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Benchmarking unemployment benefit systems

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Abstract

This paper proposes a methodology for benchmarking unemployment benefits systems, with a view to assess reform needs and priorities. The methodology permits to assess different dimensions of unemployment benefit systems and to consider alternative relevant benchmarks. Looking at all relevant dimensions allows to better gauge how unemployment benefit systems perform in terms of their multi-faceted objectives (such as income support and stabilisation, incentives to take up work) and to have a more thorough assessment of each objective. Comparisons with alternative benchmarks offer the possibility of assessing against more meaningful country comparators, which take into account similarities in terms of economic fundamentals, institutions and policy settings. The methodology is applied to EU countries and results are discussed.

JEL classification: *J65, J68, H20, H53*

Keywords: Unemployment insurance, unemployment assistance, tax and benefit policies, benchmarking, flexicurity.

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1. Introduction

Unemployment benefits are a key instrument to deal with labour market risks. They permit to insure individual incomes during temporary unemployment and provide assistance during longer unemployment periods. From a macroeconomic perspective, unemployment benefit systems perform a role of automatic stabilisation, thereby contributing to smooth aggregate shocks. The main efficiency cost of unemployment benefits are reduced incentives to work as a result of moral hazard which induces sub-optimal job search intensity (e.g. Mortensen, 1997; Shavell and Weiss, 1979), unemployment and inactivity traps linked to the tax and benefit system (Carone et al., 2003), benefit dependence associated with long benefit duration and falling employability over the unemployment spell.¹

With unemployment rates becoming persistently high in most European countries after the crisis, and with a lengthening of unemployment duration, reforms are becoming necessary to ease the trade-off between income smoothing and incentives to take up jobs. A number of elements in the design of unemployment benefit systems help easing such trade-off, including for what concerns the level and time profile of unemployment benefit replacement rates or the implementation of adequate activation policies aimed at strengthening job search effort. As unemployment benefit systems differ considerably across countries, and since they operate within heterogeneous labour market and institutional contexts, desirable and feasible reform paths may differ considerably from one country to the other. Moreover, notably in Europe and in the current context, reforms need to carefully balance social protection, incentives for the unemployed and fiscal costs.

Benchmarking of existing policies and institutions presents a necessary step to assess reform needs and define desirable reform paths in individual countries. This paper proposes a benchmarking methodology that permits to take into account a number of relevant dimensions of unemployment benefit systems and that goes beyond the simple comparison with cross-country summary statistics by taking into account similarities across countries in terms of economic fundamentals and policy settings. The methodology is applied to EU countries

¹ Findings from a vast empirical literature corroborate the expectation that more generous UI benefits are associated with higher incidence of unemployment and longer periods in unemployment (e.g. Layard et al, 1991; Nickell, 1998; Krueger and Meyer, 2002). In addition, a reduction in the maximum benefit duration is related to shorter unemployment spells (e.g., Krueger and Meyer, 2002; Van Ours and Vodopivec, 2005; Lalive, 2008; Caliendo et al., 2009).

using information from the European Commission – OECD Tax and Benefits project and covers to the period over 2001-2010.

The remainder of the paper is organised as follows. Section 2 describes a series of dimensions of unemployment benefit systems relevant for a cross-country comparison. Section 3 describes the methodology based on different benchmarks and proposes a set of indicators used for a cross-country comparison. Section 4 presents results, while section 5 concludes.

2. Comparing unemployment benefit systems: the relevant dimensions

Unemployment benefits systems consist of two main instruments: unemployment insurance and unemployment assistance. Unemployment insurance aim at insuring individual incomes during the unemployment spell and are typically based on an insurance principle. Unemployment insurance benefits are payable to job losers that, within a certain reference period, have completed a minimum period of employment or paid contributions. Unemployment assistance aims at preventing unemployment-related poverty. It is means-tested and based on welfare principle. It is usually paid either to the long term unemployed with insufficient means who have exhausted their unemployment insurance benefits or to those who failed to qualify for unemployment insurance benefits. To qualify for unemployment assistance, the unemployed often do not need to have any employment/contribution period or the required period is shorter than in case of unemployment insurance benefits. It is relevant to distinguish between unemployment assistance and unemployment insurance as these two instruments generally have different implications on incentives to take up work.²

A series of dimensions need to be taken into account when assessing unemployment benefit systems in a comparative perspective. The assessment of various dimensions allows evaluating unemployment benefit systems in terms of effectiveness in ensuring income support and effects on incentives to take up jobs.

² Unemployment assistance is means-tested and available only to low-income unemployed. The unemployed who exhaust their unemployment insurance benefits and are not entitled to unemployment assistance lose their income support entirely. This strongly increases their financial incentives to find a job. In addition, in some countries, job-search requirements differ depending on the scheme.

2.1. Effectiveness in ensuring income support

Entitlement conditions regulate access to unemployment benefits and are in this way essential in ensuring an effective income support to the pool of the unemployed. The aim of unemployment benefits is to provide consumption smoothing and income support to the unemployed during their transition period to employment. The income smoothing property of unemployment benefit systems, however, depends not only on their generosity but also on entitlement conditions, i.e. the conditions on the employment and/or contribution period the unemployed have to fulfil to qualify for benefits as well as sanctions in case of voluntary unemployment. If effectively designed, entitlement conditions ensure that the benefit coverage, i.e., the share of jobless people who are receiving unemployment benefits, is sufficiently large to provide income protection for those in need, provide effective income smoothing thereby playing a stabilisation role for the economy, while ensuring the compatibility with fiscal constraints.

2.2. Effects on incentives to take up jobs

Depending on a design, unemployment benefits can raise a risk of low incentives to take up work and benefit dependence. Unemployment benefit systems involve an inevitable trade-off between income smoothing and economic efficiency. **By providing income replacement, unemployment benefits reduce incentives of unemployed to search and take up jobs.** This is relevant above all in the context of generous and long-lasting transfers which can create unemployment traps and benefit dependence, thus entrenching long-term unemployment.

- **Unemployment traps.** Unemployment traps can be defined as cases of low net income gain from taking up work from unemployment. The traps stem from an inappropriately designed tax and benefits system and are usually associated with high net replacement rates. Large unemployment traps may entrench unemployment above all of low wage persons who tend to have higher net replacement rates and low-wage job prospects. As low-wage persons are generally at higher risk of unemployment than high wage persons and concern a larger share of unemployed the negative impact on incentives is likely to be more pervasive. Therefore, the negative repercussions on effective labour supply and potential output could be large.
- **Inactivity traps.** Inactivity traps can be defined as cases of low net income gain from taking up work from inactivity. In this case, means-tested social assistance provides

income replacement; typically to the unemployed with an insufficient contribution period, long term unemployed and hardly employable persons. Large inactivity traps raise a risk of reducing attachment of persons from the labour market and boost structural unemployment.

- *Benefit dependence.* A risk of benefit dependence increases with the benefit duration and is stronger when replacement rates do not fall over the unemployment spell and when job search and availability requirements (valid reasons for refusing job offers, availability to participate in active labour market policy programmes, availability to occupational and geographical mobility...) are absent or insufficient.

2.3. Generosity of unemployment benefit system

The total income support provided to the unemployed depends on the generosity of benefits throughout the whole unemployment spell. The overall generosity of the unemployment benefit system depends on the level of replacement rates of both unemployment insurance and unemployment assistance, their duration, and their structure throughout the unemployment spell. Section 3.2 describes the construction of a synthetic indicator that captures total income support available to an eligible unemployed and that will be used in the following analysis.

3. Benchmarking unemployment benefits systems across the EU: methodology

3.1. Income support, impact on incentives

A series of dimensions of unemployment benefit systems in individual countries are considered. The dimensions of unemployment benefit systems presented in the Section 2 can be assessed by various indicators such as entitlement conditions, unemployment and inactivity traps, benefit duration, time profile of net replacement rates and job search and availability requirements. The source of these indicators is the European Commission-OECD Tax and Benefit project based on the OECD Tax and Benefits models (Carone, 2003). A description of legislation used for the computation of most parameters is available in the Tax and benefits country chapters published on the OECD website.³ Depending on the dimension analysed, the indicators refer to characteristics of the most appropriate income support instrument

³ http://www.oecd.org/document/3/0,3343,en_2649_34637_39617987_1_1_1_1,00.html.

(unemployment insurance to measure the risk of unemployment traps at the beginning of the unemployment spell, social assistance to track the risk of inactivity traps, both unemployment insurance and unemployment assistance to measure the extent to which benefits fall over time and a related risk of benefit dependence).

- *Entitlement conditions* describe the conditions that determine initial entitlement to *unemployment insurance*. The indicator is an index and provides a score between one (least strict) and five (most strict). The aim of this indicator is to provide some measure of unemployment benefit coverage.
- *Unemployment traps* are captured by an indicator that measures financial incentives to take up work for individuals benefiting from *unemployment insurance* and at the beginning of the unemployment spell. The indicator measures the marginal effective tax rate (METR) on labour, namely the extent to which the gains from moving from unemployment to work are reduced as a result of the presence of the tax and benefit system. It usually ranges between 0 and 100; high values correspond to low incentives to take up work.⁴
- *Inactivity traps* are captured by a similar indicator as that for unemployment traps, but this indicator measures incentives to take up work from inactivity (after exhaustion of unemployment benefits or with no entitlement), while benefiting from *social assistance* if available.
- Duration of unemployment insurance benefits. The indicator is constructed with reference to an unemployed who is 40 years old and has 22 years of contributions.
- *Time profile of benefits* is measured as the ratio of the average net replacement rates of *either unemployment insurance or unemployment assistance* (whatever available) between the second and fifth year in unemployment and that in the first year.
- *Job search and work availability*. The indicator describes the extent to which an individual entitled to *unemployment insurance* must be available and actively search for work to fully qualify as a benefit recipient, and accept suitable job offers. The indicator ranges from 1 (least strict) to 5 (most strict).

⁴ The METR is computed as $METR = 1 - \Delta y_{net} / \Delta y_{gross}$, where Δy_{net} and Δy_{gross} are, respectively the change in net and gross income resulting from moving from unemployment to work. It is visible that unemployment traps may exceed 100 in the extreme case where taking up work reduces net disposable income.

The following benchmarks are chosen for a comparison of the various dimensions of EU unemployment benefit systems:

- *EU average.* It is a standard summary statistics used for benchmarking of EU countries. It has been widely used in the context of the Lisbon Assessment Framework (LAF) and the Joint Assessment Framework (JAF). The idea is to compare various dimensions of the unemployment benefit system in individual countries on the basis of the EU average.
- *Average within relevant country groupings.* An overall design of unemployment benefit systems varies considerably across EU countries, depending inter-alia on country specific labour market and welfare institutions. The unemployment benefit system can comprise different passive (unemployment insurance, unemployment assistance) and activation and active labour market policy instruments and could be oriented towards either the insurance or the welfare principle.⁵ It is customary to classify EU countries into groups characterised by relatively similar combinations of welfare and labour market policies and institutions. The average for these homogenous groups lends itself as an alternative benchmark for the assessment of unemployment benefits. This paper will use the taxonomy proposed by European Commission (2007) where countries are classified into five groups on the basis of their flexicurity model.⁶ The taxonomy permits to identify relatively homogenous country groups in terms of the characteristics of their unemployment benefit systems. Table 1 reports relevant summary statistics by country groups.
 - *Nordic countries* (Denmark, Finland, the Netherlands, Sweden). These countries are characterised by a highly generous unemployment benefit system both in terms of entitlement conditions and income support per unemployed. Long benefit duration is often coupled with high net replacement rates, in

⁵ The insurance principle aims at consumption smoothing, contributions are the main source of financing, and benefits are strongly related to previous earnings. Conversely, the welfare principle aims at redistributing income, financing is by means of flat-rate contributions or a general tax financing, and benefits are not strongly linked to past income (i.e. benefits are capped at relatively low levels).

