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**The economic downturn, unemployment
and risk of poverty:**
stress testing European welfare systems





Social Situation Observatory – Income distribution and living conditions

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Abstract

As unemployment rises across the European Union (EU) it is important to understand the extent to which the incomes of the new unemployed and their families are protected from risk of poverty by tax-benefit systems. This paper uses the EU tax-benefit model EUROMOD to explore these issues, comparing effects in five EU countries. It provides evidence on the differing degrees of resilience of the household incomes of the newly unemployed due to the variations in the protection offered by the tax-benefit systems, according to whether unemployment benefit is payable and the household situation of the unemployed person. It also explores the implications of increased unemployment for poverty rates for the population as a whole, and for children.

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Introduction and motivation

Assessing the likely social impact of the economic downturn that has been faced by European countries since the end of 2008 is not straightforward. The consequences of the crisis for the most vulnerable individuals depend on the interaction between their labour market participation, living arrangements and the capacity of the tax and benefit systems to absorb macro-economic shocks.

As unemployment rises it is important to understand the extent to which the incomes of the new unemployed are protected by tax-benefit systems. While unemployment benefits in many countries are earnings related and intended to support individual incomes in a relative sense (Figari et al., 2011), it is also relevant to establish to what extent the household incomes of the new unemployed remain above the poverty threshold.

Our aim is not to make predictions about poverty risk in general, but to test the resilience of the welfare state with respect to one aspect of the downturn: unemployment and the consequent loss of income. Our analysis is not a forecasting exercise, which would need to take account of non-labour market aspects of the downturn such as those related to the financial crisis as well as other labour market effects such as reduced working time and reduced wages. A full analysis would also require some linked macro-micro modelling. Instead, this exercise allows us to illustrate the variation in social impact of potential scenarios across countries and social protection systems (Atkinson, 2009).

In due course, survey data collected over the period of increasing unemployment will provide evidence of the evolution of the income distribution and the incomes of the unemployed (Aaberge et al., 2000). Analysis of panel data will show us how incomes have changed for the new unemployed (Jenkins, 2000). The approach taken here provides, in a timely fashion, an indication of the scale of these income changes, highlighting the direct cushioning effects of the tax-benefit system rather than those arising from other adaptive changes that the unemployed or other members of their households may make.

We provide evidence on the implications for the living standards of those most likely to become unemployed over the initial period of economic downturn, exploring the interactions between the circumstances of individual families and the policy instruments in operation. The protective effect of contributory and means-tested benefits for the unemployed are identified, along with the effects of other means-tested benefits and tax credits designed to protect families on low income. The role of other household incomes, in the form of earnings of those still in work, as well as pensions and benefits received by other household members is considered.

We exploit the information from a representative sample of each national population using data from the European Union Statistics on Income and Living Conditions (EU-SILC) and the simulation of the tax-benefit instruments in place in each country. This is done using EUROMOD, the EU tax-benefit microsimulation model, which is described in section 2. We consider the effects of tax-benefit systems in protecting the new unemployed from poverty in five countries of the European Union: Belgium, Italy, Lithuania, Spain and the UK. This selection of countries provides examples of cases with large increases in unemployment (as in Lithuania and Spain) and also a range of types of welfare states, the most relevant features of which are described in section 3. Section 4 examines the extent to which the new unemployed are vulnerable to poverty. Section 5 introduces an indicator of absolute resilience and describes how the average value and its distribution varies across countries. It also shows which elements of income, including benefits, have



a role after unemployment. Section 6 explores how increased unemployment affects poverty rates (and child poverty rates) overall, and section 7 concludes.

Methodology

Data and approach

Our analysis makes use of EUROMOD, which simulates tax liabilities and benefit entitlements for the household populations of EU Member States. EUROMOD is a multi-country, Europe-wide tax-benefit microsimulation model that provides measures of direct taxes, social contributions and cash benefits as well as market incomes in a comparable way across countries. EUROMOD simulates non-contributory cash benefit entitlements and direct tax and social insurance contribution liabilities on the basis of the tax-benefit rules in place and information available in the underlying datasets. The components of the tax-benefit systems which are not simulated (e.g. benefits which depend on contribution history) are taken from the data, along with information on original incomes. See Sutherland (2007) and Lietz and Mantovani (2007) for further information.²

Underlying micro data come from the 2006 EU-SILC³ with the exception of the UK component which is based on the national Family Resources Survey. The analysis in this paper is based on the tax-benefit rules in place in the 2008 (as of June 30th) which is the most recent policy year currently covered by EUROMOD. Monetary values referring to 2005 (2003/04 for the UK) have been updated to 2008 according to actual changes in prices and incomes over the relevant period.⁴ No adjustment is made for changes in population composition between 2006 and 2008.

In this analysis EUROMOD does not take account of any non take-up of benefits or tax evasion. The only exception is Italy for which gross self-employed income has been calibrated in order to obtain an aggregate amount corresponding to that reported in fiscal data (Fiorio and D'Amuri, 2006). It is generally assumed, however, that the legal rules are universally respected and that the costs of compliance are zero. This can result in the over-estimation of taxes and benefits.⁵ Our results can be interpreted as measuring the intended effects of the tax-benefit systems.

EUROMOD enables us to compute the household incomes of individuals under different scenarios, taking account of the operation of tax-benefit systems and the way they depend on the level of individual market income and personal/household characteristics. Income, after becoming unemployed, is calculated as an annual average assuming the person is unemployed for one year.⁶ This captures some of the effects of the variation in duration of unemployment benefit eligibility across countries. However, it is also relevant to

² EUROMOD is currently subject to a major updating process. The aim is to include all EU-27 countries in EUROMOD, using EU-SILC as underlying data, by 2012.

³ In case of Italy the national version of the EU-SILC has been used because it includes more variables at the necessary level of detail.

