Socio-Economic Review, 2025, Vol. 00, No. 00, 1–23
https://doi.org/10.1093/ser/mwaf066
Article

OXFORD

Article

Insurance against risk? Cost and compensation of job loss in different welfare states

Selçuk Bedük [1,*], Anette Eva Fasang[2], Susan Harkness [3], Stefan B. Andrade[4], Zafer Buyukkececi[5], Satu Helske[6], Aleksi Karhula[6]

[1]Department of Social Policy and Intervention, University of Oxford, Oxford, OX1 2ER, United Kingdom
[2]Department of Social Sciences, Humboldt University, Berlin, 10099, Germany
[3]School for Policy Studies, University of Bristol, Bristol, BS8 1TZ, United Kingdom
[4]The Danish Centre for Social Science Research, Copenhagen, 1052, Denmark
[5]Max Planck Institute for Demographic Research, Rostock, 18057, Germany
[6]INVEST Research Flagship Centre, University of Turku, Turku, 20500, Finland

*Corresponding author: Department of Social Policy & Intervention, University of Oxford, 32 Wellington Square, Barnett House, Oxford OX1 2ER, United Kingdom. E-mail: selcuk.beduk@spi.ox.ac.uk

Abstract

This study investigates the cost of job loss to household incomes, and the extent to which initial earnings losses are compensated through the labor market, within the household, and by the social security programs. Using survey and administrative data from Denmark, Finland, Germany, and the UK (1990–2018), we estimate short- and long-term effects of job loss with a dynamic difference-in-differences model. Job loss reduces household income by 17 per cent in the UK while only 5 to 6 percent in other countries during the first year. These losses gradually diminish and disappear over the long run. Across all countries, market (i.e. re-employment) is the main source of compensation, while the role of household and state compensations varies in line with the national compensation strategies. State compensation is crucial in mitigating immediate income losses, while market compensation becomes even more important over time. Household compensation mainly substitutes for weaker market and state protections.

Key words: unemployment; social risk; re-employment; unemployment insurance; added worker effect; social security.

JEL classification: I38 Welfare, Well-Being, and Poverty: Government Programs, Provision and Effects of Welfare Programs; J68 Public Policy; J64 Unemployment: Models, Duration, Incidence,

and Job Search; J65 Unemployment Insurance, Severance Pay, Plant Closings; D10 Household Behavior and Family Economics

1. Introduction

In an average year, around 2 per cent to 6 per cent of workers in the OECD countries lose their jobs involuntarily (Quintini and Venn 2013). These numbers are significantly higher during recessions or other economic shocks. In the first 6 months of the COVID-19 pandemic, around 6 million people in Europe (Eurostat 2022) and 8 million people in the USA (US Bureau of Labor Statistics 2021) lost their jobs. Following a job loss, workers experience a 20 per cent to 50 per cent decline in their yearly individual earnings (Couch and Placzek 2010; Bertheau et al. 2023), which might lead to large reductions in their household income as well as their expenditure and saving (Andersen et al. 2023).

Despite its prevalence and significance for living standards, evidence on the economic cost of job loss is limited. Most of the literature looks at the speed of re-employment and average losses in yearly earnings following a job displacement or mass dismissals (Couch and Placzek 2010; Farber 2017; Upward and Wright 2019; Bertheau et al. 2023) that does not account for the role of income pooling within households and income compensation provided by social security. Others that have looked at these aspects generally focus on single-country or two-country comparisons (Di Prete and McManus 2000; Ehlert 2012; Rothstein and Valletta 2017; Seim 2019; Stepner 2023; Di Nallo and Oesch 2021), and do not provide a systematic account on how compensation mechanisms interact with each other and vary across different welfare states. Also, differences in their definitions and methodologies mean that they are often not immediately comparable to each other.

In this study, we systematically compare the economic cost and compensation of job loss across different welfare states. Building on the frameworks of Di Prete and McManus (2000) and Ehlert (2012), we consider compensations through the market, within the household, and by the state, and examine the final cost of job loss for household incomes. We use long-term, high-quality survey data from Germany and the UK, and administrative data from Denmark and Finland, covering the period 1990–2018 (with shorter periods for the UK and Finland). These countries represent distinct welfare states with varying approaches to insuring against job loss. Using a difference-in-differences (DID) design, we track the incomes of 5 years following a job loss, defined as a transition from employment (at least 5 months of work per year) to a significant period of unemployment (at least 3 months in a year). We assess market compensation by examining re-employment rate and earnings replacement, household compensation by comparing changes in individual and household earnings, and state compensation by comparing household incomes before and after taxes and transfers.

We make three key contributions to the literature. First, we provide updated or new evidence on the short- and long-term impact of job loss on household disposable income in four countries with distinct welfare states. While evidence on the cost of job loss in Nordic countries is limited, comparing these contexts is valuable due to the generous, universal, and individualized nature of their welfare systems. Notably, Denmark and Finland offer distinct levels of labor market regulation, enriching our comparison. We also extend the

literature by investigating whether long-term earnings scarring translates into household income scarring.

Second, we examine all major compensation mechanisms, namely state, market, and household, considering potential substitution effects between them. For instance, reemployment reduces the need for state and household compensation, or generous social security may reduce reliance on household compensation. While Di Prete and McManus (2000) address all three mechanisms, they overlook interactions, and Ehlert (2012) focuses on the interplay between social and household compensation without considering the role of market compensation. We argue that market compensation is a primary mechanism that both substitutes for state support and influences household responses.

Third, we explore the role of welfare state policies, specifically social security, labor market, and family policies in shaping the cost and compensation of job loss. We consider how policy interactions might moderate or amplify the effectiveness of different compensation types. Although all welfare states provide some form of insurance against labor market risks, evidence on their effectiveness is limited (Hacker and Rehm 2022). While there is substantial research on the impact of individual programs, such as unemployment insurance, comprehensive assessments that account for policy interactions remain scarce.

2. Existing evidence

The literature on the cost of job loss has developed through distinct lines of inquiry. One prominent strand, largely in Economics, examines job displacement (e.g. due to mass layoffs or firm/plant closures) as an exogenous labor market shock, typically using administrative tax records with employer–employee links to compare earnings outcomes between displaced and nondisplaced workers (e.g. Couch and Placzek 2010; Farber 2017; Lachowska, Mas, and Woodbury 2020; Bertheau et al. 2023; Athey et al. 2024). These studies consistently find that although most displaced workers find new employment within a year, they experience significant and persistent earnings losses, sometimes lasting over a decade. Earnings reductions are most pronounced in Mediterranean and Liberal welfare states and least severe in Nordic countries (Quintini and Venn 2013; Bertheau et al. 2023).

While earnings outcomes are the primary focus in this research, some studies extend the analysis to household income, considering compensation mechanisms such as social transfers and the added worker effect (Hardoy and Schøne 2014; Rothstein and Valletta 2017; Stepner 2023; Fackler and Weigt 2020). For instance, household income declines following displacement range from 9 per cent in Sweden (Seim 2019) to 15 per cent in Canada (Stepner 2023). These studies find that most of the income compensation comes from taxes and transfers, with little evidence of increased work effort by other household members in Germany and Norway (Hardoy and Schøne 2014; Fackler and Weigt 2020).

A second research strand, predominantly in Sociology, defines job loss as a transition from employment to unemployment using survey data and examines the impacts on household income (Di Prete and McManus 2000; Ehlert 2012; Di Nallo and Oesch 2021). Although these studies are not comparable due to different definitions and methodologies, they consistently report substantial income losses in the first year following a job loss, varying significantly across countries, e.g. 5 per cent in Switzerland. Ten per cent in the UK, 10 to 20 per cent in Germany, and 28 per cent in the USA (Di Prete and McManus 2000; Ehlert 2012; Di Nallo and Oesch 2021). These studies emphasize the importance of

unemployment insurance in Germany and Switzerland, while also showing the role of other household members' earnings in countries with limited social security such as the UK and the USA.

Although these studies offer valuable insights into the short- and long-term earnings consequences of job loss and compensation mechanisms, differences in definitions and methodologies hinder direct comparison (Couch and Placzek 2010) and limit our ability to learn about the cost and compensation of job loss from comparative perspectives. Our study addresses this gap by adopting the sociological approach to examine the role of various compensation mechanisms in mitigating household income losses across different welfare states.