⁶ The taxonomy proposed by the European Commission (2007) largely confirms the findings of the seminal work on the taxonomy of socio-economic systems carried out by Esping and Andersen (1990). It covers 22 EU countries which are classified into five groups on the basis of principal component analysis. The five missing EU countries were for the purpose of this paper allocated on the basis of unemployment benefit systems characteristics as follows: Malta and Cyprus were allocated to the Anglo-Saxon group of countries, Luxembourg to the Continental group, Romania and Latvia to the Central, Eastern group of countries.

particular within the first two years of unemployment. The benefit system is highly redistributive, and caps on maximum benefits reduce generosity of benefits for higher wage persons. To keep work incentives high, activation and active labour market policies have a prominent role and the conditions on job search and work availability are very strict.

- *Continental countries* (Austria, Belgium, Germany, France, Luxembourg). Continental countries generally have a generous unemployment insurance system, though benefit duration is generally shorter and net replacement rates lower than in Nordic countries. Unemployment assistance often complements income support. The benefit coverage is large and ensures that a large pool of the unemployed receive benefits. The risk of unemployment and inactivity traps and benefit dependency is addressed by activation and active labour market policies.
- *Anglo-Saxon countries* (Ireland, the UK, Malta, Cyprus). In Anglo-Saxon countries, unemployment insurance benefits are relatively modest, while unemployment assistance is a relevant means-tested instrument to provide income protection to the unemployed. Expenditure on means tested full time unemployment benefits often exceeds non-means tested unemployment benefits. While unemployment traps are not a major issue, benefit dependency is a risk on account of nearly flat-rate and long-lasting unemployment assistance. To counter benefit dependency, monitoring of job-search activity is strict whilst active labour market policies play a less important role.
- *Southern countries* (Spain, Italy, Portugal). The generosity of unemployment insurance generosity varies widely depending on age and contribution period of the unemployed. Eligibility rules for unemployment insurance benefits are relatively strict. Unemployment assistance is of little relevance, as well as the risk of inactivity traps. Activation policies play a relatively minor role, while making the continuation of provision of unemployment insurance conditional to the participation in active labour market policies is more widespread.
- *Central and Eastern countries* (Greece, Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovakia, Slovenia, Romania, Latvia). This group of countries tends to exhibit a tight unemployment benefit system both in terms of benefit support per unemployed and benefit coverage. Although

replacement rates at the beginning of the unemployment spell can be high in some cases, benefits drop sharply after the first year of unemployment. While unemployment assistance plays a minor role, the unemployed can draw on substantial means-tested income support provided by housing and social benefits. Relatively strict conditions on job search and active participation of labour market policies often apply.

3.2. Generosity of unemployment benefit systems

A synthetic indicator is built to capture the overall available income support per unemployed. The overall generosity of the unemployment benefit system depends not only on the level of replacement rates of both unemployment insurance and unemployment assistance, but also on their pattern and evolution throughout the unemployment spell. With a view of capturing these features, a synthetic indicator, new in the existing literature, is computed as follows.

$$UBgenerosity = \sum_{i=1}^k nrr_{UI,i} * duration_{UI,i} + nrr_{UA} * duration_{UA}, \quad (1)$$

where *nrr* stands for net replacement rate, *UI* and *UA* at the pedix of variables denote, respectively, unemployment insurance and unemployment assistance, the index *i* refers to the different replacement levels for unemployment insurance over the unemployment spell.

The indicator corresponds to the sum of all benefits received during the unemployment spell in terms of previous labour earnings. The indicator measures *ex ante* the maximum potential income support available to those unemployed that fulfil all eligibility criteria, e.g. fulfil the criteria for job search. It can be interpreted as the number of months of previous job income to which the unemployed are entitled. All necessary parameters for its computation, notably net replacement rates over the unemployment spell and duration of both unemployment insurance benefits and unemployment assistance are taken from the joint European Commission-OECD Tax and Benefit project. Note that the actual, *ex post* generosity depends on the effective expenditure per unemployed, which is determined also by policy-driven factors, notably job search requirements, as discussed in the previous section of the paper. There is no obvious way to take into account cross-country differences in generosity linked to job search conditions into a synthetic indicator, but this is an element that deserves to be considered in the overall assessment.

The overall generosity of unemployment benefits is assessed also on the basis of a benchmark which takes into account country-specific labour market institutions and policies. The overall generosity of unemployment benefits depends on a series of factors, including the need to provide sufficient income support, the risk of depressing incentives to take up jobs, fiscal constraints. Hence, in addition to simply comparing against the EU average or the average within a homogenous country groups, a more sophisticated benchmark will be used, which permits to take into account these differences. The benchmark is the prediction obtained from cross-country regressions on the following variables (see the Appendix for details on the econometric estimations and results):⁷

- *Real GDP per capita.* Demands for income support during unemployment tend to be stronger in countries with higher income per capita.
- *Unemployment rate.* A larger pool of unemployed corresponds to a larger unemployment risk and lower probability of finding a job and raises demands for more generous protection.⁸
- *Long term unemployment rate.* The larger the number of the unemployed that are already in unemployment for more than one year, the higher the risk that generous benefits create a problem of benefit dependence, thus depressing incentives.
- *Government budget balance.* A surplus in the government budget allows for more room to increase a state share of financing of unemployment benefits.
- *Expenditures on activation policies.* Well-designed activation policies and strictly enforced job search conditionality can effectively offset disincentives stemming from more generous benefit support.

⁷ The explanatory variables do not include some relevant labour market institutions such as employment protection legislation due to short time span (the data on employment protection legislation are available until 2008) and incomplete country coverage (the employment protection legislation is not available for the EU countries which are not OECD members).

⁸ This result suggests the counter-cyclical adjustment of unemployment benefits, i.e. longer benefit duration and higher net replacement rates during downturns when unemployment rate increases.

4. Benchmarking unemployment benefits systems across the EU: results

4.1. Income support and incentives

Results are reported in Table 2. The information reported is for the latest available years. It is important to note that the data do not permit to capture the effects of reforms that become operational after 2010. A synthesis for year 2010 by means of radar graphs is provided in Graphs 5 to 10. A few words of caution are warranted when interpreting these graphs. First, all variables are re-scaled to values between zero and 100.⁹ Second, all variables are presented in such a way that a higher value (or a larger radar perimeter) correspond to more generous unemployment benefit systems. To this purpose, the entitlement and the job search indexes were adjusted in such a way that a higher value implies less strict conditions.¹⁰

A glance to radar graphs (Graphs 5 to 10) allows for a quick comparison of the various characteristics of unemployment benefit systems to EU and country group averages. This simple comparison helps assessing unemployment benefits systems according to the main relevant dimensions, thereby permitting a comprehensive view. For instance, for the case of Denmark, it stands out quite clearly that this country is characterised by a relatively generous system regardless of the benchmark, but that it also has in place instruments to fight a high risk of benefit dependence.

A few countries stand out as having particularly generous systems along all dimensions, while some countries appear to be characterised by strict systems in all respects. A cursory inspection of graphs quickly reveals that Austria, Belgium, Denmark, Finland, are more generous than the EU average in most dimensions. The opposite holds for Estonia, Italy, Poland, Romania and Slovakia. When compared with respective country groups, Finland however appears more in line with the Nordic average.

Concerning the benchmarking of each unemployment benefits system characteristic taken in isolation, results can be summarised as follows:

⁹ This is done in such a way that the minimum value of each variable is set to zero and the maximum value to 100. The values between the minimum and the maximum value are re-scaled as follows: Rescaled Value = (Original value - Minimum) / (Maximum - Minimum).

¹⁰ The usual interpretation of the entitlement conditions index and the job search and work availability index is such that a higher value of the index means more strict conditions and less generous benefit system. By taking an inverse of both indices (1/index) the interpretation could be reversed. Overall, low values of these indices, high unemployment and inactivity traps, long benefit duration and a small decline of net replacement rate over the unemployment spell suggest that the benefit system is generous and the respective radar graph large.

- *Entitlement conditions.* In Austria, Denmark, Cyprus and the Czech Republic income support is provided to a large pool of unemployed. Conversely, in Italy and Portugal entitlement conditions are particularly strict.¹¹ Entitlement conditions are also tight in most Central and Eastern European countries, with the notable exceptions of the Czech Republic and Latvia. Belgium has entitlements broadly in line with the EU average, which are however relatively strict as compared with the average for Continental countries.
- *Unemployment traps.* In Denmark, Luxembourg, and Latvia marginal effective tax rates are relatively high, exceeding 80%. However, it also appears that marginal effective tax rates in Denmark and Luxembourg are not deviating substantially from the averages of Nordic and Continental group respectively. An opposite consideration applies to countries like Ireland and Sweden: the risk of unemployment traps for these countries appears to deviate more from their own country groups than with respect to the EU average. Unemployment traps appear instead particularly low in Estonia, Malta, Slovakia, the UK.
- *Inactivity traps.* The risk of inactivity traps appears high in Denmark, Finland, Germany, the Netherlands, Slovenia when compared to the EU average. However, while Finland, Germany, and the Netherlands are broadly in line with the average of their respective country groups, Slovenia appears to deviate also in this respect, together with few other Eastern European countries (Czech Republic, Latvia, Lithuania). Conversely, relatively low risks of inactivity traps emerge in countries without generous social assistance, notably Estonia, Italy and Greece, Spain, Portugal, Romania, Bulgaria and Slovakia. Within their country groups, however, Spain and Estonia appear broadly in line, and Portugal relatively generous.
- *Duration.* Duration of unemployment insurance benefits appears particularly long in Belgium, Denmark and Portugal. Denmark, however, does not have duration much higher than what is observed on average in Nordic countries.¹² In contrast, benefit duration is relatively short in Italy and in most countries belonging to the Anglo-Saxon

¹¹ To qualify for benefits the unemployed should have in Italy two years of insurance and 52 weekly contributions during the last two years while in Portugal 450 days of employment record in the last 2 years.

¹² The assessment depends largely on the fact that Denmark in 2010 halved the duration of unemployment insurance from 48 to 24 months.

group and the Central and Eastern group.¹³ The short duration of unemployment insurance benefits in Anglo-Saxon countries is explained by the availability of means-tested unemployment assistance after the exhaustion of unemployment insurance. Austria also has a relatively short unemployment insurance benefit duration, but it provides earnings-related, means tested unemployment assistance of indefinite duration. Duration of unemployment insurance benefits in Austria, Sweden, Luxemburg and Germany is closer to EU average than to their own group averages.¹⁴

- *Time profile of replacement rates.* In Ireland, Malta and the UK unemployment insurance benefits are fully flat, and followed by a flat rate unemployment assistance of indefinite duration. Net replacement rates decline only marginally also in Belgium and Austria. Conversely, Cyprus (an exception within the Anglo-Saxon group), Italy, Luxembourg and Latvia do not operate unemployment assistance systems and have a strong drop in net replacement rates due to short unemployment insurance duration.
- *Job search conditions.* Belgium, Bulgaria, Greece have relatively lax job search and availability conditions. In contrast, Germany and Denmark appear to have the most stringent job search conditions in the EU. In both countries, strict conditions apply to job refusals and generally require participants in active labour market policy measures to be available for work and actively search for a job.¹⁵ In this respect, Germany scores well above the average for the group of Continental countries.

Overall, benchmarking with respect to EU or homogenous country group averages matter, and results are not always obvious. Benchmarking of individual dimensions of benefit systems to group averages as opposed to EU average generally tends to reduce the dispersion in the value of variables with respect to the benchmark. However, there are also cases in which benchmarking with respect to country groups increases variation (see Table 4). This often happens when variable values for single countries and country groups deviate from the EU average in opposite directions.

¹³ Italy increased unemployment insurance duration in the last decade, yet the duration remains well below both the EU average and the average of the Southern group.

¹⁴ The data do not permit to capture yet the recent reform in Hungary reducing the duration of unemployment insurance to 3 months.

¹⁵ In both countries, unemployment benefit recipients are required to accept any job that they are capable of doing, regardless of their previous occupation. After three months of unemployment long commuting times for

4.2. Unemployment benefit generosity

The design of unemployment benefits over the unemployment spell differs widely across EU countries. Graph 1 compares the pattern of unemployment benefit replacement rates for unemployment insurance and unemployment assistance over the unemployment spell across EU countries. Net replacement rates drop to some extent in almost all EU countries, either due to a reduction in unemployment insurance benefits or to the replacement of unemployment insurance benefits with less generous unemployment assistance.¹⁶ Net replacement rates can in some countries be quite high at the beginning of the unemployment spell and drop substantially after a short period of time (e.g. Latvia, Luxembourg). In other countries, net replacement rates can persist at a relatively high level for an extended period of time (e.g. Belgium, Denmark, Portugal). Graph 1 also shows that unemployment insurance benefits provide the most important income support in Belgium, Denmark, Portugal and Spain while means-tested unemployment assistance is of main relevance for income protection in Austria, Malta, Ireland and the UK.

