

Patterns and Drivers of Over-time Change in the Intergenerational Transmission of Inequality in Germany and the UK



Nguyen Nhat An Trinh

Department of Social Policy and Intervention
Wolfson College
University of Oxford

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Authorship statement

Paper 1 of this thesis is jointly written by Nhat An Trinh and Erzsébet Bukodi. In line with Examination Regulations, both authors hereby certify that the majority of the work (≥ 70 per cent) represents the work of Nhat An Trinh. Papers 2–4 are solely authored by Nhat An Trinh.

Oxford, 14th January 2021

Handwritten signature of Nhat An Trinh in blue ink.Handwritten signature of Erzsébet Bukodi in blue ink.

Thesis abstract

This doctoral thesis contributes to research on over-time trends in the intergenerational transmission of inequality in two major European societies. *Paper 1* entitled ‘Intergenerational Class Mobility of Labour Market Entrants in Germany and the UK since the 1950s’ shows that absolute mobility between parents’ social class and their children’s first social class has continuously changed. Still, increases in relative mobility rates have come to a halt for cohorts entering the labour market from the 1970s onwards in both countries. *Paper 2* entitled ‘Why do Trends in Social Fluidity at Labour Market Entry and Occupational Maturity Differ? Evidence from Germany and the UK’ identifies increases in counter mobility as the main driver of observed divergence between trends in relative intergenerational social class mobility based on class destination measured at labour market entry and later career stages. It links the growth in counter mobility to compositional shifts in the origin distribution during the second half of the twentieth century. *Paper 3* entitled ‘The Effect of Social Benefit Reform on Educational Inequality’ finds that children of parents receiving long-term unemployment assistance have a lower chance to attend the academic secondary school track compared to children of parents receiving no unemployment or social benefits after the 2005 Hartz reform in Germany. Besides changes in the socio-demographic characteristics of benefit recipients, this rise in educational inequality was mainly due to reductions in benefit levels. *Paper 4* entitled ‘Parental Employment and Children’s Education in Historical Perspective’ shows that parental employment conditions have increasingly become economically insecure for cohorts born since the mid-1980s in Germany. No weakening in the positive association between parental employment and children’s education can however be observed.

Introduction

This doctoral thesis contributes to the literature on social stratification and the intergenerational transmission of inequality. Its aim is to offer nuanced and novel empirical evidence on the degree to which parental background determines individuals' life chances, and how this relationship has developed over the past 70 years. Focusing on historical trends, the primary research goal is to explore how far major transformations in the realms of employment, occupation, and labour have affected opportunities for social mobility and experiences of disadvantage among parents and their children. Following the 'standalone paper route', the thesis consists of four individual research articles.

Background

Comparisons across time have a long tradition in inequality and social mobility research (Hout and DiPrete 2006). Studies guided by functionalist arguments of modernization theory started to emerge from the 1960s onwards, asking whether trends in the relationship between social origin and social destination follow structural developments (Bell 1972; Blau and Duncan 1967; Treiman 1970). These studies expected that with rising levels of industrialization and economic development the association between social origin and social destination would weaken due to upgrades in the occupational structure, educational expansion, as well as greater merit and skill-based selection into the educational system and labour market. In other words, rates of intergenerational social mobility were expected to increase over time (see also Ganzeboom, Luijkx, and Treiman 1989).

Until today, however, findings remain inconclusive. Although evidence pointing towards a decline in the influence of parental background on individuals' outcomes and opportunities exists (Breen et al. 2009, 2010; Ganzeboom and Luijkx 2004; Vallet 2004), studies have also made the opposite

observation of its strengthening (Blanden et al. 2004; Blanden, Gregg, and Macmillan 2013). Other work in turn highlights persistent stability in the intergenerational relationship (Erikson and Goldthorpe 1992; Featherman and Hauser 1978; Scherer et al. 2007). Particularly the observation of a lack of change in social fluidity, i.e. the strength of the association between individuals' class origin and class destination net of distributional differences between the parent and child generation, has triggered scepticism about the role that public policy and the welfare state can play in reducing the reproduction of disadvantage and fostering equality of opportunity beyond a certain point (Bukodi and Goldthorpe 2018).

Since Blau and Duncan's seminal study on status attainment in the US (Blau and Duncan 1967), education is widely recognised as one of the most important predictors, if not *the* most important predictor, of individuals' socio-economic outcomes, and a key mechanism through which parents convey their socio-economic position to their children. For this reason, more recent research has focused on linking characteristics and reform of educational institutions to levels and changes in educational inequality and intergenerational social mobility. In so far as findings are mixed, this line of work has scarcely succeeded in establishing a systematic association.

Breen and Müller (2020) observe across seven European countries and the US increases in intergenerational social class mobility for cohorts born until the 1950s, which they attribute to the expansion of education that slowed down for cohorts born thereafter. Educational expansion is suggested to have reduced class-based inequalities in education and increased the proportion of the higher educated, for whom a weaker effect of class origin on class destination net of education is shown to exist. As a result, the strength in the overall association between class origin and class destination is seen to decline. Exploiting exogenous variation induced by the extension of compulsory schooling in Germany between the 1950s and 1970s, Betthäuser (2017) likewise finds a positive impact of educational expansion on equality in educational attainment and labour market positions for individuals from different class backgrounds.

Sturgis and Buscha (2015), however, do not observe similar changes despite adopting a comparable quasi-experimental approach. Focussing on the increase in the minimum school leaving age in England and Wales in 1972, they show that the policy shift led to generally higher educational attainment as well as a weaker association between parental social status and children's education, among those who were born immediately after the implementation of the reform. This reduction in educational inequality was however not accompanied by a weakening in the association between parents' social status and their children's social status, indicating stability in intergenerational social status mobility. Similarly, Grätz (2021) does not find a significant effect of German reunification in 1990 on intergenerational mobility in terms of education, occupational status or social class, casting doubt on the extent to which institutional change can alter and interfere with processes of intergenerational social mobility more generally.

While having a greater claim to identifying causal relationships, studies that rely on natural experiments as the ones outlined above are limited in their external validity, i.e. the extent to which their findings can generate to other societal contexts and historical periods than the ones studied. Analysing temporal variation in the educational systems of Britain, Sweden, Germany, and Italy by means of a common theoretical framework, Bukodi et al. (2018) yet also produce ambiguous findings regarding the degree to which trends in educational inequality consistently follow changes in relevant institutional features. Nevertheless, they find the effect of parental background, measured in terms of social class, status, and education, on children's educational attainment to exhibit significant variation across cohorts born between the late-1930s and mid-1970s. By contrast, Pfeffer (2008), who draws on a sample of 20 industrialised countries, reports constant levels of educational inequality for cohorts born during the late-1920s and early-1980s, but shows that cross-national differences in these depend on the degree of stratification of the educational system. Focusing on the post-socialist transition of East Germany that comprised the reintroduction of a tripartite school structure based on ability sorting, findings from Betthäuser (2019) support this second observation.

A great deal of uncertainty about patterns and the underlying causes of temporal variation in intergenerational social mobility thus continues to prevail in the literature. This lack of clear and coherent evidence pertains to both short- as well as long-run trends. Furthermore, a lot of attention has focused on education and related institutional change as potential driving forces behind trends in intergenerational social mobility. Other significant developments occurring in the realm of work, employment, and the labour market have so far been ignored.

As documented by previous research, societal changes over the past several decades were not limited to the domain of education. Significant shifts in employment relations, job characteristics, labour market structures and their institutional arrangements have been observed across a wide number of market societies. In such societies, parents' and their children's social position in adulthood are highly contingent on their labour market achievements. These shifts therefore seem likely to have shaped trends in the relationship between social origin and social destination, particularly as their consequences play out differently for different social groups. Furthermore, it may be the case that changes observed in the realm of labour followed a different trajectory than changes observed in the realm of education. Developments in these two domains may have therefore counteracted each other, leading to overall persistence in the intergenerational transmission of inequality or the lack of more sustained change over time.

Aim and approach

Against this background, the present thesis seeks to approach the study of over-time change in intergenerational social mobility from a new perspective. In the four empirical papers, I take a closer look at the degree to which changes in occupational careers, labour market institutions, and employment conditions have the potential to shape trends in intergenerational social mobility and educational inequality. Most of the changes considered are part of bigger macro-social transformations that will continue to unfold as time advances. By contributing to a better

understanding of how far and why intergenerational social mobility and educational inequality are subject to temporal variation, my findings can inform policy and assist governments in designing (more) effective tools for the promotion of social equality in a long-lasting way.

Two European countries – Germany and the United Kingdom – provide the geographical setting, whereas the 1950s and 2010s define the beginning and end of the historical period studied. During this time, employment relationships experienced progressive upgrading as a consequence of de-industrialisation and the transition towards a service economy in both countries (Breen 2004; Breen and Müller 2020; Erikson and Goldthorpe 1992). Gradual deregulation and increases in labour market flexibilization towards the end of the twentieth century led to the growth of more insecure forms of work and the creation of so-called ‘dual labour markets’ (Emmenegger et al. 2012; Goos and Manning 2007; Marsden 2007; Palier and Thelen 2010). Welfare state reform altered the degree to which workers are exposed to labour market risks and economic insecurity further (Brülle 2021; Clasen and Clegg 2006; Eichhorst and Marx 2011). In addition to these larger, slow-moving changes, volatilities in the economy between periods of boom and bust may have also triggered fine-grained fluctuations in the social mobility chances of specific cohorts compared to others. Running parallel to all these developments, the rise in female labour market participation (Gregg, Gutiérrez-Domènech, and Waldfogel 2007; Konietzka and Kreyenfeld 2010; Thévon 2013) augmented the opportunity through which these long- and short-term trends can trickle down to the second generation as more children are growing up in families, in which both parents work.