3. Theory, evidence, and hypotheses

We define the economic cost of job loss as the average penalty in household disposable incomes, i.e. the extent of income lost in the years following a job loss. The idea is to examine the extent to which job loss leads to income declines after considering different income sources of a household. In that respect, the penalty depends on the extent to which job loss is compensated by three mechanisms: social or state compensation, provided by social security such as unemployment insurance (UI) and minimum income schemes (MIS); market compensation through individual's own effort to re-employ and replace lost earnings; and household compensation, defined here mainly related to the earnings of the other members in the household i.e. income pooling within the household.

Each compensation mechanism can separately offset income losses following a job loss and substitute other compensation mechanisms. These substitutions can be mechanical or reflect behavioral responses. For example, increasing market compensation can mechanically reduce household and social compensation, as it decreases initial earnings losses and might lead to individuals moving out of social security benefits; low state compensation might increase the need for hence encourage market and household compensation; or, high state compensation through generous UI benefits might replace the need for household and market compensation at least in the short-term.

Given these definitions, welfare states as a system of interacting and complementary social policies can determine the economic cost of job loss by shaping the level of these compensations (Di Prete 2002; Western et al. 2012). The compensation strategies i.e. the order and importance of each compensation likely vary significantly across the welfare states in line with policies that affect the risk and consequences of job loss such as employment protection, activation and training, and family and social security policies. Therefore, we expect the economic cost of job loss to vary across welfare states in line with these compensation strategies. Below, we explain each compensation mechanism and detail our expectations for the four countries in question.

3.1. State compensation

We expect higher state compensation in countries with more generous social security benefits. Generosity includes eligibility conditions, duration, and level of benefits, specifically of UI and MIS. UI protects against significant losses and provide income maintenance generally on an individual basis in the short-term (the first 6 months to 2 years), while MIS such as means-tested social assistance, tax credits, and child and housing benefits are generally

defined on a household basis and provide support for households on low income in the longer-term.

Despite a general convergence in eligibility, with stricter conditionality requirements (for e.g. certain job-search behaviors) and wider sanctions, countries are still distinguished in their generosity in line with their social security models (see Fig. A1 in Supplementary Data).

In the residual model such as the UK, the eligibility is mainly restricted to those on low incomes, does not consider job loss a significant social risk unless it causes low household income. As a result, the UK provides the least generous UI benefit, with a fixed amount (e.g. 9 per cent of average wage) providing on average 20 per cent replacement rate for a maximum of 6 months. The level of MIS benefits, on the other hand, is relatively higher but has also declined over time from 60 per cent to 70 per cent to 45 per cent to 55 per cent of median household income between 2002 and 2020.

In the insurance model such as Germany, the focus is on providing income maintenance in the case of income shocks. So, while UI is relatively generous providing earnings-related benefits that, on average, replace around 60 per cent of previous earnings with a maximum duration for receipt of 1 year, the MIS is relatively meager where the average level of benefit is around 40 per cent to 50 per cent of median household income.

In the universal model such as Denmark and Finland, income is protected comprehensively independent of the reason for low income. Therefore, those who experience risk events such as job loss are generously compensated through an earnings-related UI, which provides 80 per cent of previous earnings in Denmark and 60 per cent of previous earnings in Finland for a maximum of 2 years; while others on a low income are generously compensated through MIS, which provides around 50 per cent to 60 per cent of median household income (generally higher in Denmark than Finland).

Beyond policy intentions, whether households actually receive these benefits depends on the level of take-up. Nontake-up might occur due to lack of information, cost of application or social barriers (e.g. shame). While evidence on the extent of nontake-up is limited (Dubois and Ludwinek 2015), we expect take-up to be high in Nordic countries given their universalistic approach and generosity. Evidence shows significant income compensation following a job loss, specifically in countries with generous UI schemes (Hardoy and Schøne 2014; Stepner 2023; Fackler and Weigt 2020; Di Nallo and Oesch 2021). In that respect, we expect state compensation to be the highest in Denmark and Finland, both in the short and in the long-term due to high generosity and take-up, and to be the lowest in the UK especially in the short-term due to inadequate UI.

3.2. Market compensation

Market compensation is defined as the speed and quality of re-employment after job loss. Faster re-employment and better job conditions reduce annual earnings losses, thereby increasing compensation through the labor market.

We identify three main factors influencing market compensation. First, labor market regulation, specifically employment protection legislation (EPL), plays a crucial role. In highly regulated markets, where hiring and firing are costly for employers, job losers typically face slower re-employment. Strict EPL can particularly hinder re-entry for precarious or temporary workers by reducing job availability and limiting access to high-quality positions that are protected for insiders (Rueda 2014; Biegert 2017, 2019; Inanc and Kalleberg

2022). However, low-wage workers may find re-employment at a similar pay level more quickly due to fewer skill-based barriers (Gonalons-Pons and Gangl 2022).

On the other hand, strong EPL may also protect higher-quality jobs and reduce long-term unemployment and earnings scarring, especially for high earners (Gangl 2006; Gonalons-Pons and Gangl 2022). Existing evidence shows that while stringent EPL is associated with longer unemployment durations, it also leads to lower long-term earnings losses (Gangl 2006; Gonalons-Pons and Gangl 2022). This effect may result from better protection of high-paying jobs or improved job matching facilitated by generous unemployment benefits, which provide displaced workers more time to seek positions that align with their skills and career potential.

Many have argued for a convergence toward less regulated labor markets, but this trend is mainly true for temporary employment. In contrast, protections for regular permanent contracts remain strong across the OECD, leading to labor market dualization, particularly in countries like Germany (Eichhorst and Marx 2012). As shown in Fig. A2 in the Supplementary Data, Germany has the strictest EPL for regular jobs and increasingly weaker protections for temporary employment. Denmark, in contrast, maintains relatively low EPL for both regular and temporary jobs. Finland is unique among the four countries, having reduced protections for regular jobs since the early 2000s, reaching levels similar to Denmark (our data for Finland starts in 1997). The UK consistently has the lowest EPL for both regular and temporary workers.

Second, active labor market policies (ALMPs) may influence market compensation by enhancing employability and facilitating faster re-employment with better job conditions. These policies include training programs, job search assistance, behavioral requirements, and subsidized employment (Crépon and Van Den Berg 2016). Although their effectiveness varies across contexts and groups, they generally improve re-employment and subsequent earnings, especially when combined with generous benefits in flexible labor markets, i.e. flexicurity (Muffels and Luijkx 2008; Card, Kluve, and Weber 2018). A recent study by Bertheau et al. (2023) finds that ALMPs explain a substantial part of cross-country differences in earnings losses. Thus, we expect higher ALMP spending to be associated with greater market compensation. Fig. A2 in the Supplementary Data shows that Denmark consistently has the highest ALMP spending (1.5 per cent to 2 per cent of GDP), while the UK has the lowest (0.2 per cent to 0.5 per cent of GDP).

Third, the substitution effects of state and household compensation can shape market compensation. If income loss is already offset by income pooling within the household or replaced by social insurance, job losers may be less incentivized to re-enter the labor market quickly, at least in the short term. Rao (2021) argues that this effect is particularly relevant for women, whose labor market participation may be curtailed following job loss. Additionally, generous UI can reduce short-term re-employment rates, especially in contexts with high EPL like Germany, where it is difficult to secure well-paid jobs (Biegert 2017). Although such disincentive effects are likely to be low for those receiving MIS benefits especially in Germany and the UK, due to strong behavioral requirements such as work-search and job-availability, which are followed by sanctions in case of noncompliance. Conversely, high state compensation can also enhance market compensation by allowing unemployed individuals more time to find suitable job matches (Biegert 2017). Denmark's flexicurity model, combining flexible labor markets with generous UI and ALMPs, has been shown to

accelerate transitions into employment, hence can improve market compensation (Muffels and Luijkx 2008).

Based on these factors, we expect market compensation to be highest in countries with low EPL and strong ALMPs, particularly Denmark, where generous social benefits further support effective re-employment. The UK, with low EPL, should also exhibit high market compensation through faster re-employment rates. Finland, despite high EPL, may achieve high market compensation through robust UI, MIS, and effective ALMPs that improve job matching over time. In contrast, Germany is likely to have the lowest market compensation as high EPL without high ALMPs might lengthen the duration of unemployment especially given generous UI. These expectations assume that the disincentive effects of household income pooling are not substantial for the average household.

