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**Parental Unemployment and the Transition into Tertiary Education: Can Institutions Moderate the Adverse Effects?**

# Parental Unemployment and the Transition into Tertiary Education: Can Institutions Moderate the Adverse Effects?

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## Abstract

We examine how parental unemployment affects children's transition to post-secondary education in different institutional contexts. Drawing on theoretical perspectives in intergenerational mobility research and sociology of higher education, we estimate the extent to which these intergenerational effects depend on social and education policies. We use data from five longitudinal surveys to analyze the effects of parental unemployment on entry to postsecondary education in 21 countries. The results of multilevel regression analysis show that in contexts that provide better insurance against unemployment, in terms of generous earnings replacement, the adverse effect of parental unemployment is alleviated. Moreover, entry gaps between youth from unemployed and employed households are smaller in tertiary education systems with more opportunity-equalizing education policies that provide more financial support to students and reduce the role of private expenditure. Some evidence also indicates that policies are more relevant for children of less-educated unemployed parents.

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## Introduction

The recent economic recession has revived interest in the intergenerational consequences of unemployment. One key question is how the unemployment experiences of parents affect educational inequalities in the next generation. Several studies have documented the adverse consequences of parental unemployment on children's school performance and educational attainment (Brand and Thomas 2014; Coelli 2011; Kalil and Wightman 2011; Lehti, Erola, and Karhula 2017; Rege, Telle, and Votruba 2011; Stevens and Schaller 2011). Although previous research has provided valuable insights into individual-level mechanisms in single countries, it has largely neglected the comparative dimension of the phenomenon. Because the adversity of unemployment is experienced differently in different contexts (Gangl 2006), the comparative perspective helps to uncover the mechanisms behind the intergenerational effects of unemployment. We explore how the effects of parental unemployment on children's transition to postsecondary education depend on the generosity of social and education policies in 20 European countries and the United States.

We draw on comparative research on intergenerational mobility, which has studied how parents' transmission of advantages and disadvantages to their children varies across countries and time, depending on the degree of equality of condition across families and equal-opportunity policies (Breen and Jonsson 2005; Breen et al. 2009; Esping-Andersen and Wagner 2012). This research offers at least two insights into the role of policies in mitigating the effects of parental unemployment. First, social policies that promote redistribution through the welfare state and are often designed to create more equality of condition across families insure households against the consequences of adverse life-course events (DiPrete 2002; DiPrete and McManus 2000). Thus, these policies can be seen as an insurance mechanism. Second, education policies can reduce the vulnerability of educational opportunity to socioeconomic background and effectively increase equality of opportunity (Breen and Jonsson 2005). These policies can be seen as an opportunity mechanism. Although often it is not empirically possible to distinguish clearly between the consequences of these policies, as greater equality of condition also typically promotes equality of opportunity, focusing on only one of them can limit the understanding of the relationship between educational outcomes and social inequality (Downey and Condron 2016).

We examine the extent to which either the insurance mechanism or the opportunity mechanism or both alleviate the adverse effects of parental unemployment on the transition to postsecondary education. This transition can be critical for young people given the demands of postindustrial labor markets, where postsecondary education is a key to an economically secure future. Overall, parental unemployment can significantly reduce household income and increase stress levels in the family, which can affect children's well-being and their educational attainment (Brand 2015). These adverse consequences of parental unemployment might be alleviated by the insurance mechanism, which provides income stability and increases perceived economic security for families facing

unemployment, as well as by the opportunity mechanism, which fosters students' financial independence by giving them an opportunity to pursue postsecondary education at low cost. In principle, we expect both mechanisms to reduce entry gaps between young people from unemployed and employed households, and note that to date there is practically no evidence on the (relative) empirical magnitude of either type of policy. Moreover, we propose that generous policies are likely to be more important for young people whose unemployed parents do not have tertiary education than for their counterparts from college-educated households affected by unemployment. This is because college-educated parents tend to have higher aspirations and be in a better objective and subjective financial situation, for example, because they have more savings or face better prospects for finding a well-paid job.

We focus on the short-term effects of recent unemployment experiences of parents on their children's transitions in the period from 2004 to 2013. We analyze transitions from school to postsecondary education, including transitions to non-tertiary education. In contrast to several previous studies on paternal unemployment, we analyze the employment status of both parents in two-parent families. We chose this focus because the change in living conditions and the extent of unemployment-related insecurity likely depends on the status of both parents (Western et al. 2012). Thus, we also include employment of mothers. Although patterns of maternal employment differ across countries, a significant share of mothers are active in the labor market in each country analyzed.<sup>1</sup> Moreover, classical labor market burdens such as a lack of childcare should be less relevant for women whose children are in the age of leaving school. Our multilevel regression analysis is based on data from five longitudinal studies: the European Union Statistics on Income and Living Conditions (EU-SILC), the Survey of Income and Program Participation (SIPP), the German Socio-Economic Panel (SOEP), the British Household Panel Survey (BHPS) and the Understanding Society study.

## Theoretical Framework

### *Effects of Institutional Contexts*

Although we focus on potential contextual effects at the macrolevel, we recognize that the decision to continue in the postsecondary education is made by students and their families given their opportunities and constraints. Rational choice models (Breen and Goldthorpe 1997; Erikson and Jonsson 1996) assume that educational choice is based on expected costs, benefits, and probabilities of success for different alternatives. Unemployment tends to significantly reduce household income, directly affecting the budget for education. Some previous studies suggest that financial constraints are a key factor in children's enrolment in postsecondary education after parental job loss (Coelli 2011 for Canada;

<sup>1</sup> Maternal inactivity rate in our sample ranges from less than 10 percent in Nordic and Eastern European countries to about third in Italy and Greece.

Kalil and Wightman 2011 for the United States). Moreover, remaining in education incurs opportunity costs for families due to the loss of immediate earnings if a young adult would otherwise enter the workforce. Besides reduced income, unemployment increases stress and conflicts in the family (Burgard and Kalousova 2015; Kalil 2013). These psychological consequences together with financial difficulties might lower children's educational aspirations (Andersen 2013).

Institutional contexts in which students and families make educational decisions vary greatly across countries and time, as do social inequalities in access to higher education (Jerrim and Macmillan 2015). Hence, we discuss how the adverse effect of parental unemployment is mitigated by the insurance mechanism (i.e., social policies that provide economic security after unemployment) and the opportunity mechanism (i.e., education policies that foster the financial independence of students from parents).

More specifically, social policies affect the extent to which households are insured against the socioeconomic consequences of adverse events that could alter their living standards (DiPrete 2002; DiPrete and McManus 2000). Importantly for unemployed households, effective unemployment insurance can support long-term income stability and give the unemployed space to seek adequate re-employment (Gangl 2004, 2006; Wulfgramm and Fervers 2015). Besides assistance in the form of unemployment benefits, unemployed households might benefit from other measures of the welfare state (e.g., housing benefit). Overall, social policies can significantly moderate inequalities in living conditions and decrease poverty rates (Brady 2005). For instance, there is some evidence that egalitarian welfare state measures are pivotal in helping to promote intergenerational mobility among families belonging to more vulnerable segments of society (Esping-Andersen and Wagner 2012). Therefore, unemployed families in institutional contexts that insure them against a significant loss of income after job loss probably have more financial resources to cover the costs of continuing studies. Nevertheless, it is important to note that the intergenerational transmission of social disadvantage is documented even in egalitarian welfare states that significantly reduce income poverty (Vauhkonen et al. 2017; Wiborg and Hansen 2009).

Generosity of social policies might also affect subjective well-being of households facing unemployment. Previous research suggests that generous unemployment protection reduces adverse psychological consequences of unemployment (Paul and Moser 2009) and also lessens the negative effects of job insecurity on individuals' subjective well-being (Sjöberg 2010). Poorer psychological well-being in families experiencing unemployment, together with financial difficulties, could reduce educational ambitions or the perceived probability of educational success (Andersen 2013; Lindemann and Gangl 2019; Peter 2016). This can affect decisions about education. Hence, more generous social policies can insure against the material and psychological consequences of unemployment (i.e., insurance mechanism), and we propose that parental unemployment would have a less adverse effect on entry to tertiary education when social policies are more generous (*hypothesis 1*).