There hence appears to be ample room for over-time trends in intergenerational social mobility to be driven by labour market-related change. For this reason, each of the four empirical papers is dedicated to a distinct aspect and dimension. While all papers draw on quantitative methodology, analytical approaches vary and have been tailored to the more specific research questions being addressed. The first two papers adopt a comparative perspective contrasting Germany and the UK to investigate trends in intergenerational social class mobility based on labour market entrants. The

third and fourth paper focus on Germany as a case study to examine whether modifications in the social protection and unemployment benefit system as well as the emergence of insecure employment affected trends and patterns of educational inequality. Based on representative data from two major European countries, the result is a multifaceted analysis of the degree to which the intergenerational transmission of inequality has evolved over time in light of developments in the realms of employment, occupation, and labour.

Thesis overview

Paper 1 Intergenerational Class Mobility of Labour Market Entrants in Germany and the UK since the 1950s'

The first paper builds on long-standing scholarship on the association between parents' and their children's social class position and revisits the enduring debate about temporal variation in intergenerational social class mobility. By providing population-level estimates for the entire second half of the twentieth century until more recently, the paper sets the scene for the following investigations into drivers and mechanisms of over-time change.

The rich literature on the intergenerational transmission of inequality demonstrates the large diversity by which social mobility can be measured and quantified. Different dimensions of parental background that operate independently and yield distinct effects on children's life chances have been discovered (Bukodi and Goldthorpe 2013; Hällsten and Thaning 2021). Given that the overall goal of this thesis is to examine trends in the intergenerational transmission of inequality against the backdrop of labour market-related change, I focus on social mobility in terms of social class. In contrast to education, occupation, income or wealth, social class provides a comprehensive account of individuals' labour market standing as it is conceptually derived from employment relations between employers, employees, and the self-employed (Goldthorpe 2007). Assessing how the intergenerational relationship with respect to parents' and children's social class position has

changed over a period of seven decades thus appears to be most appropriate considering the greater contribution this thesis seeks to make.

Following established sociological practice, my analyses distinguish between trends in absolute and relative social class mobility. This distinction allows me to single out class structural shifts as a facilitator of the intergenerational mobility experience as well as to accurately map changes in the strength of the association between class origin and class destination that are unaffected by class structural change. Findings show that contrasting secular changes in the distribution of origin and destination classes led to differing trends in absolute upward and downward rates for individuals, who entered the labour market in Germany and the UK from the 1950s onwards. Trends in relative mobility were nevertheless strikingly similar in the two countries, presenting a pattern of increase followed by stability for those entering the labour market after the 1960s. In the absence of more fine-grained variation, rates of relative mobility seem to resist and stand robust against cyclical developments of the economy or shorter-term volatilities in the labour market.

The paper is jointly written with Erzsébet Bukodi and has been published in the *European Sociological Review*.¹

Paper 2 ‘Why do Trends in Social Fluidity at Labour Market Entry and Occupational Maturity differ? Evidence from the UK and Germany’

The second paper extends the analysis conducted in Paper 1 to incorporate a life-course perspective into the assessment of over-time change in intergenerational social class mobility. It focuses on trends in relative mobility also known as ‘social fluidity’, and how these can differ depending on when class destination is measured in people’s career. The paper hence contributes to the wider methodological discussion about the appropriate time chosen to measure children’s outcomes in

¹ Trinh, Nhat An, and Erzsébet Bukodi. 2021. ‘Intergenerational Class Mobility of Labour Market Entrants in Germany and the UK since the 1950s.’ *European Sociological Review* in print:1–17. <https://doi.org/10.1093/esr/jcab028>.

adulthood for generating meaningful estimates of the strength in the intergenerational association and how it varies over time.

Measuring class destination at the start of the working life ensures that individuals are exposed to the same economic and labour market conditions at the same career stage. It thereby becomes possible to precisely identify the consequences that specific circumstances encountered at labour market entry have for the intergenerational transmission of inequality. However, individuals are unlikely to remain in the same class position over the course of their careers. Levels and patterns of intragenerational class mobility are also likely to vary across geographical contexts and time periods. Consequently, trends in intergenerational class mobility may look very different when measured at labour market entry compared to more mature career stages.

Indeed, when calculating rates of social fluidity based on individuals' class destination 15 years after labour market entry, trends in social fluidity exhibit a pattern of consistent stability rather than initial increase in Germany and the UK. However, in neither country is this divergence driven by changes in career mobility that played out differently for those from different origins. Over the second half of the twentieth century, class-based inequalities in levels of upward and downward career mobility stayed remarkably stable. Instead, observed differences in these trends were driven by a growing number of the 'counter mobile', i.e. individuals who enter the labour market in a different social class compared to their parents but who return to their position through intragenerational mobility at a later stage. Significant country differences yet appear regarding the characteristics of the counter mobile, whose number grew over time.

The paper is being prepared for submission to *Research in Social Stratification and Mobility* for peer-review.

Paper 3 ‘The Effect of Social Benefit Reform on Educational Inequality’

Having analysed population-level trends in intergenerational social class mobility, the third paper turns to studying whether changes in institutional arrangements of the labour market have altered opportunities for social mobility for certain subgroups within society. It thereby complements research focusing on modifications of the educational system and adds to the evidence base on the effect of institutions on the intergenerational transmission of inequality. Moreover, it sheds a light on institutional aspects that act more immediately on parents rather than their children. By critically shaping the conditions and inequalities among the parental generation, these policies can be expected to further translate into and determine inequalities among the child generation.

To do so, I focus on one of the most drastic policy shifts that occurred in Germany’s recent history – the 2005 Hartz reform. Being the last in a series of four reforms, it is oftentimes simply known as ‘Hartz IV’ and forms part of wider efforts towards labour market flexibilization as well as overarching welfare state retrenchment observed in other Europe countries around the same time. Due to its radical departure from principles of conservative corporatism that have traditionally governed Germany’s approach to social welfare, the reform was widely debated. Raising concerns about social justice, it still figures in public discourse and has been put under close scientific scrutiny regarding its economic, political as well as redistributive consequences (Bradley and Kügler 2019; Fervers 2019; Goebel and Richter 2007). Nevertheless, its intergenerational effects have not been examined and therefore remained unknown until now.

Using methods suitable for causal inference, Paper 3 assesses whether children of recipients of long-term unemployment assistance were subject to greater educational disadvantage following the implementation of the reform. As highlighted above, individuals’ level of education is a critical determinant of future life outcomes and opportunities. The results show that the reform increased educational inequalities in terms of secondary school track attainment between children of parents receiving long-term unemployment assistance and children of parents not receiving unemployment

or other means-tested social benefits. Differences in the probability to enter the academic track increased by 13 percentage points. This sizable effect was in part driven by changes in eligibility criteria that altered the composition of benefit recipients. Reductions in benefit levels leading to a worsening in the economic conditions of these already disadvantaged families however appear to account for most part of the observed rise in educational inequality.

The present version of the manuscript has been invited to be revised and resubmitted to the *Journal of Social Policy* for publication.

Paper 4 'Parental employment and children's education in historical perspective'

The fourth paper is dedicated to trends concerning the expansion of insecure employment and marries the literature on labour market dualization, rising female labour market participation, and the intergenerational transmission of inequality. By drawing attention to changes in parental work conditions in conjunction with changes in their labour supply, the paper reviews one of the main stylized facts in intergenerational social mobility research: having parents who pursue gainful employment protects children against unfavourable outcomes.

A growing body of research highlights the adverse implications that economically insecure employment has on workers and their families, including children (Betthäuser, Trinh, and Fasang 2021; Kalleberg 2009, 2018; Strazdins et al. 2010; Waldfogel 2007). In light of its rising prevalence, more children are at risk of experiencing such negative consequences. The question therefore arises whether a worsening in employment conditions has led to a decline in the overall positive effect of parental employment on children's outcomes and opportunities. In other words, has the positive relationship between employment in the first generation and outcomes in the second generation weakened over time? Given that women, who have increasingly been joining the work force over the past decades, are disproportionally likely to be found in insecure employment, it seems plausible that children growing up in dual-earner families are particularly affected by this trend.

The analyses show that no weakening in the positive association between parental employment and children's educational attainment can be observed for children in Germany. The relationship has remained unchanged, despite non-negligible increases in the proportion of children who are exposed to parental temporary, irregular, or marginal employment among cohorts born between mid-1980s and late 2000s. Parental labour market participation thus continues to act as an important safeguard against adverse outcomes for children. Still, parental insecure employment, and particularly mothers' insecure employment, appears to be associated with significant educational disadvantage that cannot be compensated by the other parents' secure employment.

Suitable outlets for this paper are currently being reviewed.