⁴ This process is documented in EUROMOD Country Reports. These reports will be available in late 2010 from <http://www.iser.essex.ac.uk/research/euromod/documentation/country-reports>

⁵ It can also result in the under-estimation of poverty rates although this depends on the relationship between the level of income provided by benefits and the poverty line (potential claimants may be poor whether or not they receive the benefits to which they are entitled). For a comparison of poverty rates estimated using simulated incomes from EUROMOD with those calculated directly from EU-SILC see Ward et al. (2009) and Figari et al. (2010).

⁶ Or the number of months spent in work in the income reference period if these are less than twelve.



measure what would happen after unemployment benefit eligibility is exhausted, and to highlight the situation in cases where there is no eligibility. For this reason we make two alternative assumptions about the receipt of unemployment benefits.

First, we simulate the amount received as contributory unemployment benefit (based on reported earnings and under assumptions about contributions made in the past) and any additional income-tested benefits received by the family (i.e. housing benefits, social assistance, in-work benefits and other means-tested support) and reductions in income tax and social contributions; this is the net total support received in the short-term.

Second, we restrict the support to that which a family is likely to receive in the long-term (such as housing benefits, social assistance, in-work benefits), assuming the exhaustion of any entitlement to unemployment insurance benefits.

Sample of interest

We focus on a sub-sample of people who are identified from among the currently employed or self-employed in our data as most likely to lose their jobs at the time of the current economic crisis.

The people with the highest risk of becoming unemployed in the initial period of economic downturn are identified using published information from the European Labour Force Survey (EU-LFS) (Eurostat, 2010). The characteristics of the new unemployed are established by comparing the information on the stock of unemployed in the first quarter of 2008 (the last quarter with positive growth for the EU as a whole) with that of the stock in the third quarter of 2009 (the latest available at the time of carrying out the analysis). These changes are identifiable in published statistics by gender, age group (3 categories) and education level (3 categories). The increase in numbers of unemployed with each combination of characteristics (i.e. within each cell) is calculated and cases selected randomly from corresponding groups (in paid work) in the EUROMOD input databases in order to produce a sample of people making the transition from employment to unemployment.

In most of our analysis we focus on the unemployed and their households rather than the population as a whole. In order to make sure that such sample contains a sufficient number of observations for the subsequent analysis, particularly in countries such as Belgium and Italy with small increases in official unemployment, we expand the sample as far as possible while keeping the composition of the selected potential new unemployed in the same proportions as observed in the LFS statistics. As shown in Table 1 the increase in the unemployment rate given by the LFS varies widely from one percentage point in Belgium and Italy to 10 points in Lithuania. Once the EUROMOD data samples have been inflated, the sample size varies from 268 in Belgium to 1,452 in Spain.

In the final part of our analysis we explore the implications of the increase in unemployment for the overall risk of poverty. In this part we do not inflate the sample but instead examine the implications of the observed (in LFS) increase in numbers of unemployed on the income distribution as a whole.

Table 1 shows the marginal distributions of the characteristics that are used to control the selection of the new unemployed (shaded area) and the differences across countries which might have a relevant impact on the results. Those most at risk of becoming unemployed are more likely to be male (especially in Italy where 80% of the new unemployed are men). In Belgium they are more likely than in the other countries to be



younger but educated to a relatively high level. In Spain they are more likely to only have low level educational qualifications, whereas in Lithuania the proportion of older workers is relatively high. The remainder of the table shows some other characteristics of those selected, including whether or not they have children, their household income quintile group before unemployment and the number of people with earnings in the pre-unemployment household.

Welfare systems for the unemployed

The countries covered in this paper make use of very different policy packages to support individuals who are made unemployed and their families. Continental countries, like Belgium, have contribution-financed unemployment benefits with social assistance safety nets. These safety nets are less important than in countries, such as the UK, with systems where unemployment insurance is less generous, especially for high earners. Southern European countries, such as Italy and Spain, tend to have a lower level of protection and rely more on informal family support. However, Spain resembles the Continental countries with quite generous unemployment benefits and regional social assistance (Bonoli, 1997). Eastern European countries, such as Lithuania, add even more variation to the European mix of systems. As a result, replacement rates, eligibility requirements, duration and benefit amounts differ considerably across countries (Bertola et al., 2000).

Table 2 shows the main characteristics of the unemployment protection schemes, as of June 30th 2008, which can be classified into unemployment insurance and unemployment assistance benefits. Unemployment insurance is usually the main scheme whose eligibility is based upon contributory history and whose amount depends on previous earnings. Unemployment assistance is not available in all countries and covers those who are not eligible to or have exhausted unemployment insurance on a means-tested basis. Means-testing is usually assessed at the family or household level whereas entitlement to insurance benefits depends on individual contributions. Underpinning these schemes in some countries, Social Assistance schemes provide a guaranteed minimum level of income which is independent of employment status (although able bodied working age people are usually expected to be available for work).

Unemployment benefits are quite generous in Belgium and Spain, both in terms of replacement rate and duration. Belgium provides a replacement rate of around 60%, with minimum and maximum daily amounts and a family component with dependant's additions conditional on the dependant not receiving income in excess of a specified amount. After 12 months reduced amounts are still payable. Means tested Income Support operates as an alternative to unemployment benefits for those not eligible and also as a top-up in cases where unemployment benefit is not sufficient to reach the levels of household income guaranteed by Income Support.

In Spain, the earnings related unemployment benefit is paid at a rate of 70% of the previous earnings, with ceilings. It lasts for between 4 and 24 months, depending on contribution history. There is also a means-tested unemployment assistance scheme which lasts for 6 months with the possibility of extension up to a maximum of 18 months. There is no national social assistance scheme but instead, a series of widely varying regional schemes.

In Italy, only as a result of recent increases in the generosity of the unemployed benefits, the earnings related benefit is paid at a rate of between 40% and 60%, with a ceiling, for



up to 8 months or 12 months if aged 50 or more. There is no social assistance at the national level.

In Lithuania, the unemployed benefit is composed of a flat amount plus an earnings related component (40% of insured income). A ceiling was introduced in 2008. The benefit lasts at this level for 6 months, which may be extended at a reduced level, depending on contributory history, for 9 months. Means-tested social assistance acts as an alternative and as a top up.