The opportunity mechanism might also mitigate the adverse effect of parental unemployment, as the affordability of postsecondary education varies greatly across countries (OECD 2014). Besides lowering tuition costs, more extensive financial support helps to cover the living costs of students from unemployed households, promoting financial independence from their family. For instance, a comparative study by Arum, Gamoran and Shavit (2007) shows that a larger role for private funding increases social inequalities in access to tertiary education, but only net of the overall enrollment rate in tertiary education (see also Pfeffer and Hertel 2015; Triventi 2014).

Furthermore, education policy can affect the extent to which the perceived costs of education constitute a barrier for students from unemployed households. This is important because the expected costs can play a decisive role in education decisions (Breen and Goldthorpe 1997). Low expected costs could encourage students from unemployed households to continue their studies. For instance, a qualitative study by Thomsen et al. (2013) shows that in Denmark, working-class students do not perceive financial constraints as limiting their choice of tertiary education. In contrast, the question of costs is relevant in systems with a cost-sharing policy where students pay for a large share of their tertiary education, even when student grants or loans are provided. Research in the United States and the United Kingdom has shown that socio-economic background affects students' loan adversity (see the review in Callender and Mason 2017). This loan adversity probably reflects the experiences of less financially secure households, including those of unemployed households. For instance, in the United States, young adults from middle- and lower income families have higher risk for student loan debt than their more advantaged counterparts (Houle 2014). Hence, we expect that parental unemployment has a less negative effect for the entry to postsecondary studies in systems with more extensive equalization of educational opportunity, that is higher financial support for students and lower importance of private resources (*hypothesis 2*).

We recognize that in some contexts, the insurance and the opportunity mechanisms might work together, that is generous unemployment benefits are combined with generous support for education expenses. For instance, Breen and Jonsson (2007) suggest that political strategies to reduce inequality in Sweden reduced both inequality of condition and the dependence of educational opportunities on the economic resources of the family (e.g., by abolishing fees for postsecondary education). In addition, even if unemployed households are insured against significant loss of income, high tuition fees, and low student aid might still reduce their perceived opportunities to seek higher education, due to uncertainties about parents' employment prospects. Similarly, affordable higher education might not mitigate the negative effect of a significant reduction in household income after job loss.

### ***Institutional Contexts and Parental Education***

The significance of policies in mitigating the intergenerational effects of unemployment might also depend on parents' educational attainment. We propose

that different financial opportunities and educational aspirations across social backgrounds interact with the generosity of policies in moderating the effects of parental unemployment on educational choices. Overall, previous research has mostly suggested that the intergenerational effects of unemployment tend to be more severe in families with lower socioeconomic background (Coelli 2011; Oreopoulos, Page, and Stevens 2008; Stevens and Schaller 2011), even though some recent studies provided evidence for stronger adverse effects among children from advantaged backgrounds (Brand and Thomas 2014; Lehti et al. 2017). The weaker effects among advantaged households can relate to financial constraints. It is likely that college-educated parents have better prospects for gainful re-employment because of higher skills, which makes them less dependent on the generosity of policies. Moreover, they might have more savings and other assets to protect themselves against unfavorable circumstances. For instance, Conley (2001) shows that, even net of income, parental wealth has an effect on enrollment in postsecondary education in the United States. On the other hand, parental unemployment might affect strongly the financial opportunities of less-educated households if social policies do not insure households against significant income loss.

Besides the objective and subjective financial situation, aspiration to maintain social status might motivate parents with a tertiary education. The rational choice model by Breen and Goldthorpe (1997) includes a relative risk aversion principle, assuming that families seek foremost to avoid downward mobility when making educational decisions. Students aim to attain a level of education that allows them to achieve a class position at least as good as that of their parents. Based on this perspective, it is likely that young people whose parents do not have tertiary education, and who would avoid downward mobility even without entering tertiary education, have less strong incentives to continue their studies than their counterparts from college-educated families. Thus, parental unemployment coupled with non-generous policies might particularly discourage them from enrolment. Therefore, we propose that entry to postsecondary education depends less on the insurance and opportunity mechanism in the case of children of college-educated unemployed parents than for the children of unemployed parents with lower educational attainment (*hypothesis 3*).

## Data, Variables, and Method

### *Data on Transitions*

Our analysis of 21 countries is based on combined data from five longitudinal surveys. We obtained data on 18 European countries from the EU-SILC longitudinal files (2007–2014) covering educational transitions in the years 2004–2013. The data for the United States are from the SIPP panels 2004 and 2008.<sup>2</sup> We obtained British data from the BHPS using waves conducted

<sup>2</sup> We use the SIPP data instead of the PSID data because they provide accurate information about unemployment duration as the calendar for monthly activities is filled in at four-monthly intervals.



in 2003–2008 and from its successor study, the Understanding Society: The UK Household Longitudinal Study (UKHLS) using waves 2009–2013.<sup>3</sup> German data are from the SOEP, and we use waves 2002–2013. Germany and the United Kingdom are included in the EU-SILC study but because of its limitations (see below) we prefer to use established national longitudinal surveys that cover the same period as the EU-SILC. It is also important to note that all five surveys are household based and aim to provide nationally representative samples (see also table 1 and online appendix table A1).<sup>4</sup>

We first defined relevant variables similarly within every survey and thereafter created a new harmonized dataset for educational transitions. This new dataset includes young people from two-parent families who completed the upper secondary education (e.g., a high school degree) in the timeframe of survey. Therefore, despite the large sample sizes in the surveys that we use, our focus on this specific event in the life course of young adults leaves us with data for 13,769 individuals who finished secondary education and for whom we are able to observe transition outcomes during the observation window in 21 countries and in 179 country years. More than 93 percent of the respondents in the harmonized dataset are 17–20 years old.<sup>5</sup>

Our dependent variable is a dichotomous variable indicating whether the respondent entered to postsecondary studies ( $Y_{ijk}=1$ ) or not ( $Y_{ijk}=0$ ) after completing secondary education. We define respondents as enrolled in postsecondary education if their main status is “student” one year after finishing school.<sup>6</sup> Thus, our focus is on full-time students compared to all other school-leavers. Across all countries and years, about 64 percent of young people enter postsecondary studies after completing secondary education. It is important to note that we are interested in all types of postsecondary studies, including studies in academic and applied higher education as well as in non-tertiary postsecondary education. Thus, we analyze the overall propensity to invest in further education for youth from households affected by unemployment. We recognize that parents’ unemployment might affect which type of postsecondary education their children choose but unfortunately, EU-SILC longitudinal data do not contain any information that would enable us to distinguish further between different types of postsecondary trajectories.

Another important limitation is that the EU-SILC longitudinal files do not include data about the type of secondary education that respondents have

<sup>3</sup> We excluded UKHLS ethnic boost sample and data for Scotland because its higher education policy differs somewhat from rest of the United Kingdom.

<sup>4</sup> These older respondents are aged 21–24 years. Additional analysis (not presented) shows that the negative effect of parental unemployment is slightly more pronounced for this small group.

<sup>5</sup> Due to small sample sizes for school leavers with unemployed parents ( $N < 10$ ) or the quality of employment calendar data for parents, it was not possible to include data from all European countries that participate in the EU-SILC in the present analysis.

<sup>6</sup> Due to EU-SILC data limitation, we had to exclude from the category “students” young people whose main activity was employment already at the start of their studies. Thus, we exclude apprenticeships and other work-related education. Furthermore, we presumed that the academic year in upper secondary school is finished by July.