Taken together, these four research articles contribute to knowledge on the interplay between significant changes in the realm of labour and the intergenerational transmission of inequality. Population-level trends in intergenerational social class mobility presented in Paper 1 and Paper 2 based on labour market entry cohorts allow for a precise assessment of patterns of short- and long-term change and whether these can be linked to prevailing labour market trends. In addition, estimating changes in the strength of the origin-destination association at different career stages facilitates understanding of the precise timing of intergenerational social mobility in individuals' life course, i.e. whether chances of moving up or down the social ladder compared to one's parents is determined upon entering the labour market or at a later career stage. The latter is of specific importance for policy and will provide guidance on whether measures aimed at equalising opportunities at the beginning, over the course of individuals' working life or both, are needed to successfully increase intergenerational social mobility. Paper 3 informs the debate on the role of institutions in shaping levels of intergenerational social mobility. It thereby generates direct implications concerning the leverage and characteristics of as well as the mechanisms through which specific policies can promote or hinder equality of opportunity. Finally, Paper 4 sheds a light on whether growing economic insecurity among working parents as a consequence of labour market flexibilization may be to the detrimental of their children and have altered the positive

relationship between parental employment and children's outcomes in significant ways. Doing so, takes a first step towards understanding whether inequality-increasing developments among the parental generation regarding their employment conditions have counteracted inequality-decreasing developments among the child generation with respect to their educational opportunities.

References

- Bell, Daniel. 1972. 'On Meritocracy and Equality'. *Public Interest* 29:29–68.
- Bethhäuser, Bastian. 2017. 'Fostering Equality of Opportunity? Compulsory Schooling Reform and Social Mobility in Germany'. *European Sociological Review* 33(5):633–44.
- . 2019. 'The Effect of the Post-Socialist Transition on Inequality of Educational Opportunity: Evidence from German Unification'. *European Sociological Review* 35(4):461–73.
- Bethhäuser, Bastian, Nhat An Trinh, and Anette Fasang. 2021. *The Temporal Dimension of Parental Employment. Fixed-Term Contracts, Non-Standard Work Schedules, and Children's Education in Germany*. Berlin: Cluster of Excellence 2055 'Contestations of the Liberal Script -SCRIPTS'.
- Blanden, Jo, Alissa Goodman, Paul Gregg, and Stephen Machin. 2004. 'Changes in Intergenerational Mobility in Britain'. pp. 122–46 in *Generational Income Mobility in North America and Europe*, edited by M. Corak. Cambridge University Press.
- Blanden, Jo, Paul Gregg, and Lindsey Macmillan. 2013. 'Intergenerational Persistence in Income and Social Class: The Effect of Within-Group Inequality'. *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 176(2):541–63.
- Blau, Peter M., and Otis Dudley Duncan. 1967. *The American Occupational Structure*. New York, London: Wiley.
- Bradley, Jake, and Alice Kügler. 2019. 'Labor Market Reforms: An Evaluation of the Hartz Policies in Germany'. *European Economic Review* 113:108–35.
- Breen, Richard, ed. 2004. *Social Mobility in Europe*. Oxford: Oxford University Press.

- Breen, Richard, Ruud Luijkx, Walter Müller, and Reinhard Pollak. 2009. 'Nonpersistent Inequality in Educational Attainment: Evidence from Eight European Countries'. *American Journal of Sociology* 114(5):1475–1521.
- Breen, Richard, Ruud Luijkx, Walter Müller, and Reinhard Pollak. 2010. 'Long-Term Trends in Educational Inequality in Europe: Class Inequalities and Gender Differences'. *European Sociological Review* 26(1):31–48.
- Breen, Richard, and Walter Müller, eds. 2020. *Education and Intergenerational Social Mobility in Europe and the United States*. Stanford, California: Stanford University Press.
- Brülle, Jan. 2021. 'Dualisation versus Targeting? Public Transfers and Poverty Risks among the Unemployed in Germany and Great Britain'. *Acta Sociologica* 64(4):420–36.
- Bukodi, Erzsébet, Ferdinand Eibl, Sandra Buchholz, Sonia Marzadro, Alessandra Minello, Susanne Wahler, Hans-Peter Blossfeld, Robert Erikson, and Antonio Schizzerotto. 2018. 'Linking the Macro to the Micro: A Multidimensional Approach to Educational Inequalities in Four European Countries'. *European Societies* 20(1):26–64.
- Bukodi, Erzsébet, and John H. Goldthorpe. 2013. 'Decomposing "Social Origins": The Effects of Parents' Class, Status, and Education on the Educational Attainment of Their Children'. *European Sociological Review* 29(5):1024–39.
- . 2018. *Social Mobility and Education in Britain: Research, Politics and Policy*. Cambridge: Cambridge University Press.
- Clasen, Jochen, and Daniel Clegg. 2006. 'Beyond Activation: Reforming European Unemployment Protection Systems in Post-Industrial Labour Markets'. *European Societies* 8(4):527–53.
- Eichhorst, Werner, and Paul Marx. 2011. 'Reforming German Labour Market Institutions: A Dual Path to Flexibility'. *Journal of European Social Policy* 21(1):73–87.
- Emmenegger, Patrick, Silja Häusermann, Bruno Palier, and Martin Seeleib-Kaiser, eds. 2012. *The Age of Dualization: The Changing Face of Inequality in Deindustrializing Societies*. Oxford University Press.
- Erikson, Robert, and John H. Goldthorpe. 1992. *The Constant Flux: A Study of Class Mobility in Industrial Societies*. Oxford: Clarendon Press.

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- Featherman, David L., and Robert Mason Hauser. 1978. *Opportunity and Change*. New York: Academic Press.
- Fervers, Lukas. 2019. 'Economic Miracle, Political Disaster? Political Consequences of Hartz IV'. *Journal of European Social Policy* 29(3):411–27.
- Ganzeboom, Harry, and Ruud Luijkx. 2004. 'Recent Trends in Intergenerational Occupational Class Reproduction in the Netherlands 1970–99'. pp. 345–382 in *Social Mobility in Europe*, edited by R. Breen. Oxford: Oxford University Press.
- Ganzeboom, Harry, Ruud Luijkx, and Donald Treiman. 1989. 'Intergenerational Class Mobility in Comparative Perspective'. *Research in Social Stratification and Mobility* 8:3–84.
- Goebel, Jan, and Maria Richter. 2007. 'Nach Der Einführung von Arbeitslosengeld II: Deutlich Mehr Verlierer Als Gewinner Unter Den Hilfeempfängern'. *DIW Wochenbericht* 74(50):753–62.
- Goldthorpe, John. 2007. *On Sociology*. Second Edition. Stanford University Press.
- Goos, Maarten, and Alan Manning. 2007. 'Lousy and Lovely Jobs: The Rising Polarization of Work in Britain'. *Review of Economics and Statistics* 89(1):118–33.
- Grätz, Michael. 2021. 'Does Regime Change Affect Intergenerational Mobility? Evidence from German Reunification'. *European Sociological Review* 37(3):465–81.
- Gregg, Paul, Maria Gutiérrez-Domènech, and Jane Waldfogel. 2007. 'The Employment of Married Mothers in Great Britain, 1974–2000'. *Economica* 74(296):842–64.
- Hällsten, Martin, and Max Thaning. 2021. 'Wealth as One of the “Big Four” SES Dimensions in Intergenerational Transmissions'. *Social Forces* soab080.
- Hout, Michael, and Thomas A. DiPrete. 2006. 'What We Have Learned: RC28's Contributions to Knowledge about Social Stratification'. *Research in Social Stratification and Mobility* 24(1):1–20.
- Kalleberg, Arne L. 2009. 'Precarious Work, Insecure Workers: Employment Relations in Transition'. *American Sociological Review* 74(1):1–22.
- Kalleberg, Arne L. 2018. *Precarious Lives: Job Insecurity and Well-Being in Rich Democracies*. Cambridge, UK ; Medford, MA: Polity Press.

- Konietzka, Dirk, and Michaela Kreyenfeld. 2010. 'The Growing Educational Divide in Mothers' Employment: An Investigation Based on the German Micro-Censuses 1976-2004'. *Work, Employment and Society* 24(2):260–78.
- Marsden, David. 2007. 'Labour Market Segmentation in Britain: The Decline of Occupational Labour Markets and the Spread of "Entry Tournaments"'. *Économies et Sociétés* 28:965–98.
- Palier, Bruno, and Kathleen Thelen. 2010. 'Institutionalizing Dualism: Complementarities and Change in France and Germany'. *Politics & Society* 38(1):119–48.
- Pfeffer, F. T. 2008. 'Persistent Inequality in Educational Attainment and Its Institutional Context'. *European Sociological Review* 24(5):543–65.
- Scherer, Stefani, Reinhard Pollak, Gunna Otte, and Markus Gangl, eds. 2007. *From Origin to Destination: Trends and Mechanisms in Social Stratification Research Essays in Honour of Walter Müller*. Frankfurt New York: Campus Verlag.
- Strazdins, Lyndall, Megan Shipley, Mark Clements, Léan V. O'Brien, and Dorothy H. Broom. 2010. 'Job Quality and Inequality: Parents' Jobs and Children's Emotional and Behavioural Difficulties'. *Social Science & Medicine* 70(12):2052–60.
- Sturgis, Patrick, and Franz Buscha. 2015. 'Increasing Inter-Generational Social Mobility: Is Educational Expansion the Answer?' *The British Journal of Sociology* 66(3):512–33.
- Thévon, Olivier. 2013. 'Drivers of Female Labour Force Participation in the OECD'. *OECD Social, Employment and Migration Working Papers* 145:1–57.
- Treiman, Donald J. 1970. 'Industrialization and Social Stratification'. *Sociological Inquiry* 40(2):207–34.
- Vallet, Louis-André. 2004. 'Change in Intergenerational Class Mobility in France from the 1970s to the 1990s and Its Explanation: An Analysis Following the CASMIN Approach'. in *Social Mobility in Europe*, pp. 115–148 edited by R. Breen. Oxford: Oxford University Press.
- Waldfoegel, Jane. 2007. 'Parental Work Arrangements and Child Development'. *Canadian Public Policy / Analyse de Politiques* 33(2):251–71.