The UK system has a low flat amount of contributory benefit (i.e. contributory Jobseekers Allowance) that lasts for 6 months. It can be topped up by a means-tested benefit (i.e. income-based Jobseekers Allowance) for those on low family incomes and this means-tested benefit is also an alternative for those not eligible for the contributory benefit or those who have exhausted entitlement. Low income families who pay rent may also be entitled to Housing Benefit.

With the exception of Lithuania, unemployment insurance schemes are subject to income tax. In Spain, the unemployment benefit is also subject to social contributions paid mostly by the social security agency and only a residual part by the unemployed.

In Belgium and Italy, wage supplementation schemes provide an additional compensation for reduced hours of work. However, people brought onto wage supplementation schemes do not count as unemployed in the official statistics. In the simulations, we consider only those losing their jobs and not those retaining some wages and reducing hours of work.⁷

As shown in Table 1, around 90% of the unemployed in Belgium, Spain and Lithuania are simulated to qualify for contributory unemployment benefits. Generally, those that are older than the age limit, self employed or have not worked long enough to receive the contributory unemployment benefits make up the remainder. The share is lower and equal to 73% in the UK (where a relatively large share of new unemployed has not worked long enough to qualify) and equal to only 62% in Italy (due to more self employment and restrictions to unemployment benefit entitlement for those on temporary contracts).⁸

Poverty risk and the new unemployed

A key issue for assessing the effectiveness of protection systems for the unemployed is the extent to which they prevent household incomes from falling below the poverty threshold. For these calculations we assume that the poverty threshold remains fixed at its pre-unemployment baseline level. Table 3 shows the proportion with household equivalised incomes below the threshold before unemployment ("poor in work"), those falling below as a result of becoming unemployed ("at risk") and those remaining above in spite of unemployment ("protected"). It shows the situation for all the new unemployed and for two sub-groups: sole earner households before unemployment and households with children present. First it is worth noting that rates of in-work poverty for those vulnerable to

⁷ In any case, we are unable to simulate these schemes because they depend on the nature of the employer and the contract for which we do not have the necessary information in the EU-SILC.

⁸ In the simulation of unemployment benefits a number of assumptions were made which need to be borne in mind when interpreting the results. First, the duration of unemployment is assumed to be equal to 12 months unless the duration in employment in the income reference period is less (in this case the calculation takes place for the months of employment). Second, the point in time at which the unemployment benefit entitlement is calculated is assumed to be 12 months after becoming unemployed. Third, the contribution history before becoming unemployed is assumed to be equal to the duration of work as reported in the data.



unemployment are quite high in Spain, Italy and Lithuania (over 10%) but much lower in Belgium and the UK (under 4%). In-work poverty risk is higher in all countries for those in one-earner households before unemployment: over 20% in Spain and Lithuania and at least 8% in all five countries. It also tends to be higher for the unemployed in households with children, except in the UK.⁹

Those at risk of falling below the poverty threshold on becoming unemployed make up between 7% (in Belgium) and 31% (in Lithuania and the UK) of the group as a whole, assuming unemployment benefits are received. The figure is 14% in Spain and 24% in Italy. Those whose incomes do not fall below an absolute level equivalent to the poverty threshold are protected by a combination of other household earnings and benefits.

Figure 1 contrasts the situation averaged across all new unemployed with the effects in households containing just one person with earned income. This demonstrates the extent of protection offered when no earnings remain by benefits alone (including benefits and pensions received by other household members). In all countries the proportion of this sub-group at risk is much higher than for the new unemployed as a whole. This is especially so in Lithuania and the UK where the proportion of the group remaining protected is only 19% and 23%, respectively. The situation is even worse if no unemployment benefit is payable (shown in Table 3) with proportions of sole earners protected from poverty as low as 9% in Italy and Spain and 5% in Lithuania. The figure is also much reduced in Belgium (21% compared with 69% with unemployment benefits). In the UK there is no difference in the proportion protected: on the basis of our calculations which assume full take up of social assistance, contributory unemployment benefits are too low in value to play a supplementary role in maintaining incomes above the poverty threshold.

Figure 2 explores the extent to which the effects are different for unemployed people who live in households with dependent children. This is relevant because of the particular concern about child poverty (Frazer and Marlier, 2007; TARKI, 2010). Between 33% and 45% of the new unemployed live in households with dependent children (Table 1) and if unemployment results in below poverty level incomes for the unemployed person then the same applies to their dependents in the same household. A number of factors affect the extent to which unemployment poses increased poverty risks for children. On the one hand additional household members imply that a higher level of income is needed for the household to be protected from poverty. On the other hand, additional benefits may be targeted on children when parental income falls. Furthermore, unemployed people with children may have other characteristics (such as higher pre-unemployment earnings or partners with earnings) that would tend to protect them from falling into poverty. Figure 2 suggests that on average these factors tend to balance out with the proportions of new unemployed with children being at risk of poverty being only slightly higher than for the new unemployed as a whole in most countries, and slightly lower in the UK. Indeed, the presence of children in the household is more associated with higher in-work poverty risk, at least in Belgium, Spain and Italy, rather than a much greater increase in risk on entering unemployment.

We consider the effect of unemployment on overall child poverty below in section 6.

⁹ Small differences in figures may not be statistically significant.



Absolute resilience

We measure the protection offered in absolute terms, by comparing household income after becoming unemployed with the poverty threshold and refer to this as the Absolute Welfare Resilience Indicator (AWRI):

$$AWRI = \frac{\tilde{Y}_{post}}{PovLine_{pre}}$$

where \tilde{Y}_{post} is the equivalised disposable income, using the modified OECD scale, after the unemployment shock and $PovLine_{pre}$ is the poverty threshold at 60% of the median in the pre-shock baseline. A value of the AWRI of less than one identifies people who are poor, as conventionally measured using a fixed poverty line.

