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# ABSTRACT

# Minimum Income Support Systems as Elements of Crisis Resilience in Europe*

This paper studies the role of social policies in different European welfare states regarding minimum income protection and active inclusion. The core focus lies on crisis resilience, i.e. the capacity of social policy arrangements to contain poverty and inequality and avoid exclusion before, during and after periods of economic shocks. To achieve this goal, the papier expands its analytical focus to include other tiers of social protection, in particular upstream systems such as unemployment insurance, job retention and employment protection, as they play an additional and potentially prominent role in providing income and job protection in situations of crisis. A mixed-method approach is used that combines quantitative and qualitative research, such as descriptive and multivariate quantitative analyses, microsimulation methods and in-depth case studies. We find consistent differences in terms of crisis resilience across countries and welfare state types. In general, Nordic and Continental European welfare states with strong upstream systems and minimum income support (MIS) show better outcomes in core socio-economic outcomes such as poverty and exclusion risks. However, labour market integration shows some dualisms in Continental Europe. The study shows that MIS holds particular importance if there are gaps in upstream systems or cases of severe and lasting crises.

**JEL Classification:** J64, J65, J68

**Keywords:** minimum income support, crisis resilience, unemployment insurance, job retention, welfare states

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# 1. Introduction

In European welfare states, minimum income support (MIS) systems primarily have the important function of a basic and final safety net to prevent and reduce poverty and social exclusion (Nelson, 2014; Nolan, 2017). The goals of MIS schemes are to guarantee a social minimum and reduce the (relative and absolute) risk of poverty and social exclusion. Moreover, incentives and adequate support measures are supposed to enable those who are capable to participate in working life. In view of the growing importance of non-standard dependent employment relationships and self-employment that are not accompanied by (sufficient) entitlements to unemployment benefits (see, e.g. Spasova et al., 2017), MIS has a central and growing role within the European welfare states. This is the context in which reforms expanding general and activating minimum income schemes in many European countries in recent decades can be interpreted (Lødemel and Trickey, 2001; Eichhorst, Kaufmann and Konle-Seidl, 2008; Marchal and Van Mechelen, 2017; Natili, 2019).

As a fundamental downstream security system, MIS is under particular stress in times of crisis. It also has an automatic stabilising effect, which is particularly true for granting transfers to those households and individuals who do not have sufficient and stable income from other sources, such as unemployment insurance. In addition to the typically expansionary discretionary measures during an acute crisis, countervailing developments can also occur in later phases, such as in phases of social policy austerity in the further course of a crisis, as was observed – for example – in the aftermath of the Financial Crisis in severely countries (Theodoropoulou, 2018; Marchal, Marx and Van Mechelen, 2016). This also means intervening in automatic stabilisers (Dolls et al., 2022) and could tend to weaken them. However, it is also conceivable and observable that even after crises more 'progressive' social policy reforms are introduced and pursued, such as efforts to reduce divisions on the labour markets, more inclusive unemployment insurance or regular systems of short-time work or more universal MIS systems. In the medium term, this can also be associated with greater crisis resilience.

However, the question of what contribution MIS makes to social resilience – especially in times of crisis – has not yet been answered systematically. To fill this gap, this paper addresses the issue of the contribution of MIS to crisis resilience in European welfare states since the mid-2000s and contributes to the existing research in several respects. First, it is based on the joint analysis of upstream systems such as unemployment insurance, job retention, employment protection and the core MIS schemes in ‘normal’ and crisis times. This offers a more complete picture of national policy arrangements and their relative strengths and weaknesses when faced with economic shocks. Second, the study locates itself in the comparative welfare state literature, with a particular focus on established typologies. For a selected sample of countries, changes within the system are observed in detail. Third, given this complex research objective, the study adopts a mixed-method approach that combines quantitative and qualitative research, all with a strong focus on institutions and change. Fourth, the study adopts a longitudinal perspective, in particular to interpret quantitative findings and understand policy responses and reform trajectories over a longer period from the mid-2000s to the present situation. In this respect, the study also updates existing research to the latest observations.

Specifically, this study aims to answer the following three research-guiding questions:

1. *How successful are national social policy arrangements in ensuring adequate minimum income protection and the empowerment and (re-)integration of recipients into the labour market (i.e. implementing active inclusion concept)?*

2. *What is the contribution of MIS to social resilience during times of crisis? What differences and similarities can be identified between the countries studied and to what extent can these be attributed to the different role and importance of the MIS schemes?*
3. *How have MIS systems developed since the Financial Crisis of 2008/09 in the respective socio-economic and political context? What adjustments and reforms have taken place? Which development/reform paths can be discerned? In particular, to what extent were MIS schemes adapted during the Financial Crisis or COVID-19?*

The paper is structured as follows. Section 2 provides the classification of welfare state types used in this paper. Section 3 explains the methodology and data. Using data from EU SILC, Section 4 provides multivariate quantitative analyses on crisis impacts and socio-economic performance, which is complemented by simulations of hypothetical economic shocks shown in section 5. To track the functioning of welfare state arrangements in further detail and explore reforms and adjustments in more depth, section 6 provides case studies of five selected countries representing different welfare state types. Finally, section 7 concludes.

# 2. Typologies of welfare states

Despite significant differences in the assessment of individual dimensions, recent international comparative welfare state research often distinguishes between five types of European welfare states and their respective minimum income systems (cf. for example Bahle, Hubl and Pfeifer, 2011; see also Konle-Seidl 2021). Bahle et al.'s (2011) typology combines core indicators of scope, generosity and governance so that a broader classification of countries and their MIS can be ensured. While being aware of intra-cluster differences and changes over time, we therefore distinguish the following five types:[2]

In the Nordic type, the upstream unemployment insurance systems are considered comparatively generous and inclusive, so that the non-centrally administered MIS scheme does not have to play an essential role in income security, as long as a high level of employment can be ensured, which is also associated with extensive coverage of the unemployed. MIS has a residual role here.

The Anglo-Saxon or Liberal type is based much more on an integrated and centralised minimum income scheme as an important element of social protection in the case of unemployment, since upstream, contribution-financed unemployment insurance schemes are less relevant and have tended to erode over time. Therefore, the social minimum income and the associated activation policy play a central role in income security and integration for much larger groups than in the Nordic type.

In the Southern European or Mediterranean type, there has traditionally only been limited protection in the form of unemployment insurance, and for a long time, MIS systems were only rudimentary – if they existed at all – and categorically differentiated; for example, regarding older people. However, strict employment protection ensured job and income security for a core group of workers, at the price of high risks of exclusion faced by younger workers. However, this model has been subject to considerable reform pressure in recent years in the sense of loosening employment protection on the one hand, and more inclusive unemployment insurance and minimum benefits on

[2] In our data, the following countries are assigned to the following welfare state type: Nordic (Denmark, Finland, Sweden), Anglo-Saxon (Ireland, UK), Southern European (Cyprus, Greece, Italy, Malta, Portugal, Spain), Post-Socialist (Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia), Continental (Austria, Belgium, France, Germany, Luxembourg, Netherlands,).

the other. In this way, existing gaps in the lack of national MIS systems have been closed or at least reduced.

Although the Post-Socialist or Eastern group of countries is quite large and heterogeneous in itself, it can be seen as a cluster of welfare states that have rudimentary but little categorically differentiated minimum security systems. Despite all of the differences in this cluster regarding the structures and regulatory arrangements of its national labour markets, with reasonable simplification it can be said that rather low benefits are granted in the case of prolonged inactivity, but also in first-tier systems such as unemployment insurance.

The fifth type is the model of conservative Continental European minimum income systems. For historical reasons, this type is strongly characterised by internal, categorical differentiations in protection; for example, between the elderly, families with children and the unemployed. It also often has elements of unemployment assistance above the level of MIS by way of social assistance. Thus, some groups are more strongly referred to the general MIS scheme than others.

# 3. Methodology and data

To study the complex interactions between shocks, institutions and outcomes, it makes sense to employ a mixed-methods research design. In a first step, we undertake a preliminary check of country performance belonging to different welfare state clusters based on a set of comparable and standardised outcome indicators that use a common definition. In particular, we expect first hints at answering the question concerning the extent to which countries belonging to the same welfare state cluster performed similarly or if there has been considerable variation even within groups of countries.

Multivariate analysis aims at detecting general patterns between economic shocks and core outcome variables. To achieve this, in addition to the descriptive evidence, regression analyses based on the consistent, cross-national time series of target variables or indicators of the effectiveness of social minimum income protection (obtained from the European Union Statistics on Income and Living Conditions (EU-SILC)) for the 27 EU Member States and the UK can provide empirical evidence on statistically significant correlations between growth/recession periods and unemployment shocks on the one hand and socio-economic outcomes on the other. The regression part primarily addresses the key questions of whether the role of social protection – not least MIS regarding social resilience – is systematically related to the economic cycle depending on the type of welfare state to which a country belongs, or certain design elements of social protection.

EU-SILC is the reference source on income distribution and social inclusion in the European Union. The currently available data extend to 2020. EU-SILC is based on the idea of a common framework rather than using a uniform survey instrument. This framework comprises a harmonised list of primary (annual) and secondary (collected every four years or more) target variables to be transmitted to Eurostat, as well as common guidelines and procedures, common concepts (such as household and income), and classifications designed to maximise the comparability of the information transmitted. In spite of these binding minimum standards, there are considerable differences in the implementation of EU-SILC at the country level. These differences concern, e.g., the underlying data sources (surveys, administrative data), which can lead to problems for cross-country comparisons. To address these problems, it is advisable to consider changes in the level variables at the country level over time, as in the panel analyses applied in this study, rather than

comparing pure level variables. Complementing EU-SILC based indicators, to understand the main developments in the country studies, additional indicators from Eurostat were gathered, in particular gross domestic product (GDP) and unemployment.[3]

In order to test the crisis resistance of the social protection arrangements – in particular, MIS systems of the European countries selected for the study – different types of stress tests can be implemented within the framework of the EUROMOD microsimulation model. With the help of EUROMOD, real and hypothetical changes in the tax and transfer system and their effects on disposable household incomes can be calculated for the 27 Member States of the European Union and the United Kingdom. As a gross-net calculator, EUROMOD enables analysing the distributional, stabilisation and revenue effects of the tax and transfer systems. Compared to national microsimulation models, EUROMOD guarantees consistency in cross-country comparisons through a harmonised modelling of the respective tax and transfer systems as well as a uniform database. In the context of this study, EUROMOD enables assessing the impact of identical shock scenarios on outcomes in different welfare state settings, which can be interpreted as a direct estimate of the potential resilience of national systems when exposed to an assumed unemployment shock. In this sense, the EUROMOD work is complementary to the regression analysis as it provides the unique opportunity to estimate the stabilisation effect of the welfare system when confronted with identical shocks (i.e. not the diverse shocks observed in real data).