Intergenerational Class Mobility of Labour Market Entrants in Germany and the UK since the 1950s[†]

Nhat An Trinh and Erzsébet Bukodi*

Abstract

This study examines over-time trends in intergenerational class mobility based on cohorts of labour market entrants in Germany and the UK since the 1950s. We calculate absolute and relative mobility rates, separately for men and women, using the German Socio-Economic Panel (1984–2016), the UK Household Longitudinal Study (2009–2016), and the UK Labour Force Survey (2014–2017). Regarding absolute mobility, we find marked country differences in upward and downward rates. In Germany, downward mobility decreased, while upward mobility rose. In the UK, downward mobility increased, while upward mobility declined. We provide evidence that these differences can be linked to contrasting changes in the distribution of origin and destination classes. Regarding relative mobility, striking country similarities appear. For both countries, we observe increases in social fluidity for respondents entering the labour market during the 1950s and 1960s that cease to continue for cohorts thereafter. Comparisons between adjacent cohorts do not provide evidence that social fluidity follows cyclical developments of the economy or shorter-term volatilities in the labour market.

Keywords: Social mobility, social class, labour market entry, over-time change, Germany, UK

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*Department of Social Policy and Intervention, Nuffield College, University of Oxford.

1 Introduction

For almost a century, scholars examine to what extent the association between individuals' class origins and class destinations changes over time to further our understanding of the pattern and determinants of the intergenerational transmission of inequality. Conceptually derived from employment relations, social class predicts individuals' level of wealth as well as income stability, security and prospects due to stratified remuneration schemes and risks of unemployment (Bukodi and Goldthorpe 2018). Accordingly, a class gradient in individuals' livelihoods and opportunities has been shown to exist in many countries (e.g. Lareau and Conley 2008; Groh-Samberg 2009; Bukodi and Goldthorpe 2018).

There is now general agreement that absolute class mobility, i.e. the proportion of individuals who attain a different class position compared to their parents, displays significant variation over time, and that this variation is primarily driven by changes in the form of class structures (e.g. Erikson and Goldthorpe 1992; Breen and Luijkx 2004; Bukodi et al. 2020). However, regarding trends in relative class mobility or social fluidity, i.e. the strength of the association between individuals' and their parents' class positions net of distributional differences, the literature has yielded much less consistent results.

Studies that find gradual increases in social fluidity during the twentieth century suggest that relative mobility rates largely follow structural developments induced by modernisation (Treiman 1970; Bell 1972; Ganzeboom et al. 1989). In contrast, studies that find increases in social fluidity only for individuals born before the 1950s link these to educational expansion and reductions in educational inequalities that slowed down for individuals born thereafter (Breen and Müller 2020). Others, again, focus on the notion of cohort replacement as trends are thought to be shaped by the entry and exit of cohorts with varying levels of social fluidity (Ryder 1965; Breen and Jonsson 2007; Mayer and Aisenbrey 2007); while those who find relative mobility to remain stable, being at most

subject to ‘trendless fluctuation’, stress the ability of families at the top of the class hierarchy to pass on their advantage to the next generation regardless of societal change (Featherman and Hauser 1978; Erikson and Goldthorpe 1992; Bukodi and Goldthorpe 2018).

Most studies cited above rely on ‘quasi’-birth cohorts, or simple age groups, to map trends and patterns of absolute and relative mobility. This approach can be problematic for two reasons. First, using quasi-birth cohorts inevitably confounds inter- and intragenerational mobility. Prospective cohort studies are rarely available. Researchers thus need to construct birth cohorts from surveys that are representative of an entire population at a given point in time. Consequently, members of older cohorts are observed at later stages in their careers, while members of younger cohorts are observed at earlier stages. This introduces bias to the estimation of over-time change. Setting a minimum age for individuals to be included in the analysis controls for this only to a limited extent, since ‘occupational maturity’, i.e. the point at which job changes no longer entail changes in class positions, likely varies across time and across cohorts (see Bukodi and Goldthorpe 2009 for Britain).

Second, due to differences in educational attainment and educational trajectories, members of the same birth cohort begin their employment careers at different points in time. If some start working after completing compulsory schooling while others pursue a tertiary degree, labour market entries can lie up to ten years apart. Thus, members of the same cohort are likely to start their careers under quite different economic, labour market, and institutional conditions that could affect their later mobility prospects. Quasi-birth cohorts hence do not allow to precisely determine the timing of change in intergenerational mobility and to account for the opportunity structures its members are faced with.

Against this background, the objective of the present study is to use cohorts of labour market entrants to investigate trends in both absolute and relative class mobility. This approach addresses both critiques of the quasi-birth cohort approach: Individuals who enter the labour market at the

same time are always found at comparable career stages due to similar levels of work experience and are by definition exposed to the same conditions at the start of their working lives. The approach has therefore not only the potential to explore long-run trends in intergenerational class mobility in a more accurate way, helping to evaluate the inconclusive findings of prior work on trends in relative mobility described above. It is also useful for shedding light on the relationship between class mobility and the business cycle as well as other short-term changes occurring to the labour market. Past research in fact shows that entering the labour market under adverse economic conditions has strong and enduring ‘scarring’ effects on future trajectories and class attainment in a number of European countries, and differently so for individuals from different social backgrounds (Blossfeld 1986, 1987; Bukodi and Goldthorpe 2011; Barone and Schizzerotto 2011).

We hence see our contribution as twofold. Focussing on the association between class origin and class destination at labour market entry, we first map long-term trends that purely result from cohort differences in intergenerational mobility, and are thus ‘adjusted’ for intragenerational mobility, from the second half of the last century until today. Second, we examine shorter-term changes between labour market entry cohorts over the same period to understand how far mobility chances can be systematically linked to conditions of the economy or the labour market, under which individuals embark on their careers.

Evidently, it is possible that the long-run trends that we observe for labour market entrants differ from those observed for individuals at later career stages. The main reason is that over the course of their working lives individuals tend to move between different class positions, which may also entail quite substantial mobility intergenerationally. Further, past research shows that patterns of labour market entry and career progression unfold very differently, depending on the institutional context in which they occur (Blossfeld et al. 2005; Scherer 2005; Wolbers 2007; Barbieri et al. 2016). Differences between trends in intergenerational class mobility based on class destination measured at labour market entry vis-à-vis later career stages could then depend on a country’s level of career mobility.

We therefore adopt a comparative perspective and conduct our analyses for two countries, for which past research has demonstrated maximally different levels of career mobility – Germany and the UK (Blossfeld et al. 2008). This comparative design allows us to explore how far differences in trends of intergenerational class mobility between labour market entrants and individuals at more advanced career stages may result from differing levels of career mobility. Germany and the UK figure prominently in the mobility literature. For both countries, there exists a large and established body of evidence on trends in intergenerational class mobility for individuals at more advanced career stages, albeit based on quasi-birth cohorts. Our results can therefore be meaningfully contrasted with prior work.

The next section reviews in greater depth past research on Germany and the UK and discusses to what extent our results using labour market entry cohorts can add to previous studies using quasi-birth cohorts. We then elaborate on our data and key variables and present the empirical results in the following sections. The article ends with a summary of our findings and discussion of their implications for future research.

2 Past research and theoretical expectations

2.1 Absolute mobility

As said, absolute mobility refers to the proportion of individuals who attain different class positions (class destination) than their parents' position (class origin), which might be at higher, lower, or broadly similar levels. Absolute mobility can therefore be divided into upward, downward, and horizontal components. Past research finds quite similar trends for Germany and the UK. In both countries, overall mobility levels remained generally stable throughout the twentieth century, that is around 70-80 per cent of individuals ended up in different class positions from that of their parents (Breen 2004). Likewise, similar developments can be observed with regard to the long-run trends in the upward and downward components of absolute mobility. For Germany, Mayer and

Aisenbrey (2007), Müller and Pollak (2015) (see also Pollak and Müller 2020) as well as Hertel (2017) report increasing upward mobility for cohorts born in the first half of the twentieth century, and a decline in these rates for cohorts born thereafter. By contrast, downward mobility fell among earlier cohorts before starting to rise among later cohorts. For the UK, a similar reversal of trends in upward and downward mobility can be observed when comparing studies covering cohorts born before (Goldthorpe, Llewellyn, and Payne 1987) and after 1950 (Goldthorpe and Jackson 2007; Paterson and Iannelli 2008; Bukodi et al. 2015; Buscha and Sturgis 2018).

These similar developments in absolute mobility were driven by common class structural changes that occurred simultaneously in Germany and the UK as well as in other industrialised countries (Erikson and Goldthorpe 1992; Breen 2004; Breen and Müller 2020). Cohorts born in the first half of the twentieth century experienced a period of occupational upgrading, primarily due to the stark rise of skilled service jobs alongside the decline of the agricultural sector and unskilled manual work. Greater room at the top improved chances for upward mobility and made downward mobility less likely. However, for cohorts born thereafter occupational upgrading came to a halt and as the proportion of individuals with higher class origins had been rising, so did the proportion of men and women ‘at risk of downward mobility’ (Bukodi et al. 2020).