Absolute resilience is shown for all new unemployed and sole earners, both with and without unemployment benefit, in Table 4. This shows that in Belgium, for example, the household incomes of the new unemployed as a whole, with unemployment benefit, fall to a level that is on average 1.72 times the poverty threshold. The figure is lower for unemployed without other household earnings (1.13) and falls well below unity for that group, once no unemployment benefits are payable (0.73).

Looking across countries, the mean AWRI (for all, with unemployment benefits) is next highest for Spain (1.56) followed by Italy and Lithuania with the UK having the lowest value (1.38). In all countries except the UK, unemployment benefits make a substantial difference. In particular in Spain, the mean AWRI falls from 1.56 to 1.06 if there is no unemployment benefit. In the UK it makes almost no difference (1.34 compared with 1.38) and without unemployment benefits the value of the UK indicator is lower only than that of Belgium. The AWRI of sole earners is substantially lower than that of all households, falling to well below 1 in Italy (0.78) and Lithuania (0.66), even when unemployment benefits are payable. The values in these two countries are also extremely low (0.27 and 0.32 respectively) for this group if no unemployment benefits are payable: on average incomes fall to around 30% of the poverty threshold following unemployment.

The income components that underlie these averages are shown in Figure 3. This decomposes the components of income after unemployment and expresses them as a percentage of the poverty threshold. Remaining original incomes (mainly earnings of other household members) are shown as the white part of the bars and taxes and contributions are shown in red, negatively. Even net of taxes, remaining original incomes clearly play the major role in protecting incomes in all countries. Other benefits (including pensions) play a role, as do unemployment benefits especially in Belgium and Spain and also in Italy and Lithuania, but less so in the UK. Without unemployment benefits, social assistance substitutes to some extent in Belgium and Spain and to a greater extent in the UK. An equivalent picture (drawn to the same scale) is shown in Figure 4 for sole earners. The role of original income is now very small or non-existent, leaving other benefits to play a role of a similar absolute size as for all households (Figure 3). The exception is social assistance which has greater absolute importance especially in the UK and, when there is no unemployment benefit, in Belgium and Spain.

These mean values of the AWRI give some indication of the relative levels of protection across countries but tell us nothing about how many unemployed face very low or indeed high levels of absolute protection. Figure 5 shows the distribution of the AWRI for all new unemployed, plotting the values both with and without unemployment benefits. In all



countries there is a dispersion of AWRI around a clear modal value. The distribution is most concentrated in the UK (at the poverty threshold – shown by the vertical line, making poverty headcounts particularly sensitive to the position of the poverty line in this case). The distributions with and without unemployment benefits in the UK are similar to each other but quite distinct in the other countries, especially in Spain.

Figure 6 shows similar plots for the AWRI for sole earners. These are not only lower in general but also more concentrated to the left of the poverty line, except in the case of Belgium, with unemployment benefits.

Implications of rising unemployment for overall risk of poverty rates

So far we have considered the risk of poverty, and incomes in relation to the poverty line, for the groups most likely to be directly affected by unemployment. While it is clear that under some circumstances unemployment can have a devastating effect on incomes in particular cases, it is also relevant to explore the implications of these reductions in income for poverty risk overall. In this analysis, as explained in section 2, we analyse the effect of new unemployment such that the numbers and characteristics of the new unemployed match those indicated by the LFS. Of course, the recession will result in other changes to the income distribution apart from those directly caused by increased unemployment. Aside from macroeconomic effects, unemployment itself may induce changes in behaviour by those affected, including other household members. Moreover, reductions in working hours and wage cuts will change the earnings distribution. Here we only aim to draw out the implications of reductions in income due to unemployment for poverty risk, other things remaining the same. Table 5 shows EUROMOD estimates of overall poverty risk before the increase in unemployment, and after both with and without unemployment benefits. The poverty threshold is 60% of median equivalised household disposable income (as previously) and is fixed at the level given by the pre-unemployment (“baseline”) income distributions.

The increase in official unemployment in Belgium and Italy is very small and at least partly as a consequence the effects of unemployment on poverty rates are small in both countries. In Lithuania and Spain, with 10 percentage point increases in unemployment (Table 1) the effects are much larger. With unemployment benefits, poverty rates rise by 1.8 (Spain) and 3.2 (Lithuania) percentage points. Without unemployment benefits the increases are, as expected, larger: 5.5 in Spain and 5.1 in Lithuania. In the UK, where the unemployment increase is less (2.6 percentage points) the increase in poverty is nevertheless sizeable: 1.2 to 1.4 percentage points depending on whether unemployment benefits are included.

Table 5 also shows the effect on child poverty rates: increases are larger than for people in general, especially in Spain for those not on unemployment benefits where our results suggest that child poverty rates could rise by 7 percentage points as a direct consequence of recent unemployment increases.

Reductions in income due to unemployment affect households throughout the income distribution and result in some reduction to median incomes, and hence to a relative poverty threshold that is responsive to income changes. Table 6 shows the percentage reduction in the median due to the modelled increase in unemployment. There is little effect in Belgium and Italy and a modest drop of 2.4% in the UK. In Spain the threshold falls by 3.2% with unemployment benefits and as much as 7.4% in Lithuania. Without



unemployment benefits the threshold falls much further in Spain (by 7.2%) and by 9.2% in Lithuania. Such reductions in the threshold will, other things being equal, reduce the numbers counted as poor. This is indeed the case as shown in Table 7 which uses the new poverty lines after unemployment. In some cases the increase in poverty due to unemployment is outweighed by decreases due to the falling threshold, and the net effect is a reduction in the poverty headcount. This applies in Belgium and the UK and also in Lithuania, with unemployment benefits.

Conclusions

Different countries provide a wide ranging degree of protection when a household member becomes unemployed. Assuming individuals are eligible for unemployment benefits, the highest average level of protection is provided in countries characterised by a Bismarkian tradition of contribution-financed unemployment benefits like Belgium and, to some extent, Spain.