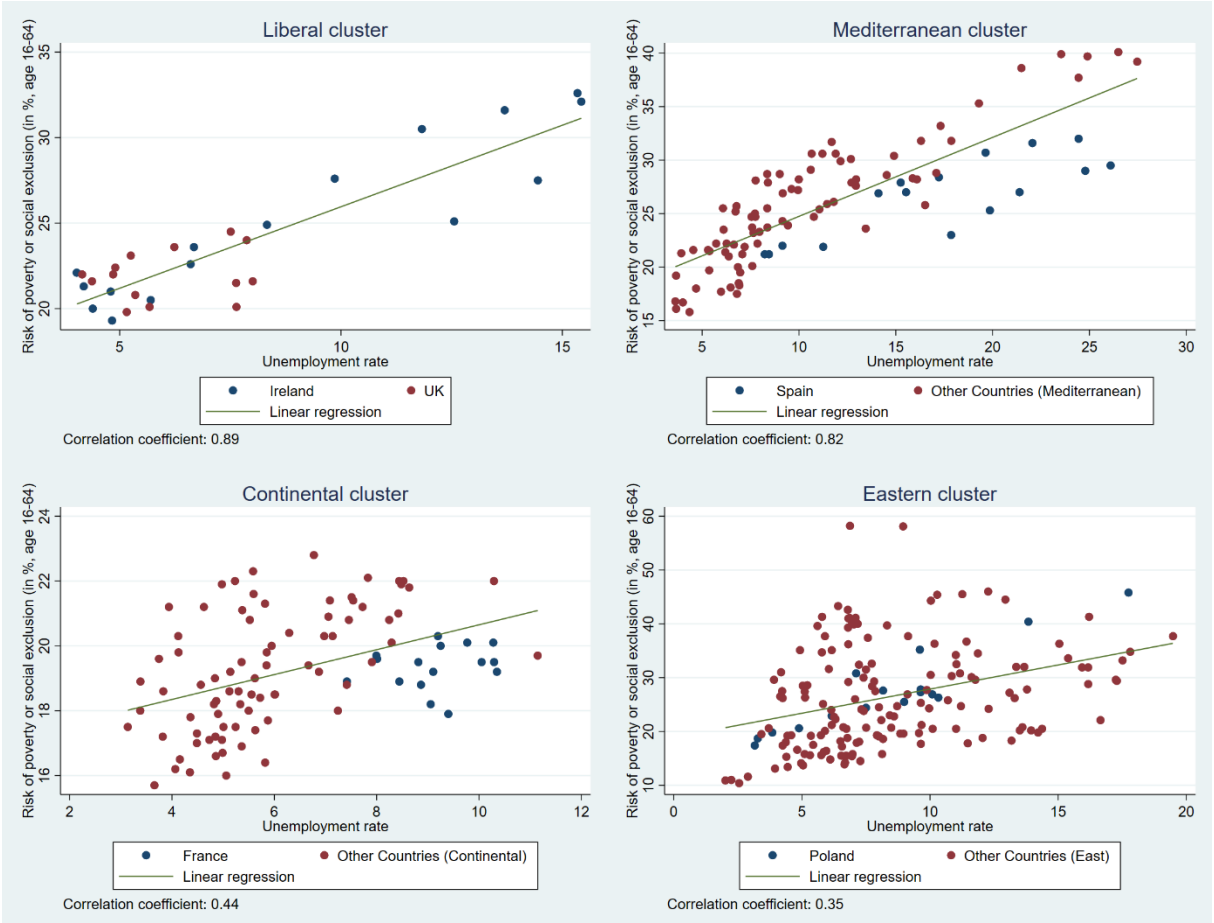
While quantitative analysis based on descriptive studies, regression analysis or simulation can provide a general understanding of relations between variables, the complex interrelations between policies of different kinds, reforms and outcomes typically cannot be fully uncovered using quantitative data alone. Therefore, in-depth case studies encompassing different pieces of information are important complementary elements of our empirical part as they can shed light on internal complexities and changes over time hidden behind aggregate figures. While the quantitative analysis requires full country coverage to ensure statistical meaningfulness, it is necessary to systematically select in-depth case studies in light of the theoretical framework and the research questions stated. Hence, from the five welfare state types described above, we chose those five countries that clearly represent the main features of the respective type; have experienced relevant crises responses and reform episodes; are well documented in the literature; and are sufficiently accessible via country experts. Based on these criteria, we take France, Spain, Denmark, Poland and Ireland as suitable representatives of the respective MIS types for our in-depth case studies.

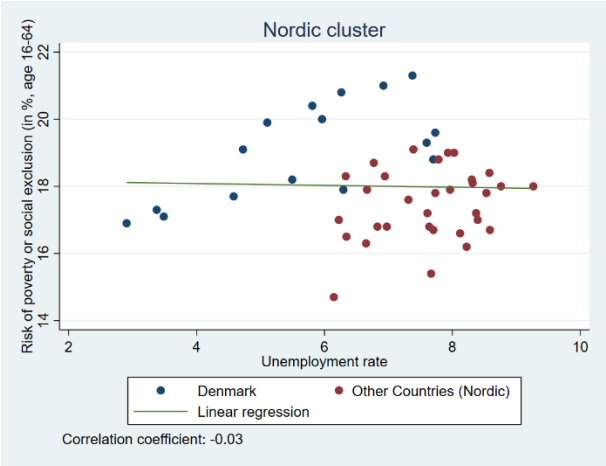
[3] EU-SILC data collected in one specific year refer to income information for the previous year (for most variables and countries). This needs to be borne in mind when interpreting the information gathered from EU-SILC. Given that micro data from EU-SILC is currently available until 2020, with the latest income reported for 2019 in most cases, we are unable to identify any impact of the COVID-19 crisis on income-related outcomes – including poverty – given this data restriction. Some indicators have been made available for 2021 (with some variables referring to 2020), although there are some significant breaks in time series.

# 4. A descriptive analysis of poverty risk and economic crises

In this section, we plot the correlation between the share of working-age people at risk of poverty or social exclusion (AROPE) and the unemployment rate, followed by a multivariate regression analysis. AROPE is an overarching and encompassing indicator regarding poverty risks, material deprivation and exclusion from work. It becomes clear that poverty is somewhat directly related to unemployment as can be seen from Figure 1. Further, despite some observable differences between individual countries belonging to the diverse welfare state clusters, there are some cluster-specific features. Unemployment seems to translate more directly into poverty in the Mediterranean and Liberal welfare state regimes with their apparently more limited buffering capacities whereas this relation is weaker in Continental Europe and in the large group of Central and Eastern European countries. In the Nordic countries with their strong welfare state, there basically is no relationship between unemployment and poverty risk.

Figure 1: Scatterplots of risk of poverty or social exclusion and the unemployment rate for different welfare state types






Source: Eurostat (risk of poverty or social exclusion (in %, age 16-64), ilc_peps01) and OECD statistics (unemployment rate), 2005-2020.

In a next step, we aim to analyse how different welfare state types might be able to moderate a potential correlation between an economic crisis period (namely an economic depression[4]) and the poverty risk, using different kinds of poverty measures next to the AROPE indicator. Our statistical model is defined as follows:

$$\text{Poverty measure}_{c,t} = \beta_1 \text{ depression}_{c,t} + \mu_1 \text{ depression}_{c,t} \times \text{welfare state indicator}_c + \beta_2 \text{ depression}_{c,t-1} + \mu_2 \text{ depression}_{c,t-1} \times \text{welfare state indicator}_c + \text{time fixed effect t} + \text{poverty measure}_{c,t-1} + a_c + \text{error term}_{c,t}$$

The inclusion of an interaction term, which interacts the depression measure with a welfare state indicator allows to statistically test whether the dependent variables behave systematically differently in times of economic crisis, depending on which type of welfare state a country belongs to. The estimation parameters of interest are $\mu_1$ and $\mu_2$. If they are significantly different from zero, the design of the welfare state has a systematic influence on the extent to which economic development affects a target dimension of social security. This could be interpreted as a moderating effect of the MIS system if $\mu_1$ and $\mu_2$ have an opposite sign of $\beta_1$ and $\beta_2$, respectively.

The model is estimated including (lagged values of) the unemployment rate as well as the labour force participation rate and the share of self-employed. In addition, the lagged dependent variable displays an important control variable as there probably prevails a certain path dependency (poverty measure c,t-1). For this reason – and to make the best use of the panel dimension of the data – the Arellano-Bond estimator is used to estimate a dynamic panel model, since coefficients will be inconsistent when using panel fixed effects regressions including a lagged dependent variable (Arellano and Bond, 1991; Angrist and Pischke, 2009).[5]

[4] A depression is defined as the growth rates of two consecutive periods being below a quarter of a standard deviation of the average growth rate of this country (54 such depressions are identified).

[5] It is common to cluster the standard errors in panel analyses to account for within-group correlation of clusters (such as individuals or in this case countries). However, since there are only 28 countries in the data set and the lowest number of clusters is commonly considered at around 40, no clustered standard errors are reported (e.g., Angrist and Pischke, 2009). Therefore, the reported standard errors might be underestimated and significance levels overestimated, so that more weight should be given to results with higher significance levels with at least two or even stronger results with three stars (when the p-value is smaller than 0.05 or 0.01).

Table 1: Arellano-Bond regression results with different dependent variables, depression as business cycle measure and interaction terms with welfare state type

