I Z A Institute
of Labor Economics
Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 17463

Crisis Resilience of European Welfare States: The Role of Multiple Layers of Protection

Werner Eichhorst
Annabelle Krause-Pilatus
Mathias Dolls
Max Lay

NOVEMBER 2024

I Z A Institute
of Labor Economics

Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 17463

Crisis Resilience of European Welfare States: The Role of Multiple Layers of Protection

Werner Eichhorst
IZA and University of Bremen

Mathias Dolls
ifo Institute, CESifo and IZA

Annabelle Krause-Pilatus
IZA

Max Lay
ifo Institute

NOVEMBER 2024

ISSN: 2365-9793

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Crisis Resilience of European Welfare States: The Role of Multiple Layers of Protection*

This paper studies the crisis resilience of European welfare states. We analyse 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 paper takes a broad perspective to include different layers of protective arrangements, notably upstream systems such as unemployment insurance (UI), job retention and employment protection that are complemented by minimum income support (MIS) schemes. Together, these multiple layers play a crucial role in providing income and job protection in situations of crisis. In that respect we also distinguish systematically between regular/permanent policies (automatic stabilisers) and discretionary, typically temporary crisis response measures. We use a mixed-method approach that combines quantitative and qualitative research, such as descriptive and multivariate quantitative analyses and microsimulation methods based on EUROMOD. This is combined with in-depth case studies covering a sample of five countries that represent different welfare state types (Nordic, Continental, Mediterranean, Liberal and Central/East European) so that we can show the complex mechanisms of multi-layered protection at work and how the policies in place have evolved over time in response to crisis episodes, disentangling the role of automatic stabilisers and discretionary elements. Our observation period ranges from the mid-2000s to the early 2020s and allows us to cover both the Great Recession of 2008/09 and its aftermath as well as the Covid-19 pandemic. 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 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 minimum income support holds particular importance if there are gaps in upstream systems or cases of severe and lasting crises.

JEL Classification: J65, J68, I38

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

Corresponding author:
Werner Eichhorst
IZA
Schaumburg-Lippe-Str. 5-9
53113 Bonn
Germany

E-mail: Eichhorst@iza.org

* This is a substantially revised and updated version of IZA Discussion Paper 16066. This holds in particular for the conceptual part stressing the role of different layers of protection, new descriptive and multivariate results as well as for complementary analysis of automatic and discretionary stabilization measures. We are grateful for all comments and suggestions received when presenting different stages of this paper at the FISS Conference in Sigtuna, Sweden, 12-14 June 2023, the conference on „Social policy and the labour market in turbulent times: (no) need for change?" organised by IAB in Nuremberg, Germany, 19-20 July 2023, and the conference on "Cash transfers and guaranteed minimum income programs", Prague, Czechia, 9-10 September 2024.

1. Introduction

This paper studies the crisis resilience of European welfare states. We analyse 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 paper takes a broad perspective to include the different layers of protective arrangements, notably upstream systems such as unemployment insurance, job retention and employment protection that are complemented by minimum income support schemes. Together, these multiple layers play a crucial role in providing income and job protection in situations of crisis. In that respect we also distinguish systematically between regular/permanent policies (automatic stabilisers) and discretionary, typically temporary crisis response measures.

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. Hence, beyond MIS, it is important to widen the analytical focus and include other layers of protection, namely employment protection, unemployment insurance and job retention schemes or short-time work. Employment protection for permanent contracts can reduce the extent of quick dismissals during a recession, in particular if combined with publicly funded job retention schemes that provide a partial relief of employers from labour costs during times of sluggish demand (Cahuc 2019). However, strict dismissal protection typically creates a more deeply dualized labour market where labour market risks are shifted towards employees with temporary contracts that are more exposed to job destruction and face major barriers to access open-ended contracts. At the same time, employees with longer spells of fixed-term contract, but also other groups such as people in marginal part-time work or (economically dependent) self-employed are typically not as well covered by job retention than permanent workers although policies can be implemented to provide better support during crisis periods. The same is true for unemployment insurance benefits that provide a

time-limited earnings-related benefit above MIS benefit levels in the initial phase of unemployment, where protection is unequal between groups of workers, while showing notably different profiles across countries (Immervoll et al. 2022). In that sense, non-standard workers tend to face a multiple disadvantage as they exhibit a higher risk of job loss and limited social protection through unemployment insurance and job retention despite discretionary adjustments during crisis phases (Spasova and Regazzoni 2022).

The question how the different layers of protection work together in European welfare states – especially in times of crisis – has not yet been answered systematically. To fill this gap, this paper addresses the issue of the contribution of the different layers to crisis resilience in European welfare states since the mid-2000s. It adds to the existing literature in many 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.

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. 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.

[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 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 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 European 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, we adopt 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. 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 European time series data of target variables 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, 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 is systematically related to the economic cycle depending on the type of welfare state to which a country belongs

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, 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.

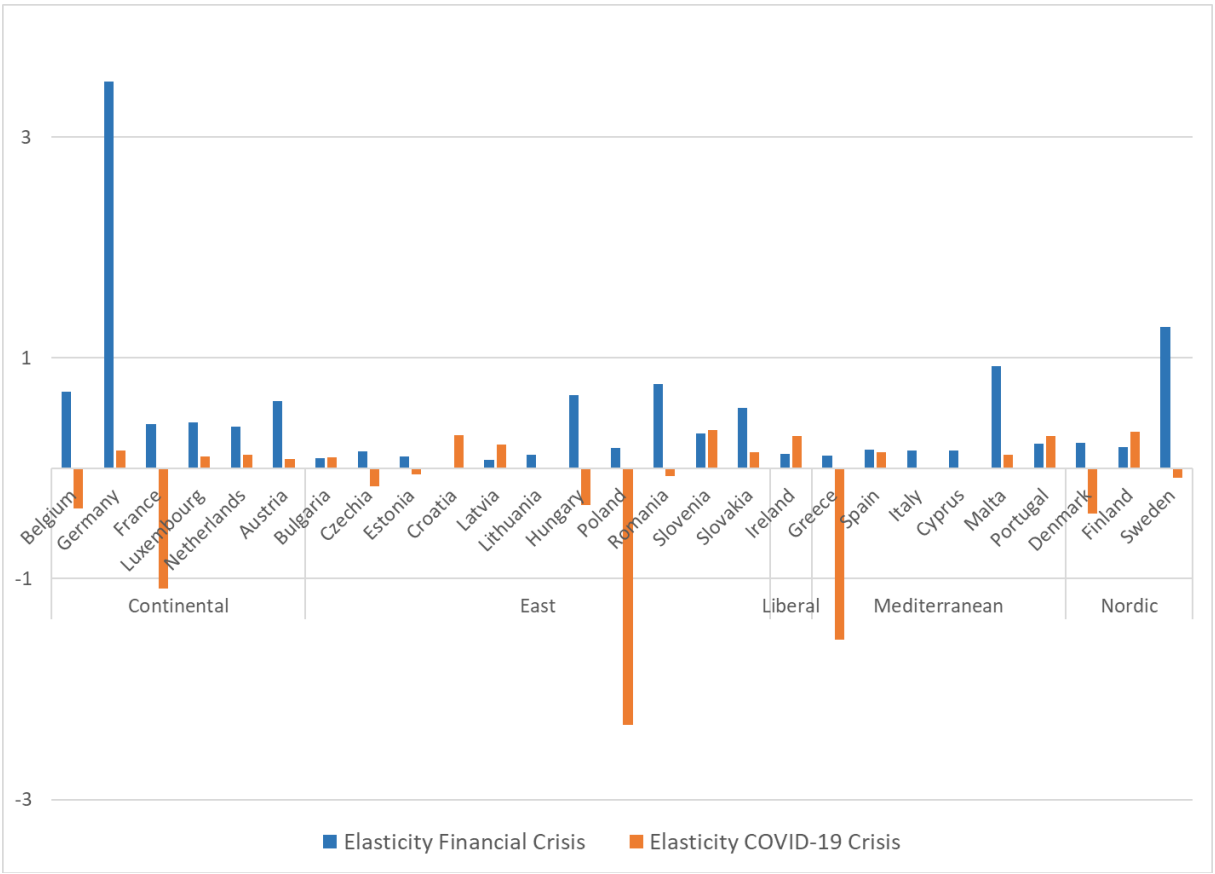
4. A descriptive analysis of poverty risk and economic crises

