European Unemployment Insurance: Economic Stability without Major Redistribution of Household Incomes

By Ferdinand Fichtner and Peter Haan

Depending on how it is structured, the introduction of a European unemployment insurance within the euro area could make a significant contribution to stabilizing economic developments. This even applies to a relatively small-scale system (based on the volume of transfers) with a maximum eligibility period of six months and transfers of 30 percent of last net salary. Higher payments would amplify the stabilizing effect but, conversely, also increase the potentially undesirable impact on incentives to work and degree of redistribution among member states. The distributive effects on households would be marginal; effects on income distribution in the Monetary Union would generally be slightly progressive to neutral. Low-income households therefore stand to gain relatively more from the introduction of a European unemployment insurance.

The notion that close fiscal policy cooperation and fiscal transfers between member states could make a positive contribution to the stability of economic developments in a currency union[1] has been the subject of academic discussion for a long time now.[2] Since a common monetary policy does not have the option of adjusting interest rates to accommodate asymmetric economic developments in member states, macroeconomic fluctuations in a currency union may be more pronounced than in a system of independent economies with flexible exchange rates.[3] Fiscal transfers between member states could counteract this effect by providing countries experiencing an economic downturn with additional resources financed by those countries in an economic upswing.[4] This deprives the booming economies of purchasing power, thus attenuating the risk of overheating, while giving weaker economies more leeway to pursue a less restrictive fiscal policy.

In the context of institutional restructuring of the European Monetary Union, proposals combining deeper fiscal policy integration with improved fiscal risk sharing between the member states are being voiced. For example, the report presented to the European Council

1 The present report is the summary of a study conducted by DIW Berlin on behalf of the Austrian Federal Ministry of Labour, Social Affairs and Consumer Protection. See S. Dullien, F. Fichtner, P. Haan, L. Jaeger, M. Jansen, R. Ochmann, and E. Tomasch, "Eine Arbeitslosenversicherung für den Euroraum als automatischer Stabilisator – Grenzen und Möglichkeiten," DIW Politikberatung Kompakt, no. 86 (2014), www.diw.de/documents/publikationen/73/diw_01.c.480292.de/diwkompakt_2014-086.pdf.

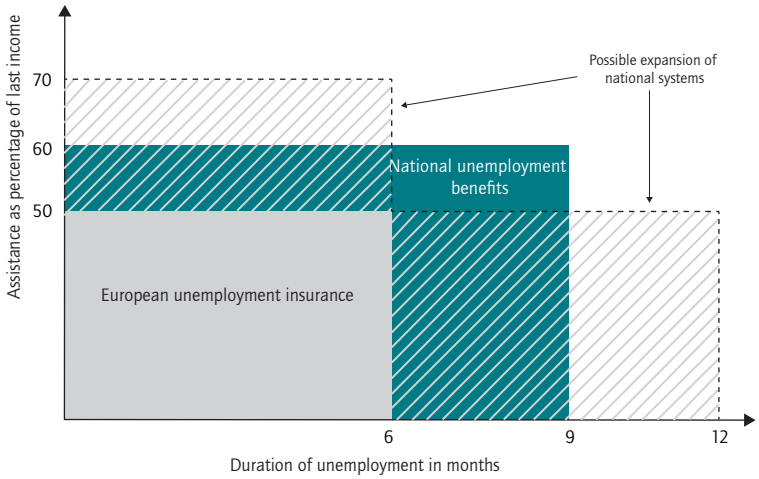
2 The present report is part of a DIW Economic Bulletin series addressing various elements of a strategy for institutional reform of the euro area. See. F. Fichtner, M. Fratzscher, M. Podstawski, and D. Ulbricht, "Making the Euro Area Fit for the Future," DIW Economic Bulletin, no. 9 (2014).

3 For a pioneering work on the theory of optimum currency areas, see R. Mundell, "A Theory of Optimum Currency Areas," American Economic Review 51 (4) (1961): 657–665. For an overview of the criteria for fiscal integration, see F. Fichtner, Optimum Currency Area Theory Revisited – New Insights from Stochastic Dynamics (Aachen: 2008).

4 P. Kenen, "The Optimum Currency Area: An Eclectic View," in R. Mundell and A. Swoboda, eds., Monetary Problems of the International Economy (Chicago and London: 1969), 41–60.

Figure 1

Diagram of a European Unemployment Insurance



Source: graph by DIW Berlin.

A European unemployment insurance scheme could replace national systems to a certain extent but could also complement them in different ways.

in December 2012, "Towards a Genuine Economic and Monetary Union" (Van Rompuy Report) sets out the objective of a more integrated budgetary framework across the euro area countries and, alongside the necessity of fiscal governance, also refers to increasing opportunities for "fiscal solidarity" in Europe.

One proposed cyclical stabilization mechanism for the Monetary Union which is gaining ground in public discussion is the introduction of a European unemployment insurance system.[5] This would create an automatic link between transfer payments and a country's economic situation and is therefore more robust against political manipulation. One controversial subject of discussion has been the impact of introducing a European unemployment insurance scheme on member states' incentive to implement labor market reforms and whether it is possible to prevent permanent transfer flows from some countries to others, i.e., transfers that are not offset by the economic cycle.[6]

The present report outlines the macroeconomic stabilization effects of introducing a common pan-euro area unemployment insurance. On this basis, using Germany and Spain as examples, the authors estimate the impact of the system on the distribution of household incomes.

European Unemployment Insurance as an Automatic Stabilizer

Under the auspices of a European unemployment insurance, employees in participating countries would pay part of their earnings into the scheme and, in the event they become unemployed, would receive compensation payments from the fund for a limited period of time and based on their earnings prior to becoming unemployed. The duration could be stipulated so that the system only covers short-term, i.e., cyclical unemployment; it might be restricted to one year, for example. The size of transfer payments can also be set below national insurance benefit ceilings.[7]

The individual countries would still be entitled to provide benefits beyond this basic level of protection. This would enable the participating states—financed by national contributions or taxes—to top up the individual transfer payments from the outset and also to extend the eligibility period beyond the first year. As a result, countries would be able to apply different eligibility criteria for unemployment benefits such as different requirements regarding the age of the benefit recipient.