| | Dependent variable: | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Risk of poverty or social exclusion (age 16-64) (1)** | **At risk of poverty rate before social transfers (age 16-64) (2)** | **Severe material deprivation rate (age 16-64) (3)** | **In-work at-risk-of-poverty-rate employed (age 18-64) (4)** | **Relative poverty gap (age 16-64) (5)** | **Poverty threshold (couple with two children, PPS) (6)** | **Households with very low work intensity, % of population less than 60 (7)** |
| Depression | 0.743* | 0.382 | 0.506 | 0.446** | -0.741 | -85.404 | -0.208 |
| | (0.379) | (0.307) | (0.434) | (0.225) | (0.562) | (171.785) | (0.224) |
| Depression* | -1.106 | 2.174*** | -3.235*** | -1.334** | -1.356 | -797.513** | 3.325*** |
| Welfare state type Liberal | (0.886) | (0.699) | (1.022) | (0.528) | (1.292) | (391.002) | (0.475) |
| Depression* | -0.321 | 0.371 | -1.100 | -0.272 | 1.159 | -44.600 | 0.633 |
| Welfare state type Continental | (0.701) | (0.574) | (0.802) | (0.409) | (1.005) | (299.027) | (0.407) |
| Depression* | -0.668 | 0.175 | -0.477 | -0.301 | -0.138 | 498.028 | 0.714 |
| Welfare state type Nordic | (0.773) | (0.618) | (0.887) | (0.449) | (1.130) | (340.499) | (0.452) |
| Depression* | -1.246** | -0.536 | -1.392** | -0.646* | 0.476 | -277.970 | 0.071 |
| Welfare state type Mediterranean | (0.581) | (0.469) | (0.671) | (0.345) | (0.854) | (264.223) | (0.339) |
| Depression (1 lag) | -0.014 | 0.090 | 0.516 | -0.458** | -0.288 | -29.198 | 0.106 |
| | (0.365) | (0.295) | (0.416) | (0.216) | (0.534) | (160.412) | (0.214) |
| Depression (1 lag)* | 0.695 | 0.236 | -0.514 | 0.926* | 0.072 | -161.463 | 0.649 |
| Welfare state type Liberal | (0.848) | (0.698) | (0.978) | (0.506) | (1.233) | (372.239) | (0.522) |
| Depression (1 lag)* | 0.239 | 1.039* | -0.600 | 0.890** | 1.272 | -308.992 | 0.330 |
| Welfare state type Continental | (0.680) | (0.550) | (0.777) | (0.398) | (0.977) | (289.380) | (0.393) |
| Depression (1 lag)* | -0.010 | -0.142 | -1.045 | 0.573 | 0.860 | -233.537 | 0.115 |
| Welfare state type Nordic | (0.707) | (0.566) | (0.807) | (0.413) | (1.030) | (309.325) | (0.413) |
| Depression (1 lag)* | 0.196 | 0.018 | -0.510 | 0.217 | 0.977 | -353.312 | 0.278 |
| Welfare state type Mediterranean | (0.564) | (0.455) | (0.643) | (0.334) | (0.816) | (246.492) | (0.328) |
| Depression (2 lags) | 1.071*** | -0.323 | 1.094*** | -0.037 | 0.366 | -87.279 | 0.090 |
| | (0.345) | (0.287) | (0.399) | (0.215) | (0.527) | (160.104) | (0.212) |
| Depression (2 lags)* | -0.397 | 0.221 | -0.305 | 0.046 | 0.520 | -201.383 | -0.503 |
| Welfare state type Liberal | (0.862) | (0.685) | (0.999) | (0.519) | (1.252) | (370.149) | (0.497) |
| Depression (2 lags)* | -1.275* | 0.545 | -1.650** | -0.321 | -1.125 | -168.935 | 0.223 |
| Welfare state type Continental | (0.683) | (0.554) | (0.778) | (0.411) | (0.995) | (293.691) | (0.395) |
| Depression (2 lags)* | -1.557** | 0.497 | -1.692* | -0.070 | -2.214** | 426.181 | 0.253 |
| Welfare state type Nordic | (0.756) | (0.606) | (0.871) | (0.445) | (1.109) | (329.853) | (0.443) |
| Depression (2 lags)* | -0.204 | 0.676 | -0.457 | 0.725** | 0.789 | -54.259 | -0.254 |
| Welfare state type Mediterranean | (0.547) | (0.451) | (0.640) | (0.338) | (0.841) | (246.368) | (0.323) |
| Observations | 354 | 363 | 354 | 363 | 363 | 363 | 363 |
| Dependent variable (1 lag) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Dependent variable (2 lags) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate (1 lag) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate (2 lags) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Further controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Source: Eurostat (all dependent variables and share of self-employed) and OECD statistics (GDP growth rate, unemployment and labour force participation rate) for all EU countries and the UK, all years available from 2005-2021.

Notes: Standard errors in parentheses. Significance levels are displayed as follows: *** p<0.01, ** p<0.05, * p<0.1. Each column represents a different regression. The variable "depression" is equal to 1 if the growth rates of two consecutive periods are below a quarter of a standard deviation of the average growth rate of the country. Year dummy variables are included in all regressions. Further control variables include the labour force participation rate and the share of self-employed.

Table 1 displays the results of the regression analysis. The Eastern European countries are used as a reference group in the estimations. We find that the non-lagged coefficient of a depression shows some opposite tendencies in Liberal welfare states compared to Post-Socialist welfare states (first two rows in column (3) and (4)) where Liberal welfare states tend to actually reduce the poverty risk compared to an increased poverty risk in the Post-Socialist model. However, in columns (2) and (6), the poverty risk before social transfers and the poverty threshold, directions for Liberal and Eastern European welfare states are the same, but significantly increased in Liberal welfare states. The first two lines in column (7) show a higher risk for low work intensity in Liberal countries than in Central

and Eastern European countries, whose coefficient is even negative, but not significant. These results comparing Liberal to Post-Socialist welfare state types are therefore rather mixed. Results in columns (1), (3) and (5) for the two-lagged depression variable show that Continental and Nordic welfare states have a lower poverty risk after a depression compared to Post-Socialist welfare states. Mediterranean welfare state types have a lower poverty risk when experiencing a depression regarding the AROPE outcome (column (1)) and the severe material deprivation rate (column (3)), but a higher in-work-at-poverty-risk after a depression long ago (last line in column (4)) compared to Post-Socialist countries.

Whereas these results do confirm general assumptions about how certain welfare states perform regarding their welfare systems also during a crisis, i.e. suggesting that the Continental and Nordic countries do rather well, the results do not seem robust across different outcomes. They should therefore be handled with strong caution and not be interpreted as systematic relationships.

Additional analyses interacting the incidence of a depression with important variables regarding the institutional framework were conducted to complement the welfare state type analysis. Table X1 (in the appendix) shows the results of interacting the incidence of a depression with the strictness of employment protection legislation and social benefits expenditure in percent of GDP, whereas Tables X2 and X3 show the results of interaction terms with the net replacement at two or 60 months into unemployment. Only statistically significant results are shown. All of these results indicate that a stronger employment protection legislation, a higher net replacement rate and a higher share of social benefit expenditure tend to buffer the effect of a depression, since the interaction terms have a negative sign (therefore decreasing the poverty risk) while the depression coefficient has a positive sign (with reversed signs for the risk of poverty thresholds as shown in columns (4) and (5) in X2). These findings show that core welfare state and labour market institutions are able to alleviate some of the poverty risk stemming from a bad economic situation. Moreover, Table X3 shows that the net replacement rate at 60 months into unemployment is able to mainly buffer economic crisis periods from the past as mostly the interactions with the two-lagged depression variable are statistically significant. The net replacement rate at two months into unemployment (excluding other types of benefits) rather representing unemployment insurance also has more short-term effects after a depression since also the non-lagged and the one-lagged values are statistically significant. However, given that all results presented here are based on a relatively low number of observations and a more descriptive rather than causal analysis, the results should be interpreted as tendencies rather than quantifiable effects.

# 5. Simulating hypothetical shocks

To complement the analysis of the contribution of MIS schemes to social resilience across Europe, we investigate their role in smoothing disposable incomes in two crisis scenarios. We use the EU-wide tax-benefit model EUROMOD to calculate household disposable incomes (see Sutherland and Figari, 2013; Sutherland, 2018). We make use of EUROMOD version I4.0+ and simulate the tax-benefit systems of the year 2020 using input data based on the 2019 EU-SILC wave (income reference year 2018).[6] We model two stylised macroeconomic shock scenarios to investigate to what extent MIS systems contribute to social resilience in times of crisis. The simulated shocks differ in size, duration and in the socio-demographic structure of the newly unemployed (see Table 2). For the analysis of the income stabilising effects of MIS systems and the tax-benefit, we simulate both shocks such that the inflow into unemployment occurs in the first month of the shock.

Table 2: Comparison of shock scenarios

| | **Small shock** | **Large shock** |
|---|---|---|
| **Increase in unemployment rate** | One percentage point | Five percentage points |
| **Duration** | One year | Two years |
| **Socio-demographic structure of people losing their job** | Corresponds to the socio-demographic structure of those already in unemployment | Corresponds to the socio-demographic structure of those in employment |

By controlling for the duration of the respective shock, we consider the effect of expiring entitlements to benefits from the unemployment insurance system, as maximum duration of benefit receipt differs substantially across countries. In addition, also within countries the maximum duration of unemployment benefit receipt may differ. We simulate unemployment benefit duration in each country according to the country-specific rules implemented in EUROMOD which we complement with information from the "Mutual Information System on Social Protection" (MISSOC).

Before we turn to the simulation of the shock scenarios, it is worth to investigate the extent to which unemployed individuals are covered by unemployment insurance or MIS systems *before* any (simulated) shock hits the economy. Such analysis may help to rationalize the findings presented below, where most analyses focus on the cushioning effects of unemployment insurance and MIS schemes *after* the stylized macroeconomic shocks have materialized.

The coverage rate is a widely used indicator to measure the strictness of eligibility criteria and the effective reach of unemployment insurance and MIS systems. Figure 2 presents the share of unemployed individuals being covered by unemployment insurance (blue bar) or MIS systems (red bar), respectively, in EU Member States and the UK without any shock.[7]

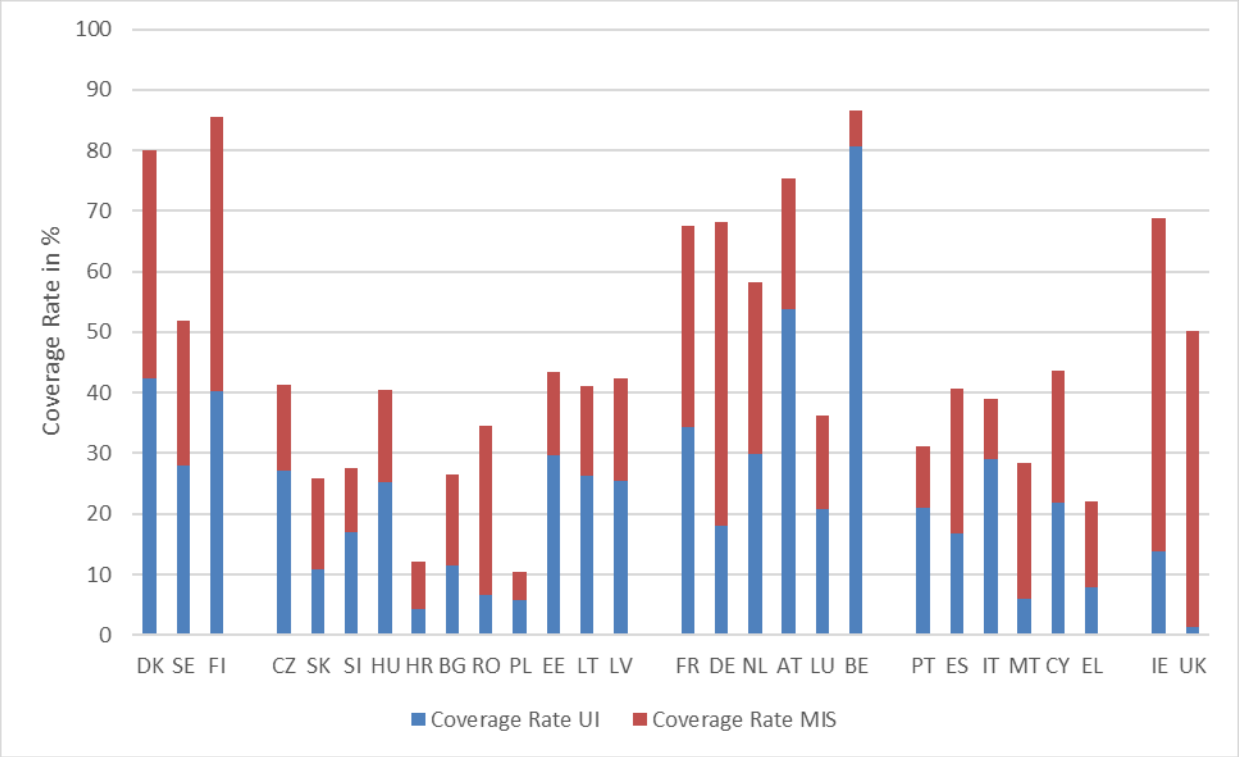
[6] Since the UK is not included in version I4.0+, we use model version I3.86+ based on 2018 input data for the UK. Comparability to other countries is given as EUROMOD uprates monetary values to fit to the policy year of interest.