However, the factor which plays the major role in protecting the household from falling below the poverty threshold is whether there are other people in the household with earnings. Our analysis highlights the role for adequate minimum income schemes alongside unemployment benefits.

In none of the countries are all new unemployed protected but generally the risk of falling below the threshold is much lower in Belgium and Spain. Support for families with children in the UK and Lithuania helps to cushion the loss of income, but the absolute level of protection is lower than in the other countries. In the context of concern about growing child poverty in the recession this points to a role for child-targeted support alongside adequate unemployment protection.

We have considered the performance of tax-benefit systems in protecting incomes relative to the poverty line. The Bismarkian system unemployment benefits are designed to protect incomes relative to their pre-unemployment level. Figari et al., (2011) show how, for the same five countries, the average proportional reduction in household income on becoming unemployed ranges from 82% in Belgium to 59% in Lithuania (with unemployment benefits).

Controlling for differences in the composition of households by income level, they find that in Italy and Belgium the scale of relative income protection is not significantly different across income quintiles mainly due to the dominance of earnings related unemployment benefits. However, relative income protection has a negative association with pre-unemployment household disposable income quintile group in Spain, Lithuania and the UK.

Our assumptions as well as the methods employed have some implications for these findings in a number of respects. In particular the reference time period that is assumed for unemployment can have a large effect on the measured importance of unemployment benefits. Our assumptions have been common across countries but the result is to maximise the resilience measures in some countries (such as Belgium) but not in others (such as the UK and Lithuania), because of different durations of maximum unemployment benefit entitlement.

Furthermore, our calculations involve assumptions that conceal some further possible weaknesses in the welfare systems. First, we have assumed that all sources of income are shared equally within the household. Our analysis has not directly considered either the



protective role of contributory unemployment benefits for unemployed people with earning partners or the implications for those who are unprotected by benefits of becoming dependent on others' incomes. Secondly, we have assumed that entitlements to benefits are always taken up. In the case of a newly unemployed person with access to no other resources this may well be a realistic assumption. But in other cases, perhaps particularly if the household retains a substantial amount of income from other sources, this may be less realistic. In general, it implies that the scenarios without unemployment benefit may appear artificially optimistic in terms of what happens to household income, relative to the scenarios with unemployment benefits. This is relevant to some extent on all countries except Italy and in particular it applies to Spain, where our estimates of the regional social assistance schemes are likely to be over-stated. It also applies in the case of the UK to both scenarios, because the means-tested benefit often acts as a top up, even if there is entitlement to the (relatively small) unemployment benefit. However, one can interpret these results as being the best possible outcomes. In practice, to the extent that there is incomplete benefit take-up among the unemployed, the situation is worse than that represented here.

Nevertheless, we believe that these calculations are informative about the differing degrees to which unemployment has the potential to reduce household incomes, and the extent of resilience of those incomes due to the protection offered by the tax-benefit systems, according to whether unemployment benefit is payable, the household situation of the unemployed person, and across countries.



References

- Aaberge R., Bjorklund A., and Jantti M. (2000), Unemployment shocks and income distribution: how did the Nordic countries fare during their crisis? *Scandinavian Journal of Economics* 102(1): 77-90
- Atkinson A. B. (2009), "Stress-testing the Welfare State", in B. Ofstad, O. Bjerkholt, K. Skrede and A. Hylland (editors) *Retfferd og politik Festskrift til Hilde Bojer*, Emiliar Forlag, Oslo: 31-39.
- Bertola G., Jimeno J. F., Marimon R. and Pissarides C. (2000), "Welfare systems and labour markets in Europe: what convergence before and after EMU?" in G. Bertola, T. Boeri and G. Nicoletti (editors) *Welfare and Employment in a United Europe*, MIT Press, Cambridge (Mass.).
- Bonoli G. (1997), "Classifying Welfare States: A Two-Dimension Approach", *Journal of Social Policy*, 26(3): 351-372.
- Eurostat (2010), European Labour Force Survey. Eurostat New Cronos, delivered by ESDS International, University of Manchester.
- Figari F., Iacovou M., Skew A. and Sutherland H. (2010), "Approximations to the truth: comparing survey and microsimulation approaches to measuring income for social indicators", ISER WP 2010-13, Colchester: University of Essex.
- Figari F., Salvatori A. and Sutherland H. (2011), "Economic downturn and stress testing European welfare systems", forthcoming in *Research in Labour Economics*
- Fiorio C.V. and D'Amuri F. (2006), "Tax evasion in Italy: an analysis using a tax-benefit microsimulation model", *The ICFAI Journal of Public Finance*, 19-37.
- Frazer H. and Marlier E. (2007) Tackling child poverty and promoting the social inclusion of children in the EU. Key lessons. Synthesis report. Independent overview based on the 2007 first semester national reports of national independent experts on social inclusion. ÖSB Consulting, CEPS/INSTEAD, IES.
- Jenkins S. P. (2000), "Modelling household income dynamics", *Journal of Population Economics* 13: 529-67.
- Lietz C. and Mantovani D. (2007), "A Short Introduction to EUROMOD: An Integrated European Tax-Benefit Model", in *Micro-simulation in action: Policy analysis in Europe using EUROMOD* edited by O. Bargain. Research in Labor Economics, Vol. 25. Elsevier.
- MISSOC (2008), Social Protection in the Member States of the European Union, European Commission, Directorate-General for Employment Industrial Relations and Social Affairs.
- Sutherland H. (2007), "EUROMOD: the tax-benefit microsimulation model for the European Union" in A. Gupta and A. Harding (editors) *Modelling our future: population ageing, health and aged care*. International Symposia in Economic Theory and Econometrics Vol. 16, Elsevier, Amsterdam: 483-488.
- TARKI (2010), *Child poverty and child well-being in the European Union*. Report prepared for the DG Employment, Social Affairs and Equal Opportunities of the European Commission, Budapest.
- Ward T., Lelkes O., Sutherland H. and Toth I. (eds.) (2009), *European inequalities – social inclusion and income distribution in the European Union*, TARKI, Budapest.