The diagram in Figure 1 shows a national system combined with different versions of a European unemployment insurance; for illustrative purposes, a national system with a maximum eligibility period of nine months and a benefit level of 60 percent of the last net salary is assumed.

In principle, there are two distinct alternatives. In one scenario, the benefit level of the European unemployment insurance is below that of the national insurance, both in terms of duration and amount.[8] In this case, the introduction of a European unemployment insurance would involve part of the transfer payment being made through the European scheme; at the same time, the employee contribution paid to cover this share of the benefit to date would be paid directly into the European in-

5 For a detailed account, see, for example, S. Dullien and F. Fichtner, "A Common Unemployment Insurance System for the Euro Area," DIW Economic Bulletin, no. 1 (2013).

6 For a critical assessment of European unemployment insurance, see, for example K. Brenke, "A Skeptical View of Mechanisms for Business Cycle Harmonization in the Euro Area," DIW Economic Bulletin, no. 1 (2013).

7 For an overview of this and similar proposals, see also European Commission, Paper on Automatic Stabilisers (2013), ec.europa.eu/social/BlobServlet?docId=10964&langId=en.

8 Other determinants of the benefit level—such as the eligibility criteria—can be applied in a similar form. Here and in the following sections, the analysis is focused on the benefit duration and income replacement level.

Box 1

The NiGEM Macroeconomic Simulation Model

The present analysis is based on the NiGEM model developed by the National Institute of Economic and Social Research (NIESR).[1] NiGEM is a comprehensive simulation and forecasting model for the global economy incorporating typical New-Keynesian elements such as rational expectation formation by economic agents as well as price and wage rigidities. The model enables a broad but nonetheless detailed modeling of the global economy. NiGEM models all OECD countries as well as numerous emerging nations with up to 130 equations and the aim of simulating their reaction to exogenous developments; the simulations also factor in international feedback effects—through foreign trade, for example—as well as economic policy responses—such as monetary and fiscal policy—for economic developments.

The analysis uses counterfactual simulations. The model simulates an economic development in the past where the deviation from the actual historical course results from the development of exogenous or endogenous variables which diverge from reality. This simulation therefore shows an institutional or economic policy environment which deviates from reality. In the case of the introduction of a European unemployment insurance, social benefits and social contributions, in particular, change compared to the reality. The simulations are created on the basis of quarterly data and simulate the introduction of a common unemployment insurance scheme for the entire euro area.[2]

1 See also nimodel.niesr.ac.uk/.

2 NiGEM maps the economic development of all member states (as of January 2014) with the exception of Latvia, Luxembourg, Malta, and Cyprus.

surance fund. Under these circumstances, both the total benefit level (national plus European unemployment insurance) and the total contribution to unemployment insurance would remain unchanged from the perspective of the insured, but the international risk equalization would result in increased economic stability.

However, it is to be assumed that a European unemployment insurance scheme would, to a certain extent, result in higher benefit levels than currently in place in Monetary Union member states. To give one example, the current benefits provided by the Irish unemployment insurance system are comparatively low. However, to achieve a marked improvement in economic stability, a certain degree of redistribution is necessary; thus, the transfers provided by a European unemployment insurance scheme would have to exceed the national insurance benefit levels in some of the participating countries. For these countries, the national insurance system would be completely replaced by the European scheme. At the same time, employees' contributions would increase—the cost of the higher level of social security would therefore be borne by the employees making unemployment insurance contributions in the participating member countries.[9]

Marked Macroeconomic Stabilization Effects

Had a common unemployment insurance scheme existed in the euro area since the creation of the Monetary Union in 1999, the cyclical fluctuations in some countries would have been considerably less pronounced; this finding is demonstrated by simulations conducted using the National Institute Global Economic Model (NiGEM) (see Box 1).[10] During periods of economic downturn, a European unemployment insurance would bolster disposable income and consequently stabilize consumption[11] which, in turn, would have a stabilizing effect on production and employment in the countries affected. The loss of purchasing power in countries with strong

9 There is therefore no cross-financing between systems which are kept deliberately restrictive and at the same time have low contributions.

10 For a discussion of the assumptions underlying the simulations, see Dullien et al., "Eine Arbeitslosenversicherung für den Euroraum." In particular, assumptions must be made regarding the number of eligible unemployed and their reference wages prior to becoming unemployed. When interpreting the findings, it is important to bear in mind that the data the simulations are based on are incomplete. For example, only a crude estimate can be made of the number of people entitled to claim benefits from the European unemployment insurance fund based, inter alia, on the total number of unemployed because more detailed information on employment history is not available.

11 The simulations take into consideration that those claiming wage replacement benefits usually have a comparatively high consumption rate because these payments typically benefit households with a relatively low net income. In the NiGEM consumer demand equations, therefore, the propensity to consume is calibrated with a suitably high value.