[7] Note that these simulated coverage rates can slightly differ from coverage rates that are directly calculated with survey data like EU-SILC. Reasons for differences are amongst others (non-) take-up issues and data limitations especially in case of simulating unemployment insurance benefits. For the sake of consistency and comparability with the findings presented in the next section, we focus on these simulated coverage rates.

The figure shows that total coverage rates for the unemployed widely differ both across and within the welfare state clusters. Countries belonging to the Nordic, Continental European and (to a smaller extent) the Liberal cluster have substantially higher total coverage rates than Post-Socialist or Southern European countries. This general pattern also mostly applies when looking at the coverage rates of MIS systems alone. In the Liberal welfare states, a relatively large share of unemployed individuals is covered by MIS schemes compared to unemployment insurance benefits. By contrast, there is roughly an equal share of unemployed individuals being covered by unemployment insurance and MIS schemes in the Nordic welfare states of Denmark and Finland, but also in Continental European countries such as France.

These examples illustrate that analysing MIS schemes in isolation without accounting for upstream systems may yield an incomplete picture of the social resilience provided in the different welfare state clusters. Concluding our simulation analysis, we will investigate whether higher coverage rates go hand in hand with dimensions of social resilience.

Figure 2: Coverage rates of unemployment insurance benefits and minimum income support schemes for unemployed individuals (Baseline (pre-shock) simulation)




Source: Own calculations on basis of EUROMOD simulations

We focus on two dimensions of social resilience: reduction of poverty and social exclusion and income stabilisation. Further analysis for inequality and labour market participation can be found in Eichhorst et al. (2023).

First, we analyse how the tax-transfer-systems in general and MIS systems in particular contribute to reducing poverty by calculating at-risk-of-poverty rates in the different scenarios. The at-risk-of-poverty (AROP) rate is defined as the share of individuals that have an equivalised disposable income

below the at-risk-of-poverty threshold. This threshold is usually set to 60 percent of the national median household equivalised disposable income. We calculate the income threshold defining the poverty line before the shock and hold the poverty line constant in the shock scenario to enable a comparison to the status quo.

Before analysing any changes in AROP rates, we note that there is a substantial variation in pre-shock AROP rates across countries (see Table 3). Comparing the welfare state clusters, we find lowest (highest) AROP rates in Nordic (Southern European) countries (mean values of 10.3 and 16.5).

## Table 3: At-risk-of-poverty rates with 60 percent at-risk-of-poverty threshold

| Country | Baseline | Small Shock | | Large Shock | | Baseline w/o MIS | Small Shock without MIS | | Large Shock without MIS | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| | $AROP_B$ | $AROP_S$ | $\Delta$ | $AROP_L$ | $\Delta$ | $AROP_B^a$ | $AROP_S^a$ | $\Delta$ | $AROP_L^a$ | $\Delta$ |
| **Nordic** | | | | | | | | | | |
| **DK** | **7.14** | 7.19 | 0.05 | 8.26 | 1.12 | 9.84 | 9.89 | 0.05 | 11.45 | 1.61 |
| **SE** | **13.16** | 14.15 | 0.99 | 15.68 | 2.52 | 13.64 | 14.68 | 1.04 | 16.28 | 2.64 |
| **FI** | **10.5** | 12.67 | 2.17 | 13.78 | 3.28 | 11.99 | 13.59 | 1.6 | 14.67 | 2.68 |
| *Mean* | ***10.27*** | *11.34* | *1.07* | *12.57* | *2.31* | *11.82* | *12.72* | *0.9* | *14.13* | *2.31* |
| **Post-Socialist** | | | | | | | | | | |
| **CZ** | **5.89** | 6.55 | 0.66 | 8.38 | 2.49 | 6 | 6.66 | 0.66 | 8.53 | 2.53 |
| **SK** | **10.42** | 10.91 | 0.49 | 13.26 | 2.84 | 10.63 | 11.16 | 0.53 | 13.62 | 2.99 |
| **SI** | **10.21** | 11.03 | 0.82 | 12.5 | 2.29 | 11.3 | 12.14 | 0.84 | 13.57 | 2.27 |
| **HU** | **24.12** | 24.5 | 0.38 | 26.4 | 2.28 | 24.4 | 24.78 | 0.38 | 26.73 | 2.33 |
| **HR** | **19.24** | 19.64 | 0.4 | 20.59 | 1.35 | 19.36 | 19.77 | 0.41 | 20.71 | 1.35 |
| **BG** | **20.03** | 20.42 | 0.39 | 21.76 | 1.73 | 21.45 | 21.85 | 0.4 | 23.19 | 1.74 |
| **RO** | **21.52** | 21.81 | 0.29 | 22.96 | 1.44 | 21.66 | 21.96 | 0.3 | 23.09 | 1.43 |
| **PL** | **13.6** | 14.07 | 0.47 | 15.91 | 2.31 | 13.78 | 14.25 | 0.47 | 16.09 | 2.31 |
| **EE** | **12.78** | 13.68 | 0.9 | 15.14 | 2.36 | 13.22 | 14.11 | 0.89 | 15.59 | 2.37 |
| **LT** | **16.09** | 18.29 | 2.2 | 21.52 | 5.43 | 16.44 | 18.64 | 2.2 | 21.82 | 5.38 |
| **LV** | **19.64** | 20.66 | 1.02 | 22.34 | 2.7 | 19.82 | 20.84 | 1.02 | 22.53 | 2.71 |
| *Mean* | ***15.78*** | *16.51* | *0.73* | *18.25* | *2.47* | *16.19* | *16.92* | *0.74* | *18.68* | *2.49* |
| **Continental** | | | | | | | | | | |
| **FR** | **12.52** | 12.74 | 0.22 | 14.72 | 2.2 | 14.63 | 14.84 | 0.21 | 16.8 | 2.17 |
| **DE** | **11.59** | 11.83 | 0.24 | 13.21 | 1.62 | 12.21 | 12.47 | 0.26 | 13.89 | 1.68 |
| **NL** | **9.15** | 9.62 | 0.47 | 11.18 | 2.03 | 11.08 | 11.58 | 0.5 | 13.26 | 2.18 |
| **AT** | **12.42** | 14.2 | 1.78 | 15.61 | 3.19 | 13.33 | 15.13 | 1.8 | 16.55 | 3.22 |
| **BE** | **10.93** | 11 | 0.07 | 11.57 | 0.64 | 11.88 | 11.95 | 0.07 | 12.55 | 0.67 |
| **LU** | **12.49** | 13.03 | 0.54 | 14.61 | 2.12 | 14.39 | 14.98 | 0.59 | 16.54 | 2.15 |
| *Mean* | ***11.52*** | *12.07* | *0.55* | *13.48* | *1.97* | *12.92* | *13.49* | *0.57* | *14.93* | *2.01* |
| **Southern** | | | | | | | | | | |
| **PT** | **16.66** | 17.1 | 0.44 | 18.97 | 2.31 | 17.82 | 18.28 | 0.46 | 20.12 | 2.3 |
| **ES** | **20.48** | 20.64 | 0.16 | 23.09 | 2.61 | 21.97 | 22.13 | 0.16 | 24.51 | 2.54 |
| **IT** | **18.55** | 18.87 | 0.32 | 20.16 | 1.61 | 19.28 | 19.6 | 0.32 | 20.85 | 1.57 |
| **MT** | **13.26** | 13.82 | 0.56 | 15.2 | 1.94 | 15.45 | 16.03 | 0.58 | 17.44 | 1.99 |
| **CY** | **13.82** | 14.81 | 0.99 | 16.85 | 3.03 | 19.22 | 20.25 | 1.03 | 22.44 | 3.22 |
| **EL** | **16.14** | 16.87 | 0.73 | 18.58 | 2.44 | 17.5 | 18.27 | 0.77 | 19.99 | 2.49 |
| *Mean* | ***16.49*** | *17.02* | *0.53* | *18.81* | *2.32* | *18.54* | *19.09* | *0.55* | *20.89* | *2.35* |
| **Liberal** | | | | | | | | | | |
| **IE** | **11.46** | 12.52 | 1.06 | 13.87 | 2.41 | 14.5 | 15.54 | 1.04 | 17.11 | 2.61 |
| **UK** | **14.71** | 15.12 | 0.41 | 16.74 | 2.03 | 23.36 | 23.89 | 0.53 | 25.67 | 2.31 |
| *Mean* | ***13.09*** | *13.82* | *0.74* | *15.31* | *2.22* | *18.93* | *19.72* | *0.79* | *21.39* | *2.46* |
| ***Mean*** | **14.23** | **14.92** | **0.69** | **16.53** | **2.3** | **15.72** | **16.4** | **0.68** | **18.06** | **2.34** |
| **Median** | **13.21** | **14.11** | **0.48** | **15.645** | **2.3** | **14.565** | **15.335** | **0.53** | **16.955** | **2.31** |

Source: Own calculations on basis of EUROMOD simulations

Notes: AROPs are calculated as the percentage of individuals with income under the at-risk-of-poverty threshold. In this table the threshold is defined as 60 percent of the national median household equivalised disposable income. The Δ columns show the change in percentage points compared to the respective baseline.

Next, we study how the AROP rates *change* in the simulated shock scenarios. Across all countries, AROP rates increase in both shock scenarios (see columns 3 and 5 in Table 3). In a counterfactual scenario without minimum income schemes, AROP rates are substantially higher in the baseline (column 6) as well as in the shock scenarios (columns 7 and 9). This confirms once again the poverty-reducing effect of MIS in both regular periods and periods of crisis.[8]

The AROP rate response to the unemployment shock scenarios is relatively moderate in Continental European, and to some extent in Southern European and Nordic countries, especially Denmark. There are stronger consequences of the shocks in Post-Socialist countries and Anglo-Saxon welfare states, especially in the large shock scenario. Overall, the initial understanding of the crisis resilience of different welfare state types from the sections above still seems largely valid. However, there is some heterogeneity between countries belonging to the same cluster even when hypothetically similar shocks are modelled.

