An Unemployment Insurance Scheme for the Euro Area? A Comparison of Different Alternatives using Micro Data

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Abstract:

We analyze different alternatives how a common unemployment insurance system for the euro area (EA) could be designed and assess their effectiveness to act as an insurance device in the presence of asymmetric macroeconomic shocks. Running counterfactual simulations based on micro data for the period 2000-13, we highlight and quantify the trade-off between automatic stabilization effects and the degree of cross-country transfers. In the baseline, we focus on a non-contingent scheme covering short-term unemployment and find that it would have absorbed a significant fraction of the unemployment shock in the recent crisis. However, 5 member states of the EA18 would have been either a permanent net contributor or net recipient. Our results suggest that claw-back mechanisms and contingent benefits could limit the degree of cross-country redistribution, but might reduce desired insurance effects. We also discuss moral hazard issues at the level of individuals, the administration and economic policy.

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1   Introduction

The Great Recession and the resulting European debt crisis have revived the debate about deeper fiscal integration in the European Monetary Union (EMU). The EMU is an atypical 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. 2013).[1] Some observers argue that national automatic stabilizers provided insufficient income insurance during the crisis as some EMU member states lost access to private capital markets and conclude that common fiscal stabilization mechanisms are necessary to make EMU more sustainable (Bertola 2013, IMF 2013). While the main argument in favor of integrated fiscal mechanisms in the euro area is that they should act as insurance devices in the presence of asymmetric macroeconomic shocks, the main concerns in the debate relate to the issues of permanent transfer flows within the currency union and moral hazard, in particular with regard to negative incentive effects inducing national governments to neglect structural reforms or fiscal consolidation.

How could a fiscal risk sharing mechanism in the euro area be designed? The former President of the European Council, Herman van Rompuy, has suggested the following: "*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.*" (Van Rompuy 2012). The European Commission built upon this initiative 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 along the lines of the Van Rompuy report have been analyzed in various studies.[2] For the 'macroeconomic approach' suggestions include a cyclical shock absorber based

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[1] In the following we equivalently use "EA", "EMU" and "Eurozone" to refer to the current 18 member states of the European Currency Union and thus, only to those EMU members who have already introduced the euro.

[2] First analyses of potential insurance effects if the EMU were more fiscally integrated date back to the introduction of the euro (Fatás 1998 and Forni and Reichlin 1999), adding to the vast literature on insurance effects in existing fiscal federations such as the US (see e.g. Bayoumi and Masson 1995 and Asdrubali et al. 1996). More recent contributions include Bargain et al. (2013) who analyze the economic implications of a fully integrated European tax and transfer system and a fiscal equalization mechanism based on taxing capacity and expenditure needs for 11 founding members of the euro area, and Feyrer and Sacerdote (2013) who ask to what extent economic shocks would be absorbed by the center if the EU were as fiscally integrated as the US. The question of how to optimally design insurance mechanisms and the political economy of fiscal unions has also gained renewed interest in the more theoretical literature (cf. Evers 2012, Farhi and Werning 2014, Luque et al. 2014).

on output-gaps (Enderlein et al. 2013) and a stabilization fund for the euro area (Furceri and Zdzienicka 2013). For the 'microeconomic approach', the discussion has focused on the idea of a common EMU-wide unemployment insurance system (henceforth EMU-UI) as proposed among others by Deinzer (2004), Dullien (2014a) and Andor (2014).[3] Previous studies on the economic effects of an EMU-UI system are based on aggregate macro-level data and focus on overall net contributions across euro area member states. This is the first paper based on household micro data that provides a comprehensive and systematic analysis of a wide range of design options for an EMU-UI system.[4] Our counterfactual simulation experiment includes the EA18 member states and covers the whole period since the start of the euro in 1999. Besides net contributions per member state, our analysis includes coverage ratios and automatic fiscal stabilization effects of a basic EMU-UI scheme that (partly) replaces national unemployment insurance systems. In addition, we explore the effects of experience rating and claw-back mechanisms that are supposed to limit the amount of redistribution across member states. We also compare the basic EMU-UI scheme to a variant with 'contingent', i.e., trigger-based benefit payments that provide income insurance only if the labor market situation deteriorates significantly in a given member state. Moreover, we run several sensitivity checks regarding coverage and generosity levels of the scheme. We also discuss various concerns and potential adverse effects of an EMU-UI system, in particular the view that such a system would lead to a transfer union in Europe and moral hazard issues. Importantly, the aim of the paper is not to serve as a policy proposal but rather as a conceptual experiment, providing general insights in the effects of various design options for a basic EMU-UI.

Our main results are as follows. We find that a basic euro area unemployment insurance scheme with a replacement rate of 50 per cent, a maximum duration of benefit receipt of 12 months and a broad coverage of all new unemployed with previous employment income could be implemented with a relatively small annual budget. Over the period 2000-13, average benefits would have amounted to roughly 49 billion euro per year financed by a uniform contribution rate across member states of 1.57 per cent on employment income. While the scheme does not lead to permanent redistribution per se as only short-term (rather than structural) unemployment is insured at the central level, our simulations show that a small number of member states would have

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[3]See also IAB (2013), Centre for European Policy Studies (2014), Dullien et al. (2014) and Lellouch and Sode (2014). Claeys et al. (2014) provide an overview of policy challenges associated with an EMU-UI system.

[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 10 euro area member states to guarantee a minimum level of 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.

been net contributor or net recipient in each year of our simulation period. Largest net contributors are Austria, Germany and the Netherlands with average yearly net contributions of 0.2-0.42 per cent of GDP, while Latvia and Spain are the largest net recipients (average yearly net benefits of 0.33 and 0.53 per cent of GDP). We find that household incomes would have been stabilized in particular at the beginning of the recent economic crisis. Our measure for automatic stabilization, the income stabilization coefficient, indicates that 36 per cent of the unemployment shock in 2009, measured as the decline in income due to the surge in unemployment, would have been absorbed by the scheme in the Eurozone. However, this effect would have diminished the longer the crisis lasted as the share of (non-eligible) long-term unemployed was rising in the majority of member states. Schemes with lower coverage ratios and generosity levels generate smaller cross-country transfers, but also reduce desired insurance effects. Country-specific contribution rates that would have balanced the budget in each member state over the period 2000-13 range from 0.75 per cent in the Netherlands to 3.3 per cent in Spain. The spread becomes larger if budgets are required to be balanced in each single year and range from 0.46 per cent in Luxembourg to 5.8 per cent in Latvia. However, revenue-neutrality can be imposed only *ex-post* when accumulated net benefit payments and changes in the tax base are known. Therefore, we explore to what extent cross-country transfers can be restricted *ex-ante* by pre-specified rules and analyze two different claw-back mechanisms, i.e., *ex-post* adjustments of country-specific contribution rates. We find that they would have led to smaller accumulated surpluses/deficits relative to the benchmark of a uniform and time-invariant contribution rate in some, but not in all member states. Finally, we consider a contingent benefit scheme which is activated if the unemployment rate in a given member state is 1 percentage point higher than in one of the previous three years. Under this system no member state would have been in a permanent net contributing / receiving position. With 21 billion euro per year, the overall budget and thus the amount of cross-country redistribution would have been less than half as large as under the non-contingent scheme in the baseline.

The paper is structured as follows. In section 2, we discuss different alternatives how a common EMU-UI system could be designed. In addition, we present key features of the simulated EMU-UI schemes. Section 3 describes the framework of the analysis. Baseline results are presented in section 4. Alternative EMU-UI schemes with claw-back mechanisms based on experience rating and contingent benefits are analyzed in section 5. Section 6 concludes.

2 Possible characteristics of an EMU-UI system

Design options. A common unemployment insurance system for the euro area could be designed in various ways. Three key options have been discussed in the literature and in the policy debate so far. A first option would be a common EMU-UI system that provides a basic level of insurance by partly replacing national unemployment insurance systems. Benefits from the euro area system could be topped up by additional payments from national unemployment insurance systems. Hence, there would be room for diversity across member states so that existing differences with regard to replacement rates and benefit duration could be preserved. The EMU-UI system would be financed by social insurance contributions with a contribution rate that could be uniform across Eurozone member states or country-specific and time-variant to restrict cross-country transfers.[5] An important feature of such a scheme is that it would provide income insurance to the unemployed (under certain eligibility conditions) irrespective of the size of the unemployment shock in a given member state. As an alternative, a common scheme could provide income stabilization only in the event of large (unemployment) shocks. Such contingent unemployment benefits would be triggered if the level and/or change in overall unemployment has reached a pre-determined threshold in a given period.[6] National unemployment insurance systems would still be in place in normal times. As a third option, the euro area unemployment insurance scheme could complement national systems by providing additional transfers which would either top up national benefits or kick-in if national benefits expire. The payout rules of this scheme could be trigger-based as well. Such a system would be comparable to the US unemployment insurance system where regular state benefits can be complemented by two types of benefits extension programs which are at least partly provided by the federal government, the Extended Benefit program (EB) and emergency benefits.[7]

Concerns. A major concern with an EMU-UI system is that it would lead to permanent transfers across euro area member states. How do the three variants for an EMU-UI system differ with regard to the risk of permanent redistribution? A basic EMU-UI scheme would not lead to permanent redistribution per se given that such a scheme conditions on *changes* in employment status rather than on unemployment *levels*. Differences in unemployment rates alone do not (necessarily) lead to permanent redistribution because benefits would be targeted to cyclical (short-time) unemploy-

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[5]Cf. Dolls et al. (2014) and Dullien (2014b).

[6]Cf. Epaulard (2014) and Gros (2014). Other triggers could be the short-term unemployment rate or the insured unemployment rate which is used in the US unemployment insurance system (besides the total unemployment rate) as a trigger for benefit extension programs (Nicholson et al. 2014).

[7]Cf. Congressional Budget Office (2012) and Nicholson et al. (2014). Note that in the US regular state benefits are paid for a period which usually lasts not longer than 6 months. The large extensions of unemployment insurance provided by the US federal government in the 2009-12 period increased the benefit duration to 99 weeks in many US states. Unemployment benefits in the EMU are usually granted much longer than regular state benefits in the US (Esser et al. 2013).

ment and expire after a certain time span. It may nevertheless happen that (net) transfers are unevenly distributed across member states if flows into unemployment diverge permanently or if there are permanent differences in the level of short-term unemployment.[8] This risk could be reduced by claw-back mechanisms based on experience rating or if transfers were trigger-based as under the contingent benefit scheme. Clearly, redistributive effects of the former (latter) scheme would depend on the exact claw-back mechanism (choice of the trigger). The risk of permanent transfers would be high with an EMU-UI scheme that provides extended benefits after national unemployment benefits expire because such a scheme would be likely to cover not only cyclical, but also structural unemployment. Moreover, it could incentivize governments to cut national unemployment insurance benefits as the EMU-UI system would step in.

A further concern related to moral hazard is that a common EMU-UI system could undermine incentives for national governments to address structural weaknesses of the labor market. One argument against this claim is that national governments would still bear the cost of long-term unemployment under a basic, contingent or non-contingent EMU-UI system. This argument is much weaker, however, with an extended benefit program which is likely to cover also structural unemployment. Moreover, incentives to pursue active labor market policies such as short-time work could be adversely affected by an EMU-UI system given that the cost of short-term unemployment would be borne by the common pool.

Additional concerns relate to other moral hazard issues including administrative manipulation and adverse incentive effects at the individual level with regard to job search and labor supply. National administrations would have incentives to use their discretion to increase the number of benefit recipients. Incentives to manipulate would depend on the characteristics of the system, e.g. the required employment period or a waiting period for EMU-UI benefits. The longer both periods are, the more costly would administrative manipulation be, but longer periods would also reduce desired insurance effects. Distortions at the individual level depend on the overall benefit level (EMU plus national benefits) relative to the status quo and in case of the extended benefit scheme also on the benefit duration. The effect of a common EMU-UI system on migration responses in case of unemployment is ambiguous. The portability of unemployment benefit claims might increase the willingness to migrate and to search for a job in a member state with better labor market conditions, but could potentially also reduce incentives for active job search if EMU-UI benefis are more generous than national benefits.

Key features of the simulated EMU-UI schemes. The current debate focuses on a basic EMU-UI system (contingent and non-contingent) as the risk of permanent transfers and moral hazard issues are perceived to be less severe compared to an ex-

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[8]Economies where seasonal employment like in tourism plays an important role would be likely to have larger flows into and out of unemployment.

tended benefit system. In the baseline scenario, we therefore focus on a basic, non-contingent EMU-UI scheme with a replacement rate of 50 per cent of previous gross earnings and a broad coverage of the short-term unemployed.[9] Eligible to EMU-UI benefits are all newly unemployed with previous employment income for a period of up to 12 months. The scheme is financed by social insurance contributions with a uniform contribution rate across member states and calibrated to be revenue-neutral at the Eurozone-level (but not the member-state level) over the simulation period. This scheme is labeled as variant A henceforth. In addition, we explore how our results change if we vary some key parameters of the baseline scheme in terms of coverage rates and generosity levels. With regard to the former, we introduce a waiting period of 2 months after job loss before eligibility to EMU-UI benefits begins in order to diminish the effect of seasonal unemployment (variant B). Moreover, while the coverage rate of the *newly* unemployed is assumed to be 100 per cent in the baseline (upper bound estimate)[10], we assume as a lower bound estimate that only the share of short-term unemployed covered by national unemployment insurance systems receives benefits from the euro area scheme (variant C). Variants B and C are otherwise identical to variant A, i.e., the replacement rate is 50 per cent of previous gross earnings and benefits are only paid up to the 12th month after job loss. In terms of generosity, we consider a scheme with a maximum benefit amount of 50 per cent of median gross income in a member state (variant D), a replacement rate of 35 per cent of gross earnings (variant E)[11], and a scheme where variants D and E are combined (variant F). Note that in variants D-F, the coverage rules of variant A are applied. Additionally, we compare the baseline EMU-UI scheme (variant A) to three alternative variants in which we impose revenue-neutrality at the member-state level (experience rating), adjust contribution rates based on past net balances in each member-state (claw-back mechanisms) and make the basic EMU-UI scheme trigger-based (contingent benefits). The analysis of redistributive and stabilizing properties of these additional variants is an important extension to the previous literature because they are often assumed to alleviate the risk of permanent redistribution and moral hazard issues.

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[9] This is on average equivalent to a replacement rate of 71 per cent of net income. To be precise, it corresponds to a replacement rate of 71.4 per cent applied to 70 per cent of gross income, i.e., taking into account the average share of income taxes and social insurance contributions in the euro area. A key advantage of applying the replacement rate to gross rather than net earnings is that in the former case the generosity of the scheme is not affected by the size (and progressivity) of national net taxes (income taxes, social insurance contributions and cash benefits) which vary considerably across euro area member states.

[10] Note that the total coverage rate is below 100 per cent as only short-term unemployed are covered by the EMU-UI scheme.

[11] This is on average equivalent to a replacement rate of 50 per cent of net income.

3 Data and methodology

3.1 EU-SILC and EUROMOD

Different methodological approaches for an analysis of the economic effects of an EMU-UI system are possible. While previous research has mainly used aggregate macro level data, we rely on representative household micro data for the EA18 and use EURO-MOD, a static tax-benefit calculator for the European Union countries, for counter-factual simulations. The key advantage of using a micro data approach in the present context is that it enables us to account for heterogeneity in various characteristics of the populations in different countries which macro data approaches cannot capture. EUROMOD input-data are mainly based on the European Union Statistics on Income and Living Conditions (EU-SILC) released by Eurostat (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).[12]

3.2 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 current 18 member states of the euro area and ask what would have happened if such a scheme had been introduced from the start of the euro in 1999.[13] In a first step, we reweight our base year household micro data from 2008 such that labor market conditions (unemployment rate, earnings and size of labor force) correspond to the levels observed in the starting year of our simulation period.[14] In the next step, we simulate a sample of repeated cross-sections for each euro area member state for the period 2000-13 by reweighting our cross-country micro data such that total unemployment, short-term unemployment, earnings and the size of the labor force follow observed trends in each member state during the simulation period.[15] An increase (a

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[12]Sutherland and Figari (2013) provide more detailed information on EUROMOD and the underlying input data.

[13]We assume that the current EA18 would have existed from 1999 onwards. In fact, it would complicate the interpretation of our results if we included new member states only after adoption of the euro.