**Table 1. Overview of Surveys Used in Analyses**

Survey	Organizer	Data used in analyses	Collection of data	No. of young people in harmonized dataset prepared for this study
EU-SILC	Coordinated by Eurostat, surveys are conducted by national statistical institutes in every EU member state	Longitudinal files 2007–2014	Data are collected annually over a 4-year period for each household, panels rotate and a new panel starts every year; data are mostly from interviews but some countries also use register data	10,588
SIPP	United States Census Bureau	Panels starting 2004 and 2008	Interviews were conducted at 4-month intervals over a 4-year panel period	1,422
BHPS and its successor, Understanding Society: UKHLS	ISER at the University of Essex	BHPS waves from 2003–2008 UKHLS waves from 2009–2013	Annual interviews; original sample from 1991 + samples/households entering at later time points (we excluded UKHLS ethnic boost sample)	1,000
SOEP	DIW	Waves from 2002–2013	Annual interviews; original sample from 1984 + samples/households entering at later time points	759

attained. However, the percentage of young people with upper secondary education that does not allow direct entry to any kind of tertiary education is rather low in most countries included in our analysis. In addition, several countries have developed the system of non-tertiary postsecondary education for further vocational studies which students from vocational schools can enter.<sup>7</sup> We are

<sup>7</sup> Belgium, Greece, Spain, and Poland have a relatively high number of graduates from ISCED-97 3C programs, but these countries provide clear options for postsecondary non-tertiary studies. However, the direct access to further studies is more limited in the Czech Republic, Hungary, and France where 28, 29, and 22 percent, respectively, of graduates at age 18–20 finished studies at ISCED 3C level (Eurostat 2016a; Eurydice 2016). We conducted additional analysis excluding these three countries from our models. The coefficients for the main effects and interactions between macrovariables and parental unemployment had similar size and significance levels. In addition,

also interested in these further study options (see above). It is important to note, however, that our sample for the United Kingdom, Germany, and the United States does include only those students who were in fact eligible to enter tertiary education, because the national panel data that we use for these three countries each contain the detailed degree data needed to fully restrict the samples.

### ***Individual-level Variables***

Our main independent variable of interest at the individual level is parental unemployment.<sup>8</sup> We focus on recent longer-term unemployment, as short-term exposure to unemployment is less likely to induce the significant financial and psychological consequences of unemployment that we are focusing on. We code parents as unemployed if they had been unemployed for at least 6 months in the 18 months prior to their child completing school. We obtained this information from a monthly calendar on parents' employment status but data are missing for some parents. In such cases, we also defined as unemployed parents who stated that their current main activity was unemployment in the year their child completed school and if they also did not work year before (about 8 percent of all unemployed parents are defined based on their current status in two consecutive waves). Because families are pooling economic resources across individual family members, so that other earners in the family may partially compensate the negative impact of another's job loss (Ehlert 2012), it is important to take into account the employment status of both parents. More specifically, we compare young people from four types of economically active dual-parent households as follows:

- Dual-earner unemployed households: one parent is unemployed and the other employed, so that unemployment affects one earner in dual-earner households, but not both earners simultaneously (9.7 percent of our sample).

we tested the interaction effects between parental unemployment and vocational orientation of secondary education (not presented). These effects were not significant. Thus, the effect of recent parental unemployment on entry to postsecondary education seems to not differ systematically between countries with more or less vocationally oriented education systems. Moreover, we used information about the school track in the SOEP to test the effect of parental unemployment among youth who attained education classified as ISCED 3B (i.e., graduates of vocational school or training, about 10 percent of whom continue studies). However, we observe a more adverse effect of parental unemployment among graduates of the academic track than among those who complete vocational studies (unemployed–employed entry gaps were about 9 vs. 3 percent; the interaction between school track and parental status was not significant but indicated a more negative effect for graduates of the academic track, not presented). It could be that graduates of vocational training are already economically more independent from their parents. If this is the case also for other countries, then the effect of parental unemployment in our study might be somewhat conservative.

<sup>8</sup> EU-SILC, UKHLS, and BHPS defined people as unemployed based on their own perception of their main activity. Respondents could choose unemployment from the list of employment status categories, which included also different categories for inactivity (e.g., retirement, long-term illness). Similarly in the SIPP data, we coded non-employed persons who said they are unable to find work as unemployed. The SOEP asks respondents to report the months of registered unemployment, which might underestimate the number of unemployed compared to other databases.

- Main earner unemployed households: one parent is unemployed and the other also unemployed or inactive, so that unemployment affects either the single earner in the family or both earners simultaneously (3.8 percent).
- Single-earner households: one parent is employed and other inactive (21.3 percent).
- Dual-earner households: both parents are employed (65.2 percent).

To minimize any confounding role of family type, we deliberately do not include young people from single-parent families and from households without any active parent. We also did not include individuals with missing data on parental employment status (6 percent). Our reference group is youth from dual-earner households, as they are typically the most advantaged economically. We are interested in the extent to which some contextual factors can equalize the educational chances of young people facing an incidence of parental unemployment with the opportunities provided in dual-earner households, conditional on parental education, parental income, and other family characteristics. An alternative is to compare youth from unemployed households with those from single-earner households. However, besides a voluntary choice to be a homemaker, the possible reasons for inactivity include retirement, long-term sickness or disability, participation in education or training or being a homemaker who has given up active job search due to inability to find a job. Thus, it would be difficult to argue that the difference between youth from single-earner and main earner unemployed households is attributable to unemployment.

Our main control variables are parental education and income (table 2). The *highest level of education* attained by parents evidently relates to cultural and educational resources available in the family and may also index differences in educational aspirations across families. For parental income, we use *household equivalised disposable income* after tax and other deductions and take into account household composition using the modified OECD equivalence scale. We use the household income for the calendar year before the year in which upper secondary education is completed. Due to differences across countries in the cost of living, we adjusted household incomes using purchasing power parities provided by Eurostat (2016a,b) to make household incomes comparable.<sup>9</sup>

Other control variables include gender and the number of children in the household younger than 16 in the year the student completed secondary education. Table 2 shows that the number of children varies only marginally across household types. Moreover, some countries in our sample had compulsory military service in the period 2004–2013, so that respondents might continue

<sup>9</sup> We do not use income at transition year because: (1) young people who enter the labor market instead of continuing their studies start to contribute to household income; (2) young people continuing in tertiary education are more likely to move for their studies and form a new household with low income (see also Groh-Samberg and Voges 2014). Moreover, although missing income data are mostly imputed by the data providers (Eurostat 2019), our sample included about 2 percent of respondents with missing values for income that we imputed using linear interpolation based on parents' occupation by parents' educational level, country, and transition year.

**Table 2. Distribution of Individual-Level Variables by Household Type**

	Dual-earner	Single-earner	Dual-earner unemployed	Main earner unemployed
Entry to postsecondary (%)	68.1	61.4	60.9	46.8
Male (%)	50.3	49.5	51.4	52.0
Military (%)	2.5	1.7	1.5	1.0
Parental education (%)				
Lower secondary or less	5.4	14.7	13.6	29.9
Upper secondary	44.4	46.2	55.5	52.0
Postsecondary non-tertiary	8.4	9.5	7.8	7.5
Tertiary	41.8	29.6	23.1	10.6
Number of children aged < 16 in the household (%)				
0	56.4	56.2	59.0	52.2
1	30.5	27.3	30.1	29.1
2	9.9	10.6	9.0	12.5
3 or more	3.2	5.9	1.9	6.2
Income (mean, logged measure)	9.50	9.27	8.98	8.50
SD	(0.70)	(0.86)	(0.72)	(1.02)
N	8,974	2,937	1,339	519

their studies only after the end of their military service. To account for this possibility, we included respondents who finished compulsory military service at least one year before the end of the survey observation window in the sample of youth at risk of a transition to the postsecondary education system. The control variable for respondents' military service was not significant in our models, however. Also, although obviously desirable in principle, we have no opportunity to control for school performance, as the EU-SILC data offer no information in this area.<sup>10</sup>

### **Contextual Variables**

We include several macrovariables that describe the national social and education policies in our analysis: an overview of the main contextual variables is

<sup>10</sup> Note that if weaker performance is the consequence of parental unemployment, the principal (causal) inferences are unaffected: unobserved performance (change) is a mediator (a generative mechanism) of the impact of parental unemployment on children's transition to postsecondary education.

provided in table 3.<sup>11</sup> Among these, *the indicators for the generosity of social transfers to unemployed households* represent the insurance mechanism. We measure generosity with short-term and long-term earnings net replacement rates for households affected by unemployment, at the initial phase of unemployment and in the 60th month of benefit receipt. We use OECD (2016) calculations of the net replacement rates for a one-earner married couple with two children after tax and including unemployment benefits, social assistance, family, and housing benefits (the previous wage of the unemployed spouse is set to the average). We chose to use the net replacement rates for a one-earner married couple to address the generosity of social policy for more vulnerable households. These measures vary across years within countries. Table 3 shows that on average across the years, the long-term replacement rates range from a few percent in Italy and Greece to more than 70 percent in Finland and Slovenia. The cross-country variance in short-term earnings replacement is much smaller: it is the lowest in Greece (39 percent), Poland (51 percent), and the United States (53 percent) and the highest in Slovenia (83 percent).