To describe the relation between economic crisis periods and poverty risk in different welfare state clusters we start by plotting the poverty risk elasticity to an unemployment change. In order to be able to include the COVID-19 crisis in the calculation, we use the poverty risk indicator (AROP) and not the overarching risk of poverty and social exclusion indicator (AROPE) as the former version of the AROPE indicator is only available until 2020 and the updated indicator only since 2015. We calculate the elasticities as follows, shown by the example for the financial crisis elasticity:

$$\text{Elasticity}_c = \frac{(AROP \max 2009{-}2015) - (AROP \min 2007{-}2008)}{AROP \min 2007{-}2008} \Big/ \frac{(UE\ rate \max 2009{-}2015) - (UE\ rate \min 2007{-}2008)}{UE\ rate \min 2007{-}2008}$$

We calculate the elasticities by country c and use as two defining values the (post-)crisis maximum value of poverty risk and unemployment and the pre-crisis minimum value to include the largest difference in those indicators in this time period in the calculation. The (post-)crisis period for the financial (COVID-19) crisis elasticity is defined as the years 2009-2015 (2020-2021) and the pre-crisis periods as 2007-2008 (2019). With these elasticities we are able to get a sense of how much the poverty risk changes given a change (or a shock) in the unemployment rate.

Figure 1: Elasticities of risk of poverty and unemployment rate for the financial and COVID-19

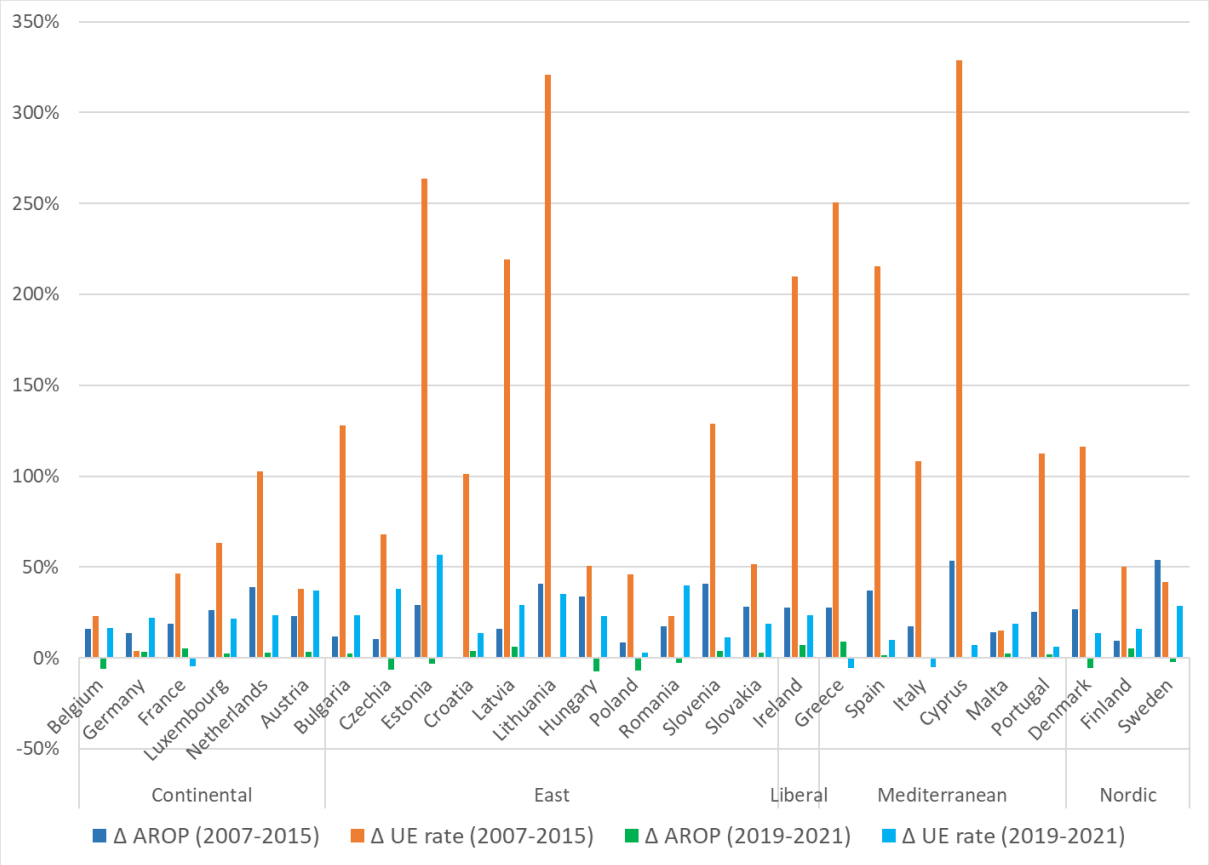


Source: Eurostat (risk of poverty (AROP) (in %, age 16-64) and unemployment rate (age 15-64) 2007-2021).