Changes in the distribution of origin and destination classes may yet look different depending on the point at which individuals are observed in their careers, and differently so in Germany and the UK. Germany’s combination of an occupation-specific education and training system with a tightly regulated labour market facilitates stable labour market entries and high degrees of job continuity (Scherer 2005; Leuze 2007). Levels of career mobility are therefore low, and individuals tend to stay in similar class positions throughout their working lives. As a result, class distributions are likely to be quite similar for individuals at different stages of their careers. We therefore expect trends in absolute mobility for labour market entrants in Germany to resemble those observed in past research.

In contrast, in the UK, the coordination between educational and labour market institutions is weak. Combined with high labour market flexibility, labour market entries are unstable and levels of career mobility high (Scherer 2005; Leuze 2007). Individuals from more advantaged backgrounds are thus more likely than their German counterparts to experience some turbulence in their early careers, possibly leading to intergenerational downward mobility before settling in more stable employment and reaching similar positions as their parents through upward career mobility – a phenomenon known as ‘counter mobility’ (Bukodi and Goldthorpe 2018). Consequently, class distributions may look rather different depending on whether individuals are observed earlier or later in their careers. We therefore expect trends in absolute mobility for labour market entrants in the UK to differ from those observed in past research, and thereby to also be different from trends observed for labour market entrants in Germany.

2.2 *Relative mobility*

Relative mobility or social fluidity refers to the strength of the association between individuals’ origins and destinations net of differences in the class distributions between the parents’ and children’s generation. For our two countries, previous studies find rather different trends in relative mobility. In Germany, increasing rates were observed for cohorts born in the first half of the twentieth century, which then levelled off and remained stable for cohorts born during the second half of the twentieth century (Hertel 2017; Pollak and Müller 2020). By contrast, in the UK, a picture of no change was found for individuals born over the same period of time (Goldthorpe and Jackson 2007; Paterson and Iannelli 2008; Bukodi et al. 2015).

To account for these patterns, the literature refers to processes affecting the associations summarised in the so-called ‘OED triangle’ between individuals’ class origin (O), educational attainment (E), and class destination (D) that are suggested to have unfolded differently in the two countries. Besides some decrease in the ED association, cohorts born in Germany before the 1950s experienced a decline in the strength of the OE and the OD associations as the expansion of

education reduced class-based educational inequalities and increased the proportion of the higher-educated, for whom a weaker origin-destination association net of education exists. As a result, social fluidity increased. However, as the population became increasingly educated, opportunities for a further weakening of these associations diminished and relative rates ceased to rise for cohorts born thereafter (Müller and Pollak 2004; 2015; Pollak and Müller 2020; Hertel 2017).

In the UK, trends in these associations were much more stable despite educational expansion. If any, a weakening in the OE association could be observed (Jonsson and Mills 1993; Breen et al. 2009) that was yet likely counteracted by a simultaneously weakening in the ED association (Goldthorpe and Mills 2004; Breen and Luijkx 2004; Jackson et al. 2005), primarily due to over-qualification and ‘credentials inflation’ (Bukodi and Goldthorpe 2018). Bukodi and Goldthorpe (2016) also show that when measuring education in relative terms, the associations between OE and ED remained essentially unchanged. With no further changes in the direct OD association (Gugushvili et al. 2017), social fluidity stayed constant for cohorts born across the twentieth century.

Again, it is possible that trends in the associations captured by the OED triangle differ for individuals at different career stages, i.e. they may depend on when we measure D, and that these differences in turn depend on levels of career mobility. If career mobility is low, changes in class positions are rare so that the OE, ED, and OD associations are unlikely to vary in any great strength over the course of individuals’ working lives. We thus expect trends in relative mobility for labour market entrants in Germany to resemble those observed in past research. High career mobility, on the other hand, means that changes in class positions occur more frequently, leading to variation especially in the ED and OD associations across individuals’ careers. The prevalence of counter mobility further implies that the ED and OD associations could be particularly weak at labour

market entry for individuals from higher class backgrounds.² Focussing on first job may then reveal more variation in relative mobility than previously reported, which would be in line with Bukodi et al. (2015), who find social fluidity to increase when members of birth cohorts are observed at a younger age. We therefore expect trends in relative mobility for labour market entrants in the UK to differ to some extent from those observed in past research.

Using cohorts of labour market entrants not only complements prior work on long-term trends in intergenerational class mobility. As we argued at the beginning, a further strength is that this approach allows to precisely explore whether shorter-term changes in relative mobility can be systematically linked to changes in conditions of the economy and the labour market. There is evidence suggesting that individuals whose labour market entries coincided with a period of severe economic difficulties, continuing high levels of unemployment, and labour market re-structuring experienced significantly slower improvements in their earnings and occupational status compared to those who started their careers under more favourable conditions (Blossfeld 1986, 1987; Bukodi and Goldthorpe 2011; Barone and Schizzerotto 2011). Moreover, such adverse economic conditions seem to disproportionally affect individuals from lower class origins. For the UK, Bukodi and Goldthorpe (2011) show that coming from more advantaged backgrounds helps to offset the relatively low earnings and occupational returns that individuals obtained from high-level qualifications during periods of unfavourable labour market conditions, and that such an advantage was still apparent at later career stages. Given these findings, we expect periods of economic ‘bust’ to be associated with decreases in social fluidity, and periods of ‘boom’ to be associated with increases in social fluidity.

² Bukodi (2017) shows that in the UK further education serves as a channel through which individuals from higher class backgrounds strengthen the OD association and achieve counter mobility.

3 Data and variables

As our objective is to map trends in intergenerational class mobility as detailed as possible from the second half of the last century until today, we use large-scale surveys that cover the period in question. For Germany, our analyses are based on waves 1984-2016 of the German Socio-Economic Panel (SOEP v33; Goebel et al. 2019). The SOEP is the largest representative, longitudinal survey in Germany interviewing each year around 30,000 respondents in ca. 11,000 households on matters relevant to social inequality research. To ensure comparability over time, we only work with the West German sample of the survey.³

For the UK, we use two datasets. Our primary dataset is the UK Household Longitudinal Study (UKHLS End User License version; University of Essex 2017), also known as Understanding Society. Like the SOEP, the UKHLS is the largest representative, longitudinal multi-topic study that is annually conducted in the UK. Covering roughly 145,000 respondents in ca. 40,000 household, it started in 2009. We use waves 2009-2016. Our secondary dataset consists of the 2014-2017 UK Labour Force Survey (UKLFS Secure Access version; Office for National Statistics 2018). The UKLFS collects representative information on current employment conditions on a quarterly basis and is currently the UK's largest household survey. Since 2014, the UKLFS also collects in each July-September Quarter data on the characteristics of parents' employment during respondents' childhood, which makes it suitable for our purposes. It is based on a rolling sample of around 100,000 respondents in ca. 40,000 households, who are interviewed in five consecutive quarters. The rationale for using the UKLFS alongside the UKHLS is twofold. First, with the UKLFS we can extend our observation window almost up to date and include respondents who

³ That is, only respondents who entered the labour market in West Germany are included in the analytical sample. However, 7.22 per cent of respondents who entered the labour market in West Germany after 1989 were born in East Germany. We run robustness checks to account for selective migration from East to West Germany after 1989. Our results remain unchanged when excluding respondents born in East Germany (see appendix C).

entered the UK labour market until 2017. Second, the UKLFS helps us to resolve certain methodological issues that we face when constructing our measure of social class as discussed below.

As said in the Introduction, we understand social class as deriving from employment relations. An individual's class position therefore depends on her employment status, i.e. whether she is employed, employing others or self-employed, and the type of contract governing her employment if she works as an employee. Different employment contracts exist because of different skill requirements and monitoring problems arising from the specific work tasks to be performed. It has been shown that in the case of employees, type of occupation serves as a reliable proxy for employment contracts and relations and can therefore be used to identify class positions. Given their strong association with socio-economic outcomes such as unemployment, income security, income stability, income prospects and wealth (Bukodi and Goldthorpe 2018), social classes can be hierarchically ordered.

For the UK, the National Statistics Socio-Economic Classification (NS-SEC) has been conceived to construct social class in exactly this way. We therefore use the NS-SEC to operationalise social class in the UKHLS and UKLFS. For Germany, we use its closest equivalent, the European Socio-economic Classification (ESeC). The ESeC has the same theoretical underpinning as the NS-SEC and has been developed to facilitate comparative research across European countries (Rose and Harrison 2010). Table 1 presents the seven-class version of the two schemes.

Table 1. The seven-class versions of the European Socio-Economic Classification (ESeC) and National Statistics Socio-Economic Classification (NS-SEC)

	ESeC	NS-SEC
Class 1	Large employers, higher managers and professionals	Higher managerial, administrative and professional occupations
Class 2	Lower managers and professionals, high-level supervisors	Lower managerial, administrative and professional occupations
Class 3	Intermediate occupations	Intermediate occupations
Class 4	Small employers and own account workers	Small employers and own account workers
Class 5	Lower supervisors and technicians	Lower supervisory and technical occupations
Class 6	Lower service, sales and technical occupations	Semi-routine occupations
Class 7	Routine occupations	Routine occupations

Note: The dotted lines indicate the five-class hierarchical ordering of the two schemes. Classes 1 and 2 are referred to as the salariat, Classes 3, 4 and 5 represent the intermediate classes, while Class 6 and 7 form the working class.