The opportunity mechanism derives from policies that enhance equality of opportunity in education. To measure the extent of equalizing educational policies, we use indicators for the level of *financial support to students* and the level of *private expenditure* in tertiary education. First, financial support to students is measured as a percentage of financial aid to students from the total public expenditure on tertiary education (data from Eurostat 2016a). Financial aid includes transfers, social benefits, and loans to students. This indicator varies over time within countries. Not surprisingly, table 3 shows that financial aid to students is at the highest level in the United Kingdom (30 percent) and in the United States (25 percent)—countries where students pay fees for their tertiary education—as well as in Sweden (26 percent). Second, the level of private expenditure is measured as a percentage of private expenditure on tertiary education institutions from the total expenditure on tertiary education. OECD (2018) provides the data for the years 2005 and 2008–2014. To fill in missing data gaps, we used the year 2005 measure for 2004 and 2006, and the year 2008 measure for 2007. Moreover, Hungary, Austria, and the United Kingdom had missing values for some additional years while Greece had no data available after 2005. Since the OECD did not provide data for Bulgaria, we used World Bank data for the year 2010 (World Bank 2015). Thus, the indicator for private expenditure varies over time, except for Greece and Bulgaria. On average, the rates of private expenditure are the lowest in Greece, Finland, Austria, Belgium, Sweden, and Germany (table 3). In contrast, tertiary education systems in the United States, the United Kingdom, Bulgaria, Latvia, Portugal, and Hungary rely the most on private funding. It is also important to note here a specificity of some education systems in Central and Eastern European countries, which offers applicants who fail to secure a state-funded study place parallel options

<sup>11</sup> We do not grand center any continuous variable at micro- or macrolevel in our analysis. Grand centering affects intercepts and their variance, but interpreting them is not a focus of this study.

**Table 3. Measures of Institutional Context**

	Insurance mechanism: level of social transfers to unemployed (mean)		Opportunity mechanism: education policies (mean)	
	Long-term earnings replacement <sup>a</sup>	Short-term earnings replacement <sup>a</sup>	Financial aid to students <sup>b</sup>	Share of private expenditure in tertiary education <sup>c</sup>
Finland	76	76	15	4
Sweden	66	66	26	11
United Kingdom	69	70	30	43
United States	36	53	25	61
Germany	64	74	21	13
Belgium	57	58	14	10
Austria	68	69	13	5
France	55	68	8	17
Italy	1	69	20	30
Spain	33	74	9	22
Greece	4	39	3	3
Portugal	49	77	13	36
Bulgaria	39	69	12	46
Slovenia	73	83	21	17
Czech Republic	60	66	4	20
Slovakia	40	58	16	27
Hungary	49	65	14	35
Poland	58	51	6	27
Latvia	64	77	10	38
Lithuania	60	76	13	31
Estonia	41	60	9	24

<sup>a</sup>Sources: [OECD \(2016\)](#),

<sup>b</sup>[Eurostat \(2016a\)](#),

<sup>c</sup>[OECD \(2018\)](#) and [World Bank \(2015\)](#).

Note: Reported figures are averages over period 2004–2014.

to enroll at the public universities for a tuition fee ([Kogan, Gebel, and Noelke 2012](#)).

We include the level of financial support to students and the level of private expenditure simultaneously in our models to reflect the affordability of tertiary

education. We also considered other measures but did not find suitable alternatives because comparative quantitative data on the affordability of higher education are rather limited. For example, an international higher education affordability score (Usher and Medow 2010) is only available for seven countries in our analysis. However, for these seven countries, the affordability score correlates strongly with measures of private expenditure ( $p = -.969$ ). Moreover, data from the Eurydice (2013) and OECD (2014) show that most countries in our sample provide to a sizable proportion of students (at least 40 percent of all students) an option to study for free or for low tuition in the first cycle of tertiary education. The only exceptions are the United Kingdom and the United States, which leaves us with limited variance to directly assess the effect of tuition costs on access to higher education.

Finally, we take into account that the structure of the education system and the macroeconomic contexts differ across countries. Therefore, all estimated models include control variables for the *youth unemployment rate*, the *overall participation rate*, the *vocational orientation* of upper secondary education, and the *age of selection* in the education system. More specifically, we use a time-varying indicator for the unemployment rate among youth with the secondary level of education (data from Eurostat 2016b; the United States Department of Labor 2014). However, we do not additionally control for the overall unemployment rate in the labor force because it is highly correlated with youth unemployment rates. We include the time-varying indicator for the overall participation rate in tertiary education because educational expansion could potentially reduce inequalities in access to tertiary education, but, admittedly, a significant change is unlikely in the short timeframe of our study.<sup>12</sup> This indicator is based on the percentage of young people aged 20–24 years enrolled in the tertiary education from the total youth population (obtained from Eurostat 2016a). We define vocational orientation as a percentage of pupils enrolled in vocational studies at the level of upper secondary education, which is a time-varying indicator (Eurostat 2016a). We also include a time-invariant control for the mean age of first selection in each country's education system, using data obtained from the PISA 2012 study (OECD 2013), as social inequalities in school achievement tend to be larger in systems that sort students earlier (Werfhorst and Mijs 2010).

## Methods

We use three-level linear probability models to test our hypothesis (Breen, Karlson, and Holm 2018). We nest secondary school graduates ( $i$ ) in transition years ( $j$ ) and transition years in countries ( $k$ ) to estimate the predicted

<sup>12</sup> Because the increasing importance of private expenditure is often related to expansion of the tertiary education sector (Arum et al. 2007), we chose to control for the participation rate by treating it as a characteristic of the education system.



probability of entry into tertiary education ( $Y_{ijk}$ ).<sup>13</sup> The three-level clustering of time and country data should reduce downward biases in standard errors (see Schmidt-Catran and Fairbrother 2016). Our main interest is with the cross-level interactions between parental unemployment and context-level variables, which are located at the level of country-year. Our strategy is to estimate separate models with cross-level interaction between unemployment and (1) long-term earnings replacement rate, (2) short-term earnings replacement rate, (3) financial aid to students and share of private expenditure in tertiary education.

We start with an empty model and find based on intraclass correlations that clustering accounts for about 9 percent of variance at the country level and 10 percent at the country-year level. Next, we compile the individual-level model as follows (Rabe-Hesketh and Skrondal 2012):

$$\Pr(Y_{ijk}) = \pi_{0jk} + \pi_{1jk}U_{ijk} + \pi_2X_{ijk} + \epsilon_{ijk} \quad (1)$$

The individual-level intercept  $\pi_{0jk}$  and the random slope  $\pi_{1jk}$  of parental unemployment  $U_{ijk}$  vary between years and countries. We also include a set of individual-level control variables  $X$ . The year-level models for the intercept and slope are:

$$\begin{aligned} \pi_{0jk} &= \beta_{00k} + \beta_{01}C_{jk} + \beta_{02}W_{jk} + r_{0jk} \\ \pi_{1jk} &= \beta_{10k} + \beta_{11}C_{jk} + r_{1jk} \end{aligned} \quad (2)$$

The upper equation models intercept as a function of a year-level contextual variable ( $C$ ) and the control variables ( $W$ ). These control variables take into account the basic structural differences between countries. The lower equation models the coefficient describing the relationship between parental unemployment ( $U$ ) and entry to tertiary education ( $Y$ ) from the individual model as a function of the contextual variable ( $C$ ), that is generosity of social transfers or financial aid to students or private expenditure in tertiary education. Hence, the term  $\beta_{11}C_{jk}$  indicates the cross-level interaction in reduced form. This tests our hypothesis about the dependence of parental unemployment on country-year-level contextual variables in affecting entry to postsecondary education. Finally, we include a country-level specification for the intercept and slope as the third level of the model:

$$\begin{aligned} \beta_{00k} &= \gamma_{000} + \gamma_{001}Z_k + u_{0k} \\ \beta_{10k} &= \gamma_{100} + \gamma_{101}Z_k + u_{1k} \end{aligned} \quad (3)$$