To identify the contribution of MIS in reducing increases in AROP rates in the two shock scenarios, we compare the differences between the baseline and the shock scenario, with and without MIS. We calculate the following difference in differences for each country:

$$\Delta_{AROP} = (AROP^{a}_{SHOCK} - AROP^{a}_{BASE}) - (AROP_{SHOCK} - AROP_{BASE})$$

The superscript $a$ represents the counterfactual scenario without MIS. We can interpret the resulting difference $\Delta_{AROP}$ as indicating by how much more the AROP rates would have increased in a given shock scenario in the absence of any MIS. First, we calculate $\Delta_{AROP}$ for each country separately and then provide the mean and median values for both shock scenarios and varying at-risk-of-poverty thresholds as described above.

Table 4 shows the results of these calculations for different AROP rates (Kneeshaw et al., 2021). Our results suggest that MIS systems prevent a further increase in AROP rates especially during deeper crisis. For an at-risk-of-poverty threshold of 60 percent, the counterfactual average AROP rate without MIS would not have increased more as compared to the scenario with MIS in the small shock scenario. However, the additional increase in the average AROP rate in the counterfactual scenario without MIS would have amounted to 0.04 percentage points in the large shock scenario.

The average cushioning effect of MIS ($\Delta_{AROP}$) is larger for the lower poverty threshold of 50 percent of median household equivalised disposable income. It amounts to 0.04 percentage points in the small shock scenario and 0.15 percentage points in the large shock scenario. With a lower poverty threshold, more households are below the poverty line in the counterfactual situation without any MIS once the shock has materialised. Symmetrically, the average cushioning effect of MIS is zero at an at-risk-of-poverty threshold of 70 percent. Our result of diminishing effects of MIS systems reveals that the benefit generosity of the average MIS system in our sample only suffices to substantially lower the risk of poverty and social exclusion in times of crisis if a 50 percent poverty threshold is used.

[8] Results for the alternative at-risk-of-poverty thresholds can be found in the appendix (section **Fehler! Verweisquelle konnte nicht gefunden werden.** below).

Table 4: Effect of MIS on AROP's differences ($\Delta_{AROP}$)

| | Mean | | Median | |
|---|---|---|---|---|
| Threshold | Small shock | Large shock | Small shock | Large shock |
| **50%** | 0.04 | 0.15 | 0.02 | 0.08 |
| **60%** | 0.00 | 0.04 | 0.01 | 0.03 |
| **70%** | 0.00 | 0.00 | 0.00 | 0.01 |

Source: Own calculations on basis of EUROMOD simulations
Notes: The table reports mean and median values of the additional change in the AROP rate in the counterfactual scenario without any MIS compared to the scenario with MIS: $\Delta_{AROP} = (AROP^{a}_{SHOCK} - AROP^{a}_{BASE}) - (AROP_{SHOCK} - AROP_{BASE})$, where values with superscript $a$ represent the counterfactual scenario without MIS. The mean and median values indicate by how much more the AROP rates would have increased in a given shock scenario in the absence of any MIS. Thresholds are 50/60/70% of national median household equivalised disposable income.

To analyse the stabilising effect of MIS on incomes, we follow Dolls et al. (2012) and Dolls et al. (2022) and calculate an income stabilisation coefficient for each country. The coefficient specifies to what extent the two simulated shocks are absorbed by tax-transfer systems. The income stabilisation coefficient $\tau^I$ is formally defined as follows:

$$\tau^I = 1 - \frac{\sum_i \Delta Y_i^D}{\sum_i \Delta Y_i^M} = \frac{\sum_i (\Delta Y_i^M - \Delta Y_i^D)}{\sum_i \Delta Y_i^M} = \frac{\sum_i \Delta G_i}{\sum_i \Delta Y_i^M} = \frac{\sum_i (\Delta T_i + \Delta S_i - \Delta B_i)}{\sum_i \Delta Y_i^M}$$

, where $Y_i^D$ is the disposable income of individual i, $Y_i^M$ her market income and $G_i$ depicts net governmental intervention. $G_i$ here comprises direct taxes $T_i$, social insurance contributions $S_i$ and benefits $B_i$.

In our study we add a further decomposition of $B_i$ to separate the effects of minimum income schemes $MIS_i$ from unemployment insurance schemes $UI_i$. The income stabilisation coefficient can then be decomposed as follows:

$$\tau^I = \frac{\sum_i (\Delta T_i + \Delta S_i - \Delta UI_i - \Delta MIS_i)}{\sum_i \Delta Y_i^M}$$

$\tau_{TAX}$, $\tau_{SIC}$, $\tau_{UI}$ and $\tau_{MIS}$ represent the stabilisation effects stemming from the different components of the tax-transfer system.

The results are presented in Table 5[9] and **Fehler! Verweisquelle konnte nicht gefunden werden.**. They show the decomposition of the income stabilisation coefficients into its components. Several findings stand out. First, on average income stabilisation coefficients are larger in case of the small shock with a cushioning effect of 52 percent on average as compared to the large shock with 43 percent. The larger cushioning effect of the tax-benefit system in case of the small shock can be explained by the fact that more people lose their unemployment benefits in a prolonged recession. This is exactly what is observed in the large shock scenario.

Second, we find considerable heterogeneity in the cushioning effect of the tax-benefit system across countries. Again, the stabilisation capacities show some pattern across welfare state types, with more pronounced income stabilisation in Nordic and Continental European countries than in Post-

[9] Lithuania is excluded from the analysis of the income stabilization coefficient as the stabilizing effects of direct taxes and social insurance contributions could not be simulated.

Socialist and Liberal welfare. In the latter group, our analysis suggests that MIS play a more central role in the tax-benefit system of the UK. Mediterranean countries show some within-cluster heterogeneity.

Third, MIS only play a small role in stabilising incomes, while unemployment insurance benefits are the most important income stabiliser in most countries. There are two main reasons for the relatively small stabilising effect of MIS. First, total amounts paid by MIS are substantially lower than benefits from unemployment insurance schemes. Second, the fact that entitlements to unemployment insurance benefits expire over time does not necessarily lead to the receipt of benefits from MIS in most EU countries, as most schemes assess eligibility based on total household income.[10] This is emphasized by the fact that in countries where MIS coverage rates for the unemployed are high (see Figure 2), the stabilising effects are also relatively low.

However, we can see various effects of the different shocks on the stabilising effect of MIS systems. As expected, the stabilising effect of MIS is larger in the large shock scenario due to expiring unemployment insurance benefits. The stabilising effect of MIS amounts to roughly 1.7 percent of the income loss due to unemployment in the small shock and 3 percent in the large shock.

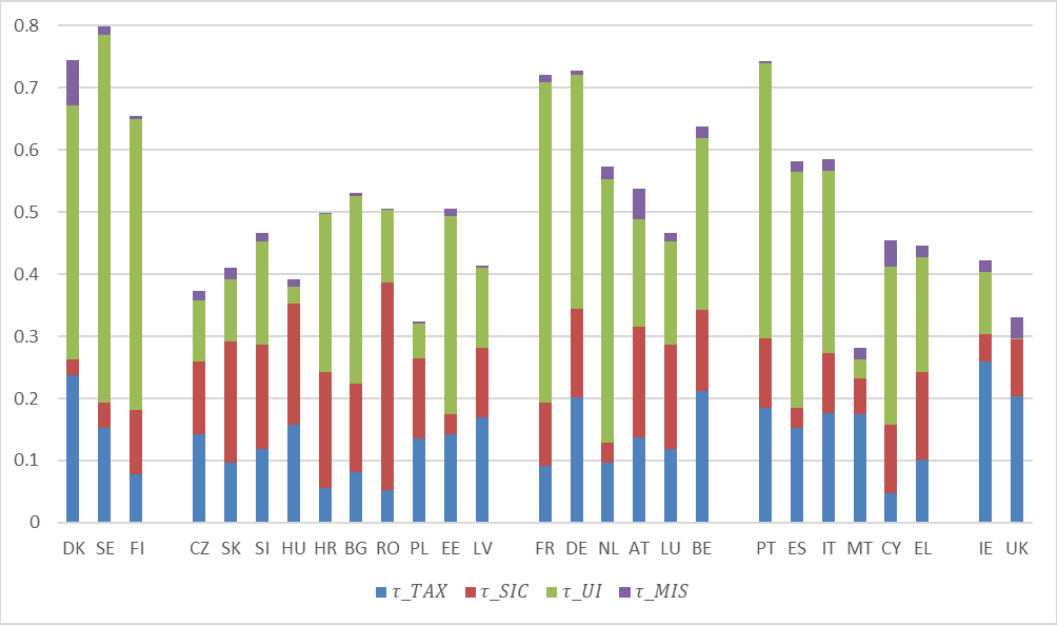
[10] In Germany, for example, only about 30 percent of those unemployed for which entitlement to unemployment insurance benefits expires in the large shock scenario receive MIS afterwards.

Table 5: Income stabilisation coefficients for small and large shock scenario

| | $\tau_{SMALL}$ | $\tau_{LARGE}$ |
|---|---|---|
| **Nordic** | | |
| **DK** | 0.743 | 0.692 |
| **SE** | 0.799 | 0.594 |
| **FI** | 0.654 | 0.437 |
| *Mean* | *0.73* | *0.57* |
| **Post-socialist** | | |
| **CZ** | 0.373 | 0.338 |
| **SK** | 0.411 | 0.348 |
| **SI** | 0.468 | 0.403 |
| **HU** | 0.498 | 0.393 |
| **HR** | 0.498 | 0.393 |
| **BG** | 0.53 | 0.339 |
| **RO** | 0.454 | 0.33 |
| **PL** | 0.325 | 0.29 |
| **EE** | 0.506 | 0.399 |
| **LV** | 0.413 | 0.336 |
| *Mean* | *0.45* | *0.36* |
| **Continental** | | |
| **FR** | 0.721 | 0.73 |
| **DE** | 0.726 | 0.63 |
| **NL** | 0.573 | 0.308 |
| **AT** | 0.537 | 0.467 |
| **BE** | 0.637 | 0.727 |
| **LU** | 0.662 | 0.521 |
| *Mean* | *0.64* | *0.56* |
| **Southern** | | |
| **PT** | 0.742 | 0.542 |
| **ES** | 0.582 | 0.561 |
| **IT** | 0.585 | 0.437 |
| **MT** | 0.283 | 0.255 |
| **CY** | 0.454 | 0.33 |
| **EL** | 0.445 | 0.358 |
| *Mean* | *0.52* | *0.41* |
| **Liberal** | | |
| **IE** | 0.421 | 0.369 |
| **UK** | 0.331 | 0.324 |
| *Mean* | *0.38* | *0.35* |
| **Median** | **0.502** | **0.393** |
| **Mean** | **0.523** | **0.428** |