Table 1

Net Payment Flows with Generous European Unemployment Insurance Model (Model A)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
In million euros															**Total**
Austria	−553	−609	−600	−567	−549	−474	−432	−522	−614	−723	−557	−605	−718	−728	**−8 249**
Belgium	−303	−386	−421	−327	−188	−182	−235	−280	−368	−438	−256	−230	−359	−320	**−4 293**
Finland	−448	−515	−557	−539	−580	−595	−680	−711	−776	−802	−583	−796	−837	−830	**−9 250**
France	5 298	4 040	3 424	3 770	4 236	4 644	4 886	4 825	4 281	3 875	6 459	6 964	6 541	7 620	**70 861**
Germany	−1 984	−2 948	−2 950	−1 735	−446	−896	511	−1 231	−3 260	−4 248	−2 620	−3 616	−5 776	−6 731	**−37 930**
Greece	276	290	294	274	254	288	341	239	178	192	466	954	1 505	1 909	**7 459**
Ireland	−300	−378	−416	−401	−447	−495	−555	−594	−627	−413	273	−135	−231	−251	**−4 969**
Italy	−1 360	−1 678	−2 120	−2 328	−2 394	−2 175	−2 284	−2 716	−3 107	−2 974	−2 201	−2 052	−2 265	−1 583	**−31 236**
Netherlands	−1 206	−1 365	−1 586	−1 541	−1 256	−1 038	−1 081	−1 454	−1 750	−1 960	−1 601	−1 308	−1 420	−1 214	**−19 781**
Portugal	−215	−285	−277	−176	−27	−57	−36	−26	17	3	257	307	504	835	**827**
Slovakia	−34	−85	−99	−143	−129	−116	−189	−208	−214	−219	−101	−208	−244	−222	**−2 213**
Spain	309	125	139	877	756	709	182	112	−19	3 492	8 874	6 252	7 325	9 640	**38 774**
As a percentage of GDP															**Mean**
Austria	−0.28	−0.29	−0.28	−0.26	−0.24	−0.20	−0.18	−0.20	−0.22	−0.26	−0.20	−0.21	−0.24	−0.24	**−0.24**
Belgium	−0.13	−0.15	−0.16	−0.12	−0.07	−0.06	−0.08	−0.09	−0.11	−0.13	−0.08	−0.06	−0.10	−0.09	**−0.10**
Finland	−0.37	−0.39	−0.40	−0.38	−0.40	−0.39	−0.43	−0.43	−0.43	−0.43	−0.34	−0.45	−0.45	−0.43	**−0.41**
France	0.39	0.28	0.23	0.24	0.26	0.28	0.28	0.27	0.23	0.20	0.34	0.36	0.33	0.37	**0.29**
Germany	−0.10	−0.14	−0.14	−0.08	−0.02	−0.04	0.02	−0.05	−0.13	−0.17	−0.11	−0.15	−0.22	−0.25	**−0.11**
Greece	0.23	0.21	0.20	0.17	0.15	0.16	0.18	0.11	0.08	0.08	0.20	0.43	0.72	0.98	**0.28**
Ireland	−0.33	−0.36	−0.36	−0.31	−0.32	−0.33	−0.34	−0.34	−0.33	−0.23	0.17	−0.09	−0.14	−0.15	**−0.25**
Italy	−0.12	−0.14	−0.17	−0.18	−0.18	−0.16	−0.16	−0.18	−0.20	−0.19	−0.15	−0.13	−0.14	−0.10	**−0.16**
Netherlands	−0.31	−0.33	−0.36	−0.33	−0.26	−0.21	−0.21	−0.27	−0.31	−0.33	−0.28	−0.22	−0.24	−0.20	**−0.28**
Portugal	−0.18	−0.22	−0.21	−0.13	−0.02	−0.04	−0.02	−0.02	0.01	0.00	0.15	0.18	0.29	0.50	**0.02**
Slovakia	−0.12	−0.27	−0.29	−0.39	−0.32	−0.26	−0.38	−0.38	−0.35	−0.33	−0.16	−0.32	−0.36	−0.31	**−0.30**
Spain	0.05	0.02	0.02	0.12	0.10	0.08	0.02	0.01	−0.00	0.32	0.84	0.59	0.69	0.92	**0.27**

Source: calculations by DIW Berlin based on NiGEM.

economic growth would also have a stabilizing impact by cooling down the overheating economy.

The impact would vary from country to country depending on the generosity of the insurance system; the following results are based on a generous model with transfers of 70 percent of last net salary and a maximum eligibility period of 12 months (Model A) and a restrictive model with a net replacement rate of 30 percent and eligibility period of up to six months (Model B). The contribution to be transferred to the European unemployment insurance fund also varies according to the level of benefits. In the generous model, the contribution rate is 1.3 percent of gross wages, and in the restrictive model, it is 0.4 percent.[12] However, there would be a reduction in the contribution to the national insurance because part of the benefits now paid out by the national insurance would be transferred to the European level.

Both models assume that only a certain percentage of those classified as unemployed would also be entitled to claim benefits under the European unemployment insurance scheme; the number of recipients classified as short-term unemployed is calibrated so that their share in the European scheme corresponds to their share in the relevant national insurance schemes. In the interest of simplification, the simulations presented here assume that the eligibility criteria applied in the national systems are also applied to a European unemployment insurance. In practice however, it would be necessary to define clear eligibility criteria for transfers from the European unemployment insurance—for example, with regard to employment in the period prior to becoming unemployed.[13]

12 It is assumed that contributions made during the simulation period (1999–2012) are exactly high enough to cover the costs of European unemployment insurance. For the macroeconomic simulations, we abstract from the contribution assessment limit that exist in the national systems.

13 It must be borne in mind that even if there are unified eligibility criteria, the different ways in which the national institutions monitor and implement these criteria could lead to incorrect transfers; with this in mind, centralized monitoring cannot be completely avoided. On this aspect, see also Brenke, "A Skeptical View of Mechanisms."