[14]Note that EUROMOD is based on cross-sectional data and not panel data. The first data year available in the current version is 2008. Hence, we need to reweight the data (as commonly done in microsimulation studies) using macro aggregates to reflect the potentially changing structure of the economy during the simulation period. This allows us to construct a series of reweighted cross-sections for the period of analysis.

[15]Earnings growth along the intensive margin and changes in the size of the labor force are modeled in order to account for changes in the tax base of the euro area unemployment insurance system. Growth rates in nominal compensation per employee, unemployment rates and the size of the labor force are obtained from the AMECO database, information on short-term unemployment from

decrease) of the unemployment rate is modeled by increasing the weights of the unemployed (employed) while the weights of the employed (unemployed) are decreased correspondingly, i.e., in effect a fraction of employed (unemployed) households is made unemployed (employed).[16]

Our analysis is based on the following simplifying assumptions. First, we do not take into account general equilibrium effects of an EMU-UI system, i.e., our analysis remains in a partial equilibrium context. This implies that we abstract both from potential moral hazard of national governments and administrations which could have adverse labor market effects as well as from potential growth-enhancing effects of an EMU-UI scheme. Accounting for these macroeconomic feedback effects would require to link our micro data to a macro-econometric simulation model. However, past validations of micro-macro linkages point to a considerable degree of uncertainty of macroeconomic projections (Peichl 2009). Second, we do not simulate individual behavioral responses, e.g. potential migration responses, changes in hours worked or different patterns of entries and exits to the labor force which could follow the introduction of an EMU-UI.[17] In the light of these assumptions, our results should be interpreted as 'first-round' effects of an EMU-UI system.

4 Main results

4.1 Coverage rates

Before analyzing coverage rates of various EMU-UI schemes, we first provide descriptive statistics on the unemployment rates of EMU member states. Figure 1 shows that there are significant differences in both levels and trends in unemployment rates and the share of short-term unemployed for the period 2000-13 across euro area member states. Differences between Germany on the one hand and Greece, Ireland and Spain on the other hand are particularly remarkable. In Germany, the unemployment rate increased from 2001 onwards, peaked at 11.3 per cent in 2005 being the second highest rate in the euro area in that year, but constantly fell afterwards. Contrary, unemployment rates increased tremendously in Greece, Ireland and Spain from 2008/2009 onwards, up to 14.7 per cent in Ireland in 2012 and 26.4 (27.3) per cent in Spain (Greece) in 2013. Other member states such as Cyprus, Estonia, Italy and Portugal were also hit by

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Eurostat.

[16]See Immvervoll et al. (2006), Bargain et al. (2012) and Dolls et al. (2012) for similar applications of the reweighting approach. When modeling (un)employment shocks, the new (un)employed are evenly chosen from the full cross-section. An alternative approach would be to assume that the socio-demographic characteristics of the (un)employed remain constant which seems less realistic given the length of our simulation period.

[17]Bargain et al. (2013) account for labor supply behavior after the introduction of a European tax and transfer system. They find that labor supply responses are marginal and do not alter their main results.

large unemployment shocks during the crisis. This would have led to increasing shares of benefit recipients of the euro area scheme relative to the labor force, in particular in those member states most affected by rising unemployment rates. However, the share of short-term unemployed (relative to total unemployment) was falling the longer the crisis lasted. Hence, coverage rates of the baseline EMU-UI scheme (which are equal to the share of short-term unemployed) would have declined as well in spite of rising unemployment rates in recent years.

Figure 2 summarizes average coverage rates of EMU-UI over the period 2000-13 for the baseline scenario of full coverage of all *new* unemployed (variant A), a scenario with a waiting period of 2 months at the beginning of the unemployment spell (variant B) and a scheme covering only the share of short-term unemployed which receives national unemployment insurance benefits (variant C).[18] Figure 2 shows that differences in average coverage rates are substantial ranging from 34 per cent in Slovakia to 78 per cent in Finland in the baseline. A waiting period would to some extent exclude seasonal unemployment (like in tourism) from coverage. Our results indicate that coverage rates would indeed decline significantly as a considerable fraction of unemployment spells in euro area member states lasts for not more than 2 months. Finally, coverage rates are much lower than in the baseline if we apply national coverage rates of the short-term unemployed. Lowest coverage rates of roughly 10 per cent are found for Greece, Italy and Slovakia, whereas more than 40 (50) per cent of the short-term unemployed are covered by national unemployment insurance systems in Austria (Finland).

Figure 1: (Short-time) unemployment and coverage EMU-UI

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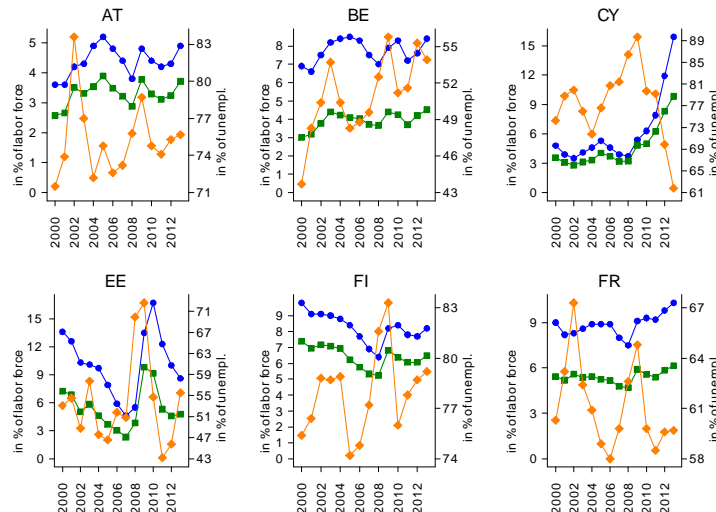
[18]Information about the share of unemployed whose unemployment spell does not exceed 2 months (waiting period) and the share of unemployed receiving national unemployment insurance benefits is obtained from Eurostat. Coverage rates for each year of our simulation period are shown in Table 2 in the Appendix.
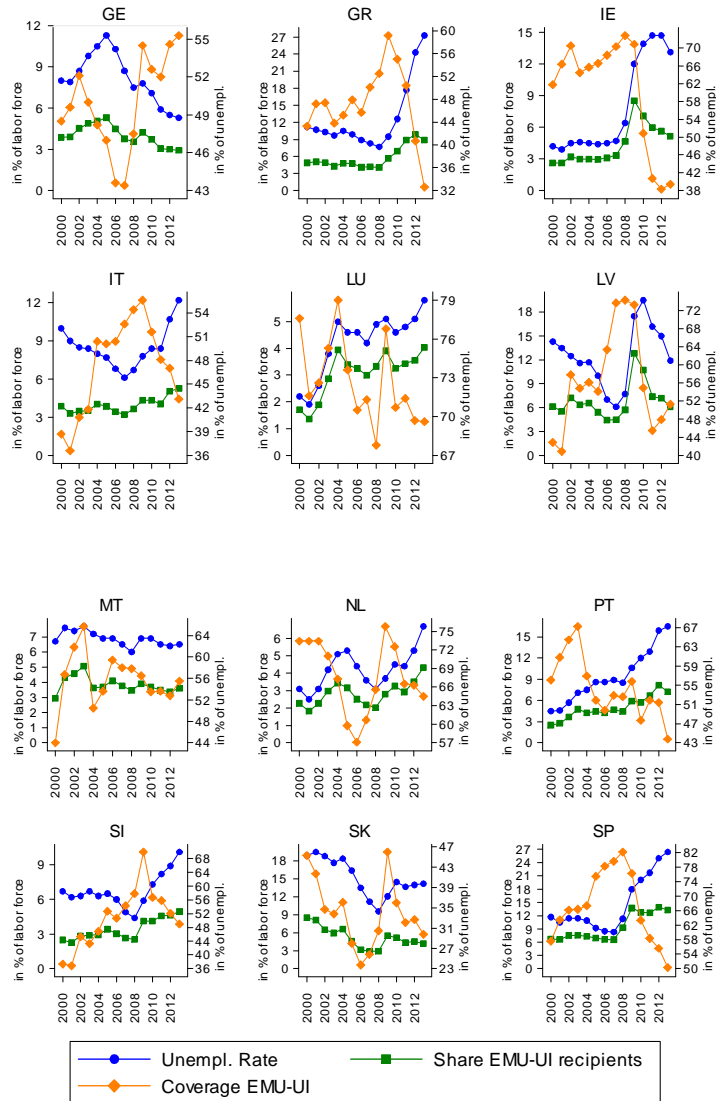
Note: Unemployment rate and share EMU-UI recipients in per cent of the labor force, coverage EMU-UI (equal to the share of short-term unemployed) in per cent of total unemployment. Sources: AMECO, EUROSTAT and own calculations based on EUROMOD.

Figure 2: Average coverage rates 2000-13
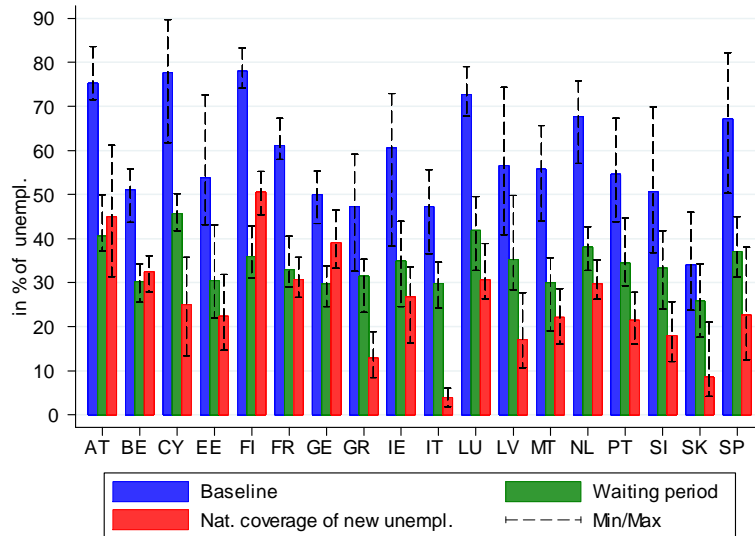
Note: Baseline: all new unemployed with previous employment income covered (variant A).
Waiting period: no benefits paid in the first 2 months of the unemployment spell (variant
B). National coverage: only the share of short-term unemployed covered by national
unemployment insurance systems eligible to benefits from euro area scheme (variant C).
Sources: EUROSTAT and own calculations based on EUROMOD.

4.2   Budgetary effects and financial flows

For the baseline scheme (variant A), a uniform contribution rate across member states
of 1.57 per cent on employment income would have led to revenue-neutrality at the euro
area level over the period 2000-13.[19] Note that the scheme can run deficits and surpluses
in single years which has important implications for its automatic stabilization effects
as discussed in the next section. Figure 3 shows the evolution of contributions and
benefits for the EA18. While contributions would have almost constantly grown over
the period due to growth in nominal earnings, benefit payments would have fluctuated
to a much larger extent. On average, benefits and contributions amount to 49 billion
euro per year. The scheme would have run surpluses from 2000-03 and from 2006-
08 and deficits in the remaining years, in particular during the recent financial and
economic crisis.

   Figure 4 shows average yearly net contributions as well as minimum and maxi-
mum payments for the baseline scenario. Relative to GDP, Austria, Germany and the
Netherlands would have been the largest net contributors with average net contribu-
tions of 0.2 per cent in Germany, 0.25 per cent in Austria and 0.42 per cent in the

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[19]Social insurance contributions include employer and employee contributions. If self-employed
were excluded from the scheme, the revenue-neutral contribution rate would be 1.8 per cent.

Figure 3: Overall contributions and benefits at Eurozone-level, 2000-13
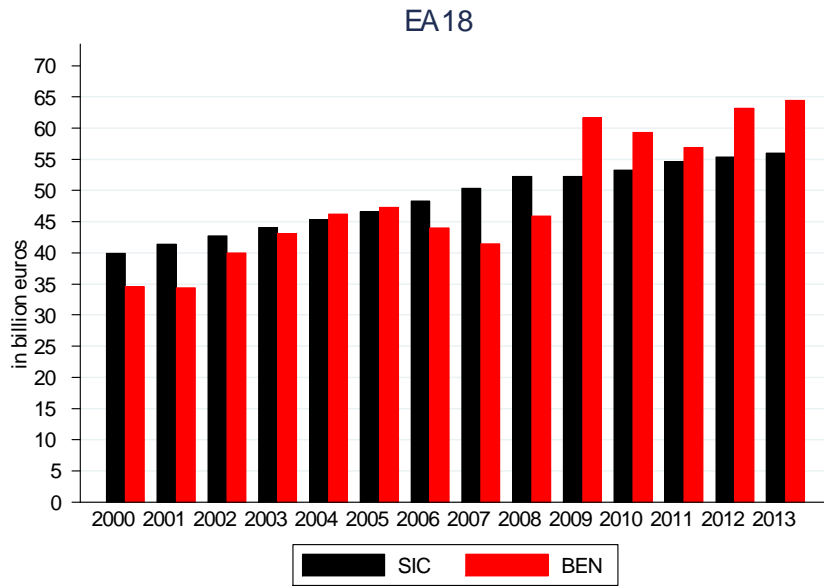
Note: Social insurance contributions (SIC) and benefits (BEN) at Eurozone-level in nominal terms. Contribution rate uniform across member states. Scheme is revenue-neutral over the simulation period. Sources: Own calculations based on EUROMOD.

Netherlands. Latvia (-0.33 per cent) and Spain (-0.53 per cent) would have been the largest net recipients. Interestingly, the majority of member states would have been net contributor in some years and net recipients in other years. Notable exceptions are Austria and the Netherlands (France, Latvia and Spain) which would have always been net contributors (recipients).

Finally, we compare the baseline scheme to variants with lower coverage and generosity levels. In terms of coverage, we introduce a waiting period for the first two months of the unemployment spell (variant B) and assume that only the share of short-term unemployed covered by national unemployment insurance systems is eligible to the euro area scheme (variant C) as in the previous section. Moreover, we alter the generosity by capping the maximum benefit amount at 50 per cent of median income in a given member state in a given year (variant D), by reducing the replacement rate to 35 per cent of gross income (variant E) and by combining the latter two scenarios (variant F). Results are presented in Figures 5 and 6 and in Tables 3-6 in the Appendix.

Figure 5 shows that a waiting period would reduce net contributions considerably in most member states compared to the baseline scenario, in some cases by almost 50 per cent, indicating that a large share of the short-term unemployed was able to find a new job within a short time period. Seasonal (un)employment patterns are one

Figure 4: Average yearly net contributions, 2000-13
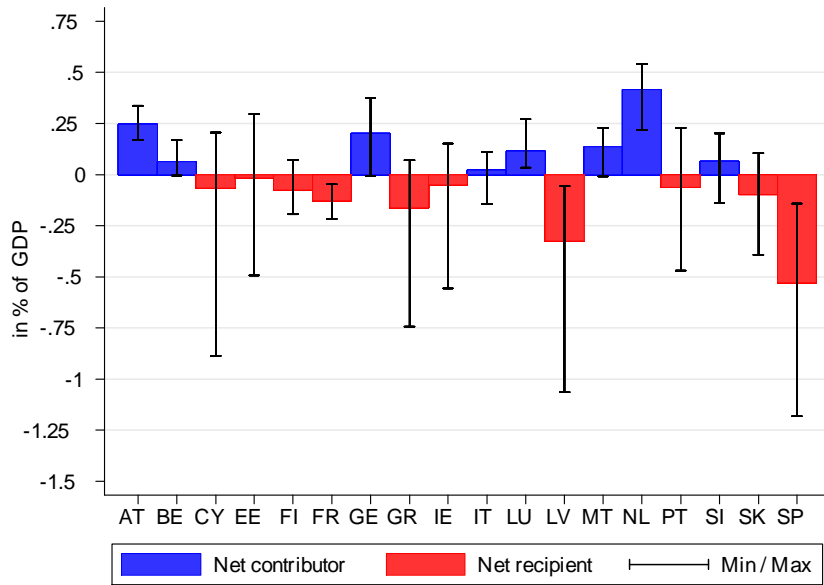
Note: Net contributions = SIC - BEN. Contribution rate uniform across member states. Scheme is revenue-neutral over the simulation period. Sources: Own calculations based on EUROMOD.

factor explaining this finding. When only the share of short-term unemployed covered by national unemployment insurance systems is eligible, net contributions shrink further and some member states which are a net contributor in the baseline become a net recipient (Belgium, Germany) or vice versa (Cyprus, Estonia, Greece, Portugal, Slovakia). This is due to large differences in coverage rates of national unemployment insurance systems as discussed in section 4.1.