The overall generosity of unemployment benefit systems varies widely across the EU and is relatively stable over time, except in countries having carried out major reforms in the past. Graph 2 displays the synthetic benefit generosity indicator (see section 3.2) for each country since 2001. The graph clearly shows that the total available income support per unemployed varies very widely across the EU, with countries with higher income per capita generally providing more generous systems.¹⁷ Over past decade, benefit support per unemployed appears relatively stable in most countries. However, some countries saw a substantial drop in total benefit generosity (e.g. Germany, Denmark, Sweden, France, Slovenia) while some increases were observed in Belgium, Ireland and the Netherlands. These visible changes are associated with reforms carried out throughout the past ten years.¹⁸

job reasons are required in Denmark while in Germany the required salary for a suitable job falls with the duration of unemployment.

¹⁶ It is not always the case that unemployment insurance has more generous net replacement rates than unemployment assistance. Net unemployment assistance benefits exceed that of unemployment insurance in Malta because unemployment insurance is taxed while this is not the case for unemployment assistance.

¹⁷ For computation purposes, indefinite unemployment insurance duration in Belgium and indefinite unemployment assistance duration in Austria, Germany, Finland, Ireland, Malta and the UK is capped to 60 months. Therefore, for these countries, the total available benefit generosity is understated and should be in principle unlimited as long as the unemployed fulfil the eligibility criteria.

¹⁸ In Germany a large drop in benefit support in 2005 followed the Hartz IV reform which merged the unemployment assistance with social assistance and introduced a flat-rate instead of an earnings-related income

The simple comparison of unemployment benefit generosity with the EU average does not permit to account for the fact that differences are to some extent related to structural differences in economic fundamentals, institutions, policy settings. Appropriate benchmarking helps taking into account such differences.

- As shown in Table 3, Belgium, Malta, Austria, Denmark, Ireland, Finland and Portugal stand out as having more generous benefit systems than the EU average, while the opposite holds for the Czech Republic, Lithuania, Slovakia, Italy, Poland, Hungary, Latvia and Estonia.
- When generosity is compared to the average of more homogenous country groups, deviations intuitively tend to narrow. In particular, all Central and Eastern European countries that have much less generous benefit systems than the EU average do not deviate much from their own group average. However, there are also cases in which deviations from benchmark become more evident when referred to country groups. For instance, Luxembourg, Sweden and the UK tend to have less generous benefits when compared to their own group averages than when compared to the EU average.
- When the comparison is performed with respect to benchmarks predicted from multivariate regressions (see section 3.2. and Appendix), it appears that once differences in fundamentals are taken into account, new insights emerge (Table 3, Graphs 3 and 4). While unemployment benefit systems in Malta, Belgium and Portugal appear even more clearly highly generous, the evidence becomes weaker for Denmark and Finland. The reason is that high income per capita, strong activation policies, and sufficient fiscal space in these countries, justify more generous benefit systems. These benchmarks strengthen the case that Luxemburg and Sweden are characterised by relatively tight benefit systems, while for Slovakia, Greece, Poland and Hungary results become more nuanced: benefit systems are still relatively tight, but, in light of a combination of low income per capita, fiscal deficits, and high long-

support. Denmark, Sweden and France reduced its benefit support by cutting benefit duration in 2010, 2008 and 2003 respectively. In addition, Sweden introduced a declining profile of net replacement rates in 2007. A decline of benefit support in Slovenia follows scrapping off the unemployment assistance in 2007. On the other hand, Belgium saw a gradual increase in benefit support over time, largely due to a flattening of the benefit profile over the unemployment spell. In Ireland, benefit support was steadily increased due to a solid rise in weekly benefits. The Netherlands reduced substantially the maximum benefit duration from 60 to 38 months and introduced a declining profile of benefit support in 2007. However, the benefit duration for a person with 22 years of contribution period increased from 18 to 22 months.

term unemployment, not as much as coming out from a simple comparison with EU average.

5. Conclusions

The paper evaluates unemployment benefit systems in the EU using various benchmarks. The data are taken from the European Commission – OECD Tax and Benefit Project and are available over the period 2001-2010. The analysis considers a multiplicity of dimensions of unemployment benefit systems - such as entitlement conditions, unemployment and inactivity traps, benefit duration, time profile of replacement rates and job search and work availability. Cross-country comparisons are performed not only on the basis of the EU average but also on the basis of the average of a homogenous group of countries with similar labour market institutions.

A synthetic measure of the total generosity of unemployment benefit systems is constructed taking into account net replacement rates over the whole unemployment spell of both unemployment insurance and unemployment assistance. This synthetic indicator is compared with a benchmark estimated from multivariate cross-country regressions and takes into account differences across countries in GDP per capita, labour market performance, fiscal constraints and expenditures on activation policies.

A number of relevant results emerge as follows from the comparison of the different dimensions of unemployment benefit systems:

- Belgium, Denmark, Portugal, Spain, Finland and the Netherlands appear to be relatively generous in terms of unemployment insurance replacement rates and duration compared with the EU average, while in the UK, Malta, Slovakia, Estonia, Poland and Romania benefit conditions are relatively tight.
- Regarding entitlements conditions, they are particularly loose in Denmark, Austria, Cyprus, while in Portugal, Italy, Slovenia, they are rather tight. As for job search conditionality, it is loose in Belgium, Greece, Bulgaria, while tight conditions apply in Germany, Denmark, Slovakia. While a decline in the net replacement rate is nearly absent in Ireland, Malta, the UK, Austria and Belgium, the decline is rather abrupt in Italy, Latvia, Luxembourg, Greece, Estonia, Poland, Slovenia and Lithuania.

- Within the EU, there are groups of countries with relatively homogenous benefit systems. Nordic and Continental countries are characterised by relatively generous unemployment benefit systems both in terms of entitlement conditions and income support per unemployed. In both groups, activation and active labour market policies have a prominent role, with job search conditionality being strong especially in Nordic countries. In Anglo-Saxon countries, unemployment insurance benefits are relatively modest, while unemployment assistance plays a major role. Monitoring of job-search activity is strict whilst active labour market policies play a less important role. In Southern countries, access to unemployment insurance is strict and benefit generosity varies widely depending on age and contribution period. Activation policies play a relatively minor role, while participation in active labour market policies is widespread. Finally, Central and Eastern countries tend to exhibit a tight unemployment benefit system both in terms of benefit support per unemployed and benefit coverage. Although replacement rates at the beginning of the unemployment spell can be high in some cases, benefits drop sharply over the unemployment spell. Strict conditions on job search and availability often apply.
- Some countries that stand out as particularly generous in terms of replacement rates and duration as compared with the overall EU average turn out instead broadly in line when compared with the average for their respective groups. This is the case of Finland, the Netherlands, Spain. Symmetrically, Malta, the UK, Poland, Romania and Estonia which have tight benefits as compared to the whole EU appear broadly in line with the other countries of their own groups.

The benchmarking of the synthetic measures of overall generosity of unemployment benefit systems reveals a number of insights as follows:

- The overall generosity of unemployment benefit systems exhibits a high degree of variation across EU countries, with Belgium, Malta, Austria, Denmark, Ireland, Finland and Portugal having much more generous benefit systems than EU average while opposite is the case in the Czech Republic, Lithuania, Slovakia, Italy, Poland, Hungary, Latvia and Estonia.
- A somehow different picture emerges when the overall generosity of unemployment benefit systems is benchmarked against the prediction from multivariate regressions that take into account differences in fundamental factor affecting unemployment

benefit systems. While unemployment benefit systems in Malta, Belgium and Portugal appear even more clearly highly generous, the evidence becomes weaker for Denmark and Finland. The reason is that high income per capita, strong activation policies, and sufficient fiscal space in these countries, justify more generous benefit systems. These benchmarks strengthen the case that Luxemburg and Sweden are characterised by relatively tight benefit systems, while for Slovakia, Greece, Poland and Hungary results become more nuanced: benefit systems are still relatively tight, but, in light of a combination of low income per capita, fiscal deficits, and high long-term unemployment, not as much as coming out from a simple comparison with EU average.

Overall, results confirm the usefulness of considering a wide range of elements when comparing unemployment benefit systems and of referring to alternative benchmarks. Looking at all relevant dimensions permits to better gauge how unemployment benefit systems perform in terms of their multi-faceted objectives (income support and stabilisation, incentives to take up work,...). Using alternative benchmarks offers the possibility of assessing against more meaningful country comparators, which take into account similarities in terms of economic fundamentals, institutions and policy settings.

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Table 1. Unemployment benefits systems, activation and active labour market policies, by groups of countries, averages over 2001-2010

Policy area*	Variable*	Nordic countries	Continental countries	Anglo-Saxon countries	Southern countries	Central and Eastern countries	
Unemployment benefit generosity (in months of previous net income)	UI generosity_100% of AW	16.4	13.9	2.5	13.1	4.3	
	UB generosity_100% of AW	19.7	22.8	16.4	14.5	4.6	
	UI generosity_67% of AW	21.1	16.2	3.2	13.5	5.1	
	UB generosity_67% of AW	25.6	25.3	22.1	15.4	5.6	
Passive labour market policies - expenditures (% of GDP)	Full time UB	1.40	1.09	0.53	0.83	0.28	
	Full time UB_non means tested	1.11	0.89	0.20	0.65	0.26	
	Full time UB_means tested	0.28	0.20	0.33	0.19	0.02	
Passive labour market policies - coverage	UB	67	68	51	40	18	
Activation, active labour market policies - expenditures (% of GDP)	Labour market services (cat.1 - activation)	0.22	0.18	0.18	0.09	0.07	
	Total LMP measures (categories 2-7 - ALMP)	1.09	0.66	0.30	0.53	0.18	
Activation, active labour market policies - coverage	Labour market services (cat.1 - activation)	23	28	7	0.08	23	
	Total LMP measures (categories 2-7 - ALMP)	47	48	20	45	11	
	Activation of registered unemployed	25	30	10	25	16	
Unemployment benefit duration (in months)	Minimum UI duration	21.4	16.4	7.3	5.8	5.2	
	Maximum UI duration	36.4	30.8	8.9	23.9	11.7	
	UI duration if 22 years of a contribution period	27.9	23.4	8.9	18.7	9.9	
	UA duration	36.9	37.5	60.0	15.4	7.5	
Net replacement rates over the unemployment spell	NRR_UB_year 1_average	0.66	0.70	0.46	0.64	0.45	
	NRR_UB_year 2_average	0.63	0.50	0.38	0.48	0.10	
	NRR_UB_year 5_average	0.14	0.40	0.38	0.05	0.08	
	NRR_UB+HB+SA_year 1_average	0.75	0.73	0.67	0.64	0.61	
	NRR_UB+HB+SA_year 2_average	0.74	0.66	0.66	0.48	0.46	
	NRR_UB+HB+SA_year 5_average	0.66	0.61	0.66	0.25	0.42	
Unemployment and inactivity traps	In_trap_single_67% of AW	0.80	0.66	0.60	0.34	0.46	
	In_trap_learner couple_2 children_67% of AW	0.93	0.79	0.72	0.40	0.62	
	In_trap_2earners couple_2 children_67% of AWs	0.46	0.36	0.32	0.27	0.35	
	Un_trap_single_67% of AW	0.83	0.79	0.60	0.77	0.74	
	Un_trap_learner couple_2 children_67% of AW	0.92	0.84	0.70	0.73	0.76	
	Un_trap_2earners couple_2 children_67% of AW	0.82	0.81	0.53	0.80	0.77	
	Incentives structure (index)	Entitlement conditions	2.8	3.0	2.8	3.9	2.9
		Job-search and availability requirements	3.4	2.6	3.0	2.9	3.4
Monitoring of job-search activity		2.5	2.8	4.5	3.0	3.4	
Sanctions		3.4	3.2	3.1	4.6	4.4	

Legend: UB = unemployment benefits; UI = unemployment insurance; UA = unemployment assistance; NRR = net replacement rate; PLMP = passive labour market policies; ALMP = active labour market policies; HB = housing benefits; SA = social assistance; AW = average wage; In_trap = inactivity trap; Un_trap = unemployment trap
 UB generosity is computed for a single person, 40 years old and with 22 years of a contribution period. Coverage is measured as the number of participants per 100 persons wanting to work. Decline in NRR is computed as the ratio of the average net replacement rates in the years 2 to 5 to the net replacement rate in the year 1. UI in Belgium and UA in some countries are of indefinite duration which is for computation purposes capped at 60 months.