Table 1 Characteristics of the new unemployed

		Belgium	Spain	Italy	Lithuania	UK
Increase in unemployment rate (ppt)		1.2	9.5	1.3	10.3	2.6
Sample size		268	1,452	436	872	959
% Male		53.2	65.3	78.1	71.2	65.9
Age groups %	15-24	47.1	19.6	29.9	24.6	41.8
	25-49	42.5	66.9	48.2	55.5	44.5
	50-74	10.4	13.6	21.9	19.9	13.7
Education level %	Lower secondary	1.1	60.0	29.0	9.0	25.9
	Upper secondary	53.0	22.7	51.1	64.0	49.0
	Tertiary	45.9	17.3	19.9	27.0	25.2
With children %		32.9	43.0	37.6	45.1	38.8
Household income quintile %	Q1	5.5	11.9	13.3	11.5	7.3
	Q2	13.2	17.3	16.4	11.1	13.8
	Q3	16.7	23.3	21.1	21.2	23.9
	Q4	26.6	26.0	21.3	26.5	28.2
	Q5	38.1	21.5	27.8	29.7	26.8
Number of earners %	1	19.9	23.5	29.1	26.7	26.6
	2	57.6	47.7	46.9	50.1	49.6
	3+	22.4	28.8	24.0	23.2	23.8
% with other new unemployed in household		6.3	13.1	1.1	14.4	6.3
% entitled to unemployment benefits		86.7	88.9	61.8	92.5	73.0

Notes: New unemployed are individuals who became unemployed between the first quarter of 2008 and the third quarter of 2009. Shaded cells show characteristics controlled using LFS information on changes. Source: EUROMOD version F2.21

Table 2 Unemployment benefit and Social Assistance schemes at June 30th, 2008

	Schemes		Contributions conditions	Payment rate	Duration (months)	Tax and SICs
Belgium	Insurance	Earnings-related benefit (flat rate for young persons); amount depends on family situation	Between 45 weeks in 18 months and 89 weeks in 3 years	Single persons: 60% (from 2nd year 53%). Cohabitants without dependants: 58% (from 2nd year 40%). Lower and upper ceilings	No limit	Benefit is subject to income tax
	Assistance	None				
	Social Assistance	<i>Minimex</i>	Means test			
Spain	Insurance	Earnings-related benefit	12 months in 6 years	70% for first 6 months; afterwards 60%. Lower and upper ceilings	From 4 months to 2 years	Benefit is subject to income tax, SICs and Credited contributions
	Assistance	Flat-rate benefit	Generally none with the exception of some allowances	80% of the "Public Income Rate of Multiple Effects"	6 months with possible extension up to 18 months	
	Social Assistance	<i>Renta Activa de Inserción</i>	Means test			
Italy	Insurance	Earnings-related benefit*	52 weeks in 2 years	60% (for the first 6 months, 50% for month 7 and 8 and 40% for the rest). Upper ceiling.	8 months (12 months for the those aged >50)	Benefit is subject to income tax
	Assistance	None				
	Social Assistance	None				
Lithuania	Insurance	Earnings-related benefit	18 months in 3 years	Fixed component (€ 83) and variable component based on earnings	From 6 (< 25 years in work) to 9 months (> 35 years in work)	Benefit is not subject to income tax
	Assistance	None				
	Social Assistance	<i>Socialinė pašalpa</i>	Means test			
UK	Insurance	Flat rate-benefit for all employed and some self-employed persons	Contributions paid in one of the 2 years on which the claim is based, with minimum level	From € 46 to € 80 per week	6 months	Benefit is subject to income tax
	Assistance	<i>Income-based Jobseeker's Allowance (JSA)</i>	Means test		Unlimited, for those seeking work	
	Social Assistance	<i>Income support</i> (for those exempt from seeking work)	Means test			

Notes: SICs: Social Insurance contributions paid by the unemployed. Credited contributions are paid by the social security agency on the Unemployment benefit. * Special schemes in the building sector and after the wage supplementation scheme (*mobilita'*) are not simulated in EUROMOD. Source: MISSOC (2008) and EUROMOD country reports.



Table 3: The percentage of new unemployed at risk of falling below the poverty threshold with and without unemployment benefits (UBs)

%			Belgium	Spain	Italy	Lithuania	UK
All	with UBs	poor in work	3.0	11.4	11.2	11.7	3.4
		at risk	7.3	13.7	23.9	30.6	32.1
		protected	89.7	74.9	64.9	57.7	64.5
	without UBs	poor in work	3.0	11.4	11.2	11.7	3.4
		at risk	26.1	43.8	42.6	44.9	35.6
		protected	71.0	44.8	46.2	43.4	61.0
Sole earner households	with UBs	poor in work	8.8	22.0	16.5	24.5	9.9
		at risk	21.8	33.7	47.9	56.4	67.5
		protected	69.4	44.3	35.5	19.1	22.6
	without UBs	poor in work	8.8	22.0	16.5	24.5	9.9
		at risk	70.4	68.8	74.7	70.6	67.5
		protected	20.8	9.2	8.7	4.9	22.6
With children	with UBs	poor in work	7.1	17.2	16.6	13.4	3.1
		at risk	5.5	19.1	29.0	31.9	30.8
		protected	87.4	63.7	54.4	54.7	66.2
	without UBs	poor in work	7.1	17.2	16.6	13.4	3.1
		at risk	24.2	48.4	44.4	42.9	34.3
		protected	68.7	34.4	39.0	43.6	62.7

Notes: The poverty threshold is fixed at 60% of baseline median household disposable equivalised income. Source: EUROMOD version F2.21.