Figure 6 shows that net contributions become smaller the less generous the euro area unemployment scheme is. In the least generous case of a scheme with a 35 per cent replacement rate and benefits capped at 50 per cent of median income, average net contributions shrink to 0.25 per cent of GDP in the Netherlands, the largest net contributor, and to -0.31 per cent in Spain, the largest net recipient. Interestingly, Estonia and Portugal become net contributors rather than net recipients if benefits are capped which is due to low median incomes in these member states.

Figure 5: Average yearly net contributions - Different coverage scenarios
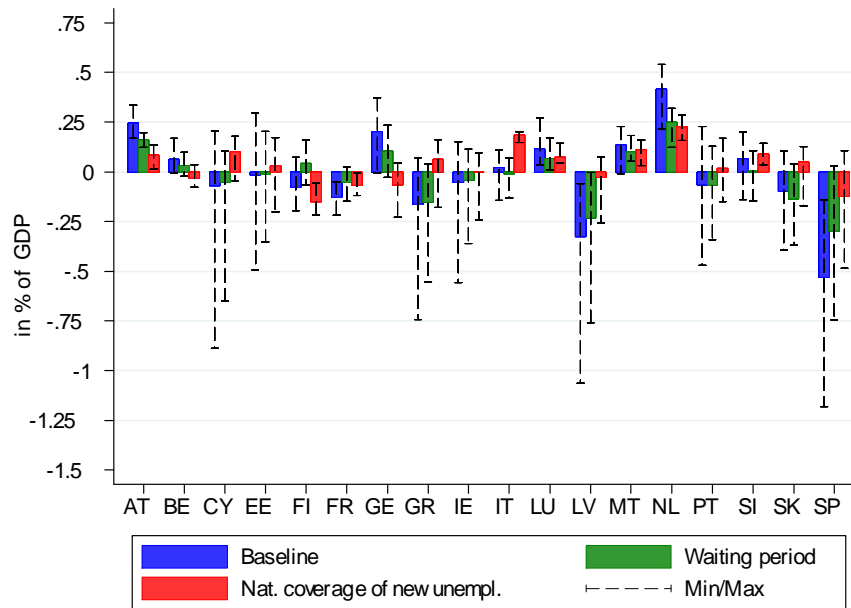
Note: Net contributions = SIC - BEN. Contribution rate uniform across member states. Scheme is revenue-neutral over the simulation period. Sources: EUROSTAT and own calculations based on EUROMOD.

Figure 6: Average yearly net contributions - Different generosity levels
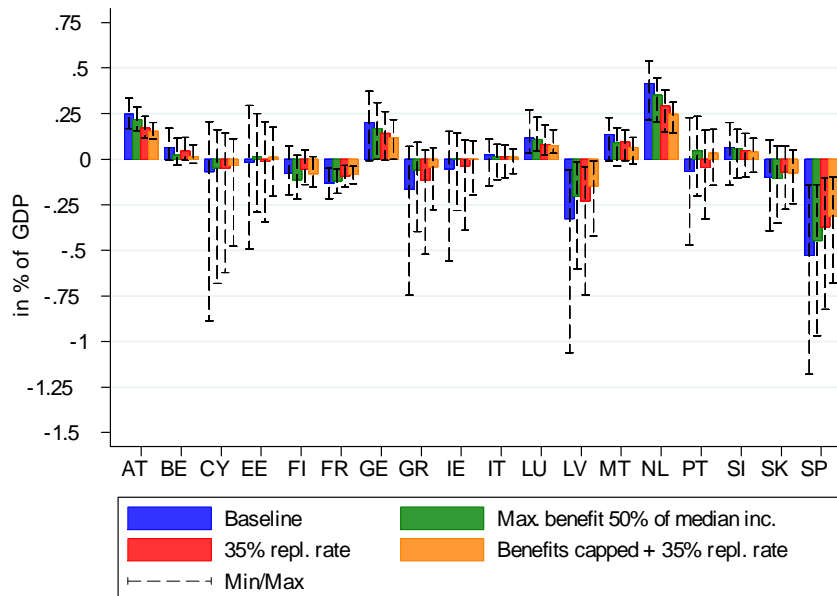
Note: Net contributions = SIC - BEN. Contribution rate uniform across member states. Scheme is revenue-neutral over the simulation period. Sources: Own calculations based on EUROMOD.

4.3 Automatic fiscal stabilization

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 the decline in disposable income being smaller than the shock to gross income (Auerbach and Feenberg 2000, Kniesner and Ziliak 2002, 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.[20]

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^I, that shows how changes in market income Y^M (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^D (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 all variants of the EMU-UI system presented throughout this paper. τ is computed using arithmetic changes (Δ) in benefit and contribution payments as well as changes in employment income from year t to $t+1$ ($\sum_i \Delta B_i$, $\sum_i \Delta SIC_i$ and $\sum_i \Delta Y_i^{EMPL}$) which are aggregated across individuals i in each member state. Note that changes in employment income as well as in contribution and benefit payments are calculated for employment changes along the extensive margin only in order to isolate the stabilizing effect in the event of unemployment shocks from (intensive margin) income shocks. The income stabilization coefficient for euro area unemployment insurance benefits is positive in a given member state if total benefit payments in year $t+1$ are *higher* than in year t and the total change in employment income following entries into employment/unemployment is negative, and zero otherwise:

$$\tau_{BEN} = \max\left(\frac{-\sum_i \Delta B_i}{\sum_i \Delta Y_i^{EMPL}}, 0 \right) \tag{1}$$

Accordingly, the income stabilization coefficient for contribution payments is positive if total contributions in year $t+1$ are *lower* than in year t and the total change in

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[20]Automatic stabilization might not only have effects on disposable income and consumption 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.

employment income is negative, and zero otherwise:

$$\tau_{SIC} = \max\left(\frac{\sum_i \Delta SIC_i}{\sum_i \Delta Y_i^{EMPL}}, 0\right) \tag{2}$$

The individual components of τ can be a summed up to the total income stabilization coefficient, τ^I:

$$\tau^I = \tau_{BEN} + \tau_{SIC} \tag{3}$$

Income stabilization coefficients for the so-called GIIPS countries (Greece, Ireland, Italy, Portugal and Spain), which were hardest hit during the recent crisis period, are shown in Figures 7 and 8. Tables 7 and 8 in the Appendix provide the full set of results. Note that we focus on the total income stabilization coefficient which is mainly driven by increased benefit payments and only to a small extent by lower contribution payments. In fact, τ_{SIC} is equal to the contribution rate of the scheme (see last row of Table 1). In the baseline scenario, the euro area unemployment benefit scheme would have absorbed a considerable fraction of the overall unemployment shock in 2009 both at the euro area level (36 per cent) as well as in individual member states. The fact that all member states would have been stabilized in 2009 can be explained by the capacity of the scheme to build up deficits in years with rising (short-time) unemployment.[21] For the GIIPS countries, we find income stabilization coefficients in a range between 23-31 per cent at the beginning of the crisis, but lower stabilization effects in the following years which is due to rising long-term unemployment (and hence lower coverage rates) in the more recent years of the crisis.[22] In line with our results presented in section 4.2, the euro area unemployment benefit scheme is less effective in stabilizing disposable incomes the lower the coverage rates and the less generous the scheme is. These findings indicate that there is a trade-off between the amount of redistribution (ex-post) across member states on the one hand and the insurance and stabilization effects on the other hand as both are positively correlated. Hence, it is interesting to compare the stabilizing effects of a basic EMU-UI system covering only short-term unemployment (for a maximum period of one year, i.e., 52 weeks) to the extended and emergency unemployment benefits provided by the US federal government (with benefits extended from 26 up to 99 weeks in many US states in the 2009-12 period). Given the longer duration of UI payments in the US, one can conclude that a basic EMU-UI system (without further extensions) would only be an effective automatic stabilizer in short recessions. In prolonged recessions with more and more

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[21]In fact, any shock absorption scheme without debt financing can have destabilizing effects if the union as a whole is hit by a shock as in 2009. See Bargain et al. (2013) on the (de)stabilizing effects of a fiscal equalization system with a balanced budget rule.

[22]Note that the income stabilization coefficient can be higher than the replacement rate of 50 per cent if a member state faces a strong increase in the share of short-term unemployment, but not in overall unemployment.

long-term unemployed individuals, the coverage rates of the EMU-UI scheme decline (see Figure 1) and a program such as the federal extensions in the US unemployment insurance system would be more effective as an automatic stabilizer in such a setting.

Figure 7: Income stabilization - Different coverage scenarios
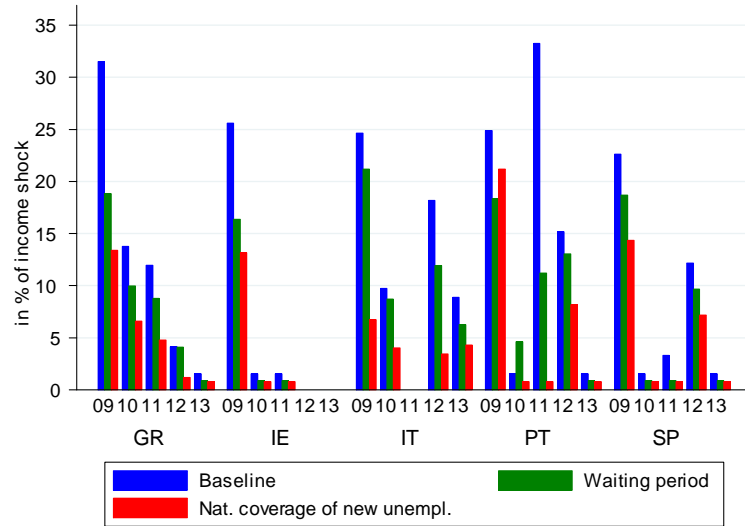
Note: Total income stabiliziation coefficient τ^I for variants A (baseline), B (waiting period) and C (coverage of national unemployment insurance systems). Sources: EUROSTAT and own calculations based on EUROMOD.

Figure 8: Income stabilization - Different generosity levels
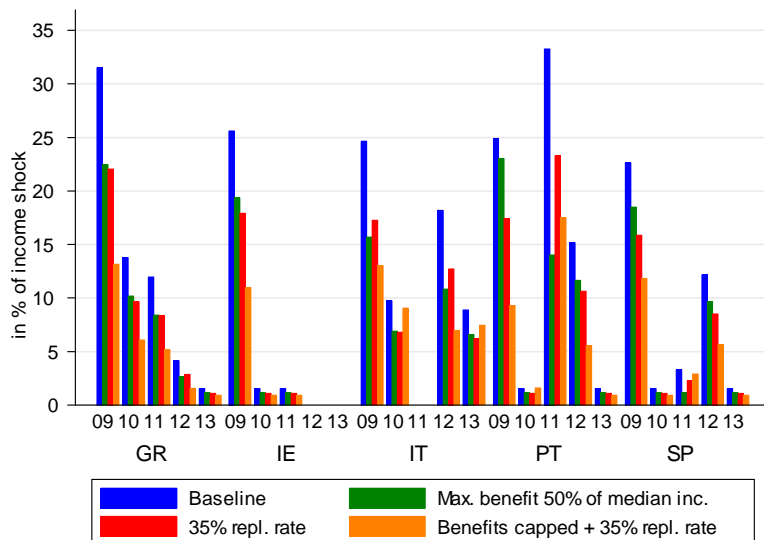
Note: Total income stabiliziation coefficient τ^I for variants A (baseline), D (max. benefit 50% of median income), E (replacement rate of 35%) and F (D+E combined). Sources: Own calculations based on EUROMOD.

5 Alternative scenarios

5.1 Experience rating and claw-back

The baseline scheme is calibrated to be revenue-neutral at the EMU-level over the simulation period with a uniform contribution rate (1.57 per cent) across member states. The analysis in the previous section has shown that a uniform contribution rate would have led to permanent transfers in the euro area with 5 member states of the EA18 being either net contributor (Austria and the Netherlands) or net recipient (France, Latvia and Spain) in each year of the 2000-13 period. Therefore, an interesting analytical exercise is to calculate country-specific contribution rates that balance the budget in each member state either over the whole simulation period or in each year (experience rating). The former are shown in Table 1 for the different specifications of the euro area unemployment insurance scheme presented throughout this paper. The last row of Table 1 shows the uniform contribution rates that where estimated in the previous section and balance the budget at the euro area, but *not* the member-state level. Given the large differences in net contributions across member states presented in the previous section, it is not surprising that country-specific contribution rates differ significantly ranging from 0.75 per cent in the Netherlands to 3.3 per cent in Spain for the baseline scenario. Less generous schemes (columns B-F in Table 1) require lower contribution rates for revenue-neutrality.

Table 1: Contribution rates for different specifications

	A	B	C	D	E	F
AT	0.97	0.52	0.56	0.77	0.68	0.54
BE	1.39	0.82	0.88	1.25	0.97	0.88
CY	1.85	1.12	0.52	1.52	1.30	1.06
EE	1.57	0.91	0.65	1.22	1.10	0.86
FI	1.74	0.80	1.13	1.56	1.22	1.09
FR	2.07	1.11	1.04	1.76	1.45	1.23
GE	1.15	0.69	0.90	0.97	0.81	0.68
GR	2.08	1.39	0.60	1.49	1.46	1.04
IE	1.81	1.11	0.80	1.34	1.27	0.94
IT	1.50	0.95	0.13	1.27	1.05	0.89
LU	1.10	0.64	0.45	0.86	0.77	0.60
LV	3.05	1.96	0.90	2.23	2.13	1.56
MT	1.19	0.65	0.47	1.06	0.83	0.74
NL	0.75	0.42	0.33	0.62	0.53	0.43
PT	1.82	1.16	0.74	1.19	1.27	0.83
SI	1.39	0.92	0.48	1.15	0.98	0.81
SK	1.84	1.39	0.44	1.63	1.29	1.14
SP	3.30	1.88	1.23	2.76	2.31	1.93
EA18	1.57	0.92	0.78	1.31	1.10	0.92

Notes: Country-specific contribution rates (in % of employment income) that balance the budget in each member state over the simulation period. Last row: uniform contribution rates that balance the overall budget at Eurozone-level (but not in each single member state). A: Baseline, all new unemployed with previous employment income covered. B: Waiting period, no benefits paid in the first 2 months of the unemployment spell. C: National coverage, only the share of short-term unemployed covered by national unemployment insurance systems eligible to benefits from euro area scheme. D: Maximum benefit 50 per cent of median income. E: 50 per cent replacement rate applied to 70 per cent of gross income, i.e., net replacement rate of 35 per cent. F: D + E combined. Sources: EUROSTAT and own calculations based on EUROMOD.

Figure 9 presents average country-specific contribution rates that balance national budgets in each year as well as maximum and minimum contribution rates over the period. In Austria and the Netherlands, the two member states that would have been permanent net contributors, revenue-neutral contribution rates would have always been below the uniform (Eurozone-wide) contribution rate of 1.57 per cent (dashed horizontal line), while the opposite is true for France, Latvia and Spain, the three net recipients throughout the simulation period in the baseline scenario (variant A).

Figure 9: Country-specific contribution rates: Annual balanced budget
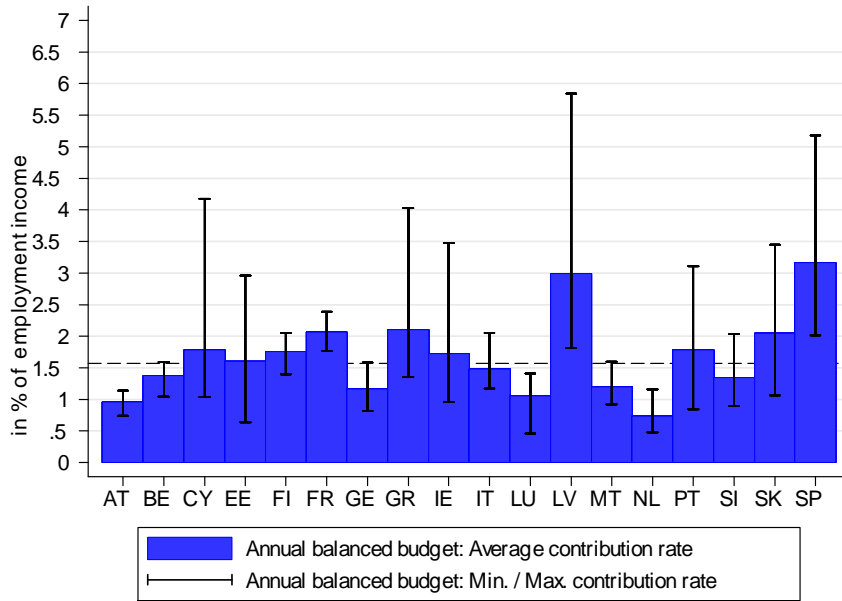
Note: Dashed horizontal line: Revenue-neutral uniform contribution rate (1.57 per cent) at EMU-level for the period 2000-13. Blue bars: Average country-specific contribution rates that balance the budget in each single year. Black vertical lines: Maximum/Minimum country-specific contribution rates that balance the budget in each single year. Sources: Own calculations based on EUROMOD.