Note: The "Elasticity Financial Crisis" (COVID-19 Crisis) is calculated by dividing the AROP percentage change between the maximum crisis value 2009-2015 (2020-2021) and the minimum value pre-crisis 2007-2008 (2019) by the unemployment percentage change between the maximum crisis value 2009-2015 (2020-2021) and the minimum value pre-crisis 2007-2008 (2019).

Figure 1 shows the elasticities for the countries grouped by the welfare state type categorization. The values show that for most countries the elasticity during the financial crisis is higher than the one during COVID-19. This means that during or after the financial crisis the poverty risk was correlated much stronger to unemployment changes than during the COVID-19 crisis. Moreover, during the financial crisis no negative elasticities are observed contrary to the COVID-19 elasticities. It therefore seems that on average these European countries were able to avoid an unemployment shocks and poverty risk increases much better during the COVID-19 crisis, which can be inferred from the larger application of short-time work and other job retention schemes in 2020 and 2021 (see e.g. Müller, Schulten and Drahokupil 2022; Corti, Ounnas and De La Ossa 2023). This observation is confirmed when taking the average of the elasticities over all countries. The average financial crisis elasticity amounts to 0.47 whereas the average COVID-19 elasticity lies at -0.14. When removing the outliers Germany (in the financial crisis elasticity) and Poland (in the COVID-19 elasticity), the difference in the average is still apparent (0.35 vs. 0.05). These tendencies are rather similar between and within welfare state clusters.

Figure 2: Percentage changes of risk of poverty and unemployment rate for the financial and COVID-19 crisis



Source: Eurostat (risk of poverty (AROP) (in %, age 16-64) and unemployment rate (age 15-64) 2007-2021).

Note: ΔAROP is calculated as ((AROP max – AROP min)/AROP min). The change in the unemployment rate is calculated analogously.

However, it must be noted that there are certain differences between clusters which become more apparent when looking at the separate percentage changes used for the calculation of the elasticities. Figure 2 shows these percentage changes of poverty risk and unemployment. First, these

numbers show that unemployment and poverty risk both increased much more during the financial crisis than during COVID-19. Moreover, the absolute values of, e.g., the unemployment changes are much higher in many Eastern and Mediterranean countries (see also Table A.1 in the Appendix). Germany for instance did not experience a high unemployment increase compared to other countries during the financial crisis, but had a slightly relatively high increase in the poverty risk, which in turn leads to a relatively high financial crisis elasticity.

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 recession[3]) and the poverty risk. We use the average of the AROPE indicator of three periods following a recession as dependent variable as well as the average of its sub-components as dependent variables.[4] Our statistical model is defined as follows:

$\frac{1}{3}\sum_{t=1}^{3} poverty\ measure_c$ = β_1 recession $_{c,t}$ +μ_1 recession $_{c,t}$ x welfare state indicator$_c$ + time fixed effect t + poverty measure $_{c,t-1}$ + a_c + error term $_{c,t}$

The variables are measured for a country c at a time t. The time constant t ensures that factors that affect the dependent variables at a specific point in time independently of country-specific conditions, such as a global change in the economic climate, are controlled for.[5] A_c is a time-invariant unobservable component that is removed when first differencing the model (country-specific fixed effect). 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 parameter of interest is μ_1. If it is 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. If μ_1 has an opposite sign of β_1 with β_1 having a positive relationship with the poverty risk, this could be interpreted as a moderating effect of the welfare system.

The model is estimated including the unemployment rate, the labour force participation rate as well as 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).[6]

[3] A recession 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 (58 such recessions are identified).

[4] We use the old version of the AROPE indicator to be able to go further back into the past (ilc_peps01). However, data is only available until 2020, which is similar to the severe material deprivation rate indicator.

[5] It is not possible to include a country constant because time-invariant factors, i.e. factors that do not change over time such as the country identifier, are dropped from the regression.

[6] 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 regressions of poverty measures with recession as business cycle measure and interaction terms with welfare state type

	Dependent variable:			
	Risk of poverty or social exclusion (age 16-64, average t1+t2+t3) (1)	**At risk of poverty rate (age 16-64, average t1+t2+t3) (2)**	**Severe material deprivation rate (age 16-64, average t1+t2+t3) (3)**	**Households with very low work intensity, % of population less than 60 (average t1+t2+t3) (4)**
Recession	1.090***	0.252***	1.473***	0.494***
	(0.196)	(0.090)	(0.203)	(0.130)
Recession*	-0.315	0.191	-0.357	-0.939***
Welfare state type Liberal	(0.493)	(0.226)	(0.544)	(0.298)
Recession*	-1.228***	-0.320**	-1.498***	-0.700***
Welfare state type Continental	(0.322)	(0.139)	(0.337)	(0.204)
Recession*	-1.519***	-0.439**	-1.935***	-0.596**
Welfare state type Nordic	(0.409)	(0.184)	(0.430)	(0.263)
Recession*	0.696**	0.303**	0.338	0.302
Welfare state type Mediterranean	(0.307)	(0.135)	(0.333)	(0.192)
Observations	290	342	290	315
Dependent variable (1 lag)	✓	✓	✓	✓
Unemployment rate	✓	✓	✓	✓
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 2005-2022. Data for dependent variables in column 1 and 3 are only available until 2020.

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 "recession" 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 and are therefore displayed by the non-interacted Recession variable. We find that independent of the outcome variable, a recession seems to be followed by an increase in the poverty risk measured by the AROPE indicator (column (1) or its sub-components columns (2) to (4)) in Eastern European countries. The welfare states in the Continental and Nordic clusters seem to moderate this risk as their coefficients are negative and statistically significant. Compared to the post-Socialist model, the Continental and Nordic have stronger buffers against an increase in poverty following a recession. Moreover, the Liberal cluster also has a moderating capacity on the poverty risk when it comes to the share of households with very low work intensity (see column (4)). Finally, in the Mediterranean countries, the poverty risk following a recession seems to actually be even higher than in the Eastern European countries, at least when analysing the AROPE and AROP indicators (columns (1) and (2)).

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. 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 different welfare state systems to crisis resilience across Europe, we investigate their role in smoothing disposable incomes in two hypothetical 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). [7] The simulated unemployment 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 the tax-benefit systems, we simulate both shocks such that the inflow into unemployment occurs in the first month of the shock. Our analysis focuses on the shock absorption capacity of unemployment insurance and minimum income support (MIS) schemes.