Table 4 Average Welfare Resilience Indicator (AWRI) with and without unemployment benefits (UBs)

		Belgium	Spain	Italy	Lithuania	UK
All	with UBs	1.716	1.562	1.471	1.404	1.383
	without UBs	1.391	1.062	1.104	1.089	1.348
Sole earner households	with UBs	1.134	1.050	0.781	0.663	0.833
	without UBs	0.732	0.617	0.269	0.315	0.809

Notes: AWRI is the ratio of post unemployment household income to the income level corresponding to the poverty threshold, measured as 60% of median pre-unemployment equivalised household disposable income. Source: EUROMOD version F2.21



Table 5 Overall risk of poverty rates (%) before and after the increase in unemployment: with a fixed poverty threshold

	Belgium		Spain		Italy		Lithuania		UK	
	All	Children	All	Children	All	Children	All	Children	All	Children
Before	8.1	8.7	19.3	23.5	18.2	22.7	21.1	25.8	14.6	16.8
After: with UBs	8.2	8.8	21.2	26.6	18.4	23.0	24.3	30.0	15.8	18.2
<i>Increase (ppts)</i>	<i>0.1</i>	<i>0.0</i>	<i>1.8</i>	<i>3.1</i>	<i>0.2</i>	<i>0.3</i>	<i>3.2</i>	<i>4.2</i>	<i>1.2</i>	<i>1.4</i>
After: without UBs	8.4	9.0	24.9	30.4	18.5	23.0	26.2	31.3	16.0	18.3
<i>Increase (ppts)</i>	<i>0.3</i>	<i>0.3</i>	<i>5.5</i>	<i>6.9</i>	<i>0.3</i>	<i>0.3</i>	<i>5.1</i>	<i>5.5</i>	<i>1.4</i>	<i>1.5</i>

Notes: The poverty threshold is fixed at 60% of baseline median household disposable equivalised income. Source: EUROMOD version F2.21.

Table 6 Percentage reduction in median income and poverty thresholds after the increase in unemployment

	Belgium	Spain	Italy	Lithuania	UK
With UBs	0.3	3.2	0.1	7.4	2.4
Without UBs	0.6	7.2	0.2	9.2	2.4

Source: EUROMOD version F2.21.

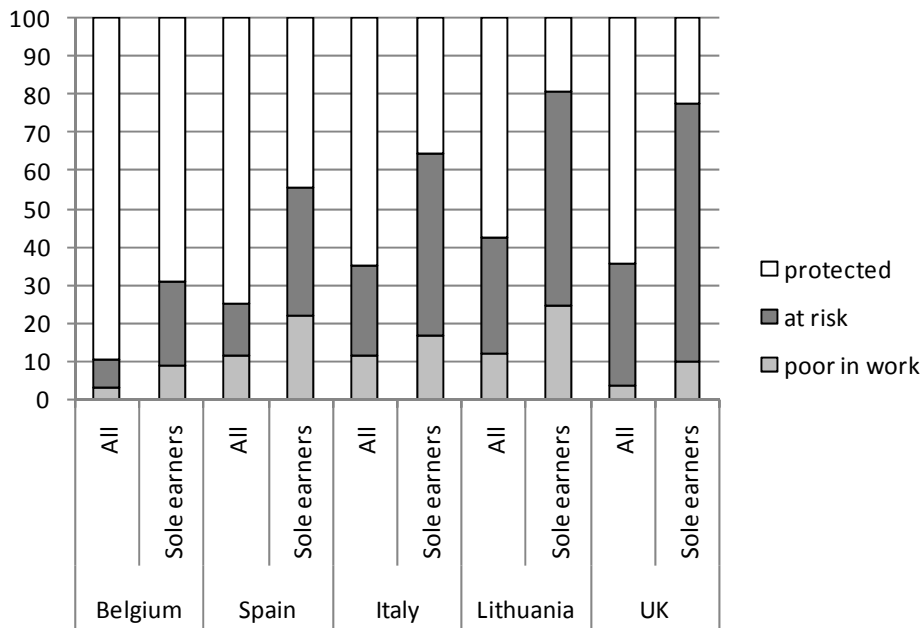
Table 7 Overall risk of poverty rates (%) before and after the increase in unemployment: with a shifting poverty threshold

	Belgium		Spain		Italy		Lithuania		UK	
	All	Children	All	Children	All	Children	All	Children	All	Children
Before	8.1	8.7	19.3	23.5	18.2	22.7	21.1	25.8	14.6	16.8
After: with UBs	8.0	8.6	19.6	24.7	18.4	23.0	20.4	26.2	14.4	16.1
<i>Increase (ppts)</i>	<i>-0.1</i>	<i>-0.1</i>	<i>0.3</i>	<i>1.2</i>	<i>0.2</i>	<i>0.3</i>	<i>-0.8</i>	<i>0.4</i>	<i>-0.1</i>	<i>-0.7</i>
After: without UBs	8.1	8.5	20.4	26.4	18.4	23.0	21.6	27.0	14.5	16.2
<i>Increase (ppts)</i>	<i>0.0</i>	<i>-0.3</i>	<i>1.0</i>	<i>2.9</i>	<i>0.2</i>	<i>0.3</i>	<i>0.5</i>	<i>1.2</i>	<i>-0.1</i>	<i>-0.6</i>

Notes: The poverty threshold is 60% of relevant median household disposable equivalised income. Source: EUROMOD version F2.21.