However, an important implementation problem with experience rating is that in practice, the revenue-neutral contribution rate is not known ex-ante (neither for the euro area as a whole nor for its member states). A potential way to reduce cross-country transfers could be to determine pre-specified rules, i.e., claw-back mechanisms, that adjust (country-specific) contribution rates automatically after certain time intervals based on previous balances. In the US, for instance, each state places its unemployment insurance payroll taxes in a trust fund with the Treasury and state-specific tax rates are raised if trust funds become insolvent (Vroman and Woodbury 2014).[23] We consider

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[23]Note that this automatism can have undesirable side effects such as pro-cyclical adjustments of unemployment insurance payroll taxes during economic downturns.

two stylized types of claw-back mechanisms and examine their effect on each member state's net contributions over time. Under the first claw-back mechanism (Claw-back A), member-state specific contribution rates are applied in the current period that would have balanced the (national) budget in the previous period. Under the second claw-back mechanism (Claw-back B), past accumulated deficits or surpluses are taken into account as follows. In the initial period, we apply the Eurozone-wide revenue-neutral contribution rate (1.57 per cent) which leads to an unbalanced budget at the member-state level. In the subsequent periods, country-specific contribution rates are applied that would have reduced the net balance of the previous period by 50 per cent. For both claw-back mechanisms, contribution rates are adjusted in 3-year intervals (2000-02, 2003-05, 2006-08, 2009-11, 2012-13).

Cumulative net contributions under Claw-back A and B are presented in Figure 10, together with net contributions that would have accrued under uniform and country-specific contribution rates (column A of Table 1). The latter two cases can be interpreted as benchmark scenarios for our claw-back mechanisms as they are based on contribution rates which *ex-post* guarantee revenue neutrality at the euro area and member-state level. Figure 10 illustrates that ex-post adjustments of contribution rates reduce accumulated deficits or surpluses, relative to the counterfactual of a uniform contribution rate, in some, but not all member states. In France, Germany, Greece, Latvia, Malta, and Spain, this holds for both claw-back mechanisms and in Austria, Belgium, Finland, Luxembourg, and the Netherlands for Claw-back B. In a few cases, the accumulated net balance at the end of the simulation period is amplified (Cyprus, Ireland, Portugal). In other member states, claw-back mechanisms result in a net contributor (recipient) becoming a net recipient (contributor), namely Austria, Belgium, Finland, Luxembourg and the Netherlands under Claw-back A and Italy, Slovenia and Slovakia under Claw-back A and B. Note that we find similar results with other claw-back mechanisms based on shorter or longer adjustment periods.[24] These simulations show that claw-back mechanisms could be useful tools to reduce cross-country transfers, but that this does not hold in a systematic way in all member states. The trade-off between the degree of cross-country redistribution and automatic stabilization effects would become especially apparent if member states were forced to increase the contribution rate and thus the tax wedge on wages during a recession.

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[24]These additional results are available from the authors upon request.

Figure 10: Cumulative net contributions - Claw-back
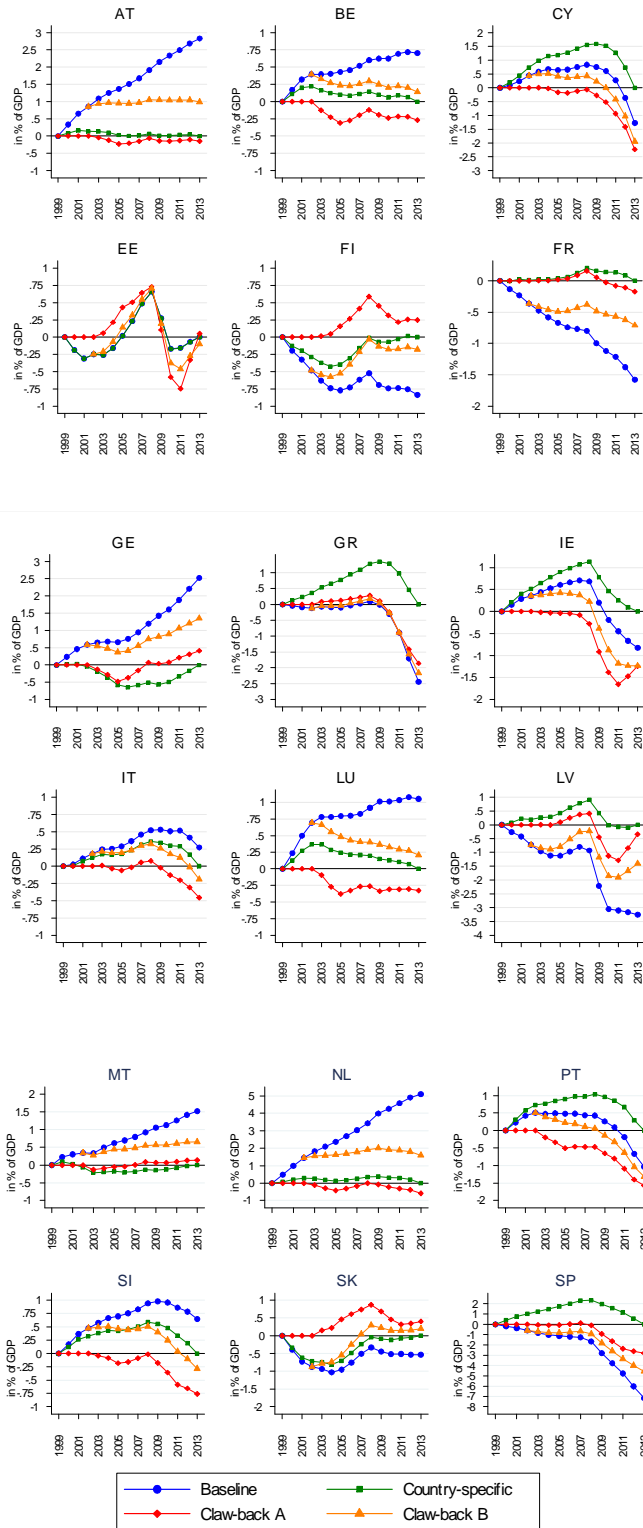
Note: Uniform and country-specific contribution rates as in Table 1, column A. Claw-back A and B: Country-specific contribution rates are adjusted every 3 years. Claw-back A: Contribution rates that would have led to a balanced budget in the previous 3-year interval are applied to the contemporaneous 3-year period. Claw-back B: Net contributions for the initial 3-year period are calculated based on the revenue-neutral uniform contribution rate. In all subsequent 3-year periods, country-specific contribution rates that would have reduced the net balance of the previous 3-year interval by 50 per cent are applied to the contemporaneous 3-year period. Sources: Own calculations based on EUROMOD.

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5.2 Contingent transfers

As a further variant we simulate an EMU-UI scheme with contingent benefits which are activated once certain triggers are reached and analyze its stabilizing and redistributive properties, in particular if such a scheme reduces cross-country transfers. Our choice of the trigger is guided by the US Extended Benefit (EB) program which permits states to use either the insured or the total unemployment rate to qualify for extended unemployment benefits (Nicholson et al. 2014). We choose the total unemployment rate as a trigger so that activation of contingent transfers is independent from eligibility conditions of national unemployment insurance systems. Precisely, benefits from the EMU-UI system are triggered if the unemployment rate in year t is at least 1 percentage point higher than the unemployment rate in i) year $t-1$, ii) years $t-1$ or $t-2$, iii) years $t-1$ or $t-2$ or $t-3$. Longer look-back periods ensure that EMU-UI benefits can remain activated in sustained periods of high unemployment rates.[25] In all other dimensions (payout rules, uniform contribution rate across member states), the contingent benefit schemes i-iii are identical to the baseline scheme (variant A) which implies that by construction member states are net contributors in those years when contingent benefits are not triggered.

Table 9 in the Appendix shows that while with a three-year look-back period, contingent benefits would have been triggered in all member states at least once, they would not have been activated in Malta (Belgium and Malta) in any year with a two-year (one-year) look-back period. The divergent development of unemployment rates since the start of the euro in 1999 becomes evident by a comparison of activation periods in different member states. While the short-term unemployed in Germany or Luxembourg, for instance, would have been eligible to EMU-UI benefits only in the period 2003-05 (and in 2013 in Luxembourg under variant iii), transfers would have been activated in Greece, Ireland, Italy and Spain only from 2008 onwards (with the exception of Greece under variant iii in 2000). Not surprisingly, with average yearly benefit and contribution payments of 13, 19 and 21 billion euro at the Eurozone-level, the overall budget of the contingent benefit schemes i-iii would have been significantly lower than in our baseline scenario with non-contingent benefits (49 billion per year). Consequently, revenue-neutral contribution rates would have been less than half as large as in the baseline (0.41, 0.61 and 0.68 rather than 1.57 per cent on employment income).

Figure 11 compares cumulative net contributions under the contingent benefit schemes to the baseline variant. A key finding is that the redistributive effects of the contingent benefit schemes differ to the baseline in several instances as evidenced

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[25] In the US the Tax Relief Act changed the look-back period in the EB program from a two-year to a three-year period in the recent recession to increase its stabilization impact (Nicholson and Needels 2011).

by the fact that a few member states change their net contributing position in terms of accumulated net contributions at the end of the simulation period (Finland, France, Italy, Slovenia). Austria and the Netherlands, the two member states which would have been net contributors in each year in the baseline, are now net receivers in some years. In the Netherlands, accumulated net contributions are reduced by more than 50 per cent by the end of the simulation period relative to the baseline. Spain, a net recipient in the baseline throughout the simulation period, is a net contributor until 2007 and a net recipient in the remaining years. These results show that an EMU-UI system with contingent benefits could indeed provide more targeted transfers to member states which see their labor market conditions significantly deteriorating.

What are the automatic stabilization effects of such a scheme? Given that the contingent benefit schemes considered here correspond to the non-contingent baseline scheme in all dimensions besides the activation of the scheme, stabilization effects are similar once EMU-UI benefits are triggered. However, it must be taken into account that countries that have not reached the trigger (but might well be in a recession) would be worse off compared to the baseline EMU-UI system as the link between contribution and benefit payments would be broken. The reason is that households in these member states would need to finance both their national unemployment insurance system as well as the EMU-UI system because the former would not be (partly) replaced by the latter if the trigger is not reached. This potential destabilizing effect could be prevented by suspending contribution payments to the EMU-UI system under certain circumstances such as rising unemployment rates.

Figure 11: Cumulative net contributions - Contingent benefits
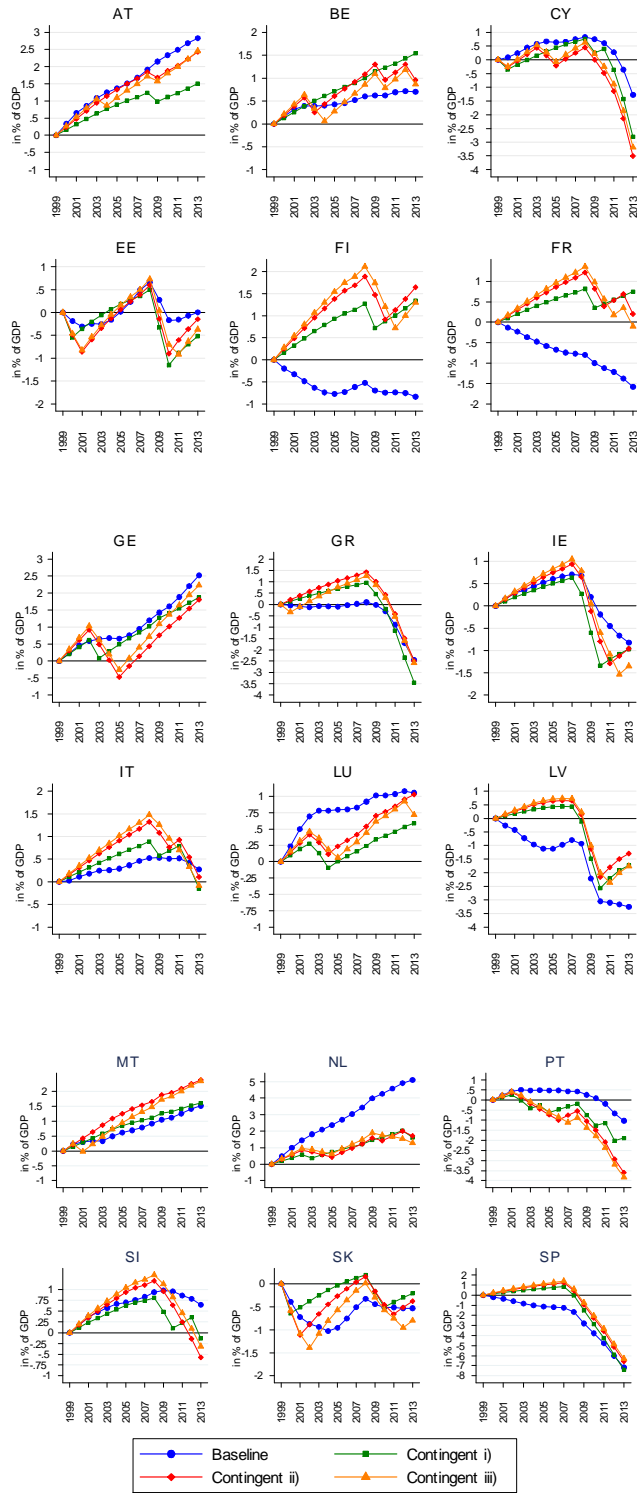
Note: Baseline and contingent benefits. Contingent scheme i): Benefits are paid if unemployment rate in a given member state in year t is at least 1 percentage point higher than in t-1 (one-year look-back period). Contingent scheme ii): 2-year look-back period, i.e., benefits are triggered if unemployment rate in year t is at least 1 percentage point higher than in t-1 OR t-2. Contingent scheme iii): 3-year look-back period, i.e., benefits are triggered if unemployment rate in year t is at least 1 percentage point higher than in t-1 OR t-2 OR t-3. Sources: Own calculations based on EUROMOD.

6　Conclusion

The economic crisis in the Eurozone has revived the debate on deeper fiscal integration and has brought this topic 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. Supporters of this idea argue that a centralized EMU-UI system would dampen asymmetric shocks in the Eurozone and provide income insurance to those households which are most vulnerable. It would thus not only improve the economic resilience of EMU and make its institutional architecture more sustainable, but also strengthen the social dimension of European policy-making. However, main concerns include the risk of permanent transfer flows across member states and moral hazard for national governments and administrations, which could lead to adverse labor market effects.

The aim of this paper has been to present different options for the design of a common unemployment insurance system and to assess their redistributive and stabilizing properties. Moreover, we have discussed how different design options would affect moral hazard issues. In our empirical analysis, we have used counterfactual simulation techniques based on harmonized European micro data to examine the economic effects of a hypothetical common EMU-UI system for the time period 2000-13. Our main results can be summarized as follows. A basic scheme, partly replacing national unemployment insurance systems, with a replacement rate of 50 per cent, a maximum duration of benefit receipt of 12 months and a broad coverage of all new unemployed with previous employment income could be implemented with a relatively small annual budget. On average, it would have amounted to 49 billion euro per year at the Eurozone-level financed by a contribution rate of 1.57 per cent on employment income. The scheme would have provided significant income stabilization at the beginning of the recent economic crisis absorbing 36 per cent of the unemployment shock in 2009 at the Eurozone-level, but due to its focus on short-term unemployment this effect would have diminished, the longer the crisis lasted. We find, perhaps surprisingly given that the scheme does not lead to permanent redistribution per se, that 5 out of 18 member states would have been either net contributor or net recipient in each year of our simulation period. Running various sensitivity checks regarding the coverage and generosity of the scheme, we show that there is a trade-off between the degree of cross-country redistribution and desired automatic stabilization effects.