3.3. Household compensation

Household compensation refers to income pooling within the household. The cost of job loss to household income is lower if there are other earners present at the time of job loss (static pooling) or if other household members increase their earnings by taking new jobs or working additional hours (dynamic pooling, also known as the added worker effect). Static pooling serves as an immediate buffer and long-term risk mitigation strategy, while dynamic pooling reflects a behavioral response that may become more relevant over time. For couples, household compensation primarily occurs through static pooling, whereas dynamic pooling tends to be limited to specific groups or recessionary periods, especially in countries with weaker unemployment benefits (Ehlert 2012; Hardoy and Schøne 2014; Bredtmann, Otten, and Rulff 2018; Fackler and Weigt 2020).

We identify three key factors influencing the extent of household compensation. First, household compensation is shaped by household employment, which in turn is influenced by family policies. Specifically, policies that defamilialize care responsibilities, such as public childcare and paid parental leave, can reduce barriers to employment, especially among low-educated or low-income mothers in high-inequality contexts (Ziefle and Gangl 2014; Hook and Paek 2020; Zagel and Van Winkle 2022). In countries like Denmark and Finland, these policies can reduce the cost of child-rearing and increase the likelihood of a second earner in the household.

Over recent decades, spending on family policies, particularly for early childhood education and parental leave, has increased significantly (Daly and Ferragina 2018). While these policies generally aim to promote female employment and shift care responsibilities outside the home, even in traditionally familialistic countries like Germany, household employment patterns still vary widely across countries. As shown in Fig. A3 of the Supplementary Data, two full-time earner households are predominant in Denmark and Finland (60 per cent to 70 per cent of households), while in Germany and the UK, one full-time and one part-time earner households are equally common. Although the share of dual full-time earner households has increased in Germany and the UK over the past decade, it remains below Nordic levels.

Second, household compensation varies depending on who experiences the job loss. If the lower earner in the household loses their job, other earners can provide an immediate buffer. This is more likely in Denmark and Finland, where dual-earner households are prevalent, or in Germany and the UK, where labor markets are segmented, with lower protections for temporary workers, making job loss more likely for lower earners (Rueda 2005).

Third, household compensation depends on the substitution effects of market and state compensation. If a job loser is re-employed under good conditions or if social security replaces lost earnings adequately, the need for additional household income diminishes. Market compensation reduces household compensation by lowering the initial income loss, while generous social benefits can similarly reduce the need for a second earner.

Overall, household compensation depends on the interplay of these factors. If individualization policies (e.g. defamilialization) and high household employment drive compensation, we would expect the highest levels in Denmark and Finland due to the high likelihood of a second earner. This is our main expectation. This expectation rests on the assumption that the composition of risk profiles between single- and dual-earner households is similar across countries. On the other hand, if state and market compensation are high enough to compensate most of the initial losses, this would not leave much responsibility for households in Nordic countries, hence household compensation may be lower. In contrast, weaker social and market compensation in Germany and the UK may force households to take on the responsibility, potentially resulting in higher levels of household compensation in these countries.

3.4. Economic cost of job loss

Considering different compensation mechanisms, the penalty of job loss depends on the level of compensations provided by each mechanism as well as their substitution effects between them given distinct policy mixes applied in different welfare states. However, it is relatively difficult to form expectations as while there is evidence on the importance of each mechanism separately, there is no clear evidence on their relative importance. Still, state compensation is a relatively independent mechanism that shapes the conditions that might affect an individual's job-search behavior and households' decisions on income pooling. In between market and household, market is likely to be the primary mechanism i.e. if job losers can re-employ, they do; if they cannot, households pool incomes to insure against shocks and compensate the losses both as a short-term and long-term strategy.

Given these assumptions, the penalty is likely to be the lowest in Denmark as it likely provides a high state compensation and the necessary conditions for high market and household compensation, and the highest in the UK despite higher market and possibly household compensation mainly due to low state compensation, especially in the short-term due to low generosity of UI. In Finland, high state compensation would replace most of the losses in earnings, but the penalty is still expected to be higher than in Denmark due to lower market compensation (given higher EPL). In Germany, the penalty is expected to be higher than in Denmark and Finland due to lower market compensation especially in the long-term; compared to the UK, the penalty is likely to be lower at least in the short-term due to relatively generous UI.

4. Research design

4.1. Data and target population

We use long-term panel survey data for Germany [German Socio-Economic Panel (GSOEP)] and the UK [British Household Panel Survey (BHPS)], and longitudinal administrative data from Denmark and Finland. The available data cover 1991–2018 for Germany and Denmark, 1997–2018 for Finland, and 1991–2008 for the UK. We did not use

Understanding Society (UKHLS), which is the counterpart of the BHPS, for the most recent period in the UK because UKHLS does not include information on yearly incomes, which is crucial to estimate the economic cost of job loss. The admin data from Denmark and Finland combines multiple registers including population, tax, and social security data. Our target population is individuals aged twenty-five to fifty-five. We exclude younger individuals given long education and high state support for young people in Denmark and Finland. We exclude older individuals given the possibility of early retirement, and self-employed given the difficulty of defining job loss and earnings of this group; also, social security schemes often do not include the self-employed. These choices are standard in most of the literature (e.g. Di Prete and McManus 2000; Couch and Placzek 2010). We use an unbalanced sample, and our unit of analysis is individual.

4.2. Measures

Our primary explanatory variable is a binary indicator for job loss, defined as a yearly transition from employment (at least 5 months in the previous year) to unemployment (of at least 3 months). This definition was chosen based on three key considerations: first, to capture significant job loss events rather than temporary transitions, we define unemployment as being without a job for at least 3 months in the current year. This allows us to focus on substantial employment events likely to impact household income, rather than short-term fluctuations. Second, we condition on having at least 5 months of employment and no more than 3 months of unemployment in the previous year to identify individuals principally employed in the prior year, excluding cases of seasonal employment. Lastly, adopting this definition allows us to compare administrative and survey data in a more consistent way, as we cannot identify mass layoff events in the survey data.

We have tested the sensitivity of our results to these conditions, for example, by conditioning on longer employment (i.e. 7 months) and shorter unemployment (i.e. more than 2 months) similar to the definition used by Ehlert (2012). While penalties slightly change in the expected directions, the broader patterns and our conclusions are substantively the same. See Supplementary Data for results.

We use multiple outcome measures to estimate the economic cost of job loss and different compensation mechanisms. To assess the cost of job loss, we use posttax/posttransfer household income, which includes household earnings, investment income, and public taxes and transfers, adjusted for household size and composition using the modified OECD scale, which weights the first adult as 1, other adults as 0.5, and each child below the age of 14 as 0.3. This measure reflects the final income available for household consumption and ultimately defines living standards. To evaluate the various compensation mechanisms, we use and compare different income measures. For state compensation, we compare pre- and postgovernment household income (i.e. household income before and after taxes and transfers, equivalized using the modified OECD scale). For market compensation, we use (i) re-employment, defined as being in paid work for at least 5 months in a given year and (ii) individual gross annual earnings before taxes and social contributions. For household compensation, we compare individual and household gross yearly earnings.

We control for calendar year, age, and gender by residualizing our outcome variables in all our models. Descriptive statistics for each country are presented in the Supplementary Data. Issues related to data comparability and their implications for our analysis are also detailed in the Supplementary Data and summarized in the discussion section.

4.3. Estimation of the effects of interest

Our main interest is observing how much income individuals lose following an event of job loss relative to their income prior to the event. In other words, from a policy perspective, we are interested in monitoring the incomes of those who experience a job loss to understand the cost and compensation for these groups in different welfare states. Still, we use a control group in our estimation to control for possible average trends in earnings. The characteristics of this "treatment" group can be different from the average population; hence, these estimates would not represent causal effects of job loss. In addition to the cost of job loss, we are interested in estimating state compensation as the level of household income replaced by the social security programs, market compensation as the level of earnings replacement, and household compensation as the level of earnings loss offset within the household in the year following a job loss.