This upper equation models the intercept from the year-level model as a function of the control variables ( $Z$ ). In the slope equation for the coefficient  $\beta_{10k}$  of parental unemployment, the term  $\gamma_{101}Z_k$  is the cross-level interaction

<sup>13</sup> We tested alternative models with country-fixed effects and varying intercepts and slopes at the country-year level. These results were very similar to the results we present.

between parental unemployment and age of selection in the country's secondary school system, which we treat as a contextual control variable in the present analysis, to control for any potential dependence between the incidence of parental unemployment and the characteristics of the secondary school system. In addition, our final models are including random slopes only for main earner unemployed households because the slopes for dual-earner unemployed households did not vary significantly on the year or country level (see table A2 in the online appendix). To ensure model convergence under the constraint of moderate sample sizes within countries, we adopt the general principle of keeping the multilevel specifications as parsimonious, as seems substantively defensible in the present paper.<sup>14</sup>

## Empirical Results

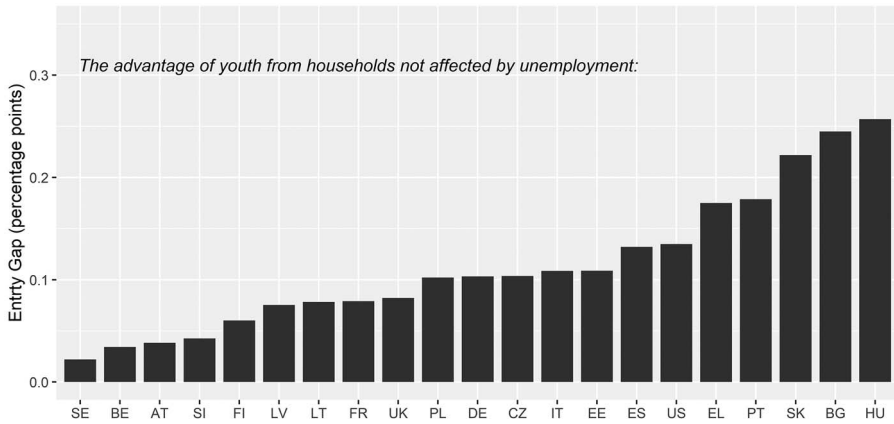
To emphasize the potential role of parental unemployment for educational attainment, we start our analysis with basic descriptive statistics for the difference in postsecondary education entry rates between youth from unemployed and employed households. For both readability and small sample sizes in some countries, we do not distinguish between the two types of unemployed households. Figure 1 shows that the gaps between transition rates of students from employed and unemployed households vary considerably across countries. These gaps, that is the potential adverse effects of parental unemployment, are largest in some Eastern and Southern European countries, notably in Hungary, Bulgaria, Slovakia, Portugal, and Greece. Also, the gaps in transition rates are relatively large in the United States. In accordance, table 3 with measures for institutional context showed that long-term earnings replacement rates are rather low in some of these countries—Greece, the United States, Bulgaria, and Slovakia. Similarly, the share of private expenditure in tertiary education is relatively high in the United States, Bulgaria, Portugal, and Hungary. Figure 1 also indicates that the gaps between transition rates of students from employed and unemployed households are smallest in Sweden and Belgium, where social and education policies are relatively generous (table 3). These descriptive results illustrate that the effects of parental unemployment probably vary across contexts. In multilevel analysis, we test which social and educational policies can mitigate the effects of parental unemployment.

### ***Regression Estimates for the Effect of Parental Unemployment on Transition Rates***

Before we turn to the discussion of these macrolevel influences, we note that the individual-level results of multilevel linear probability models provide clear

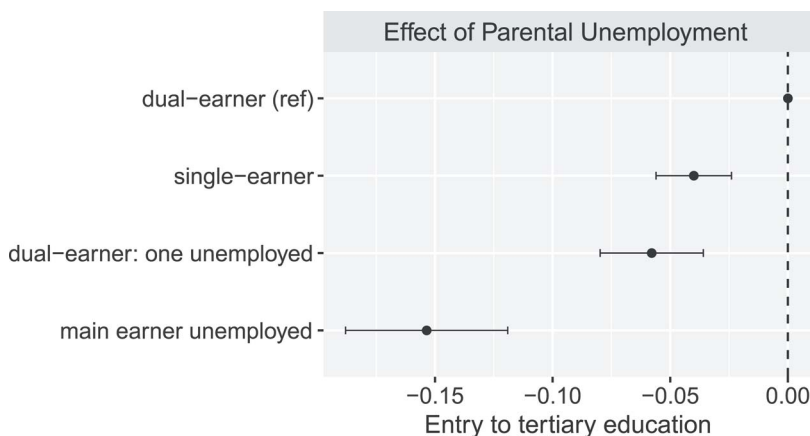
<sup>14</sup> Our sample sizes in several countries are too small to estimate a set of heterogeneous (treatment) effects by countries, as for example, in matching estimators applied at the level of education groups by countries. In contrast, multilevel models are parametric regression models where (linear) functional form assumptions are used to smooth over areas of sparse data. We use this feature to avoid including effects to describe single country cells (i.e., country-specific regression coefficients) in the fixed part of the model.

**Figure 1. Postsecondary education entry gaps between youth from employed and unemployed households.**



evidence for the negative effect of parental unemployment (figure 2 and table A2 in online appendix for detailed results). On average across countries and transition years, children of unemployed parents have clearly lower chances of continuing in postsecondary education than students from dual-earner families. The most disadvantaged groups are youths from households where the main earner is unemployed and the other parent also does not work. Moreover, youth from dual-earner unemployed households—that is with one employed and one unemployed parent—are also less successful than their counterparts from dual-earner households, although the gap with youth from single-earner families without an unemployed parent is small. The model presented in figure 2 includes household income. Overall, the effect of unemployment reduces only slightly after we control for income, even though households' financial resources have an evident effect on the continuation of studies (see table A2 in online appendix). While the inclusion of parental income in our regression specification may appear debatable on theoretical grounds—the variable can be argued to be capturing in part income losses brought about by parental job loss, and could be regarded partly as a mediator rather than a confounding factor—our empirical evidence reveals this to be a moot point. In addition, we estimated a model using income from two years before completing secondary education (available for 64 percent of our sample) and the findings were similar (online table A2).

Finally, the relatively limited set of controls that is available in our comparative data may raise the broader concern that some unobserved family characteristics (e.g., psychological traits or relationship quality in the family) might confound the estimates we report in this study. While it is impossible to entirely rule this out, it is reassuring to note that our findings for the adverse effect of parental unemployment are consistent with several single-country studies that could draw on more comprehensive survey data to identify the causal effect of parental unemployment (Brand and Thomas 2014; Coelli 2011; Lehti et al. 2017). By extrapolation, we therefore also consider it unlikely that our estimates for the

**Figure 2. The effect of parental unemployment on entry to postsecondary education.**

**Note:** Coefficients from multilevel linear probability model (full model and simpler versions of this model are presented in table A2 in online appendix). Model controls for gender and military service, parental education, the number of children, and household income. The reference category is dual-earner households presented by the line crossing the horizontal axes at 0.