We therefore investigate whether claw-back mechanisms based on experience rating and contingent benefit schemes lead to smaller accumulated net balances. In a first step, we calculate country-specific contribution rates that would have balanced national budgets either over the whole period or in every single year. These range from 0.75 per cent in the Netherlands to 3.3 per cent in Spain in the former and from 0.46 per cent in Luxembourg to 5.8 per cent in Latvia in the latter case. In the next step,

analyzing two stylized claw-back mechanisms under which country-specific contribution rates are adjusted in 3-year intervals based on previous net balances, we find that they lead to smaller net contributions in some, but not all member states. Finally, our analysis shows that a common EMU-UI system with contingent benefits would lead to less cross-country redistribution as it would provide more targeted transfers to member states with deteriorating labor market conditions. However, claw-back mechanisms and contingent benefits can have undesirable side effects such as pro-cyclical adjustments of contribution rates or a broken link between contribution and benefit payments if benefits are not activated.

We should emphasize that our analysis has a number of limitations which should be taken into account in the interpretation of the results. Most importantly, it is not the objective of this paper to establish whether or not the introduction of an EMU-UI scheme is desirable in terms of economic welfare. Our analysis focuses on the financial flows implied by different unemployment insurance schemes and the ability of these flows to act as an automatic stabilizer. In so far our analysis is purely positive, rather than normative. In addition, we take economic behavior as given. If EMU-UI had the desired stabilizing effects, the financial flows in the system would differ from those calculated here; the redistributive effects would probably be smaller. However, if the moral hazard effects dominated, the financial flows from contributors to recipients could also be larger. Adding behavioral effects to the analysis is a promising subject for future research.

References

Andor, L. (2014). Basic European Unemployment Insurance - The best way forward in strengthening the EMU's resilience and Europe's recovery, *Intereconomics* **Vol. 49 (4) Forum**: 184–189.

Asdrubali, P., Sorensen, P. and Yosha, O. (1996). Channels of interstate risk-sharing: United States 1963-1990, *Quarterly Journal of Economics* **111**: 1081–1110.

Auerbach, A. and Feenberg, D. (2000). The significance of federal taxes as automatic stabilizers, *Journal of Economic Perspectives* **14**: 37–56.

Bargain, O., Dolls, M., Fuest, C., Neumann, D., Peichl, A., Pestel, N. and Siegloch, S. (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.

Bargain, O., Immvervoll, H., Peichl, A. and Siegloch, S. (2012). Distributional conse-

quences of labor-demand shocks: the 2008 - 2009 recession in Germany, *International Tax and Public Finance* **19 (1)**: 118–138.

Bayoumi, T. and Masson, P. (1995). Fiscal flows in the United States and Canada: Lessons for monetary union in Europe, *European Economic Review* **39**: 253–274.

Bertola, G. (2013). Policy coordination, convergence, and the rise and crisis of EMU imbalances, European Commission DG Economic and Financial Affairs: European Economy - Economic Papers No. 490.

Bordo, M., Jonung, L. and Markiewicz, A. (2013). A Fiscal Union for the Euro: Some Lessons from History, *CESifo Economic Studies* **59 (3)**: 449–488.

Centre for European Policy Studies (2014). Simulation exercise for an Unemployment Insurance Scheme for the euro area, Cost of Non-Europe Report 3/2014.

Claeys, G., Darvas, Z. and Wolff, G. (2014). Benefits and drawbacks of European unemployment insurance, Bruegel Policy Brief 2014/06.

Congressional Budget Office (2012). Unemployment insurance in the wake of the recent recession, Pub. No. 4525.

Deinzer, R. (2004). Konvergenz- und Stabilisierungswirkungen einer europäischen Arbeitslosenversicherung, Berlin: Duncker & Humblot.

Dolls, M., Fuest, C., Neumann, D., Peichl, A. and Ungerer, M. (2014). Cost of non-Europe of the absence of an Unemployment Insurance Scheme for the Euro Area, Report on behalf of the European Parliament.

Dolls, M., Fuest, C. and Peichl, A. (2012). Automatic Stabilizers and Economic Crisis: US vs. Europe, *Journal of Public Economics* **96**: 279–294.

Dullien, S. (2014a). A European Unemployment Benefit Scheme. How to provide for more Stability in the Euro Zone, Gütersloh: Bertelsmann-Stiftung.

Dullien, S. (2014b). Preventing permanent transers under a European Unemployment Insurance: Can a claw-back mechanism be the answer?, Presentation at the conference 'Economic shock absorbers for the Eurozone', Brussels, June 2014.

Dullien, S., Fichtner, F., Haan, P., Jaeger, L., Jansen, M., Ochman, R. and Tomasch, E. (2014). Eine Arbeitslosenversicherung für den Euroraum als automatischer Stabilisator - Grenzen und Möglichkeiten, DIW Berlin: Politikberatung kompakt 86.

Enderlein, H., Guttenberg, L. and Spiess, J. (2013). Blueprint for a cyclical insurance in the euro area, Project EU & Differentiated Integration.

Epaulard, A. (2014). Contingent vs. non-contingent unemployment benefit scheme for the EMU, Presentation at the conference 'Economic shock absorbers for the Eurozone', Brussels, June 2014.

Esser, I., Ferrarini, T., Nelson, K., Palme, J. and Sjöberg, O. (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**: 507–252.

Farhi, E. and Werning, I. (2014). Fiscal Unions, revised version of NBER Working Paper No. 18280, Issued in August 2012.

Fatás, A. (1998). Does EMU need a fiscal federation?, *Economic Policy* **13**: 163–203.

Fatás, A. and Mihov, I. (2001). Government size and automatic stabilizers: international and intranational evidence, *Journal of International Economics* **55**: 3–28.

Feyrer, J. and Sacerdote, B. (2013). How much would US style fiscal integration buffer European unemployment and income shocks, *American Economic Review: Papers & Proceedings* **103(3)**: 125–128.

Forni, M. and Reichlin, L. (1999). Risk and potential insurance in Europe, *European Economic Review* **43**: 1237–1256.

Furceri, D. and Zdzienicka, A. (2013). The Euro Area Crisis: Need for a Supranational Fiscal Risk Sharing Mechanism?, IMF Working Paper WP13/198.

Gros, D. (2014). A fiscal shock absorber for the Eurozone? Insurance with Deductible, *Intereconomics* **Vol. 49 (4) Forum**: 199–203.

IAB (2013). Verteilungswirkungen einer europäischen Arbeitslosenversicherung - Simulationsrechnungen, Institut für Arbeitsmarkt- und Berufsforschung, Aktuelle Berichte.

IMF (2013). Toward a Fiscal Union for the Euro Area, IMF Staff Discussion Note, SDN/13/09.

Immvervoll, H., Levy, H., Lietz, C., Mantovani, D. and Sutherland, H. (2006). The sensitivity of poverty rates to macro-level changes in the European Union, *Cambridge Journal of Economics* **30**: 181–199.

Jara, H. X. and Sutherland, H. (2014). The implications of an EMU unemployment insurance scheme for supporting incomes, EUROMOD Working Paper Series EM5/14.

Kniesner, T. and Ziliak, J. (2002). Tax Reform and Automatic Stabilization, *American Economic Review* **92(3)**: 590–612.

Lellouch, T. and Sode, A. (2014). An unemployment insurance scheme for the euro area, Trésor-Economics No. 132.

Luque, J., Morelli, M. and Tavares, J. (2014). A volatility-based theory of fiscal union desirability, *Journal of Public Economics* **forthcoming**.

Nicholson, W. and Needels, K. (2011). The EUC08 Program in Theoretical and Historical Perspective, Mathematica Policy Research report submitted to U.S. Department of Labor.

Nicholson, W., Needels, K. and Hock, H. (2014). Unemployment Compensation During the Great Recession: Theory and Evidence, *National Tax Journal* **67(1)**: 187–218.

Pechman, J. (1973). Responsiveness of the Federal Income Tax to Changes in Income, *Brookings Papers on Economic Activitiy* **2**: 385–421.

Pechman, J. (1987). *Federal Tax Policy*, Brookings, 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.

Sutherland, H. and Figari, F. (2013). EUROMOD: the European Union tax-benefit microsimulation model, *International Journal of Microsimulation* **6(1)**: 4–24.

Van Rompuy, H. (2012). Towards a genuine Economic and Monetary Union, Report to the European Council Meeting, December, 13.-14., 2012, in close collaboration with J.M. Barroso, J.-C. Juncker and M. Draghi.

Vroman, W. and Woodbury, S. (2014). Financing Unemployment Insurance, *National Tax Journal* **67 (1)**: 253–268.

A   Appendix:

Table 2: Coverage rates EMU-UI

| | 2000 | | | 2001 | | | 2002 | | | 2003 | | | 2004 | | |
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
AT	71.5	43.2	48.8	73.9	42.4	47.9	83.6	49.9	61.2	77.0	44.7	56.8	72.2	39.3	44.4
BE	43.7	25.6	27.9	48.3	30.4	31.6	50.4	31.4	33.3	53.7	34.3	35.5	50.4	32.1	34.1
CY	74.3	44.3	27.7	78.8	44.1	29.6	79.9	50.2	32.3	76.0	45.5	31.0	71.8	45.2	29.5
EE	53.1	31.5	23.5	54.5	38.8	23.3	48.8	29.4	20.8	57.7	31.2	24.7	47.6	27.9	21.5
FI	75.4	39.5	48.2	76.4	38.3	49.2	78.8	39.7	49.0	78.7	42.1	49.6	78.9	42.9	48.9
FR	60.3	38.2	28.5	63.2	39.1	30.4	67.3	40.5	35.8	62.4	32.0	32.9	60.9	33.1	30.1
GE	48.5	30.9	36.4	49.6	31.7	37.3	52.1	33.8	40.6	50.0	33.6	39.3	48.2	31.2	36.5
GR	43.3	31.1	8.5	47.2	29.1	9.8	47.4	35.4	10.8	43.8	31.5	9.1	45.2	33.5	10.2
IE	61.8	33.1	25.0	66.4	31.6	27.8	70.6	38.5	30.1	64.5	36.0	28.0	65.7	35.4	28.6
IT	38.7	27.7	2.5	36.6	24.3	3.0	40.8	28.8	2.0	41.8	28.8	1.8	50.4	29.1	3.6
LU	77.6	45.1	31.4	71.6	32.8	30.0	72.6	39.0	30.4	75.3	44.0	38.9	79.0	46.0	32.2
LV	42.9	31.3	12.9	40.9	28.3	11.0	57.8	36.3	18.4	54.8	33.7	20.2	56.1	33.4	18.4
MT	44.0	19.0	17.8	56.7	24.9	23.8	61.8	29.6	26.4	65.7	25.3	28.6	50.5	26.8	22.0
NL	73.4	41.6	29.7	73.4	41.6	30.8	73.4	41.6	31.3	71.0	39.8	30.9	67.3	42.6	29.3
PT	56.1	33.6	22.5	60.8	36.9	16.0	64.5	41.0	21.1	67.3	44.6	23.3	56.9	39.1	23.7
SI	37.3	25.3	12.1	36.8	24.0	12.3	45.3	31.7	18.4	43.3	33.2	21.4	46.9	35.0	23.4
SK	45.3	33.9	21.0	41.7	34.3	13.8	34.7	28.5	9.9	33.8	26.9	9.2	36.1	29.6	10.2
SP	57.6	37.3	12.5	63.5	37.5	14.0	66.2	41.4	14.6	66.4	43.3	14.8	67.4	41.2	16.7
EA18	55.8	34.0	24.3	57.8	33.9	24.5	60.9	37.0	27.0	60.2	36.1	27.6	58.4	35.7	25.7

| | 2005 | | | 2006 | | | 2007 | | | 2008 | | | 2009 | | |
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
AT	74.8	37.8	46.2	72.6	37.6	44.2	73.2	37.9	44.1	75.8	37.6	46.3	78.7	41.5	40.6
BE	48.3	26.9	32.4	48.8	27.9	32.2	49.6	27.6	30.6	52.5	27.9	32.7	55.8	31.8	36.1
CY	76.6	43.0	16.0	80.7	46.4	35.8	81.4	46.2	34.2	86.4	45.7	25.8	89.7	47.2	20.6
EE	46.6	24.1	22.0	51.8	27.9	23.8	50.8	22.0	22.5	69.9	32.3	18.8	72.6	43.1	31.9
FI	74.2	35.1	46.6	74.8	34.0	45.4	77.2	34.2	49.3	81.6	31.1	54.4	83.3	35.7	55.2
FR	58.9	30.5	29.7	58.0	29.1	29.1	59.8	29.0	26.6	62.6	29.2	29.9	64.8	33.5	32.9
GE	47.0	28.7	36.7	43.6	26.1	33.8	43.4	24.5	33.3	47.5	26.9	35.3	54.5	31.2	42.6
GR	47.9	31.7	12.7	45.7	32.7	12.6	50.1	31.3	13.8	52.5	30.9	13.9	59.2	35.0	18.6
IE	66.6	32.2	33.6	68.4	41.5	31.4	70.4	42.6	31.2	72.9	43.8	30.9	70.9	43.9	32.9
IT	50.1	29.4	2.9	50.4	29.5	3.2	52.6	29.7	3.4	54.4	31.1	3.6	55.6	34.7	5.5
LU	73.6	40.1	36.3	70.5	44.6	29.5	71.3	43.7	27.2	67.8	36.3	30.7	76.8	49.5	30.3
LV	54.1	33.3	15.7	63.4	35.3	15.9	73.7	37.6	27.7	74.3	40.8	20.6	73.3	49.8	22.8
MT	53.6	30.3	19.7	59.4	32.8	24.1	58.0	29.9	25.7	57.8	31.3	24.5	56.5	35.2	26.2
NL	59.8	36.3	30.2	57.1	33.2	26.2	60.7	33.2	26.9	65.6	32.8	27.8	75.8	40.6	35.2
PT	51.9	33.0	21.1	49.8	31.1	21.0	52.9	32.5	21.8	52.6	30.2	19.2	55.8	34.5	27.8
SI	52.7	35.1	20.7	50.7	33.9	17.2	54.3	31.8	16.4	57.8	32.3	16.8	69.9	41.7	25.6
SK	28.0	20.6	6.0	23.7	17.7	4.3	25.8	18.3	4.1	30.5	20.6	4.9	46.0	32.1	9.2
SP	75.5	33.5	38.1	78.3	32.3	22.2	79.6	32.5	23.0	82.2	36.4	27.1	76.3	45.0	34.0
EA18	57.8	32.3	25.9	58.2	33.0	25.1	60.3	32.5	25.7	63.6	33.2	25.7	67.5	39.2	29.3

	2010			2011			2012			2013		
	A	B	C	A	B	C	A	B	C	A	B	C
AT	74.8	39.2	39.7	74.1	37.2	39.6	75.3	38.0	37.5	75.7	41.1	31.3
BE	51.2	30.3	31.4	51.6	30.7	31.2	55.3	32.7	32.8	53.9	33.2	32.8
CY	79.7	45.8	19.1	79.2	48.9	18.2	69.9	44.8	16.1	61.8	41.7	13.4
EE	54.7	37.4	26.4	43.2	23.3	16.0	45.8	25.4	14.7	55.5	31.5	22.7
FI	76.0	32.9	52.6	77.8	31.6	50.6	78.7	32.4	54.6	79.2	33.5	53.7
FR	59.8	31.0	32.4	58.5	29.8	28.5	59.6	30.3	31.7	59.7	36.8	30.6
GE	52.6	30.3	40.0	52.0	27.7	42.1	54.6	28.7	46.0	55.3	29.9	46.5
GR	55.0	34.0	18.8	50.4	32.5	17.7	40.7	27.6	13.9	32.6	23.2	9.2
IE	50.9	34.7	23.7	40.7	26.8	17.3	38.3	24.5	16.4	39.4	24.9	16.3
IT	51.6	32.8	5.7	48.1	31.4	5.0	47.0	30.8	5.5	43.1	28.4	6.0
LU	70.7	40.5	30.2	71.4	43.0	26.3	69.7	39.3	28.0	69.6	42.3	26.3
LV	54.9	41.9	18.2	45.5	30.5	10.7	47.9	29.8	11.4	51.3	32.0	15.1
MT	53.5	35.7	16.1	53.6	32.7	17.4	52.8	32.2	17.4	55.5	32.4	19.3
NL	72.5	40.4	33.7	66.5	35.4	28.3	66.3	35.3	28.4	64.5	38.0	26.7
PT	47.7	31.2	22.6	51.9	31.6	20.0	51.4	33.6	21.1	43.8	29.2	18.8
SI	56.7	39.0	19.9	55.8	35.8	20.0	52.1	33.1	14.4	49.0	33.7	12.4
SK	36.0	27.7	8.0	32.1	24.4	6.4	32.7	24.4	6.7	29.8	21.8	5.7
SP	63.4	38.2	29.8	58.4	34.8	24.5	55.6	34.3	24.2	50.3	31.2	20.2
EA18	59.0	35.7	26.0	56.2	32.7	23.3	55.2	32.1	23.4	53.9	32.5	22.6

Notes: Coverage rates in per cent of all unemployed. A: Baseline, all new unemployed with previous employment income covered. B: Waiting period, no benefits paid in the first 2 months of the unemployment spell. C: National coverage, only the share of short-term unemployed covered by national unemployment insurance systems receives benefits.
Sources: EUROSTAT and own calculations based on EUROMOD.