Source: Eurostat, ESSPROS, Joint European Commission-OECD project, using OECD Tax-Benefits models.

Table 2. Selected dimensions of unemployment benefit systems

Country	Entitlement conditions		Unemployment trap				Inactivity trap				UI duration if 22 years of a contribution period				Decline in net replacement rate		Job search and availability conditions	
	2011	2004	2010	2009	2008	2007	2010	2009	2008	2007	2010	2009	2008	2007	2010	2009	2011	2004
AT	2.0	2.0	70	69	71	70	56	55	57	57	9.0	9.0	9.0	9.0	95	95	2.5	2.5
BE	3.0	3.0	79	79	74	74	59	59	59	59	60.0	60.0	60.0	60.0	91	91	2.0	2.0
BG	3.5	-	71	72	67	-	36	37	38	-	11.0	11.0	11.0	-	-	-	2.3	-
CY	2.0	-	-	-	-	62	-	-	-	48	-	-	-	6.0	6	-	2.8	-
CZ	2.0	2.0	74	72	69	71	54	53	54	56	5.0	5.0	6.0	6.0	30	30	4.0	4.5
DE	3.0	3.0	75	77	76	77	62	64	63	64	12.0	12.0	12.0	10.0	64	64	4.5	4.0
DK	2.0	2.0	87	86	86	87	83	83	84	84	24.0	48.0	48.0	48.0	79	79	4.1	4.1
EE	4.0	4.0	55	54	53	55	39	37	33	35	11.8	11.8	11.8	11.8	14	14	3.5	2.8
ES	4.0	4.0	72	71	70	71	37	35	34	37	23.7	23.7	23.7	23.7	46	46	3.5	3.5
FI	2.5	2.5	74	74	74	75	61	61	62	62	23.0	23.0	23.0	23.0	65	65	2.5	2.8
FR	3.0	-	69	69	71	71	54	54	53	52	24.0	24.0	23.0	23.0	58	58	2.9	-
GR	3.5	-	72	71	71	66	15	16	15	15	12.0	12.0	12.0	12.0	11	11	2.0	-
HU	3.0	-	75	77	77	78	42	52	52	53	8.9	8.9	8.9	8.9	28	28	3.5	-
IE	3.0	-	70	69	67	65	60	63	59	59	12.0	12.0	15.0	15.0	100	100	3.3	-
IT	4.5	4.0	72	72	72	66	25	26	24	23	8.0	8.0	8.0	7.0	3	3	4.0	2.3
LT	2.5	2.5	75	82	75	72	58	55	45	43	6.0	6.0	6.0	6.0	23	11	2.5	2.5
LU	3.5	-	83	82	83	82	60	59	57	56	12.0	12.0	12.0	12.0	11	11	3.5	-
LV	-	2.0	80	75	74	78	57	50	48	52	9.0	9.0	9.0	9.0	5	5	2.8	2.8
MT	3.5	3.5	56	57	57	59	50	50	51	52	6.0	6.0	6.0	6.0	100	99	4.0	3.5
NL	3.5	3.5	76	76	78	78	68	68	69	66	22.0	22.0	22.0	22.0	27	27	3.6	3.6
PL	3.5	-	68	63	63	65	47	47	48	50	12.0	12.0	18.0	18.0	17	17	3.8	-
PT	4.5	3.5	71	72	73	73	40	40	40	41	27.6	27.6	27.6	27.6	53	56	3.3	2.8
RO	4.0	-	64	66	61	-	37	36	35	-	12.0	15.0	12.0	-	-	-	4.0	-
SE	3.0	3.0	71	73	74	77	55	56	57	59	13.8	13.8	13.8	27.7	59	59	3.8	3.4
SI	4.0	4.0	78	79	79	77	62	64	65	65	9.0	9.0	9.0	9.0	22	22	3.5	3.0
SK	3.0	3.0	59	58	69	69	38	37	46	47	6.0	6.0	6.0	6.0	27	24	4.0	4.0
UK	2.5	2.5	50	50	50	50	49	49	49	49	6.0	6.0	6.0	6.0	99	99	2.9	2.8
EU27	3.2	3.0	71	71	71	71	50	50	50	51	14.8	15.9	16.1	16.5	45	46	3.3	3.1
Nordic countries	2.8	2.8	77	77	78	79	67	67	68	68	20.7	26.7	26.7	30.2	57	57	3.5	3.5
Continental countries	2.9	2.7	75	75	75	75	58	58	58	58	23.4	23.4	23.2	22.8	64	64	3.1	2.8
Anglo-Saxon countries	2.8	3.0	59	59	58	59	53	54	53	52	8.0	8.0	9.0	8.2	76	99	3.2	3.1
Southern countries	4.3	3.8	72	72	72	70	34	33	33	34	19.8	19.8	19.8	19.4	34	35	3.6	2.8
Central and Eastern countries	3.3	2.9	70	70	69	70	44	44	44	46	9.3	9.6	10.0	9.6	20	18	3.3	3.3

Notes:

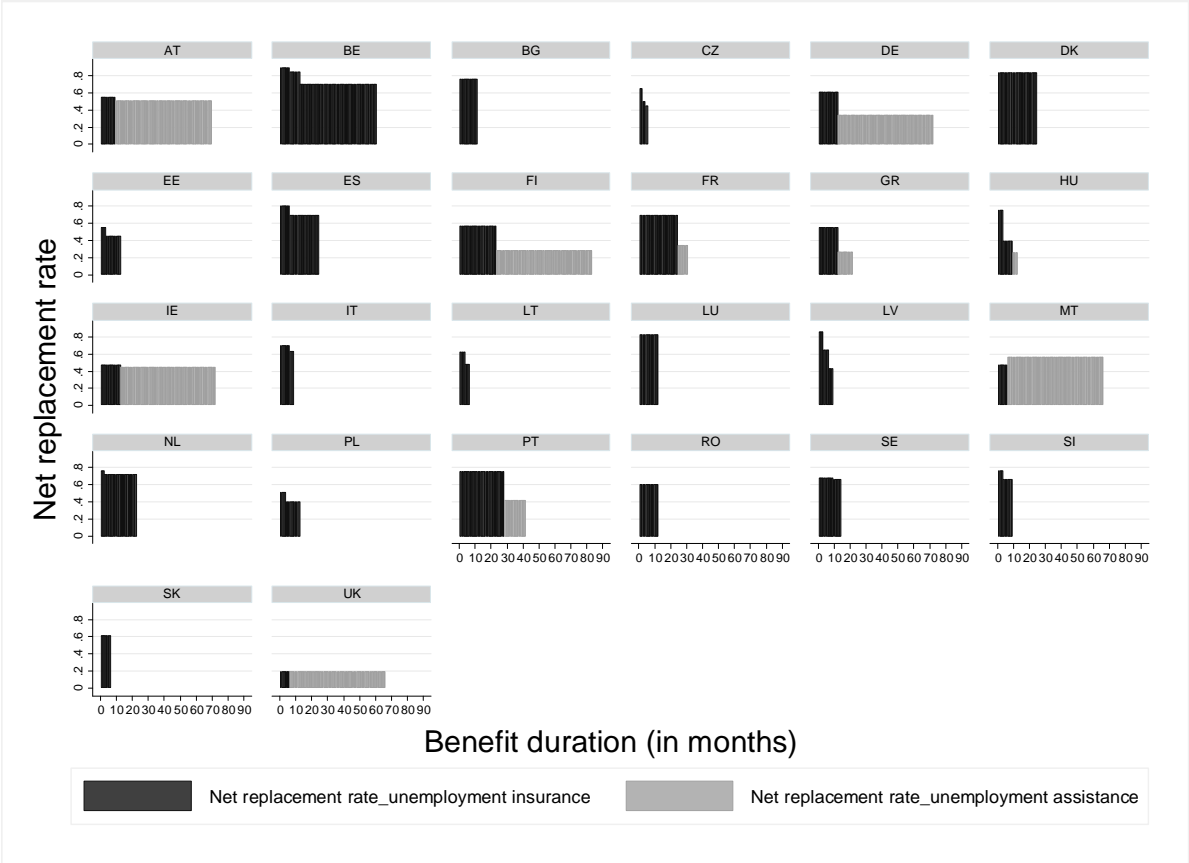
Data are presented for the most recent available years.

Unemployment and inactivity trap are averages over six different stylised family types (single, one-earner couple, two-earner couple, with and without children) and two earnings levels (67% and 100% of average full-time wages).

Decline in net replacement rate is computed as the ratio of the average net replacement rates in the years 2 to 5 to the net replacement rate in the year 1. UI in Belgium and UA in some countries are of indefinite duration which is for computation purposes capped at 60 months.

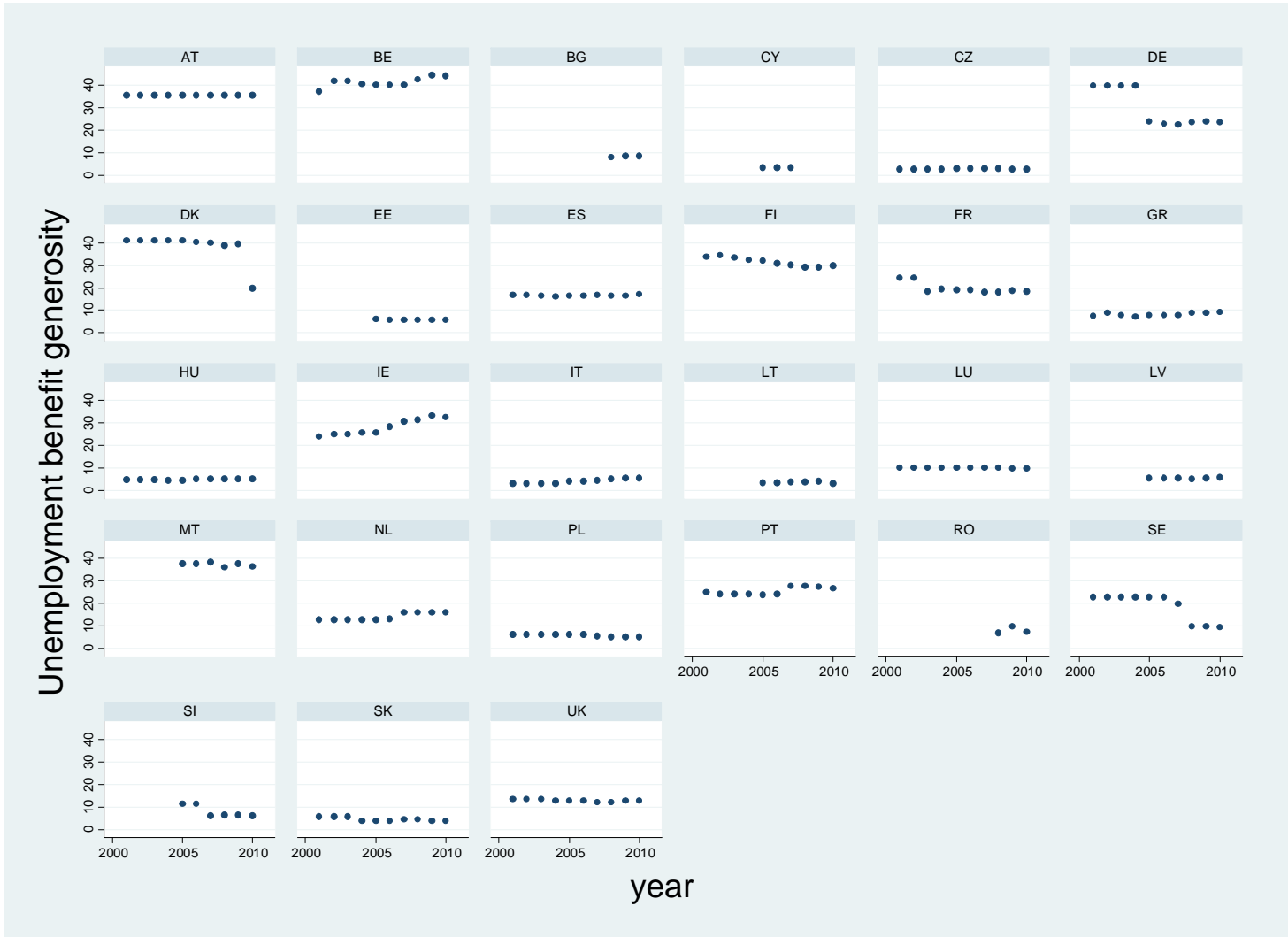
Source: Joint European Commission-OECD project, using OECD Tax-Benefits model.