Table 2

Net Payment Flows with Restrictive European Unemployment Insurance Model (Model B)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
In million euros															**Total**
Austria	−148	−163	−154	−134	−133	−107	−99	−134	−160	−199	−117	−163	−189	−184	**−2 085**
Belgium	−92	−127	−123	−101	−56	−87	−90	−76	−111	−113	−36	−78	−132	−78	**−1 298**
Finland	−125	−151	−161	−149	−166	−170	−202	−209	−228	−229	−137	−232	−242	−233	**−2 633**
France	1 461	1 007	909	1 055	1 122	1 266	1 322	1 287	1 144	1 194	2 241	1 825	1 760	2 275	**19 868**
Germany	−742	−1 004	−908	−409	−235	−559	224	−819	−1 209	−1 271	−535	−1 233	−1 884	−1 890	**−12 473**
Greece	77	72	79	50	23	47	57	26	38	57	174	307	460	522	**1 989**
Ireland	−89	−115	−119	−110	−134	−152	−161	−166	−172	−82	166	−106	−126	−103	**−1 468**
Italy	−522	−619	−752	−793	−809	−645	−669	−798	−882	−769	−566	−620	−707	−413	**−9 565**
Netherlands	−339	−392	−456	−403	−307	−292	−349	−473	−527	−564	−391	−335	−407	−287	**−5 522**
Portugal	−68	−94	−82	−37	1	−47	−23	−27	0	−7	100	53	153	258	**179**
Slovakia	−5	−28	−34	−45	−44	−37	−56	−62	−65	−66	−15	−61	−75	−68	**−661**
Spain	36	16	39	366	216	171	135	265	265	1 830	3 685	1 668	2 085	2 893	**13 669**
As a percentage of GDP															**Mean**
Austria	−0.07	−0.08	−0.07	−0.06	−0.06	−0.05	−0.04	−0.05	−0.06	−0.07	−0.04	−0.06	−0.06	−0.06	**−0.06**
Belgium	−0.04	−0.05	−0.05	−0.04	−0.02	−0.03	−0.03	−0.02	−0.03	−0.03	−0.01	−0.02	−0.04	−0.02	**−0.03**
Finland	−0.10	−0.11	−0.12	−0.10	−0.11	−0.11	−0.13	−0.13	−0.13	−0.12	−0.08	−0.13	−0.13	−0.12	**−0.12**
France	0.11	0.07	0.06	0.07	0.07	0.08	0.08	0.07	0.06	0.06	0.12	0.09	0.09	0.11	**0.08**
Germany	−0.04	−0.05	−0.04	−0.02	−0.01	−0.03	0.01	−0.04	−0.05	−0.05	−0.02	−0.05	−0.07	−0.07	**−0.04**
Greece	0.06	0.05	0.05	0.03	0.01	0.03	0.03	0.01	0.02	0.02	0.08	0.14	0.22	0.27	**0.07**
Ireland	−0.10	−0.11	−0.10	−0.08	−0.10	−0.10	−0.10	−0.09	−0.09	−0.05	0.10	−0.07	−0.08	−0.06	**−0.07**
Italy	−0.05	−0.05	−0.06	−0.06	−0.06	−0.05	−0.05	−0.05	−0.06	−0.05	−0.04	−0.04	−0.04	−0.03	**−0.05**
Netherlands	−0.09	−0.09	−0.10	−0.09	−0.06	−0.06	−0.07	−0.09	−0.09	−0.09	−0.07	−0.06	−0.07	−0.05	**−0.08**
Portugal	−0.06	−0.07	−0.06	−0.03	0.00	−0.03	−0.02	−0.02	0.00	0.00	0.06	0.03	0.09	0.16	**0.00**
Slovakia	−0.02	−0.09	−0.10	−0.12	−0.11	−0.08	−0.11	−0.11	−0.11	−0.10	−0.02	−0.09	−0.11	−0.10	**−0.09**
Spain	0.01	0.00	0.01	0.05	0.03	0.02	0.01	0.03	0.02	0.17	0.35	0.16	0.20	0.28	**0.10**

Source: calculations by DIW Berlin based on NiGEM.

The impact of introducing a European unemployment insurance scheme varies significantly among participating member states. Depending on the national level of social security benefits and, particularly, the labor market situation and economic developments, contributions to and transfers from the European unemployment insurance fund vary significantly over time. and across participating member states (see Tables 1 and 2).

If we take Portugal as an example, it is possible to illustrate the fundamental idea behind the European unemployment insurance, i.e., that countries receive higher transfers during times of crisis and pay higher contributions when their economies are strong. During the first half of the simulation period, Portugal is a net contributor, and only from 2007 onwards do large sums flow into the country, thus providing budgetary relief. If we consider the example of Germany, however, it is evident that countries do not only receive payments during severe recessions; in 2005, when Germany was experiencing economic stagnation and rising unemployment, it received positive transfers being usually a net contributor.

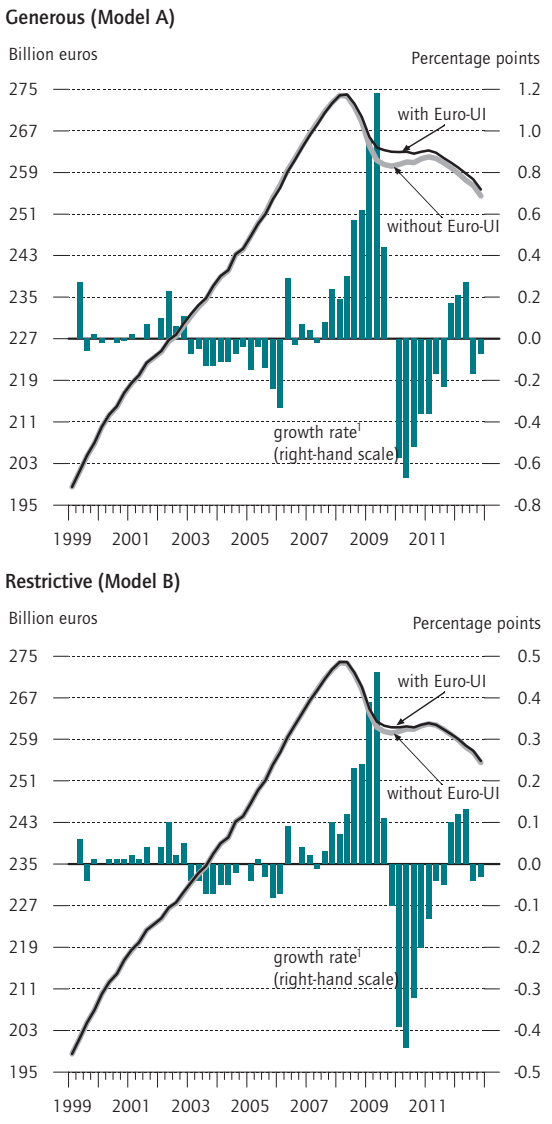
However, the simple model of a European unemployment insurance considered here also proves that it is impossible to completely avoid permanent transfers.[14] This is partly due to the period of observation—after 2009, transfer processes were dominated by the crisis and the resultant sharp increase in unemployment in some of the Monetary Union countries, and it partly stems from structural differences between the member states' labor markets. Consequently, Spain and France profit considerably from the introduction of a European unemployment insurance over the entire observation period. In Spain, this is primarily a result of the high transfers during the crisis. In France, due to the comparatively high reference wages and high number of eligible unemployed, transfers are clearly positive for all years.[15] Conversely, in Austria and the Netherlands, neg-

14 One possible way of avoiding permanent transfers is to set country-specific contribution rates to the European unemployment insurance and to correct them for surpluses and/or deficits accumulated in the past. On this, see S. Dullien, "Preventing permanent transfers under a European Unemployment Insurance: Can a clawback mechanism be the answer?" presentation (2014), ec.europa.eu/social/BlobServlet?docId=11885&langId=en.