Given our focus on the intergenerational class mobility of labour market entrants, respondents' origin class and class at labour market entry are our two key variables. In the SOEP and UKHLS, we use the dominance approach to construct origin class, which takes the higher class if father's and mother's class differ (Erikson 1984). Since the UKLFS only asks about the occupation of the main wage earner during childhood, we take this as approximation. In all three surveys, class of origin is established at respondents' age 14.

Due to their longitudinal design, the SOEP and UKHLS have information, even if in part retrospectively, on respondents' full employment trajectories, including first job based on which class at labour market entry is constructed. The UKLFS, however, does not ask respondents about their first jobs but provides information on the date when they completed their full-time education. Based on this, we select respondents who completed full-time education within one year of the interview and are in employment when surveyed. Given that in the UK, average job tenure amongst individuals below age 35 is around three years (OECD 2019), it is highly likely that these respondents are still working in their first jobs. To minimise the risk of capturing casual jobs during the school-to-work transition and re-entries into the labour market after periods of continuing

education, we exclude in all surveys respondents who started their first jobs before age 14 or left full-time education after age 35.

For Germany, the SOEP provides ISCO88 3-digit occupational codes as well as information on employment status, number of employees and supervisory functions for respondents and their parents. We are hence able to construct the ‘full’ version of ESeC based on the official crosswalk for both class origin and class at labour market entry according to the procedure in Rose and Harrison (2010).

For the UK, we use the official NS-SEC crosswalk that relies on the national occupational classification, i.e. SOC10 4-digits codes, alongside information on employment status, number of employees and supervisory functions. The UKLFS has all this information for the respondents. We can therefore construct the ‘full’ version of the NS-SEC to measure class at labour market entry. For class of origin, however, we need to revert to the ‘simplified’ version since only the occupation of the main wage earner in the parental household is known. Yet, as appendix Table A4 shows, the allocation of NS-SEC according to the ‘full’ and ‘simplified’ method for class at labour market entry overlaps to a large extent. In the UKHLS, SOC10 codes are only provided in 3-digits for both respondents and their parents. We therefore create our own crosswalk between SOC10 3-digits codes and NS-SEC classes based on the relevant distributions in the UKLFS, which are then used in the UKHLS to measure class origin and class at labour market entry according to the simplified version.⁴

⁴ More precisely, we take the full sample of the pooled 2014-2017 UKLFS July-September Quarters and construct the seven-class version of the NS-SEC for respondents’ current employment and their main wage earner as outlined above. Respondents’ last employment is taken if information on current employment is missing. We then turn the SOC10 4-digits into 3-digits and determine for each of the latter the most common NS-SEC class position, separately for men, women, and the main wage earner. Our gender- and generation-specific crosswalks thus rely on the mode NS-SEC constructed from SOC10 4-digits by SOC10 3-digits in the UKLFS.

To map trends over time, we follow the literature and adopt a cohort approach. Since we aim to do so for labour market entrants, we use labour market entry cohorts contrary to most of past research that relied on quasi-birth cohorts. Moreover, we aim to define these cohorts as narrowly as possible in order to give a detailed picture of change in intergenerational class mobility. In the SOEP, labour market entry is defined as the year in which respondents start their first job after having completed full-time education. In the UKHLS and UKLFS, we take the year in which respondents first left full-time education as a proxy, since no information on the precise date when respondents entered the labour market is available.⁵ In our two primary datasets, the SOEP and UKHLS, we then create 16 four-year cohorts, comprising of respondents who entered the labour market between 1950 and 2013. Given the UKLFS's large sample size, we can work with four annual labour market entry cohorts (2014–2017) in our secondary dataset for the UK.

As explained, the operationalisation of class origin and class at labour market entry is somewhat different in the two UK surveys. Class mobility rates are hence likely to differ to some extent. In particular, rates of relative mobility might be over-estimated in the UKLFS due to attenuation bias as class origin is measured less precisely based on the main wage earner and using an occupation-only-approach.⁶ Despite these measurement problems, we regard using the UKLFS as important to provide an up-to-date account of UK trends in intergenerational class mobility. Although mobility levels might be slightly different from those in the UKHLS, a close inspection of the UKLFS suggests that the size of the measurement error described above does not differ between

⁵ For 688 observations (1.8 per cent) in the UKHLS, year of leaving full-time education is missing. For these cases, we approximate year of labour market entry using mean age of leaving full-time education of those respondents, who have similar educational qualifications and were born within the same five years.

⁶ If class origin is measured with greater error, its 'predictiveness' regarding class destination decreases and the association between class origin and class destination weakens. Thus, rates of relative mobility will be upwardly biased showing greater social fluidity than is the case (Erikson and Goldthorpe 2010). This is exactly what we observe as presented in appendix Figure A1.

survey years, or labour market entry cohorts, within the UKLFS. Thus, the estimates of over-time change yielded by the two datasets can be regarded as comparable.

Finally, we perform multiple imputation by chained equations, separately for men and women, on all three datasets to adjust for systematic missingness in class origin.⁷ In line with previous research (Betthäuser 2017), we find that individuals with lower class destinations are more likely to have missing information on their origin class than individuals with higher class destinations. After imputation, our analytical samples contain 31,885 (SOEP), 37,847 (UKHLS) and 6,770 (UKLFS) observations. Appendix Tables A1, A2, and A3 show the distributions of class origin and class at labour market entry by cohort and gender for each survey. All results presented draw on the multiply imputed datasets.

4 Empirical results

4.1 *Absolute mobility rates*

We calculate rates of total, upward, and downward mobility for each of our labour market entry cohorts in Germany and the UK, separately for men and women. Total rates are calculated as the percentage of individuals, who were in a different class at labour market entry than that of their parents based on the seven-class version of ESeC and NS-SEC. For upward and downward mobility, we use the five-class collapse of both schemes since Classes 3, 4 and 5 cannot be hierarchically ordered (see Table 1). Upward (downward) rates are calculated as the percentage of individuals, who started their careers in a higher (lower) class position than their origin class.

⁷ Besides year and class at labour market entry, we use available information on individuals' highest educational attainment, age at labour market entry, class at age 36 or older, (log) income as well as parental education and labour market participation to predict missing information on class of origin. Class origin is imputed for 18.59 per cent, 10.31 per cent, and 5.30 per cent of the analytical sample in the SOEP, UKHLS, and UKLFS, respectively.

Figures 1 and 2 show the absolute mobility rates with 95 per cent confidence intervals. Like previous research based on quasi-birth cohorts, we generally observe no significant change in total mobility for labour market entrants in either country. We also find similar levels of total mobility (70-80 per cent) as reported by prior studies. Country differences, however, emerge with respect to changes in the relative importance of upward and downward mobility. In Germany, upward mobility steadily increased, while downward mobility steadily decreased. From the 1960s onwards, the proportion of those starting their careers in a higher class than their class of origin gradually exceeded the proportion of those starting their careers in a lower class. In the UK, we see an opposite pattern. Upward mobility was in constant decline, while downward mobility constantly rose. Starting one's career in a lower class than that of one's parents became increasingly common since the 1970s. Data from the UKLFS confirms that this trend persisted for the most recent cohorts.

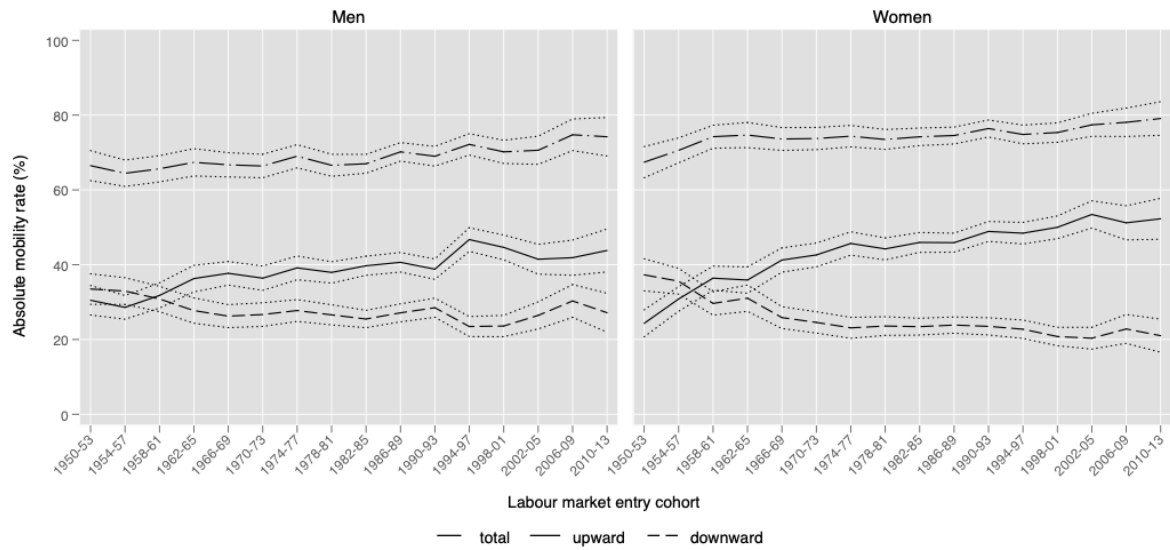


Figure 1. Absolute mobility rates by labour market entry cohort, Germany

Note: 95 per cent confidence intervals shown. $N_{\text{men}} = 15,607$; $N_{\text{women}} = 16,278$. Source: SOEP 1984-2016.