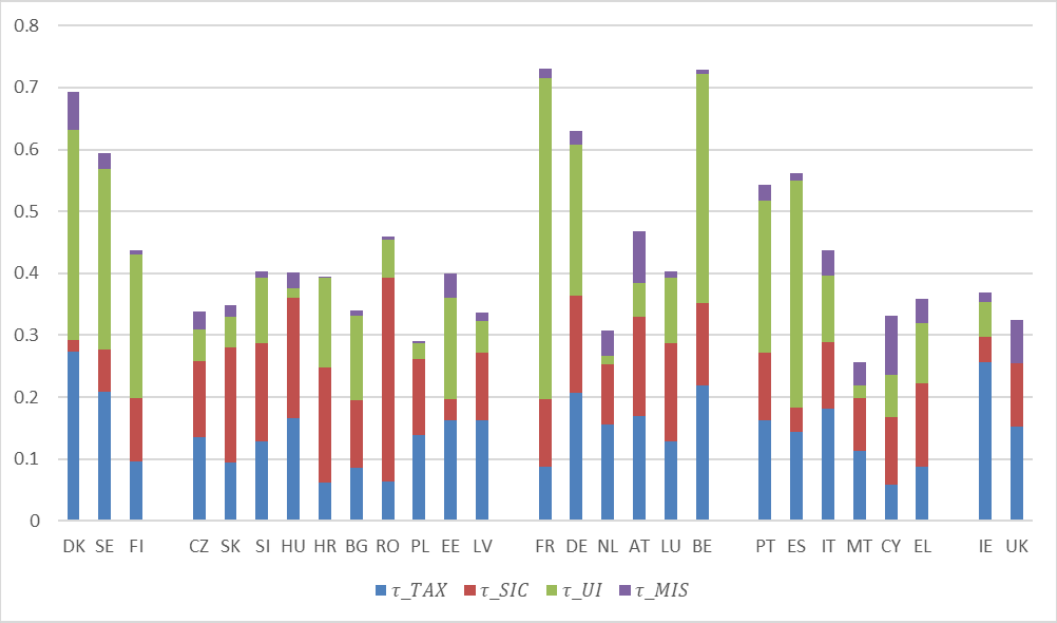
Source: Own calculations on basis of EUROMOD simulations

Figure 3: Decomposition of income stabilisation coefficient in small shock scenario




Source: Own calculations on basis of EUROMOD simulations

Figure 4: Decomposition of income stabilisation coefficient in large shock scenario



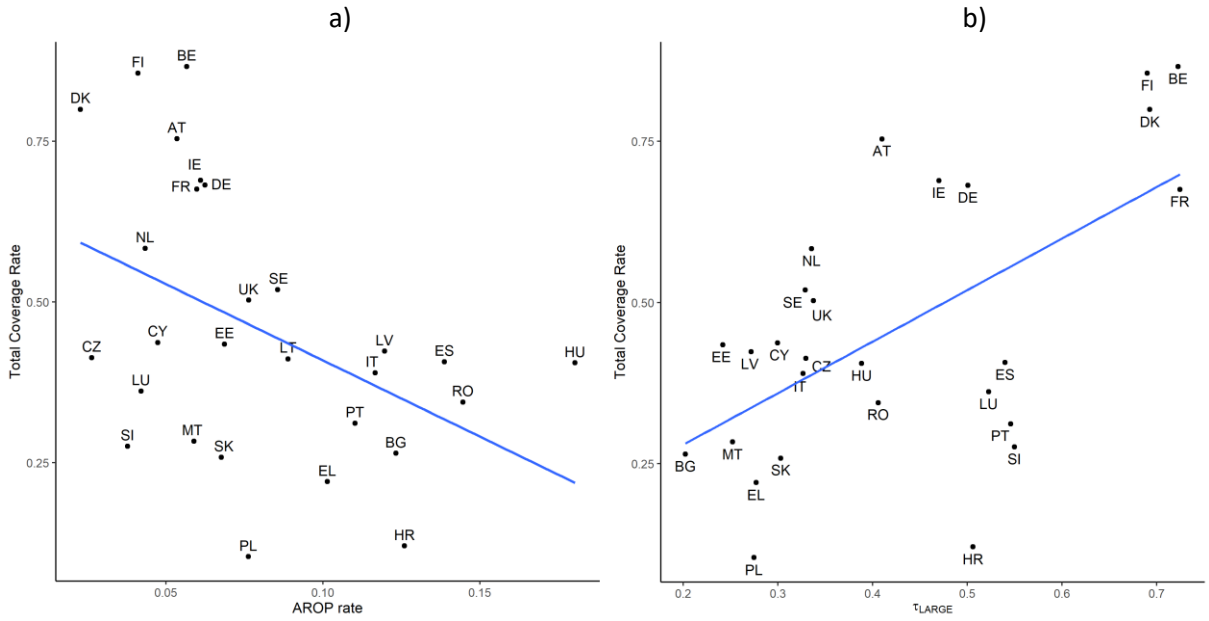

Source: Own calculations on basis of EUROMOD simulations.

Our results from the simulation of stylized unemployment shocks hitting labour markets suggest that the tax-benefit contributes to social resilience in periods of crises. However, the separate contribution of MIS is relatively small, especially in comparison to the unemployment insurance system.

Finally, we return to the question of how key indicators of social resilience coincide with the coverage rates discussed at the beginning of this chapter. Figure 5 portrays the relationship between total coverage rates on the one hand and the AROP and the income stabilisation coefficient on the other hand. In panel a) we document a strong negative correlation between coverage rates and

standard AROP rates, whereas panel b) reveals that coverage rates and income stabilisation coefficients are positively correlated. These results forcefully illustrate that higher coverage rates coincide with improved social resilience.

Figure 5: Correlation between a) total coverage rates and AROP rates and b) total coverage rates and income stabilisation coefficients




Source: Own calculations on basis of EUROMOD simulations.

# 6. A comparative analysis of selected national cases

This section provides an assessment of the five main countries representing diverse welfare state types regarding their institutional arrangements, reforms and performance when confronted with economic shocks in the 2000s. The information presented here was gathered via desk research as well as 25 semi-structured online and in-person interviews with country experts. The information obtained through desk research was used to draw up the interview guidelines. For reasons of confidentiality findings from expert interviews are integrated into the main text without making direct reference to them or the individuals consulted.[11] Table 6 brings together the findings from the case studies and main quantitative figures.

*France (Continental European)*

Over the whole period, France exhibited a strong redistribution capacity given its tax-benefit system. This confirms our initial expectation regarding the Continental European welfare state type that the French welfare state should be able to limit poverty and exclusion risks as well as inequality. Its reliable income stabilisation even during crisis periods can be attributed to the design of UI and MIS. Both tend to provide relative generous income support and reach high coverage, besides stable employment for the core workforce. UI plays a particularly important role due to its high coverage and generosity, which helps to contain inequality and poverty during not so severe crisis periods as experienced in France – but MIS also plays a prominent role in this setting. This was supported by employment protection and short-time work (in particular most recently). In that respect, poverty and exclusion are less cyclically related in France, but there are persistent issues with medium employment levels, difficult labour market entry and upward mobility, in particular with the young. However, over time, there have been steps to even out the long-standing dualism in social policy and labour market regulation in France without fully overcoming this divide that is typical for Continental European settings (Caune and Theodoropoulou, 2018; Clegg, Heins and Rathgeb, 2022). French UI has become more inclusive while protection of labour market insiders, i.e. permanent and high-income workers, has declined to some extent in UI and employment protection legislation. This was combined with (unsuccessful) efforts to limit the heavy reliance on short temporary contracts. The minimum income system is still fragmented, given the existence of categorial schemes for some target groups, but over the period observed the main scheme RSA has been expanded, not least with a strong focus on permanent in-work benefits to strengthen work incentives which has brought more people into paid work to some extent while low pay and in-work poverty could be contained. Overall the French minimum income support system and the wider social policy arrangement seem stronger with respect to income stabilisation than activation and entry into non-subsidised and permanent jobs. While France pays strong attention and devotes large funds to support workers (and jobs) at the lower end of the income distribution, thereby avoiding strong wage and income dispersion, upward mobility through skill formation and complementary activation policies seems less effective. One could argue that the Continental European welfare state of France continues to exhibit remarkably strong redistributive capacities, but it has at least partially departed from its heavily dualised model of social protection and labour market regulation. This could now be classified as a modified Continental European model.

[11] Overall, 25 interviews were carried out in the five countries, involving academic experts, experts at independent research institutes as well as experts working with ministries or think tanks close to government. Most interviews were done online via Zoom, some via email. In some cases, additional material from national sources was handed over to the research team. Sometimes, remaining questions were clarified via email exchange following up the interview.

*Spain (Southern European)*

The Spanish employment and social protection system, characterized by the Southern European combination of fragmented and weak MIS with a comparatively strong system of job and unemployment protection for permanent workers as opposed to temporary employees, came under massive pressure during and after the Financial Crisis. Spain was particularly affected given the transformation of the economic crisis into a public debt crisis resulting in a double dip recession. This was followed by austerity measures in social protection and structural changes in the long-standing pattern of employment protection. As the crisis unfolded, it became clear that neither the relatively encompassing UI nor the existing minimum income protection system relying mainly on the diverse regional MIS systems in place did suffice to stabilise income and contain poverty (Guillén and Begega, 2019). Under strong internal and external pressure, Spain questioned its institutional status quo and the legacy of the Mediterranean welfare state type, trying to establish more encompassing UI, and a more balanced and flexible model of employment protection. During the COVID-19 crisis, it could provide more support through short-time work than ten years earlier, and it was able to establish a national MIS system that is now in the process of implementation and brings Spain closer to the European mainstream (Bengoechea, 2021). In this sense, the Spanish welfare state was modernised at the institutional level, departing from the Southern European legacy and moving more in the direction of Continental European models. Despite these efforts at reforming the welfare state and the labour market, it seems difficult to overcome long-standing patterns of labour market and social policy dualism since Spain continues to show massive problems with labour market integration of those trying to (re)enter the labour market via temporary contracts. The latter phenomenon is quite similar to the French situation.

*Denmark (Nordic)*

Denmark entered the 2008/09 crisis with a highly developed and inclusive welfare state. The crisis had a major impact on socio-economic outcomes in the first half of the 2010s. While still quite favourable overall and in comparison to the other countries in our sample, unemployment and poverty risks increased and stayed at relatively high levels for quite some time (Bredgaard and Madsen, 2018). The flexible labour market in Denmark with very limited employment protection suffered more from the crisis expected. As a response at the policy level, the 2010s were characterised by a sequence of emergency measures on the one hand and structural changes following an austerity orientation on the other hand. This made MIS and unemployment insurance more restrictive, exclusive (fragmented) and activating, while traditionally high spending on 'enabling' ALMPs was cut (Kvist, 2016). In that sense, the Nordic welfare state of Denmark has become more 'demanding' over time by lowering benefit generosity and tightening work requirements. This calls into question a path dependent logic according to which the Nordic model is characterised by a stable policy approach leading to superior performance. In some ways, Denmark has lost distinct advantages that sets it apart from other countries. While unemployment insurance was adapted and enlarged in coverage, transitions from unemployment to employment are more frequent in Denmark than in other countries. However, over time Denmark has moved away from the ideal type Nordic model as it was perceived and referred to over the 2000s.