Table 2: Definition of shock scenarios

	Small shock	**Large shock**
Increase in unemployment rate	1 percentage point	5 percentage points
Duration	1 year	2 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 3 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.[8]

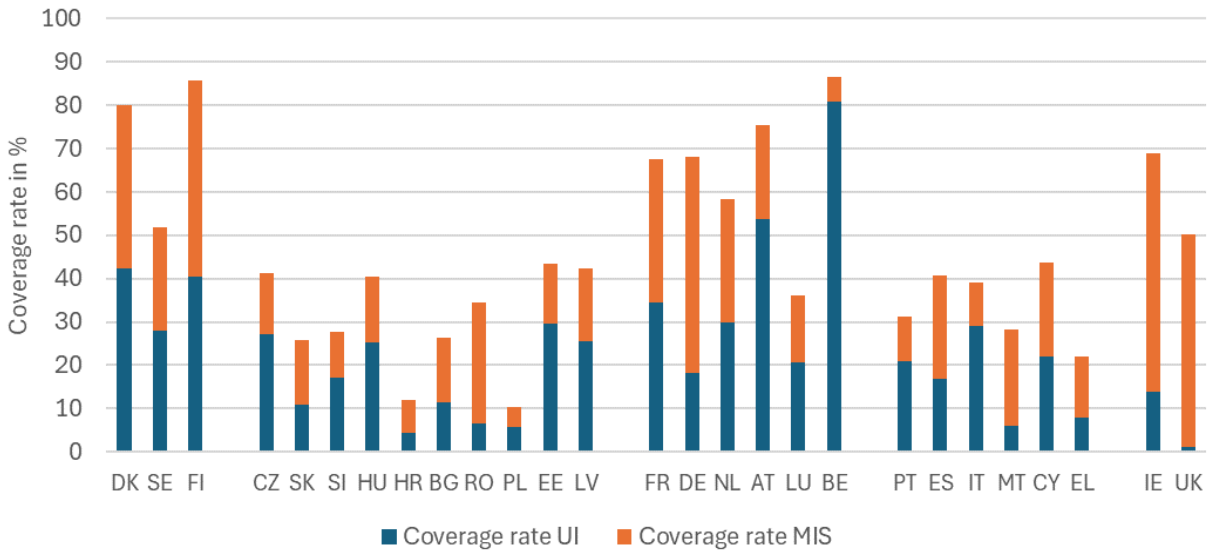
[7] Since the UK is not included in version I4.0+, we use model version I3.86+ based on 2018 input data for the UK. Comparability to other countries is given as EUROMOD uprates monetary values to fit to the policy year of interest.

[8] 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 differ widely both across and within 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 Eastern 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 one particular benefit system in isolation may yield an incomplete picture of the crisis 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 crisis resilience.

Figure 3: 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

Our analysis focuses on one particular dimension of crisis resilience: income stabilisation.[9] 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 simulated shocks are absorbed by tax-benefit systems. The income stabilisation coefficient τ^I is formally defined as follows:

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

[9] The effect of unemployment insurance and MISS schemes on poverty reduction, inequality and labour market participation is studied by Eichhorst et al. (2023).

, 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.[10] The income stabilisation coefficient can then be decomposed as follows:

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

The results are presented in Figures 4 and 5[11]. 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 (see Table A.2 in appendix). 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 Eastern European and Liberal welfare states. 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.[12] This is emphasized by the fact that in countries where MIS coverage rates for the unemployed are high (see Figure 3), the stabilising effects are also relatively high.

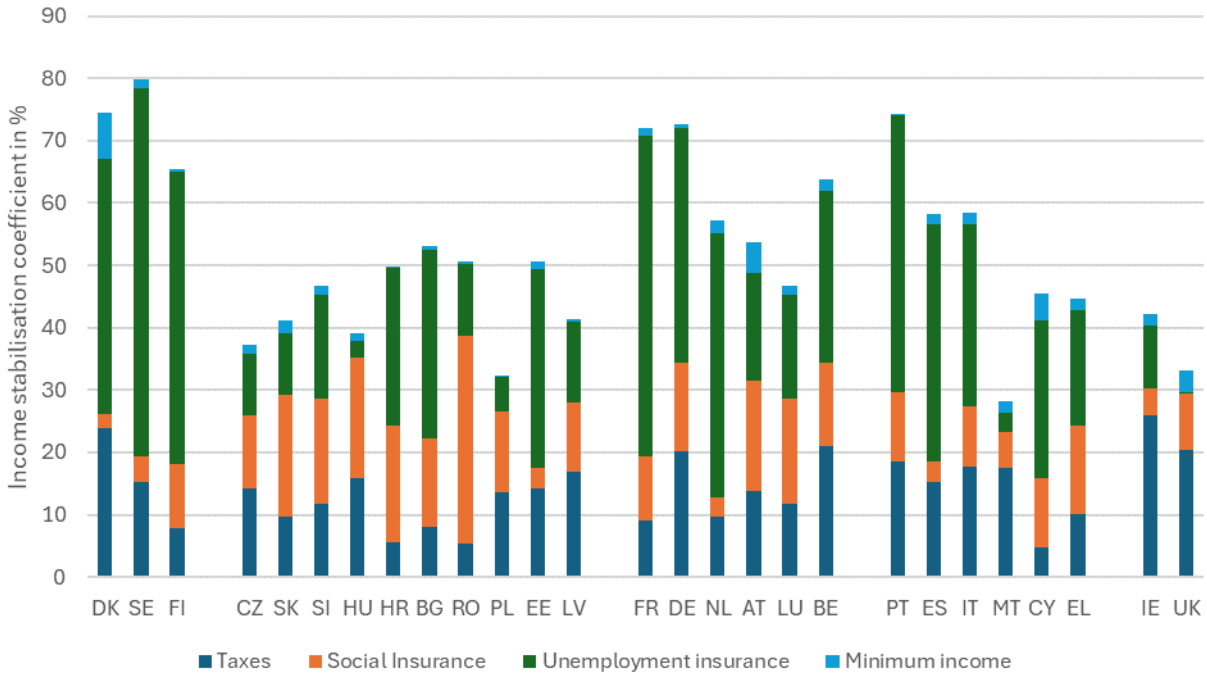
However, we find that the importance of MIS as an income stabiliser differs across scenarios. The stabilising effect of MIS is larger in the large shock scenario due to expiring unemployment insurance benefits. The stabilising effect of MIS amounts to roughly 1.7 percent of the income loss due to unemployment in the small shock and 3 percent in the large shock. To conclude, the stabilising effect of MIS is relatively small, especially if compared to the other components of the tax-benefit system.

[10] We abstract from other types of benefits that might play a role in unemployment shocks, e.g. housing benefits and family benefits.

[11] Lithuania is excluded from the analysis as the stabilising effects of direct taxes and social insurance contributions could not be simulated.