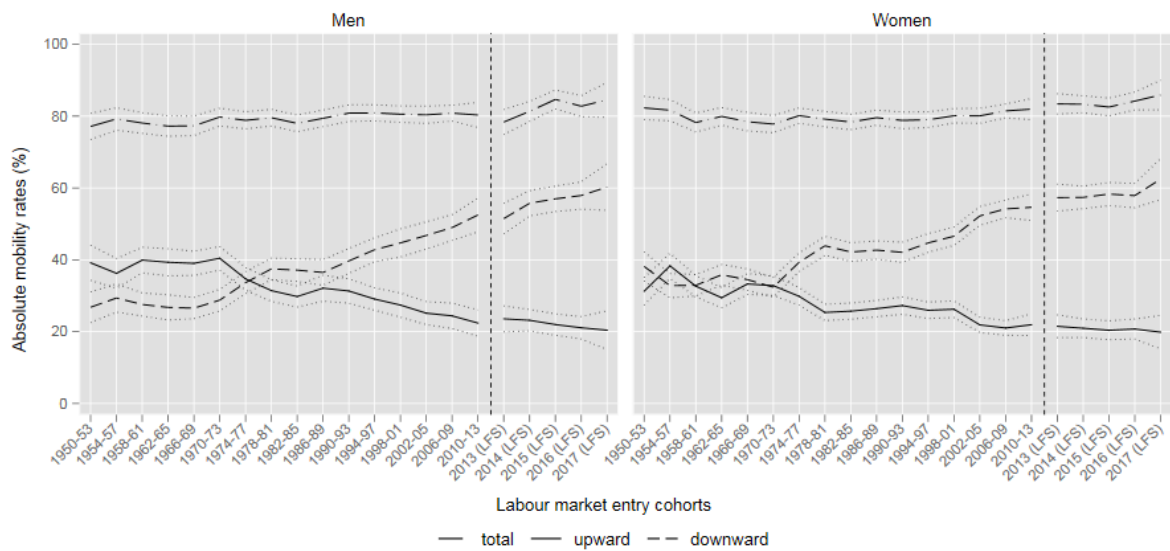


Figure 2. Absolute mobility rates by labour market entry cohort, UK

Note: 95 per cent confidence intervals shown. $N_{\text{men}} = 17,019$ (UKHLS) / 3,025 (UKLFS); $N_{\text{women}} = 19,687$ (UKHLS) / 3,745 (UKLFS). Source: UKHLS 2009-2013 EUL; UKLFS 2014-2017 Secure Access.

The continuity in the trends of upward and downward mobility, which we observe for labour market entrants in both countries, stands somewhat in contrast to our expectations. For Germany, we expected to see similar trends to what was observed in past research, chiefly because class distributions, as we suggested, would look similar for individuals at different career stages in a context of low career mobility. Although our results of increasing upward mobility and decreasing downward mobility are in line with the findings of prior studies for individuals born during the first half of the twentieth century – most of whom entered the labour market between the 1930s and 1970s – we fail to discover a reversal of trends, i.e. increases in downward mobility and decreases in upward mobility for later cohorts. This suggests that career mobility might have become more important for members of later labour market entry cohorts relative to earlier cohorts. In fact, Becker and Blossfeld (2017) show that in Germany, increases in occupational prestige across individuals' working lives became increasingly steeper for those who entered the labour market from the 1970s onwards. Differences in class distributions, depending on when class destination is measured, may therefore be larger for later cohorts. Nevertheless, our expectation about country differences appears confirmed as we see divergent trends in the upward and downward rates of labour market entrants in Germany and the UK.

To see whether these divergent trends result from contrasting changes in the distribution of origin and destination classes, Figure 3 plots the proportion of respondents from salariat (Classes 1 and 2) origins and the proportion of respondents in salariat destinations for each labour market entry cohort in Germany and the UK.⁸ Although more pronounced in the UK, we observe for both countries a growing proportion of respondents with more advantaged class backgrounds, corroborating previous findings. In Germany, however, not only the proportion of respondents from salariat origins increased, but also the proportion of respondents in salariat destinations. The

⁸ We only show the development of origin and destination classes in terms of the salariat across labour market entry cohorts. A more or less 'mirrored' picture of these developments can be observed when looking at the working class (Classes 6 and 7). See also Figures 4 and 5 in Paper 2 for trends in salariat and working class origins.

latter even started to overtake the former in the mid-1960s, improving chances for upward mobility and making downward mobility less likely for labour market entrants over time.

In the UK, only cohorts entering the labour market during the 1950s and 1960s – a period of exceptional economic growth and prosperity⁹ – saw an expansion in the proportion of salariat destinations that paralleled increases in the proportion of salariat origins. From the 1970s onwards, the proportion of respondents that began their careers in salariat destinations remained more or less stable. As the proportion of respondents coming from salariat origins yet continued to rise, so did the proportion of labour market entrants ‘at risk of downward mobility’ (Bukodi et al. 2020). The observed country differences in absolute mobility can therefore be attributed to divergent class structural changes for labour market entrants in Germany and the UK.

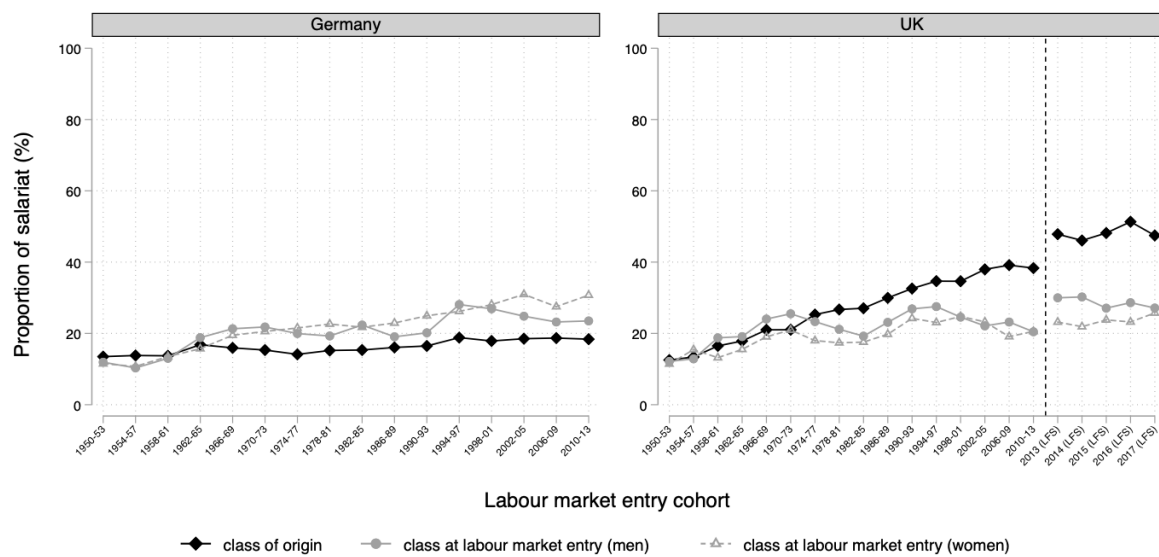


Figure 3. Proportion of respondents from salariat origins and proportion of respondents in salariat destinations at labour market entry by labour market entry cohort

Source: SOEP 1984-2016, UKHLS 2009-2016 EUL; UKLFS 2014-2017 Secure Access.

⁹ The reason why this period is sometimes referred to as Britain’s ‘golden age’ of intergenerational mobility (Bukodi and Goldthorpe 2018).

4.2 Relative mobility rates

Since relative mobility considers the chances of individuals coming from different class origins being found in different class destinations net of class structural change, we use (log-)odds ratios to measure relative rates. For a mobility table that is based on a seven-class scheme like the ESeC or NS-SEC, $21^2 = 441$ odds ratios can be calculated, as there are $(7 \times 6)/2 = 21$ pairs of origin and destination classes each. We have 16 mobility tables for Germany and 16 (UKHLS) + 4 (UKLFS) tables for the UK for each gender, and so must deal with 31,752 odds ratios in total. Two different approaches are chosen to navigate such complexity that come with their own strengths and shortcomings.

Our first approach is adopted from Cox, Jackson, and Lu (2009) and is based on ‘average global log-odds ratios’ (AGLORs) (see also Dale 1984; Bukodi et al. 2020). The main advantage of AGLORs is that they provide a single summary measure of social fluidity for each mobility table and thereby enable straightforward cross-cohort comparisons. However, they require fully ordered class categories. We thus work with the five-class versions of ESeC and NS-SEC (see Table 1). The first step is then to partition each 5×5 mobility table into 16 2×2 sub-tables to calculate global log-odds ratios. The first global log-odds ratio is calculated based on the table being divided between the first row and first column. The second is calculated based on the table being divided between the first row and first and second column. The third is calculated based on the table being divided between the first row and first, second, and third column and so on. We then average across all 16 global log-odds ratios. Formally,

$$AGLOR_k = \frac{1}{16} \sum_{i=1}^4 \sum_{j=1}^4 \ln \left[\frac{\text{odds}(\text{destination} \leq \text{Class}_j \mid \text{origin} \leq \text{Class}_i)}{\text{odds}(\text{destination} \leq \text{Class}_j \mid \text{origin} > \text{Class}_i)} \right],$$

where $AGLOR_k$ is the average global log-odds ratio for labour market entry cohort k based on a 5×5 mobility table. The higher the AGLOR, the stronger the net origin-destination association, i.e. the lower relative mobility.