To estimate these quantities, we use a dynamic DID estimator proposed by De Chaisemartin and d'Haultfoeuille (2024). This is a nonparametric estimator that aggregates several 2×2 DID comparisons of treated and never-treated groups.

$$\mathrm{DID}_{\ell,g} = \left(Y_{\mathrm{treated},t+\ell} - Y_{\mathrm{treated},t-1}\right) - \left(Y_{\mathrm{control},t+\ell} - Y_{\mathrm{control},t-1}\right)$$

where g is the treatment group that can vary in the first year of treatment (i.e. $g = 1992, 1993, \ldots, 2018$); ℓ is the number of years after treatment (or posttreatment time periods) (i.e. $\ell = 1, 2, 3, 4, 5$); t is the year when the treatment occurs (e.g. the year someone loses their job), which is specified for each treatment group g; Y is the income of the treated or control group residualized for year, age and gender; and $\mathrm{DID}_{\ell,g}$is the DID estimate for group g at ℓ periods after treatment, which shows the extent to which the difference in pre- versus posttreatment outcomes differs between treated and control groups. The outcomes for the control group are measured contemporaneously with the treated groups' outcomes, at the specific period relative to the treatment timing.

We then aggregate these DID estimates across groups to reach aggregated estimates for each period ℓ:

$$\delta_\ell = \frac{1}{N}\sum_{g=1}^{N} \mathrm{DID}_{\ell,g}$$

where N is the number of treated groups, and δ_ℓ is the DID estimate aggregated for all groups at period ℓ. The effects of interest can then be calculated from δ_ℓ for each posttreatment year ℓ. We divide estimates by the average outcome in the year before the job loss (similar to Ehlert 2012), so present them as percentage changes from the previous outcome.

$$\rho_\ell = \delta_\ell / Y_{t-1}$$

The value for ρ_ℓ for the postgovernment household income is the cost of job loss; the difference in ρ_ℓ between pre- and postgovernment household income is the state compensation, between individual earnings and household earnings models is the household compensation, and 1-ρ_ℓ in the earnings model is the market compensation.

We prefer DID over more traditional two-way fixed effects (TWFE) models used in previous literature due to concerns about the time-heterogeneity of effects. While Rüttenauer and Aksoy (2024) argue that TWFE with event study specifications generally perform similarly well, our observation period is relatively long, and heterogeneity of job loss effects

Table 1. Average market, state, and household compensation over the 5 years following a job loss in Germany, Denmark, Finland, and the UK.

Country	DE	DK	FI	UK	Pooled
Market compensation	71.4%	82.2%	81.1%	69.0%	75.9%
	(1.9)	(1.5)	(1.4)	(4.8)	(2.4)
State compensation	9.3%	9.7%	7.4%	4.6%	7.8%
	(2.1)	(1.5)	(1.9)	(5.2)	(2.7)
Household compensation	15.4%	7.8%	9.4%	20.0%	13.2%
	(2.5)	(1.9)	(2.1)	(6.2)	(3.2)

Notes: Market compensation shows earnings replacement, state compensation shows replacement of incomes through taxes and transfers, while household compensation shows a reduction in losses through earnings of other members in the household. The coefficients are rescaled, and so the values are presented as a percentage of the average outcome during the reference year (the year prior to the job loss). The estimates are derived from the diff-in-diff model described in the methods section. The values in parentheses show standard errors of the estimates.
Source: Author's own elaboration.

over time might differ across our four countries. Still, applying DID does not solve the identification problems related to parallel trends, anticipation effects, and time-varying exogeneity, but neither our aim nor our claim is to deal with these problems and identify causal effects. While many novel DID estimators have recently been proposed (see a review by Roth et al. 2023), we prefer this estimator as it allows nonabsorbing treatments i.e. moving in and out of job loss and account for treatment duration (i.e. durations of unemployment following a job loss—see Fig. A5 in Supplementary Data for an analysis of this). The applied estimator adapts to non-absorbing by adjusting for overlapping treatments and avoiding double counting. To make these cases with multiple treatments comparable to other single treatment cases, the treatment effects are normalized for each group by their total treatment dose—aggregating their effects proportionally to the treatment doses received in each period. Normalization helps disentangle overlapping effects by scaling them to reflect contributions per unit of treatment change.

5. Results

5.1. Market as the main source of compensation

The findings show the market as the primary mechanism for compensation. Table 1 presents the average compensation levels across four countries. The values show what percentage of the initial loss of earnings is reduced through the market, by the state and within the household on average within the 5 years following a job loss.

On average across all countries, market compensation replaces around 76 per cent of losses, while the compensation by the state and household is around 8 per cent and 13 per cent respectively. High market compensation is mainly due to high re-employment in the first year (varying between 60 per cent and 77 per cent across countries), even if generally with lower wages than previous employment (see Fig. 1). Beyond this general pattern, market compensation is higher in Denmark and Finland (around 80 per cent) and lower in Germany and the UK (around 70 per cent). Low market compensation is mainly due to low

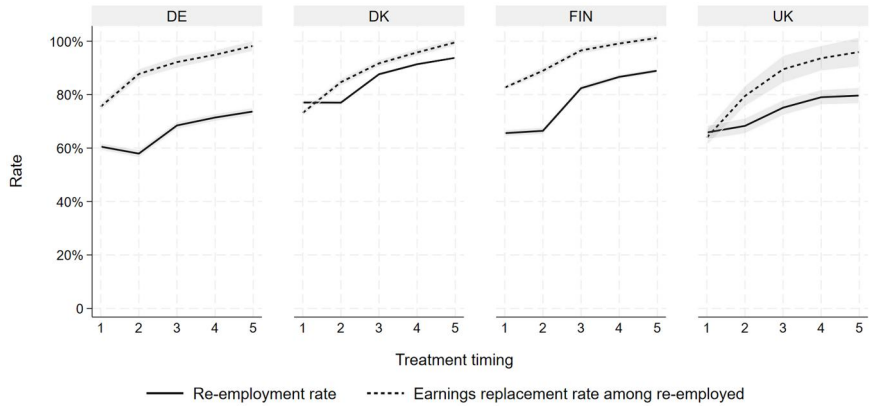

Figure 1. Types of market compensation: re-employment and earnings replacement (among re-employed) over the 5 years following a job loss in Germany, Denmark, Finland, and the UK.

Notes: Earnings replacement shows the percentage of previous earnings replaced by new employment among job losers, and re-employment shows the rate of re-employment among job losers. The value for earnings replacement is rescaled so the values are presented as a percentage of the average earnings during the reference year (the year prior to the job loss). The estimates are derived from the diff-in-diff model described the methods section. The shaded areas show 95 per cent confidence intervals.

Source: Author's own elaboration.

re-employment rate in Germany, and both low re-employment and low earnings replacement rates (i.e. quality of re-employment) in the UK. Despite providing similar levels of market compensation, re-employment is faster in Denmark, while the quality of re-employment is better in Finland.

These findings align well with our expectations given the mix of policies related to the labor market in these countries. Denmark's flexicurity strategy combining flexible labor markets with activation policies and generous unemployment insurance provides the highest market compensation mainly through quick re-employment in the short-term and quality of employment in the longer term. Finland provides similar levels of market compensation with a stricter EPL for regular workers, which leads to relatively slower re-employment, but with a higher quality job. Germany, another country with a stricter EPL, also shows a similar pattern with a consistently high earnings replacement level and lower re-employment rate compared to other countries. The UK provides similar levels of market compensation to Germany despite having significantly lower levels of EPL and UI. The main reason for this outcome is the lower quality of re-employment i.e. lower earnings replacement rate.

Therefore, more flexible EPL and/or meager UI does not necessarily lead to high market compensation, while stricter EPL and/or generous UI does not necessarily prevent high market compensation. In the UK, market compensation in the first year is low despite low UI and less strict EPL. In Denmark, market compensation is generally high despite generous UI given its mixed with high flexibility, which helps to increase re-employment rate already within a year. In the longer-term, quality of re-employment i.e. earnings replacement also increases in Denmark, which might be partly a result of high UI and high ALMP that encourages workers to have better job matches and higher earnings progression. In Finland,

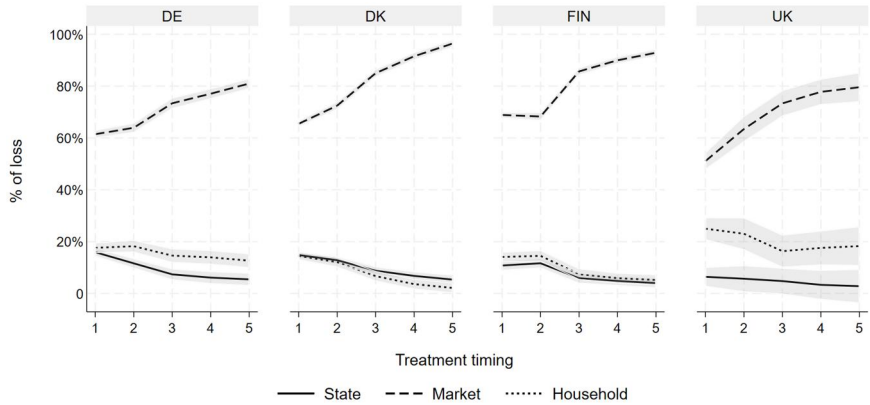

Figure 2. State, market, and household compensation over the 5 years following a job loss in Germany, Denmark, Finland, and the UK.