Table 3: Net contributions (per cent of GDP) - Different coverage scenarios

	2000			2001			2002			2003			2004		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
AT	0.34	0.19	0.11	0.33	0.19	0.11	0.22	0.12	0.01	0.25	0.14	0.03	0.21	0.14	0.06
BE	0.17	0.10	0.04	0.16	0.07	0.02	0.09	0.03	-0.03	0.01	-0.02	-0.08	0.03	-0.01	-0.07
CY	0.09	0.05	0.11	0.16	0.10	0.13	0.21	0.10	0.14	0.17	0.09	0.12	0.13	0.05	0.11
EE	-0.19	-0.12	-0.06	-0.14	-0.16	-0.03	0.03	0.01	0.05	-0.04	0.00	0.02	0.07	0.04	0.05
FI	-0.20	-0.06	-0.22	-0.14	-0.02	-0.19	-0.16	-0.03	-0.18	-0.16	-0.05	-0.19	-0.14	-0.05	-0.16
FR	-0.13	-0.10	-0.05	-0.10	-0.08	-0.04	-0.14	-0.09	-0.09	-0.12	-0.03	-0.08	-0.13	-0.05	-0.06
GE	0.24	0.11	-0.03	0.23	0.10	-0.03	0.13	0.03	-0.12	0.07	-0.02	-0.18	0.04	-0.03	-0.18
GR	-0.04	-0.10	0.15	-0.06	-0.05	0.14	-0.04	-0.12	0.14	0.04	-0.04	0.16	-0.02	-0.10	0.14
IE	0.15	0.10	0.10	0.15	0.11	0.09	0.09	0.06	0.07	0.11	0.07	0.07	0.12	0.08	0.07
IT	0.02	-0.04	0.18	0.09	0.02	0.18	0.07	-0.00	0.19	0.07	0.00	0.20	0.02	0.01	0.19
LU	0.23	0.14	0.13	0.27	0.17	0.14	0.22	0.14	0.12	0.14	0.08	0.06	0.05	0.03	0.05
LV	-0.26	-0.24	-0.01	-0.19	-0.17	0.03	-0.33	-0.22	-0.04	-0.25	-0.16	-0.05	-0.26	-0.16	-0.03
MT	0.23	0.18	0.14	0.08	0.12	0.08	0.05	0.08	0.06	-0.01	0.11	0.03	0.16	0.12	0.11
NL	0.48	0.29	0.27	0.54	0.32	0.29	0.49	0.29	0.26	0.40	0.24	0.22	0.34	0.17	0.19
PT	0.23	0.13	0.14	0.20	0.11	0.17	0.10	0.04	0.12	-0.02	-0.05	0.07	0.03	-0.03	0.05
SI	0.17	0.07	0.14	0.20	0.10	0.14	0.13	0.04	0.10	0.12	0.01	0.06	0.12	0.01	0.06
SK	-0.39	-0.35	-0.17	-0.36	-0.37	-0.06	-0.22	-0.26	0.01	-0.17	-0.20	0.03	-0.22	-0.25	0.01
SP	-0.19	-0.16	0.11	-0.18	-0.11	0.11	-0.27	-0.19	0.09	-0.27	-0.21	0.08	-0.24	-0.16	0.07
EA18	0.08	0.02	0.05	0.10	0.04	0.05	0.04	-0.01	0.01	0.01	-0.02	-0.01	-0.01	-0.02	-0.01

	2005			2006			2007			2008			2009		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
AT	0.17	0.13	0.03	0.22	0.15	0.06	0.25	0.17	0.08	0.29	0.20	0.11	0.19	0.14	0.09
BE	0.04	0.04	-0.06	0.05	0.03	-0.05	0.09	0.06	-0.01	0.10	0.08	-0.00	0.01	0.01	-0.07
CY	0.02	0.02	0.18	0.07	0.04	0.06	0.14	0.09	0.10	0.14	0.10	0.15	-0.09	-0.02	0.13
EE	0.16	0.11	0.08	0.22	0.14	0.12	0.30	0.20	0.16	0.18	0.15	0.17	-0.49	-0.30	-0.18
FI	-0.05	0.05	-0.12	0.00	0.09	-0.07	0.06	0.11	-0.05	0.07	0.16	-0.06	-0.13	0.05	-0.20
FR	-0.11	-0.03	-0.06	-0.10	-0.02	-0.05	-0.06	0.01	-0.01	-0.05	0.02	-0.02	-0.18	-0.06	-0.10
GE	-0.01	-0.03	-0.23	0.12	0.06	-0.12	0.23	0.14	-0.03	0.27	0.16	0.01	0.18	0.11	-0.09
GR	-0.02	-0.05	0.12	0.06	-0.02	0.13	0.06	0.01	0.13	0.07	0.04	0.14	-0.11	-0.07	0.06
IE	0.12	0.10	0.06	0.11	0.06	0.06	0.09	0.04	0.06	-0.06	-0.04	0.01	-0.56	-0.36	-0.24
IT	0.04	0.02	0.19	0.09	0.05	0.19	0.11	0.07	0.19	0.07	0.04	0.20	-0.01	-0.03	0.18
LU	0.09	0.06	0.04	0.09	0.04	0.06	0.10	0.05	0.07	0.09	0.06	0.05	0.05	0.01	0.06
LV	-0.16	-0.11	0.03	-0.06	-0.02	0.08	-0.06	-0.00	0.02	-0.20	-0.10	0.04	-1.06	-0.76	-0.26
MT	0.15	0.10	0.13	0.11	0.08	0.10	0.14	0.11	0.09	0.18	0.12	0.12	0.13	0.06	0.08
NL	0.36	0.20	0.18	0.44	0.26	0.23	0.49	0.29	0.26	0.51	0.32	0.27	0.44	0.27	0.23
PT	0.00	-0.02	0.05	0.02	-0.01	0.05	-0.03	-0.03	0.03	0.00	0.01	0.07	-0.18	-0.13	-0.09
SI	0.07	0.01	0.07	0.11	0.03	0.11	0.15	0.09	0.13	0.17	0.11	0.14	-0.01	-0.01	0.06
SK	-0.05	-0.08	0.08	0.07	0.00	0.11	0.10	0.03	0.12	0.11	0.04	0.13	-0.11	-0.12	0.08
SP	-0.19	-0.01	-0.10	-0.15	0.02	0.06	-0.14	0.03	0.06	-0.45	-0.13	-0.06	-1.07	-0.63	-0.45
EA18	-0.01	0.01	-0.04	0.05	0.05	0.02	0.10	0.09	0.06	0.07	0.08	0.05	-0.11	-0.05	-0.06

| | 2010 | | | 2011 | | | 2012 | | | 2013 | | |
	A	B	C	A	B	C	A	B	C	A	B	C
AT	0.25	0.17	0.11	0.27	0.19	0.12	0.26	0.18	0.13	0.20	0.13	0.14
BE	0.03	0.01	-0.04	0.09	0.05	0.00	0.04	0.02	-0.03	-0.00	-0.02	-0.06
CY	-0.13	-0.07	0.12	-0.32	-0.22	0.08	-0.64	-0.44	0.00	-0.89	-0.65	-0.04
EE	-0.44	-0.35	-0.20	-0.01	0.02	0.06	0.08	0.06	0.11	0.07	0.05	0.07
FI	-0.08	0.07	-0.19	-0.03	0.11	-0.13	-0.03	0.11	-0.16	-0.09	0.08	-0.19
FR	-0.15	-0.05	-0.10	-0.13	-0.04	-0.06	-0.18	-0.06	-0.11	-0.22	-0.15	-0.12
GE	0.25	0.15	-0.01	0.35	0.22	0.04	0.36	0.23	0.04	0.37	0.23	0.05
GR	-0.29	-0.20	-0.02	-0.57	-0.40	-0.13	-0.74	-0.55	-0.18	-0.63	-0.51	-0.08
IE	-0.40	-0.32	-0.17	-0.26	-0.20	-0.08	-0.22	-0.17	-0.07	-0.16	-0.12	-0.03
IT	-0.01	-0.03	0.18	0.02	-0.02	0.18	-0.11	-0.10	0.17	-0.14	-0.13	0.15
LU	0.09	0.06	0.06	0.08	0.04	0.07	0.07	0.05	0.06	0.03	0.01	0.05
LV	-0.78	-0.66	-0.20	-0.38	-0.28	-0.00	-0.35	-0.23	0.00	-0.23	-0.16	0.00
MT	0.15	0.05	0.16	0.17	0.09	0.15	0.19	0.10	0.16	0.16	0.09	0.14
NL	0.37	0.22	0.19	0.41	0.26	0.23	0.33	0.22	0.20	0.22	0.12	0.16
PT	-0.16	-0.14	-0.07	-0.28	-0.18	-0.05	-0.47	-0.34	-0.15	-0.37	-0.29	-0.12
SI	-0.02	-0.07	0.06	-0.08	-0.08	0.04	-0.09	-0.09	0.08	-0.14	-0.15	0.08
SK	-0.09	-0.13	0.07	-0.02	-0.07	0.09	-0.03	-0.08	0.09	-0.01	-0.05	0.10
SP	-0.97	-0.60	-0.44	-0.99	-0.60	-0.37	-1.18	-0.75	-0.48	-1.11	-0.71	-0.40
EA18	-0.07	-0.04	-0.04	-0.02	-0.01	-0.00	-0.08	-0.04	-0.03	-0.09	-0.07	-0.03

Notes: Net contributions (SIC - BEN) in per cent of GDP. A: Baseline, all new unemployed with previous employment income covered. B: Waiting period, no benefits paid in the first 2 months of the unemployment spell. C: National coverage, only the share of short-term unemployed covered by national unemployment insurance systems receives benefits.
Sources: EUROSTAT and own calculations based on EUROMOD.

Table 4: Net contributions (in billion euro) - Different coverage scenarios

| | 2000 | | | 2001 | | | 2002 | | | 2003 | | | 2004 | | |
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
AT	0.70	0.39	0.23	0.70	0.41	0.25	0.49	0.27	0.03	0.56	0.33	0.06	0.50	0.33	0.13
BE	0.43	0.25	0.09	0.40	0.19	0.05	0.23	0.09	-0.07	0.03	-0.06	-0.21	0.08	-0.03	-0.21
CY	0.01	0.00	0.01	0.02	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.02	0.01	0.01
EE	-0.01	-0.01	-0.00	-0.01	-0.01	-0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.01	0.00	0.01
FI	-0.26	-0.09	-0.29	-0.20	-0.02	-0.26	-0.24	-0.05	-0.26	-0.23	-0.08	-0.27	-0.21	-0.07	-0.25
FR	-1.92	-1.51	-0.76	-1.53	-1.16	-0.64	-2.17	-1.43	-1.38	-1.91	-0.53	-1.21	-2.11	-0.88	-1.03
GE	4.87	2.19	-0.63	4.86	2.13	-0.71	2.84	0.70	-2.66	1.49	-0.53	-3.86	0.85	-0.59	-3.95
GR	-0.05	-0.14	0.21	-0.08	-0.07	0.20	-0.06	-0.18	0.22	0.07	-0.07	0.28	-0.04	-0.18	0.26
IE	0.16	0.10	0.10	0.18	0.13	0.11	0.12	0.08	0.09	0.16	0.10	0.10	0.17	0.12	0.11
IT	0.29	-0.46	2.18	1.08	0.30	2.25	0.95	-0.01	2.51	0.97	0.05	2.70	0.27	0.19	2.60
LU	0.05	0.03	0.03	0.06	0.04	0.03	0.05	0.03	0.03	0.04	0.02	0.02	0.01	0.01	0.01
LV	-0.02	-0.02	-0.00	-0.02	-0.02	0.00	-0.03	-0.02	-0.00	-0.02	-0.02	-0.00	-0.03	-0.02	-0.00
MT	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	-0.00	0.01	0.00	0.01	0.01	0.00
NL	2.02	1.19	1.11	2.42	1.43	1.28	2.29	1.36	1.23	1.91	1.16	1.06	1.65	0.85	0.95
PT	0.29	0.16	0.18	0.27	0.15	0.23	0.15	0.06	0.17	-0.03	-0.08	0.10	0.05	-0.04	0.08
SI	0.04	0.02	0.03	0.05	0.02	0.03	0.03	0.01	0.02	0.03	0.00	0.02	0.03	0.00	0.02
SK	-0.09	-0.08	-0.04	-0.08	-0.09	-0.02	-0.06	-0.07	0.00	-0.05	-0.06	0.01	-0.07	-0.09	0.00
SP	-1.23	-1.01	0.67	-1.19	-0.73	0.72	-1.94	-1.37	0.62	-2.11	-1.65	0.64	-2.03	-1.37	0.58
EA18	5.29	1.05	3.13	6.93	2.72	3.55	2.69	-0.51	0.57	0.92	-1.41	-0.55	-0.85	-1.75	-0.68

| | 2005 | | | 2006 | | | 2007 | | | 2008 | | | 2009 | | |
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
AT	0.41	0.33	0.07	0.56	0.40	0.16	0.67	0.46	0.23	0.82	0.56	0.30	0.53	0.38	0.24
BE	0.13	0.11	-0.18	0.15	0.10	-0.16	0.29	0.21	-0.02	0.33	0.27	-0.01	0.04	0.05	-0.24
CY	0.00	0.00	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.02	0.03	-0.02	-0.00	0.02
EE	0.02	0.01	0.01	0.03	0.02	0.02	0.05	0.03	0.03	0.03	0.02	0.03	-0.07	-0.04	-0.03
FI	-0.09	0.07	-0.19	0.01	0.14	-0.12	0.10	0.21	-0.10	0.14	0.30	-0.12	-0.22	0.09	-0.35
FR	-1.90	-0.53	-1.01	-1.84	-0.32	-0.95	-1.16	0.18	-0.12	-0.94	0.47	-0.31	-3.35	-1.21	-1.80
GE	-0.14	-0.59	-5.11	2.78	1.37	-2.86	5.51	3.44	-0.73	6.59	4.04	0.25	4.22	2.61	-2.06
GR	-0.03	-0.10	0.23	0.13	-0.05	0.27	0.12	0.03	0.28	0.17	0.09	0.32	-0.26	-0.17	0.14
IE	0.20	0.16	0.09	0.19	0.10	0.11	0.16	0.08	0.11	-0.11	-0.08	0.01	-0.90	-0.59	-0.40
IT	0.56	0.31	2.79	1.28	0.73	2.90	1.72	1.09	3.01	1.07	0.69	3.08	-0.14	-0.38	2.77
LU	0.03	0.02	0.01	0.03	0.01	0.02	0.04	0.02	0.03	0.03	0.02	0.02	0.02	0.00	0.02
LV	-0.02	-0.01	0.00	-0.01	-0.00	0.01	-0.01	-0.00	0.01	-0.05	-0.02	0.01	-0.20	-0.14	-0.05
MT	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
NL	1.85	1.03	0.90	2.40	1.40	1.25	2.78	1.68	1.46	3.03	1.89	1.61	2.49	1.55	1.31
PT	0.01	-0.04	0.07	0.04	-0.01	0.08	-0.04	-0.05	0.05	0.00	0.01	0.11	-0.30	-0.22	-0.15
SI	0.02	0.00	0.02	0.03	0.01	0.03	0.05	0.03	0.05	0.06	0.04	0.05	-0.00	-0.00	0.02
SK	-0.02	-0.03	0.03	0.03	0.00	0.05	0.06	0.02	0.07	0.07	0.03	0.08	-0.07	-0.07	0.05
SP	-1.73	-0.13	-0.91	-1.48	0.24	0.64	-1.50	0.33	0.68	-4.91	-1.37	-0.66	-11.17	-6.63	-4.68
EA18	-0.69	0.62	-3.13	4.35	4.16	1.48	8.88	7.77	5.07	6.37	6.99	4.82	-9.40	-4.76	-5.17