15 It is likely that the number of eligible unemployed has been overestimated for Spain and France because both countries have national unemployment

Figure 2

Impact of a European Unemployment Insurance on Spain's Economy



1 Change in annualized GDP growth against previous quarter compared to baseline scenario without European unemployment insurance.
Source: calculations by DIW Berlin based on NiGEM.

The economic downturn experienced by Spain in 2010 would have been significantly less pronounced.

Table 3

Impact of European Unemployment Insurance on Spain's Economy

In percent

	Modell A[1]	Modell B[2]	Baseline
Change in real GDP			
1997	3.87	3.87	3.87
1998	4.47	4.47	4.47
1999	4.79	4.75	4.75
2000	5.10	5.10	5.09
2001	3.68	3.68	3.67
2002	2.80	2.75	2.71
2003	3.08	3.08	3.09
2004	3.16	3.21	3.26
2005	3.48	3.56	3.58
2006	3.98	4.06	4.08
2007	3.54	3.50	3.48
2008	1.16	1.00	0.89
2009	−3.10	−3.56	−3.83
2010	−0.42	−0.41	−0.20
2011	−0.26	−0.10	0.05
2012	−1.57	−1.58	−1.64
Unemployment rate			
2007	8.33	8.28	8.28
2008	11.28	11.33	11.38
2009	17.60	17.86	18.03
2010	19.71	19.98	20.08
2011	21.73	21.77	21.68
2012	25.23	25.16	25.08

1 With generous European unemployment insurance model.
2 With restrictive European unemployment insurance model.
Source: calculations by DIW Berlin based on NiGEM
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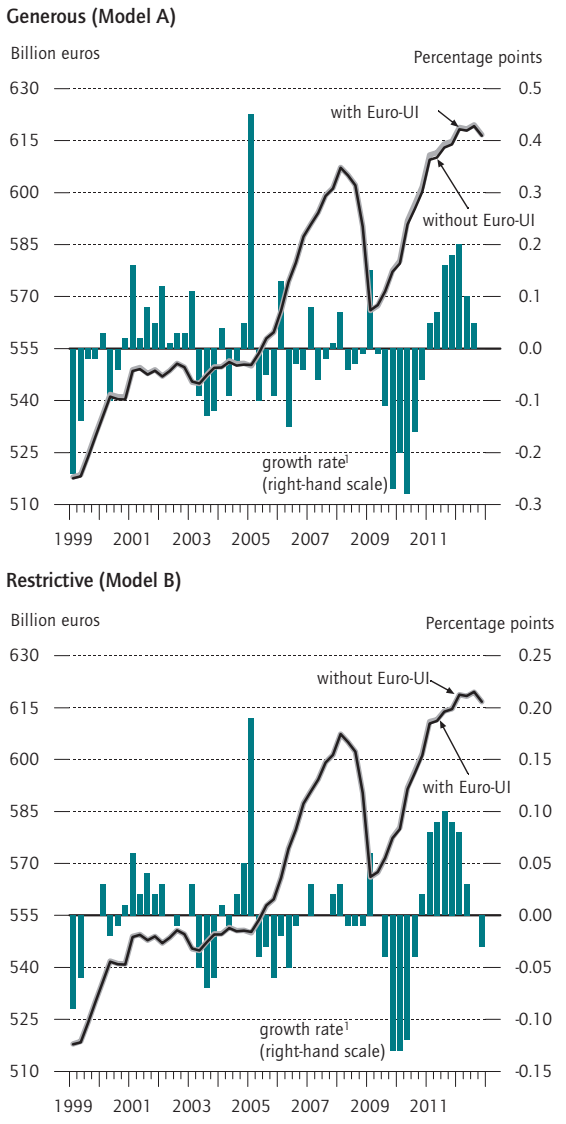
ative net payment flows are observed for the entire period due to low unemployment resulting in low transfers and, at the same time, high contributions due to comparatively high gross wages. In Belgium and Italy, the number of short-term unemployed relative to overall unemployment is comparatively low, which results in negative net payment flows despite the very high overall level of unemployment.

Changes in net payment flows over time are a decisive factor affecting the economic impact of a European unemployment insurance. For instance, in one country, a European unemployment insurance might have a dampening effect on the economy during a period when the absolute amount of net payments is declining even if net payments remain positive overall. The stabilizing effects of a European unemployment insurance scheme are outlined in detail below, illustrated with the examples of Spain and Germany. The analysis thus presents findings for two countries which have shown particularly different macroeconomic developments since the creation of the Monetary Union. After the introduction of the euro, Germany's economic development was ini-

insurance schemes with a two-year eligibility period and a correspondingly high number of eligible unemployed at the national level. This cannot be corrected due to a lack of data on employment history of the unemployed.

Figure 3

Impact of a European Unemployment Insurance on Germany's Economy



1 Change in annualized GDP growth against previous quarter compared to baseline scenario without European unemployment insurance.
Source: calculations by DIW Berlin based on NiGEM.

European unemployment insurance would also have buffered economic fluctuations in Germany somewhat.