Notes: State compensation shows replacement of incomes through taxes and transfers, market compensation shows earnings replacement, while household compensation shows reduction in losses through earnings of other members in the household. The coefficients are rescaled, and so the values are presented as a percentage of the average outcome during the reference year (the year prior to the job loss). The estimates are derived from the diff-in-diff model described in the methods section. The shaded areas show 95 per cent confidence intervals.

Source: Author's own elaboration.

market compensation is also generally high despite strict EPL for regular workers and generous UI, which possibly reduces the speed of re-employment, but increases the quality of job match by e.g. allowing time for job losers to find a more appropriate job. Relatively high spending of ALMP in Finland also possibly helps to increase the rate of re-employment in the longer term, especially when compared with the relatively lower re-employment rate in Germany. Germany's mix of very stringent EPL for regular workers and generous UI potentially disincentivizes work due to a lack of attractive job opportunities relative to the benefit levels, as suggested by Biegert (2017). The results for the UK show that flexibility in labor market through less stringent EPL does not necessarily translate into higher re-employment or earnings replacement.

5.2. State compensation as the immediate buffer

Compensation provided by the state appears to be low across all countries. As shown in Table 1, it ranges from 5 per cent in the UK to 10 per cent in Denmark. The variation across countries fits expectations related to the level of generosity in social security. Yet, it seems to be more related to the benefits provided through UI schemes and less so through MIS for those on low incomes, as the compensation is higher in Germany than in Finland. As we have shown earlier, the generosity of UI schemes is relatively similar across Denmark, Finland, and Germany, while MIS is less generous in Germany. This then means that state compensation is important in the first year when job losers are still eligible for UI.

In Fig. 2, we present the level of state compensation over the 5 years following a job loss. In the first year, when unemployment insurance is provided more generously, the highest level

of compensation is around 15 per cent to 16 per cent in Denmark and Germany, and they reduce significantly over the following years, already halving after 2 years.

This variation over time possibly reflects the substitution between market and state compensation. Re-employment rate in Denmark and Finland reaches around 90 per cent to 93 per cent in the fifth year, so most job losers possibly do not benefit from state compensation; on the other hand, in Germany, re-employment rate reaches around 74 per cent in the fifth year of job loss, so some job losers are still not re-employed and possibly benefiting from state compensation; yet they most likely do not receive UI due to exhaustion of eligibility, but MIS due to low incomes, which is less generous. In the UK, state compensation has been low across 5 years around 3 per cent to 7 per cent and not statistically significant through most of the period (except for the first year).

5.3. Household as the last resort

The level of household compensation seems to be mainly determined by the availability of other compensation types. Against our main expectation, average household compensation is around 8 per cent to 9 per cent in Denmark and Finland and relatively low compared to Germany (15 per cent) and the UK (20 per cent) (see Table 1). As argued earlier, household compensation comprises of the static effect of income pooling i.e. having other earners in the household when job loss happens, which provides the initial buffer, and the dynamic household labor response by increased earnings of other members in the household following a job loss. It is important to note here that static pooling is not a direct compensation per se, but the proportionate cost is lower if there are other earners in the household in the year of job loss. Theoretically, we expected static and dynamic household compensation to be higher in Nordic countries due to the higher prevalence of dual-earner households and greater defamilialization. However, our results indicate significantly higher household compensation levels in Germany and the UK.

In Fig. 3, we present how the static and dynamic household compensations have evolved over the 5 years following a job loss (see Supplementary Data for details on how each of these components is calculated). Denmark and Finland show lower compensation levels for both components. For example, static pooling on average is around 9 per cent in Denmark and Finland, while 13 per cent to 16 per cent in Germany and the UK. This average difference is partly due to the fact that the compensation provided by static pooling significantly reduces over time in Denmark and Finland yet holds at a certain level for Germany and the UK. In addition, while the dynamic component is negligible in Finland and Denmark, it provides significant compensation in the later years in Germany and the UK. Dynamic pooling appears to be more substantial in the UK than in Germany, especially in the later period.

Two factors may explain the lower household compensation in the Nordic countries. First, job loss in Denmark and Finland may disproportionately affect higher earners within households. On average, job losers in these countries contribute around 65 per cent to 75 per cent of their household's earnings (see descriptive statistics tables in the Supplementary Data), limiting the extent to which other earners can buffer income losses. However, this pattern is not markedly different in the UK and Germany, where job losers account for around 60 per cent of household earnings. Still, this difference in the earning profiles of job losers between the two country groups might partly explain the results.

Second, household compensation may be lower in the Nordic countries due to substitution effects. In both Finland and Denmark, on average, around 90 per cent of income losses are replaced by state and market compensation, leaving little need for household support.

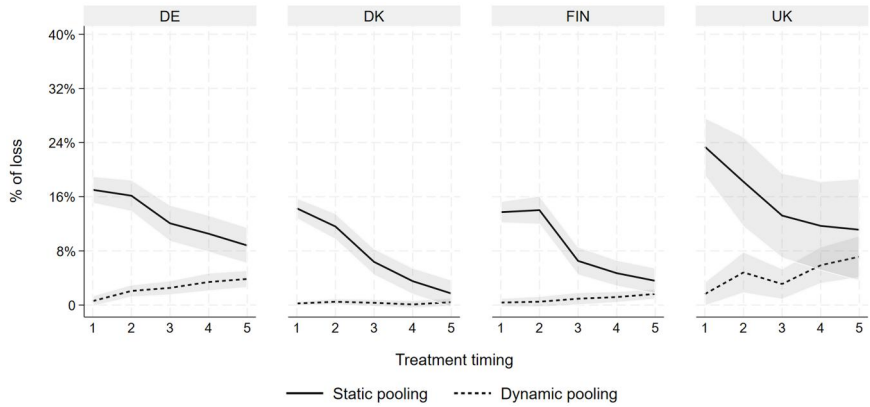

Figure 3. Types of household compensation over the 5 years following a job loss in Germany, Denmark, Finland, and the UK.

Notes: Static pooling shows the reduction in loss of earnings due to having other earners in the household at the time of job loss, while dynamic pooling shows compensation of earnings loss by increasing the earnings of other members in the household. The estimates show the percentage of loss compensated by each component. The estimates are derived from the diff-in-diff model described in the methods section. The shaded areas show 95 per cent confidence intervals.

Source: Author's own elaboration.

By contrast, in Germany and the UK, state and market mechanisms replace only 75 per cent to 80 per cent of the losses, increasing the burden on households. High state and market compensation can mechanically reduce the role of static pooling and disincentivize dynamic pooling in Denmark and Finland. In opposite, both the initial buffer provided by the presence of other earners in the household, and dynamic household response through increased earnings are substantially more important in Germany and the UK.

These substitution effects are evident in how market and household compensations evolve over time (see Fig. 2). In all countries, household compensation tends to decline as market compensation rises. In Denmark and Finland, market compensation reaches around 90 per cent to 93 per cent after 5 years, reducing the need for both state and household support. By contrast, in the UK and Germany, market compensation plateaus around 80 per cent, and household compensation remains stable from the third year onward, likely compensating for the limited gains from the market. Overall, when state or market compensation falls short, households appear to be acting as a critical last-resort buffer against the economic consequences of job loss.

5.4. Are workers insured? Cost of job loss for household income

Considering these compensations, what is then the penalty of job loss in the short-term and long-term in different welfare states? Table 2 shows average penalties over the 5 years following a job loss in the four countries. The estimates show the level of earnings, pregovernment household income, and postgovernment household income lost between the reference year and the average of the following 5 years, and presented as a percentage of the average outcomes in the reference years.