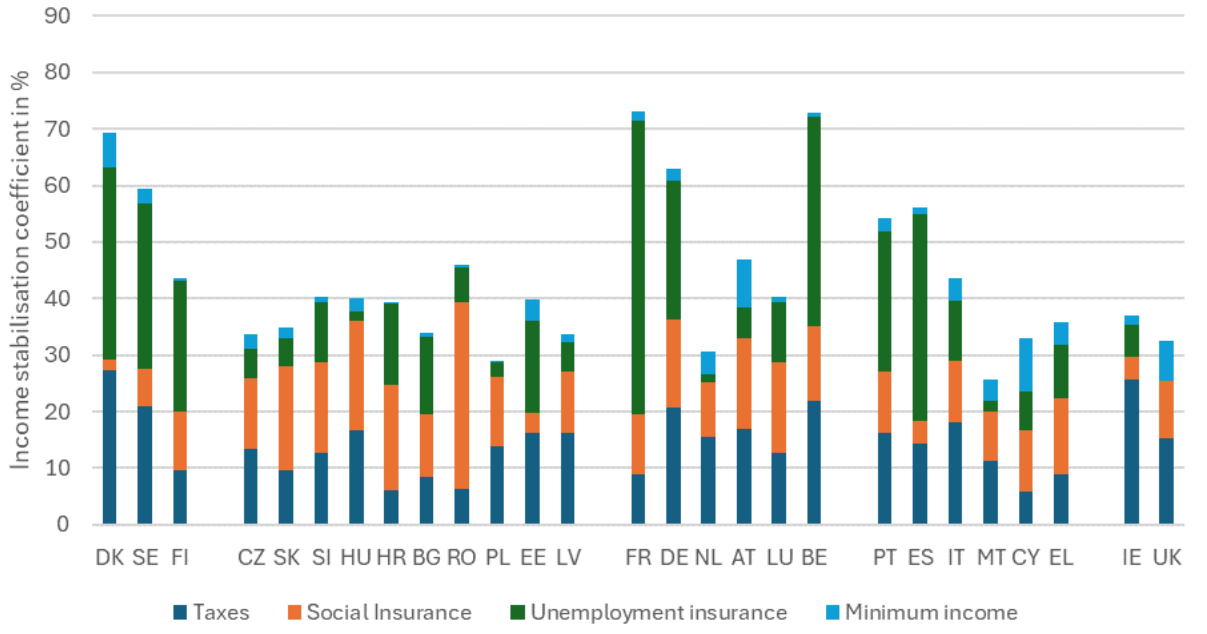
[12] In Germany, for example, only about 30 percent of those unemployed for which entitlement to unemployment insurance benefits expires in the large shock scenario receive MIS afterwards.

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



Source: Own calculations on basis of EUROMOD simulations

Figure 5: Decomposition of income stabilisation coefficient in large shock scenario

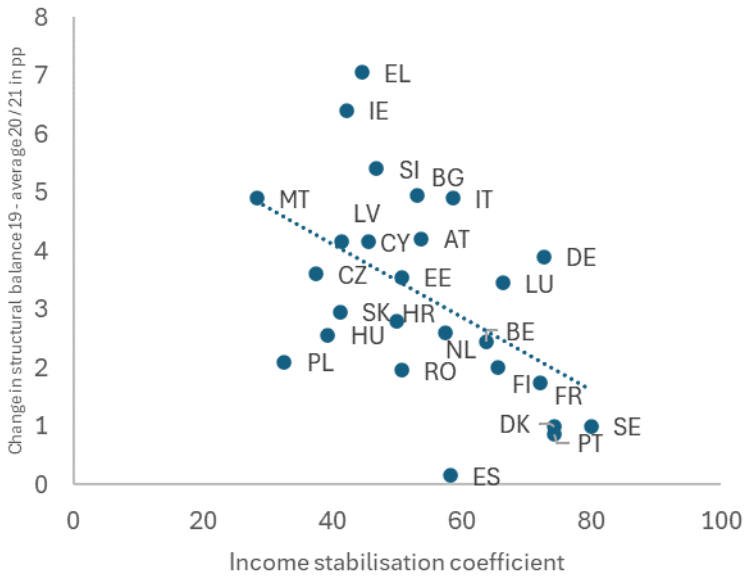


Source: Own calculations on basis of EUROMOD simulations.

Periods of crisis typically involve large government expenditure programs that go beyond the automatic stabilisation capacity of tax-benefit systems. During the Covid crisis in the years 2020 and 2021 discretionary policy measures of the EU member states amounted to around 550 billion Euros

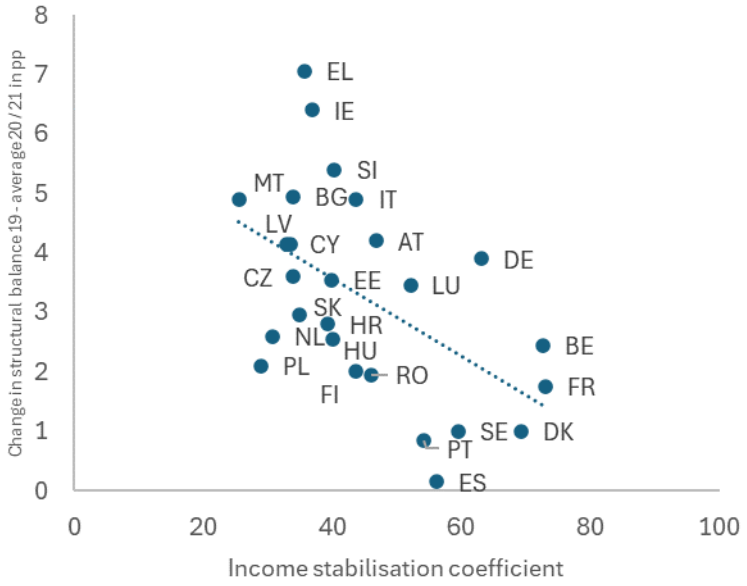
in total (AMECO, 2024). In public debates revolving around crisis resilience, a common claim is that welfare states with strong automatic stabilisers do not come into the needs of extensive discretionary policy measures to stabilise household income. Dolls et al. (2012) show that there was indeed a negative correlation between the income stabilisation coefficient and the size of discretionary fiscal policy measures enacted during the Great Financial Crisis. Figures 5 and 6 show a similar relation between the income stabilisation coefficients in the respective shock scenarios and fiscal impulses measured by the change in the structural fiscal balance between 2019 (pre-covid) and the average of the years 2020 and 2021 (during covid), with a larger change in the structural balance indicating a stronger discretionary fiscal impulse. The correlation coefficient amounts to -0.51 in Figure 6 and to -0.52 in Figure 7. As during the Great Financial Crisis, countries seem to have compensated smaller automatic stabilisers with stronger discretionary fiscal policy measures. The statistically significant negative correlation is confirmed in multivariate regressions controlling for other macroeconomic and budgetary variables that have been shown to affect discretionary fiscal policy measures (see Appendix Tables A.3 and A.4).