Table 4

Impact of European Unemployment Insurance on Germany's Economy

In percent

	Modell A[1]	Modell B[2]	Baseline
Change in real GDP			
1997	1.79	1.79	1.79
1998	1.66	1.66	1.66
1999	1.65	1.71	1.74
2000	3.27	3.30	3.30
2001	1.69	1.66	1.64
2002	0.09	0.04	0.03
2003	−0.39	−0.40	−0.39
2004	0.64	0.68	0.69
2005	0.93	0.89	0.85
2006	3.85	3.85	3.89
2007	3.38	3.40	3.39
2008	0.81	0.81	0.81
2009	−5.08	−5.09	−5.09
2010	3.67	3.77	3.86
2011	3.41	3.44	3.40
2012	1.03	0.95	0.90
Unemployment rate			
2007	8.65	8.65	8.65
2008	7.50	7.50	7.50
2009	7.80	7.80	7.80
2010	7.19	7.14	7.10
2011	5.93	5.91	5.93
2012	5.41	5.43	5.45

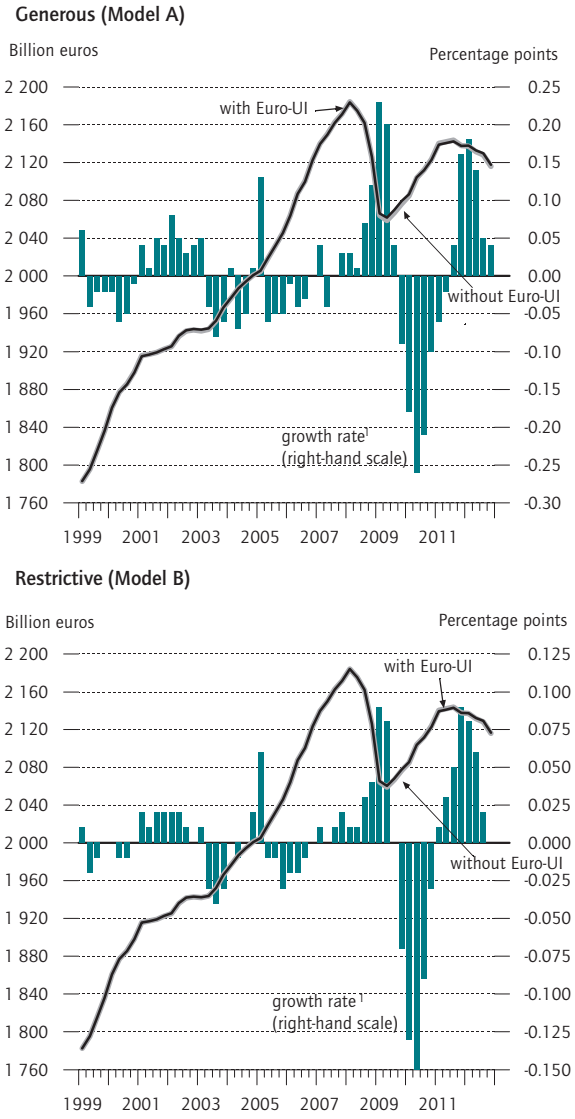
1 With generous European unemployment insurance model.
2 With restrictive European unemployment insurance model.
Source: calculations by DIW Berlin based on NiGEM.

tially subdued whereas the Spanish economy expanded dramatically. Conversely, during the crisis period, i.e., from 2008, the Spanish economy contracted sharply, while German economic growth, particularly labor market development, was only temporarily impaired. The qualitative findings presented here can also be applied to the other Monetary Union countries.

Increasing transfers from a European unemployment insurance would result in positive growth and employment effects for the member states with weak economies, which could lead to significant deviations from the baseline, i.e., economic developments without a European unemployment insurance. As shown in Figure 2 and Table 3 for Model A, the introduction of a European unemployment insurance scheme would have significantly reduced Spanish GDP losses from 2008 to 2010; this is primarily due to a less severe slump in disposable income which, in turn, moderates the downturn in consumer demand. In addition, as a result of the European unemployment insurance easing the burden on the national budget, there would be stronger growth in public spending which, in turn, would have a stabilizing impact. The downturn in GDP in 2009 would then have amounted to 3.1 instead of 3.8 percent. A similar effect is also observed in Model B (see Figure 2) although this materializes at a slightly later point in time and to a lesser extent. In the years immediately preceding the crisis, the growth in Spanish GDP resulting from the Europe-

Figure 4

Impact of a European Unemployment Insurance on the Euro Area's Economy



1 Change in annualized GDP growth against previous quarter compared to baseline scenario without European unemployment insurance.
Source: calculations by DIW Berlin based on NiGEM.

Overall, the stabilizing impact on the euro area economy would have been marginal.

an unemployment insurance would have been slightly more moderate. The transfers from the European unemployment insurance scheme would have decreased in the pre-crisis period because unemployment was also declining. This would have subdued the expansion of

Table 5

Impact of European Unemployment Insurance on Germany's Economy

In percent

	Modell A[1]	Modell B[2]	Baseline
Change in real GDP			
1997	2.65	2.65	2.65
1998	2.73	2.73	2.73
1999	2.84	2.83	2.84
2000	4.01	4.04	4.04
2001	2.03	2.03	2.02
2002	0.98	0.95	0.93
2003	0.75	0.74	0.75
2004	1.93	1.96	1.97
2005	1.81	1.82	1.81
2006	3.34	3.35	3.37
2007	2.97	2.98	2.98
2008	0.29	0.27	0.26
2009	4.27	−4.35	−4.40
2010	1.79	1.83	1.91
2011	1.60	1.65	1.66
2012	−0.49	−0.55	−0.60

1 With generous European unemployment insurance model.
2 With restrictive European unemployment insurance model.
Source: calculations by DIW Berlin based on NiGEM.

private consumer demand and thus also mitigated the overheating of the economy somewhat.[16]

However, during periods of high growth—or periods of low unemployment—a European unemployment insurance would have resulted in dampening effects on the economies of the member states. Due to the growth in employment during economic upswings, contributions also increase, leading to an outflow of cash which, in turn, slows overall economic growth.

The German economy would have experienced stronger growth during periods of weak economic activity (particularly from 2000 to 2002 and in 2005) with a European unemployment insurance than without it. However, over the entire observation period and particularly since the beginning of the crisis, the introduction of a European unemployment insurance would have had a primarily negative impact on the country's GDP; this is demonstrated in Figure 3 and Table 4 for unemployment insurance models A and B, which vary in their generosity. The predominantly negative impact on German GDP is a result of the—on aggregate—negative net pay-

16 Although Spain's net claims from the European unemployment insurance were positive over the entire simulation period, the decisive factor for the economic impact of the transfer mechanism is, however, the changes in transfers which would have been negative prior to the crisis and consequently would have had a negative impact on the economy.