Graph 1. Net replacement rates over the unemployment spell, 2010



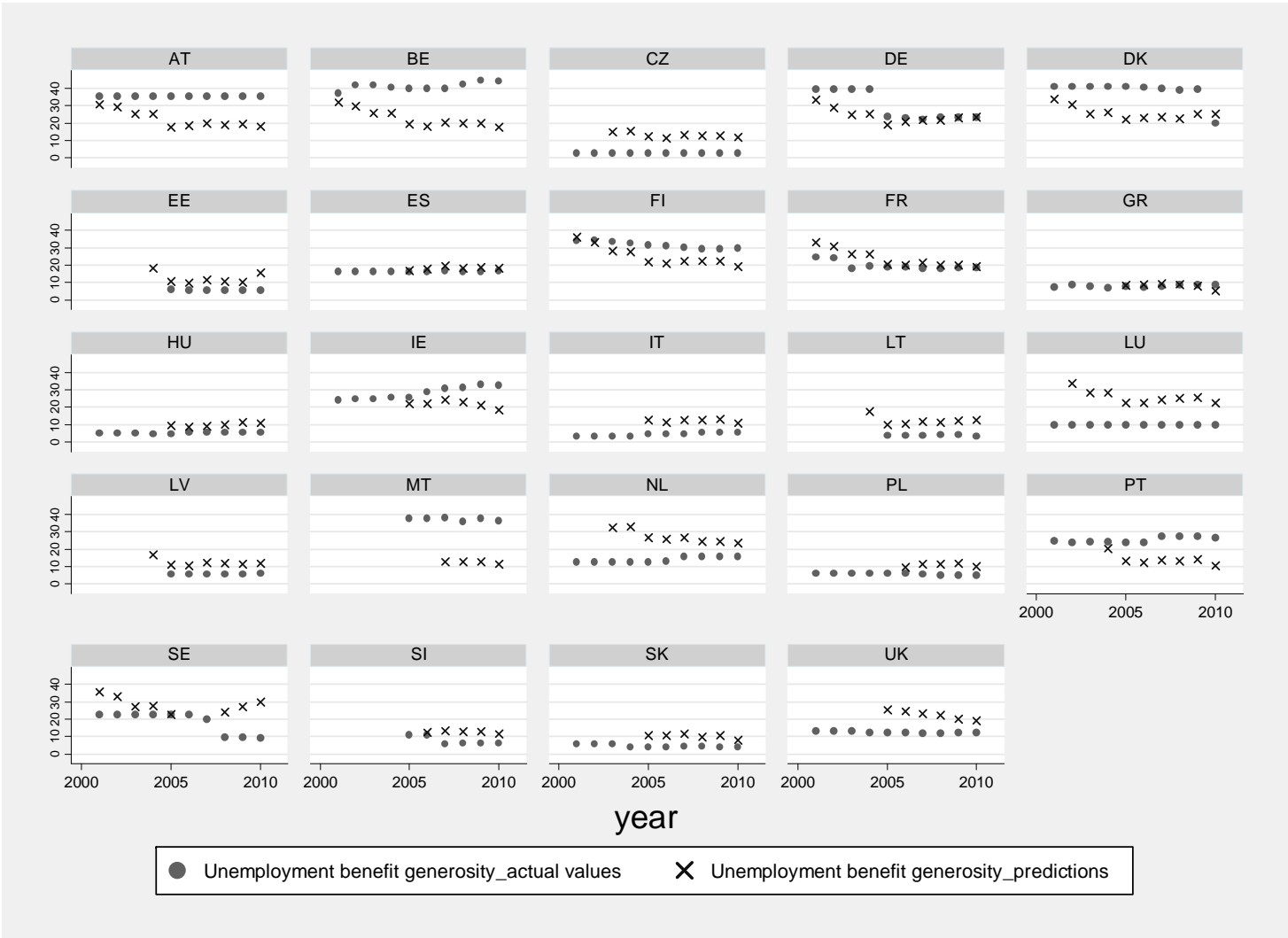
Notes: Net replacement rates and benefit duration are computed for a single, low-wage person, 40 years old and with 22 years of a contribution period.

Graph 2. The evolution of unemployment benefit generosity over time



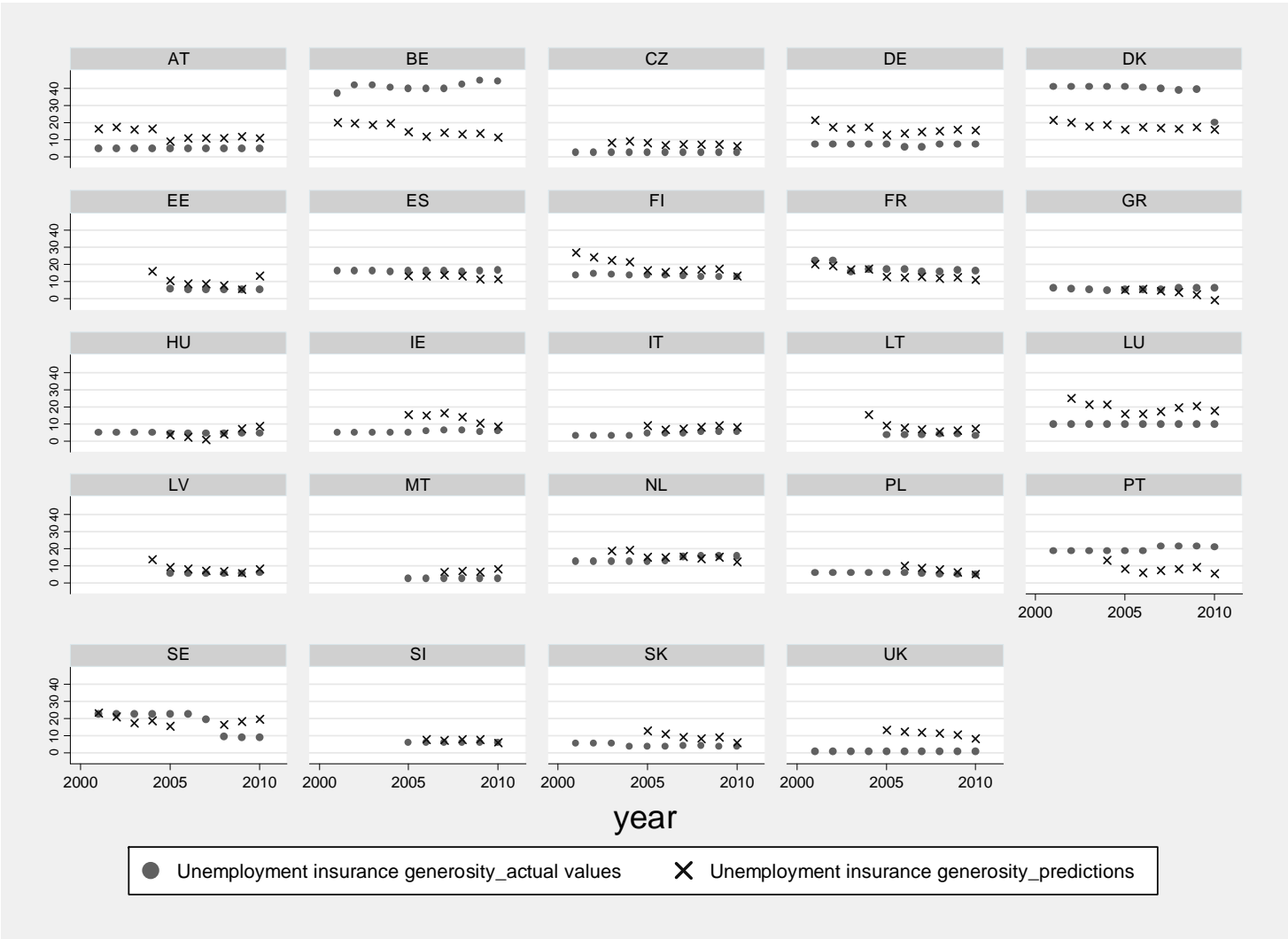
Notes: Unemployment benefit generosity is computed for a single, low-wage person, 40 years old and with 22 years of a contribution period. See Section 3.2. for the definition and interpretation of the unemployment benefit generosity. The drop of benefit generosity in Germany is to some extent attributed to the separation of a living allowance and a rent allowance payment after 2004, whereby only a living allowance is considered as unemployment assistance.

Graph 3. Benchmarks (predictions) and actual unemployment benefit generosity



Notes: Unemployment benefit generosity is computed for a single, low-wage person, 40 years old and with 22 years of a contribution period. See Section 3.2. for the definition and interpretation of the unemployment benefit generosity. Predictions are obtained from the multivariate regression (1) specified in the column 2 of Table A1 in the Appendix.

Graph 4. Benchmarks (predictions) and actual unemployment insurance generosity



Notes: Unemployment insurance generosity is computed for a single, low-wage person, 40 years old and with 22 years of a contribution period. See Section 3.2. for the definition and interpretation of the unemployment insurance generosity. Predictions are obtained from the multivariate regression (1) specified in the column 4 of Table A1 in the Appendix.

Table 3. Unemployment benefit generosity and unemployment insurance generosity, actual values and different benchmarks, average 2007-2010

	Actual value by country - actual value at EU average		Actual value by country - actual value at GROUP average		Actual value by country - Prediction by country				Prediction by country - Actual value at EU average			
	UB generosity	UI generosity	UB generosity	UI generosity	UB generosity		UI generosity		UB generosity		UI generosity	
					1	2	1	2	1	2	1	2
LU	-6.7	-0.7	-16.1	-6.3	-18.0	-13.7	-10.7	-8.7	11.2	6.9	10.1	8.1
DK	17.9	23.9	11.5	15.6	10.8	11.3	18.0	17.9	7.1	6.5	5.9	6.0
FI	13.0	2.6	6.6	-5.8	7.0	8.6	-3.7	-2.9	6.1	4.4	6.3	5.5
SE	-4.5	1.5	-10.9	-6.8	-13.9	-15.7	-7.4	-8.7	5.9	7.2	7.1	8.1
IE	15.4	-4.7	6.4	2.6	12.4	11.6	-6.2	-6.4	3.0	3.7	1.5	1.7
ES	0.0	6.1	0.3	2.3	-2.8	-2.1	3.0	4.1	2.8	2.1	3.0	1.9
AT	18.9	-5.7	9.5	-11.3	16.2	16.8	-6.7	-6.2	2.6	2.0	1.0	0.6
NL	-0.8	5.3	-7.2	-3.1	-3.2	-6.4	4.1	1.7	2.4	5.6	1.2	3.6
UK	-4.4	-9.5	-13.4	-2.2	-6.0	-7.9	-8.8	-9.5	1.5	3.5	-0.6	0.1
FR	1.8	5.8	-7.6	0.2	2.4	0.1	5.6	4.2	-0.6	1.7	0.2	1.6
BE	26.1	32.2	16.8	26.6	26.9	25.3	31.2	29.7	-0.8	0.7	1.0	2.4
EE	-11.0	-4.9	0.1	0.4	-9.1	-6.9	-4.5	-3.2	-1.9	-4.1	-0.4	-1.7
DE	6.6	-3.7	-2.7	-9.3	8.5	4.4	-4.9	-8.3	-1.9	2.2	1.2	4.6
IT	-11.5	-5.4	-11.2	-9.2	-9.5	-7.3	-4.3	-2.9	-2.0	-4.2	-1.1	-2.4
SI	-10.5	-4.4	0.6	0.9	-8.1	-6.7	-2.1	-1.2	-2.3	-3.8	-2.2	-3.2
LV	-11.1	-5.0	0.0	0.3	-8.5	-7.1	-3.0	-1.4	-2.6	-4.0	-2.0	-3.6
LT	-12.9	-6.8	-1.8	-1.5	-10.2	-9.0	-3.9	-2.6	-2.7	-3.9	-2.9	-4.2
MT	20.4	-7.7	11.5	-0.4	24.1	24.7	-4.6	-4.1	-3.6	-4.3	-3.0	-3.6
CZ	-13.8	-7.7	-2.8	-2.5	-9.7	-9.5	-4.4	-4.2	-4.0	-4.3	-3.3	-3.5
PT	10.6	10.7	10.9	6.9	16.1	15.3	14.2	13.8	-5.4	-4.7	-3.4	-3.1
HU	-11.3	-6.0	-0.3	-0.8	-5.2	-5.0	-1.2	-0.6	-6.1	-6.3	-4.9	-5.4
PL	-11.5	-5.4	-0.4	-0.1	-5.3	-5.6	-1.8	-1.9	-6.2	-5.9	-3.5	-3.5
GR	-8.0	-4.3	3.1	1.0	-1.3	0.2	2.0	3.6	-6.7	-8.2	-6.3	-7.9
SK	-12.6	-6.6	-1.6	-1.3	-0.6	-3.2	-1.7	-4.2	-12.1	-9.4	-4.9	-2.3