Table 2. Average cost for earnings and household income over the 5 years following a job loss in Germany, Denmark, Finland, and the UK.

Country	DE	DK	FI	UK	Pooled
Earnings	−28.6%	−17.8%	−18.9%	−31.0%	−24.1%
	(1.9)	(1.5)	(1.4)	(4.8)	(2.4)
Pregovernment HH income	−13.2%	−10.0%	−12.1%	−10.8%	−11.5%
	(1.6)	(1.2)	(1.5)	(3.9)	(2.1)
Postgovernment HH income	−3.9%	−0.3%	−4.7%	−6.2%	−3.8%
	(1.4)	(1.0)	(1.2)	(3.4)	(1.7)

Notes: The estimates are the average over 5 years. Earnings show gross yearly individual labor earnings, pre-gov HH income shows the sum of household earnings and investment income, and post-gov HH income shows the sum of household earnings and investment income net of taxes and including social transfers. The coefficients are rescaled, and so the values are presented as a percentage of the average outcome during the reference year (the year before the job loss). The estimates are derived from the diff-in-diff model described in the methods section. The values in parentheses show standard errors of the estimates.
Source: Author's own elaboration.

The estimates show significant losses in postgovernment household incomes, except in Denmark, averaging between 4 per cent and 6 per cent over the 5 years following job loss (an accumulated loss of 20 per cent to 30 per cent). The average cost of job loss is the lowest in Denmark, which is around 0. Denmark has consistently the lowest penalties on earnings, pre- and postgovernment household income. This is due to high market and state compensation.

The average cost of job loss is the highest in the UK, around 6 per cent. This is despite having the strongest household compensation among all countries. Earnings penalty is among the highest, but substantially reduced for pregovernment household income due a strong household compensation. The penalty for pregovernment household income is among the lowest in the UK. The final cost, however, is still the highest due to low state compensation.

The average cost of job loss is smaller in Finland and Germany, around 4 per cent to 5 per cent. Among these countries, Germany has significantly higher penalty for earnings, around 29 per cent, compared to Finland's 19 per cent. This significant country difference disappears for pregovernment household income due to higher household compensation in Germany. Similar state compensation between these countries leads to similar final cost of job loss on postgovernment household income. Therefore, despite different compensation strategies (more market compensation in Finland, more household compensation in Germany), the cost of job loss is similar across Finland and Germany.

This average picture, however, masks significant variation over time. Figure 4 shows the amount of postgovernment household income lost in the 5 years following a job loss in four countries, presented as a percentage of the average outcome in the reference year. Three comparative findings are important to emphasize.

First, in the short-term, the findings align with our expectations: job losers in the UK experience the highest penalty (17 per cent), driven primarily by limited state and lower market compensation. While low state compensation was anticipated, slower and lower quality re-employment also appears to be a feature of the job loss experiences in the UK. In the first year, the UK has the highest penalty despite having the highest household compensation. In

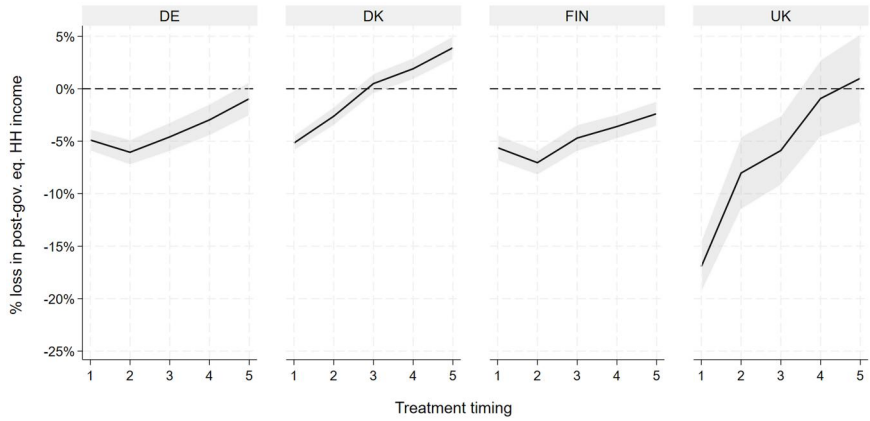

Figure 4. Average cost of job loss over the 5 years in Germany, Denmark, Finland, and the UK.
Notes: Post-government household income is defined as the sum of household earnings and investment income net of taxes and transfers. The coefficients are rescaled, and so the values are presented as a percentage of the average outcome during the reference year (the year before the job loss). The estimates are derived from the diff-in-diff model described in the methods section. The shaded areas show 95 per cent confidence intervals.
Source: Author's own elaboration.

contrast, other countries show similar levels of penalty but rely on different compensation mechanisms: Denmark and Finland combine high market and state compensation, while Germany combines high state and household compensation.

Second, the evolution of income penalty over time varies across countries, reflecting differences in the level and type of compensation, as well as the degree of substitution between them. In Germany and Finland, both characterized by generous unemployment benefits and strict employment protection, penalties increase in the second year as rising market compensation fails to offset declines in state and household support. This is largely due to stagnant re-employment rates, which limit gains from the market. From the third year onward, market compensation increases notably, but primarily substitutes for declining state and household compensation, leading to only modest reductions in overall losses. In contrast, Denmark sees penalties disappear by the third year, as rising market compensation more than offsets reductions in state and household support. In the UK, penalties begin to decline significantly from the second year, driven by a sharp increase in market compensation (from 50 per cent to 73 per cent) and continued household compensation. By the fourth year, postgovernment household income penalties in the UK effectively vanish.

The third and final comparative finding concerns cross-country variation in the long-term cost of job loss. By the fifth year, average income penalties are largely compensated in all countries. In Germany and Finland, job losers still face small losses of around 1 per cent to 2 per cent, though the effect is only marginally significant in Finland. The most notable trajectory is that of the UK, where losses begin at 17 per cent but disappear by the fourth year, driven by rising market compensation and substantial level of sustained household

compensation. These findings suggest that while compensation strategies vary, all countries ultimately succeed in compensating the long-term penalties. Importantly, substantial long-term earnings losses, particularly in countries with weaker market compensation like Germany and the UK, do not necessarily translate into persistent household income declines mainly as a result of household income pooling.

One factor that might affect differences in the cost across countries could be the duration of unemployment following a job loss. To examine this, we have estimated the cost per month of unemployment following a job loss, and the estimates over time follow the exact same patterns in all countries. See Supplementary Data for results.

6. Discussion

In recent decades, job and income insecurity have become growing concerns in high-income countries. Kalleberg (2018) argues that deindustrialization, relaxed labor regulations, the rise of temporary contracts, and weakened collective bargaining have shifted employment risks from employers to employees, resulting in more jobs but with less security and lower quality. Others highlight that income insecurity has increased due to a shift in the responsibilities of social risks from the state and market to families and individuals (Hacker 2019; Western et al. 2012; Latner 2019; Hacker and Rehm 2022). Consequently, with declining employment and income protections, individuals are increasingly left to manage risks like job loss on their own (Andersen et al. 2023; Bedük 2023).

In this article, we examine the economic cost of job loss for household incomes and the extent and sources of compensation across different welfare states. Our findings show that household incomes decline significantly in the years following a job loss but return to levels prior to job loss in the long term. On average, in all countries except Denmark, individuals lose about 4 per cent to 6 per cent of their income annually over 5 years, amounting to a total loss of 25 per cent to 30 per cent. These losses are most severe in the short term, particularly in the UK (around 17 per cent), but are relatively modest in the long term, especially in Denmark and the UK. In the fifth year of job loss, income returns to where they were prejob loss in all countries, but UK households lose more during this period, around 30 per cent to 35 per cent relative to 15 per cent to 20 per cent in other countries.

Despite similar household income penalties, compensation strategies differ markedly across welfare states. Market compensation is the primary mechanism in all countries, but its level varies considerably, as do the roles of state and household compensation. In Denmark, high market and state compensation replace about 90 per cent of losses, leaving little need for household compensation. In contrast, Germany and the UK rely more heavily on household compensation due to limited market or state compensation. In the UK, despite having the strongest household compensation, low state compensation leads to substantial short-term income losses. Finland follows a strategy similar to Denmark's, combining market and state compensation, but with slightly less generous state support, resulting in higher long-term costs for Finnish households.

