hazard concerns. The main options identified are a basic unemployment insurance scheme that partially replaces national UI systems, a benefit extension program that complements national UI systems if certain triggers are reached and a centralized system that fully replaces national systems. The last option is the most far-reaching alternative which would lead to a complete harmonization of rules and conditions. If the common UI system averages national UI systems, it could provide stronger stabilization effects as those systems with below-average income protection. However, it would also come with a high risk of moral hazard and permanent transfer flows within the Eurozone given that not only cyclical, but potentially also structural unemployment would be captured by the common system. A benefit extension program that is trigger-based, i.e. benefits are paid only if the level and/or change in national unemployment rates reached pre-determined thresholds, provides stabilization in severe economic crises. Depending on the exact rules and specifications, there could be a high risk that national governments do not address structural weaknesses of the economy given that benefits from the euro area system would kick-in at some point. A basic euro area UI scheme would provide timely stabilization, as benefits are paid from the start of the unemployment spell or after a short waiting period. However, as benefits from the common system expire after a certain time period, stabilization from the central level decreases in the share of long-term unemployed. Administrative manipulation might be an important issue with that variant as the system could be exploited by using administrative discretion to increase the number of transfer recipients.

In its main analysis, the report presents a counterfactual simulation exercise based on harmonized European micro data investigating the economic effects of a basic euro area unemployment insurance scheme. It is shown that such a scheme could be implemented with a relatively small budget. Over the period 2008-2013, average annual contributions and benefits would have amounted to roughly 61 billion euros. Net benefits would have stabilized incomes in particular in Cyprus, Estonia, Greece, Ireland, Portugal and Spain whereas Austria, Germany and the Netherlands would have been the largest net contributors. With a predicted increase in output of only up to 0.2 per cent relative to a situation with existing pre-crisis national unemployment insurance systems, our results suggest that a basic euro area UI scheme would have had only moderate growth-enhancing effects at the euro area level. With 0.6-1.9 per cent, growth effects would have been larger in those countries, however, which were severely affected by rising unemployment and where national automatic stabilizers only absorb a small share of unemployment shocks (Estonia, Greece, Italy Slovenia and Spain).

1. Introduction

The Great Recession and the resulting European debt crisis revived a debate about deeper fiscal integration in the Economic and Monetary Union (EMU). Not least since the EMU is atypical as a monetary union because monetary policy is decided at the central (European) level while fiscal policy is carried out at the sub-central (member state) level (Bordo et al., 2011). Some observers argue that the ongoing economic crisis in the euro area (EA)¹ where some member states lost access to private capital markets and could not let their national automatic stabilizers work has shown that the European currency union will not survive unless it is complemented by a 'fiscal union'. Options discussed range from enforced budget rules to the development of an own 'fiscal capacity' for the EMU. In December 2012, the President of the European Council, Herman van Rompuy, argued: *"An EMU fiscal capacity with a limited asymmetric shock absorption function could take the form of an insurance-type system between euro area countries. [...] The specific design of such a function could follow two broad approaches. The first would be a macroeconomic approach, where contributions and disbursements would be based on fluctuations in cyclical revenue and expenditure items.... The second could be based on a microeconomic approach, and be more directly linked to a specific public function sensitive to the economic cycle, such as unemployment insurance."*² The European Commission built upon these initiatives when launching its official report entitled *"A blueprint for a deep and genuine economic and monetary union - Launching a European Debate"* (European Commission 2012).

Since then, the perspectives of a European fiscal union and different reform proposals have been analyzed and discussed in various studies (see, e.g., Fuest and Peichl 2012, Bargain et al. 2013, Dolls et al. 2013, Dullien 2013, Enderlein et al. 2013, Furceri and Zdzienicka 2013 and IMF 2013a). The question of how to optimally design a (European) fiscal union has also gained renewed interest in the more theoretical literature (see e.g., Forni and Reichlin 1999, Evers 2012, Drèze and Durré 2013, Engler and Voigts 2013, Farhi and Werning 2012, Fidrmuc 2013 and Luque et al. 2014). While the main argument in favor of integrated fiscal mechanisms in the EMU is that they should act as insurance devices in the presence of asymmetric macroeconomic shocks, the main concerns in the debate relate to negative incentive effects inducing national governments to refrain from structural reforms and permanent transfer flows within the currency union.

¹ In the following we equivalently use "EA", "EMU" and "Eurozone" to refer to the current 17 member states of the European Currency Union (except Latvia, which joined the EA on January 1st, 2014) and thus, only to those EMU members who have already introduced the Euro.

² 'Towards a genuine Economic and Monetary Union', Final Report, The President of the European Council, Brussels, 5 December 2012, p.11.

In this paper, we run a counterfactual experiment and assess the effectiveness of a basic euro area unemployment insurance scheme which partly replaces national systems to work as an automatic stabilizer during the recent economic crisis.³ To the best of our knowledge, this paper is the first which provides micro data estimates of the redistributive and stabilizing effects of an unemployment insurance scheme for the euro area.⁴ Our micro-data based counterfactual experiment allows us to take individual household heterogeneity across and within Eurozone countries into account. This is of particular importance when assessing the macroeconomic stabilization effect of an euro area unemployment insurance scheme since there is ample empirical evidence that households can differ significantly regarding their propensity to consume and hence to adjust their consumption expenditure after shocks to disposable income.

Our main results are as follows. We find that a significant unemployment insurance scheme for the euro area which provides a basic level of income insurance in terms of its replacement rate (50 per cent) and maximum benefit duration (12 months) but which has a broad coverage (all new unemployed with previous employment or self-employment income) could be implemented with a relatively small budget. Over the period 2008-2013, the total volume would have been 365 billion euros, i.e. the average yearly benefits and contributions would have amounted to 61 billion euros. While the scheme analyzed in this study does not lead to permanent redistribution per se as only short-term unemployment is insured at the central level, our simulations show that (net) transfers from the euro area unemployment insurance scheme would have been unevenly distributed due to a substantial divergence in unemployment rates within the Eurozone in recent years. Largest (net) contributors would have been Austria, Germany and the Netherlands with yearly contributions up to 0.6 per cent of GDP in the Netherlands in 2008. Households in Cyprus, Estonia, Greece, Ireland, Portugal and in particular Spain would have benefited most with yearly (net) benefits reaching their highest level in Spain in 2009 (1.4 per cent of GDP).

We find that household incomes would have been stabilized by a considerable degree, in particular in those countries most affected by rising unemployment. Our measure for automatic stabilization, the income stabilization coefficient, is close to

³ Note that the aim of this paper is to conduct an analysis of possible scenarios for an EMU-unemployment insurance system. We do not aim at designing an optimal system which is beyond the scope of this paper. Still, the scenarios analyzed in this paper provide useful guidance for design of such policies and also show potential for future research in this area.

⁴ Jara and Sutherland (2014) also use micro data to analyze to what extent an EMU-unemployment insurance system would top-up national unemployment insurance systems in the euro area in terms of coverage and income protection. Their analysis is conceptually different from ours as they compare stabilization gaps of existing national systems which would be filled by the centralized unemployment insurance scheme while we focus on the economic effects of the latter ignoring potential top-ups of national unemployment insurance systems. Both studies are thus complementary to each other.

50 per cent in Greece, Ireland and Portugal in 2009, and in Italy in 2012. However, coverage rates of the euro area unemployment insurance scheme would have declined from 2009 onwards as the share of long-term unemployed was rising in recent years. We show to what extent output would have been raised if pre-crisis national unemployment insurance systems would have been replaced by the euro area scheme. Assuming a plausible range of estimates for the fiscal multiplier which are in line with the recent literature (see e.g. Ramey 2011), we find that growth effects would have been moderate at the euro area level raising output by up to 0.20 per cent in 2009 and up to 0.08 per cent in 2012. The euro area unemployment insurance scheme would have unfolded largest macro stabilization effects in Estonia, Ireland and Spain where our upper bound estimates suggest that output would have been raised by 1.9, 0.8 and 0.6 per cent in 2009, respectively. The additional stabilization effect would have been small in those member states where national unemployment insurance systems provide strong automatic stabilizers, in particular in Austria, Belgium, France, Germany and Luxembourg.

The reminder of this paper is structured as follows. The framework for our empirical analysis, i.e. the data, models and methods used, is described in section 2. The effectiveness of national unemployment insurance systems in the euro area to act as an automatic stabilizer as well as discretionary policy changes in national unemployment insurance systems implemented in recent years are documented in section 3. Different alternatives how a supranational unemployment insurance scheme for the euro area could be designed as well as their stabilization effects, the risks of permanent redistribution and moral hazard are discussed in section 4. Results of our empirical analysis are presented in section 5. Section 6 concludes.

2. Data and methodology

Key findings

- This study uses European micro data (EUROMOD, based on EU-SILC) and counterfactual simulation techniques to analyze the economic effects of a euro area unemployment insurance scheme.
- The empirical analysis shows what would have happened in the period 2008-2013 if a euro area unemployment insurance scheme had been introduced before the start of the economic crisis in 2007.
- Automatic stabilization effects are measured by the so-called income stabilization coefficient which relates changes in benefit and contribution payments from year t to $t+1$ to changes in gross incomes. The income stabilization coefficient shows how much of a shock on gross income is absorbed by the unemployment insurance system, either through higher benefits from or lower contributions into the scheme.

2.1 Data: EU-SILC and EUROMOD

In order to analyze the impact of a European unemployment insurance system, several approaches are possible. While previous research has mainly used aggregated macro level data, we rely on representative household micro data for the EA17 from 2008 covering income and population characteristics from 2007 and use EUROMOD, a static tax-benefit calculator for the European Union countries, for counterfactual simulations. The key advantage of using a micro data approach in the present context is that it allows accounting for heterogeneity in various characteristics of the populations in different countries which macro data approaches cannot capture.

EUROMOD allows for comparative analysis of tax-benefit systems and their impact on the income distribution in a consistent way through a common framework. Most importantly, the micro data are harmonized across countries with common variable definitions. EUROMOD input-data are mainly based on the European Union Statistics on Income and Living Conditions (EU-SILC) released by Eurostat (cf. Eurostat 2012). The simulated components include most direct taxes (especially income taxes on all sources of income including tax credits, payroll taxes and social insurance contributions) and benefits (e.g. welfare benefits, social assistance and some transfers based on previous contributions, e.g. unemployment benefits). Information on consumption is missing in the data; hence indirect taxes and taxes on corporate profits are not included in the model, likewise in-kind benefits. Also, EUROMOD

assumes full benefit take-up and tax compliance focusing on the intended effects of tax-benefit systems.

The main stages of the simulations are as follows. First, a representative micro-data sample of households (including information on all gross income components as well as demographic characteristics that are relevant to determine taxes and benefits such as age, number of children or marital status) and the respective tax benefit rules are read into the model. Subsequently, the model constructs corresponding assessment units (for instance the individual or household) for each tax and benefit instrument according to the underlying eligibility rules. On that basis, all taxes and benefits are simulated and disposable income is calculated. For more detailed information on the current version of EUROMOD and the underlying input data, see Sutherland and Figari (2013).

2.2 Simulation experiment

An important feature of EUROMOD is that it allows for counterfactual ex-ante simulations. In our empirical analysis, we introduce an unemployment insurance scheme for the euro area and ask what would have happened if such a scheme had been in place before the start of the recent crisis. In order to shed light on this question, we take our base year household micro data reflecting incomes, labour market status and socio-demographic characteristics from 2007 and simulate unemployment shocks as observed in the period 2008-2013 for each member state of the euro area. Given that there are no harmonized panel data available for the EA17 spanning such a recent time period, we simulate a sample of repeated cross-sections for each country reflecting changes in unemployment and incomes. In each year of our sample period, unemployment shocks are modelled such that unemployment rates in our cross-country data precisely follow real trends in unemployment, i.e. they correspond to those reported in the IMF World Economic Outlook Database October 2013 (cf. IMF 2013b).⁵ Gross earnings are adjusted by average growth in nominal compensation per employee for earnings changes along the intensive margin⁶, while employees entering the labour market (i.e. extensive margin changes due to a reduction in the unemployment rate) are assumed to earn average gross earnings.

For the simulation of entries into and exits out of unemployment, we need to make assumptions about the structure of the new unemployed and employed, respectively. One possibility is to assume that the structure of the new

⁵ Note that unemployment rates in our base year micro data deviate from official statistics in some countries. Therefore, we adjust our base year data such that actual unemployment rates in 2007 are fully reflected in the data. Hence, changes in unemployment from 2007 to 2008 are not biased by data inconsistencies.

⁶ Cf. AMECO database: http://ec.europa.eu/economy_finance/db_indicators/ameco/index_en.htm.

(un)employed is equal to the existing pool of (un)employed.⁷ Alternatively, one can assume that new (un)employed are similar to the total population⁸. We opt for the latter approach which seems to be the more realistic scenario in the period under consideration.

Note that in our simulations we do not account for behavioural responses such as migration, changes in hours worked or entries into and exits out of the labour force which are certainly all important channels. However, modelling all these responses would add considerable complexity to our analysis which instead focuses on the economic effects in terms of stabilization and distribution of an unemployment insurance scheme for the euro area.

2.3 Descriptive information

In this section we report descriptive information on gross income levels in the euro area in 2007 which is the base year of our simulations and show how per capita compensation has changed over the simulation period. We report this information at the overall EMU level and for individual countries. Column 1 of Table 1 shows the population share of each Eurozone country. Average monthly employment income (in 2007 EURO) which is the basis for contributions into and transfer payments out of the simulated euro area unemployment insurance scheme is reported in column 2. Growth in nominal compensation per employee (in per cent) from 2007 to 2013 is reported in columns 3-9.

Table 1 reveals considerable differences across individual countries with respect to income levels in 2007. Average monthly employment income ranges from 3729 Euros in Luxembourg, 187 per cent of the EMU average of 1996 Euros, to a value of 493 Euros in Slovakia, roughly 25 per cent of the EMU average. However, one should note that these income levels are not adjusted for differences in purchasing power, which would render income differentials somewhat smaller.

Columns 3-9 show that growth in nominal compensation per employee differed significantly within the euro area leading to a divergence rather than a convergence process in income levels (cf. Bertola 2013). Those countries most affected by the recent crisis have seen largest losses in employment income, albeit at different points in time. Countries such as Estonia (in 2009) and Ireland (2009-2011) experienced negative growth in average earnings early on in the crisis, whereas others in more recent years (Greece from 2010-2013, Portugal 2011-2012, Cyprus and Slovenia from 2012-2013). These income changes, together with changes in unemployment, do have an important impact on the stabilizing and redistributive effect of the euro area unemployment insurance scheme analyzed below.

⁷ This can be modelled by reweighting the micro data (see Immervoll et al. 2006 and Dolls et al. 2012) or by estimating probabilities of becoming unemployed (Bell and Blanchflower 2010).

⁸ Cf. Bargain et al. (2012).

Table 1: Average monthly gross income (2007 EUR) and growth in nominal compensation per employee (in per cent)

	(1) POP	(2) GI	(3) ΔGI07	(4) ΔGI08	(5) ΔGI09	(6) ΔGI10	(7) ΔGI11	(8) ΔGI12	(9) ΔGI13
EMU	1	1996	2.60	3.48	1.81	1.96	2.17	2.03	1.51
AT	0.027	2320	2.62	3.14	2.49	1.18	2.38	2.55	2.34
BE	0.033	2476	3.41	3.56	1.16	1.37	3.08	3.73	2.25
CY	0.002	1742	2.78	3.36	2.59	2.56	2.49	-0.95	-9.45
EE	0.004	636	25.02	9.67	-3.11	2.31	0.55	5.95	6.74
FI	0.018	2054	3.65	4.36	2.31	1.76	3.24	3.53	2.39
FR	0.188	1953	2.60	2.77	2.04	2.46	2.50	2.19	1.41
GE	0.279	2417	0.78	2.11	0.14	2.36	2.96	2.64	1.93
GR	0.03	1514	4.70	3.58	3.53	-2.57	-3.38	-4.21	-7.00
IE	0.012	2612	5.56	5.19	-1.06	-3.81	-0.12	0.78	0.00
IT	0.173	1844	2.27	3.81	1.71	2.79	1.29	0.99	1.32
LU	0.001	3729	3.70	3.37	1.78	2.64	2.38	2.01	0.83
MT	0.001	1219	3.07	4.21	3.23	1.55	0.63	2.18	2.05
NL	0.054	2379	3.44	3.25	2.52	1.49	1.59	1.87	-0.15
PT	0.028	1113	3.59	3.02	2.79	2.03	-0.57	-2.04	2.48
SI	0.05	1139	6.16	7.21	1.85	3.89	1.63	-0.97	-0.25
SK	0.014	493	8.73	7.01	2.48	5.11	1.97	2.79	2.03
SP	0.129	1507	4.68	6.86	4.16	0.42	1.33	0.24	1.02

Note: POP, GI: Population share and gross income in 2007. ΔGI: Growth in nominal compensation per employee (in per cent). Source: Own calculations based on EUROMOD and European Commission (DG ECFIN), AMECO.

2.4 Automatic stabilization effects

2.4.1 Risk-sharing in federations

A key argument of proponents of enhanced fiscal integration in Europe is an increase in macroeconomic stability, both at the level of individual countries and the Eurozone as a whole. An important early discussion of the key issues can be found in the MacDougall Report (1977), which had the broad objective to analyze the role of public finances for European monetary integration. One of the key findings of the report is that “public finance in existing economic unions plays a major role in cushioning short term and cyclical fluctuations ... there is no such mechanism in place ... between member countries and this is an important reason why in present circumstances monetary union is impracticable” (p. 12).⁹ This view has been confirmed by most of the later literature on the implications of EMU for fiscal policy in Europe. Eichengreen (1990) compares Europe to the US, emphasizing that the federal income tax in the US provides significant insurance against asymmetric

⁹ See also Delors (1989), p. 89: “In all federations the different combinations of federal budgetary mechanisms have powerful ‘shock-absorber’ effects dampening the amplitude either of economic difficulties or of surges in prosperity of individual states. This is both the product of and the source of the sense of national solidarity which all relevant economic and monetary unions share.”

macroeconomic shocks. Since regional problems are likely to be greater in Europe than in the US, he argues that fiscal shock absorbers would have to be significantly larger. A huge literature has estimated the degree of risk sharing through fiscal transfers in existing federations (see e.g., the early contributions by Bayoumi and Masson 1995 and Asdrubali et al. 1996 and the more recent contributions of Andersson 2008 and Balli et al. 2012). Estimates for consumption smoothing through risk sharing across regional jurisdictions vary substantially across countries and time periods, but the majority of studies finds that less than 25 per cent of a shock is absorbed by federal fiscal transfers. Capital and credit markets are often more important than fiscal transfers in smoothing regional shocks.

Related to these studies are contributions which assess the potential insurance effects which could be achieved in EMU if Europe were more fiscally integrated (cf. Fatás 1998, Forni and Reichlin 1999, Bargain et al. 2013, Dolls et al. 2013, Feyrer and Sacerdote 2013, Furceri and Zdzienicka 2013). Depending on the policy considered and scenarios analyzed, these studies reach very different conclusions regarding the insurable component of income and unemployment risk in EMU.¹⁰ A general consensus of the studies cited above is, though, that the current federal system in EMU does not provide significant insurance against idiosyncratic country-level shocks and that some degree of risk sharing could be achieved by more fiscal integration in Europe. Dolls et al. 2013 show that a partly integrated tax and transfer system in EMU where 10 per cent of national tax and transfer systems are replaced by a common EMU system would indeed improve fiscal stabilizers in the Eurozone and reduce the vulnerability of individual member states to income shocks. Yet, their analysis concludes that a significant degree of risk-sharing can only be achieved by much higher levels of fiscal integration which implies more income redistribution across countries when considering a joint tax and transfer system and a fiscal equalization mechanism at EMU level. The aim of this paper is to shed light on the automatic stabilization effects of a common unemployment insurance system for the euro area which has the advantage that ex-ante redistributive effects are not pre-determined as it is the case with a simple equalization mechanism based on taxing capacity and expenditure needs or a joint income tax system, for instance.

2.4.2 Automatic stabilization by taxes and transfers

Automatic fiscal stabilization is associated with the ability of taxes and transfers to automatically stabilize disposable income and consequently consumption in the event of macroeconomic shocks. This relies on a simple mechanism: in the presence of a given negative shock to gross income, taxes decline and transfers increase, with

¹⁰ Some of these studies solely focus on the extent of risk-sharing which could be achieved in EMU. Bargain et al. 2013 and Dolls et al. 2013 also analyze redistributive and incentive effects (in terms of labor supply) which would arise under a fiscally more integrated framework. The latter dimensions are important when evaluating the political feasibility of any reforms steps towards more fiscal integration in Europe.

the decline in disposable income being smaller than the shock to gross income (see e.g., Auerbach and Feenberg 2000, Kniesner and Ziliak 2002, Mabbett and Schelkle 2007, Dolls et al., 2012). Several components of government budgets are affected by the macroeconomic situation in ways that operate to smooth the business cycle, with progressive income taxes and unemployment benefits being the most prominent examples. Automatic stabilization might not only have effects on disposable income but also on GDP itself (cf. Fatás and Mihov 2001). If fewer taxes are collected and more transfers are paid in a recession, this should support private incomes and dampen adverse movements in aggregate demand. We can expect this stabilizing property to be stronger if the tax system is more progressive (van den Noord, 2000).

Naturally, cushioning shocks through taxes and transfers comes at the cost of an increase in the government budget deficit. The usual assumption is for this gap to be closed through debt financing. However, in the current Eurozone debt crisis, some countries have lost access to private capital markets and thus need outside help to close this gap. We will return to the issue of debt financing of the euro area unemployment scheme further below.

The extent to which automatic stabilizers mitigate the impact of income shocks on household demand essentially depends on two factors. Firstly, the tax and transfer system determines the way in which a given shock to gross income translates into a change in disposable income. For instance, in the presence of a proportional income tax with a tax rate of 40%, a shock on gross income of one hundred Euros leads to a decline in disposable income of 60 Euros. In this case, the tax absorbs 40% of the shock to gross income. A progressive tax, in turn, would have a stronger stabilizing effect. Alternatively, in the presence of an unemployment insurance system with a replacement ratio of 60%, a shock on gross income at the extensive margin of 1000 Euros leads to a decline in disposable income of 400 Euros. In this case, the unemployment insurance system absorbs 60% of the shock to gross income. The second factor is the link between current disposable income and current demand for goods and services. If the income shock is perceived as transitory and current demand depends on some concept of permanent income, and if households can borrow or use accumulated savings, their demand will not change. In this case, the impact of automatic stabilizers on current demand would be equal to zero. Things are different, though, if households are liquidity constrained. In this case, their current expenditures do depend on disposable income so that automatic stabilizers play a role.

A common measure for estimating automatic stabilization based on micro data is the “*normalized tax change*” used by Auerbach and Feenberg (2000) which can be interpreted as “*the tax system’s built-in flexibility*” (Pechman 1973, 1987). Based on this idea, Dolls et al. (2012) define the “*income stabilization coefficient*”, τ , that shows

how changes in market income X (defined as the sum of all incomes from market activities such as (self)-employment, business and property income) translate into changes in disposable income Y (market income minus taxes plus benefits) through changes in net tax payments T . They extend the concept of normalized tax change to include other taxes as well as SIC and transfers.

In our simulations, we follow their approach and calculate the income stabilization effects of a euro area unemployment insurance system in year t if such a system had been in place in the period 2008-2013. τ is computed using arithmetic changes in benefit and contribution payments from/to the common euro area unemployment insurance system ($\sum_i \Delta B_i$ and $\sum_i \Delta SIC_i$) and employment income changes along the extensive ($\sum_i \Delta X_i$) and intensive ($\sum_i \Delta Y_i$) margin between year t and $t-1$ based on household micro level information:

$$\tau_{BEN} = \frac{\sum_i \Delta B_i}{\sum_i \Delta X_i}. \quad (1)$$

$$\tau_{SIC} = \frac{\sum_i \Delta SIC_i}{\sum_i \Delta Y_i}. \quad (2)$$

τ is positive if the sum of euro area unemployment insurance benefit (contribution) payments in year t is higher (lower) than in the previous year given a reduction in gross income and zero otherwise.