Figure 6: Correlation between discretionary policy and income stabilisation – small shock



Note: Vertical axis represents change in the structural balance, computed as the difference between the average structural balance in 2020 and 2021, and the 2019 value, measured in percentages. The data source is AMECO data base. On the x-axis, income stabilisation coefficients are shown in the case of a small shock.

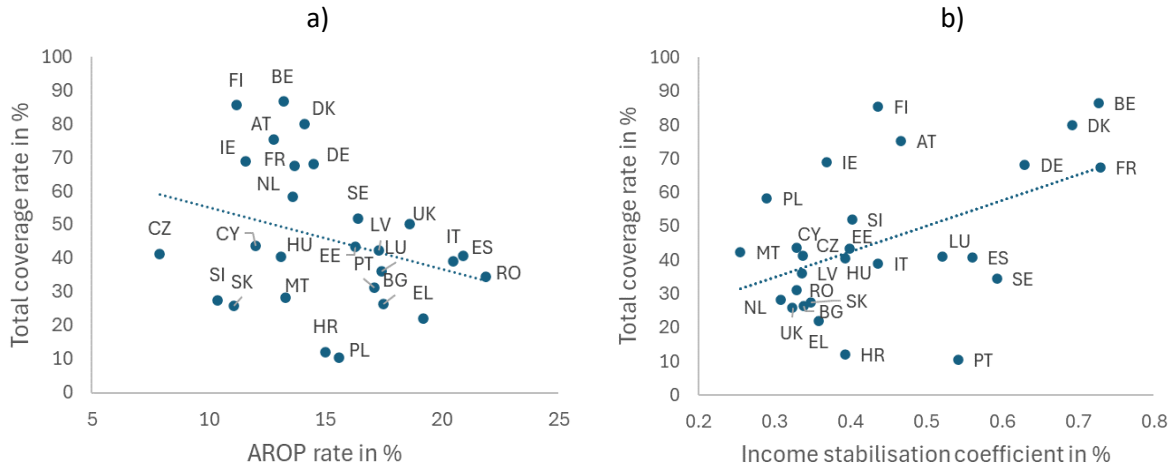
Figure 7: Correlation between discretionary policy and income stabilisation – large shock



Note: Vertical axis represents change in the structural balance, computed as the difference between the average structural balance in 2020 and 2021, and the 2019 value, measured in percentages. The data source is AMECO data base. On the x-axis, income stabilisation coefficients are shown in the case of a large shock.

Finally, we return to the question of how key indicators of crisis resilience coincide with the coverage rates discussed at the beginning of this chapter. Figure 8 portrays the relationship between total coverage rates on the one hand and the AROP rate and the income stabilisation coefficient on the other hand. In panel a) we document a strong negative correlation between coverage rates and 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 crisis resilience.

Figure 8: 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. Table 3 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 and with the difficulties faced with 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 still rather unsuccessful efforts to limit the heavy reliance on short temporary contracts despite notable reforms in employment protection and higher non-wage labour costs for employers when using temporary contracts. The minimum income system continued to be 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. However, most recent reforms have started to tackle these issues, in particular the full integration of employment services and benefit administration combined with a more systematic activation of MIS beneficiaries and efforts to reduce non-take up. 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, but it also shows the difficulties in overcoming the path-dependency of a dual labour market and social protection system.

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, deregulating dismissal protection while reducing the flexibility of temporary contracts. 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 more coherent national MIS system that is now being implemented, complementing the diverse regional schemes, thereby creating difficult coordination and adaptation issues. Along with a better coordination of public employment services at national and regional level in order deliver activation policies more effectively, this 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). These policies were continued in the subsequent period, strengthening the demanding side of activation overall. In that sense, the Nordic welfare state model 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 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 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 Central and Eastern European 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. Most recently, however, Ireland reformed its UI system to create earnings-related benefits, overcoming the long-standing flat-rate benefit design.

Table 3: Main patterns of crisis responses in five selected welfare states

	France	Spain	Denmark	Poland	Ireland
Welfare state type	Continental European	Southern European	Nordic	Central and Eastern European	Anglo-Saxon
Unemployment/AROP Elasticity I (Financial Crisis)	0.4	0.17	0.23	0.18	0.13
Unemployment/AROP Elasticity II (COVID)	-1.09	0.15	-0.41	-2.33	0.29
Income stabilisation co-efficient (large shock)	73.0	56.1	69.2	29.0	36.9
Contribution of UI and MIS to stabilisation (large shock)	51.9 + 1.5	36.7 + 1.1	34 + 6.1	2.6 + 0.3	5.6 + 1.6
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
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
Main structural reforms (2010s)	Gradual 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 Rather late shift towards activation

Sources: own calculations of elasticities and income stabilisation coefficients as shown in the paper and the appendix, combined with findings from case studies.

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 two major crises, the Great Recession from 2008/09 and the COVID-19 pandemic, on socio-economic outcomes, in particular poverty, social exclusion and labour market integration. Our main findings 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 Central and Eastern European 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, and the same is true for the role of job retention in the two major crises as well as the reconfiguration of employment protection. 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, or, more recently, the introduction of the national MIS system 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 – while questioning strict employment protection for permanent contracts. At the same time, we see a clear tendency to strengthen MIS and the governance systems needed to implement more coherent activation policies, as visible in France, Spain, but also elsewhere. In particular, however, the most deeply fragmented and segmented systems have taken steps to provide more equal access to benefit systems 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. Additional steps regarding non-standard work 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.

8. References

AMECO – ECFIN annual macroeconomic database, European Commission, Directorate-General for Economic and Financial Affairs, (updated 2024-15-05)

Angrist, Joshua D. and Jörn-Steffen Pischke (2009): *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.

Arellano, Manuel and Stephen Bond (1991): Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations, *The Review of Economic Studies*, 58(2), 277–297.

Bahle, Thomas, Vanessa Hubl and Michaela Pfeifer (2011): The Last Safety Net: A Handbook of Minimum Income Protection in Europe. Bristol: Policy Press.

Bengoechea, G. Gomez (2021): The impact of the COVID-19 crisis on income distribution under different protection schemes: the case of Spain. Public Sector Economics, 45(4), 517–541.

Bredgaard, Thomas and Per K. Madsen (2018): Farewell flexicurity? Danish flexicurity and the crisis, Transfer, 2018, DOI: 10.1177/1024258918768613

Cahuc, Pierre (2019): Short-time work compensation schemes and employment. IZA World of Labor 2019: 11 doi: 10.15185/izawol.11.v2.

Caune, Hélène and Sotiria Theodoropoulou (2018): French employment market policies: dualisation and destabilisation. In: Sotiria Theodoropoulou (ed.): Labour market policies in the era of pervasive austerity. A European perspective. Policy Press.