Box 2

EUROMOD: Tax-Benefit Microsimulation Model for the European Union

The present analysis uses EUROMOD, the tax-benefit microsimulation model for the European Union. EUROMOD was developed by the Institute for Social and Economic Research (ISER) at the University of Essex in cooperation with national teams in each EU member state and commissioned by the EU's Directorate-General for Employment, Social Affairs and Inclusion (DG-EMPL). In 2012, EUROMOD was extended significantly as part of a development project and now covers income tax and benefit systems in all 27 EU member states.[1] EUROMOD now operates using EU-SILC (European Survey of Income and Living Conditions)[2] as a unified database for all countries. The EU-SILC data include market income differentiated by source (employment, capital, letting, and leasing) as well as accurate information on the composition of income replacement and transfer payments. Consequently, it can be determined how much unemployment benefit, unemployment assistance, and/or social security benefits each household received in the reference year. In addition, the data capture any periods of employment, unemployment, and/or retirement in the reference year (previous year) which, depending on the country, is either 2008 or 2010. The present analysis uses program version F6.36 of the EUROMOD Model. This is based on 2010 EU-SILC data for Germany and Spain. The reference year for income and unemployment is therefore the previous year, 2009, i.e., the height of the financial crisis. This aspect must be borne in mind when interpreting the findings. Consequently, the transfer payments from national unemployment insurance, on which the microanalysis is based, refer to a period during which unemployment was relatively high..

1 EUROMOD is continuously being developed and updated. The present analysis uses a preliminary version of F5.6 and the official version of this program will be released in the near future. This was kindly made available to DIW Berlin, ahead of its release, by the EUROMOD development team at the University of Essex. Due to a fundamental update of the program from 2009 to 2012 in conjunction with, inter alia, a standardization of the database, the results of the current program version can no longer be compared, without limitations, with the results from previous EUROMOD versions. Documentation on the current EUROMOD program version can be found on www.iser.essex.ac.uk/euromod, last accessed on March 12, 2012.

2 The UK is an exception, however, as, for this country, the version of EUROMOD used in the present analysis is still based on data from the Family Resources Surveys (FRS) (survey period 2008/09).

ments the country receives from the European unemployment insurance fund; since the German labor market was barely affected by the crisis that began in 2008, while other countries experienced significant increases in unemployment, Germany would have been a net contributor during the entire observation period. During other economic cycles—for example, if Germany were to experience comparatively unfavorable labor market developments—the reverse effect would be observed.

A look at the entire euro area shows that a European unemployment insurance following Models A and B would also contribute to an increase in macroeconomic stability at this level. For Model A (see Figure 4 and Table 5), there is a maximum stabilizing effect of approximately 0.15 percent of the euro area's GDP during the crisis years of 2008 and 2009. In the run-up to the crisis (2005 to 2007) and also during the period of economic recovery (2010 and 2011), contractive effects on GDP are visible. This emphasizes the counter-cyclical nature of this European unemployment insurance model. Similar, albeit considerably less pronounced, effects are evident for Model B (see Figure 4).

The medium- to long-term effects of a European unemployment insurance are marginal. This is because a European unemployment insurance in the form modeled here induces appreciable transfers to the economies affected, particularly during periods of strong growth in (short-term) unemployment, whereas a persistently high level of unemployment combined with an increasing average duration of unemployment is accompanied by a withdrawal of transfers from the European unemployment insurance fund. Furthermore, the simulations presented here do not factor in longer term unemployment effects on economic output such as those sometimes associated with hysteresis effects of the labor market. The reduction in economic volatility achieved by introducing the European unemployment insurance could also improve an economy's growth prospects in that companies would be more willing to invest in a more predictable economic environment.

Table 6

Positive Financial Impact[1] of European Unemployment Insurance on German Households

	Equivalence weighted[2] net household income		Net household income	Share of unemployment benefit recipients	Positive financial impact–Model A		Positive financial impact–Model B	
	Mean	Decile boundary	Mean	Mean	Mean	On income	Mean	On income
	In euros			In percent	In euros	In percent	In euros	In percent
1st decile	8,495	10,831	10,783	7.5	12	0.11	−3	−0.02
2nd decile	12,023	13,163	17,130	1.6	−25	−0.15	−8	−0.05
3rd decile	14,285	15,381	21,374	1.1	−48	−0.22	−15	−0.07
4th decile	16,396	17,380	25,056	0.9	−74	−0.29	−21	−0.08
5th decile	18,382	19,447	28,485	0.6	−102	−0.36	−26	−0.09
6th decile	20,627	21,863	30,866	0.1	−129	−0.42	−31	−0.10
7th decile	23,198	24,752	34,981	0.0	−172	−0.49	−39	−0.11
8th decile	26,765	28,985	40,013	0.1	−192	−0.48	−45	−0.11
9th decile	31,841	35,535	47,498	0.1	−245	−0.52	−57	−0.12
10th decile	49,739	–	72,867	0.2	−308	−0.42	−73	−0.10
All households	21,862	–	32,363	1.4	−125	−0.39	−31	−0.10

1 In 2012 prices.
2 Equivalence weighted using modified OECD scale.
Sources: EU Statistics on Income and Living Conditions (EU-SILC), 2010 data for Germany; calculations by DIW Berlin using EUROMOD (program version F6.36).

Microeconomic Distributional Effects Tend to be Progressive

The distributional effects of the different models for a European unemployment insurance are derived using the EUROMOD microsimulation model. This model maps the current income tax, social insurance, and transfer systems for households (status quo) in all EU member states and describes the effects of these systems on household net disposable income (see Box 2). Further, the model can also simulate the impact of specific reforms, in this case a reform of unemployment insurance, on net income.

The distributional analysis compares the status quo of income distribution (pre-reform) with the income distribution after the simulated versions of the reform are implemented (post-reform). The differences reveal the distributive effects with respect to household income, i.e. which households are better or worse off due to the reform. The distribution analysis is always based on the 2012 income distribution.