Legend: UB = unemployment benefits; UI = unemployment insurance;

Notes: Unemployment insurance generosity is computed for a single, low-wage person, 40 years old and with 22 years of a contribution period. See Section 3.2. for the definition and interpretation of the unemployment benefit generosity.

Last eight columns in the table take into account predictions obtained from the multivariate regressions specified in Table A1 in the Appendix.

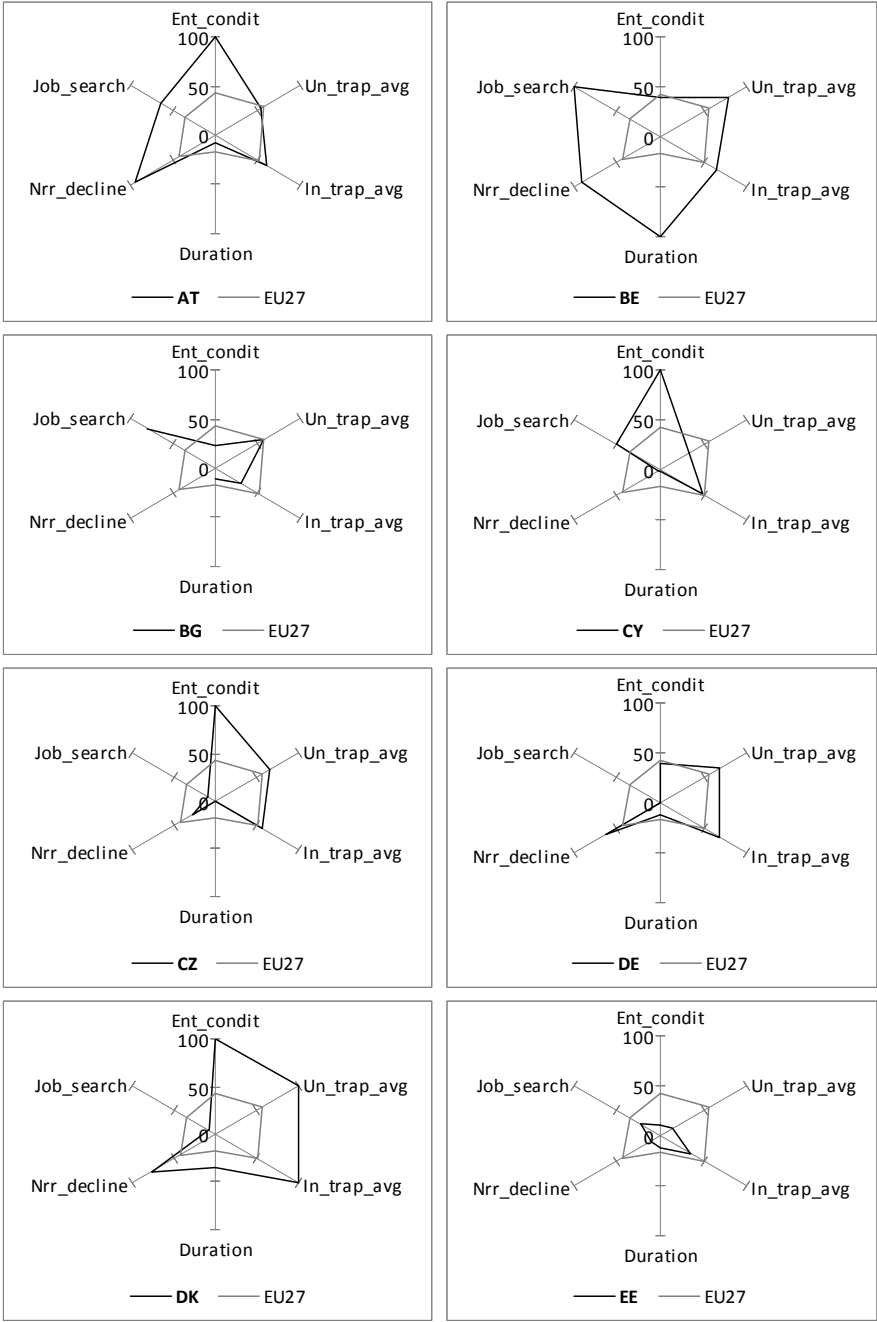
Table 4. Difference between deviations from group average and EU average*

	Entitlement conditions	Unemployment trap	Inactivity trap	Unemployment insurance duration (22 years of contribution)	Decline in net replacement rate	Job search and availability conditions
AT	-0.3	4.1	-4.3	8.6	-18.7	-0.2
BE	-0.1	-4.1	-7.9	-8.6	-18.7	-0.2
BG	-0.1	1.0	-6.1	-2.2		0.0
CY	0.1				-25.7	0.0
CZ	0.1	1.0	6.1	-5.5	-5.3	0.0
DE	-0.1	-3.4	-7.9	8.6	-18.7	0.2
DK	-0.4	-6.1	-16.7	-5.9	-12.0	-0.2
EE	-0.1	-1.0	-6.1	-0.5	-25.7	0.0
ES	-0.5	-0.9	-9.4	-4.9	11.1	-0.1
FI	-0.4	0.2	-4.7	-5.9	-12.0	0.2
FR	-0.1	4.1	1.0	-8.6	-7.8	-0.2
GR	-0.1	1.0	-6.1	-0.2	-25.7	0.0
HU	0.1	1.0	-6.1	-5.5	-8.8	0.0
IE	0.1	10.6	-3.0	1.2	-30.8	0.0
IT	-1.2	-0.8	-16.1	4.9	-11.1	-0.3
LT	0.1	1.0	6.1	-5.5	-18.6	0.0
LU	0.3	-4.1	-7.9	8.6	18.7	0.2
LV		1.0	6.1	-5.5	-25.7	0.0
MT	0.4	-12.2	2.8	-6.8	-30.8	0.1
NL	0.4	-4.5	-16.7	-5.9	12.0	-0.2
PL	-0.1	-1.0	0.6	-0.2	-25.7	0.0
PT	-1.2	-0.2	-4.2	-4.9	11.1	0.3
RO	-0.1	-1.0	-6.1	-0.2		0.0
SE	0.1	5.3	6.5	5.9	-12.0	-0.2
SI	-0.1	1.0	6.1	-5.5	-21.7	0.0
SK	0.1	-1.0	-6.1	-5.5	-10.4	0.0
UK	-0.4	-12.2	3.0	-6.8	-30.8	-0.1
Standard deviation, EU average**	0.74	8.57	14.36	11.59	33.59	0.70
Standard deviation, GROUP average**	0.60	6.72	10.10	9.52	20.17	0.68

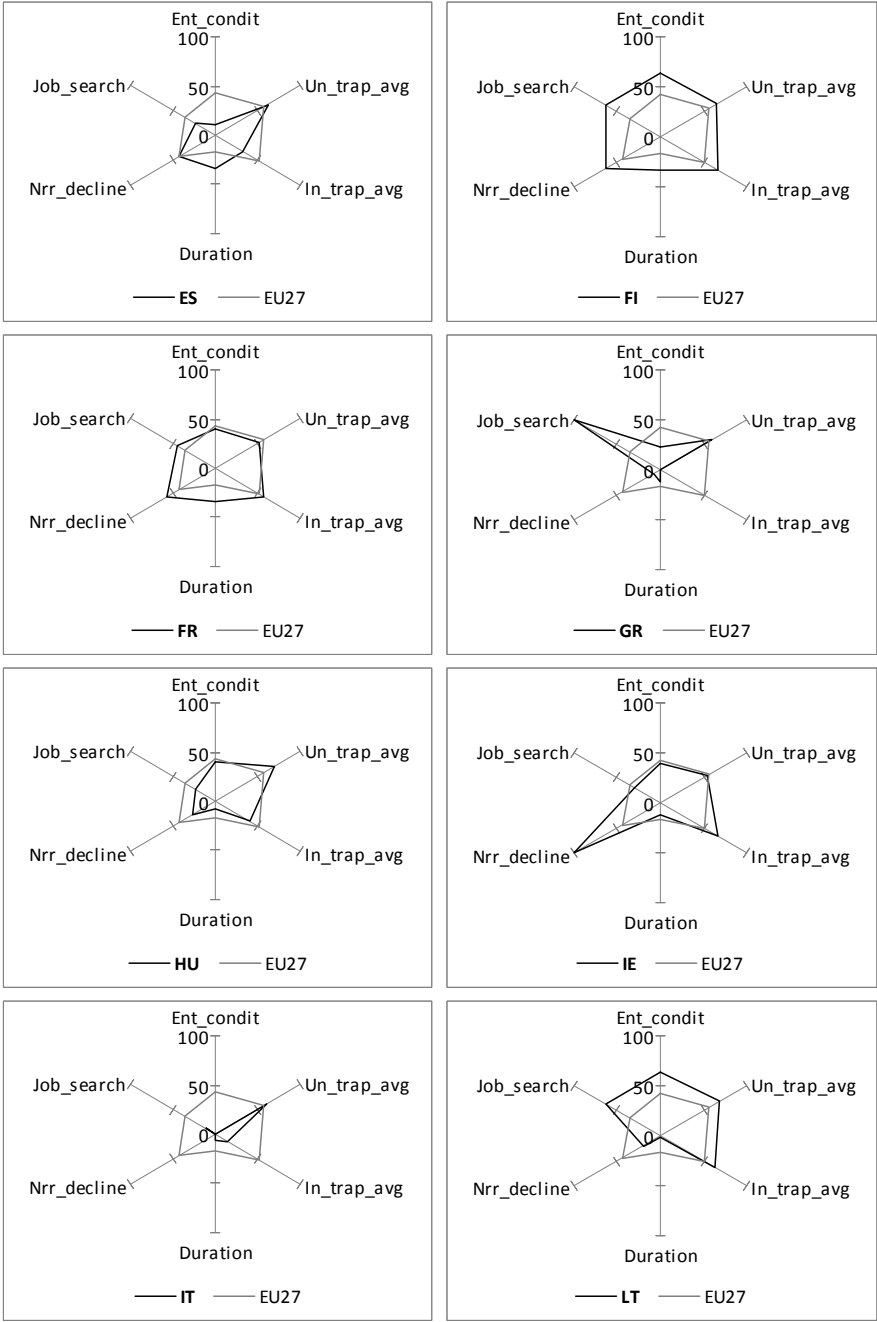
* The numbers reported in the table are differences in the absolute of value of deviations of the variables with respect to the group average and the EU average. Positive numbers are in bold.