Clegg, Daniel, Elke Heins and Philipp Rathgeb (2022): 'Unemployment benefit governance, trade unions and outsider protection in conservative welfare states', *Transfer: European Review of* Labour and Research, 28(2), pp. 195–210. doi: 10.1177/10242589221094240.

Corti, Francesco, Alexandre Ounnas and Tomás Ruiz de la Ossa (2023): Job retention schemes between the Great Recession and the Covid-19 crises – does the institutional design affect the take up? An EU-27 cross-country comparison. In: *CEPS In-Depth Analysis*. Brussels: Centre for European Policy Studies.

Daly, Mary (2019): Ireland: The Welfare State and the Crisis. In Welfare and the Great Recession: A Comparative Study (pp. 115–131). Oxford University Press USA.

Dolls, Mathias, Clemens Fuest, Andreas Peichl and Christian Wittneben (2022): Fiscal Consolidation and Automatic Stabilization: New Results, IMF Economic Review, 70 (3), 420-450, 2022.

Dukelow, Fiona (2018): No longer 'fit for purpose'? Consolidation and catch-up in Irish labour market policy. In: Sotiria Theodoropoulou (ed.): Labour market policies in the era of pervasive austerity. A European perspective. Policy Press.

Eichhorst, Werner, Holger Bonin, Annabelle Krause-Pilatus, Paul Marx, Mathias Dolls and Max Lay (2023). *Minimum Income Support Systems as Elements of Crisis Resilience in Europe* (No. 137). Institute of Labor Economics (IZA).

Eichhorst, Werner, Otto Kaufmann and Regina Konle-Seidl (eds.) (2008): Bringing the Jobless into Work? Experiences with Activation Schemes in Europe and the US, Springer.

Guillén, Ana C. and Sergio González Begega (2019): Spain: Economic Crisis and the Politics of Welfare under Austerity. In: Stefán Ólafsson, Stefán, Daly, Mary, Kangas, Olli and Joakim Palme (eds.): Welfare and the Great Recession: A Comparative Study, Oxford University Press.

Immervoll, Herwig et al. (2022): De-facto Gaps in Social Protection for Standard and Non-standard Workers: An Approach for Monitoring the Accessibility and Levels of Income Support, IZA Discussion Paper 15289.

Konle-Seidl, Regina (2021): Strengthening minimum income protection in the EU, European Parliament, Briefing Note, March 2021.

Kvist, Jon (2016): Minimum income schemes Denmark. ESPN Thematic Review.

Lødemel, Ivar and Heather Trickey (eds.) (2001): An offer you can't refuse': Workfare in international perspective. Bristol: The Policy Press.

Marchal, Sarah and Natascha Van Mechelen (2017): A new kid in town? Active inclusion elements in European minimum income schemes. *Social Policy & Administration*, *51*(1), 171–194.

Marchal, Sarah, Ive Marx and Natascha Van Mechelen (2016): Minimum income protection in the austerity tide. IZA Journal of European Labour Studies 5: 4. doi: 10.1186/s40174-016-0052-7.

Müller, Torsten, Thorsten Schulten and Jan Drahokoupil (2022): Job retention schemes in Europe during the COVID-19 pandemic – different shapes and sizes and the role of collective bargaining. Transfer: European Review of Labour and Research, 28(2), 247-265

Natili, Marcello (2019): Worlds of last-resort safety nets? A proposed typology of minimum income schemes in Europe, Journal of International and Comparative Social Policy, DOI: 10.1080/21699763.2019.1641134

Nelson, Kenneth (2014): Minimum Income Protection and European Integration: Trends and Levels of Minimum Benefits in Comparative Perspective, in Navarro, V. and Muntaner, C (eds.) *The Financial and Economic Crises and their Impact on Health and Social Well-Being. New* York: Baywood.

Nolan, Brian (2017): Poverty and social exclusion in the European Union. In: Patricia Kennett and Noemi Lendvai-Bainton (eds.) *Handbook of European social policy,* 353 – 370. Cheltenham: Edward Elgar.

Spasova, Slavina and Pietro Regazzoni (2022): Income protection for self-employed and non-standard workers during the COVID-19 pandemic. International Social Security Review 2022 Apr-Jun; 75(2):3-24.

Spasova, Slavina, Denis Bouget, Dalila Ghailani and Bart Vanhercke (2017): Access to social protection for people working on non-standard contracts and as self-employed in Europe. *A Study of National Policies. Brussels: European Commission*.

Strzelecki, Pawel and Robert Wyszynski (2016): Poland's Labour Market Adjustment in Times of Economic Slowdown–WDN3 Survey Results. National Bank of Poland Working Paper, 233.

Sutherland, Holly and Francesco Figari (2013): EUROMOD: the European Union tax-benefit microsimulation model. EUROMOD Working Papers, EM8/13

Sutherland, Holly (2018): Quality assessment of microsimulation models. The case of EUROMOD. International Journal of Microsimulation; 11(1); 198-223.

Theodoropoulou, Sotiria (ed.) (2018): Labour market policies in the era of pervasive austerity. A European Perspective. Policy Press.

9. Appendix

Table A.1 Percentage changes and elasticities of risk of poverty and unemployment rate for the financial and COVID-19 crisis

		Δ AROP (2007-2015)	Δ UE rate (2007-2015)	Elasticity Financial Crisis	Δ AROP (2019-2021)	Δ UE rate (2019-2021)	Elasticity COVID-19 Crisis
Continental	**Belgium**	0.16	0.23	0.69	-0.06	0.17	-0.36
	Germany	0.14	0.04	3.50	0.03	0.22	0.16
	France	0.19	0.46	0.40	0.05	-0.05	-1.09
	Luxembourg	0.26	0.63	0.42	0.02	0.21	0.11
	Netherlands	0.39	1.03	0.38	0.03	0.24	0.13
	Austria	0.23	0.38	0.61	0.03	0.37	0.08
East	**Bulgaria**	0.12	1.28	0.09	0.02	0.23	0.10
	Czechia	0.10	0.68	0.15	-0.06	0.38	-0.17
	Estonia	0.29	2.64	0.11	-0.03	0.57	-0.05
	Croatia	0.00	1.01	0.00	0.04	0.13	0.30
	Latvia	0.16	2.19	0.07	0.06	0.29	0.22
	Lithuania	0.41	3.21	0.13	0.00	0.35	0.00
	Hungary	0.34	0.51	0.66	-0.08	0.23	-0.33
	Poland	0.08	0.46	0.18	-0.07	0.03	-2.33
	Romania	0.18	0.23	0.77	-0.03	0.40	-0.07
	Slovenia	0.41	1.29	0.32	0.04	0.11	0.35
	Slovakia	0.28	0.52	0.55	0.03	0.19	0.14
Liberal	**Ireland**	0.28	2.10	0.13	0.07	0.24	0.29
Mediterra-nean	**Greece**	0.28	2.51	0.11	0.09	-0.06	-1.55
	Spain	0.37	2.16	0.17	0.01	0.10	0.15
	Italy	0.18	1.08	0.16	0.00	-0.05	0.00
	Cyprus	0.53	3.29	0.16	0.00	0.07	0.00
	Malta	0.14	0.15	0.93	0.02	0.19	0.12
	Portugal	0.25	1.13	0.22	0.02	0.06	0.29
Nordic	**Denmark**	0.27	1.16	0.23	-0.06	0.14	-0.41
	Finland	0.09	0.50	0.19	0.05	0.16	0.33
	Sweden	0.54	0.42	1.28	-0.02	0.29	-0.09

Source: Eurostat (risk of poverty (AROP) (in %, age 16-64) and unemployment rate (age 15-64) 2007-2021).