Considering this variation, some general patterns emerge in how different compensation mechanisms function. In the short-term i.e. the first 2 years of job loss, state compensation is the main driver of cross-country differences. Countries with generous UI, such as Denmark, Finland, and Germany, experience lower average penalties (4 per cent to 6 per cent in the first year), compared to the UK, where low UI replacement rates result in a 17

per cent penalty despite higher household compensation. In the long term, however, generous social compensation does not necessarily translate into lower penalties, as MIS function more as a safety net rather than full income replacement. For example, from the third year of job loss, Denmark, Finland, and Germany provide significantly higher state compensation than the UK, yet penalties decline more rapidly in the UK. Another factor explaining country differences in the short term is the market compensation. In the first year, 51 per cent of losses in the UK replaced through the market, compared to 60 per cent to 70 per cent in other countries. By the second year, market compensation levels, and as a result, household income losses converge across countries.

Market compensation is also what seems to mainly drive the variation in long-term penalties. Across all countries, it is the only compensation mechanism that increases over time. Therefore, the main mechanism for compensating losses in the long-term seems to be individual's own effort to re-employ with good conditions. In all countries, rising market compensation outweighs the reduction in other compensations, gradually lowering income penalties. This is particularly true for Denmark, which shows a secular increase in market compensation, hence a secular decline in penalties. In other countries, although market compensation plateaus after the third year, it continues to contribute to recovery, particularly in the UK, where ongoing household compensation further mitigates long-term losses.

Overall, household compensation functions as a last-resort mechanism when state and market compensation fall short. It is lower in Denmark and Finland, despite high levels of defamilialization and dual-earner households, because generous market and state compensation reduce the need for income pooling within the household. Strong market compensation lowers initial losses, while robust state compensation may reduce incentives for additional household labor. In opposite, limited state compensation in the UK shifts greater responsibility to individuals and families, who respond through long-term income pooling (static pooling) and increased labor force participation (dynamic pooling), consistent with Ehlert's (2012) findings for the USA. These results highlight the strong elasticity of household compensation: it appears as an important mechanism when market and state compensations are weak (as in the UK) and diminishes when they are sufficient (as in Denmark). However, household efforts alone are not sufficient to fully compensate income losses, as evidenced by the UK's significantly higher short-term and cumulative income penalties over 5 years.

These findings offer important policy implications. In the UK, while households act as a last resort, the short-term and accumulated costs remain substantial, underscoring the importance of robust UI schemes. State compensation, especially in the form of UI benefits, plays a critical role in protecting against income loss in the early years following job displacement. However, our results suggest the need to move beyond isolated policy instruments and consider the broader compensation strategies. Market compensation emerges as the primary mechanism for income replacement and can be high in countries with both generous and limited UI systems, or with varying degrees of EPL. For instance, market compensation is strong in both Denmark (low EPL) and Finland (high EPL), when combined with generous UI and ALMPs. In Denmark, this works through rapid re-employment, while in Finland, it operates via high-quality job matches that ensure better earnings replacement. In contrast, market compensation is weaker in Germany with high EPL and generous UI, and in the UK with low EPL and meager UI, possibly due to low levels of ALMPs in both countries. These findings align with recent cross-national evidence showing that earnings

scarring is less severe in countries with strong ALMPs (Bertheau et al. 2023), particularly when paired with generous UI (Biegert 2017). Nonetheless, we caution that our research design does not allow causal identification of specific policy effects, and observed differences may also reflect broader macroeconomic conditions.

While our analysis focuses on average effects, the experience of job loss likely varies substantially across social groups and country contexts. For instance, although job losers tend to occupy similar positions in the earnings and income distribution across countries, in Denmark, they are more often sole earners within their households. Without access to household compensation, these individuals will rely more heavily on market and state compensation. In contrast, similar single earners, particularly high earners in the UK, may face much higher costs, as they depend almost exclusively on market compensation in the absence of strong social insurance. Conversely, when a secondary earner loses their job, the overall cost may be modest as household income likely remains relatively stable due to static pooling.

Compensation patterns may also differ across the income distribution. In countries with greater assortative mating in earnings, higher-income households may face lower costs due to stronger household compensation. State support is likely to be more generous at the lower end of the distribution in the UK due to its means-tested social assistance, while relatively equal across the distribution in other countries, especially in Germany, due to earnings-related insurance schemes. Investigating these heterogeneities would provide valuable insights and a meaningful contribution to the literature.

Our analysis is limited in several respects. First, comparability of measurement between administrative and survey data could be a potential problem for comparing estimates across countries. In Supplementary Data, we discuss in detail possible limitations. We believe there could be one major issue related to the underreporting of public transfers in survey data that might lead to underestimation of state compensation and overestimation of the cost of job loss in Germany and the UK compared to the other two countries with administrative data. Second, we evaluate household compensation mainly based on earnings of other members, but not considering the effect of familial ties and support such as cash or in-kind support from other households (e.g. parents). Ehlert's (2012) finding for singles, however, shows that such transfers provide limited compensation. As our interest is only on household incomes, we also do not consider other household responses for consumption smoothing such as dissaving, borrowing, or other financial strategies e.g. related to loan or mortgage, which could be useful extensions. Lastly, while comparing four countries gives us important comparative evidence, a more systematic assessment of institutional characteristics could be made with a more comprehensive design. For example, Mediterranean countries tend to have higher earnings penalties to job loss and whether household compensation can substitute such earning losses similar to the UK is an interesting question given that these countries have relatively strict EPL and strong family ties, but low rates of two-earner households.

Recent scholarship highlights growing public demand for state protection against the financial risks of life course events, with exposure to such risks emerging as a driver of social and political preferences (Rehm 2016; Rueda and Stegmueller 2019). Income protection matters for all income groups, but especially for individuals lacking sufficient private resources. Modern welfare states can meet these needs through a combination of social insurance and MIS adapted to the labor market and household structures of the 21st century (Atkinson 2015).

A substantial body of economic research shows that well-designed UI yields significant positive effects on re-employment speed and job quality, with minimal disincentive effects on the duration of nonemployment (Schmieder, von Wachter, and Bender 2016). However, as a short-term policy, UI often fails to adequately cover marginalized groups, particularly those in nonstandard employment (Immervoll et al. 2022). To address these gaps, UI should be complemented by generous MIS that provide a comprehensive safety net. Additionally, effective insurance against job loss requires policies that facilitate retraining and skill development and improve job matching and quality. These broader efforts recognize the critical role of market-based compensation in protecting individuals from the consequences of job loss (Von Wachter 2019).

Acknowledgments

We owe thanks to G. Paugam, M. Brewer, R. Carranza, J. Erola, B. Nolan, Z. Parolin, Z. Van Winkle, and attendants to our presentations at ECINEQ 2023, RC 28 London 2022, London Inequality Group, and Social Inequality Research Group at the University of Oxford for their valuable comments and suggestions on the draft paper. We also thank Guillaume Paugam for his help on a figure.

Supplementary data

Supplementary data is available at *SOCECO Journal* online.

Funding

We gratefully acknowledge funding under the EQUALLIVES project which is financially supported by the NORFACE Joint Research Programme on Dynamics of Inequality Across the Life-course, co-funded by the European Commission through Horizon 2020 under grant agreement No 724363.

References

Andersen, A. L. et al. (2023). How Do Households Respond to Job Loss? Lessons from Multiple High-Frequency Datasets. *American Economic Journal: Applied Economics*, **15**: 1–29.

Athey, S. et al. (2024) The Heterogeneous Earnings Impact of Job Loss Across Workers, Establishments, and Markets. *ArXiv preprint ArXiv: 2307.06684*, preprint: not peer reviewed.

Atkinson, A. B. (2015). *Inequality*. Cambrdige: Harvard University Press.

Bedük, S. (2023) 'Insured Privately? Wealth Stratification of Job Loss in the UK', *Social Inclusion*, **11**: 135–47.

Bertheau, A. et al. (2023) 'The Unequal Consequences of Job Loss across Countries', *American Economic Review: Insights*, **5**: 393–408.

Biegert, T. (2017) 'Welfare Benefits and Unemployment in Affluent Democracies: The Moderating Role of the Institutional Insider/Outsider Divide', *American Sociological Review*, **82**: 1037–64.