**Standard deviation of deviations from benchmark.

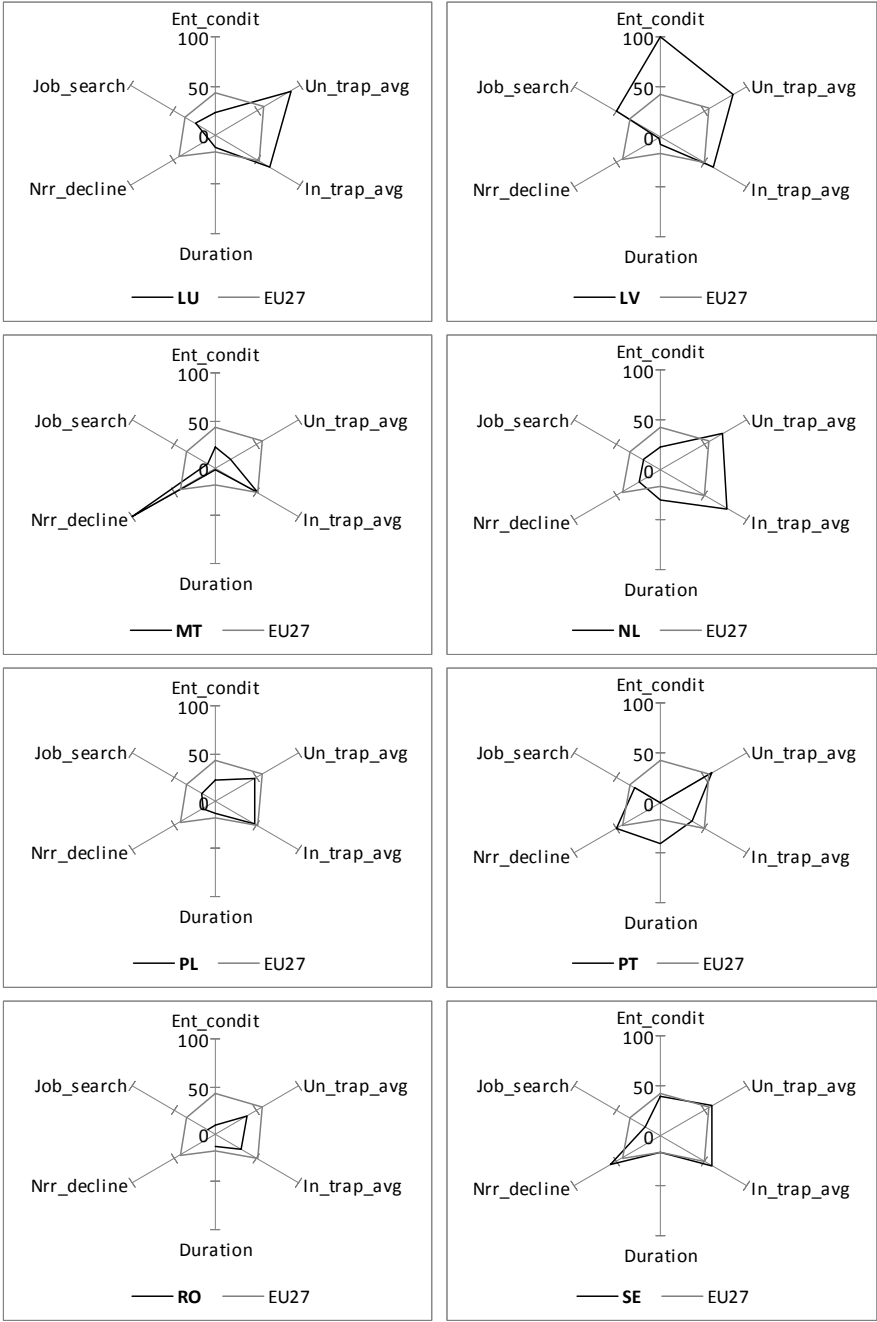
Graph 5. Benchmarking unemployment benefit systems with respect to the EU average



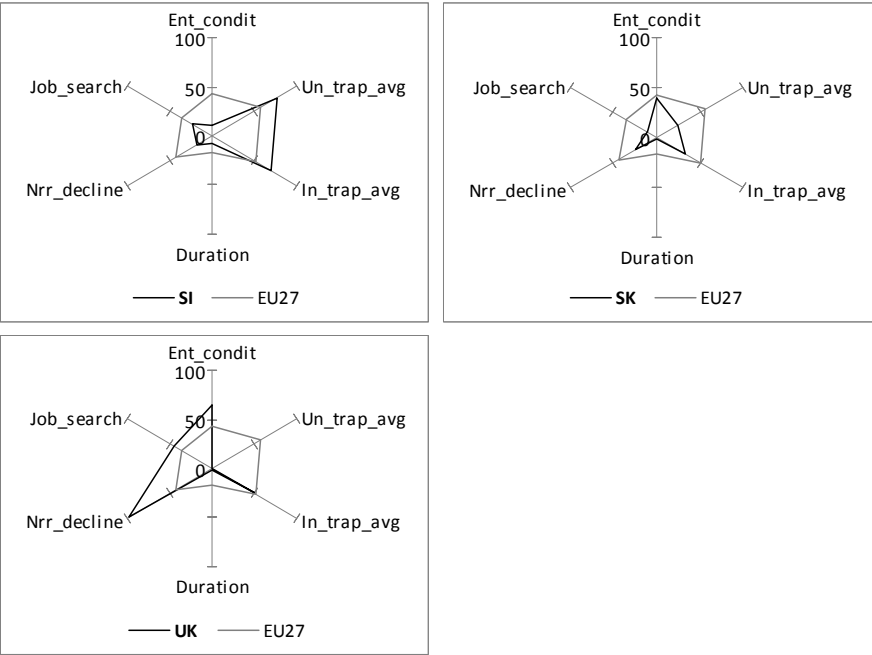
Graph 5. Benchmarking unemployment benefit systems with respect to the EU average, continued



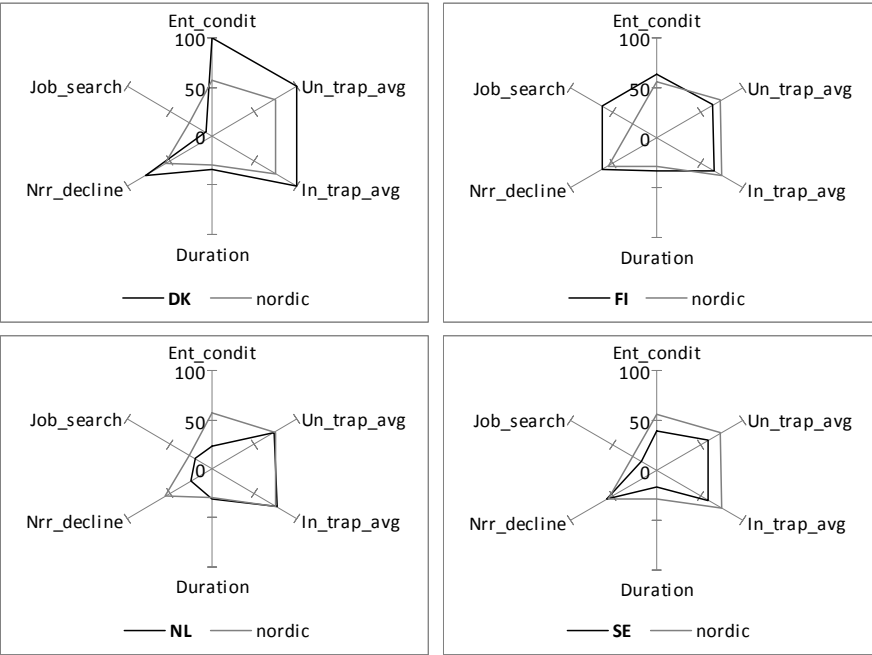
Graph 5. Benchmarking unemployment benefit systems with respect to the EU average, continued



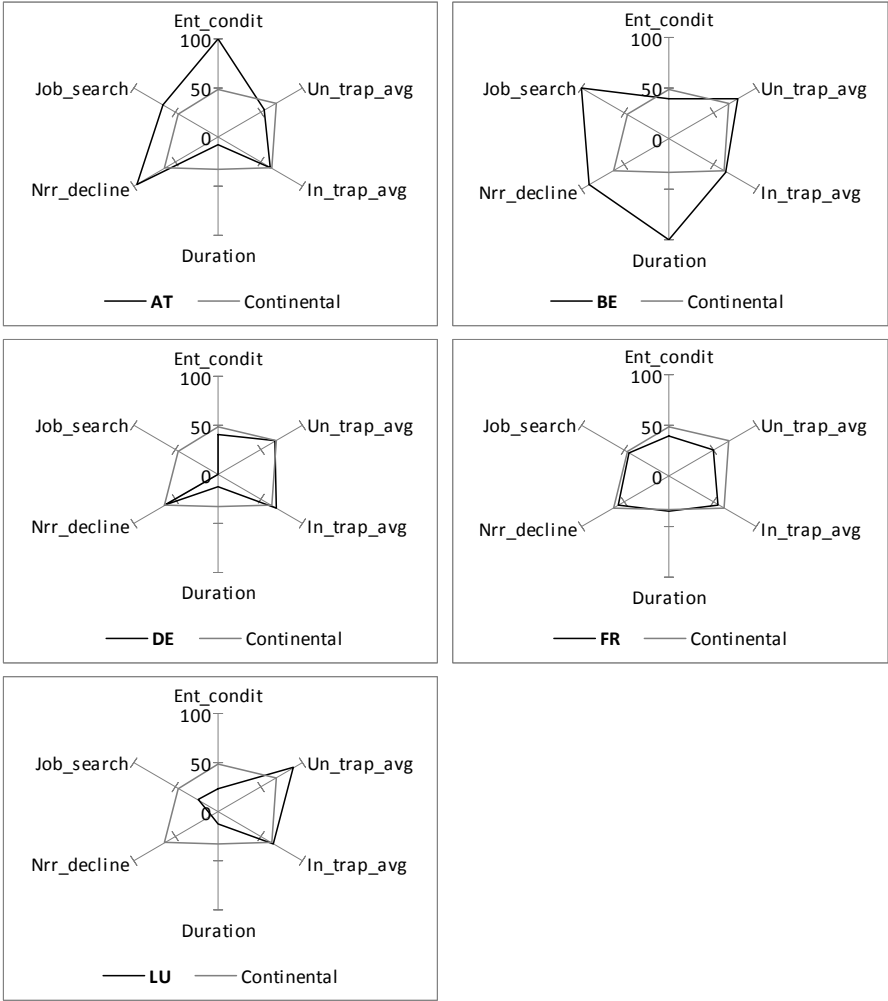
Graph 5. Benchmarking unemployment benefit systems with respect to the EU average, continued



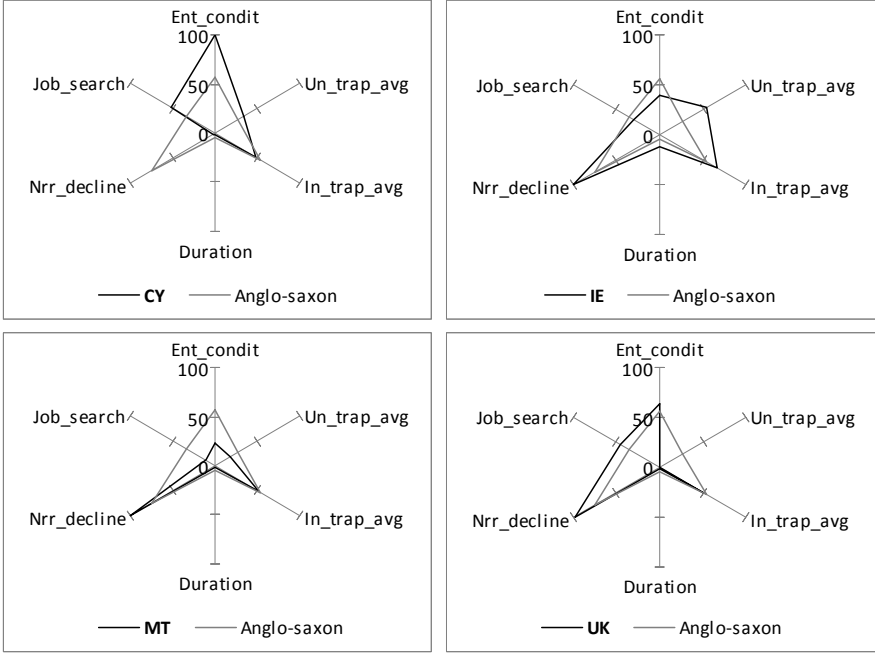
Graph 6. Benchmarking unemployment benefit systems with respect to the Nordic group average