	2010			2011			2012			2013		
	A	B	C	A	B	C	A	B	C	A	B	C
AT	0.71	0.48	0.32	0.81	0.56	0.36	0.79	0.55	0.39	0.63	0.42	0.43
BE	0.10	0.04	-0.15	0.34	0.18	0.00	0.14	0.07	-0.10	-0.02	-0.08	-0.23
CY	-0.02	-0.01	0.02	-0.06	-0.04	0.01	-0.11	-0.08	0.00	-0.15	-0.11	-0.01
EE	-0.06	-0.05	-0.03	-0.00	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.01
FI	-0.13	0.13	-0.34	-0.06	0.21	-0.24	-0.06	0.21	-0.31	-0.17	0.15	-0.36
FR	-2.88	-0.97	-1.92	-2.61	-0.71	-1.19	-3.69	-1.23	-2.27	-4.49	-3.06	-2.45
GE	6.23	3.72	-0.36	9.04	5.82	1.02	9.65	6.25	0.95	10.19	6.40	1.25
GR	-0.64	-0.44	-0.04	-1.18	-0.83	-0.26	-1.44	-1.07	-0.35	-1.15	-0.93	-0.15
IE	-0.63	-0.50	-0.27	-0.43	-0.33	-0.13	-0.36	-0.27	-0.11	-0.26	-0.20	-0.05
IT	-0.20	-0.51	2.76	0.30	-0.32	2.91	-1.66	-1.62	2.61	-2.25	-2.05	2.32
LU	0.04	0.02	0.02	0.03	0.02	0.03	0.03	0.02	0.03	0.02	0.01	0.02
LV	-0.14	-0.12	-0.04	-0.08	-0.06	-0.00	-0.08	-0.05	0.00	-0.05	-0.04	0.00
MT	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NL	2.14	1.32	1.14	2.46	1.55	1.39	2.00	1.31	1.19	1.30	0.74	0.95
PT	-0.28	-0.24	-0.11	-0.48	-0.31	-0.09	-0.78	-0.56	-0.25	-0.61	-0.47	-0.21
SI	-0.01	-0.02	0.02	-0.03	-0.03	0.01	-0.03	-0.03	0.03	-0.05	-0.05	0.03
SK	-0.06	-0.09	0.05	-0.01	-0.05	0.07	-0.02	-0.06	0.06	-0.01	-0.04	0.07
SP	-10.19	-6.26	-4.63	-10.36	-6.25	-3.92	-12.15	-7.67	-4.98	-11.40	-7.28	-4.10
EA18	-6.02	-3.51	-3.54	-2.29	-0.58	-0.00	-7.75	-4.22	-3.07	-8.44	-6.57	-2.46

Notes: Net contributions (SIC - BEN) in billion euro. A: Baseline, all new unemployed with previous employment income covered. B: Waiting period, no benefits paid in the first 2 months of the unemployment spell. C: National coverage, only the share of short-term unemployed covered by national unemployment insurance systems receives benefits.
Sources: EUROSTAT and own calculations based on EUROMOD.

Table 5: Net contributions (per cent of GDP) - Different generosity levels

| | 2000 | | | 2001 | | | 2002 | | | 2003 | | | 2004 | | |
	D	E	F	D	E	F	D	E	F	D	E	F	D	E	F
AT	0.29	0.23	0.20	0.28	0.23	0.20	0.21	0.16	0.15	0.22	0.17	0.15	0.20	0.15	0.14
BE	0.11	0.12	0.08	0.10	0.11	0.07	0.05	0.06	0.04	-0.02	0.01	-0.01	-0.01	0.02	-0.01
CY	0.09	0.06	0.06	0.12	0.11	0.08	0.16	0.14	0.11	0.14	0.12	0.10	0.11	0.09	0.08
EE	-0.11	-0.13	-0.08	-0.11	-0.10	-0.07	0.04	0.02	0.02	-0.02	-0.03	-0.01	0.07	0.05	0.05
FI	-0.22	-0.14	-0.15	-0.17	-0.10	-0.12	-0.19	-0.11	-0.13	-0.18	-0.11	-0.13	-0.17	-0.10	-0.12
FR	-0.12	-0.09	-0.09	-0.10	-0.07	-0.07	-0.13	-0.10	-0.09	-0.11	-0.08	-0.08	-0.12	-0.09	-0.08
GE	0.19	0.17	0.13	0.19	0.16	0.13	0.13	0.09	0.09	0.08	0.05	0.06	0.04	0.03	0.03
GR	0.01	-0.03	0.01	-0.00	-0.04	-0.00	0.01	-0.03	0.01	0.07	0.03	0.05	0.04	-0.01	0.03
IE	0.14	0.10	0.10	0.14	0.11	0.10	0.11	0.06	0.08	0.11	0.08	0.08	0.12	0.08	0.08
IT	0.01	0.02	0.01	0.06	0.06	0.04	0.05	0.05	0.04	0.05	0.05	0.03	0.00	0.01	0.00
LU	0.20	0.16	0.14	0.23	0.19	0.16	0.20	0.16	0.14	0.14	0.10	0.09	0.06	0.03	0.04
LV	-0.17	-0.18	-0.12	-0.12	-0.13	-0.08	-0.23	-0.23	-0.16	-0.16	-0.17	-0.12	-0.18	-0.18	-0.12
MT	0.17	0.16	0.12	0.05	0.06	0.04	0.01	0.03	0.01	-0.04	-0.01	-0.03	0.11	0.11	0.08
NL	0.40	0.34	0.28	0.45	0.38	0.31	0.42	0.34	0.29	0.35	0.28	0.25	0.29	0.23	0.21
PT	0.24	0.16	0.16	0.22	0.14	0.15	0.17	0.07	0.12	0.09	-0.01	0.06	0.11	0.02	0.08
SI	0.14	0.12	0.10	0.16	0.14	0.12	0.11	0.09	0.08	0.11	0.09	0.07	0.10	0.08	0.07
SK	-0.35	-0.28	-0.25	-0.34	-0.25	-0.24	-0.22	-0.15	-0.15	-0.17	-0.12	-0.12	-0.21	-0.15	-0.15
SP	-0.18	-0.14	-0.13	-0.17	-0.12	-0.12	-0.23	-0.19	-0.16	-0.25	-0.19	-0.17	-0.22	-0.17	-0.16
EA18	0.05	0.05	0.04	0.07	0.07	0.05	0.03	0.03	0.02	0.01	0.01	0.01	-0.01	-0.01	-0.01

| | 2005 | | | 2006 | | | 2007 | | | 2008 | | | 2009 | | |
	D	E	F	D	E	F	D	E	F	D	E	F	D	E	F
AT	0.16	0.12	0.11	0.19	0.15	0.13	0.21	0.17	0.15	0.25	0.20	0.18	0.19	0.13	0.13
BE	-0.00	0.03	-0.00	0.00	0.03	0.00	0.04	0.06	0.03	0.05	0.07	0.03	-0.01	0.01	-0.01
CY	0.02	0.01	0.01	0.04	0.05	0.03	0.11	0.10	0.08	0.10	0.10	0.07	-0.06	-0.07	-0.04
EE	0.14	0.11	0.10	0.19	0.15	0.13	0.25	0.21	0.18	0.17	0.12	0.12	-0.26	-0.34	-0.18
FI	-0.09	-0.04	-0.07	-0.04	0.00	-0.03	0.01	0.04	0.01	0.02	0.05	0.02	-0.13	-0.09	-0.09
FR	-0.11	-0.08	-0.07	-0.10	-0.07	-0.07	-0.06	-0.04	-0.04	-0.05	-0.03	-0.04	-0.14	-0.12	-0.10
GE	0.00	-0.00	0.00	0.08	0.08	0.06	0.18	0.16	0.12	0.21	0.19	0.15	0.15	0.12	0.11
GR	0.03	-0.01	0.02	0.08	0.04	0.06	0.08	0.04	0.06	0.09	0.05	0.06	-0.01	-0.08	-0.01
IE	0.12	0.08	0.08	0.11	0.07	0.08	0.10	0.06	0.07	0.02	-0.04	0.01	-0.28	-0.39	-0.20
IT	0.02	0.03	0.01	0.06	0.06	0.04	0.08	0.08	0.06	0.06	0.05	0.04	-0.00	-0.01	-0.00
LU	0.08	0.06	0.06	0.08	0.06	0.06	0.09	0.07	0.07	0.09	0.06	0.06	0.05	0.03	0.04
LV	-0.10	-0.11	-0.07	-0.02	-0.04	-0.01	-0.01	-0.04	-0.01	-0.09	-0.14	-0.06	-0.60	-0.74	-0.42
MT	0.10	0.11	0.07	0.06	0.08	0.04	0.09	0.10	0.07	0.13	0.13	0.09	0.10	0.09	0.07
NL	0.30	0.25	0.21	0.36	0.31	0.25	0.40	0.34	0.28	0.42	0.36	0.29	0.37	0.30	0.26
PT	0.10	0.00	0.07	0.09	0.02	0.07	0.06	-0.02	0.04	0.08	0.00	0.06	-0.01	-0.12	-0.01
SI	0.05	0.05	0.04	0.09	0.08	0.06	0.12	0.11	0.09	0.14	0.12	0.10	0.01	-0.01	0.01
SK	-0.07	-0.03	-0.05	0.04	0.05	0.03	0.07	0.07	0.05	0.07	0.07	0.05	-0.09	-0.08	-0.07
SP	-0.18	-0.13	-0.12	-0.14	-0.10	-0.10	-0.14	-0.10	-0.10	-0.35	-0.32	-0.25	-0.81	-0.75	-0.57
EA18	-0.01	-0.01	-0.01	0.03	0.04	0.02	0.07	0.07	0.05	0.06	0.05	0.04	-0.07	-0.07	-0.05

	2010			2011			2012			2013		
	D	E	F	D	E	F	D	E	F	D	E	F
AT	0.22	0.17	0.15	0.23	0.19	0.16	0.23	0.18	0.16	0.19	0.14	0.13
BE	-0.01	0.02	-0.01	0.04	0.06	0.03	0.00	0.03	0.00	-0.03	-0.00	-0.02
CY	-0.10	-0.09	-0.07	-0.25	-0.22	-0.17	-0.47	-0.45	-0.33	-0.68	-0.62	-0.48
EE	-0.29	-0.31	-0.20	0.01	-0.00	0.00	0.07	0.05	0.05	0.07	0.05	0.05
FI	-0.11	-0.05	-0.08	-0.08	-0.02	-0.05	-0.08	-0.02	-0.05	-0.12	-0.06	-0.08
FR	-0.14	-0.10	-0.09	-0.12	-0.09	-0.09	-0.16	-0.13	-0.11	-0.19	-0.15	-0.13
GE	0.20	0.17	0.14	0.28	0.24	0.20	0.30	0.25	0.21	0.31	0.26	0.22
GR	-0.12	-0.20	-0.08	-0.29	-0.40	-0.21	-0.40	-0.52	-0.28	-0.39	-0.44	-0.27
IE	-0.25	-0.28	-0.18	-0.17	-0.18	-0.12	-0.15	-0.15	-0.11	-0.10	-0.11	-0.07
IT	-0.01	-0.01	-0.01	0.00	0.01	0.00	-0.06	-0.07	-0.04	-0.11	-0.10	-0.08
LU	0.09	0.07	0.06	0.08	0.06	0.05	0.07	0.05	0.05	0.05	0.02	0.03
LV	-0.54	-0.55	-0.38	-0.27	-0.27	-0.19	-0.24	-0.25	-0.17	-0.15	-0.16	-0.11
MT	0.10	0.10	0.07	0.12	0.12	0.09	0.14	0.13	0.10	0.11	0.11	0.08
NL	0.32	0.26	0.22	0.34	0.29	0.23	0.29	0.23	0.20	0.20	0.15	0.14
PT	-0.01	-0.11	-0.01	-0.10	-0.20	-0.07	-0.20	-0.33	-0.14	-0.17	-0.26	-0.12
SI	0.00	-0.01	0.00	-0.06	-0.06	-0.04	-0.07	-0.07	-0.05	-0.10	-0.10	-0.07
SK	-0.08	-0.06	-0.05	-0.04	-0.01	-0.03	-0.05	-0.02	-0.04	-0.03	-0.01	-0.02
SP	-0.82	-0.68	-0.57	-0.84	-0.69	-0.59	-0.97	-0.83	-0.68	-0.95	-0.78	-0.66
EA18	-0.05	-0.05	-0.04	-0.02	-0.02	-0.02	-0.06	-0.06	-0.04	-0.07	-0.06	-0.05

Notes: Net contributions (SIC - BEN) in per cent of GDP. D, E, F: Baseline coverage of EMU-UI (no waiting period, all new unemployed covered) D: Maximum benefit 50 per cent of median income. E: 50 per cent replacement rate applied to 70 per cent of gross income, i.e., net replacement rate of 35 per cent. F: D + E combined. Source: Own calculations based on EUROMOD.

Table 6: Net contributions (in billion euro) - Different generosity levels

| | 2000 | | | 2001 | | | 2002 | | | 2003 | | | 2004 | | |
	D	E	F	D	E	F	D	E	F	D	E	F	D	E	F
AT	0.60	0.49	0.42	0.60	0.49	0.42	0.46	0.34	0.32	0.49	0.39	0.34	0.46	0.35	0.32
BE	0.29	0.30	0.20	0.26	0.28	0.18	0.15	0.16	0.10	-0.05	0.02	-0.03	-0.03	0.06	-0.02
CY	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01
EE	-0.01	-0.01	-0.00	-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.00	-0.00	-0.00	0.01	0.00	0.00
FI	-0.29	-0.18	-0.20	-0.24	-0.14	-0.17	-0.27	-0.16	-0.19	-0.27	-0.16	-0.19	-0.26	-0.15	-0.18
FR	-1.79	-1.34	-1.25	-1.47	-1.07	-1.03	-2.02	-1.52	-1.41	-1.75	-1.34	-1.22	-1.92	-1.48	-1.34
GE	3.87	3.41	2.71	3.91	3.40	2.74	2.74	1.99	1.92	1.72	1.05	1.20	0.83	0.60	0.58
GR	0.01	-0.04	0.01	-0.01	-0.06	-0.00	0.02	-0.04	0.01	0.12	0.05	0.08	0.07	-0.03	0.05
IE	0.15	0.11	0.10	0.17	0.13	0.12	0.14	0.08	0.10	0.16	0.11	0.11	0.17	0.12	0.12
IT	0.10	0.21	0.07	0.77	0.76	0.54	0.65	0.67	0.46	0.66	0.68	0.46	0.05	0.19	0.03
LU	0.04	0.04	0.03	0.05	0.04	0.04	0.05	0.04	0.03	0.03	0.02	0.02	0.02	0.01	0.01
LV	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.02	-0.02	-0.01
MT	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	-0.00	-0.00	0.01	0.01	0.00
NL	1.66	1.41	1.16	2.00	1.69	1.40	1.95	1.60	1.36	1.68	1.34	1.18	1.44	1.15	1.01
PT	0.30	0.20	0.21	0.30	0.19	0.21	0.23	0.10	0.16	0.12	-0.02	0.09	0.16	0.03	0.11
SI	0.03	0.03	0.02	0.04	0.03	0.03	0.03	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.02
SK	-0.08	-0.06	-0.05	-0.08	-0.06	-0.06	-0.06	-0.04	-0.04	-0.05	-0.03	-0.04	-0.07	-0.05	-0.05
SP	-1.16	-0.86	-0.81	-1.14	-0.83	-0.79	-1.66	-1.36	-1.16	-1.94	-1.48	-1.36	-1.88	-1.42	-1.32
EA18	3.72	3.70	2.61	5.16	4.85	3.61	2.40	1.88	1.68	0.96	0.64	0.67	-0.92	-0.59	-0.64