2.4.3 Discussion on pros and cons of a euro area UI system

What are the arguments for having an unemployment insurance scheme at the euro area level partly replacing or complementing national unemployment insurance schemes? Some observers argue that the recent recession during which some euro area member states lost access to capital markets and couldn't let their national automatic stabilizers sufficiently work has shown that a sustainable architecture of the Eurozone includes some form of supranational automatic stabilizers. Under the assumption that a fiscal capacity at the euro area level were able to run deficits in bad times when some member states have lost access to capital markets, asymmetric shocks could to some extent be cushioned by supranational automatic stabilizers. Further arguments for more fiscal integration in the euro area are that there is no lender of last resort for national governments in the event of fiscal crises and no national monetary policy and no exchange rate adjustments to deal with asymmetric shocks. Another view is that a centralized unemployment insurance scheme would enhance labour mobility in the euro area and that a "race to the bottom" between euro area member states in terms of social protection standards could be prevented. The latter two arguments are open empirical questions which are hard to answer ex-ante. However, the level of social expenditure in Europe which is still high in a global perspective does not point to a potential race-to-the

bottom problem which could be prevented by a common euro area unemployment insurance system. Labour mobility is comparably low in Europe compared with the US, for instance, but there is first evidence that it has increased in recent years as a consequence of the weak labour markets in those countries most severely affected by the economic crisis.

The concerns most often expressed are that a common unemployment insurance scheme would induce permanent transfer flows within the Eurozone, undermine incentives of national governments to address structural weaknesses in the economy and come with a high risk of administrative manipulation. For example, one argument is that a common unemployment insurance scheme which primarily targets cyclical rather than structural unemployment in the euro area member states could affect cyclical unemployment patterns. In Germany a large part of the 2008-2009 shock was cushioned by labour market institutions such as short-time work or working time accounts and thus mainly affected the intensive rather than the extensive margin. A concern of some observers is that a common euro area unemployment insurance would have adverse incentives to absorb shocks at the intensive margin because the 'costs' to keep people in employment are borne by the national government whereas unemployment benefits are financed by the common pool. Other observers argue that the European Stability Mechanism (ESM) already serves as a crisis mechanism and that there is no need for further fiscal integration in the Eurozone.

This report focuses on the automatic stabilization effects of a common unemployment insurance system for the euro area which in our view is the crucial argument for more fiscal integration in Europe, while moral hazard and the risk of permanent transfers which can have adverse incentives at the level of individual member states are the most important concerns which should be taken into account. The most important challenges for policy-makers with regard to the design of a potential common unemployment insurance scheme are critically assessed in section 4. There different variants of a common scheme are presented, namely a basic common unemployment insurance system which partly replaces national systems, a benefit extension program which complements national systems and which is close to the US model of benefit extensions and a fully centralized unemployment insurance system at EMU-level. We show that the alternatives thoroughly discussed in section 4 have very different implications in terms of automatic stabilization and redistribution effects.

3. National unemployment insurance systems in the crisis

Key findings

- There is large heterogeneity in the euro area regarding the automatic stabilization effects of pre-crisis national unemployment insurance systems.
- Largest stabilizing effects are found for Nordic and continental European countries, whereas there is limited income stabilization in Southern and Eastern European countries.
- Discretionary policy changes in recent years did not lead to a strengthening of the stabilizing effects of national unemployment insurance systems.

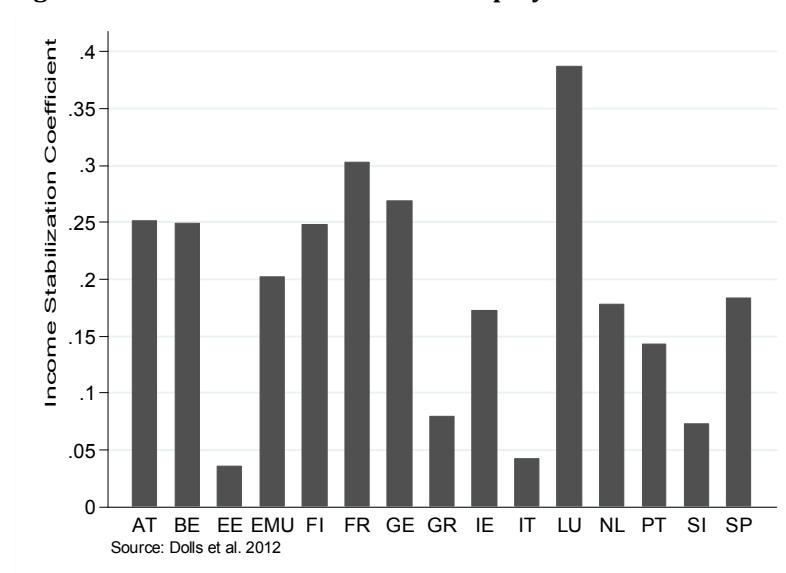
Unemployment benefits are supposed to work as an automatic stabilizer in economic crises when economies are hit by rising unemployment rates. Before discussing potential costs and benefits of a centralized unemployment insurance system at the Eurozone level, it is therefore important to investigate the effectiveness of national unemployment insurance systems to cushion unemployment shocks. In this section, we review existing evidence on the shock-absorption capacity of national unemployment insurance systems in Europe in the event of unemployment shocks. Moreover, we document discretionary policy changes regarding unemployment insurance in euro area countries during the crisis.

Dolls et al. (2012) use the same pre-crisis micro data as we do and run a controlled experiment in which the unemployment rate in each Eurozone country is increased such that total household income decreases by 5 per cent. They calculate income stabilization coefficients described above for 14 Eurozone countries which are shown in Figure 1.¹¹ Their main findings can be summarized as follows. The extent to which unemployment shocks are absorbed by pre-crisis unemployment insurance systems differs substantially within the euro area. In most of the continental European and Nordic countries, at least 25 per cent of the shock is cushioned whereas there is very little stabilization in particular in Eastern and

¹¹ Conceptionally, the unemployment shock modelled in their paper differs slightly from our modelling approach. While they assume that the socio-demographic characteristics of the new unemployed are equal to those of the existing pool of unemployed, we assume in our simulations that the characteristics of the new (un)employed correspond to those of the full population (in terms of age, gender, marital status, household size, education and region). Income stabilization coefficients are very similar for both approaches and we opt for the latter approach as it is computationally more flexible.

Southern European countries. Lowest values are found for Estonia, Greece, Italy and Slovenia. This finding is surprising from an insurance point of view since countries with low stabilization tend to be those with low incomes on average implying that households in these countries are particularly vulnerable to income losses.

Figure 1: Income stabilization for unemployment shock scenario¹²



Given the heterogeneity of national unemployment insurance systems within the euro area regarding their automatic stabilization effects before the start of the crisis¹³, it is instructive to scrutinize policy changes regarding national unemployment insurance systems during the crisis and to assess whether these policy changes led to a convergence or divergence process in the degree of income protection. Table 2 reveals that in 2009 total unemployment expenditure increased by roughly 28% in the euro area and remained on a comparatively high level in the following years. Bontout and Lokajickova (2013) decompose these changes into the main factors influencing unemployment expenditure. They show that in 2009, the increase was mainly driven by rising numbers of short- and long-term unemployed and only to a minor extent due to higher average unemployment expenditure per unemployed. In 2010, the latter even declined by more than 5 per cent (cf. Bontout and Lokajickova 2013, p. 23). These numbers document the budgetary effect of rising unemployment in the euro area in recent years, but do not give an indication whether changes in average expenditure per unemployed were caused by more or less generous unemployment insurance systems or by a changing structure of the new unemployed. In order to assess whether the stabilizing effect of national unemployment insurance systems has changed in recent years, we focus on changes

¹² Data for Cyprus, Malta and Slovakia was not available at the time of writing of that paper.

¹³ See Figari et al. (2011) for further evidence on differences in the degree of income protection offered by tax-benefit systems in Europe in the event of income shocks.

Table 2: Unemployment expenditure in million euros

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EMU	126,640.83	127,958.88	139,234.70	147,458.12	148,570.42	145,755.31	138,586.97	129,383.56	131,248.10	167,773.18	166,209.51	155,606.69
AT	3,051.11	3,139.97	3,583.64	4,002.45	4,087.08	3,963.05	4,057.32	3,754.90	3,632.94	4,423.43	4,391.02	3,987.28
BE	8,122.73	8,248.24	9,153.42	9,978.55	10,333.75	10,453.56	10,554.03	10,351.80	10,459.45	12,015.11	12,190.78	11,994.05
CY	120.97	119.57	106.42	106.25	129.73	148.83	174.42	137.78	163.50	153.78	164.65	185.97
EE	12.87	13.68	11.57	20.90	20.59	18.28	13.74	19.55	40.16	138.79	86.84	57.89
FL	3,549.21	3,407.74	3,528.49	3,750.45	3,879.84	3,768.18	3,572.26	3,307.87	3,124.66	3,818.49	3,945.74	3,384.63
FR	31,507.63	31,807.61	35,366.09	38,243.34	38,499.30	38,239.18	36,215.58	34,724.47	33,492.61	38,033.85	39,508.22	38,296.65
GE	47,277.93	46,976.88	50,323.54	51,478.66	50,513.81	46,770.41	42,371.92	36,713.37	34,244.97	43,230.15	39,854.25	31,613.99
GR	2,117.60	2,227.92	2,445.40	2,280.87	2,489.78	2,398.61	2,238.96	2,272.82	2,692.69	3,332.17	3,269.37	3,717.71
IE	1,581.97	1,612.99	1,839.07	1,912.07	2,015.93	2,048.40	2,226.89	2,445.25	3,026.58	4,953.07	5,618.63	5,336.63
IT	5,751.99	5,506.65	6,163.79	6,468.00	6,931.49	7,242.00	7,363.55	6,603.43	7,360.78	11,154.63	11,911.50	11,384.21
LU	148.23	180.93	197.45	248.32	289.84	322.80	325.47	331.57	330.85	433.20	449.90	432.33
MA	18.68	19.32	39.48	33.12	30.77	30.08	30.63	26.61	27.35	31.29	29.80	30.31
NL	6,027.24	6,014.13	6,626.58	8,016.49	8,240.82	8,150.00	7,177.10	6,259.62	5,854.56	7,895.79	8,641.24	8,054.28
PT	1,016.01	1,047.64	1,249.82	1,787.60	1,939.99	2,051.95	1,981.61	1,826.23	1,656.29	2,162.02	2,311.00	2,125.03
SI	238.46	216.52	192.24	188.84	197.39	211.50	185.72	138.09	125.46	184.65	207.49	249.65
SK	281.79	212.98	255.00	346.75	371.31	211.16	217.47	249.94	280.34	453.11	449.98	383.38
SP	14,822.52	16,320.05	17,662.72	18,350.57	18,583.55	19,727.33	19,995.05	20,293.13	24,625.97	35,343.22	33,359.14	34,233.24

Source: Eurostat

in replacement ratios, the maximum duration of benefit receipt, qualifying conditions and contribution rates and document discretionary policy changes during the crisis along these dimensions.

Table 3: Unemployment benefit replacement rates

	2007	2008	2009	2010	2011
AT	63.50	63.50	63.33	63.33	63.00
BE	66.67	66.67	74.83	74.17	72.00
CY	67.83	n.a.	n.a.	n.a.	n.a.
EE	61.83	61.83	61.17	62.00	62.33
FI	61.50	61.17	60.83	61.83	61.83
FR	72.00	71.83	71.83	71.83	71.83
GE	68.50	68.33	68.50	68.83	67.67
GR	50.50	55.00	55.67	50.83	52.17
IE	59.50	60.33	64.33	61.83	60.50
IT	67.17	70.50	71.00	69.67	68.67
LU	85.00	85.00	84.33	84.33	85.33
MT	51.17	50.33	50.33	49.83	47.50
NL	78.50	78.67	78.17	77.83	78.83
PT	83.17	83.00	83.00	80.17	80.50
SI	72.00	74.00	74.50	77.67	83.17
SK	68.00	68.50	67.33	67.50	68.50
SP	74.00	73.33	73.00	73.50	72.83

Definition: Average unemployment benefit replacement rate during the first year of unemployment across two income situations (100% and 67% of average earnings) and three family situations (single, one-earner married couple, two-earner married couple). The initial net replacement rates measure is defined: Initial phase of unemployment but following any waiting period (excluding social assistance, covering two earning levels and three family situations, as mentioned above). Any income taxes payable on unemployment benefits are determined in relation to annualized benefit values (i.e. monthly values multiplied by 12) even if the maximum benefit duration is shorter than 12 months. For married couples the percentage of AW relates to the previous earnings of the "unemployed" spouse only; the second spouse is assumed to be "inactive" with no earnings and no recent employment history. Where receipt of social assistance or other minimum-income benefits is subject to activity tests (such as active job-search or being "available" for work), these requirements are assumed to be met. AW: Average Worker; an adult full-time worker in the covered industry sectors whose wage earnings are equal to the average wage earnings of such workers.

Source: CESifo DICE

Table 3 shows average replacement rates in the initial phase of unemployment for the period 2007-2011. In 2007, average replacement rates for the first year of unemployment across two income situations (100 percent and 67 percent of average earnings) and three family situations (single, one-earner married couple, two-earner married couple) ranged from 50 percent in Greece to 85 percent in Luxemburg. Focusing on the so-called GIIPS countries (Greece, Ireland, Italy,

Portugal and Spain) which were especially hit by rising unemployment in that period (see chapter 5), one can conclude that initial conditions regarding average replacement rates were quite heterogeneous. With a ratio of 83 percent in 2007, Portugal had the most generous replacement rate among the GIIPS countries. Greece, on the other hand, only provided an average replacement rate of 50 percent in. With the beginning of the crisis in 2008, Greece, Ireland and Italy increased replacement rates by three to five percentage points. In the more recent years of the economic downturn, however, replacement ratios became somewhat less generous with rates falling to 61 percent in Ireland, 69 percent in Italy and to 52 percent in Greece, which was the second lowest value in the Eurozone after Malta (47.5 per cent). There was no increase in the average replacement rate in Portugal during the first years of the crisis, but it was lowered to 81 percent in 2011 and thus below its 2007 value, as the economic downturn continued. Only in Spain average replacement rates remained relatively constant during this period with values around 73-74 per cent.

Another way of changing the generosity of unemployment insurance schemes is to alter the qualifying conditions for access to the system. While Ireland and Portugal changed their qualifying conditions, Greece, Italy and Spain kept access to their unemployment insurance systems constant during the crisis (cf. Table A.1). Ireland tightened the requirements for access to the unemployment insurance system, while Portugal eased qualifying conditions. More precisely, qualifying conditions became stricter in Ireland from 2009 onwards, then requiring 104 weeks of contributions instead of 39. Portugal alleviated the minimum qualification requirements in order to qualify for unemployment insurance benefits from 450 days of employed work and contribution payment in the 24 months preceding commencement of unemployment to 360 in 2013.

Closely related to the qualifying conditions for unemployment benefits is the duration of payments, as it may depend on the contribution period to the unemployment insurance system (cf. Table A.2). The benefit duration was lowered in Ireland and Portugal, while Italy rather extended the benefit time implicitly. In Ireland, the permitted maximum duration of benefit receipt was reduced from 390 days in 2007 to 312 days in 2009. In 2013, there was a further decrease to 234 days of benefit allowance. Over the entire period, proportionally lower rates apply if applicants have paid less than 260 weekly contributions since first entering insurance. Until 2011, Portugal's UI system was rather generous especially for senior employees, with the maximum benefit duration depending on the age and length of contribution. Starting in 2013, the maximum benefit duration for all age groups decreased significantly depending on the months of contribution payments. The decrease was particularly strong for older employees. Italy increased the benefit duration from 210 days in 2009 to 240 days in 2011. Starting in 2013, a benefit duration scheme depending on the age of the unemployed applied. The reform

essentially implied a longer maximum period of benefit duration for older employees. In Greece and Spain, the maximum benefit duration was neither extended nor shortened during the crisis.

Finally, policy changes also affected contribution rates and ceilings up to which contributions have to be paid. Table A.3 shows that in Greece the lower monthly ceiling of 2,432 Euros for employees who had been insured since 1993 or before was raised to the general ceiling of 5,546 Euros which broadened the tax base for the national unemployment insurance system, but increased the tax wedge for the working population. The total contribution rate to the unemployment insurance system ranged from 4-5 percent from 2007-2013, with an increase in the contribution share of employees from 1.33 per cent to 1.83 per cent and a decrease in the contribution share of employers from 3.67 per cent to 3.17 per cent. In Ireland, the ceiling for employees increased from 48,000 Euros in 2007 to 75,036 Euros in 2009 and was completely abolished afterwards. At the same time, costs for employers were reduced by lowering the employer contribution rate from 8.5 per cent in 2011 to 4.25 per cent in 2013. The contribution in Italy is only paid by the employer, who pays a share of 1.61 per cent. In Portugal, contributions to the unemployment insurance system are included in the overall social security contributions. In Spain, the contribution rate for employees was decreased from 5.75 per cent in 2007 to 5.5 per cent in 2009.

All in all, this short overview suggests that the stabilizing effect of unemployment insurance systems in those countries which were strongest affected by rising unemployment during the crisis has not been strengthened by discretionary policy changes in the last few years.

4. Possible characteristics of a Eurozone-wide unemployment insurance scheme

Key findings

- A euro area unemployment insurance scheme could provide a minimum level of insurance and would thus partly replace national UI systems which could top up benefits from the common system.
- Alternatively, a euro area benefit extension program could provide additional unemployment benefits and thus complement national UI systems if certain thresholds of indicators which measure economic activity are reached.
- A third and very far-reaching option would be to fully replace national UI systems by a common euro area system.
- These alternatives have very different implications for automatic stabilization, redistribution and moral hazard.

We identify three main options how an unemployment insurance scheme for the Eurozone could be designed. For all variants, specific choices need to be made regarding eligibility rules, replacement ratios and duration of benefit receipt. Additionally, the interaction between the euro area and the national unemployment insurance systems needs to be considered. For instance, the common system could partly replace national systems by providing a minimum benefit level for a limited duration or complement national systems by providing additional transfers in economic downturns. Closely related is the question when transfers from the common insurance system should kick in. They could be conditioned on macroeconomic indicators such as the unemployment rate and would be triggered if certain thresholds are reached or, alternatively, kick in automatically if an eligible person becomes unemployed. Finally, there are different options for its financing. It can take place at the national level or be pooled at the Eurozone level. In the following, we discuss the characteristics of three possible variants of a common unemployment insurance scheme for the euro area: a minimum insurance scheme, a benefit extension program and a scheme that fully replaces national systems.

4.1 A basic unemployment insurance scheme

An unemployment insurance scheme for the euro area which provides a basic level of insurance has first been proposed by Deinzer (2004) and Dullien (2007, 2013). By providing a minimum insurance for a limited time period, such a scheme would partly replace national unemployment insurance systems which could top up benefits from the euro area system. When designing such an unemployment insurance system, several options in various dimensions need to be discussed. All

unemployed with previous employment (and possibly self-employment) income would be eligible for benefits, depending on the duration of previous employment (potentially including a certain minimum duration for the employment spell such as 12 month). Benefit payments from the common scheme could kick in directly at the beginning of the unemployment spell or after a (short) 'waiting period'. The maximum duration of benefit receipt would be limited to a certain time period, for example 12 months. This could be prolonged by national unemployment insurance systems. Such a system would leave room for diversity between member states. Differences with regard to replacement rates and benefit duration could be maintained by additional transfers from national unemployment insurance systems.

How much stabilization is provided by the common system and when does the stabilization from the central level kick in?

Transfers from the central level are timely as unemployment benefits are paid at the start of the unemployment spell (or after a short waiting period). In contrast to a benefit extension program (as in the United States), which is triggered if certain thresholds are crossed, all new unemployed who fulfil the eligibility criteria (mainly in terms of previous employment) receive transfers from the common euro area unemployment insurance system.

However, given that the common system provides only a minimum level of insurance in terms of its replacement rate, the stabilization effect of the common system is limited by construction but could be enhanced by national systems. As benefits from the common system expire after a certain time period, stabilization from the central level decreases in the share of long-term unemployed in an economy. In sum, at least part of the stabilization in the presence of unemployment shocks is provided by the euro area unemployment insurance system which might help avoiding pro-cyclical fiscal policy in severe economic downturns if countries have lost access to capital markets.

How large is the risk of permanent redistribution?

Given that the scheme conditions on job losses, i.e. on *changes* in employment status rather than on unemployment *levels*, the risk of permanent transfers is limited. Differences in unemployment rates alone do not lead to permanent redistribution because benefits expire. It may nevertheless happen that (net) transfers from the euro area unemployment insurance system are unevenly distributed across countries if flows into unemployment diverge permanently.

Therefore a key factor determining redistributive effects of such a minimum insurance scheme is the share of short-term unemployed. If countries A and B are characterized by the same income distribution, the unemployment rates do not deviate over time, but the share of short-term unemployed is constantly higher in country A relative to country B, the former will receive a higher share of transfers from the common unemployment insurance system. The reason is that there are

more people entering (and leaving) unemployment, and those entering unemployment receive benefits.¹⁴

Would such a scheme undermine the incentives of national governments to address structural weaknesses? How large is the risk of administrative manipulation?

This risk is an unavoidable feature of insurance mechanisms. At the national level, it can be present if unemployment benefits are paid by the federal level, but activation policies are the responsibility of the regional level (Vandenbroucke 2014), for instance. Therefore, a close cooperation between the federal and local level is of crucial importance. The risk that a common basic unemployment insurance system undermines the incentives of national governments to implement structural reforms is likely to be limited, though. Structural weaknesses usually affect medium to long term growth and employment perspectives. Transfers from the common system expire after a certain time period. After this time period, national governments will have to bear the full costs of unemployment. Therefore the common unemployment insurance system would undermine incentives to address structural weaknesses much less than a system of permanent transfers.

Administrative manipulation might be a more important issue. This risk might also be present within national frameworks and it is unclear ex-ante if it is higher at the euro area level. A common euro area unemployment insurance system which is (only) targeted at short-term unemployment could be exploited by using administrative discretion to increase the number of transfer recipients, essentially by raising the number of unemployed that can be classified as newly unemployed. Incentives to manipulate and costs of this manipulation would depend on the characteristics of the system like the required employment period and the length of the waiting period for eligibility to euro area unemployment benefits.

In 2009-2010, the qualifying period for national unemployment insurance programs ranged from 4 – 36 months in the euro area with the majority of systems requiring 6 - 12 months of contributions. Further differences across member states exist with regard to the period in which the contributions to the unemployment insurance schemes have to be made (see Table A.1 and Esser et al. 2013). A conceivable approach for the set-up of a basic euro area unemployment insurance scheme would be to align the scheme with national systems with a required employment period between 6 - 12 months. In order to further reduce the risk of administrative manipulation as well as the effect of seasonable unemployment, a waiting period of 3 - 4 months could be established. Policy-makers face a trade-off between insurance effects of unemployment insurance schemes and the risk of moral hazard and administrative manipulation. The longer both periods are, the more costly is

¹⁴ Economies where seasonal employment like in tourism, for instance, plays an important role, would be likely to have larger flows into and out of unemployment.

administrative manipulation, but longer periods also reduce the desired insurance effect.

To what extent is individual behaviour distorted, i.e. how strong are moral hazard concerns?

Whether distortions at the individual level change would depend on whether overall benefits (national and European benefits combined) change, relative to the status quo, given that the euro area unemployment insurance system would partly replace existing national systems. As it would be in the discretion of national governments to top up benefits of the euro area unemployment insurance scheme, it is unclear ex-ante to what extent individual behaviour would be distorted relative to the status-quo.