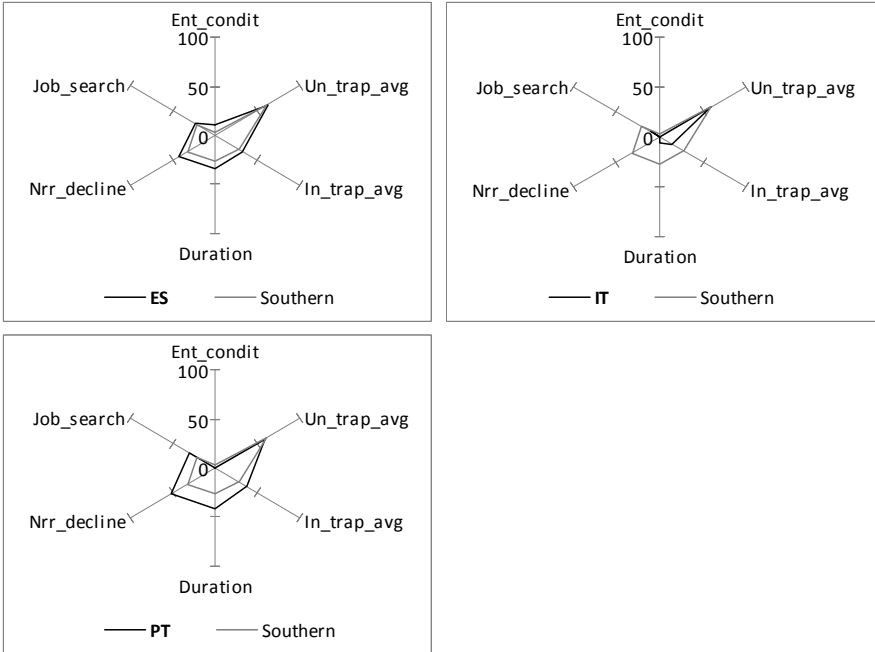
Graph 7. Benchmarking unemployment benefit systems with respect to the Continental group average



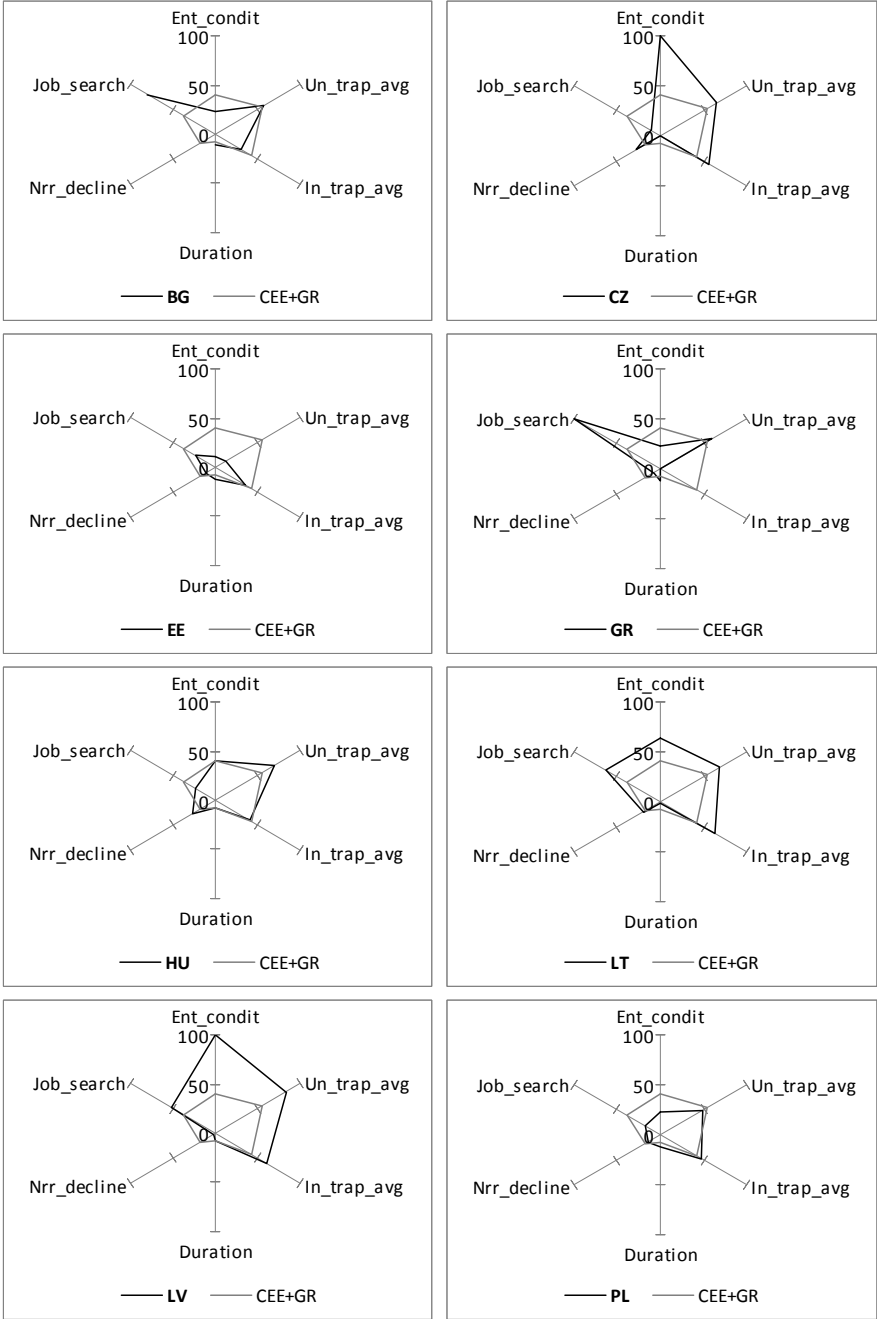
Graph 8. Benchmarking unemployment benefit systems with respect to the Anglo-Saxon group average



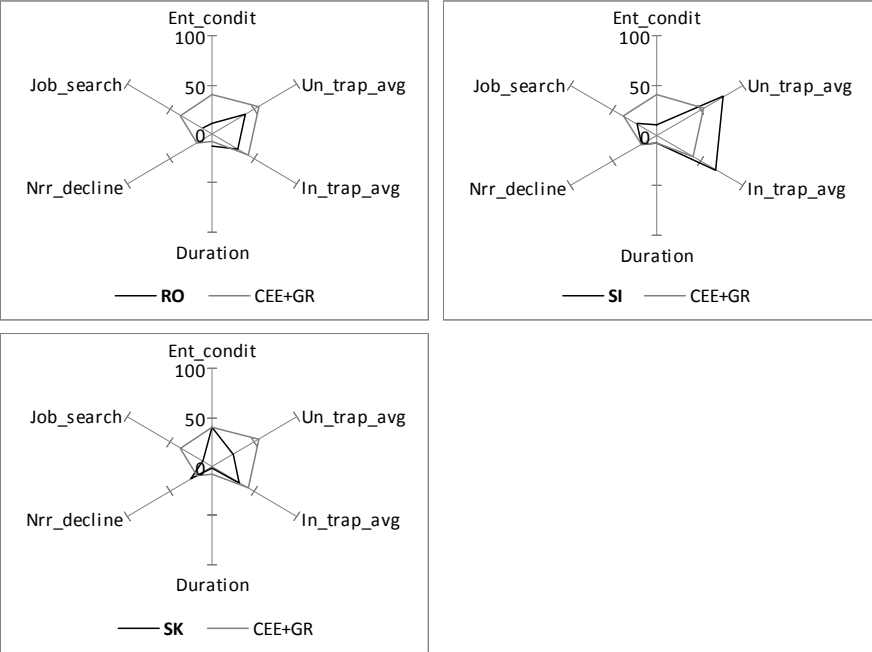
Graph 9. Benchmarking unemployment benefit systems with respect to the Southern group average



Graph 10. Benchmarking unemployment benefit systems with respect to the Central and Eastern group average



Graph 10. Benchmarking unemployment benefit systems with respect to the Central and Eastern group average, continued



Appendix

Estimating benchmarks for unemployment benefit generosity from multivariate regressions

A1. Specification, sample, estimation

The specification of the regression equation for, respectively overall unemployment benefit generosity and unemployment insurance generosity are as follows:

$$UBgenerosity_{i,t} = \alpha_t + \beta_1 y_{i,t-1} + \beta_2 u_{i,t-1} + \beta_3 ltu_{i,t-1} + \beta_4 fbalance_{i,t-1} + \beta_5 lmp_{i,t-1} + e_{it}, \quad (A1)$$

$$UIgenerosity_{i,t} = \alpha_t + \beta_1 y_{i,t-1} + \beta_2 u_{i,t-1} + \beta_3 ltu_{i,t-1} + \beta_4 fbalance_{i,t-1} + \beta_5 lmp_{i,t-1} + e_{it}, \quad (A2)$$

where the term α_t refers to time fixed effects.

The definition of variables is provided in the following table.

Variable	Definition
<i>UBgenerosity</i>	Total available unemployment benefit support (unemployment insurance + unemployment assistance) for a low wage single person, in months of previous full net income, joint EC-OECD tax and benefits project
<i>UIgenerosity</i>	Total available unemployment insurance support for a low wage single person, in months of previous full net income, joint EC-OECD tax and benefits project
<i>y</i>	Real GDP per capita at constant prices from 2005, AMECO
<i>u</i>	Unemployment rate, Labour Force Survey, Eurostat
<i>ltu</i>	Long term unemployment rate measured as a share of long-term unemployed in labour force, Labour Force Survey, Eurostat
<i>fbalance</i>	Government budget balance, as % of GDP, AMECO
<i>lmp</i>	Expenditures on labour market services (activation policies), as % of GDP, Eurostat

The sample includes 24 EU countries over the period 2001-2010. Bulgaria, Romania and Cyprus are excluded from the sample due to short available time series.

The estimation is carried out across countries, controlling for time effects, by means of OLS with standard errors robust with respect to heteroscedastic errors.

A2. Results

Regression results are estimated in the table below. As estimates are not fully robust to the inclusion of the active labour market policy variable (*lmp*), specifications excluding this variable are also presented.

The benchmarks are obtained as the prediction from the regressions estimated below.

**Table A1 – Determinants of unemployment benefit generosity
24 EU countries, 2001-2010**

Explanatory variables	Dependent variable: UB generosity		Dependent variable: UI generosity	
	(1)	(2)	(1)	(2)
Real GDP per capita	0.1956405* [0.0954045]	0.1757816+ [0.0922541]	0.170726** [0.0546395]	0.1672543** [0.0562539]
Unemployment rate	0.7726355+ [0.4089653]	0.8328556+ [0.4795027]	0.7913636* [0.3047878]	0.7128282+ [0.3666056]
Long term unemployment rate	-2.196717** [0.638547]	-1.679218* [0.7149512]	-0.9264094+ [0.5282451]	-0.2675044 [0.6642391]
Government budget balance	0.4436693+ [0.261754]	0.3652645 [0.2908932]	0.7276251** [0.1998956]	0.806174** [0.2497218]
Expenditures on labour market services		21.89311* [10.68627]		14.39714* [7.208663]
Constant	13.10658* [5.277544]	23.00918** [4.858395]	6.251502+ [3.410164]	8.957961 [5.955565]
Observations	216	174	216	174
R-squared	0.2186	0.2856	0.1562	0.2143
Number of countries	24	24	24	24

Estimation method: evidence from year-by-year cross-section regression. Robust standard errors in brackets. Clustering of standard errors by country: ** p<0.01; * p<0.05; + p<0.1.