The macro model described above simulates the financing volume and converts this into a contribution rate for the different European unemployment insurance models which is identical for all countries and remains constant over time. The introduction of a European unemployment insurance scheme further reduces the financial burden on national insurance systems and, thus, the contributions into this system. The net effect of these two financing components is incorporated into the micro model in the form of a change in the contribution rate to the national insurance system for each country and each reform version. This net effect of a European unemployment insurance on net household incomes can then be calculated.[17]

The effects of different European unemployment insurance models on household incomes and on income distribution are discussed below using German and Spanish households as examples. The distributive effects are shown as deciles of net household income where the division of households into income deciles also takes household size into consideration (equivalence weighting). The first four columns of Tables 6 and 7 first show the upper income boundaries and the corresponding equivalence weighted and unweighted average incomes as well as the share of eligible unemployed in each of the deciles. The last four columns display the absolute and relative

17 In Dullien et al., "Eine Arbeitslosenversicherung für den Euroraum," the assumptions necessary for integrating the macro and micro models are discussed, particularly with regard to the eligible unemployed population.

Table 7

Positive Financial Impact[1] of European Unemployment Insurance on Households in Spain

	Equivalence weighted[2] net household income		Net household income	Share of unemployment benefit recipients	Positive financial impact–Model A		Positive financial impact–Model B	
	Mean	Decile boundary	Mean	Mean	Mean	On income	Mean	On income
	In euros			In percent	In euros	In percent	In euros	In percent
1st decile	3,111	5,840	5,638	5.9	46	0.81	8	0.14
2nd decile	7,137	8,269	13,082	11.5	101	0.77	20	0.15
3rd decile	9,172	10,112	15,839	8.5	113	0.71	23	0.15
4th decile	11,005	11,869	19,689	9.5	120	0.61	30	0.15
5th decile	12,720	13,547	22,697	10.8	125	0.55	36	0.16
6th decile	14,436	15,283	24,927	7.5	134	0.54	39	0.16
7th decile	16,365	17,496	28,671	6.9	138	0.48	50	0.17
8th decile	18,827	20,323	33,468	6.6	162	0.49	60	0.18
9th decile	22,484	25,149	39,208	5.7	177	0.45	77	0.20
10th decile	32,598	–	54,951	3.9	177	0.32	88	0.16
All households	14,995	–	26,160	7.6	130	0.50	44	0.17

1 In 2012 prices.
2 Equivalence weighted using modified OECD scale.
Sources: EU Statistics on Income and Living Conditions (EU-SILC), 2010 data for Germany; calculations by DIW Berlin using EUROMOD (program version F6.36).

positive and negative financial effects of both European unemployment insurance models.

The average income effects across all households (bottom line) are a direct result of the macro model simulations. Spanish households are better off on average whereas German households are worse off. This applies to both of the European unemployment insurance models discussed in the present analysis.

However, these aggregated effects do not show the whole picture regarding the introduction of a European unemployment insurance; wins and losses depend on a households' position in the income distribution. Each model would have its particular winners and losers since transfers and contributions affect two fundamentally different income groups: Those claiming benefits generally have much lower average incomes than those paying contributions. If reforms are now to be implemented both on the transfer and on the financing side, with additional benefits typically financed from the system itself, households at the lower end of the income distribution spectrum are affected differently than those in the middle and upper ranges of the distribution.

According to the generous European unemployment insurance model (Model A), German households in the lowest decile were 12 euros per year, or 0.11 percent, better off, on average. In all other deciles, households were worse off, on average. The absolute financial burden increases progressively and totals an average of 308 euros in the upper decile. Relatively speaking, a progressive effect is also observed. There is less of a negative impact on the households in the upper decile than on the households between the 5th and 9th deciles.

The small-scale model (Model B) paints a similar picture. However, in this model, households in the lower decile also lose on average, though the absolute and relative effects are marginal across all deciles.

The situation in Spain is quite different. For both models considered, all households are better off here on average. A possible explanation for the disparity between Germany and Spain is the different distribution of eligible unemployed across the deciles. While in Germany only a small number of households outside the lowest decile is unemployed and thus entitled to claim financial support from a European unemployment insurance, in Spain the share is significant, even in the upper decile. However, simulations show that the introduction of a European unemployment insurance scheme has a predominantly progressive effect. Although, in absolute terms, the positive financial effects increase with the deciles, relative to household income, the generous insurance model results in much more significant positive effects in the lower deciles. For example, households in the lowest decile are 0.81 percent better off, on aver-

age, and households in the highest decile are only 0.31 percent better off. In the small-scale model, the effects are marginal in all deciles. Here, no clear trend is evident across the deciles.

Conclusion

The present Economic Bulletin article analyzes the macroeconomic stabilization and microeconomic distributional effects of introducing a European unemployment insurance scheme. The analysis demonstrates that the introduction of such a transfer system in the euro area—depending on its structure—can make a significant contribution to stabilizing economic developments. Particularly the generous European unemployment insurance model examined in this analysis with a net replacement rate of 70 percent and maximum eligibility period of 12 months would have an appreciable impact: in Spain, for example, the 2009 decline in real GDP stemming from the crisis which was 3.8 percent in reality would have been reduced to 3.1 percent with a European unemployment insurance. The distributive impact of a common unemployment insurance would be progressive in Spain because low-income households tend to benefit more from the introduction of this type of scheme than those with higher incomes. Similar distributive effects are observed for German households: While German households would be worse off on average if a European unemployment insurance model were to be introduced, households in the lower deciles are either completely unaffected or only negligibly worse off.

However, this very generous European unemployment insurance model might be accompanied by an increase in unemployment benefit levels for virtually all European economies—with potential undesirable knock-on effects on incentives to work and labor market developments. On the other hand, if the amount of unemployment benefit received under the European scheme were to be restricted to a minimum with a maximum six-month eligibility period and net replacement rate of 30 percent, the stabilization impact would decrease sharply. Yet this model also has a marked impact; if this form of unemployment insurance had been introduced, the decline in Spanish GDP in 2009 would still have been reduced to 3.6 percent versus the actual drop of 3.8 percent. The distributive effect would also have been correspondingly lower. It is evident from the examples of Spain and Germany that the restrictive model would barely have any distributive impact; all Spanish households would have been equally better off but only by less than 0.2 percent of their net income (on average 44 euros per household per year).

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