4.2 A benefit extension program

An alternative option for a euro area unemployment insurance scheme would be to complement national systems by providing additional benefits which could either top-up national benefits or kick-in if national benefits expire. The pay-out rules would be trigger-based, i.e. benefits from the common system would be paid if the level and/or change in unemployment reached pre-determined thresholds. Contributions to the scheme could be lowered or suspended in those countries where transfer payments had been triggered in order to increase the stabilizing effect of the program. Such a system would be broadly comparable with various benefit extension programs in the US. There, regular unemployment insurance benefits can be extended through a combination of permanent and temporary legislation. The federal Extended Benefits (EB) program provides additional 13-20 weeks of benefits to workers in states where the level and change in the state unemployment rate is above a specified threshold. The EB program has been supplemented by temporary programs, most recently by the Emergency Unemployment Compensation (EUC) program which provides up to 47 weeks of additional unemployment benefits to jobless workers who have exhausted their regular benefits (see e.g. Center on Budget and Policy Priorities 2013, CBO 2012, Farber and Valletta 2013 or the overview in Nicholson et al. 2014 for more information on US federal legislation and further literature).

How much stabilization is provided by the common system and when does the stabilization from the central level kick in?

A euro area unemployment benefit extension program would not provide benefits in normal times but would only kick-in in deep recessions when certain indicators such as the unemployment rate reach pre-defined thresholds. Estimates for the US suggest that additional weeks of benefits through Emergency Unemployment Compensation (EUC) provided significant income and output stabilization. For example, CBO (2012) and CBO (2013) both ex-ante projected an increase in the fourth quarter GDP in 2013 and 2014 of 0.2 percent, respectively, if the EUC program and temporary provisions of the EB program were fully extended for one

year. Applying output stabilization estimates of benefit extension programs in the US to euro area member states is problematic, however, since regular unemployment benefits only last for 26 weeks in most states in the US (and in some states only for 19 weeks), whereas unemployment benefits are paid for longer time periods in the majority of euro area member states (see Table A. 2 and Esser et al. 2013).

How large is the risk of permanent redistribution?

This depends on the exact rules and specifications of such a scheme. If the scheme only conditions on the level of the unemployment rate, the probability that there is permanent redistribution from low to high unemployment countries is high. This risk could be reduced by additionally conditioning on other factors such as changes in unemployment.

Further important factors would be if the triggers are country-specific or not and, closely related, the link between contributions and benefits. In contrast to the basic euro area unemployment insurance system which pays benefits to all unemployed who previously contributed to the scheme, a benefit extension program could break the link between contributions and benefits, e.g. if pay-outs from the common system are trigger-based. Hence, contribution and pay-out rules would need to be carefully chosen so that the general acceptance of the scheme would not be undermined by a perceived unbalancedness of transfer payments.

Would such a scheme undermine the incentives of national governments to address structural weaknesses? How large is the risk of administrative manipulation?

The risk that national governments do not address structural weaknesses of the economy could be higher than under a minimum insurance scheme given that the extended benefit program would not only cover cyclical but potentially also structural unemployment. There is also a risk of administrative manipulation, for example if previously unemployed not actively seeking for work and therefore not part of the labour force any more are still classified as unemployed and hence are eligible to extended euro area unemployment benefits.

To what extent is individual behaviour distorted, i.e. how strong are moral hazard concerns?

Extended unemployment insurance benefits which prolong the period of unemployment insurance receipt can have adverse incentive effects. For example, Farber and Valletta (2013) and Rothstein (2011) find a small but statistically significant reduction in unemployment exit rates in the US in the Great Recession caused by extended unemployment benefits. However, the social costs may be overestimated when market externalities of unemployment insurance extension programs are not properly accounted for (Lalive et al. 2013). Such externalities occur if those not eligible to unemployment benefits have higher job finding probabilities because those covered by unemployment insurance reduce their job search effort.

4.3 A fully centralized unemployment insurance system

A third option would be to introduce a full euro area unemployment insurance scheme. This reform would be far-reaching as national unemployment insurance systems would be *fully* replaced by a euro area unemployment insurance system, in contrast to alternatives 1 and 2 where the euro area system would either partly replace or complement national unemployment insurance systems. Several options for designing such a system are possible – such as choosing a specific system among the existing ones or simply some kind of average system. The latter approach has the (political economy) advantage that one does not have to make a choice in favour of one and against all other countries. Such an average euro area unemployment insurance system could be estimated along the lines of Bargain et al. (2013) and Dolls et al. (2013) who use the European tax-benefit calculator EUROMOD and representative household micro data to estimate a joint tax and transfer system for 11 Eurozone countries (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal and Spain) and the EA17, respectively.

How much stabilization is provided by the common system and when does the stabilization from the central level kick in?

By construction, those member states whose national unemployment insurance systems provide below-average stabilization, e.g. because of below-average replacement rates, duration of benefit receipt or low coverage rates, would experience a gain in stabilization whereas the opposite would be true for member states with above-average stabilization effects of their national systems. Automatic stabilization effects would only be provided by the central level as contributions and benefits would be paid into/from the common system.

How large is the risk of permanent redistribution?

The risk of permanent redistribution from low to high unemployment member states is substantially higher than under alternatives 1 and 2, in particular if there are permanent differences in the level of unemployment across the euro area.

Would such a scheme undermine the incentives of national governments to address structural weaknesses? How large is the risk of administrative manipulation?

The incentives of national governments to implement structural (labour market) reforms could be severely affected by a euro area unemployment insurance system that fully replaces national systems since (direct) costs of unemployment would be completely borne by the central level. Similar to a euro area benefit extension program, there is also a risk of administrative manipulation if those out of work and not actively seeking for work are classified as unemployed and hence are eligible to euro area unemployment benefits.

To what extent is individual behaviour distorted, i.e. how strong are moral hazard concerns?

As with the basic unemployment insurance system, the extent to which distortions at the individual level change would depend on whether benefits change relative to the status quo. Higher unemployment benefits can reduce job search efforts and hence prolong the unemployment spell.

4.4 Summary

Table 4 summarizes the three alternative options for a euro area unemployment insurance scheme according to the issues discussed above.

Table 4: Alternative options for a euro area UI scheme

Option	Stabilization effects	Redistributive effects	Moral hazard	Rational for euro area UI scheme regarding its stabilization function
Basic UI scheme	Stabilization effects timely, but decrease in the share of <i>long-term</i> unemployed. National UI systems could top up euro area system.	Redistributive effects significantly affected by changes in <i>short-term</i> unemployment. Differences in unemployment rates alone do not lead to permanent redistribution.	Only short-term unemployment covered, national governments bear costs of long-term unemployment. Administrative discretion could be used to increase the number of transfer recipients. Distortions at the individual level depend on overall benefit level (national and European combined).	Under the condition that a basic euro area UI scheme is not restricted in its capacity to run deficits, it could ensure that a minimum level of insurance is guaranteed even if a member state loses access to private capital markets so that the working of national automatic stabilizers is restricted.
Benefit extension program	Stabilization by the central level (only) in severe economic crisis, pay-out-rules trigger-based. Additional stabilization by extending the coverage and/or the generosity of national UI systems.	Risk of permanent redistribution depends on the specification of the triggers. If pay-out-rules condition only on unemployment levels rather than levels and changes in unemployment, the risk of permanent redistribution would be high.	Risk that scheme undermines incentives of national governments to address structural weaknesses of the labour market is higher than under a basic UI scheme if it covers both cyclical and structural unemployment. Extended period of benefit receipt can have adverse incentive effects at the individual level.	A benefit extension program administered at the euro area level could increase the insurance effect of national UI schemes in severe economic downturns.
Fully centralized UI system	Timely stabilization, exclusively provided by the centralized UI system which fully replaces national UI systems.	High risk of permanent redistribution if there are permanent differences in unemployment levels across the euro area.	Direct costs of unemployment fully borne by the central level which gives rise to severe moral hazard concerns.	To establish automatic stabilizers at the central level that are more effective than in member states with weak automatic stabilizers.

5. Economic effects of an unemployment insurance scheme for the euro area

Key findings

- A significant basic euro area unemployment insurance scheme could be implemented with a relatively small budget. Over the period 2008-2013, the total volume would have been 365 billion euros, i.e. the average yearly benefits and contributions would have amounted to 61 billion euros.
- Our simulations show that (net) transfers from the euro area unemployment insurance scheme would have been unevenly distributed due a substantial divergence in unemployment rates within the Eurozone in recent years.
- Coverage rates of the euro area UI would have declined from 2009 onwards as the share of long-term unemployed got larger. At EMU-level, coverage rates would have gone down from 57 per cent in 2008 to 51 per cent in 2013.
- Household incomes would have been stabilized by a considerable degree, in particular in those countries most affected by rising unemployment. Our measure for automatic stabilization, the income stabilization coefficient, is close to 50 per cent in Greece, Ireland and Portugal in 2009, and in Italy in 2012.
- Our results suggest that growth effects would have been moderate at the euro area level. The euro area unemployment insurance scheme would have raised output by up to 0.2 in 2009 and up to 0.08 per cent in 2012. Output stabilization would have been larger in those countries whose national unemployment insurance systems only provide weak stabilization and which were severely affected by rising unemployment. Our upper bound estimates which are based on a fiscal multiplier of 1.5 imply that in 2009 output would have been raised by 1.9 per cent in Estonia, 0.8 per cent in Ireland and 0.6 per cent in Spain.

5.1 Key features of a basic unemployment insurance scheme for the Euro area

Given the three broad alternatives for a euro area unemployment insurance scheme presented above, the key question is which scheme would best serve its purpose of improving economic resilience of the EMU by cushioning asymmetric shocks without leading to permanent transfers across member states and without undermining incentives of national governments to implement structural reforms. These criteria are explicitly emphasized in the van Rompuy report *“Towards a Genuine Economic and Monetary Union”* and in the report *“A blueprint for a deep and genuine economic and monetary union – Launching a European Debate”* both outlining a roadmap for the (potential) further institutional development of EMU (see van Rompuy et al. 2012 and European Commission 2012).

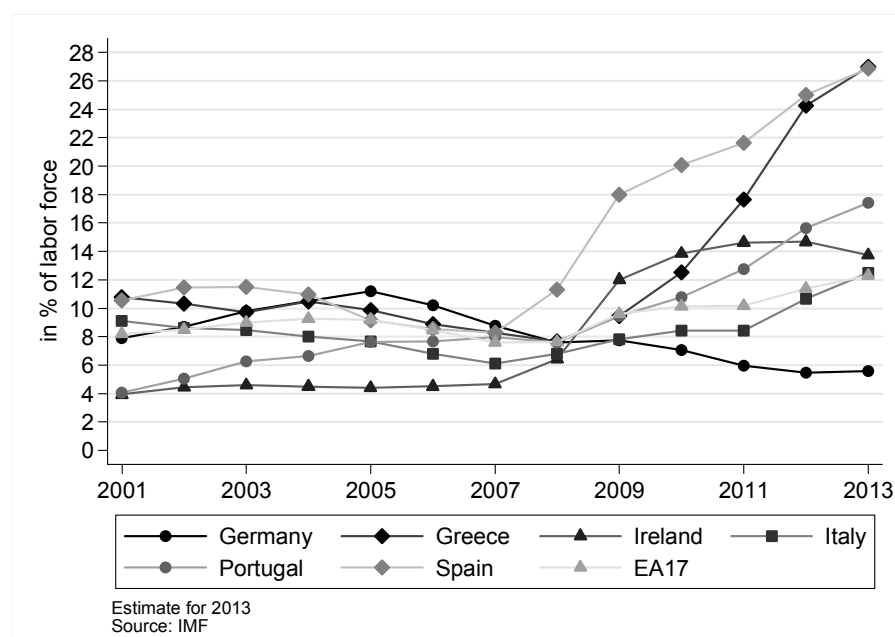
In our empirical analysis, we consider the economic effects of a basic unemployment insurance scheme as a benchmark case. Clearly, the basic euro area unemployment insurance system could be combined with elements of an extended benefit program, e.g. transfers could be activated once unemployment rates are above a certain threshold and continue rising. Other characteristics would be similar, for example the general requirement of active job search to be eligible for unemployment insurance benefits from the common system. Our simulations provide a useful starting point to illustrate the economic effects of a common unemployment insurance system in the euro area.

In our set-up, the common system has a replacement rate of 50 per cent of previous (gross) wages which corresponds to the lowest replacement rate of national unemployment insurance systems in the euro area in 2007 (Greece, see Table 3). All new unemployed with previous income (as well as self-employment income) are eligible for benefits from the euro area unemployment insurance system for up to 12 months. As outlined in section 2, we simulate unemployment shocks for the period 2008-2013 reflecting real trends in unemployment as well as short-term unemployment in the euro area in order to match the share of unemployed who would have been eligible for the basic unemployment insurance scheme. The scheme is financed by a proportional payroll tax and is calibrated (ex-post) so that it is revenue neutral over the simulation period, i.e., it can run deficits in single years, but needs to be balanced over a longer time period. The total contribution rate (sum of employer and employee social insurance contributions) is 1.9% on all employment income. The total volume of this scheme at the EMU-level would have amounted to 365 billion euros over the whole simulation period (2008-2013), i.e. the average yearly budget is roughly 61 billion euros.

5.2 Changes in (short-term) unemployment and coverage rates

Before assessing the redistributive and stabilizing effects of a euro area unemployment insurance system, it is instructive to consider how unemployment rates in EMU have developed since the start of the common currency and, in particular, during the recent deep recession which had a tremendous impact on labour markets in Europe. Figure 2 shows unemployment rates in Germany, the so-called GIIPS countries (Greece, Italy, Ireland, Portugal and Spain) as well as in the EA17 since 2001.

Figure 2: Unemployment rates in selected EA member states 2001-2013



The figure reveals that unemployment rates have followed different cycles within the euro area. In Germany, it was increasing from 2001 onwards reaching its peak in 2005 with a rate of 11.2% (see also Table 5 and Figure 7 for unemployment rates of all EA member states). In that year, the German unemployment rate was above the EA17 average and also higher than in the GIIPS countries. In contrast unemployment was declining from 2003-2007 in Spain and from 2004-2008 in Greece indicating that these two countries were in a different position of the business cycle in these years. Since then, unemployment has been rising in Spain and Greece up to a rate of 27% in 2013. Unemployment has also been increasing in Portugal, Ireland, and Italy since 2007, but, compared with growth rates in Spain and Greece, to a much smaller extent. IMF forecasts for the coming years suggest, however, that in Ireland the peak was reached in 2012. Against this trend in the GIIPS countries, Germany's unemployment rate has been declining in recent years, despite a huge drop in its GDP of almost 5% in 2008.

For an assessment of an unemployment insurance scheme that only insures the first 12 months of unemployment, it is equally important to consider the share and absolute number of short-term unemployed which is depicted in Figures 3 and 4 for Germany and the GIIPS countries (see also Table 6 and Figure 8 for shares and absolute numbers of short-term unemployment for all EA member states).

Figure 3: Share short-term unemployment rates in selected EA member states 2001-2012

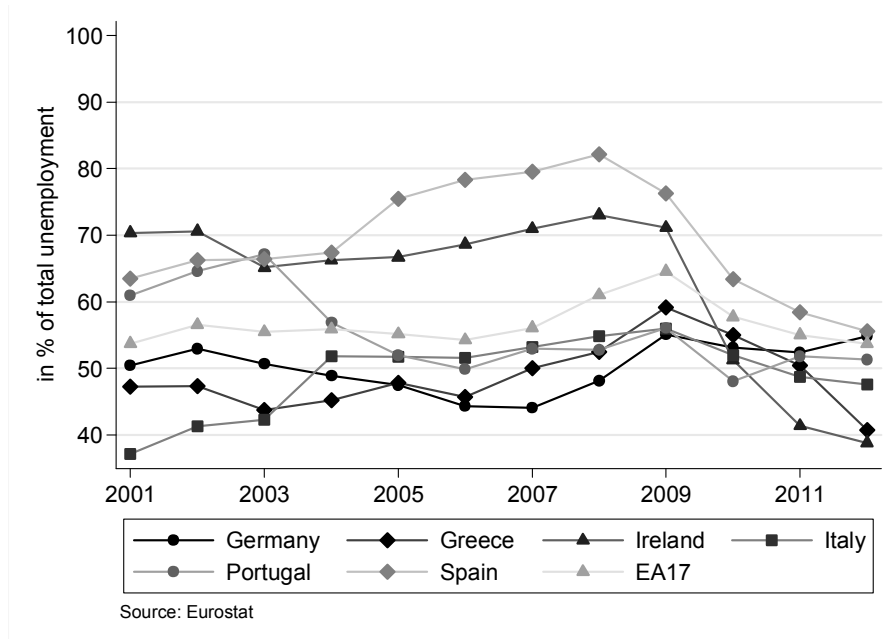


Figure 4: Absolute number short-term unemployed in selected EA member states 2001-2012

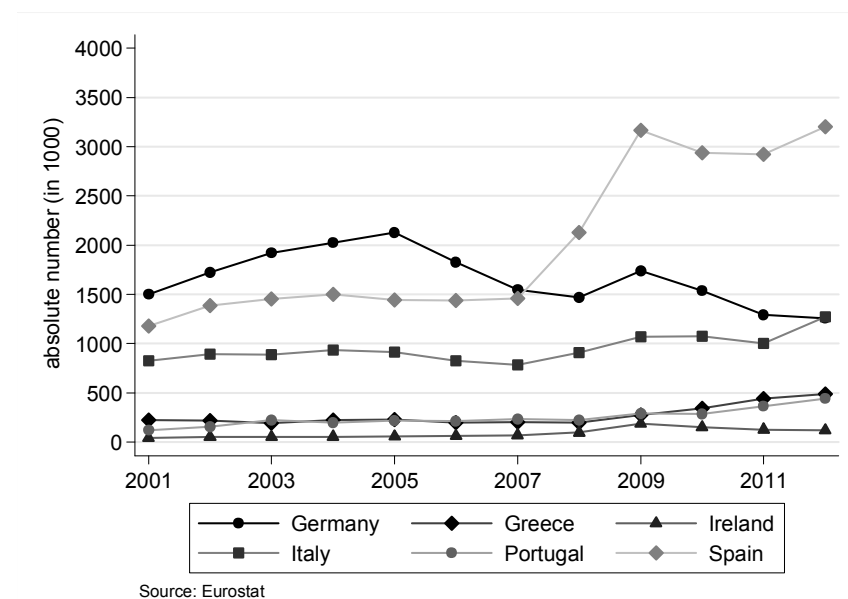
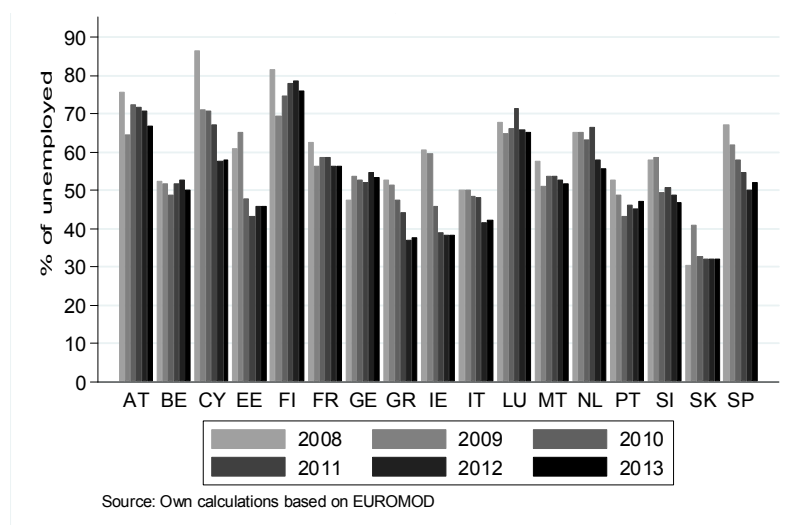


Figure 3 shows that fluctuations in the share of short-term unemployment are rather large. In the recent recession, the share of short-term unemployed increased in the majority of euro area member states from 2007 to 2008 and at the Eurozone level also from 2008 to 2009 (Table 6), but fell afterwards, in particular in those countries which were severely affected by rising unemployment (see e.g. Spain, Ireland and Greece in Figure 3). Figure 4 reveals that absolute numbers of short-term unemployed were still rising up to 2012 (the last year for which data on short-term unemployment is available) in Spain, Italy, Greece and Portugal which can be explained by the ongoing rise in unemployment in these countries.

These patterns have important implications for the coverage and hence the stabilizing effect of the basic euro area unemployment insurance scheme. In a deep economic crisis such as in 2008-2009, a scheme which covers (only) short-term unemployment has its strongest stabilizing effect when the rise in short-term unemployment is largest. This effect diminishes the more the share of the long-term unemployed is growing. Contrary, a benefit extension program would unfold its stabilizing effects when certain thresholds of macro-indicators such as the unemployment rate are reached which might come with some time lag.

Our simulations confirm these implications for the basic euro area unemployment insurance scheme. Figure 5 shows that the share of benefit recipients from the euro area unemployment insurance system (relative to the total labour force) would have increased in the majority of member states from 2008-2013. The largest increases would have occurred in Cyprus (from 3.1 per cent in 2008 to 9.8 in 2013), Greece (from 4.0 per cent to 10 per cent), Portugal (from 4.0 per cent to 8.2 per cent) and Spain (from 7.6 per cent to 14 per cent), countries with huge inflows into unemployment.

Figure 5: Share of recipients of EMU-UI, 2007-2013



Notable exceptions would have been Estonia, Germany and Slovakia where the share of recipients would have gone down after 2009 (from 8.9 per cent in 2009 to 3.8 per

cent in 2013 in Estonia, from 4.1 per cent to 3.0 per cent in Germany, from 4.9 per cent to 4.6 per cent in Slovakia) due to declining unemployment rates (Estonia and Germany) and lower shares of short-term unemployed (Estonia and Slovakia).

However, in spite of rising shares of benefit recipients from the euro area unemployment insurance system, the coverage ratios, i.e. the share of unemployed who would have received transfers from the common euro area unemployment insurance system, would have declined significantly in those countries most affected by rising unemployment. In Spain, the ratio would have declined from 67% in 2008 to 52% in 2013, in Greece from 53% to 38%, in Ireland from 61% to 38% and in Portugal from 53% to 47%. For the EA17, the share would have decreased from 57% to 51% (see Figure 6 and Table 10).