Note: Δ is calculated as (AROP max – AROP min)/AROP min and equivalently for the unemployment rate. The "Elasticity Financial Crisis" (COVID-19 Crisis) is calculated by dividing the AROP percentage change between the maximum crisis value 2009-2015 (2020-2021) and the minimum value pre-crisis 2007-2008 (2019) by the unemployment percentage change between the maximum crisis value 2009-2015 (2020-2021) and the minimum value pre-crisis 2007-2008 (2019).

Table A.2 Income stabilisation coefficients for small and large shock scenario

	τ_{SMALL}	τ_{LARGE}
Nordic		
DK	74.3	69.2
SE	79.9	59.4
FI	65.4	43.7
Mean	*73*	*57*
Eastern		
CZ	37.3	33.8
SK	41.1	34.8
SI	46.8	40.3
HU	49.8	39.3
HR	49.8	39.3
BG	53	33.9
RO	45.4	33
PL	32.5	29
EE	50.6	39.9
LV	41.3	33.6
Mean	*45*	*36*
Continental		
FR	72.1	73
DE	72.6	63
NL	57.3	30.8
AT	53.7	46.7
BE	63.7	72.7
LU	66.2	52.1
Mean	*64*	*56*
Southern		
PT	74.2	54.2
ES	58.2	56.1
IT	58.5	43.7
MT	28.3	25.5
CY	45.4	33
EL	44.5	35.8
Mean	*52*	*41*
Liberal		
IE	42.1	36.9
UK	33.1	32.4
Mean	*38*	*35*
Median	**50.2**	**39.3**
Mean	**52.3**	**42.8**

Source: Own calculations on basis of EUROMOD simulations

Table A.3 Regression analysis of the relationship between discretionary policy and income stabilisation capacity – Small shock

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Income stabilisation - small	-0.063***	-0.066***	-0.066***	-0.064***	-0.071***	-0.056**	-0.079***	-0.064**
	(0.022)	(0.023)	(0.021)	(0.022)	(0.019)	(0.023)	(0.024)	(0.024)
Net interest (mrd)		-0.014						
		(0.024)						
Debt/GDP (%)			0.010					
			(0.008)					
Fiscal Space 1				0.106				
				(0.172)				
Fiscal Space 2					8.176***			
					(2.886)			
Openness (%)						0.004		
						(0.004)		
GDP per capita (th)							0.027	
							(0.019)	
Estimated RRF/GNI (%)								-0.019
								(0.101)
Constant	6.628***	6.713***	6.150***	6.385***	7.167***	5.664***	6.735***	6.794***
	(1.201)	(1.227)	(1.236)	(1.279)	(1.073)	(1.535)	(1.179)	(1.502)
N	26	26	26	26	26	26	26	26
R2	0.259	0.269	0.312	0.271	0.451	0.290	0.318	0.260

*** p < 0.01, ** p < 0.05, *p < 0.1.

Note: Dependent variable is the change in structural balance between 2019 and the average of 2020 and 2021 values (in %, source: AMECO database). Lithuania and United Kingdom excluded. Several sources for regressors: (a) Eurostat: debt/GDP - share of general government consolidated gross debt in GDP in %, net interest – the difference between interest receivable and interest payable expressed in bln. EUR, openness – sum of imports and exports relative to GDP in % (b) AMECO: GNI data (c) Bruegel website: estimated RRF (d) World Development Indicators database: Tax Revenue/GDP and Net lending/GDP. The last two variables are used to compute Fiscal Space 1 and Fiscal Space 2 as in Aaizenman and Jinjarak (2010). Fiscal space 1 is ratio between public debt and tax revenues, while Fiscal Space 2 is ratio between government deficit and tax revenue. Income stabilisation coefficient is also expressed in %.

Table A.4 Regression analysis of the relationship between discretionary policy and income stabilisation capacity – Large shock

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Income stabilisation - large	-0.066***	-0.072***	-0.071***	-0.070***	-0.061***	-0.059**	-0.077***	-0.069**
	(0.022)	(0.024)	(0.022)	(0.023)	(0.021)	(0.023)	(0.024)	(0.025)
Net interest (mrd)		-0.020						
		(0.025)						
Debt/GDP (%)			0.012					
			(0.008)					
Fiscal Space 1				0.165				
				(0.172)				
Fiscal Space 2					5.344			
					(3.128)			
Openness (%)						0.005		
						(0.004)		
GDP per capita (th)							0.021	
							(0.019)	
Estimated RRF/GNI (%)								-0.033
								(0.101)
Constant	6.208***	6.349***	5.712***	5.911***	6.042***	5.266***	6.106***	6.485***
	(1.035)	(1.057)	(1.057)	(1.083)	(1.001)	(1.322)	(1.033)	(1.352)
N	26	26	26	26	26	26	26	26
R2	0.269	0.289	0.337	0.297	0.351	0.308	0.308	0.272

*** p < 0.01, ** p < 0.05, *p < 0.1.

Note: Dependent variable is the change in structural balance between 2019 and the average of 2020 and 2021 values (in %, source: AMECO database). Lithuania and United Kingdom excluded. Several sources for regressors: (a) Eurostat: debt/GDP - share of general government consolidated gross debt in GDP in %, net interest – the difference between interest receivable and interest payable expressed in bln. EUR, openness – sum of imports and exports relative to GDP in % (b) AMECO: GNI data (c) Bruegel website: estimated RRF (d) World Development Indicators database: Tax Revenue/GDP and Net lending/GDP. The last two variables are used to compute Fiscal Space 1 and Fiscal Space 2 as in Aaizenman and Jinjarak (2010). Fiscal space 1 is ratio between public debt and tax revenues, while Fiscal Space 2 is ratio between government deficit and tax revenue. Income stabilisation coefficient is also expressed in %.

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.