| | 2005 | | | 2006 | | | 2007 | | | 2008 | | | 2009 | | |
	D	E	F	D	E	F	D	E	F	D	E	F	D	E	F
AT	0.39	0.29	0.27	0.49	0.39	0.35	0.59	0.47	0.41	0.71	0.57	0.50	0.52	0.37	0.37
BE	-0.00	0.09	-0.00	0.01	0.11	0.01	0.13	0.21	0.09	0.17	0.23	0.12	-0.04	0.03	-0.03
CY	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.02	0.01	0.02	0.02	0.01	-0.01	-0.01	-0.01
EE	0.02	0.01	0.01	0.02	0.02	0.02	0.04	0.03	0.03	0.03	0.02	0.02	-0.04	-0.05	-0.03
FI	-0.15	-0.06	-0.10	-0.07	0.00	-0.05	0.01	0.07	0.01	0.04	0.10	0.03	-0.22	-0.16	-0.15
FR	-1.81	-1.33	-1.27	-1.76	-1.29	-1.23	-1.19	-0.81	-0.83	-1.02	-0.66	-0.72	-2.61	-2.35	-1.82
GE	0.00	-0.10	0.00	1.92	1.95	1.34	4.30	3.86	3.01	5.29	4.61	3.70	3.57	2.95	2.50
GR	0.05	-0.02	0.04	0.18	0.09	0.12	0.18	0.09	0.12	0.22	0.12	0.15	-0.03	-0.18	-0.02
IE	0.20	0.14	0.14	0.20	0.13	0.14	0.19	0.11	0.13	0.03	-0.08	0.02	-0.46	-0.63	-0.32
IT	0.30	0.40	0.21	0.91	0.90	0.64	1.29	1.20	0.90	0.88	0.75	0.62	-0.03	-0.10	-0.02
LU	0.02	0.02	0.02	0.03	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.01	0.01
LV	-0.01	-0.01	-0.01	-0.00	-0.01	-0.00	-0.00	-0.01	-0.00	-0.02	-0.03	-0.01	-0.11	-0.14	-0.08
MT	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00
NL	1.53	1.30	1.07	1.96	1.68	1.37	2.29	1.95	1.60	2.50	2.12	1.75	2.12	1.75	1.49
PT	0.15	0.00	0.11	0.15	0.03	0.11	0.11	-0.03	0.08	0.14	0.00	0.10	-0.02	-0.21	-0.01
SI	0.02	0.01	0.01	0.03	0.02	0.02	0.04	0.04	0.03	0.05	0.04	0.04	0.01	-0.00	0.00
SK	-0.03	-0.01	-0.02	0.02	0.02	0.01	0.04	0.04	0.03	0.05	0.05	0.03	-0.06	-0.05	-0.04
SP	-1.61	-1.21	-1.13	-1.41	-1.03	-0.99	-1.45	-1.05	-1.01	-3.81	-3.44	-2.67	-8.47	-7.82	-5.93
EA18	-0.94	-0.48	-0.65	2.69	3.05	1.88	6.62	6.22	4.63	5.29	4.46	3.70	-5.84	-6.58	-4.09

	2010			2011			2012			2013		
	D	E	F	D	E	F	D	E	F	D	E	F
AT	0.62	0.50	0.43	0.70	0.56	0.49	0.69	0.55	0.48	0.59	0.44	0.42
BE	-0.03	0.07	-0.02	0.16	0.24	0.11	0.00	0.10	0.00	-0.12	-0.01	-0.08
CY	-0.02	-0.02	-0.01	-0.04	-0.04	-0.03	-0.08	-0.08	-0.06	-0.11	-0.10	-0.08
EE	-0.04	-0.04	-0.03	0.00	-0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
FI	-0.20	-0.09	-0.14	-0.15	-0.04	-0.10	-0.14	-0.04	-0.10	-0.22	-0.12	-0.16
FR	-2.62	-2.02	-1.83	-2.45	-1.82	-1.71	-3.19	-2.59	-2.23	-3.90	-3.14	-2.73
GE	5.08	4.36	3.55	7.40	6.33	5.18	8.02	6.76	5.62	8.47	7.13	5.93
GR	-0.27	-0.45	-0.19	-0.61	-0.83	-0.43	-0.77	-1.01	-0.54	-0.71	-0.81	-0.49
IE	-0.40	-0.44	-0.28	-0.28	-0.30	-0.19	-0.25	-0.25	-0.18	-0.17	-0.18	-0.12
IT	-0.22	-0.14	-0.16	0.03	0.21	0.02	-0.98	-1.16	-0.68	-1.73	-1.58	-1.21
LU	0.03	0.03	0.02	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.01	0.01
LV	-0.10	-0.10	-0.07	-0.05	-0.05	-0.04	-0.05	-0.05	-0.04	-0.04	-0.04	-0.03
MT	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NL	1.85	1.50	1.30	2.01	1.72	1.41	1.75	1.40	1.22	1.24	0.91	0.86
PT	-0.02	-0.20	-0.02	-0.17	-0.33	-0.12	-0.33	-0.54	-0.23	-0.27	-0.43	-0.19
SI	0.00	-0.01	0.00	-0.02	-0.02	-0.01	-0.03	-0.02	-0.02	-0.04	-0.03	-0.03
SK	-0.05	-0.04	-0.04	-0.03	-0.01	-0.02	-0.04	-0.02	-0.03	-0.02	-0.00	-0.01
SP	-8.54	-7.13	-5.98	-8.78	-7.25	-6.14	-9.97	-8.50	-6.98	-9.71	-7.98	-6.80
EA18	-4.91	-4.21	-3.44	-2.24	-1.60	-1.57	-5.31	-5.42	-3.72	-6.69	-5.91	-4.68

Notes: Net contributions (SIC - BEN) in billion euro. D, E, F: Baseline coverage of EMU-UI (no waiting period, all new unemployed covered) D: Maximum benefit 50 per cent of median income. E: 50 per cent replacement rate applied to 70 per cent of gross income, i.e., net replacement rate of 35 per cent. F: D + E combined. Source: Own calculations based on EUROMOD.

Table 7: Income stabilization - Different coverage scenarios

	2001			2002			2003			2004			2005		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
AT	0	0	0	45	30	42	2	1	1	15	3	1	15	3	1
BE	0	0	0	28	16	18	36	25	23	2	1	9	2	1	9
CY	0	0	0	0	0	0	36	17	15	30	25	13	30	25	13
EE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FR	0	0	0	196	90	192	2	1	1	34	36	1	34	36	1
GE	0	0	0	24	17	22	13	11	10	12	3	3	12	3	3
GR	0	0	0	0	0	0	0	0	0	32	27	10	32	27	10
IE	0	0	0	47	36	21	20	23	17	0	0	0	0	0	0
IT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LU	0	0	0	30	21	12	30	20	20	36	21	7	36	21	7
LV	0	0	0	0	0	0	0	0	0	325	154	22	325	154	22
MT	53	24	24	0	0	0	55	1	28	0	0	0	0	0	0
NL	0	0	0	24	14	11	20	11	9	17	17	8	17	17	8
PT	132	86	1	31	22	15	31	23	13	2	1	16	2	1	16
SI	0	0	0	258	218	164	17	29	30	0	0	0	0	0	0
SK	3	35	1	0	0	0	0	0	0	65	59	21	65	59	21
SP	0	0	0	41	33	9	0	0	0	0	0	0	0	0	0
EA18	4	3	0	55	30	47	7	6	5	15	12	3	15	12	3

	2006			2007			2008			2009			2010		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
AT	0	0	0	0	0	0	0	0	0	28	18	7	0	0	0
BE	0	0	0	0	0	0	0	0	0	30	22	22	2	7	1
CY	0	0	0	0	0	0	0	0	0	39	20	5	15	18	6
EE	0	0	0	0	0	0	52	26	4	21	14	11	2	5	2
FI	0	0	0	0	0	0	0	0	0	25	14	16	2	1	2
FR	0	0	0	0	0	0	0	0	0	29	20	18	2	1	25
GE	0	0	0	0	0	0	0	0	0	61	37	60	0	0	0
GR	0	0	0	0	0	0	0	0	0	31	19	13	14	10	7
IE	144	205	23	95	57	34	34	20	13	26	16	13	2	1	1
IT	0	0	0	0	0	0	34	21	3	25	21	7	10	9	4
LU	0	0	0	0	0	0	26	4	21	119	134	16	0	0	0
LV	0	0	0	0	0	0	46	29	4	25	20	9	2	1	1
MT	0	0	0	0	0	0	0	0	0	20	21	13	0	0	0
NL	0	0	0	0	0	0	0	0	0	36	22	20	17	12	8
PT	0	0	0	65	36	22	0	0	0	25	18	21	2	5	1
SI	0	0	0	0	0	0	0	0	0	41	27	20	7	14	1
SK	0	0	0	0	0	0	0	0	0	38	27	9	2	6	2
SP	0	0	0	0	0	0	32	16	13	23	19	14	2	1	1
EA18	2	3	0	3	2	1	12	7	3	36	24	25	4	3	6

	2011			2012			2013		
	A	B	C	A	B	C	A	B	C
AT	0	0	0	69	38	5	28	21	1
BE	0	0	0	51	29	27	20	16	14
CY	34	26	7	20	14	5	10	9	2
EE	0	0	0	0	0	0	0	0	0
FI	0	0	0	0	0	0	27	15	14
FR	0	0	0	37	18	33	31	63	9
GE	0	0	0	0	0	0	0	0	0
GR	12	9	5	4	4	1	2	1	1
IE	2	1	1	0	0	0	0	0	0
IT	0	0	0	18	12	3	9	6	4
LU	56	48	1	35	6	26	33	27	9
LV	0	0	0	0	0	0	0	0	0
MT	0	0	0	0	0	0	101	35	53
NL	0	0	0	20	11	9	18	14	7
PT	33	11	1	15	13	8	2	1	1
SI	23	6	10	4	1	1	10	14	1
SK	0	0	0	39	24	10	2	1	1
SP	3	1	1	12	10	7	2	1	1
EA18	2	1	0	18	10	10	11	16	4

Notes: Income stabilization coefficients. A: Baseline, all new unemployed with previous employment income covered. B: Waiting period, no benefits paid in the first 2 months of the unemployment spell. C: National coverage, only the share of short-term unemployed covered by national unemployment insurance systems receives benefits. Source: Own calculations based on EUROMOD.

Table 8: Income stabilization - Different generosity levels

	2001			2002			2003			2004			2005		
	D	E	F	D	E	F	D	E	F	D	E	F	D	E	F
AT	0	0	0	44	31	22	1	1	1	3	11	6	3	11	6
BE	0	0	0	23	19	14	29	25	24	3	1	8	3	1	8
CY	0	0	0	0	0	0	26	25	17	21	21	19	21	21	19
EE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FR	0	0	0	194	137	116	1	1	1	15	24	20	15	24	20
GE	0	0	0	23	17	10	12	9	7	7	8	10	7	8	10
GR	0	0	0	0	0	0	0	0	0	21	22	14	21	22	14
IE	0	0	0	34	33	21	19	14	32	0	0	0	0	0	0
IT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LU	0	0	0	21	21	13	25	21	16	21	25	20	21	25	20
LV	0	0	0	0	0	0	0	0	0	173	227	170	173	227	170
MT	38	37	30	0	0	0	42	39	31	0	0	0	0	0	0
NL	0	0	0	18	17	11	15	14	10	12	12	11	12	12	11
PT	31	92	57	23	22	12	22	22	14	1	1	1	1	1	1
SI	0	0	0	211	181	149	23	12	7	0	0	0	0	0	0
SK	1	2	12	0	0	0	0	0	0	43	46	38	43	46	38
SP	0	0	0	25	29	21	0	0	0	0	0	0	0	0	0
EA18	1	3	2	51	38	30	6	5	4	8	11	10	8	11	10

	2006			2007			2008			2009			2010		
	D	E	F	D	E	F	D	E	F	D	E	F	D	E	F
AT	0	0	0	0	0	0	0	0	0	18	20	13	0	0	0
BE	0	0	0	0	0	0	0	0	0	26	21	15	1	1	5
CY	0	0	0	0	0	0	0	0	0	22	27	19	10	11	13
EE	0	0	0	0	0	0	28	36	27	16	14	9	1	1	3
FI	0	0	0	0	0	0	0	0	0	20	17	13	1	1	3
FR	0	0	0	0	0	0	0	0	0	24	21	14	7	1	18
GE	0	0	0	0	0	0	0	0	0	61	43	31	0	0	0
GR	0	0	0	0	0	0	0	0	0	22	22	13	10	10	6
IE	83	101	72	65	66	48	24	24	15	19	18	11	1	1	1
IT	0	0	0	0	0	0	19	24	16	16	17	13	7	7	9
LU	0	0	0	0	0	0	24	18	11	67	83	76	0	0	0
LV	0	0	0	0	0	0	25	32	20	17	18	10	1	1	1
MT	0	0	0	0	0	0	0	0	0	16	14	9	0	0	0
NL	0	0	0	0	0	0	0	0	0	28	25	18	13	12	10
PT	0	0	0	44	46	28	0	0	0	23	17	9	1	1	2
SI	0	0	0	0	0	0	0	0	0	31	29	20	4	5	4
SK	0	0	0	0	0	0	0	0	0	24	27	21	2	1	1
SP	0	0	0	0	0	0	23	23	16	19	16	12	1	1	1
EA18	1	1	1	2	2	2	7	8	6	31	25	18	4	3	6

	2011			2012			2013		
	D	E	F	D	E	F	D	E	F
AT	0	0	0	37	49	37	14	20	13
BE	0	0	0	39	36	28	17	14	11
CY	21	24	19	12	14	9	6	7	6
EE	0	0	0	0	0	0	0	0	0
FI	0	0	0	0	0	0	20	19	14
FR	0	0	0	35	26	18	20	22	19
GE	0	0	0	0	0	0	0	0	0
GR	8	8	5	3	3	2	1	1	1
IE	1	1	1	0	0	0	0	0	0
IT	0	0	0	11	13	7	7	6	7
LU	23	39	28	30	24	18	21	23	17
LV	0	0	0	0	0	0	0	0	0
MT	0	0	0	0	0	0	77	71	60
NL	0	0	0	14	14	9	12	12	9
PT	14	23	17	12	11	6	1	1	1
SI	16	16	16	1	3	4	5	7	4
SK	0	0	0	25	27	21	1	1	1
SP	1	2	3	10	9	6	1	1	1
EA18	1	2	1	14	13	9	7	8	7

Notes: Income stabilization coefficients. D, E, F: Baseline coverage of EMU-UI (no waiting period, all new unemployed covered) D: Maximum benefit 50 per cent of median income. E: 50 per cent replacement rate applied to 70 per cent of gross income, i.e., net replacement rate of 35 per cent. F: D + E combined. Source: Own calculations based on EUROMOD.

Table 9: Trigger for contingent benefits

	2000			2001			2002			2003			2004			2005			2006		
	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii
AT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
BE	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0
CY	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0
EE	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GE	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	1	1	0	0	0
GR	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LU	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	1	0	0	0
LV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MT	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NL	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	1	1	0	0	0
PT	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1
SI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SK	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
SP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	2007			2008			2009			2010			2011			2012			2013		
	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii	i	ii	iii
AT	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
BE	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
CY	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
EE	0	0	0	0	0	0	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0
FI	0	0	0	0	0	0	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0
FR	0	0	0	0	0	0	1	1	1	0	1	1	0	0	1	0	0	0	0	1	1
GE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GR	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IE	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	0	0	0
IT	0	0	0	0	0	0	1	1	1	0	1	1	0	0	1	1	1	1	1	1	1
LU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
LV	0	0	0	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0
MT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NL	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	1	1	1	1
PT	0	0	1	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1
SI	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1
SK	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	0	0	1	0	0	0
SP	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Notes: Years in which contingent benefits are activated. Contingent scheme i): Benefits are paid if unemployment rate in a given member state in year t is at least 1 percentage point higher than in t-1 (one-year look-back period). Contingent scheme ii): 2-year look-back period, i.e., benefits are triggered if unemployment rate in year t is at least 1 percentage point higher than in t-1 OR t-2. Contingent scheme iii): 3-year look-back period, i.e., benefits are triggered if unemployment rate in year t is at least 1 percentage point higher than in t-1 OR t-2 OR t-3. Source: AMECO.