Figure 6: Coverage rate of EMU-UI, 2008-2013

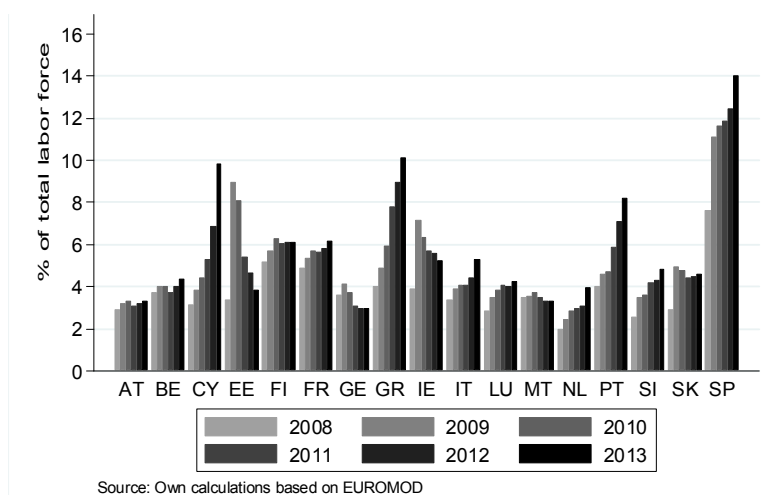


Figure 7: Unemployment rates in the EA17, 2007-2013

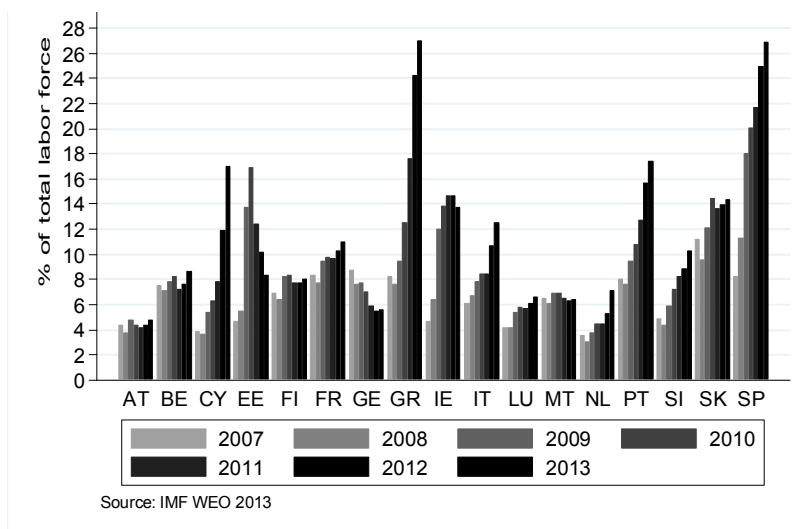
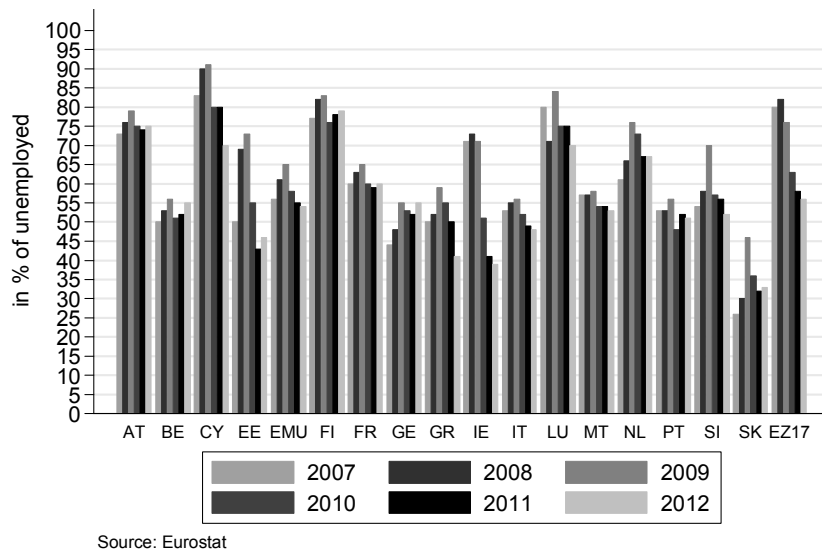


Figure 8: Share short-term unemployed, 2007-2013

Table 5: Unemployment rates (in % of total labour force) in the EA17, 2000-2013

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EMU	8.7	8.2	8.5	9.0	9.3	9.2	8.5	7.6	7.6	9.6	10.1	10.2	11.4	12.3
AT	3.6	3.6	4.2	4.3	4.9	5.2	4.8	4.4	3.8	4.8	4.4	4.2	4.3	4.8
BE	6.9	6.7	7.6	8.2	8.3	8.4	8.2	7.5	7.1	7.8	8.2	7.2	7.6	8.7
CY	4.8	3.9	3.5	4.1	4.6	5.3	4.5	3.9	3.6	5.4	6.3	7.9	11.9	17
EE	13.7	12.6	10.3	10.0	9.7	7.9	5.9	4.7	5.5	13.8	16.9	12.5	10.2	8.3
FI	9.8	9.1	9.1	9.0	8.8	8.4	7.7	6.9	6.4	8.2	8.4	7.8	7.8	8.0
FR	9.0	8.2	8.3	8.9	9.3	9.3	9.2	8.4	7.8	9.5	9.7	9.6	10.3	11.0
GE	8.0	7.9	8.7	9.8	10.5	11.2	10.2	8.8	7.6	7.7	7.1	6.0	5.5	5.6
GR	11.4	10.8	10.3	9.7	10.5	9.9	8.9	8.3	7.7	9.5	12.5	17.7	24.2	27.0
IE	4.3	3.9	4.4	4.6	4.5	4.4	4.5	4.7	6.4	12.0	13.9	14.6	14.7	13.7
IT	10.1	9.1	8.6	8.5	8.0	7.7	6.8	6.1	6.8	7.8	8.4	8.4	10.7	12.5
LU	2.4	2.2	2.5	3.3	3.7	4.1	4.2	4.2	4.2	5.4	5.8	5.7	6.1	6.6
MT	6.8	7.6	7.4	7.7	7.2	7.3	6.9	6.5	6.1	6.9	6.9	6.5	6.3	6.4
NL	3.1	2.5	3.1	4.2	5.1	5.3	4.4	3.6	3.1	3.7	4.5	4.4	5.3	5.3
PT	4.0	4.1	5.1	6.3	6.7	7.6	7.7	8.0	7.6	9.5	10.8	12.7	15.7	17.4
SI	6.7	6.2	6.3	6.7	6.3	6.5	6.0	4.9	4.4	5.9	7.3	8.2	8.9	10.3
SK	18.9	19.5	18.8	17.7	18.4	16.4	13.5	11.2	9.6	12.1	14.5	13.7	14.0	14.4
SP	13.9	10.6	11.5	11.5	11.0	9.2	8.5	8.3	11.3	18.0	20.1	21.7	25.0	26.9

Source: IMF World Economic Outlook, October 2013, Estimate for 2013

Table 6: Share of short-term unemployment (less than 12 months, in % of total unemployment) in the EA17, 2000-2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EMU	53	54	57	56	56	55	54	56	61	65	58	55	54
AT	72	74	85	77	72	75	73	73	76	79	75	74	75
BE	44	48	51	54	50	48	49	50	53	56	51	52	55
CY	77	80	83	82	74	78	82	83	90	91	80	80	70
EE	53	59	54	64	47	47	52	50	69	73	55	43	46
FI	76	77	79	79	79	74	75	77	82	83	76	78	79
FR	60	63	67	64	61	59	59	60	63	65	60	59	60
GE	50	50	53	51	49	47	44	44	48	55	53	52	55
GR	43	47	47	44	45	48	46	50	52	59	55	50	41
IE	62	70	71	65	66	67	69	71	73	71	51	41	39
IT	39	37	41	42	52	52	52	53	55	56	52	49	48
LU	100	100	84	89	85	77	74	80	71	84	75	75	70
MT	72	86	86	100	70	54	60	57	57	58	54	54	53
NL	100	100	74	72	68	60	58	61	66	76	73	67	67
PT	57	61	65	67	57	52	50	53	53	56	48	52	51
SI	37	37	45	43	47	53	51	54	58	70	57	56	52
SK	46	42	35	34	36	28	24	26	30	46	36	32	33
SP	58	63	66	66	67	75	78	80	82	76	63	58	56

Source: Eurostat, 2013 values not available yet

Table 7: Absolute number short-term unemployed (less than 12 months) in 1000 in the EA17, 2000-2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EMU	6626.3	6047.9	6882.8	7100.9	7462.2	7359.4	6793	6371.9	7049.3	9463.9	8969.3	8638.1	9520
AT	129.6	112.8	156.1	144.6	146.2	154.4	141.7	135.4	122.6	160.6	140.7	132.5	142.2
BE	126.9	128.5	151	180.6	166.1	188.2	186.6	174.7	174.3	211.6	207.4	179.1	203.7
CY	11.4	10.2	8.6	10.8	10.8	14.6	13.4	12.5	12.3	19.2	20.9	26.7	36.1
EE	45.2	40.2	26.7	40.8	31.5	24.3	21	16.2	26.5	69	63.3	37.4	32.4
FI	217.5	204.9	218.7	218.5	214.2	161.4	151.1	139.8	137.4	181.4	167.4	159.5	159.4
FR	1586	1408.9	1530.9	1386.1	1487.7	1417	1394.9	1313.4	1272.3	1644.8	1562	1516.1	1669.3
GE	1479.8	1501.6	1722.4	1921.1	2023.5	2129.7	1829.7	1546.7	1469.5	1738	1536.4	1293.2	1255.6
GR	225	226.2	218.6	191.8	222.6	228.3	198.5	203.5	198.3	278.6	345.6	442.2	489.7
IE	46.2	43.1	54.4	53.3	55.5	58.8	64.3	70.4	97.7	188.3	152.8	127.4	119.9
IT	976.2	825	893.8	887.2	936.7	914.2	823.9	782.9	908.2	1072.5	1073	1003.3	1274.7
LU	3.1	2.4	3.2	5.3	7.9	6.6	6.8	6.2	7.1	9	6.9	8.3	8.7
MT	1.6	4.2	6.9	7.8	4.2	6.2	6.7	6.2	5.9	6.7	6.4	6.3	6.2
NL	0	0	151.3	209.2	262.1	237.3	187.8	164.5	154.9	225.1	278	254.2	304.2
PT	102.7	122.7	156.5	223.7	197.2	218.2	212.7	236.5	223.6	293.5	286	366	441.1
SI	24.9	19.4	26.3	27	28.4	34.8	30.8	27	26.3	42.7	42.7	46.5	46.7
SK	218.8	211.9	168.8	151.4	177.1	120.8	84	76.3	77.8	149	139.9	117.1	123.8
SP	1421.1	1178	1384.9	1455.1	1500.3	1443.4	1438.5	1459.2	2127.6	3165.3	2937.7	2920.7	3204

Source: Eurostat, 2013 values not available yet

Table 8: Absolute number long-term unemployed (more than 12 months) in 1000 in the EA17, 2000-2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EMU	6259.8	5424.7	5363	5838	6033.6	6100.4	5836.3	5064.1	4565	5243	6632.9	7122.9	8277.5
AT	51.5	40.3	28.7	43.3	56.4	52.7	53.6	49.8	39.5	43.6	47.5	46.6	46.8
BE	163.6	137.4	148.6	155.8	163.2	201.5	195.8	177.3	158.1	167.7	197.4	167.4	164.7
CY	2.5	1.8	2.6	4	4.2	3	2.6	1.4	1.9	5.3	6.8	15.7	15.7
EE	40.3	33.7	27.6	25.6	34.8	27.9	19.5	15.9	11.9	26.1	52.6	49.4	38.1
FI	70.8	63.3	59	59.3	57.2	56.3	50.9	41.5	31.4	36.8	53.4	45.9	43.8
FR	1045.3	822.1	745.4	838.6	959.7	987.9	1008	882.3	764.7	898.3	1050.8	1073.5	1128.4
GE	1570.4	1526.9	1580.8	1921.6	2176.8	2399.8	2365	2015.5	1626	1450.2	1381.7	1192.1	1046.4
GR	294	252.3	243.3	248.5	270	249	236	203.5	179.6	192.4	283.1	434.7	714
IE	28.6	19.5	22.8	29.3	29.1	29.5	29.6	29.4	36.3	77.2	147.6	185.7	193.4
IT	1545.4	1426.7	1296.3	1239.5	926.2	911.8	810.9	704.3	763.9	857	1009.8	1081	1439.1
LU	0	0	0.8	0.8	1.5	2.1	2.5	1.7	3.1	1.9	2.5	2.9	3.9
MT	2.7	1.6	1.5	0	3.5	5.4	4.5	4.6	4.4	5.1	5.6	5.4	5.6
NL	0	0	55.1	86.3	126.1	159.3	141.9	107	82.6	74.2	105.7	128	156.4
PT	86	79.2	86	109.4	149.9	202.8	214.4	210.9	201.5	232.3	313.2	340.1	418.9
SI	41.6	34.9	31.8	35.1	32.1	31.3	29.9	22.9	19.2	18.3	32.6	36.8	42.9
SK	264.1	296.3	317.2	296.2	314	309.2	271.1	219.5	177.9	174.6	249.1	247.9	254.3
SP	1047.6	677.6	707	736.1	726.2	469.1	398.5	374.6	463.1	984	1694.6	2078.2	2564.9

Source: Eurostat, 2013 values not available yet

Table 9: Total number unemployed in 1000 in the EA17, 2000-2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EMU	13,218.6	11,723.7	12,334.1	13,121.1	13,683.1	13,600.6	12,758.0	11,532.9	11,708.6	14,798.7	15,691.6	15,835.4	17,881.5	17,881.5
AT	181.1	154.3	187.0	188.0	203.4	207.7	195.6	185.6	162.3	204.4	188.2	179.0	189.1	189.1
BE	290.5	265.9	300.8	337.3	329.4	390.4	383.2	353.0	333.4	379.6	405.9	346.7	369.0	369.0
CY	15.4	12.8	10.8	14.1	15.2	19.5	17.0	15.4	14.5	21.7	26.4	34.0	52.0	52.0
EE	85.5	81.5	60.6	70.7	66.2	52.2	40.5	32.0	38.4	95.1	115.9	86.8	70.5	70.5
FI	296.6	275.6	280.0	280.7	275.5	219.7	204.4	183.3	172.1	220.9	224.3	208.7	206.8	206.8
FR	2,631.4	2,230.8	2,276.5	2,308.4	2,487.7	2,432.0	2,431.9	2,223.0	2,064.4	2,575.2	2,640.0	2,612.1	2,824.3	2,824.3
GE	3,122.9	3,078.5	3,362.0	3,894.0	4,261.1	4,570.8	4,245.4	3,601.0	3,136.0	3,228.2	2,945.5	2,501.4	2,316.5	2,316.5
GR	519.1	478.4	462.1	441.7	492.6	477.3	434.5	406.9	377.9	471.1	628.7	876.9	1,203.8	1,203.8
IE	75.4	65.8	77.6	84.1	86.3	88.6	94.4	101.4	134.7	267.7	302.7	316.7	316.0	316.0
IT	2,542.4	2,268.4	2,206.4	2,145.8	1,923.3	1,888.6	1,673.4	1,506.0	1,691.9	1,944.9	2,102.4	2,107.8	2,743.6	2,743.6
LU	4.3	3.4	5.1	7.1	10.2	9.1	9.7	8.6	10.8	11.7	10.1	11.6	12.8	12.8
MT	9.7	11.3	11.0	12.0	11.5	11.7	11.2	10.8	10.3	12.0	12.2	11.7	11.8	11.8
NL	220.2	174.6	214.3	302.9	394.8	402.1	335.7	277.9	243.0	303.7	389.9	388.6	468.5	468.5
PT	198.5	202.9	243.1	333.4	347.3	422.3	427.8	448.6	427.1	528.6	602.6	706.1	860.1	860.1
SI	66.4	55.1	58.1	62.1	60.5	66.0	60.8	49.9	45.5	61.0	75.4	83.2	89.6	89.6
SK	490.5	508.7	486.3	447.7	491.0	430.0	355.4	295.7	255.7	323.5	389.2	365.0	378.0	378.0
SP	2,468.8	1,855.6	2,092.6	2,191.2	2,227.2	1,912.5	1,837.1	1,833.9	2,590.6	4,149.5	4,632.4	4,999.0	5,769.0	5,769.0

Source: Eurostat, 2013 values not available yet

Table 10: Coverage rate of EMU-UI, 2008-2013

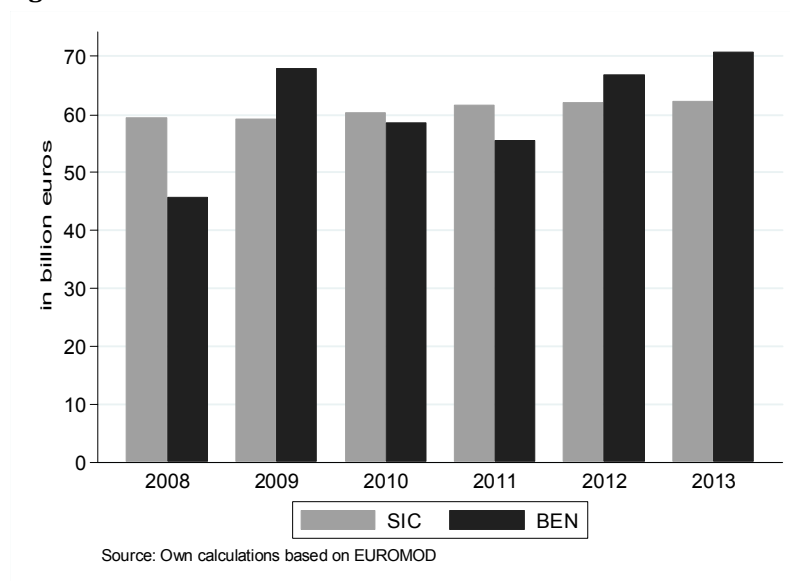
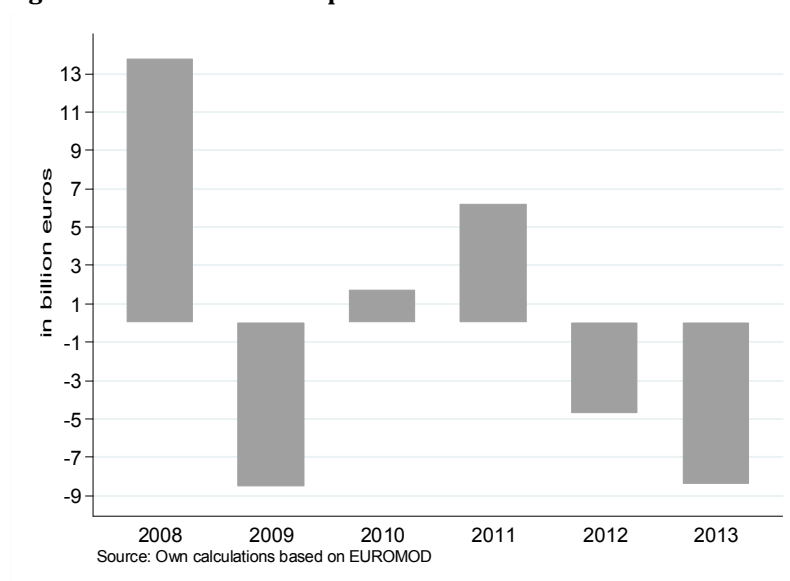
	2008	2009	2010	2011	2012	2013
EMU	56.7	56.1	54.3	53.3	49.9	50.9
AT	75.7	64.5	72.4	71.7	70.7	66.8
BE	52.4	51.6	48.9	51.7	52.6	50.0
CY	86.4	70.9	70.7	67.1	57.7	57.9
EE	60.7	65.0	47.9	43.2	45.9	45.9
FI	81.6	69.4	74.7	77.8	78.6	75.9
FR	62.5	56.3	58.5	58.5	56.4	56.3
GE	47.5	53.5	52.7	52.0	54.5	53.3
GR	52.5	51.5	47.5	44.2	37.0	37.6
IE	60.5	59.6	45.9	38.8	38.2	38.3
IT	49.9	50.0	48.3	48.1	41.5	42.3
LU	67.6	64.7	66.3	71.2	65.8	65.0
MT	57.7	51.1	53.5	53.7	52.6	51.8
NL	65.2	65.0	63.2	66.5	58.0	55.6
PT	52.6	48.7	43.3	46.2	45.2	47.1
SI	57.8	58.6	49.6	50.7	48.7	46.9
SK	30.4	40.8	32.8	32.1	32.1	31.9
SP	67.3	61.8	57.9	54.7	49.9	52.1

Note: Coverage Rate in % of all unemployed

Source: Own calculations based on EUROMOD.

5.3 Budgetary effects and financial flows

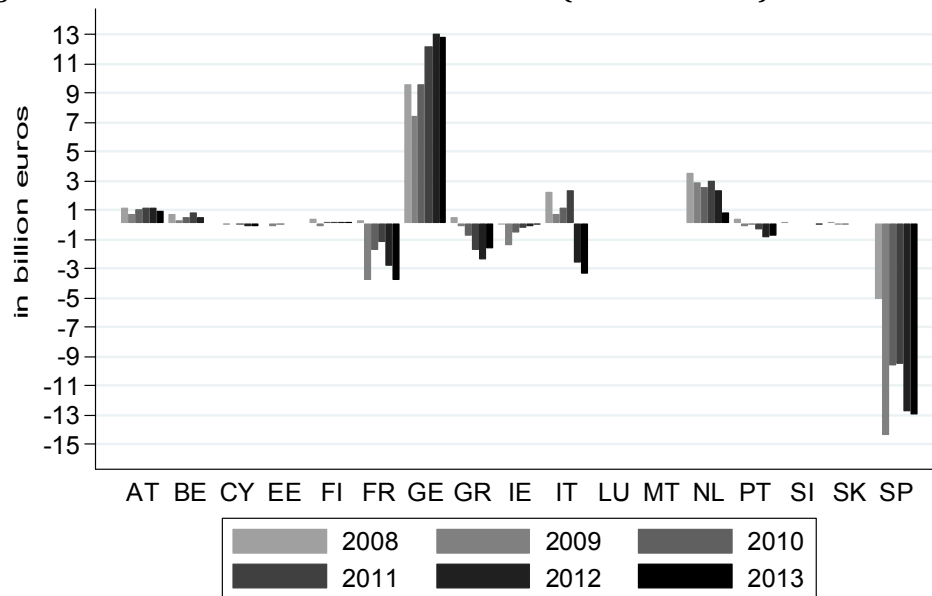
As stated above, the euro area unemployment insurance scheme analyzed in our simulations can run deficits and surpluses in single years, but is balanced over the whole simulation period. In order to achieve revenue neutrality, a proportional payroll tax of 1.9 per cent on all employment income is required. Figure 9 shows the sum of contributions into and pay-outs from the scheme at the Eurozone level. While contributions are relatively stable over the six year period, increasing from 59 billion euros in 2008 to 62 billion in 2013, benefit payments fluctuate to a much larger extent (see also Table 11). They reach their peak in 2009 and 2013 (68 and 71 billion euros), i.e. in those years when aggregate growth in unemployment was highest, and have their lowest level in 2008 (46 billion euros) when the aggregate unemployment rate in the Eurozone did not change relative to the previous year (see Table 5). Consequently, the scheme would run surpluses in 2008 (13.7 billion euros), 2010 (1.7 billion euros) and 2011 (6.2 billion euros) and deficits in 2009 (8.5 billion euros), 2012 (4.7 billion euros) and 2013 (8.4 billion euros, see also Figure 10). Over the period 2008-2013, the total volume of the scheme would have amounted to 365 billion euros at the Eurozone level.