Biegert, T. (2019) 'Labor Market Institutions, the Insider/Outsider Divide and Social Inequalities in Employment in Affluent Countries', *Socio-Economic Review*, **17**: 255–81.

Bredtmann, J., Otten, S., and Rulff, C. (2018) 'Husband's Unemployment and Wife's Labor Supply: The Added Worker Effect Across Europe', *ILR Review*, **71**: 1201–31.

Card, D., Kluve, J., and Weber, A. (2018) 'What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations', *Journal of the European Economic Association*, **16**: 894–931.

Couch, K. A., and Placzek, D. W. (2010) 'Earnings Losses of Displaced Workers Revisited', *American Economic Review*, **100**: 572–89.

Crépon, B., and Van Den Berg, G. J. (2016) 'Active Labor Market Policies', *Annual Review of Economics*, **8**: 521–46.

Daly, M., and Ferragina, E. (2018) 'Family Policy in High-Income Countries: Five Decades of Development', *Journal of European Social Policy*, **28**: 255–70.

De Chaisemartin, C., and d'Haultfoeuille, X. (2024) 'Difference-in-Differences Estimators of Intertemporal Treatment Effects', *Review of Economics and Statistics*, 1–45.

Di Nallo, A., and Oesch, D. (2021) 'No Stratified Effect of Unemployment on Incomes: How the Market, State, and Household Compensate for Income Loss in the United Kingdom and Switzerland', *European Sociological Review*, **37**: 783–98.

Di Prete, T. A. (2002) 'Life Course Risks, Mobility Regimes, and Mobility Consequences: A Comparison of Sweden, Germany, and the United States', *American Journal of Sociology*, **108**: 267–309.

Di Prete, T. A., and McManus, P. A. (2000) 'Family Change, Employment Transitions, and the Welfare State: Household Income Dynamics in the United States and Germany', *American Sociological Review*, **65**: 343–70.

Dubois, H., and Ludwinek, A. (2015). *Access to Social Benefits: Reducing Non-Take-Up*. Luxembourg: Publications Office of the European Union.

Ehlert, M. (2012) 'Buffering Income Loss Due to Unemployment: Family and Welfare State Influences on Income After Job Loss in the United States and Western Germany', *Social Science Research*, **41**: 843–60.

Eichhorst, W., and Marx, P. (2012). 'Whatever Works: Dualization and the Service Economy in Bismarckian Welfare States'. In: Emmenegger, P. (eds.) *The Age of Dualization: The Changing Face of Inequality in Deindustrializing Societies*, pp. 73–99. USA: Oxford University Press.

Eurostat. (2022). *Database—Employment and Unemployment (LFS)*. Eurostat. https://ec.europa.eu/eurostat/web/lfs/data/database, accessed 5 Sept. 2022.

Farber, H. S. (2017) 'Employment, Hours, and Earnings Consequences of Job Loss: US Evidence from the Displaced Workers Survey', *Journal of Labor Economics*, **35**(S1): S235–S272.

Fackler, D., and Weigt, E. (2020) 'Who Buffers Income Losses After Job Displacement? The Role of Alternative Income Sources, the Family, and the State', *Labour*, **34**: 239–76.

Gangl, M. (2006) 'Scar Effects of Unemployment: An Assessment of Institutional Complementarities', *American Sociological Review*, **71**: 986–1013.

Gonalons-Pons, P., and Gangl, M. (2022) 'Regulated Earnings Security: The Relationship between Employment Protection and Unemployment Scarring over the Great Recession', *Socio-Economic Review*, **20**: 169–98.

Hacker, J. S. (2019) *The Great Risk Shift: The New Economic Insecurity and the Decline of the American Dream* (2nd ed.). Oxford University Press.

Hacker, J. S., and Rehm, P. (2022) 'Reducing Risk as Well as Inequality: Assessing the Welfare State's Insurance Effects', *British Journal of Political Science*, **52**: 456–66.

Hardoy, I., and Schøne, P. (2014) 'Displacement and Household Adaptation: Insured by the Spouse or the State?', *Journal of Population Economics*, **27**: 683–703.

Hook, J. L., and Paek, E. (2020) 'National Family Policies and Mothers' Employment: How Earnings Inequality Shapes Policy Effects Across and within Countries', *American Sociological Review*, **85**: 381–416.

Immervoll, H. 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*. No. **271**. OECD Social, Employment and Migration Working Papers.

Inanc, H., and Kalleberg, A. L. (2022) 'Institutions, Labor Market Insecurity, and Well-Being in Europe', *Social Sciences*, **11**: 245.

Kalleberg, A. L. (2018) *Precarious Lives: Job Insecurity and Well-Being in Rich Democracies*. Medford, Mass: Polity Press.

Lachowska, M., Mas, A., and Woodbury, S. A. (2020) 'Sources of Displaced Workers' Long-Term Earnings Losses', *American Economic Review*, **110**: 3231–66.

Latner, J. P. (2019) 'Economic Insecurity and the Distribution of Income Volatility in the United States', *Social Science Research*, **77**: 193–213.

Muffels, R., and Luijkx, R. (2008) 'Labour Market Mobility and Employment Security of Male Employees in Europe: 'Trade-Off' or 'Flexicurity'?', *Work, Employment and Society*, **22**: 221–42.

Quintini, G., and Venn, D. (2013) *Back to Work: Re-Employment, Earnings and Skill Use after Job Displacement*. Paris: OECD Publishing.

Rehm, P. (2016) *Risk Inequality and Welfare States: Social Policy Preferences, Development, and Dynamics*. New York: Cambridge University Press.

Roth, J. et al. (2023) 'What's Trending in Difference-in-Differences? A Synthesis of the Recent Econometrics Literature', *Journal of Econometrics*, **235**: 2218–44.

Rothstein, J., and Valletta, R. G. (2017) 'Scraping by: Income and Program Participation After the Loss of Extended Unemployment Benefits', *Journal of Policy Analysis and Management*, **36**: 880–908.

Rueda, D. (2005) 'Insider–Outsider Politics in Industrialized Democracies: The Challenge to Social Democratic Parties', *American Political Science Review*, **99**: 61–74.

Rueda, D. (2014) 'Dualization, Crisis and the Welfare State', *Socio-Economic Review*, **12**: 381–407.

Rueda, D., and Stegmueller, D. (2019) *Who Wants What? Redistribution Preferences in Comparative Perspective*. Cambridge, UK: Cambridge University Press.

Rüttenauer, T., and Aksoy, O. (2024) When Can We Use Two-Way Fixed-Effects (TWFE): A Comparison of TWFE and Novel Dynamic Difference-In-Differences Estimators. *ArXiv Preprint ArXiv : 2402.09928*, preprint: not peer reviewed.

Schmieder, J. F., von Wachter, T., and Bender, S. (2016) 'The Effect of Unemployment Benefits and Nonemployment Durations on Wages', *American Economic Review*, **106**: 739–77.

Seim, D. (2019) 'On the Incidence and Effects of Job Displacement: Evidence from Sweden', *Labour Economics*, **57**: 131–45.

Stepner, M. (2023) The Insurance Value of Redistributive Taxes and Transfers. In: *ASHEcon 2023 Conference*. ASHECON.

Upward, R., and Wright, P. W. (2019) 'Don't Look Down: The Consequences of Job Loss in a Flexible Labour Market', *Economica*, **86**: 166–200.

U.S. Bureau of Labor Statistics. (2021) *The employment situation – February 2021*. U.S. Department of Labor. https://www.bls.gov/cps, accessed 23 Sept. 2025.

Von Wachter, T. (2019) 'Unemployment Insurance Reform', *The Annals of the American Academy of Political and Social Science*, **686**: 121–46.

Western, B. et al. (2012) 'Economic Insecurity and Social Stratification', *Annual Review of Sociology*, **38**: 341–59.

Zagel, H., and Van Winkle, Z. (2022) 'Women's Family and Employment Life Courses across Twentieth-Century Europe: The Role of Policies and Norms', *Social Politics: International Studies in Gender, State & Society*, **29**: 446–76.

Ziefle, A., and Gangl, M. (2014) 'Do Women Respond to Changes in Family Policy? A Quasi-Experimental Study of the Duration of Mothers' Employment Interruptions in Germany', *European Sociological Review*, **30**: 562–81.

Socio-Economic Review, 2025, 00, 1–23
https://doi.org/10.1093/ser/mwaf066
Article