*Poland (Post-Socialist)*

The Post-Socialist welfare state setting in Poland experienced a somewhat asynchronous development relative to the other countries in our sample (Strzelecki and Wyszyński, 2016). Most importantly, the role of crisis periods was more contained. This also implied that the rather weak stabilisation capacities of the Polish welfare state due to low generosity and coverage on the one

hand and labour market dualisms on the other hand were not put to a test to the same extent as in the other countries. Hence, coping with the aftermath of the Financial Crisis was not the main issue in Poland over the 2010s. Rather, departing from a limited social protection system with low coverage and low benefits as well as a rather dualised labour market with notable segments of low pay and low job stability, Poland could catch up significantly in economic terms. This overall positive development gave Poland the opportunity to pursue a different social policy agenda in the 2010s. Not having to deal with a severe economic shock and subsequent labour market deterioration created the fiscal space for a partial expansion of social policies and some attempt at reducing the dual character of the Polish labour market. However, this all occurred within the long-standing institutional structures of unemployment insurance (allowance) and MIS so that the basic structures continued to exist. A main focus of Polish social policy in the 2010s was laid on family benefits, but also – to some extent – on streamlining activation policies. While the emphasis on family policies seems to be a topic of political choice in the Polish context, the move towards activation is more in line with broader European trends. Still, it makes sense to set Poland as a Post-socialist welfare state apart from other types. Based on this case study, however, it is not possible to assess to what extent the Polish experience is typical for the Post-socialist country cluster. In fact, this cluster is quite heterogeneous in institutional terms and in crisis exposure.

*Ireland (Liberal)*

Ireland suffered heavily from the Financial Crisis and its aftermath. As expected, MIS schemes played the primary role in containing poverty and income dispersion in the Anglo-Saxon model in normal times and was also particularly relevant during the deep crisis after 2008 along with the limited and transitory role of UI. As a consequence, the massive shock from the late-2000s put the Irish welfare state under massive fiscal pressure, not least due to the negative development of employment and large shares of working-age people out of work or with low work intensity. This situation could not be overcome easily and lasted until the mid-2010s (Dukelow, 2018). The Irish system provided an effective and broadly adequate MIS model in the early phase of the recession (Daly, 2019). To counter the massive increase in the fiscal pressure of the escalating crisis, the early-2010s in Ireland were characterised by strict austerity policies, trying to contain the cost associated with the Irish MIS. This included more efforts to overcome low work intensity, which could be attributed to persistent lack of jobs on the one hand but also high benefit withdrawal rates when entering the labour market. However, adopting a medium-term perspective, Ireland moved away from the established model of rather transfer-heavy social policies that did not place much emphasis on activation. In fact, the mid-2010 saw attempts at more systematic and effective activation of job seekers. In this respect, the MIS-centred model of the Liberal Irish welfare state was ultimately complemented by an activation focus that brought Ireland closer to the European mainstream setting. The focus of income stabilisation through MIS during the crisis and subsequent austerity and activation shifts in this scheme confirm the expected crucial role of MIS in the Anglo-Saxon setting as opposed to countries with more emphasis on UI and related reforms.

Table 6: Main patterns of crisis responses in five selected welfare states

| | **France** | **Spain** | **Denmark** | **Poland** | **Ireland** |
|---|---|---|---|---|---|
| Welfare state type | Continental European | Southern European | Nordic | Post-Socialist | Anglo-Saxon |
| GDP change 2008-09 | -2.6 | -2.9 | -5.4 | 7 | -9.6 |
| Unemployment rate from low to peak | 7.4 (2008) + 2.9 (2013) | 8.2 (2007) + 17.9 (2013) | 2.9 (2008) + 4.8 (2011) | 7.1 (2008) + 3.2 (2013) | 4.8 (2007) + 10.6 (2012) |
| AROPE from low to peak (age 16-64) | 18.9 (2008) + 1.4 (2011) | 21.2 (2007) + 10.8 (2014) | 16.9 (2008) + 4.4 (2013) | 30.8 (2008) -3 (2010) | 21 (2007) + 11.6 (2011) |
| Simulated AROP change (large shock) | 2.2 | 2.61 | 1.12 | 2.31 | 2.41 |
| Income stabilisation co-efficient (large shock, V2) | 0.73 | 0.56 | 0.69 | 0.29 | 0.37 |
| Contribution of UI and MIS to stabilisation (large shock, V2) | 0.519 + 0.015 | 0.367 + 0.011 | 0.34 + 0.061 | 0.026 + 0.003 | 0.056 + 0.016 |
| Main classification | Strong resilience primarily via UI and MIS in second place | Strong resilience via UI, weaker MIS | Strong resilience primarily via UI and MIS in second place | Lower resilience | Intermediate resilience, but strong MIS |
| Benefit adequacy 2009<br>- single person<br>- jobless couple, two children | 68.8<br>62.3 | 50.0<br>37.1 | 117.1<br>112.6 | 53.3<br>74.7 | 116.7<br>113.0 |
| Expenditure change from low to peak (means-tested) | 0.2 (2007, 2009) | 0.8 (2008, 2011) | 0.8 (2007, 2013) | 0.1 (2008, 2013) | 2.2 (2007, 2011) |
| Main observations | Strong income stabilisation, but issues with labour market and social protection dualisms | Massive increase in poverty and exclusion in a dual system with limited stabilisation capacities | Relative increase in inequalities in an encompassing welfare state | Country less affected by the crisis during long catching-up, limited stabilisation not strongly put at test | Quite strong stabilisation of income via MIS, but massive fiscal pressure in the aftermath of the crisis |

| | France | Spain | Denmark | Poland | Ireland |
|---|---|---|---|---|---|
| Main structural reforms (2010s) | Weak de-dualisation of employment protection; expansion of in-work benefits; activation policies; expansion of UI coverage | Deep austerity phase; partly de-dualising employment protection; and benefit cuts; creation of national MIS scheme; expansion of UI coverage | Austerity phase with benefit cuts and shift towards more demanding activation; continuous adjustment of UI | Steps towards reducing dualisms in the labour market and social protection; expansion of family benefits | Severe austerity phase with social policy retrenchment<br>Rather late shift towards activation |

Data sources: GDP: OECD statistics, gross domestic product (expenditure approach), annual growth rates in percentage; unemployment: OECD statistics, annual unemployment rates; AROPE: Eurostat (ilc_peps01). Simulated effect on AROP, income stabilisation and contribution of MIS and UI: own simulations based on EUROMOD. Benefit adequacy: own calculations based on OECD statistics (Adequacy of guaranteed minimum income benefits, GMI amount in local currency, jobless person without children, including housing benefits) and Eurostat (ilc_li01), relative to 60% threshold; Expenditure: own calculations based on the Eurostat ESSPROS database (SPR_EXP_GDP).

# 7. Conclusion

This study aims to identify the contribution of social protection systems, in particular MIS and upstream schemes such as unemployment insurance and job retention, to crisis resilience in European countries that belong to different welfare state types. To this end, the study uses a mixed-method design that combines different types of quantitative and qualitative evidence. The period studied here (2005 to 2022) allows for an assessment of the empirically observable impact of one major crisis, the Great Recession that started in 2008, on socio-economic outcomes, in particular poverty, social exclusion and labour market integration. The effects of COVID-19 cannot be identified with the standardised quantitative data available but can be tracked at the policy level. Therefore, it is not yet possible to assess the extent to which the latest crisis compares to the Great Recession in terms of its effects on outcome variables concerned here.

Our main findings related to the three research-guiding questions raised in the introduction are the following:

1. There are consistent differences in terms of crisis resilience across countries and welfare state types. In general, Nordic and Continental European welfare states with strong upstream systems and MIS show better outcomes in core socio-economic outcomes, however, labour market integration shows some dualisms in Continental Europe. MIS are also quite strong in Liberal welfare states.
2. MIS are of particular importance if there are gaps in upstream systems or cases of severe and lasting crises. In Continental Europe and Nordic countries, MIS play an important role in stabilisation of income and inclusion, but they are rather secondary to UI in particular. MIS are the crucial stabilisation mechanism in the Liberal setting while they are less strong in the Southern European and Post-Socialist models.
3. Over time, UI and MIS underwent a phase of austerity in all case-study countries hit by the 2008/09 crisis, but were reformed and expanded later on. The Mediterranean MIS in Spain is now becoming more integrated, departing from its long-standing legacy. The role of activation, both with demanding and enabling elements, has become more prominent over time in all countries. There was some convergence in this respect.

While it is still useful and informative to distinguish five welfare state clusters as we used them in terms of cushioning capacities, the descriptive, multivariate and simulation analysis also revealed considerable heterogeneity within the five country groups. However, to better understand that, a further analysis of additional cases would be required to identify what reactions are typical for the cluster and which steps can rather be explained by country-specific factors. For example, one might question the continued existence of a distinct Mediterranean cluster to the extent that other countries in that group also adopt more universal MIS and relaxed employment protection as was observed in the Spanish case (e.g. in Italy). This would move the Southern European cluster closer to the Continental European one. A further issue certainly is to look closer into the heterogeneous group of Post-Socialist welfare states and check to what extent the changes observed in Poland correspond to reforms in other countries in that region.

Regarding institutional adaptation and reforms, it is fair to say that stability with many quantitative institutional indicators and basic welfare state structures is only part of the story and a rough approximation to reality as there have also been sequences of significant reforms in the five selected

countries. Both unemployment insurance and MIS schemes were not left unchanged, but were reformed to some extent in the five Europe countries. In most instances, this occurred rather within existing structures than by revising the basic setup. With hindsight, it becomes clear that one type of structural change was most prominent in those countries that were strongly exposed to the Great Recession and subsequent fiscal and external pressure in the 2010s. In these cases, the typical reaction was a shift towards austerity and stricter, i.e. more demanding rather than enabling, activation (see Ireland, Denmark and Spain in the early-2010s). A second type of reform can be described as more incremental, cumulative in countries such as France or Poland (the latter characterised by a longer catching-up process). In many countries this put net replacement rates and benefit adequacy under pressure. Apart from the austerity reforms, there are quite a few examples of significant expansionary or 'progressive' reforms in MIS systems, e.g. in France with RSA or, more recently, the introduction of the national MIS system IMV in Spain in 2020 after a longer phase of austerity. In fact, after the retrenchment phase in the early-2010s one can identify some effort at the national level to make in particular unemployment insurance somewhat more universal, enlarging its potential coverage. This can be seen as an attempt to strengthen upstream systems (with the notable exception of employment protection for permanent contracts). In particular, the most deeply fragmented and segmented systems have taken steps to provide more equal access to benefits and to the labour market, addressing some of the long-standing dualisms in social protection and employment protection legislation, e.g. in France and Spain. Further steps were undertaken during the COVID-19 pandemic on a temporary basis, e.g. providing better benefits for those not insured and a much wider application of short-time work, which can be interpreted as a lesson from the 2008/09 crisis. While the impact of these reforms is not directly visible at the macro level or in available quantitative indicators, they have clearly brought about different arrangements as compared to the situation in 2005. It would require additional in-depth case studies to see if those changes observed in the small sample of five diverse countries are representative for the respective welfare state clusters and if there is broader convergence across countries and clusters.