Figure 9: Contributions and benefits euro area UI scheme 2008-2013**Figure 10: Deficits and surpluses euro area UI scheme 2008-2013**

Our simulations demonstrate that at the national level Germany would have been the largest contributor to the scheme in absolute terms with yearly net contributions ranging from 7.4 to 13 billion euros (Figure 11 and Table 11), whereas Austria, Germany and the Netherlands would have borne the largest burden relative to their GDP. Net contributions relative to GDP would have ranged from 0.27 – 0.4 per cent in Austria, from 0.31 – 0.40 per cent in Germany and from 0.14 – 0.59 per cent in the Netherlands (Figure 12 and Table 12). Among the net recipients would have been Spain, France, Greece and Portugal, i.e. those countries most affected by rising unemployment. In Spain, the largest recipient in absolute terms, net benefits would have ranged from 5.2 billion euros in 2008 (0.47 per cent of GDP) to 14.5 billion euros in 2009 (1.39 per cent of GDP). In France, net benefits would have

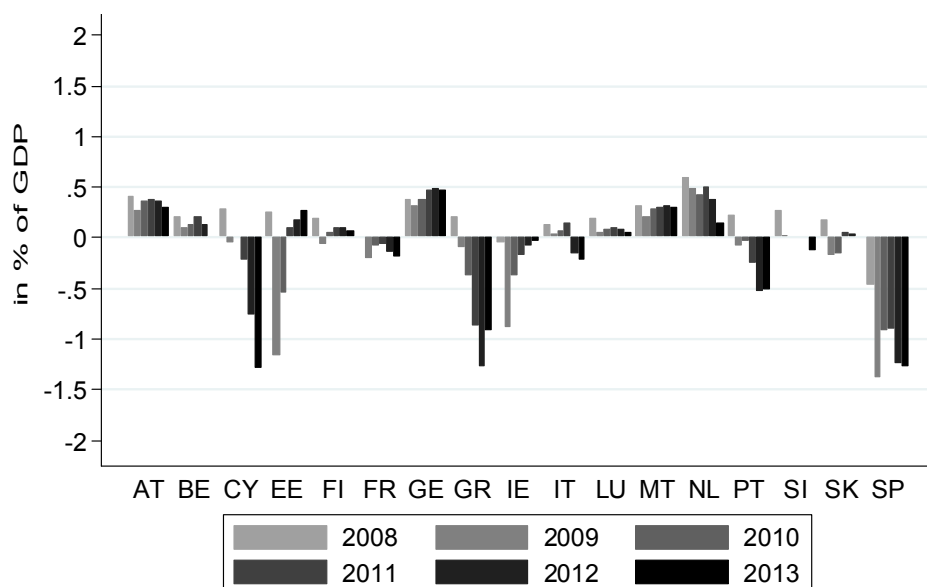
reached their maximum in 2013 (3.9 billion euros or 0.19 per cent of GDP) in 2013, in Greece and Portugal in 2012 (2.5 and 0.9 billion euros or 1.23 and 0.53 per cent of GDP, respectively). Italy, the largest Southern European country, would have been a net contributor from 2008-2011 with net payments ranging from 0.7-2.3 billion euros (0.04 – 0.14 per cent of GDP) and a net recipient in 2012 and 2013 (2.6 and 3.4 billion euros or 0.17 and 0.22 per cent of GDP).

Figure 11: EMU-UI Net contributions 2008-2013 (in billion euros)



Source: Own calculations based on EUROMOD

Figure 12: EMU-UI Net contributions 2008-2013 (in % of GDP)



Source: Own calculations based on EUROMOD

Figure 13: Share of net contributions relative to EMU total (2008-2013)

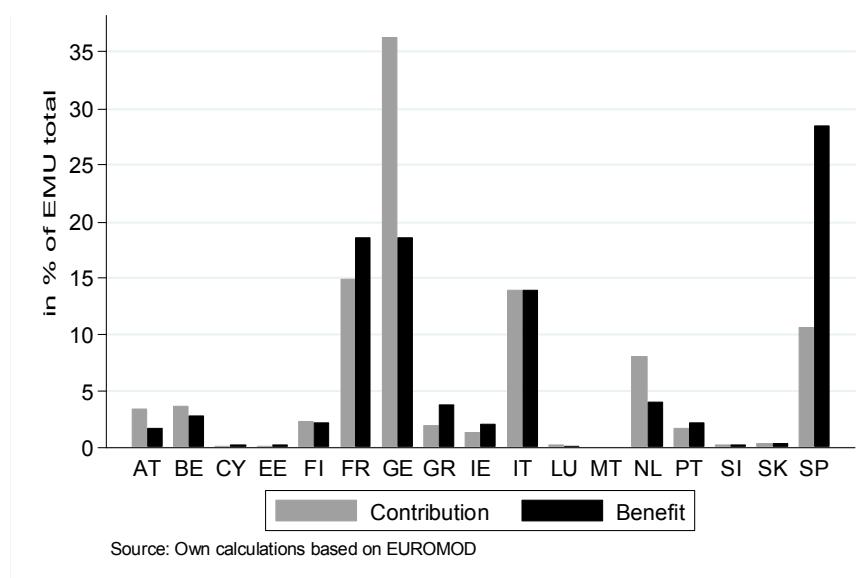


Table 11: EMU-UI benefits, contributions and net balance (in billion euros)																		
	2008			2009			2010			2011			2012			2013		
	BEN	SIC	BAL	BEN	SIC	BAL	BEN	SIC	BAL	BEN	SIC	BAL	BEN	SIC	BAL	BEN	SIC	BAL
EMU	45.70	59.45	13.75	67.88	59.33	-8.55	58.50	60.21	1.72	55.38	61.58	6.20	66.80	62.08	-4.72	70.67	62.28	-8.39
AT	0.84	1.98	1.14	1.28	2.01	0.73	1.00	2.04	1.05	0.97	2.10	1.13	1.06	2.15	1.09	1.25	2.19	0.94
BE	1.39	2.12	0.72	1.80	2.13	0.32	1.70	2.15	0.44	1.47	2.24	0.77	1.82	2.31	0.49	2.30	2.34	0.04
CY	0.06	0.11	0.05	0.12	0.11	-0.01	0.11	0.11	0.00	0.15	0.11	-0.04	0.25	0.11	-0.04	0.25	0.11	-0.14
EE	0.06	0.11	0.04	0.26	0.09	-0.16	0.17	0.09	-0.08	0.08	0.10	0.02	0.07	0.11	0.03	0.07	0.12	0.05
FI	1.02	1.39	0.37	1.52	1.39	-0.13	1.30	1.41	0.11	1.27	1.47	0.20	1.32	1.52	0.19	1.42	1.55	0.13
FR	8.49	8.78	0.30	12.59	8.79	-3.80	10.79	8.99	-1.80	10.53	9.23	-1.30	12.26	9.37	-2.89	13.29	9.42	-3.86
GE	11.33	20.87	9.54	13.48	20.87	7.39	11.97	21.53	9.56	10.25	22.45	12.19	10.13	23.16	13.03	10.77	23.58	12.81
GR	0.92	1.40	0.48	1.65	1.42	-0.22	2.19	1.34	-0.85	3.05	1.22	-1.83	3.53	1.07	-2.45	2.65	0.96	-1.68
IE	1.01	0.92	-0.09	2.30	0.86	-1.45	1.40	0.81	-0.59	1.09	0.80	-0.29	0.95	0.80	-0.15	0.89	0.81	-0.07
IT	6.18	8.35	2.16	7.72	8.40	0.68	7.44	8.57	1.13	6.41	8.68	2.28	11.17	8.55	-2.62	11.91	8.49	-3.42
LU	0.06	0.13	0.07	0.11	0.13	0.02	0.10	0.14	0.04	0.10	0.14	0.04	0.11	0.14	0.03	0.12	0.14	0.02
MT	0.02	0.04	0.02	0.03	0.04	0.01	0.02	0.04	0.02	0.02	0.04	0.02	0.02	0.04	0.02	0.02	0.05	0.02
NL	1.31	4.81	3.50	2.07	4.90	2.83	2.42	4.93	2.51	2.05	5.01	2.96	2.76	5.06	2.30	4.10	4.96	0.86
PT	0.68	1.06	0.37	1.22	1.07	-0.15	1.13	1.07	-0.06	1.48	1.04	-0.44	1.86	1.99	-0.88	1.86	0.99	-0.87
SI	0.08	0.19	0.10	0.18	0.19	0.01	0.19	0.19	0.00	0.19	0.19	0.00	0.18	0.19	0.01	0.23	0.19	-0.04
SK	0.13	0.25	0.11	0.35	0.25	-0.11	0.35	0.25	-0.10	0.22	0.26	0.04	0.24	0.26	0.02	0.26	0.27	0.01
SP	12.09	6.94	-5.15	21.19	6.68	-14.51	16.20	6.54	-9.66	16.05	6.50	-9.55	19.05	6.23	-12.81	19.24	6.14	13.10

Source: Own calculations based on EUROMOD

Source: Own calculations based on EUROMOD

Table 12: EMU-UI benefits, contributions and net balance (in % of GDP)																					
2008						2009			2010			2011			2012			2013			
	BEN	SIC	BAL	BEN	SIC	BAL	BEN	SIC	BAL	BEN	SIC	BAL	BEN	SIC	BAL	BEN	SIC	BAL	BEN	SIC	BAL
EMU	0.5	0.6	0.1	0.8	0.7	-0.1	0.6	0.7	0.0	0.6	0.7	0.1	0.7	0.7	0.1	0.7	0.7	0.1	0.7	0.7	-0.1
AT	0.3	0.7	0.4	0.5	0.7	0.3	0.3	0.7	0.4	0.3	0.7	0.4	0.3	0.7	0.4	0.3	0.7	0.4	0.4	0.7	0.3
BE	0.4	0.6	0.2	0.5	0.6	0.1	0.5	0.6	0.1	0.4	0.6	0.2	0.5	0.6	0.1	0.6	0.6	0.1	0.6	0.6	0.0
CY	0.4	0.6	0.3	0.7	0.7	-0.1	0.7	0.7	0.0	0.9	0.6	-0.2	1.4	0.6	-0.8	1.9	0.6	-0.8	1.9	0.6	-1.3
EE	0.4	0.6	0.3	1.8	0.7	-1.2	1.2	0.6	-0.5	0.5	0.6	0.1	0.4	0.6	0.2	0.4	0.6	0.2	0.4	0.6	0.3
FI	0.5	0.7	0.2	0.9	0.8	-0.1	0.7	0.8	0.1	0.7	0.8	0.1	0.7	0.8	0.1	0.7	0.8	0.1	0.7	0.8	0.1
FR	0.4	0.5	0.0	0.7	0.5	-0.2	0.6	0.5	-0.1	0.5	0.5	-0.1	0.6	0.5	-0.1	0.6	0.5	-0.1	0.6	0.5	-0.2
GE	0.5	0.8	0.4	0.6	0.9	0.3	0.5	0.9	0.4	0.4	0.9	0.5	0.4	0.9	0.5	0.4	0.9	0.5	0.4	0.9	0.5
GR	0.4	0.6	0.2	0.7	0.6	-0.1	1.0	0.6	-0.4	1.5	0.6	-0.9	1.8	0.6	-1.3	1.4	0.6	-1.3	1.4	0.5	-0.9
IE	0.6	0.5	0.0	1.4	0.5	-0.9	0.9	0.5	-0.4	0.7	0.5	-0.2	0.6	0.5	-0.1	0.5	0.5	-0.1	0.5	0.5	0.0
IT	0.4	0.5	0.1	0.5	0.6	0.0	0.5	0.6	0.1	0.4	0.6	0.1	0.7	0.5	-0.2	0.8	0.5	-0.2	0.8	0.5	-0.2
LU	0.2	0.4	0.2	0.3	0.4	0.1	0.3	0.3	0.1	0.2	0.3	0.1	0.2	0.3	0.1	0.3	0.3	0.1	0.3	0.3	0.1
MT	0.4	0.7	0.3	0.5	0.7	0.2	0.4	0.7	0.3	0.4	0.7	0.3	0.3	0.7	0.3	0.3	0.7	0.3	0.3	0.6	0.3
NL	0.2	0.8	0.6	0.4	0.9	0.5	0.4	0.8	0.4	0.3	0.8	0.5	0.5	0.8	0.4	0.7	0.8	0.4	0.7	0.8	0.1
PT	0.4	0.6	0.2	0.7	0.6	-0.1	0.7	0.6	0.0	0.9	0.6	-0.3	1.1	0.6	-0.5	1.1	0.6	-0.5	1.1	0.6	-0.5
SI	0.2	0.5	0.3	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.7	0.5	0.0	0.7	0.5	-0.1
SK	0.2	0.4	0.2	0.6	0.4	-0.2	0.5	0.4	-0.2	0.3	0.4	0.1	0.3	0.4	0.0	0.4	0.4	0.0	0.4	0.4	0.0
SP	1.1	0.6	-0.5	2.0	0.6	-1.4	1.5	0.6	-0.9	1.5	0.6	-0.9	1.9	0.6	-1.2	1.9	0.6	-1.2	1.9	0.6	-1.3
Source: Own calculations based on EUROMOD																					

Source: Own calculations based on EUROMOD

5.4 Automatic stabilization effects

To what extent does the basic unemployment insurance scheme analyzed in our simulations provide income stabilization? In order to investigate this important function of the euro area unemployment insurance scheme, we follow the literature on automatic stabilization effects of tax-benefit systems (cf. Auerbach and Feenberg 2000, Dolls et al. 2012, Bargain et al. 2013) and calculate the income stabilization coefficient defined in section 2 which relates changes in taxes and benefits to changes in gross income. It thus measures how much of a shock on gross income is absorbed by the tax-benefit system. In other words, changes in net incomes are smaller than gross income changes if a fraction of the shock is cushioned by taxes or benefits and unemployment insurance can thus have a consumption-smoothing effect (cf. Baily 1978, Gruber 1997, Chetty 2008). To what extent the cushioning of the shock translates into demand stabilization depends on how households adjust their consumption expenditure after changes in net income (cf. Jappelli and Pistaferri 2010 for a survey). The higher the share of credit-constrained households, the larger will be the stabilizing effect on aggregate demand.¹⁵

Unemployment insurance can stabilize (aggregate) disposable income either through reduced contributions or higher benefit payments. In our simulations, we calculate changes in benefit payments from and social contributions into the euro area unemployment insurance scheme from year t to year $t+1$ at the individual micro level and aggregate these changes to the country-level. For the calculation of stabilization effects of the euro area unemployment insurance scheme, we relate aggregate changes in benefit payments to aggregate gross income changes at the extensive margin, i.e. due to job losses or exits out of unemployment, and aggregate changes in contribution payments to the sum of extensive and intensive gross income changes. The unemployment insurance scheme does have a stabilizing effect if total benefit (contribution) payments at the country level are higher (lower) than in the previous year conditional on an aggregate loss in gross income.

Figure 14 shows stabilization results for the GIIPS countries, Table 13 for the EA17. The first important result is that in 2009 the euro area unemployment insurance scheme would have had a stabilizing effect in all 17 member states. This is due to the fact that in 2009 unemployment rates and the share of short-term unemployed went up in the euro area and, equally important, that the scheme can build up deficits in single years. Any shock absorption scheme without the possibility of debt financing would have unfolded a destabilizing effect in those member states which were comparably less severe affected in that recession year.¹⁶ Euro area unemployment

¹⁵ See e.g. Dolls et al. 2012 who use information on financial wealth, home-ownership and direct survey evidence to identify credit-constrained households in their micro data.

¹⁶ See Bargain et al. 2013 and Dolls et al. 2013 for evidence on the (de)stabilizing effects of a fiscal equalization system which is based on taxing capacity and expenditure needs. The authors show that in

insurance benefits would have absorbed 42.5 percent of the shock on gross income at EMU-level with national values ranging from 32.5 percent in Italy to almost 130 percent in Germany.¹⁷ The stabilizing effect of reduced contribution payments amounts to 1.9 percent which is equal to the proportional payroll tax. Note that we account for extensive and intensive margin income changes when calculating the stabilizing effect of contributions which explains why stabilization stemming from changes in contribution payments can be zero even if unemployment increases. This happens if income growth at the intensive margin outweighs income losses at the extensive margin.¹⁸

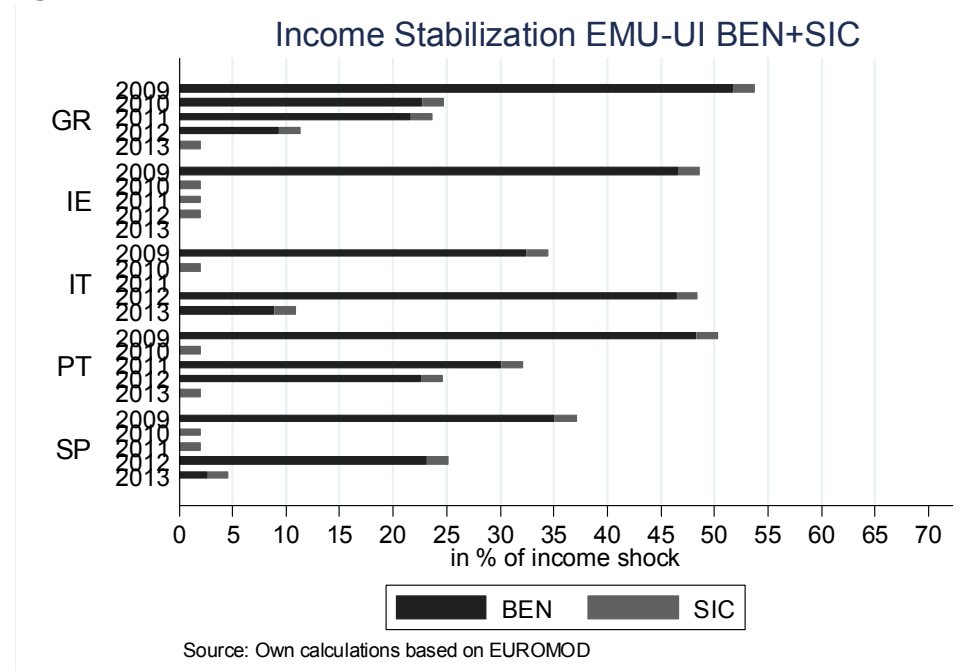
Interestingly, in spite of declining coverage rates (see Table 10) Greece and Spain are the only member states which would have been stabilized either by higher unemployment insurance benefits and/or reduced contributions over the whole sample period. In Greece, for example, the aggregate amount of euro area unemployment benefits would have increased in each year from 2008 to 2012 (from 0.92 billion euros in 2008 to 3.53 billion euros in 2012, see Table 11). The yearly increase in unemployment benefits which would have been paid to the unemployed in Greece results in a positive income stabilization coefficient for benefits from 2009-2012 (Table 13). Only in 2013, the aggregate amount of euro area unemployment benefits would have declined to 2.65 billion euros so that, by definition, the income stabilization coefficient for benefits is zero in 2013.

At the other end of the spectrum are countries such as Estonia or Malta which would have been stabilized only in two out of 5 years. One can thus conclude that the basic unemployment insurance scheme analyzed in our simulations would have supported those countries with the worst labour market developments and hence, would have had the intended effect in terms of income stabilization.

the event of the 2008-2009 shock, the taxing capacity of the union as a whole declined which implies that there would have been less money available in the equalization pot and hence, some member states would have had to pay more contributions or would have received lower payments than in the previous year.

¹⁷ Note that (aggregate) income stabilization at the country-level can be higher than the replacement rate of 50 percent if the share of short-term unemployed increases from year t to $t+1$. In that case, the aggregate change in benefits can be even higher than the aggregate gross income loss, which, in the case of Germany would have led to a stabilization coefficient of more than 100 percent in 2009.

¹⁸ If we account for income changes at the extensive margin only, social insurance contributions to the euro area unemployment insurance scheme would always stabilize incomes when the total number of contributors to the scheme goes down.

Figure 14: Income stabilization EMU-UI in selected member states**Table 13: Income stabilization coefficient**

	2009		2010		2011		2012		2013	
	BEN	SIC	BEN	SIC	BEN	SIC	BEN	SIC	BEN	SIC
EMU	42.5	1.9	0.0	0.0	0.0	0.0	37.8	0.0	12.8	0.0
AT	41.5	0.0	0.0	0.0	0.0	0.0	60.8	0.0	38.3	0.0
BE	50.4	0.0	0.0	0.0	0.0	0.0	72.8	0.0	38.1	0.0
CY	56.0	0.0	0.0	0.0	42.9	0.0	38.6	1.9	19.7	1.9
EE	43.2	1.9	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
FI	35.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.7	0.0
FR	48.2	0.0	0.0	0.0	0.0	0.0	55.2	0.0	30.1	0.0
GE	129.4	1.9	0.0	0.0	0.0	0.0	0.0	0.0	44.0	0.0
GR	51.8	0.0	22.7	1.9	21.7	1.9	9.4	1.9	0.0	1.9
IE	46.7	1.9	0.0	1.9	0.0	1.9	0.0	0.0	0.0	0.0
IT	32.5	0.0	0.0	0.0	0.0	0.0	46.5	1.9	8.9	1.9
LU	55.9	0.0	0.0	0.0	0.0	0.0	41.3	0.0	31.6	0.0
MT	38.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.4	0.0
NL	45.4	0.0	18.7	0.0	30.2	1.9	22.6	1.9	0.0	0.0
PT	48.4	0.0	0.0	0.0	30.2	1.9	22.6	1.9	0.0	0.0
SI	66.3	0.0	5.2	0.0	4.4	0.0	0.0	1.9	35.8	1.9
SK	65.0	1.9	0.1	0.0	0.0	0.0	67.9	0.0	30.3	0.0
SP	35.1	1.9	0.0	1.9	0.0	1.9	23.2	1.9	2.7	1.9

Source: Own calculations based on EUROMOD.

How does stabilization by the basic euro area unemployment insurance scheme compare to automatic stabilizers inherent in national unemployment insurance systems? A comparison of income stabilization coefficients reported in Table 13 with those in Figure 1 in section 3 shows that the basic euro area unemployment

insurance scheme would have provided significant stabilization in 2009 and in some member states also in more recent years, even with a modest replacement rate of 50 per cent (cf. Table 3).¹⁹ The stabilization gap is particularly large in Estonia, Greece, Italy and Slovenia (with a difference in income stabilization ranging between 30-60 percentage points in 2009), but also apparent in Ireland and Spain, all countries with pre-crisis national UI systems absorbing less than 20 per cent of an asymmetric unemployment shock. The reason is that eligibility rules of national UI schemes are in many cases more restrictive implying a lower coverage than under the basic unemployment insurance scheme analyzed here which provides full coverage for all new unemployed with previous employment income for up to 12 months. Additionally, we have documented in section 3 that discretionary policy actions during the crisis implemented in particular in the GIIPS countries did not enhance the stabilizing effects of their national unemployment insurance systems.

Our calculations allow us to provide estimates to what extent household consumption would have been stabilized by the euro area unemployment insurance scheme. Several studies have shown that especially credit-constrained households adjust their consumption expenditure when disposable income changes and that unemployment is a good predictor for limited liquidity (Gruber 1997, Browning and Crossley 2001, Bloemen and Stancanelli 2005, Jappelli and Pistaferri 2013). An upper bound estimate for demand stabilization is therefore to assume that unemployment households fully adjust their consumption expenditure after changes in disposable income in which case demand stabilization equals income stabilization. A stabilization gap between national and euro area unemployment insurance schemes of e.g. 40 per cent would then imply that the decline in household consumption would have been cushioned by this number in the presence of the basic euro area unemployment insurance scheme.

In order to quantify potential effects of the basic euro area unemployment insurance scheme on output, we estimate the additional stabilization effects relative to the shock-absorption capacity of pre-crisis national UI systems. We follow CBO (2011) and assume a range of estimates how an additional euro spent in unemployment benefits would affect output.²⁰ This range for this fiscal multiplier is assumed to lie between 0.5-1.5 which is also in line with the evidence surveyed in Ramey (2011).²¹

¹⁹ Recall that estimated stabilization effects of pre-crisis national UI systems shown in Figure 1 are based on a stylized shock scenario where the unemployment rate in a given country is increased such that aggregate gross income is reduced by 5 per cent (see Dolls et al. 2012). Hence, we compare stabilizing effects of pre-crisis national UI systems with those of the euro area UI system during the crisis.

²⁰ See also Auerbach and Gorodnichenko (2012) and Nicholson et al. (2014) for a recent literature overview on the macroeconomic effects of unemployment compensation.

²¹ Our lower (upper) bound estimate of 0.5 (1.5) thus implies that each additional euro spent in transfers to the unemployed raises output by 0.5 (1.5) euros. Estimates in CBO (2011) range from 0.4

We abstract from stabilization effects resulting from changes in contribution payments to the euro area UI scheme in this exercise since the magnitude of this effect is very small relative to GDP.