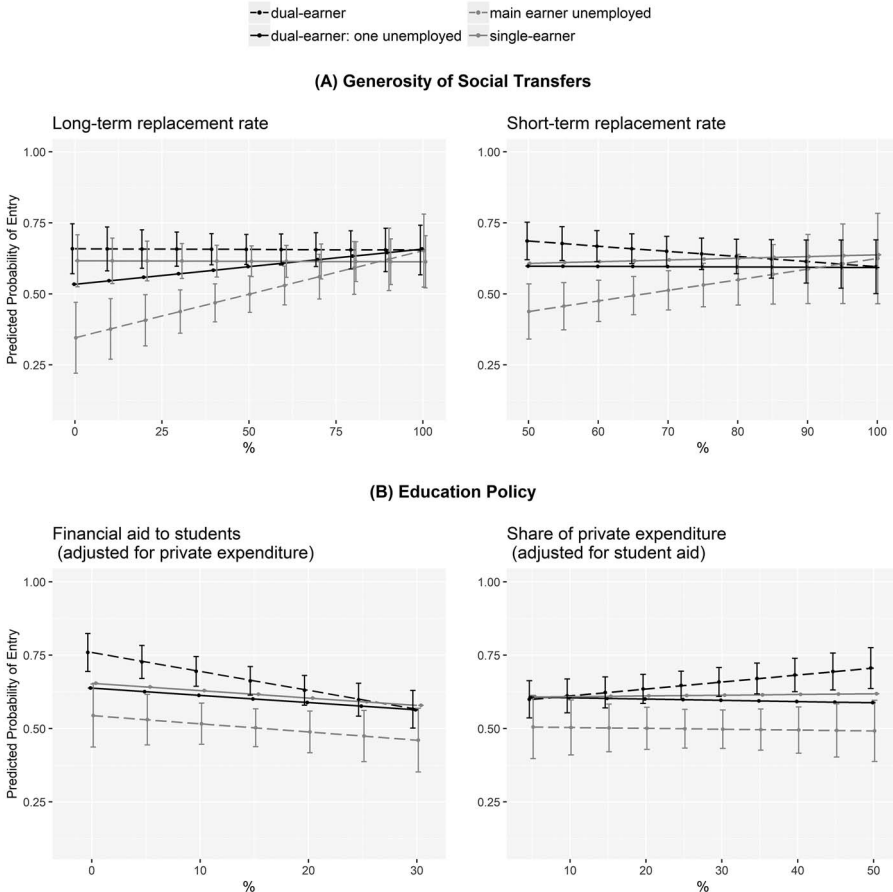
interaction between parental unemployment and institutional contexts, which form the main contribution of our study, would be severely affected by omitted variable bias.

### Contextual Effects

We turn to our central question, namely how the effect of parental unemployment depends on the institutional context and what features of welfare states and educational systems may mitigate the adverse impacts of parental unemployment on students' entry to postsecondary education. To explore this, we add cross-level interactions between parental employment status and key macrolevel variables to our individual-level model. We present the empirical results for these cross-level interactions graphically as predicted probabilities in figure 3, and we also document the corresponding coefficient estimates for the cross-level interactions in table 4.

It was already apparent from our descriptive results in figure 1 that the impact of parental unemployment on the next generations' educational transitions might vary across countries, but this can now be corroborated more formally from our regression analysis. Specifically, as we expected in *hypothesis 1*, we find that the insurance mechanism moderates the adverse effect of parental unemployment on entry to postsecondary education. More generous social policies, measured in terms of a higher long-term net replacement rate for unemployed households, indeed improve access to education for children from families affected by unemployment (see the top left graph in figure 3 and Model 1 in table 4, respectively, and note that the effect size in table 4 denotes one percentage point change in each of the tested macrolevel variables). The generosity of

**Figure 3. Interacting effects of household type and institutional context on entry to postsecondary education.**



**Note:** Predicted probabilities with 90 percent confidence intervals; multilevel linear probability models (see also table 3) that control for (1) individual level: household type, gender, military service, parental education, number of children in the household, household income; (2) macrolevel: main effects of interacted macrolevel variables, youth unemployment rate, overall participation rate, vocational orientation, age of selection, and its interaction with household type. Sample includes 13,769 respondents, 179 country-years, and 21 countries. For readability, some categories miss confidence intervals if for most of the measurement points their confidence intervals did not differ from the reference category.

social transfers affects transition rates particularly for students from main earner unemployed households where no parent is employed. From the predicted probabilities provided in figure 2 it is apparent that the entry gap between youths from these families and dual-earner households is statistically not significant when the long-term earnings replacement rate covers more than 60 percent of previous earnings. Moreover, social transfers that, in the long-term, replace more

**Table 4. Interacting Effects of Parental Unemployment and Institutional Context on the Entry to Postsecondary Education**

	Model 1	Model 2	Model 3	Model 4
Household type x long-term earnings replacement (ref. dual-earner)				
Single-earner x long-term	0.000			-0.001
	(0.000)			(0.001)
Dual-earner: one unemployed x long-term	0.001*			0.001
	(0.001)			(0.001)
Main earner unemployed x long-term	0.003**			0.003*
	(0.001)			(0.001)
Household type x short-term earnings replacement (ref. dual-earner)				
Single-earner x short-term		0.002*		
		(0.001)		
Dual-earner: one unemployed x short-term		0.002		
		(0.001)		
Main earner unemployed x short-term		0.006*		
		(0.002)		
Household type x financial aid (ref. dual-earner)				
Single-earner x financial aid			0.004**	0.004**
			(0.001)	(0.001)
Dual-earner: one unemployed x financial aid			0.004*	0.004*
			(0.002)	(0.002)
Main earner unemployed x financial aid			0.004	0.003
			(0.003)	(0.003)
Household type x private expenditure (ref. dual-earner)				
Single-earner x private expenditure			-0.002**	-0.002**
			(0.001)	(0.001)
Dual-earner: one unemployed x private expenditure			-0.003**	-0.003*
			(0.001)	(0.001)
Main earner unemployed x private expenditure			-0.003	-0.003

*(Continued)*

**Table 4. continued**

	Model 1	Model 2	Model 3	Model 4
			(0.002)	(0.002)
<i>Country-level variance</i>				
Slope: main earner unemployed	0.000	0.003	0.003	0.000
	(0.003)	(0.005)	(0.007)	(0.000)
Intercept	0.021	0.020	0.017	0.018
	(0.007)	(0.007)	(0.006)	(0.006)
<i>Country-year-level variance</i>				
Slope: main earner unemployed	0.004	0.004	0.005	0.004
	(0.006)	(0.005)	(0.006)	(0.006)
Intercept	0.002	0.002	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Covariance	0.001	0.002	0.001	0.001
	(0.001)	(0.001)	(0.002)	(0.002)

Note: Coefficients from multilevel linear probability models. Standard errors are in parentheses. Models control for (1) individual level: household type, gender, military service, parental education, number of children in the household, and household income; (2) macrolevel: main effects of interacted macrolevel variables, youth unemployment rate, overall participation rate, vocational orientation, age of selection, and its interaction with household type. Sample includes 13,769 respondents, 179 country-years, and 21 countries.

Statistical significance levels at

<sup>+</sup>  $p < 0.1$ ,

\*  $p < 0.05$ ,

\*\*  $p < 0.01$ ,

\*\*\*  $p < 0.001$  based on two-tailed tests.

than 70 percent of previous earnings are able to reduce the substantive magnitude of this entry gap below 10 percentage points. In addition, a similar entry gap is evident when comparing main earner unemployed households with single-earner employed households. The likelihood of enrolment differs significantly between these two groups when the level of long-term earnings replacement is below 50 percent. Although the insurance mechanism is somewhat less relevant for the transition chances of young people from families with one employed and one unemployed parent, their transition rates also increase if long-term earnings replacement is more generous.

The short-term earnings replacement rate for unemployed households also matters. In most countries and years, initial replacement rates after the job loss are at least 50 percent of the previous income for the average household (table 4). Figure 3 shows that in comparison with young people from dual-earner families, youth from families where the main earner is unemployed and the other parent is also not working have significantly lower chances of continuing studies if the short-term replacement rate is less than 70 percent. In contrast, the chances of



youth from unemployed households with one employed parent depend less on the short-term replacement rates. In sum, our empirical findings provide some support to *hypothesis 1*: the insurance mechanism that increases the financial security of households and that reduces perceived economic strain seems to alleviate some of the negative effects of parental unemployment on young adults' entry to postsecondary studies. However, we also find that generous transfer policies matter especially for families where the main earner is unemployed and other parent is also not working, whereas these policy effects on dual-earner unemployed families where one parent remains employed are more limited.<sup>15</sup>

Besides the insurance mechanism, our results also indicate that the opportunity mechanism has a role in alleviating the adverse effects of parental unemployment. We measured the affordability of postsecondary education with the extent of the financial aid to students and the share of private expenditure in tertiary education. We put these measures into a single model because the two effects might cancel each other out: generous financial aid might not reduce inequality if tuition fees remain high.