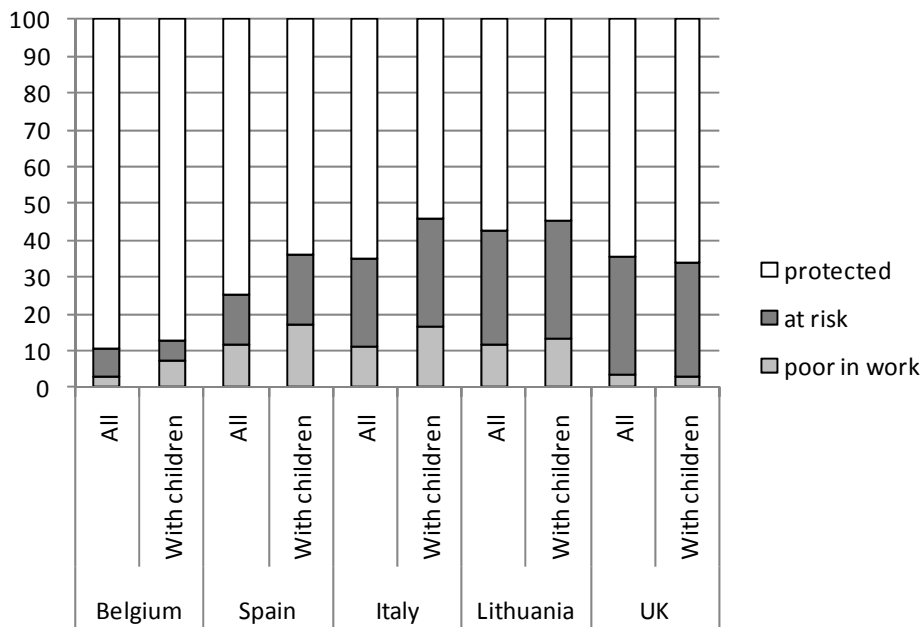


Figure 1 The proportion of new unemployed at risk of falling below the poverty threshold, with unemployment benefits (all and sole earner households)



Notes: The poverty threshold is fixed at 60% of baseline median household disposable equivalised income. Source: EUROMOD version F2.21.

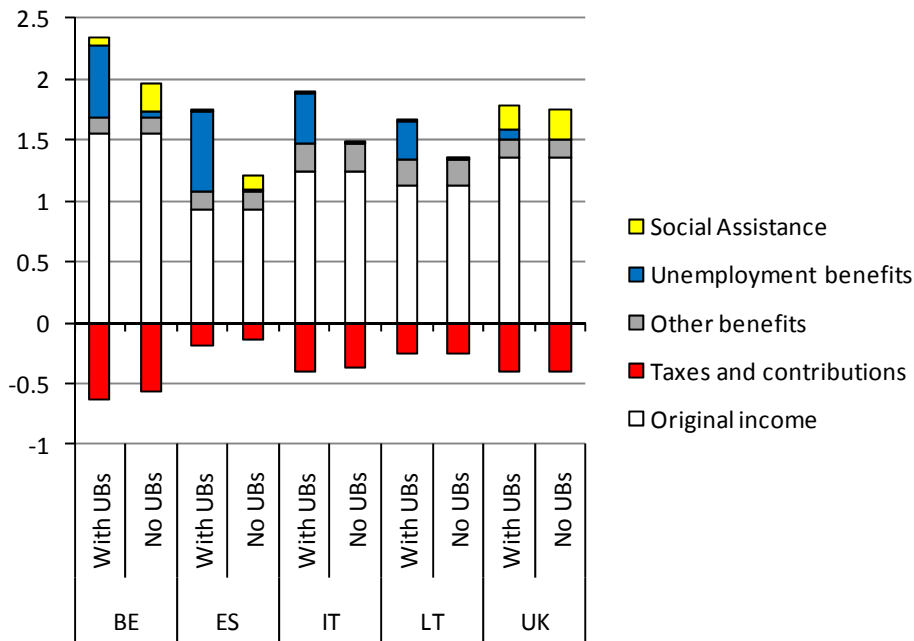
Figure 2 The proportion of new unemployed at risk of falling below the poverty threshold, with unemployment benefits (all and unemployed in households with children)



Notes: The poverty threshold is fixed at 60% of baseline median household disposable equivalised income. Source: EUROMOD version F2.21.

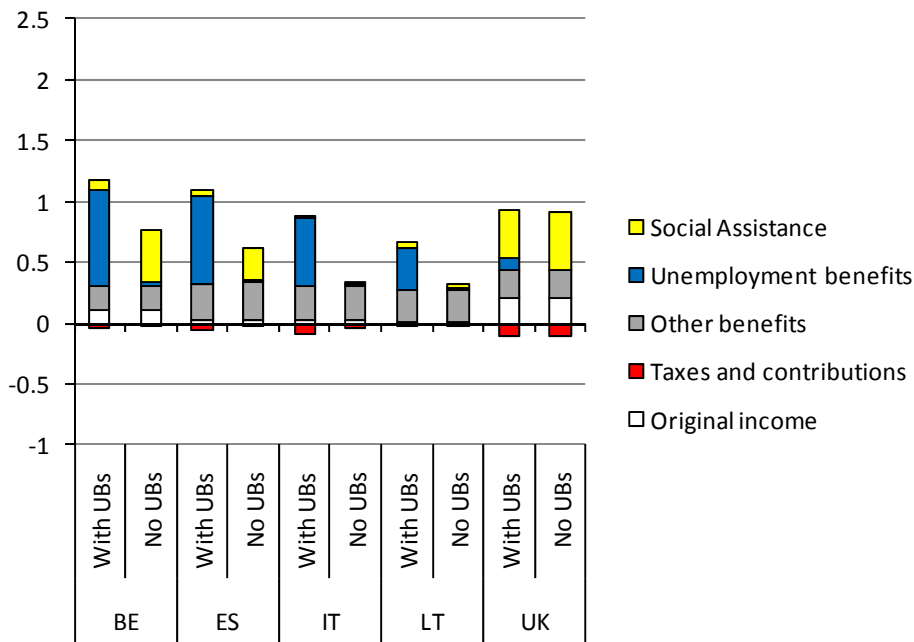


Figure 3 Mean Absolute Welfare Resilience Indicator (AWRI) decomposed by income source: all new unemployed



Notes: The AWRI is the ratio of post-unemployment equivalised household income to the poverty threshold, fixed at 60% of baseline median household disposable equivalised income. Source: EUROMOD version F2.21.

Figure 4 Mean Absolute Welfare Resilience Indicator (AWRI) decomposed by income source: sole earner households after unemployment



Notes: The AWRI is the ratio of post-unemployment equivalised household income to the poverty threshold, fixed at 60% of baseline median household disposable equivalised income. Source: EUROMOD version F2.21.