Table 14: Estimated effect of euro area UI on output

Year	2009			2010			2011			2012			2013		
	0.5	1	1.5	0.5	1.0	1.5	0.5	1.0	1.5	0.5	1.0	1.5	0.5	1.0	1.5
EMU	0.07	0.13	0.20	0	0	0	0	0	0	0.03	0.06	0.08	0	0	0
AT	0.03	0.06	0.09	0	0	0	0	0	0	0.01	0.02	0.03	0.01	0.02	0.03
BE	0.03	0.06	0.09	0	0	0	0	0	0	0.03	0.06	0.09	0.02	0.04	0.07
EE	0.63	1.25	1.88	0	0	0	0	0	0	0	0	0	0	0	0
FI	0.05	0.09	0.14	0	0	0	0	0	0	0.01	0.03	0.04	0.01	0.02	0.03
FR	0.04	0.08	0.12	0	0	0	0	0	0	0.02	0.04	0.06	0	0	0
GE	0.04	0.07	0.11	0	0	0	0	0	0	0	0	0	0	0.01	0.01
GR	0.13	0.27	0.40	0.08	0.16	0.24	0.13	0.26	0.39	0.02	0.04	0.06	0	0	0
IE	0.25	0.50	0.75	0	0	0	0	0	0	0	0	0	0	0	0
IT	0.04	0.09	0.13	0	0	0	0	0	0	0.14	0.28	0.42	0.01	0.02	0.04
LU	0.02	0.04	0.06	0	0	0	0	0	0	0	0	0	0	0	0
NL	0.04	0.08	0.12	0	0	0	0	0	0	0.03	0.06	0.08	0.04	0.08	0.12
PT	0.11	0.22	0.33	0	0	0	0.05	0.11	0.16	0.04	0.09	0.13	0	0	0
SI	0.12	0.24	0.36	0	0	0	0	0	0	0	0	0	0.05	0.11	0.16
SP	0.21	0.41	0.62	0	0	0	0	0	0	0.03	0.06	0.09	0	0	0

Note: Output effects are expressed in per cent of national GDP for a range of estimates (0.5, 1, 1.5) of the short-term effects of an additional euro spent in unemployment benefits on output. Source: Own calculations based on EUROMOD.

Table 14 shows the (additional) effect of the euro area unemployment insurance scheme on output under the assumption that pre-crisis national unemployment insurance systems would have been replaced by the euro area unemployment insurance scheme. In other words, we compare stabilization effects of the euro area unemployment insurance system with those of pre-crisis national unemployment insurance systems abstracting from policy changes during the crisis.²² Our results suggest that growth effects would have been moderate at the euro area level raising output by up to 0.20 per cent in 2009 and up to 0.08 per cent in 2012. In all other years, the euro area unemployment insurance scheme would have provided no additional growth effect at the EMU level. Results at the country level differ

to 1.5 and hence are almost identical to ours.

²² Note that as in the previous analysis we do not consider any potential topping-up of the euro area unemployment insurance benefits by national unemployment benefits in this exercise.

substantially with largest output effects estimated for 2009 which is in line with our results on income stabilization presented in Table 13. The euro area unemployment insurance scheme would have unfolded largest macro stabilization effects in Estonia, Ireland and Spain where our upper bound estimates suggest that output would have been raised by 1.9, 0.8 and 0.6 per cent in 2009, respectively. The additional stabilization effect would have been very small in those member states with strong national automatic stabilizers, in particular Austria, Belgium, France, Germany and Luxembourg. In Greece, the euro area unemployment insurance scheme would have provided additional stabilization in 4 out of 5 years, whereas in Estonia, Ireland and Luxembourg there would have been a positive effect on output only in 2009.

Our results on output effects of the euro area unemployment insurance system should be interpreted in the light of the limitations of our analysis and the simplifying assumptions made. First, we abstract from potential spill-over effects of additional benefits to the unemployed within the euro area. Taking these macro-feedback effects into account would require a combined micro-macro model at the multi-country level. So far these models have been restricted to a single country (Peichl 2009). Second, there is still considerable uncertainty in the literature how large fiscal multipliers actually are (see e.g. Auerbach and Gorodnichenko 2012 and Ramey 2011) which is why we rely on a range of potential values. Finally, we do not account for potential fiscal responses of national governments, for example topping-up benefits from the euro area unemployment insurance system, if a euro area unemployment insurance system had been introduced in 2007.

6. Conclusions

The current economic crisis in the Eurozone has brought the idea of deeper fiscal integration to the top of the European policy agenda. A common unemployment insurance system is one key reform proposal which could serve as a fiscal risk sharing mechanism in the euro area. However, main concerns often expressed in these debates include permanent transfer flows induced by supranational automatic stabilizers and the risk of moral hazard.

In this paper, we have presented different possible variants of an unemployment insurance system for the euro area, namely a basic unemployment insurance scheme that partly replaces national UI systems, a benefit extension program that complements national unemployment insurance systems and a fully centralized system. All three alternatives would establish automatic stabilizers at the euro area level, but would have very different implications for stabilization, redistribution and the risk of moral hazard. A basic euro area unemployment insurance scheme could ensure that a basic level of insurance is guaranteed even if a member state loses access to private capital markets and cannot let its national automatic stabilizers sufficiently work. Its stabilizing effect diminishes, however, when the share of long-term unemployed becomes larger. A benefit extension program administered at the euro area level and with pay-out rules linked to certain triggers would not provide stabilization in normal times but could increase the insurance effect of national unemployment insurance schemes in severe economic crises. A fully centralized unemployment insurance system would lead to a complete harmonization of unemployment insurance so that existing differences of national unemployment insurance systems in terms of income stabilization would be equalized. The risk of ex-ante permanent redistribution and consequently, adverse incentives for national governments to address structural weaknesses of the economy, is higher the more likely it is that not only short-term (cyclical) unemployment, but potentially also long-term (structural) unemployment is covered by the common system.

Using counterfactual simulation techniques based on harmonized European micro data, we have examined the economic effects of a basic euro area unemployment insurance scheme if such a system had been in place from 2008-2013. The scheme analyzed in our simulations has a low replacement rate of only 50 per cent which could be topped up by national unemployment insurance systems and hence would leave room for diversity across member states. It has a broad coverage as all new unemployed with previous employment income are eligible to unemployment benefits from the common system for up to 12 months. The scheme can run deficits or build surpluses in single years but is calibrated such that it is revenue neutral over the whole simulation period.

Our main results can be summarized as follows. Over the period 2008-2013, the scheme would have had a total volume of 365 billion euros at the Eurozone level. Average yearly benefits and contributions would have amounted to 61 billion euros. The scheme would have run deficits in 2009, 2012 and 2013 and surpluses in 2008, 2010 and 2011. Net transfers would have been unevenly distributed due to a substantial divergence in unemployment rates across the euro area over the simulation period. Largest net contributors to the scheme would have been Austria, Germany and the Netherlands with net contributions relative to GDP ranging from 0.27 – 0.4 per cent in Austria, from 0.31 – 0.40 per cent in Germany and from 0.14 – 0.59 per cent in the Netherlands. Largest net recipients would have been Spain, France, Greece and Portugal. Net benefits would have been up to 1.39 per cent of GDP in Spain, up to 1.23 per cent in Greece, up to 0.53 per cent in Portugal and up to 0.19 per cent in France.

We have shown that the basic unemployment insurance scheme considered in our simulations which has the capacity to build up deficits and a broad coverage of new unemployed would have provided significant stabilization in the early phase of the economic crisis, but that the stabilizing effects would have diminished in the following years. Net household incomes would have been stabilized by the euro area unemployment insurance scheme in all Eurozone countries in 2009, and, to a smaller extent, in the following years. We have compared stabilization effects of the euro area unemployment insurance scheme with those of pre-crisis national unemployment insurance systems and shown that there is a substantial stabilization gap in some member states which is due to stricter eligibility rules of national schemes. In a next step we have asked the question to what extent output would have been raised if pre-crisis national unemployment insurance systems would have been replaced by the euro area scheme. Assuming a plausible range of estimates for the fiscal multiplier which are in line with the recent literature, we find that growth effects would have been moderate at the euro area level raising output by up to 0.20 per cent in 2009 and up to 0.08 per cent in 2012. The euro area unemployment insurance scheme would have unfolded largest macro stabilization effects in Estonia, Ireland and Spain where our upper bound estimates suggest that output would have been raised by 1.9, 0.8 and 0.6 per cent in 2009, respectively. The additional stabilization effect would have been small in those member states where national unemployment insurance systems provide strong automatic stabilizers, in particular in Austria, Belgium, France, Germany and Luxembourg.

The aim of this paper was to conduct an analysis of possible scenarios for an EMU-unemployment insurance system. On purpose, we did not aim at designing an optimal system which is beyond the scope of this paper as this requires a much deeper theoretical analysis. Still, the scenarios analyzed in this paper provide useful guidance for designing such policies. We leave the optimality questions to future research.

References

- Andersson, L. (2008). 'Fiscal Flows and Financial Markets: To What Extent Do They Provide Risk Sharing within Sweden?', *Regional Studies* 42 (7): 1003-1011.
- Auerbach, A. and D. Feenberg (2000). 'The significance of federal taxes as automatic stabilizers'. *Journal of Economic Perspectives*, 14(3): 37-56.
- Auerbach, A. and Y. Gorodnichenko (2012). 'Fiscal Multipliers in Recession and Expansion', in "Fiscal Policy after the Financial Crisis" NBER Chapters, National Bureau of Economic Research.
- Asdrubali, P., B. Sorensen, and O. Yosha (1996). 'Channels of interstate risk-sharing: United States 1963-1990'. *Quarterly Journal of Economics* 111, 1081-1110.
- Balli F., Kalemli-Ozcan S., Sørensen B. E., 2012, "Risk sharing through capital gains," *Canadian Journal of Economics*, vol. 45, n°2, 472-492.
- Bargain, O., H. Immervoll, A. Peichl and S. Siegloch (2012). 'Distributional consequences of labor-demand shocks: The 2008-2009 recession in Germany', *International Tax and Public Finance*, 19 (1), 118-138.
- Bargain, O., M. Dolls, C. Fuest, D. Neumann, A. Peichl, N. Pestel and S. Siegloch (2013): 'Fiscal Union in Europe? Redistributive and Stabilizing Effects of a European Tax Benefit System and Fiscal Equalization Mechanism', *Economic Policy*, July 2013, 375-422.
- Baily, M. (1978): 'Some aspects of optimal unemployment insurance'. *Journal of Public Economics*, 10: 379-402.
- Bayoumi, T. and P. Masson (1995). 'Fiscal flows in the United States and Canada: lessons for monetary union in Europe'. *European Economic Review* 39 (2), 253-274.
- Bell, D. and D. Blanchflower (2010), 'UK unemployment in the Great recession', *National Institute Economic Review*, 214, R3-R25.
- Bertola, G. (2013). 'Policy coordination, convergence, and the rise and crisis of EMU imbalances', CEPR Discussion Paper 9471.
- Bloemen, H. and E. Stancanelli (2005): 'Financial Wealth, Consumption Smoothing and Income Shocks Arising from Job Loss.' *Economica* 72 (August): 431-52.
- Bontout, O. and T. Lokajickova (2013): 'Social protection budgets in the crisis in the EU', Working Paper 1/2013, European Commission.
- Bordo, M., A. Markiewicz and L. Jonung (2011): 'A fiscal union for the euro: Some lessons from history', NBER Working Paper No. 17380.
- Browning, M. and T. Crossley (2001): 'Unemployment Insurance Levels and Consumption Changes', *Journal of Public Economics* 80 (April): 1-23.
- Center on Budget and Policy Priorities (2013), 'Introduction of unemployment insurance', by C. Stone and W. Chen.

- Chetty, R. (2008). 'Moral hazard versus liquidity and optimal unemployment insurance', *Journal of Political Economy*, 116 (2): 173-234.
- Congressional Budget Office (2011). 'Policies for increasing economic growth and employment in 2012 and 2013', Testimony by Douglas W. Elmendorf, Director. Prepared for Committee on the Budget, United States Senate.
- Congressional Budget Office (2012). 'Unemployment insurance in the wake of the recent recession', Pub. No. 4525
- Congressional Budget Office (2013). 'How extending certain unemployment benefits would affect output and employment in 2014', Letter by Douglas W. Elmendorf, Director, to the Committee on the Budget, U.S. House of Representatives.
- Deinzer, R. (2004). 'Konvergenz- und Stabilisierungswirkungen einer europäischen Arbeitslosenversicherung', Berlin: Duncker & Humblot.
- Delors, J. (1989). 'Regional implications of economic and monetary integration'. In C. for the Study of Economic and M. Union (Eds.), *Report on Economic and Monetary Union in the European Community*. Luxembourg: European Commission.
- Dolls, M., C. Fuest, D. Neumann and A. Peichl (2013). 'Fiscal integration in the Eurozone: Economic effects of two key scenarios', ZEW Discussion Paper No. 13-106.
- Dolls, M., C. Fuest and A. Peichl (2012): 'Automatic Stabilizers and Economic Crisis: US versus Europe', *Journal of Public Economics*, 96, 279-294.
- Drèze, J. and A. Durré (2013). 'Fiscal integration and growth stimulation in Europe', CORE DP 2013/13.
- Dullien, S. (2007). 'Improving economic stability: What the euro area can learn from the United States' unemployment insurance', Working Paper FG 1, 2007/11, July 2007, SWP Berlin.
- Dullien, S. (2013): 'A euro-area wide unemployment insurance as an automatic stabilizer: Who benefits and who pays?', Paper prepared for the European Commission (DG EMPL), January 2013.
- Eichengreen, B. (1990). 'One money for Europe? Lessons from the US currency union', *Economic Policy* 10, 117-187.
- Enderlein, H., L. Guttenberg and J. Spiess (2013). 'Blueprint for a cyclical insurance in the euro area', Project "EU&Differentiated Integration".
- Engler, P. and S. Voigts (2013). 'A transfer mechanism for a monetary union', SFB649 Discussion Paper 2013-013.
- Esser, I., T. Ferrarini, K. Nelson, J. Palme and O. Sjöberg (2013), 'Unemployment benefits in EU Member States', report prepared for the use of the European Commission, DG Employment, Social Affairs and Inclusion.
- European Commission (2012), 'A blueprint for a deep and genuine economic and monetary union – Launching a European Debate', Communication from the Commission, 777 final/2.
- Eurostat (2012), 'Task 5.1.1. - Working paper with the description of the Income and living conditions dataset'.

- Evers, M. (2012). 'Federal fiscal transfer rules in monetary unions', *European Economic Review*, 56, pp. 507-252.
- Farber, H. and R. Valletta (2013). 'Do extend unemployment benefits lengthen unemployment spells? Evidence from recent cycles in the U.S. labor market', NBER Working Paper 19048.
- Farhi, E. and I. Werning (2012). 'Fiscal Unions', NBER Working Paper No. 18280.
- Fatás, A. (1998). 'Does EMU need a fiscal federation?', *Economic Policy* 13, 163-203.
- Fatás, A. and I. Mihov (2002). 'Government size and automatic stabilizers', *Journal of International Economics* 55, 3-28.
- Feyrer, J. and B. Sacerdote (2013). 'How much would US style fiscal integration buffer European unemployment and income shocks', *American Economic Review: Papers & Proceedings*, 103 (3): 125-128.
- Figari, F., A. Salvatori and H. Sutherland (2011) "Economic downturn and stress testing European welfare systems". *Research in Labor Economics* 32, pp.257-286.
- Fidrmuc, J. (2013). 'Political Economy of Fiscal Unions', CESifo Working Paper No. 4344.
- Forni, M. and L. Reichlin (1999). 'Risk and potential insurance in Europe'. *European Economic Review* 43, 1237-1256.
- Fuest, C. and A. Peichl (2012), 'European fiscal union: What is it? Does it work? And are there really 'no alternatives'?', *CESifo Forum* 13 (1), pp. 3-9.
- Furceri, D. and A. Zdzienicka (2013). 'The Euro Area Crisis: Need for a Supranational Fiscal Risk Sharing Mechanism?', IMF Working Paper WP13/198.
- Gruber, J. (1997). 'The Consumption Smoothing Benefits of Unemployment Insurance', *The American Economic Review* 87 (1): 192-205.
- Jappelli, T., and L. Pistaferri (2010). 'The consumption response to income changes'. *Annual Review of Economics* 2, 479-506.
- Jappelli, T. and L. Pistaferri (2013). 'Fiscal Policy and MPC Heterogeneity', forthcoming in: *American Economic Journal: Macroeconomics*
- Jara, H. X. and H. Sutherland (2014). 'The implications of an EMU unemployment insurance scheme for supporting incomes', EUROMOD Working Paper Series EM5/14
- Immervoll, H., H. Levy, C. Lietz, D. Mantovani and H. Sutherland (2006), 'The sensitivity of poverty rates to macro-level changes in the European Union'. *Cambridge Journal of Economics* 30, 181-199.
- IMF (2013a), 'Toward a Fiscal Union for the Euro Area', IMF Staff Discussion Note, SDN/13/09.
- IMF (2013b), 'World Economic Outlook: Transitions and Tensions', October 2013.

- Kniesner, T. and J. Ziliak (2002). 'Tax reform and automatic stabilization', *American Economic Review* 92 (3), 590-612.
- Lalive, R., C. Landais and J. Zweimüller (2013). 'Market externalities of large unemployment insurance extension programs', CESifo Working Paper No. 4413.
- Luque, J., M. Morelli and J. Tavares (2014). 'A volatility-based theory of fiscal union desirability', forthcoming in *Journal of Public Economics*
- Mabbett, D. and W. Schelkle (2007). 'Bringing macroeconomics back into the political economy of reform: the Lisbon Agenda and the 'fiscal philosophy' of the EU', *Journal of Common Market Studies* 45, 81-104.
- MacDougall, D. et al. (1997). Report of the study group on the role of public finances in European integration, Commission of the European Communities, Volume 1: General Report, Brussels.
- Nicholson, W., K. Needels and H. Hock (2014). 'Unemployment Compensation During the Great Recession: Theory and Evidence', *National Tax Journal*, March 2014, 67 (1), 187-218.
- Pechman, J. (1973). 'Responsiveness of the federal income tax to changes in income', *Brookings Papers on Economic Activity*.
- Pechman, J. (1987). 'Federal tax policy', Brookings Institution, Washington.
- Peichl, A. (2009). 'The benefits and problems of linking micro and macro models – Evidence from a flat tax analysis', *Journal of Applied Economics* XII (2), 301-329.
- Ramey, V. (2011). 'Can Government Purchases Stimulate the Economy?', *Journal of Economic Literature*, 49 (3), 673-685.
- Rothstein, J. (2011). 'Unemployment insurance and job search in the Great Recession', NBER Working Paper No. 17534.
- Stovicek, K. and A. Turrini (2012), 'Benchmarking unemployment benefits in the EU', IZA Policy Paper No. 43.
- Sutherland, H. and F. Figari (2013). 'EUROMOD: the European Union tax-benefit microsimulation model', *International Journal of Microsimulation* 6(1) pp. 4-26.
- Vandenbroucke, F. (2014). 'Automatic Stabilisers and a European Unemployment Benefit Scheme: How to Mitigate Moral Hazard', presentation at a DG-EMPL seminar on unemployment-based supranational automatic stabilizers, Brussels, 20th February 2014.
- Van Rompuy, H., J.M. Barroso, J.C. Juncker and M. Draghi (2012): Towards a genuine Economic and Monetary Union, Report to the European Council Meeting, December, 13.-14., 2012.

Appendix

Table A.1: Qualifying conditions for unemployment benefits

	2007	2009	2011	2013
AT	52 weeks of insurance periods within the last 24 months. 26 weeks within the last 12 months for persons under the age of 25.	52 weeks of insurance periods within the last 24 months. 26 weeks within the last 12 months for persons under the age of 25.	52 weeks of insurance periods within the last 24 months. 26 weeks within the last 12 months for persons under the age of 25.	52 weeks of insurance periods within the last 24 months. 26 weeks within the last 12 months for persons under the age of 25.
BE	Period varies according to the age of the insured person between 312 working days during the previous 18 months, and 624 working days over the previous 36 months.	Period varies according to the age of the insured person between 312 working days during the previous 18 months, and 624 working days over the previous 36 months.	Period varies according to the age of the insured person between 312 working days during the previous 18 months, and 624 working days over the previous 36 months.	Period varies according to the age of the insured person between 312 working days during the previous 21 months, and 624 working days over the previous 42 months.
CY	<p>Conditions relate to extent of contributions paid: The insured person has been insured for at least 26 weeks up to the date of unemployment, Lower part of insurable earnings up to the date of unemployment equal to at least 26 times the weekly Basic Insurable Earnings (Βασικές Ασφαλιστέες Αποδοχές) of CYP 82.67 (€ 142) per week; and Paid and credited insurable earnings in the benefit year are at least equal to 20 times the weekly amount of Basic Insurable Earnings. Definitions: Lower part of insurable earnings: insurable earnings up to Basic Insurable Earnings. Upper part of insurable earnings: insurable earnings over Basic</p>	<p>Conditions relate to extent of contributions paid: * The insured person has been insured for at least 26 weeks up to the date of unemployment, * Lower part of insurable earnings up to the date of unemployment equal to at least 26 times the weekly Basic Insurable Earnings (Βασικές Ασφαλιστέες Αποδοχές) of € 154.07 per week; and * Paid and credited insurable earnings in the benefit year are at least equal to 20 times the weekly amount of Basic Insurable Earnings Definitions: Lower part of insurable earnings: insurable earnings up to Basic Insurable Earnings. Upper part of insurable earnings: insurable</p>	<p>Conditions relate to extent of contributions paid: * The insured person has been insured for at least 26 weeks up to the date of unemployment, * Paid basic insurance up to the date of unemployment equal to at least 26 times the weekly Basic Insurable Earnings (Βασικές Ασφαλιστέες Αποδοχές) of € 167.05 per week (0.50 insurance point); and * Paid and assimilated insurance in the relevant contribution year is at least equal to 20 times the weekly amount of Basic Insurable Earnings (0.39 insurance point). Definitions: Basic insurance:</p>	<p>Conditions relate to the extent of contributions paid: * the insured person has been insured for at least 26 weeks up to the date of unemployment; * paid basic insurance up to the date of unemployment equal to at least 26 times the weekly Basic Insurable Earnings (Βασικές Ασφαλιστέες Αποδοχές) of €174.38 per week (0.50 insurance point); and * paid and assimilated insurance in the relevant contribution year is at least equal to 20 times the weekly amount of Basic Insurable Earnings (0.39 insurance point). Following the exhaustion of payment, entitlement can be</p>

	2007	2009	2011	2013
	Insurable Earnings. Benefit year: Starts from the first Monday of July and ends the last Sunday prior to the first Monday from which the benefit year will start.	earnings over Basic Insurable Earnings. Benefit year: Starts from the first Monday of July and ends the last Sunday prior to the first Monday from which the benefit year will start.	insurable earnings up to Basic Insurable Earnings (up to one insurance point). One insurance point: equal to 52 times the weekly basic amount = € 8,687. Relevant contribution year: the last contributions year, prior to the benefit year which includes the date of fulfilling the relevant insurance conditions. Benefit year: the period which starts the first Monday of July of each year and ends the last Sunday prior to the first Monday of July of the following year.	regained after 26 weeks of employment from the day of exhaustion and provided that insurance has been paid during that period equal to at least 26 times the weekly Basic Insurable Earnings (Βασικές Ασφαλιστέες Αποδοχές). Definitions: Basic insurance: insurable earnings up to Basic Insurable Earnings (up to one insurance point). One insurance point: equal to 52 times the weekly basic amount = € 9,068. Relevant contribution year: the last contribution year, prior to the benefit year, which includes the date of fulfilling the relevant insurance conditions. Benefit year: the period which starts the first Monday of July of each year and ends the last Sunday prior to the first Monday of July of the following year.
EE	Unemployment Insurance Benefit (töötuskindlustushüvitis): Insurance period (payment of contributions) of 12 months over the 36 months preceding registration as an unemployed.	Unemployment Insurance Benefit (töötuskindlustushüvitis): Insurance period (payment of contributions) of 12 months over the 36 months preceding registration as an unemployed.	Unemployment Insurance Benefit (töötuskindlustushüvitis): Insurance period (payment of contributions) of 12 months over the 36 months preceding registration as an unemployed.	Unemployment Insurance Benefit (töötuskindlustushüvitis): Insurance period (payment of contributions) of 12 months over the 36 months preceding registration as an unemployed.
FI	Insurance: Basic unemployment allowance (peruspäiväraha): Employees: Initial	Insurance: Basic unemployment allowance (peruspäiväraha):	Insurance: Basic unemployment allowance (peruspäiväraha):	Insurance: Basic unemployment allowance (peruspäiväraha):

	2007	2009	2011	2013
	condition at least 43 weeks of employment during the last 28 months and during each week at least 18 hours. Re-eligibility condition at least 34 weeks of employment during the last 24 months and during each week at least 18 hours. Self-employed persons: at least 24 months of entrepreneurship during the last 48 months.	* Employees: Initial condition at least 43 weeks of employment during the last 28 months and during each week at least 18 hours. Re-eligibility condition at least 34 weeks of employment during the last 24 months and during each week at least 18 hours. * Self-employed persons: at least 24 months of entrepreneurship during the last 48 months.	* Employees: Initial condition at least 34 weeks of employment during the last 28 months and during each week at least 18 hours. * Self-employed persons: at least 18 months of entrepreneurship during the last 48 months.	* Employees: Initial condition at least 34 weeks of employment during the last 28 months and during each week at least 18 hours. * Self-employed persons: at least 18 months of entrepreneurship during the last 48 months.
FR	Unemployment insurance (assurance chômage): At least 6 months (182 days) insurance during the last 22 months preceding the unemployment.	Unemployment insurance (assurance chômage): At least 4 months (122 days) insurance during the last 28 months (36 months for those aged 50 and over) preceding the unemployment.	Unemployment insurance (assurance chômage): At least 4 months (122 days) insurance during the last 28 months (36 months for those aged 50 and over) preceding the unemployment.	Unemployment insurance (assurance chômage): At least 4 months (122 days) insurance during the last 28 months (36 months for those aged 50 and over) preceding the unemployment.
GE	Unemployment insurance (Arbeitslosenversicherung): The unemployed person must have been compulsorily insured for at least 12 months during the last 2 years.	Unemployment insurance (Arbeitslosenversicherung): The unemployed person must have been compulsorily insured for at least 12 months during the last 2 years.	Unemployment insurance (Arbeitslosenversicherung): The unemployed person must have been compulsorily insured for at least 12 months during the last 2 years.	Unemployment insurance (Arbeitslosenversicherung): The unemployed person must have been compulsorily insured for at least 12 months during the last 2 years.
GR	At least 125 days of work during the 14 months preceding job loss or, at least, 200 days of work during the 2 years preceding job loss. For first time claimants, an additional requirement of at least 80 days of work per year during the 2 previous years applies.	* At least 125 days of work during the 14 months preceding job loss or, at least, 200 days of work during the 2 years preceding job loss. * For first time claimants, an additional requirement of at least 80 days of work per year during the 2 previous years applies.	* At least 125 days of work during the 14 months preceding job loss or, at least, 200 days of work during the 2 years preceding job loss. * For first time claimants, an additional requirement of at least 80 days of work per year during the 2 previous years applies.	* At least 125 days of work during the 14 months preceding job loss or, at least, 200 days of work during the 2 years preceding job loss. From the reference periods the two last months are excluded. * For first time claimants, an additional requirement of at least 80 days of work per year during the 2 previous years applies.