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# 9. Appendix

Table X1 Arellano-Bond regression results with different dependent variables, depression as business cycle measure and interaction terms with institutional variables

| | Dependent variable: | | | |
|---|---|---|---|---|
| | At risk of poverty rate before social transfers (age 16-64) (1) | Households with very low work intensity, % of population less than 60 (2) | Risk of poverty or social exclusion (age 16-64) (3) | Severe material deprivation rate (age 16-64) (4) |
| Depression | 3.350*** | 4.511*** | | |
| | (1.118) | (0.914) | | |
| Depression*EPL regular workers | -1.052** | -1.574*** | | |
| | (0.431) | (0.354) | | |
| Depression (1 lag) | 0.115 | 0.996 | | |
| | (1.163) | (0.957) | | |
| Depression (1 lag)*EPL regular workers | 0.058 | -0.341 | | |
| | (0.447) | (0.371) | | |
| Depression (2 lags) | -0.375 | -0.180 | | |
| | (1.107) | (0.952) | | |
| Depression (2 lags)*EPL regular workers | 0.252 | 0.096 | | |
| | (0.432) | (0.370) | | |
| Observations | 260 | 260 | | |
| Depression | | | 3.098*** | 3.430*** |
| | | | (1.077) | (1.258) |
| Depression*Social benefits expenditure | | | -0.119*** | -0.157*** |
| | | | (0.045) | (0.052) |
| Depression (1 lag) | | | 0.563 | 2.598** |
| | | | (0.986) | (1.145) |
| Depression (1 lag)*Social benefits expenditure | | | -0.019 | -0.106** |
| | | | (0.041) | (0.048) |
| Depression (2 lags) | | | 3.224*** | 4.138*** |
| | | | (0.919) | (1.075) |
| Depression (2 lags)*Social benefits expenditure | | | -0.118*** | -0.163*** |
| | | | (0.039) | (0.046) |
| Observations | | | 327 | 327 |
| Dependent variable (1 lag) | ✓ | ✓ | ✓ | ✓ |
| Dependent variable (2 lags) | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate (1 lag) | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate (2 lags) | ✓ | ✓ | ✓ | ✓ |
| Further controls | ✓ | ✓ | ✓ | ✓ |

Source: Eurostat (all dependent variables, social benefits expenditure and share of self-employed) and OECD statistics (GDP growth rate, unemployment, labour force participation rate and EPL) for all EU countries and the UK, all years available from 2005-2021.

Notes: Standard errors in parentheses. Significance levels are displayed as follows: *** p<0.01, ** p<0.05, * p<0.1. Each column represents a different regression. Strictness of employment protection (regular workers). Social benefits expenditure in % of GDP. Year dummy variables are included in all regressions. Further control variables include the labour force participation rate and the share of self-employed.

Table X2: Arellano-Bond regression results with different dependent variables, depression as business cycle measure and interaction terms with the net replacement rate two months in unemployment

| | Dependent variable: | | | | | |
|---|---|---|---|---|---|---|
| | **At risk of poverty rate before social transfers (age 16-64) (1)** | **Households with very low work intensity, % of population less than 60 (2)** | **In-work at-risk-of-poverty-rate employed (age 18-64) (3)** | **Risk of poverty threshold Single (PPS) (4)** | **Risk of poverty threshold (couple with two children, PPS) (5)** | **At risk of poverty rate after social transfers (age 16-64) (6)** |
| Depression | 2.151*** | 1.824*** | 0.655 | -342.499** | -720.313** | |
| | (0.628) | (0.442) | (0.441) | (150.764) | (316.622) | |
| Depression* | -0.027*** | -0.026*** | -0.009 | 5.422** | 11.401** | |
| Net replacement rate 2 months single no children | (0.010) | (0.007) | (0.007) | (2.439) | (5.121) | |
| Depression (1 lag) | -0.152 | 0.653 | -0.133 | -370.713*** | -779.221*** | |
| | (0.593) | (0.431) | (0.416) | (139.441) | (292.838) | |
| Depression (1 lag)* | 0.006 | -0.007 | -0.001 | 5.522** | 11.610** | |
| Net replacement rate 2 months single no children | (0.010) | (0.007) | (0.007) | (2.249) | (4.723) | |
| Depression (2 lags) | 0.229 | -0.170 | 1.074*** | -91.644 | -193.108 | |
| | (0.577) | (0.413) | (0.411) | (136.785) | (287.259) | |
| Depression (2 lags)* | -0.004 | 0.004 | -0.019*** | 1.578 | 3.326 | |
| Net replacement rate 2 months single no children | (0.009) | (0.007) | (0.007) | (2.233) | (4.689) | |
| Observations | 352 | 352 | 352 | 352 | 352 | |
| Depression | | | 1.677*** | -321.860 | -676.991 | 1.677*** |
| | | | (0.626) | (220.480) | (463.037) | (0.613) |
| Depression* | | | -0.025** | 4.464 | 9.389 | -0.023** |
| Net replacement rate 2 months couple with children | | | (0.010) | (3.339) | (7.013) | (0.009) |
| Depression (1 lag) | | | -0.136 | -628.059*** | -1,320.323*** | -0.118 |
| | | | (0.589) | (202.172) | (424.573) | (0.570) |
| Depression (1 lag)* | | | -0.001 | 8.888*** | 18.687*** | 0.002 |
| Net replacement rate 2 months couple with children | | | (0.009) | (3.079) | (6.467) | (0.009) |
| Depression (2 lags) | | | 1.779*** | -171.937 | -361.346 | 0.939 |
| | | | (0.586) | (203.928) | (428.258) | (0.574) |
| Depression (2 lags)* | | | -0.029*** | 2.574 | 5.410 | -0.016* |
| Net replacement rate 2 months couple with children | | | (0.009) | (3.146) | (6.606) | (0.009) |
| Observations | | | 352 | 352 | 352 | 352 |
| Dependent variable (1 lag) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Dependent variable (2 lags) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate (1 lag) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate (2 lags) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Further controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Source: Eurostat (all dependent variables and share of self-employed) and OECD statistics (GDP growth rate, unemployment, labour force participation rate and net replacement rate) for all EU countries and the UK, all years available from 2005-2021.

Notes: Standard errors in parentheses. Significance levels are displayed as follows: *** p<0.01, ** p<0.05, * p<0.1. Each column represents a different regression. Net replacement rate for two months in unemployment for a single without children and a couple with children at 100% of average wage excluding social assistance and housing benefits. Year dummy variables are included in all regressions. Further control variables include the labour force participation rate and the share of self-employed.

Table X3: Arellano-Bond regression results with different dependent variables, depression as business cycle measure and interaction terms with the net replacement rate 60 months in unemployment

| | Dependent variable: | | | | |
|---|---|---|---|---|---|
| | **Risk of poverty or social exclusion (age 16-64) (1)** | **At risk of poverty rate after social transfers (age 16-64) (2)** | **Severe material deprivation rate (age 16-64) (3)** | **In-work at-risk-of-poverty-rate employed (age 18-64) (4)** | **Relative poverty gap (age 16-64) (5)** |
| Depression | 0.430 | 0.265 | 0.280 | 0.534* | -0.221 |
| | (0.476) | (0.274) | (0.558) | (0.282) | (0.702) |
| Depression* | -0.000 | -0.001 | -0.013 | -0.012 | -0.009 |
| Net replacement rate 60 months single no children | (0.014) | (0.008) | (0.017) | (0.008) | (0.020) |
| Depression (1 lag) | -0.477 | -0.023 | -0.131 | -0.667** | 0.476 |
| | (0.449) | (0.259) | (0.522) | (0.267) | (0.667) |
| Depression (1 lag)* | 0.021 | 0.001 | 0.012 | 0.017** | -0.009 |
| Net replacement rate 60 months single no children | (0.013) | (0.008) | (0.015) | (0.008) | (0.019) |
| Depression (2 lags) | 1.424*** | 0.598** | 1.436*** | 0.668** | 1.476** |
| | (0.444) | (0.255) | (0.517) | (0.264) | (0.663) |
| Depression (2 lags)* | -0.030** | -0.023*** | -0.034** | -0.024*** | -0.052*** |
| Net replacement rate 60 months single no children | (0.014) | (0.008) | (0.016) | (0.008) | (0.020) |
| Observations | 343 | 352 | 343 | 352 | 352 |
| Depression | | 0.284 | | 0.326 | 0.161 |
| | | (0.315) | | (0.322) | (0.796) |
| Depression* | | -0.000 | | -0.003 | -0.013 |
| Net replacement rate 60 months couple with children | | (0.005) | | (0.005) | (0.013) |
| Depression (1 lag) | | 0.264 | | -0.486 | 0.888 |
| | | (0.300) | | (0.305) | (0.758) |
| Depression (1 lag)* | | -0.004 | | 0.006 | -0.012 |
| Net replacement rate 60 months couple with children | | (0.005) | | (0.005) | (0.013) |
| Depression (2 lags) | | 0.827*** | | 0.846*** | 1.625** |
| | | (0.298) | | (0.305) | (0.764) |
| Depression (2 lags)* | | -0.017*** | | -0.017*** | -0.032** |
| Net replacement rate 60 months couple with children | | (0.005) | | (0.005) | (0.013) |
| Observations | | 352 | | 352 | 352 |
| Dependent variable (1 lag) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Dependent variable (2 lags) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate | ✓ | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate (1 lag) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Unemployment rate (2 lags) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Further controls | ✓ | ✓ | ✓ | ✓ | ✓ |

Source: Eurostat (all dependent variables and share of self-employed) and OECD statistics (GDP growth rate, unemployment, labour force participation rate and net replacement rate) for all EU countries and the UK, all years available from 2005-2021.

Notes: Standard errors in parentheses. Significance levels are displayed as follows: *** p<0.01, ** p<0.05, * p<0.1. Each column represents a different regression. Net replacement rate for 60 months in unemployment for a single without children and a couple with children at 100% of average wage including social assistance and housing benefits. Year dummy variables are included in all regressions. Further control variables include the labour force participation rate and the share of self-employed.

The results presented here are based on EUROMOD version I4.0+ and I3.86+. Originally maintained, developed and managed by the Institute for Social and Economic Research (ISER), since 2021 EUROMOD has been maintained, developed and managed by the Joint Research Centre (JRC) of the European Commission, in collaboration with Eurostat and national teams from the EU countries. We are indebted to the many people who have contributed to the development of EUROMOD. The results and their interpretation are the authors' responsibility.