Our empirical findings are that education policy that provides more financial aid to students reduces differences in postsecondary entry rates between youth from different types of households (figure 3 and Model 3 in table 4). Table 4 shows that the entry gap between young people from dual-earner unemployed families and their counterparts from dual-earner employed families depends on the supportiveness of the system. This gap is about 12 percentage points when aid is at the minimum level but decreases with the increase in financial support. Moreover, figure 3 shows that the entry gap between young people from main earner unemployed families and dual-earner families reduces significantly when financial support to students is higher (although the cross-level interaction in table 4 does not reach statistical significance). However, the disadvantage of students from main earner unemployed households remains around 10 percentage points even when generous financial support is provided. Although our main interest is the gaps between different types of households, we note that the entry rates are higher for youth from dual-earner households if financial aid to students is lower (figure 3), possibly because the overall immediate postsecondary education entry rates are somewhat higher in such contexts, for example, in Poland, Spain, Greece, or Estonia. In sum, however, our findings provide some support to *hypothesis 2* suggesting that education policies supporting the financial independence of students moderate the adverse effect of parental unemployment. However, it is important to note that financial aid also includes loans to students. Hence, from the longer life-course perspective, the intergenerational transmission of disadvantage might still occur in contexts

<sup>15</sup> We tested models without income measures (table A8 in online appendix) and found similar interaction terms between parental unemployment and replacement rates. We also estimated preliminary models testing whether the generosity of unemployment benefits would mitigate the negative effect of income reduction among employed families, but found little evidence for this (table A9 in online appendix).

where students from unemployed households need to take on greater debt to pursue a tertiary degree.

In addition, we also find that a higher share of private expenditure in tertiary education widens the entry gap between youths from dual-earner households and their peers from households affected by unemployment. Although the importance of private resources tends to be greater in countries with a larger tertiary education sector, [table 4](#) shows that youth from families with unemployment experience likely benefit less from such opportunities, while the entry rates of their peers from dual-earner families are increasing. The gap between young people from dual-earner unemployed households (with one working parent) and dual-earner employed households widens as private resources become more important. In addition, [figure 3](#) shows that young people from households where the main earner is unemployed lag behind others when the importance of private expenditure increases (but, again and possibly due to small sample sizes, the interaction in [table 4](#) does not reach statistical significance). Thus, tertiary education systems that rely more on private finances seem to enhance social inequalities for families affected by unemployment, which provides further support to our arguments surrounding *hypothesis 2*.

Interestingly, our results show that more supportive education policies also increase transition opportunities for young people from single-earner families where parents did not experience longer term unemployment. Although there are various reasons for inactivity, we suggest that less financial insecurity, or even possible stressful conditions that can be the cause of the inactivity (long-term illness or discouraged worker), might affect the educational transitions of young people from these households.

All that said, one evident limitation of our analysis is that, not the least due to data constraints in the EU-SILC survey, we focus on the year after completing upper secondary education. Overall, the entry rates in this relatively short period are lower in more supportive systems ([Eurostat 2018](#)). Hence, inequalities might appear in later transitions in supportive systems because financial aid can motivate children of unemployed parents to enter more quickly into tertiary education, while securing financial independence might be less relevant for youth from dual-earner families. Therefore, we used the limited sample available to us and tested preliminary models using student status two years after completing studies (online appendix figure A3). The findings showed similar tendencies for replacement rate and education policy. Yet, we emphasize that although our results provide first evidence about the interaction between parental unemployment and the affordability of postsecondary education, this question deserves more detailed analysis in the future.

Finally, we also tested a model that included the effects of education policy and social policy simultaneously. Estimation results for Model 4 in [table 4](#) are entirely in line with our previous findings. The chances of young people from main earner unemployed households depend foremost on the generosity of replacement rates. Hence, the insurance mechanism that reduces economic insecurity for parents seems particularly important for students from these households. In contrast, for young people from dual-earner households affected by unemployment it is the

opportunity mechanism that clearly increases equality in access to postsecondary education, whereas the insurance mechanism seems to not play as decisive a role. One reason could be that the direct financial consequences of unemployment are less severe for households where at least one parent remains employed.

Extending this line of reasoning it might seem particularly unfortunate that we chose to exclude single parents, which probably excludes the economically most vulnerable families from our analysis. To assess the sensitivity of our key findings to this restriction, we re-estimated our models on the full sample of families that includes single parents, and found similar cross-level interactions (see the online appendix A4 for detailed results). Moreover, online table A5 also provides initial evidence that the effects of unemployment are not as adverse in single-parent households as in main earner unemployed households. This is most likely because children living in single-parent households often still have a non-residential parent who is employed and can support the continuation of their studies. However, the available samples of unemployed single-parent households are unfortunately too small in most countries to allow us to investigate this point in any greater empirical detail.

### ***The Interaction between Parental Education and Institutions***

As the final step we evaluate whether the impact of either the insurance or the opportunity mechanism might depend on parents' level of education. We proposed in theoretical part that successful educational trajectories might depend more strongly on adequate institutional support to moderate the adverse effects of parental unemployment for students from lower-educated families, whose educational aspirations or financial capacities might be less resilient to adverse events like job loss. To test our corresponding hypothesis 3, we estimated our interaction models separately for college-educated parents and for parents without tertiary education. Table A6 in the online appendix provides further models by household type that test whether the differences between educational groups presented in [table 5](#) are statistically significant. In addition, online figure A7 presents in a graph the associations that were statistically significant (see below). It is also interesting to note that additional analyses indicated that the individual-level interaction terms between parental unemployment and parental education were not statistically significant (not presented).

Our findings show that the insurance mechanism reduces the entry gap between dual-earner unemployed and dual-earner households among families without tertiary education, while no such tendency appears among college-educated households (see Models 1 and 2 in [table 5](#) and figure A7). Additional analysis confirms that children of dual-earner unemployed families, especially those whose parents do not have higher education, benefit from more generous social policies (online table A6). On the other hand, the insurance mechanism increases the transition probabilities for young people from main earner unemployed households irrespective of parental education ([table 5](#) and online table A6). For clarity, we should add that we are not able to draw fully solid conclusions here because of the small sample size for main earner unemployed

**Table 5. Interactions between Education Policy Measures and Household Type by Parental Education**

	Social policy				Education policy			
	Model 1: non-tertiary		Model 2: tertiary		Model 3: non-tertiary		Model 4: tertiary	
<i>Parental highest education:</i>								
Household type x long-term earnings replacement (ref. dual-earner)								
Single-earner x long term	0.000	(0.001)	-0.000	(0.000)				
Dual-earner: one unemployed x long term	0.002*	(0.001)	-0.000	(0.001)				
Main earner unemployed x long term	0.003*	(0.001)	0.005	(0.003)				
Household type x financial aid (ref. dual-earner)								
Single-earner x aid					0.005**	(0.001)	0.001	(0.002)
Dual-earner: one unemployed x aid					0.004*	(0.002)	0.001	(0.003)
Main earner unemployed x aid					0.002	(0.003)	0.013	(0.008)
Household type x private expenditure (ref. dual-earner)								
Single-earner x private					-0.002+	(0.001)	-0.002*	(0.001)
Dual-earner: one unemployed x private					-0.004**	(0.001)	0.002	(0.002)
Main earner unemployed x private					-0.003	(0.002)	-0.006	(0.005)
<i>Country-level variance</i>								
Slope: main earner unemployed	0	(0)	0	(.)	0	(0)	0	(0)
Intercept	0.020	(0.007)	0.018	(.)	0.017	(0.006)	0.015	(0.006)
<i>Country-year-level variance</i>								
Slope: main earner unemployed	0.005	(0.007)	0.016	(.)	0.007	(0.007)	0.029	(0.027)
Intercept	0.002	(0.001)	0.000	(.)	0.002	(0.001)	0.001	(0.000)
Covariance	-0.000	(0.002)	0.003	(.)	-0.001	(0.002)	0.005	(0.002)
N individuals	8,784		4,985		8,784		4,873	
N country years	177		174		177		174	
N countries	21		21		21		21	

Note: Coefficients from multilevel linear probability models. Standard errors are in parentheses. Models control for (1) individual level: household type, gender, military service, parental education, number of children in the household, household income; (2) macrolevel: main effects of interacted macrolevel variables, youth unemployment rate, overall participation rate, vocational orientation, age of selection, and its interaction with household type. Sample did not include enough parents with lower secondary or postsecondary non-tertiary education to conduct separate analysis for these groups.