	2007	2009	2011	2013
IE	Insurance: 39 weekly contributions paid; and 39 weekly contributions paid or credited during the relevant contribution year preceding the benefit year, or 26 weekly contributions paid in each of the two relevant tax years preceding the benefit year.	Insurance: * 104 weekly contributions paid; and * 39 weekly contributions paid or credited during the relevant contribution year preceding the benefit year, of which a minimum of 13 must be paid contributions. The latter requirement may be satisfied by contributions paid in some other contribution years, or * 26 weekly contributions paid in each of the two relevant tax years preceding the benefit year.	Insurance: * 104 weekly contributions paid; and * 39 weekly contributions paid or credited during the relevant contribution year preceding the benefit year, of which a minimum of 13 must be paid contributions. The latter requirement may be satisfied by contributions paid in some other contribution years, or * 26 weekly contributions paid in each of the two relevant tax years preceding the benefit year.	Insurance: * 104 weekly contributions paid; and * 39 weekly contributions paid or credited during the relevant contribution year preceding the benefit year, of which a minimum of 13 must be paid contributions. The latter requirement may be satisfied by contributions paid in some other contribution years, or * 26 weekly contributions paid in each of the two relevant tax years preceding the benefit year.
IT	Ordinary unemployment benefit: Two years of insurance and 52 weekly contributions during the last 2 years. Special unemployment benefit: 10 monthly contributions of 43 weekly contributions during the last two years in the building industry.	Ordinary unemployment benefit: Two years of insurance and 52 weekly contributions during the last 2 years. Special unemployment benefit: 10 monthly contributions of 43 weekly contributions during the last two years in the building industry.	Ordinary unemployment benefit: Two years of insurance and 52 weekly contributions during the last 2 years. Special unemployment benefit: 10 monthly contributions of 43 weekly contributions during the last two years in the building industry..	Employment social allowance (Assegno Sociale per l'Impiego, ASpl): Having matured at least two years of work insurance contributions one of which accrued during the two years prior to the onset of unemployment. Mini ASpl: Having matured at least 13 weeks (3 months) of contributions during the 12 months prior to dismissal.
LU	At least 26 weeks of employment during the last year.	At least 26 weeks of employment during the last year.	At least 26 weeks of employment during the last year.	At least 26 weeks of employment during the last year.
MT	50 weeks of paid contributions of which at least 20 paid or credited should be in the last two previous years.	50 weeks of paid contributions of which at least 20 paid or credited should be in the last two previous years.	50 weeks of paid contributions of which at least 20 paid or credited should be in the last two previous years.	50 weeks of paid contributions of which at least 20 paid or credited should be in the last two previous years.
NL	Short-term benefit (kortdurende	A person who has been employed for at least 26	A person who has been employed for at least 26	A person who has received wages in at

	2007	2009	2011	2013
	<p>uitkering): At least 26 weeks of paid employment during the last 36 weeks (week condition). Salary-related benefit (loongerelateerde uitkering): 26-weeks-condition and employment in at least 4 years during the last 5 calendar years, in each of which a salary over 52 days was paid (4-out-of-5 condition).</p>	<p>weeks in the 36 weeks before the first day of unemployment (weeks' condition) qualifies for a three-month benefit. A person who has received wages for at least 52 days in four of the five calendar years preceding the year in which s/he became unemployed, (years' condition) qualifies for a benefit payable for a number of months that equals the number of months in employment (with a maximum of 38 months).</p>	<p>weeks in the 36 weeks before the first day of unemployment (weeks' condition) qualifies for a three-month benefit. A person who has received wages for at least 52 days in four of the five calendar years preceding the year in which s/he became unemployed, (years' condition) qualifies for a benefit payable for a number of months that equals the number of months in employment (with a maximum of 38 months).</p>	<p>least 26 weeks out of the 36 weeks before the first day of unemployment (weeks' condition) qualifies for a three-month benefit. A person who has received wages for at least 208 hours in four of the five calendar years preceding the year in which s/he became unemployed, (years' condition) qualifies for a benefit payable for a number of months that equals the number of months in employment (with a maximum of 38 months).</p>
PT	<p>Unemployment insurance: At least 450 days of salaried work and contribution payment, or assimilated situation, in 24 months preceding commencement of unemployment.</p>	<p>Unemployment insurance: At least 450 days of salaried work and contribution payment, or assimilated situation, in 24 months preceding commencement of unemployment.</p>	<p>Unemployment insurance: At least 450 days of employed work and contribution payment, or assimilated situation, in the 24 months preceding commencement of unemployment.</p>	<p>Unemployment insurance: At least 360 days of employed work and contribution payment, or assimilated situation, in the 24 months preceding commencement of unemployment.</p>
SI	<p>At least 3 years (2 years in case of temporary employment) of unemployment insurance contributions during the last 4 years.</p>	<p>At least 3 years (2 years in case of temporary employment) of unemployment insurance contributions during the last 4 years.</p>	<p>At least 2 years of unemployment insurance contributions during the last 3 years (4 years in case of temporary employment).</p>	<p>At least 2 years of unemployment insurance contributions during the last 3 years (4 years in case of temporary employment).</p>
SK	<p>At least 12 months of employment (full time equivalent) during the previous 18 months.</p>	<p>At least 12 months of employment (full time equivalent) during the previous 18 months.</p>	<p>At least 9 months of insurance during the previous 24 months.</p>	<p>At least 9 months of insurance during the previous 24 months. For unemployed persons younger than 30 years: at least 6 months of insurance during the previous 24 months.</p>
SP	<p>Insurance: Minimum contribution period of 360 days during the 6 years</p>	<p>Insurance: Minimum contribution period of 360 days during the 6 years immediately</p>	<p>Insurance: Minimum contribution period of 360 days during the 6 years</p>	<p>Insurance: Minimum contribution period of 360 days during the 6 years</p>

	2007	2009	2011	2013
	immediately preceding the legal unemployment situation.	preceding the legal unemployment situation.	immediately preceding the legal unemployment situation.	immediately preceding the legal unemployment situation.

Source: European Commission

(<http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp>)

Table A.2: Duration of unemployment benefit receipt

	2007	2009	2011	2013
AT	<p>Unemployment benefit (Arbeitslosengeld): Depends on insurance duration and age. Insurance periods and duration of payment: 52 weeks within 2 years: 20 weeks; 156 weeks within 5 years: 30 weeks; 312 weeks within 10 years and 40 years of age: 39 weeks; 468 weeks within 15 years and 50 years of age: 52 weeks.</p> <p>This duration will be extended by the period during which the beneficiary participates in a follow-up training or retraining measure or in a reintegration measure commissioned by the Labour Market Service and by 156 or 209 weeks if the beneficiary participates in a work foundation (special training measure).</p>	<p>Unemployment benefit (Arbeitslosengeld): Depends on insurance duration and age. Insurance periods and duration of payment: 52 weeks within 2 years: 20 weeks; 156 weeks within 5 years: 30 weeks; 312 weeks within 10 years and 40 years of age: 39 weeks; 468 weeks within 15 years and 50 years of age: 52 weeks.</p> <p>This duration will be extended by the period during which the beneficiary participates in a follow-up training or retraining measure or in a reintegration measure commissioned by the Labour Market Service and by 156 or 209 weeks if the beneficiary participates in a work foundation (special training measure).</p>	<p>Unemployment benefit (Arbeitslosengeld): Duration of payment depends on insurance duration and age: 52 weeks within 2 years: 20 weeks; 156 weeks within 5 years: 30 weeks; 312 weeks within 10 years and 40 years of age: 39 weeks; 468 weeks within 15 years and 50 years of age: 52 weeks.</p> <p>After completion of a vocational rehabilitation from the statutory social insurance the duration of payment amounts to 78 weeks. The duration will be extended by the period during which the beneficiary participates in a follow-up training or retraining measure or in a reintegration measure commissioned by the Labour Market Service and by 156 or 209 weeks if the beneficiary participates in a work foundation (special training measure). old-age pension are met.</p>	<p>Unemployment benefit (Arbeitslosengeld): Duration of payment depends on insurance duration and age: 52 weeks within 2 years: 20 weeks; 156 weeks within 5 years: 30 weeks; 312 weeks within 10 years and 40 years of age: 39 weeks; 468 weeks within 15 years and 50 years of age: 52 weeks.</p> <p>After completion of a vocational rehabilitation from the statutory social insurance the duration of payment amounts to 78 weeks. The duration will be extended by the period during which the beneficiary participates in a follow-up training or retraining measure or in a reintegration measure commissioned by the Labour Market Service and by 156 or 209 weeks if the beneficiary participates in a work foundation (special training measure).</p>
BE	No limit (except for certain cases of long-term	No limit (except in case of active search for	No limit (except in case of active search for	No limit (provided the beneficiary actively

	2007	2009	2011	2013
CY	unemployment or in case of active search for employment). 156 days.	employment). 156 days.	employment). 156 days.	looks for work and notably follows a pathway to work). 156 days.
EE	Unemployment Insurance Benefit (töötuskindlustushüvitis): 180 calendar days for a person with an insurance period less than 56 months, 270 calendar days for a person with an insurance period from 56 to 110 months, 360 calendar days for a person with an insurance period of 111 or more months.	Unemployment Insurance Benefit (töötuskindlustushüvitis): * 180 calendar days for a person with an insurance period less than 56 months, * 270 calendar days for a person with an insurance period from 56 to 110 months, * 360 calendar days for a person with an insurance period of 111 or more months.	Unemployment Insurance Benefit (töötuskindlustushüvitis): * 180 calendar days for a person with an insurance period less than 56 months, * 270 calendar days for a person with an insurance period from 56 to 110 months, * 360 calendar days for a person with an insurance period of 111 or more months.	Unemployment Insurance Benefit (töötuskindlustushüvitis): * 180 calendar days for a person with an insurance period less than 56 months, * 270 calendar days for a person with an insurance period from 56 to 110 months, * 360 calendar days for a person with an insurance period of 111 or more months.
FI	Insurance: 500 calendar days. An employee born prior to 1950 and who has reached the age of 57 while in receipt of an unemployment allowance may be paid until the age of 60, after which entitled to unemployment pension. An employee born in 1950 or thereafter who has reached the age of 59 while in receipt of an unemployment allowance may be paid until the age of 65.	Insurance: 500 calendar days. An employee born prior to 1950 and who has reached the age of 57 while in receipt of an unemployment allowance may be paid until the age of 60, after which entitled to unemployment pension. An employee born in 1950 or thereafter who has reached the age of 59 while in receipt of an unemployment allowance may be paid until the age of 65.	Insurance: Maximum period of 500 calendar days. A jobseeker born prior to 1950 can then apply for unemployment pension (Työttömyyseläke). A jobseeker born in 1950-1954 may, notwithstanding the maximum period, be paid unemployment allowance until the end of the calendar month in which s/he reaches the age of 65, provided s/he has reached the age of 59 before the maximum period expires and has acquired, on expiry of the maximum period, at least five employment years - as defined by law - over the last 20 years. A jobseeker born in 1955 or later may, notwithstanding the	Insurance: Maximum period of 500 calendar days. A jobseeker born prior to 1950 can then apply for unemployment pension (Työttömyyseläke). A jobseeker born in 1950-1954 may, notwithstanding the maximum period, be paid unemployment allowance until the end of the calendar month in which s/he reaches the age of 65, provided s/he has reached the age of 59 before the maximum period expires and has acquired, on expiry of the maximum period, at least five employment years - as defined by law - over the last 20 years. A jobseeker born in 1955 or later may, notwithstanding the

	2007	2009	2011	2013
			maximum period, be paid unemployment allowance until the end of the calendar month in which s/he reaches the age of 65, provided s/he has reached the age of 60 before the maximum period expires and has acquired, on expiry of the maximum period, at least five employment years - as defined by law - over the last 20 years.	maximum period, be paid unemployment allowance until the end of the calendar month in which s/he reaches the age of 65, provided s/he has reached the age of 60 before the maximum period expires and has acquired, on expiry of the maximum period, at least five employment years - as defined by law - over the last 20 years.
FR	Unemployment insurance (assurance chômage): Duration of payment of the benefit varies according to length of insurance and to age; minimum: 7 months, maximum: 36 months.	Unemployment insurance (assurance chômage): The duration of payment of the benefit corresponds to the length of insurance taken into account for acquiring entitlement to benefits (between 4 months and 2 years or 3 years if the beneficiary is aged 50 and over).	Unemployment insurance (assurance chômage): The duration of payment of the benefit corresponds to the length of insurance taken into account for acquiring entitlement to benefits (between 4 months and 2 years or 3 years if the beneficiary is aged 50 and over).	Unemployment insurance (assurance chômage): The duration of payment of the benefit corresponds to the length of insurance taken into account for acquiring entitlement to benefits (between 4 months and 2 years or 3 years if the beneficiary is aged 50 and over).
GE	Unemployment insurance (Arbeitslosenversicherung): The duration of benefits (DB) depends on the duration of compulsory insurance coverage and on the age of the beneficiary: DB Age DP (months) (years) (months) 12 6 16 8 20 10 24 12 30 55 15 36 55 18 (Provision in force since 1 January 2004 for new entitlements after 1 February 2006).	Unemployment insurance (Arbeitslosenversicherung): The duration of benefits (DB) depends on the duration of compulsory insurance coverage (DI) and on the age of the beneficiary: DI (months) Age (years) DB (months) 12 6 16 8 20 10 24 12 30 50 15 36 55 18 48 58 24 (Provision in force since 1 January 2008; special provision for persons who completed their 50th or 58th year of age before 1 January 2008 and whose	Unemployment insurance (Arbeitslosenversicherung): The duration of benefits (DB) depends on the duration of compulsory insurance coverage (DI) and on the age of the beneficiary: DI (months) Age (years) DB (months) 12 6 16 8 20 10 24 12 30 50 15 36 55 18 48 58 24	Unemployment insurance (Arbeitslosenversicherung): The duration of benefits (DB) depends on the duration of compulsory insurance coverage (DI) and on the age of the beneficiary: DI (months) Age (years) DB (months) 12 6 16 8 20 10 24 12 30 50 15 36 55 18 48 58 24

	2007	2009	2011	2013
GR	<p>Generally proportional to periods of employment: Employment duration: 125 days 5 months 150 days 6 months 180 days 8 months 220 days 10 months 250 days 12 months If aged 49 or more: 210 days 12 months In all cases, 3 additional months at reduced rate, if 4,050 days of work, 12 additional months. For the newcomers on the labour market (youngsters between 20-29 years): 5 months of benefits. In all cases, 25 instalments of daily unemployment benefit for each month.</p>	<p>entitlement is not yet exhausted, in case they had the entitlement for the maximum period of entitlement according to the provision that was valid till 31 December 2007: increase to 15 or 24 months).</p> <p>Generally proportional to periods of employment: Employment duration: 125 days: 5 months 150 days: 6 months 180 days: 8 months 220 days: 10 months 250 days: 12 months If aged 49 or more: 210 days: 12 months In all cases, 3 additional months at reduced rate, if 4,050 days of work, 12 additional months. For the newcomers on the labour market (youngsters between 20-29 years): 5 months of benefits. In all cases, 25 instalments of daily unemployment benefit for each month.</p>	<p>Generally proportional to periods of employment: Employment duration: 125 days: 5 months 150 days: 6 months 180 days: 8 months 220 days: 10 months 250 days: 12 months If aged 49 or more: 210 days: 12 months In all cases, 3 additional months at reduced rate, if 4,050 days of work, 12 additional months. For the newcomers on the labour market (youngsters between 20-29 years): 5 months of benefits. In all cases, 25 instalments of daily unemployment benefit for each month.</p>	<p>Generally proportional to periods of employment: Employment duration: 125 days 5 months 150 days 6 months 180 days 8 months 220 days 10 months 250 days 12 months If aged 49 or more: 210 days 12 months If one of the above conditions for granting unemployment benefits is fulfilled and 4.050 or more days of insurance are certified: 12 months. For the newcomers on the labour market (young people between 20-29 years): 5 months (€73.37). Every beneficiary is entitled to 25 days of insurance for each month during which unemployment benefit is granted.</p>
IE	<p>Insurance: 390 days but limited to 312 days if applicant has paid less than 260 weekly contributions since first entering insurance. If applicant is 65, the</p>	<p>Insurance: 312 days but limited to 234 days if applicant has paid less than 260 weekly contributions since first entering insurance. If</p>	<p>Insurance: 312 days but limited to 234 days if applicant has paid less than 260 weekly contributions since first entering insurance. If applicant is</p>	<p>Insurance: 234 days but limited to 156 days if applicant has paid less than 260 weekly contributions since first entering insurance. If applicant is</p>

	2007	2009	2011	2013
IT	<p>allowance will be paid until 66 (pension age) if 156 weekly contributions have been paid.</p> <p>Ordinary unemployment benefit: 210 days (300 days for the unemployed aged over 50 years).</p> <p>Special unemployment benefit: 90 days with of extension in the event of a recession.</p>	<p>applicant is 65, the allowance will be paid until 66 (pension age) if 156 weekly contributions have been paid.</p> <p>Ordinary unemployment benefit: 210 days (300 days for the unemployed aged over 50 years).</p> <p>Special unemployment benefit: 90 days with of extension in the event of a recession.</p>	<p>65, the allowance will be paid until 66 (pension age) if 156 weekly contributions have been paid.</p> <p>Ordinary unemployment benefit: 240 days (360 days for the unemployed aged over 50 years).</p> <p>Special unemployment benefit: 90 days with of extension in the event of a recession.</p>	<p>65, the allowance will be paid until 66 (pension age) if 156 weekly contributions have been paid.</p> <p>Employment social allowance (Assegno Sociale per l'Impiego, ASpl): statutory durations will be gradually increased according to age:</p> <p>* Unemployed persons under 50 will be granted the benefit for 8 months till 2014, then increased to 10 months in 2015;</p> <p>* Unemployed persons between the age of 50 and 54 will be granted the benefit for a period of 12 months till 2015;</p> <p>* Unemployed persons aged 55 and over will be granted the benefit for 12 months in 2013 then increased to 14 months in 2014 and 16 months in 2015.</p> <p>From January 2016 onwards:</p> <p>* Unemployed persons under 55 will be granted the benefit for 12 months;</p> <p>* Unemployed persons aged 55 and over will be granted the benefit for 18 months.</p> <p>Mini ASpl: Granted for a number of weeks corresponding to half the number of weekly contributions</p>

	2007	2009	2011	2013
LU	365 calendar days during a reference period of 24 months (without exceeding the duration of working days over the reference period). 182 extra calendar days for persons particularly "difficult" to place. For unemployed of 50 years and more prolongation of 12, 9 or 6 months respectively if 30, 25 or 20 years of affiliation to pension.	* 365 calendar days during a reference period of 24 months (without exceeding the number of working days over the reference period). * 182 extra calendar days for persons particularly "difficult" to place. * For unemployed persons over 50 years of age, prolongation of 12, 9 or 6 months if 30, 25 or 20 years of affiliation to pension insurance, respectively.	* 365 calendar days during a reference period of 24 months (without exceeding the number of working days over the reference period). * 182 extra calendar days for persons particularly "difficult" to place. * For unemployed persons over 50 years of age, prolongation of 12, 9 or 6 months if 30, 25 or 20 years of affiliation to pension insurance, respectively.	paid during the last year prior to dismissal. . * 365 calendar days during a reference period of 24 months (without exceeding the number of working days over the reference period). * 182 extra calendar days for persons particularly "difficult" to place. * For unemployed persons over 50 years of age, prolongation of 12, 9 or 6 months if 30, 25 or 20 years of affiliation to pension insurance, respectively.
MT	A maximum of 156 days' benefit or when the number of benefit days paid do not exceed the number of contributions paid under a Contract of Service. For example, a person claims Unemployment Benefit (Beneficcju ghal dizimpjieg) after working for 70 weeks since his entry in the Scheme. He will be entitled to a maximum of 70 days. All other number of days paid as sickness and unemployment prior to this claim will also be deducted. So if he has previously taken 8 days sick leave his entitlement would be of 62 days.	A maximum of 156 days' benefit or when the number of benefit days paid do not exceed the number of contributions paid under a Contract of Service. For example, a person claims Unemployment Benefit (Beneficcju ghal dizimpjieg) after working for 70 weeks since his entry in the Scheme. He will be entitled to a maximum of 70 days. All other number of days paid as sickness and unemployment prior to this claim will also be deducted. So if he has previously taken 8 days sick leave his entitlement would be of 62 days.	A maximum of 156 days' benefit or when the number of benefit days paid do not exceed the number of contributions paid under a Contract of Service. For example, a person claims Unemployment Benefit (Beneficcju ghal dizimpjieg) after working for 70 weeks since his/her entry in the Scheme. S/he will be entitled to a maximum of 70 days. All other number of days paid as sickness and unemployment prior to this claim will also be deducted. So if s/he has previously taken 8 days sick leave his/her entitlement would be of 62 days.	A maximum of 156 days' benefit, provided that the number of benefit days paid does not exceed the number of contributions paid under a Contract of Service. For example, a person claims Unemployment Benefit (Beneficcju ghal dizimpjieg) after working for 70 weeks since his/her entry in the Scheme. S/he will be entitled to a maximum of 70 days. All other number of days paid as sickness and unemployment prior to this claim will also be deducted. So if s/he has previously taken 8 days sick leave his/her entitlement would be of 62 days.
NL	Short-term benefit (kortdurende uitkering):	A person who only meets the weeks' condition	A person who only meets the weeks'	A person who only meets the weeks'

	2007	2009	2011	2013
	<p>6 months.</p> <p>Salary-related benefit (loongerelateerde uitkering): The benefit will be payable for as many months as the number of years in employment (with a maximum of 38 months).</p>	<p>receives benefits for a maximum duration of 3 months.</p> <p>A person who satisfies the years' condition receives benefits for as many months as the number of months in employment, with a maximum of 38 months.</p> <p>See "1. Conditions", "Qualifying period".</p>	<p>condition receives benefits for a maximum duration of 3 months.</p> <p>A person who satisfies the years' condition receives benefits for as many months as the number of months in employment, with a maximum of 38 months.</p> <p>See "1. Conditions", "Qualifying period".</p>	<p>condition receives benefits for a maximum duration of 3 months.</p> <p>A person who satisfies the years' condition receives benefits for as many months as the number of months in employment, with a maximum of 38 months.</p> <p>See "1. Conditions", "Qualifying period".</p>
PT	<p>Unemployment insurance: Duration of benefits proportional to age and length of contribution: (1) aged less than 30 years: contribution period < 24 months: 270 days of payment; contribution period > 24 months: 360 days of payment; 30 extra days every 5 years of registered income before unemployment.</p> <p>(2) aged from 30 to 40 years: contribution period < 48 months: 360 days of payment; contribution period c 24 months: 540 days of payment; 30 extra days every 5 years of registered income during the last 20 years preceding unemployment.</p> <p>(3) aged from 40 to 45 years: contribution period < 60 months: 540 days of payment; contribution period c 60 months: 720 days of payment; 30 extra days every 5 years of registered income during the last 20 years preceding</p>	<p>Unemployment insurance: Duration of benefits proportional to age and length of contribution: (1) aged less than 30 years: * contribution period > 24 months: 360 days of payment; 30 extra days every 5 years of registered income before unemployment.(2) aged from 30 to 40 years: * contribution period * contribution period > 24 months: 540 days of payment; 30 extra days every 5 years of registered income during the last 20 years preceding unemployment.(3) aged from 40 to 45 years: * contribution period * contribution period > 60 months: 720 days of payment; 30 extra days every 5 years of registered income during the last 20 years preceding unemployment.(4) aged 45 years or more: * contribution period * contribution period > 72 months: 900 days of</p>	<p>Unemployment insurance: Duration of benefits proportional to age and length of contribution: (1) aged less than 30 years: * contribution period < 24 months: 270 days of payment; * contribution period > 24 months: 360 days of payment; 30 extra days every 5 years of registered income before unemployment.(2) aged from 30 to 40 years: * contribution period < 48 months: 360 days of payment; * contribution period > 24 months: 540 days of payment; 30 extra days every 5 years of registered income during the last 20 years preceding unemployment.(3) aged from 40 to 45 years: * contribution period < 60 months: 540 days of payment;</p>	<p>Unemployment insurance: Duration of benefits proportional to age and length of contribution: (1) aged less than 30 years: * contribution period < 15 months: 150 days of payment; * contribution period ≥ 15 months and < 24 months: 210 days of payment; * contribution period ≥ 24 months: 330 days of payment; 30 extra days every 5 years of registered income during the last 20 years preceding unemployment.</p> <p>(2) aged from 30 to 40 years: * contribution period < 15 months: 180 days of payment; * contribution period ≥ 15 months and < 24 months: 330 days of payment;</p>

	2007	2009	2011	2013
	unemployment. (4) aged 45 years or more: contribution period < 72 months: 720 days of payment; contribution period c 72 months: 900 days of payment; 60 extra days every 5 years of registered income during the last 20 years preceding unemployment.	payment; 60 extra days every 5 years of registered income during the last 20 years preceding unemployment.	* contribution period > 60 months: 720 days of payment; 30 extra days every 5 years of registered income during the last 20 years preceding unemployment.(4) aged 45 years or more: * contribution period < 72 months: 720 days of payment; * contribution period > 72 months: 900 days of payment; 60 extra days every 5 years of registered income during the last 20 years preceding unemployment.	* contribution period ≥ 24 months: 420 days of payment; 30 extra days every 5 years of registered income during the last 20 years preceding unemployment. (3) aged from 40 to 50 years: * contribution period < 15 months: 210 days of payment; * contribution period ≥ 15 months and < 24 months: 360 days of payment; * contribution period ≥ 24 months: 540 days of payment; 45 extra days every 5 years of registered income during the last 20 years preceding unemployment. (4) aged 50 years or more: * contribution period < 15 months: 270 days of payment; * contribution period ≥ 15 months and < 24 months: 480 days of payment; * contribution period ≥ 24 months: 540 days of payment; 60 extra days every 5 years of registered income during the last 20 years preceding unemployment.
SI	Unemployment Benefit	Unemployment Benefit	Unemployment Benefit	Unemployment Benefit

	2007	2009	2011	2013
	(Dávka v nezamestnanosti): 6 months (4 months in case of temporary employment).	(Dávka v nezamestnanosti): 6 months (4 months in case of temporary employment).	(Dávka v nezamestnanosti): 6 months (4 months in case of temporary employment). After a period of 3 months, the beneficiary has the choice either to continue receiving benefit (for another 3 months maximum) or to cancel the registration as jobseeker and obtain a bonus.	(Dávka v nezamestnanosti): 6 months (4 months in case of employees on fixed-term labour contracts). After a period of 3 months, the beneficiary has the choice either to continue receiving benefit (for another 3 months maximum) or to cancel the registration as jobseeker and obtain a bonus.
SK	Depends upon length of insurance: 3 months for insurance of 1 to 5 years, 6 months for insurance of 5 to 15 years, 9 months for insurance of 15 to 25 years, 12 months for insurance of 25 years or more, 18 months for insured persons over 50 years of age and insurance period of more than 25 years, 24 months for insured persons over 55 years of age with on insurance period of more than 25 years.	Depends upon length of insurance: * 3 months for insurance of 1 to 5 years, * 6 months for insurance of 5 to 15 years, * 9 months for insurance of 15 to 25 years, * 12 months for insurance of 25 years or more, * 18 months for insured persons over 50 years of age and insurance period of more than 25 years, * 24 months for insured persons over 55 years of age with on insurance period of more than 25 years.	Depends upon length of insurance: * 3 months for insurance of 9 months to 5 years, * 6 months for insurance of 5 to 15 years, * 9 months for insurance of 15 to 25 years, * 12 months for insurance of 25 years or more, * 19 months for insured persons over 50 years of age and insurance period of more than 25 years, * 25 months for insured persons over 55 years of age with on insurance period of more than 25 years.	Depends upon length of insurance and partly also on age: * insurance period between 9 months and 5 years: 3 months, * insurance period between 5 and 15 years: 6 months, * insurance period between 15 and 25 years: 9 months, * insurance period of 25 years or more: 12 months (19 months if over age 50; 25 months if over age 55). Only for unemployed persons younger than 30 years: * insurance period of at least 6 months: 2 months.
SP	Insurance: Depending on contribution period over preceding 6 years. The duration of the payment varies from a minimum of	Insurance: Depending on contribution period over preceding 6 years. The duration of the payment varies from a minimum of	Insurance: Depending on contribution period over preceding 6 years. The duration of the payment varies from a	Insurance: Depending on contribution period over preceding 6 years. The duration of the payment varies from a minimum

	2007	2009	2011	2013
	4 months to a maximum of 2 years.	4 months to a maximum of 2 years.	minimum of 4 months to a maximum of 2 years.	of 4 months to a maximum of 2 years.

Source: European Commission

(<http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp>)

Table A.3: Unemployment Insurance Contribution

	2007	2009	2011	2013
AT	6.00% total, of which 3.00% employees, 3.00% employers. Ceiling: In principle, € 3,840 per month, for special payments (13th and 14th salary) € 7,680 per year. No employers' or employees' contributions for women over the age of 56 years and men over the age of 58 years.	6.00% total, of which 3.00% employees, 3.00% employers. Ceiling: In principle, € 4,020 per month, for special payments (13th and 14th salary) € 8,040 per year. No employers' or employees' contributions for women and men over the age of 57 years. Employees' contributions are omitted or reduced in case of low incomes. There is no employee contribution to be paid up to € 1,128. Contribution rate paid by employee with an income over € 1,128 up to € 1,230 amounts to 1% and with an income over € 1,230 up to € 1,384 to 2%.	6.00% total, of which 3.00% employees, 3.00% employers. Ceiling: In principle, €4,200 per month, for special payments (13th and 14th salary) €8,400 per year. No employers' or employees' contributions for women and men who have reached the age of 58 before 1 June 2011. Employees' contributions are omitted or reduced in case of low incomes. There is no employee contribution to be paid up to € 1,179. Contribution rate paid by employee with an income over € 1,179 up to € 1,286 amounts to 1% and with an income over € 1,286 up to € 1,447 to 2%.	6.00% total, of which 3.00% employees, 3.00% employers. Ceiling: In principle, €4,440 per month, for special payments (13th and 14th salary) €8,880 per year. No employers' or employees' contributions for women and men who have reached the age of 58 before 1 June 2011. Employees' contributions are omitted or reduced in case of low incomes. There is no employee contribution to be paid up to €1,219. Contribution rate paid by employee with an income over €1,219 up to €1,330 amounts to 1% and with an income over €1,330 up to €1,497 to 2%.
BE	Part of the contributions from global management, which varies according to need.	Part of the contributions from global management, which varies according to need.	Part of the contributions from global management, which varies according to need.	Part of the contributions from global management, which varies according to need.
CY	6% of the global contribution in respect of employed persons is transferred out of the Social Insurance Fund (Ταμείο Κοινωνικών	6% of the global contribution in respect of employed persons is transferred out of the Social Insurance Fund (Ταμείο Κοινωνικών	From the overall contribution a percentage of 1.15% of the insurable earnings of employed persons is allocated to the	From the overall contribution a percentage of 1.15% of the insurable earnings of employed persons is allocated to the

	2007	2009	2011	2013
EE	Ασφαλίσεων) paid into a separate Unemployment Benefit (Επίδομα Ανεργίας) Account.	Ασφαλίσεων) paid into a separate Unemployment Benefit (Επίδομα Ανεργίας) Account.	Unemployment Benefit Account (Λογαριασμός Παροχών Ανεργίας).	Unemployment Benefit Account (Λογαριασμός Παροχών Ανεργίας).
FI	Unemployment Insurance Benefit (töötuskindlustushüvitis): 0.9% of gross wages total, of which 0,6% employee, 0.3% employer.	Unemployment Insurance Benefit (töötuskindlustushüvitis): 3% of gross wages total, of which 2% employee, 1% employer.	Unemployment Insurance Benefit (töötuskindlustushüvitis): 4.2% of gross wages total, of which 2.8% employee, 1.4% employer.	Unemployment Insurance Benefit (töötuskindlustushüvitis): 3% of gross wages total, of which 2% employee, 1% employer.
FR	Earnings-related security (ansioperusteinen sosiaaliturva): Employer: 0.75% on first € 840,940 of payroll, 2.95% on exceeding amount Insured:	Earnings-related security (ansioperusteinen sosiaaliturva): Employer: 0.65% on the first € 1,788,000 of payroll, 2.70% on exceeding amount Insured:	Earnings-related security (ansioperusteinen sosiaaliturva): Employer: 0.80% on the first € 1,879,500 of payroll, 3.20% on exceeding amount Insured:	Earnings-related security (ansioperusteinen sosiaaliturva): Employer: 0.80% on the first €1,990,500 of payroll, 3.20% on exceeding amount Insured:
GE	6.4% total, of which 2.4% employee, 4.0% employer. Monthly ceiling: € 10,728 Annual ceiling: € 128,736	6.4% total, of which 2.4% employee and 4.0% employer. Monthly ceiling: € 11,436 Annual ceiling: € 137,23	6.4% total, of which 2.4% employee, 4.0% employer. Monthly ceiling: € 11,784 Annual ceiling: € 141,408	Employees: 2.4% Employers: 4%. For recruitments as of 1 July 2013, variation of the employer contribution rate according to the type of contract and age. Monthly ceiling: €12,344 Annual ceiling: €148,128
GR	Unemployment insurance: 4.2% total, of which 2.1% employee, 2.1% employer. Annual ceiling: € 63,000 in the old Länder and € 54,600 in the new Länder.	Unemployment insurance: 2.8% total, of which 1.4% employee, 1.4% employer. Annual ceiling: € 64,800 in the old Länder and € 54,600 in the new Länder.	Unemployment insurance: 3.0% total, of which 1.5% employee, 1.5% employer. Annual ceiling: € 66,000 in the old Länder and € 57,600 in the new Länder.	Unemployment insurance: 3.0% total, of which 1.5% employee, 1.5% employer. Annual ceiling: €69,600 in the old Länder and €58,800 in the new Länder.
	5% total, of which 1.33% employee, 3.67% employer. Persons insured before 1.1.1993: Ceiling: € 2,315.00 per	4% total, of which 1.33% employee, 2.67% employer. Persons insured before 1/1/1993:	5% total, of which 1.83% employee, 3.17% employer. Beginning of application: 1/8/2011.	5% total, of which 1.83% employee, 3.17% employer. Beginning of application: 1/8/2011.

	2007	2009	2011	2013
	month. Persons insured since 1.1.1993: Ceiling: € 5,279.60 per month.	Ceiling: € 2,432.25 per month. Persons insured since 1/1/1993: Ceiling: € 5,543.55 per month.	Persons insured before 1/1/1993: Ceiling: € 2,432.25 per month. Persons insured since 1/1/1993: Ceiling: € 5,543.55 per month.	Ceiling: €5,546.80 per month.
IE	Included in the overall Social Insurance rates.	Included in the overall Social Insurance rates.	Included in the overall Social Insurance rates.	Included in the overall Social Insurance rates.
	Overall Social Insurance (excluding contribution for sickness and maternity benefits in kind) rates: Self-employed: 3.0%. No ceiling. Employee: 4.0%. The first € 127 of weekly earnings is excluded from the calculation of the percentage payable. Employees with earnings up to € 339 per week are exempt from making a contribution. Annual ceiling: € 48,800. Employer: 8.5% (including a 0.7% National Training Fund Levy) on incomes up to € 356 per week. 10.75% (including a 0.7% National Training Fund Levy) on all earnings where weekly income is in excess of € 356. No ceiling.	Overall Social Insurance rates (excluding contribution for sickness and maternity benefits in kind): * Employee: 4.0%. The first € 127 of weekly earnings is excluded from the calculation of the percentage payable. Employees with earnings up to € 352 per week are exempt from making a contribution. Annual ceiling: € 75,036. * Employer: 8.5% (including a 0.7% National Training Fund Levy) on incomes up to € 356 per week. 10.75% (including a 0.7% National Training Fund Levy) on all earnings where weekly income is in excess of € 356. No ceiling.	Overall Social Insurance rates (excluding contribution for sickness and maternity benefits in kind): * Employee: 4.0%. The first € 127 of weekly earnings is excluded from the calculation of the percentage payable. Employees with earnings up to € 352 per week are exempt from making a contribution. No ceiling. * Employer: 8.5% (including a 0.7% National Training Fund Levy) on incomes up to € 356 per week. 10.75% (including a 0.7% National Training Fund Levy) on all earnings where weekly income is in excess of € 356. No ceiling.	Overall Social Insurance rates (excluding contribution for sickness and maternity benefits in kind): * Employee: 4.0%. Employees with earnings up to €352 per week are exempt from making a contribution. No ceiling. * Employer: 4.25% (including a 0.35% National Training Fund Levy) on incomes up to €356 per week. 10.75% (including a 0.7% National Training Fund Levy) on all earnings where weekly income is in excess of €356. No ceiling.
IT	Industry (with over 50 employees): 4.71% total, of which 0.30% employee, 4.41% employer. Commerce (with over 50 employees): 2.51% total, of which 0.30% employee,	Both industry and commerce (almost all enterprises): 1.61%, paid by the employer. No ceiling in either case.	Both industry and commerce (almost all enterprises): 1.61%, paid by the employer. No ceiling in either case.	Both industry and commerce (almost all enterprises): 1.61%, paid by the employer. Additional contribution of 1.40% (thus a total contribution rate of 3.01%) in case of fixed-

	2007	2009	2011	2013
	2.21% employer. The rate includes 1.61% contribution for unemployment benefit and 3.1% (industry) for topping up earnings in case of partial unemployment; this supplement made up as follows: 2.2% ordinary earnings supplement (Cassa integrazione guadagni ordinaria), 0.9% extraordinary earnings supplement (Cassa integrazione guadagni straordinaria), (0.3% of which is from the employee, 0.6% from the employer). No ceiling.			term work contracts. No ceiling in either case.
LU	The employment fund is financed by solidarity taxes from individuals and legal persons and by a general annual contribution from the State.	The employment fund is financed by solidarity taxes from individuals and legal persons and by a general annual contribution from the State.	The employment fund is financed by solidarity taxes from individuals and legal persons and by a general annual contribution from the State.	The employment fund is financed by solidarity taxes from individuals and legal persons and by a general annual contribution from the State.
MT	Included in the overall contribution.	Included in the overall contribution.	Included in the overall contribution.	Included in the overall contribution.
NL	The contributions to unemployment insurance (Werkloosheidswet, WW) consists of two separate components: one is paid into the General Unemployment Fund (Algemeen werkloosheidsfonds, Awf); the other, into the social security agency's Redundancy Payment Fund (Wachtgeldfonds, Wgff). Awf contribution: 8.25% total, of which 3.85% employee, 4.40% employer.	The contributions to unemployment insurance (Werkloosheidswet, WW) consists of two separate components: one is paid into the General Unemployment Fund (Algemeen werkloosheidsfonds, Awf); the other, into the social security agency's Redundancy Payment Fund (Wachtgeldfonds, Wgff). Awf contribution: 4.15% paid by the employer. Wgff contribution:	The contributions to unemployment insurance (Werkloosheidswet, WW) consists of two separate components: one is paid into the General Unemployment Fund (Algemeen werkloosheidsfonds, Awf); the other, into the social security agency's Redundancy Payment Fund (sectorfondsen, Sfn). Awf-contribution: 4.20% paid by the employer. Sfn-contribution: 1.90% paid by the employer.	The contributions to unemployment insurance (Werkloosheidswet, WW) consists of two separate components: one is paid into the General Unemployment Fund (Algemeen werkloosheidsfonds, Awf); the other, into the social security agency's Redundancy Payment Fund (sectorfondsen, Sfn). Awf-contribution: 1.70% paid by the employer. Sfn-contribution:

	2007	2009	2011	2013
	<p>Wgf contribution: 1.75% paid by the employer.</p> <p>Ceiling for WW-contributions: The WW contribution is paid over a maximum of € 174.64 per day with a contribution-free allowance of € 60 per day.</p> <p>The mentioned Wgf-contribution is an average; it may vary according to branch of industry.</p>	<p>1.75% paid by the employer.</p> <p>Ceiling for WW-contributions: The WW contribution is paid over a maximum of € 185.46 per day with a contribution-free allowance of € 63 per day.</p> <p>The mentioned Wgf-contribution is an average; it may vary according to branch of industry.</p>	<p>Ceiling for WW-contributions: The WW contribution is paid over a maximum of € 189.60 per day with a contribution-free allowance of € 65.25 per day.</p> <p>The mentioned Sfn-contribution is an average; it may vary according to branch of industry.</p>	<p>2.76% paid by the employer.</p> <p>Ceiling for WW-contributions: The WW contribution is paid over a maximum of €195.96 per day.</p> <p>The mentioned Sfn-contribution is an average; it may vary according to branch of industry.</p>
PT	Included in the overall contribution.	Included in the overall contribution.	Included in the overall contribution.	Included in the overall contribution.
SI	<p>Contributions as a percentage of the assessment base:</p> <p>1% employee, 1% employer, 2% voluntarily insured.</p> <p>No contribution of employee and employer if the employee receives Old-age pension.</p> <p>Assessment base ceiling: Minimum SKK 7,600 (€ 226) per month (minimum wage), maximum SKK 56,283 (€ 1,677) per month (3 times the average monthly wage in 2006).</p> <p>Lower minimum ceilings for persons with disabilities and young persons (see 3. "Sickness and maternity: cash benefits").</p>	<p>Contributions as a percentage of the assessment base:</p> <p>1% employee, 1% employer, 2% voluntarily insured.</p> <p>No contribution of employee and employer if the employee receives Old-age pension.</p> <p>Assessment base ceiling: Minimum € 295.50 per month (minimum wage), maximum € 2,892.12 per month (4 times the average monthly wage in 2008).</p> <p>Lower minimum ceilings for persons with disabilities and young persons (see Table I, 3. "Sickness and maternity: Cash benefits").</p>	<p>Contributions as a percentage of the assessment base:</p> <p>1% employee, 1% employer, 2% voluntarily insured.</p> <p>No contribution of employee and employer if the employee receives Old-age pension.</p> <p>Assessment base ceiling: Minimum (only for self-employed and voluntarily insured) 44.2% of national average wage; maximum € 2,978 per month (4 times the average monthly wage in 2009).</p>	<p>Contributions as a percentage of the assessment base:</p> <p>1% employee, 1% employer, 2% voluntarily insured.</p> <p>Assessment base: Employees and employer: monthly gross earnings.</p> <p>Voluntarily insured: sum assigned by insurer.</p> <p>No contribution of employee and employer if the employee receives Old-age pension, Early pension or full Invalidity pension.</p> <p>Assessment base ceiling: Minimum (only for self-employed and voluntarily insured) 50% of national average wage; maximum €4,025 per month (5 times the average monthly wage in 2012).</p>
SK	0.20% of gross wages total, of which	0.20% of gross wages total, of which 0.14%	0.20% of gross wages total, of which 0.14%	0.20% of gross wages total, of which 0.14%

	2007	2009	2011	2013
	0.14% employee, 0.06% employer. No ceiling.	employee and 0.06% employer. No ceiling.	employee and 0.06% employer. No ceiling.	employee and 0.06% employer. No ceiling.
SP	Unemployment insurance: 7.30% total, of which 1.55% employee, 5.75% employer. Ceiling: € 2,996.10 per month.	Unemployment insurance: 7.05% total, of which 1.55% employee, 5.50% employer. Ceiling: € 3,166.20 per month.	Unemployment insurance: 7.05% total, of which 1.55% employee, 5.50% employer. Applied to a maximum ceiling (tope máximo de cotización) of € 3,230.10 per month.	Unemployment insurance: 7.05% total, of which 1.55% employee, 5.50% employer. Applied to a maximum ceiling (tope máximo de cotización) of €3,425.70 per month.

Source: European Commission

(<http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp>)

The European Parliament has called for a “social dimension” to the Economic and Monetary Union to tackle unemployment and restore growth following the recent economic crisis. Among various alternative options, automatic stabilisers could potentially be a means of stabilising the Eurozone, while at the same time addressing social problems associated with the financial crisis.

This study explores the prospects for introducing an automatic stabilizer in the form of an Unemployment Insurance scheme for the euro area, which will provide the monetary union with greater stability in the medium and long term.

Analysis of its potential benefits, had it existed during the recent crisis, shows that such a scheme would have reduced the fall in GDP in the most affected Member States by 71 billion euro in the period between 2009 and 2012.