Statistical significance levels at

+  $p < 0.1$ ,

\*  $p < 0.05$ ,

\*\*  $p < 0.01$ ,

\*\*\*  $p < 0.001$  based on two-tailed tests.

families (i.e., the group most affected by this mechanism) where parents also have a tertiary degree.

The relevance of the opportunity mechanism also differs by parental education. Our results indicate that when the role of private expenditure in tertiary education is greater, the entry gaps between dual-earner unemployed and employed households are large among children of less educated parents, while no such gaps appear among children of college-educated parents (Models 3 and 4 in table 5 and figure A7). Further analysis also shows that among unemployed dual-earner households, youth from tertiary-educated families seem more successful in using the market-based options offered in the tertiary education than their similar peers from lower-educated families (online table A6). In contrast, although higher financial aid reduces disadvantage for youth from lower-educated unemployed dual-earner households and does not affect youth from similar tertiary-educated households, further analysis indicates that the difference between coefficients in Models 3 and 4 in table 5 is not statistically significant (online table A6). Moreover, we do not see clear differences in the importance of financial aid by parental education among young people from main earner unemployed households. Therefore, based on findings for dual-earner unemployed families, we conclude that our results provide partial support to *hypothesis 3*. For these households, we observe that the relevance of the insurance mechanism and partially also the opportunity mechanism in moderating the adverse effect of parental unemployment varies depending on parental education.

## Discussion and Conclusions

This paper offers a novel comparative view on intergenerational consequences of unemployment in the context of social and education policy in European countries and the United States. Drawing on the literature on intergenerational mobility research and the sociology of higher education, we tested the relevance of two mechanisms for varying intergenerational effects across institutional contexts: the insurance mechanism, which promotes greater equality of circumstances across families, and the opportunity mechanism, which reduces the effect of socioeconomic background on educational opportunities. Based on data from five longitudinal studies, we studied how parental unemployment occurring in a child's last years of secondary school affected their probability of transition to postsecondary education.

From a theoretical standpoint, we emphasize that the individual-level effect of parental unemployment on educational outcomes can be strongly affected by institutions. In line with previous studies, we find that parental unemployment has an adverse effect on opportunities to continue in the postsecondary education. However, we also find that the strength of this adverse effect varies greatly across countries. Descriptively, we observe large drops in transition probabilities in some Eastern and Southern European countries and in the United States, but find remarkably small adverse consequences of parental unemployment in Nordic and some Continental European countries. Although the reasons for

the variation across contexts are certainly multidimensional, we specifically explored the moderating role of social transfers to households affected by unemployment, financial aid to students and the extent of private expenditure in tertiary education.

Our results first show that insufficient insurance against unemployment has adverse outcomes for the educational prospects of children of unemployed parents. The generosity of social policy affects foremost unemployed households where no parent is working. Our finding is in line with previous research on intergenerational mobility showing that egalitarian welfare measures matter, especially for the most vulnerable families (Esping-Andersen and Wagner 2012). A more comprehensive insurance mechanism increases income security and thus enables households to meet the costs of postsecondary education. Income security also moderates the psychological consequences of unemployment in the family (Paul and Moser 2009), which might otherwise discourage young people from making ambitious educational choices.

Our findings also suggest that opportunity-equalizing education policy that provides more financial support to students and reduces the role of private expenditure reduces the gaps in transition rates between young people from employed and unemployed households. This applies even if one parent in an unemployed household still has a job. Thus, opportunity-equalizing education policies seem to lower inequalities in access to tertiary education for families affected by unemployment. We propose that besides actual costs more equalizing education policy also reduces the perceived costs of education, which could be a barrier for children whose parents are unemployed, especially if unemployment increases their risk aversion. Interestingly, by providing evidence for independent effects of both generous income protection for unemployed parents and low institutional barriers to higher education, our results demonstrate that resilience towards adverse intergenerational effects of unemployment may be enhanced through both policy channels. Our additive model specifications moreover imply that the two institutional levers have interlocking positive implications for resilience, with the traditionally social democratic policy combination of generous unemployment insurance and low financial barriers to higher education being a main cause for the relatively small adverse effects of parental unemployment in the Nordic countries.

Our results also provide some evidence that institutional contexts are more relevant for moderating the adverse effect of parental unemployment for young people from less-educated families than for those with college-educated parents. Although we observe this differentiating role of parental education only among unemployed households where one parent still works, this tentative evidence suggests that some individual- and family-level mechanisms might become increasingly important for young people from less-educated households in contexts that provide fewer institutional buffers. Such mechanisms might be the future earnings prospects of parents, wealth of family or motivational differences between college-educated and less-educated parents. In this context, it is also important to note that our results do not show that, on average across countries, parental education would compensate for the negative effects of unemployment.

That said, we believe that there are at least three additional considerations that future research should address. Due to data limitations, we were not able to explore the role of differentiation within postsecondary education (Lucas 2001; Triventi 2013). Our general approach is likely to hide some disadvantage that children of unemployed parents might face in accessing more prestigious tracks. Moreover, our focus was on the entry to further studies but the attainment of postsecondary education for children of unemployed parents could depend even more strongly on the institutional context. For instance, Goldrick-Rab et al. (2016) suggest that financial aid to students can be an effective measure to reduce drop-out rates for youth from financially less secure households. Thus, future research should investigate how parental unemployment affects young people's trajectories through tertiary education. Another relevant question for future research is whether the experiences of parental unemployment increase drop-out risk from upper secondary education (see also Brand and Thomas 2014) and how it depends on institutional contexts. For the time being, we emphasize that the adverse effects of parental unemployment as investigated in this study applies among youth who had the choice to continue in postsecondary education. In addition, we note that although our data limits us from controlling for possible confounding effects of psychological characteristics of parents or relationship quality in the family, we consider it rather unlikely that the role of these characteristics would vary too substantially across countries among parents with similar education, family composition and income to bias our cross-country inferences on the role of public institutions. Likewise, as earlier single-country research has found evidence that fathers' unemployment tends to have stronger negative effects than mothers' (Lindemann and Gangl 2019; Mooi-Reci et al. 2019; Rege et al. 2011), it would be of obvious interest to explore in the future research how the cross-country patterns vary by the gender of the unemployed parent.

We studied educational transitions in years 2004–2013, which includes the global economic recession, when unemployment rates spiked in many countries. Although entry into unemployment was less selective during the recession, there is no universal reason why unemployed households should be more or less affected by policies during recession than in the years of growth. We have therefore chosen not to explore any cyclical variation in higher education enrolment, but have rather taken the recession years as an unfortunate opportunity to study the effects of unemployment in different types of households, educational groups and countries. The fact that we observe remarkable differences across countries in the strength of the association between parental unemployment and children's educational opportunities, and that we relate these in no small measure to institutional differences that make educational trajectories more or less resilient, does not render the question of potential changes in higher education enrolment over time any less relevant or interesting. A systematic study on how the recession has affected entry into higher education in different institutional contexts would be of high interest, but is beyond the scope of this paper.

To conclude, our study draws attention to the importance of institutional contexts in understanding the intergenerational effects of unemployment.



Providing adequate social transfers clearly increases the opportunities of young people from unemployed households where no parent is working, or from less-educated unemployed families with one employed parent. Yet, even when social policy supports unemployed households, high fees in tertiary education and low financial support to students might still increase inequality in transition rates between unemployed and employed dual-earner households. Thus, we conclude that both education policy and social policy have key roles in moderating the adverse effects of parental unemployment on educational outcomes. Studying only one of them risks missing important linkages between economic inequality, public policy, and educational attainment.

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## Supplementary Material

Supplementary material is available at *Social Forces* online, <http://sf.oxfordjournals.org/>.

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