Based on our primary datasets, Figure 4 plots the AGLOR for each labour market entry cohort by country. Especially for men, the origin-destination associations are generally stronger in Germany than in the UK. This is in line with previous research that identifies Germany as a low and the UK as a high fluidity country (Bukodi et al. 2020). More important for our purposes is yet the indication of a slight increase in social fluidity. In both countries, the origin-destination association seems to have weakened over the considered period, especially for women, as suggested by the downwardly sloping trend lines. However, we also see, especially for men, some levelling off of these increases for cohorts that entered the labour market since the mid-1970s.

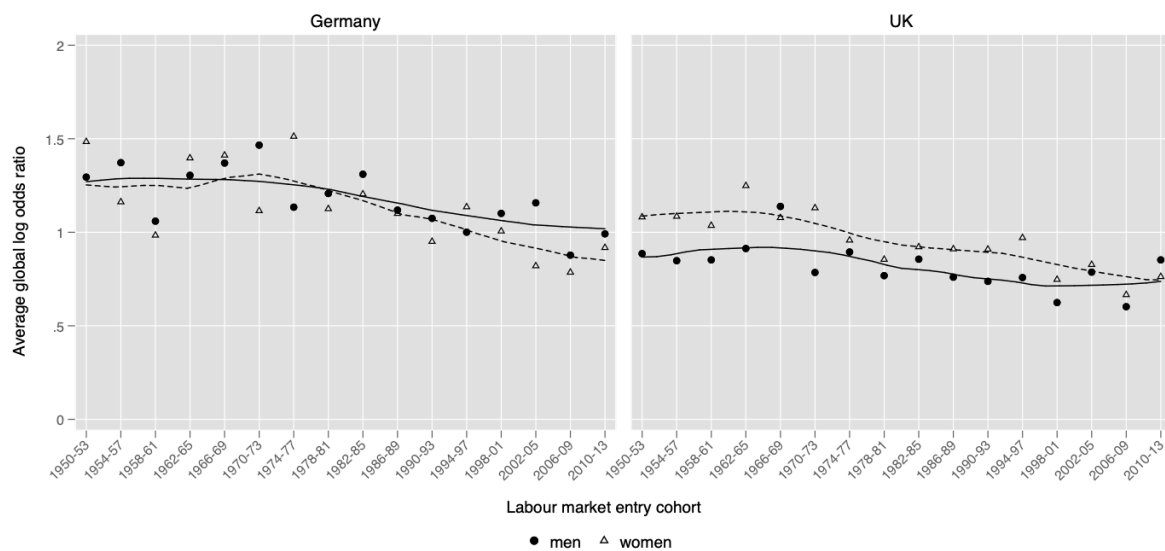


Figure 4. Average global log odds ratios by labour market entry cohort

Note: Local polynomial smoothing applied for men (solid line) and women (dashed line).

Source: SOEP 1984-2016, UKHLS 2009-2016 EUL.

Although easy to calculate and interpret, AGLORs are based on collapsed versions of ESeC and NS-SEC. They therefore mask horizontal mobility, which could bias the estimation of over-time trends if movements between Classes 3, 4, and 5 differed between cohorts. Our second approach hence follows more established sociological practice and fits two log-linear models on the seven-class version of ESeC and NS-SEC (for further elaboration see Breen 2004). The model of

‘Constant Social Fluidity’ (CnSF) assumes that the net origin-destination association does not differ across labour market entry cohorts and so remains constant over time:

$$\log F_{ijk} = \mu + \lambda_i^O + \lambda_j^D + \lambda_i^C + \lambda_{ik}^{OC} + \lambda_{jk}^{DC} + \lambda_{ij}^{OD},$$

where F_{ijk} is the expected frequency in cell ijk of a three-way table including origin i (O), destination j (D) and labour market entry cohort k (C), μ is a scale factor, $\lambda_i^O, \lambda_j^D, \lambda_k^C$ are the main effects of the distributions of individuals over origins, destinations and cohorts, and λ_{ik}^{OC} and λ_{jk}^{DC} refer to the association between origin and cohort and destination and cohort, respectively. Finally, λ_{ij}^{OD} represents the net association between origin and destination, for which the defining log-odds ratios are assumed to be the same across cohorts.

By contrast, the model of ‘Uniform Differences’ (UNIDIFF), also known as the log-multiplicative layer effects model (Erikson and Goldthorpe 1992; Xie 1992), allows the log-odds ratios to differ by a common cohort-specific factor β_k – the UNIDIFF parameter:

$$\log F_{ijk} = \mu + \lambda_i^O + \lambda_j^D + \lambda_i^C + \lambda_{ik}^{OC} + \lambda_{jk}^{DC} + \beta_k X_{ij}^{OD},$$

where X_{ij}^{OD} refers to the general pattern of the association between origins and destinations across cohorts. If $\beta_k < 1$, the origin-destination association is weaker and relative rates are higher in cohort k compared to a given reference cohort ($\beta_{reference} = 1$). If $\beta_k > 1$, the origin-destination association is stronger and relative mobility rates are lower. The UNIDIFF thus accounts for cohort-specific differences in the origin-destination association that apply uniformly to all underlying log-odds ratios. Put differently, it allows cohorts to have consistently higher or lower levels of social fluidity. Being limited to capturing only uniform differences in social fluidity across cohorts is a disadvantage of the model compared to the AGLOR approach. However, as Appendix Tables A5 and A6 show, the model fits well on the observed data in both countries for almost all cohorts.

To give a thorough account of long-term trends, we apply what we call a ‘moving windows’ approach. Starting with the earliest labour market entry cohort (1950-53) as reference, we fit the CnSF and UNIDIFF models to compare its relative mobility rates to those of all subsequent cohorts. We then repeat this exercise using the next cohort (1953-57) as reference and so on, until the relative rates of the 2006-09 cohort are compared to those of the 2009-13 cohort. In total, we have 15 comparisons. Setting up the cross-cohort comparison in this way allows us to see to what extent the patterns of change in relative mobility depend on the cohorts considered and thus to more precisely identify the timing of change.

The results are shown in Figure 5 for Germany and in Figure 6 for the UK. When we compare cohorts that entered the labour market in the 1950s and 1960s with cohorts that entered the labour market in the 1970s and later, we again find evidence for increasing social fluidity, i.e. the UNIDIFF improves on the CnSF in both countries for both genders. Yet, when we only focus on those who started their careers after 1970, the picture is clearly different. The UNIDIFF no longer improves consistently on the CnSF, suggesting that increases in relative rates at labour market entry came to a halt. For German men and women as well as for British men, relative mobility essentially stopped increasing for those who entered the labour market since the first half of the 1970s. For British women, increases in relative mobility ceased to continue somewhat later, during the late-1990s.

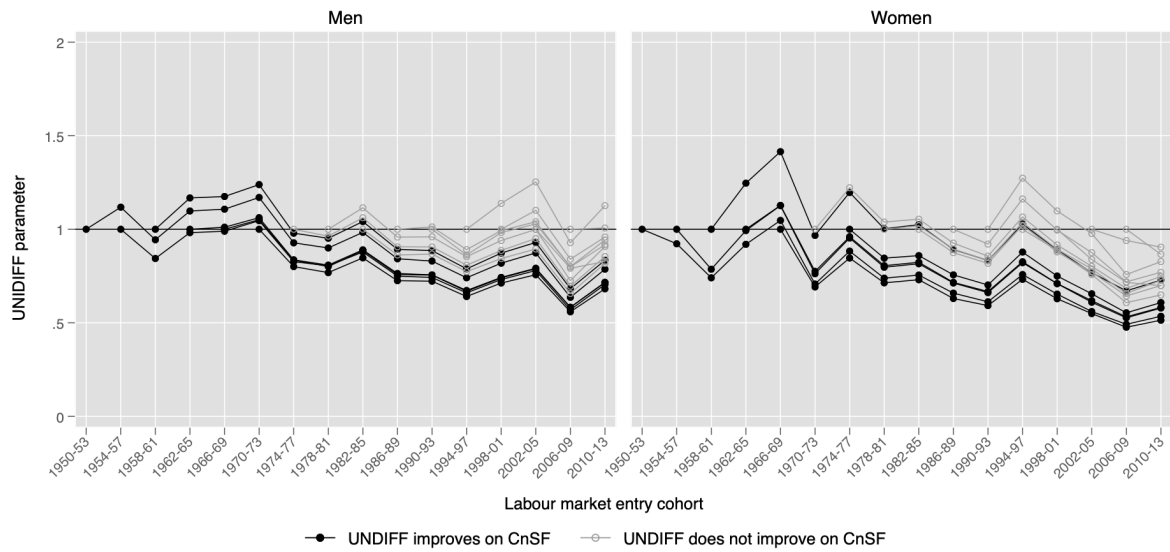


Figure 5. UNIDIFF parameters for labour market entry cohorts, ‘Moving windows approach’, Germany

Note: Fit statistics are presented in Appendix Table A5. *Source:* SOEP 1984-2016.

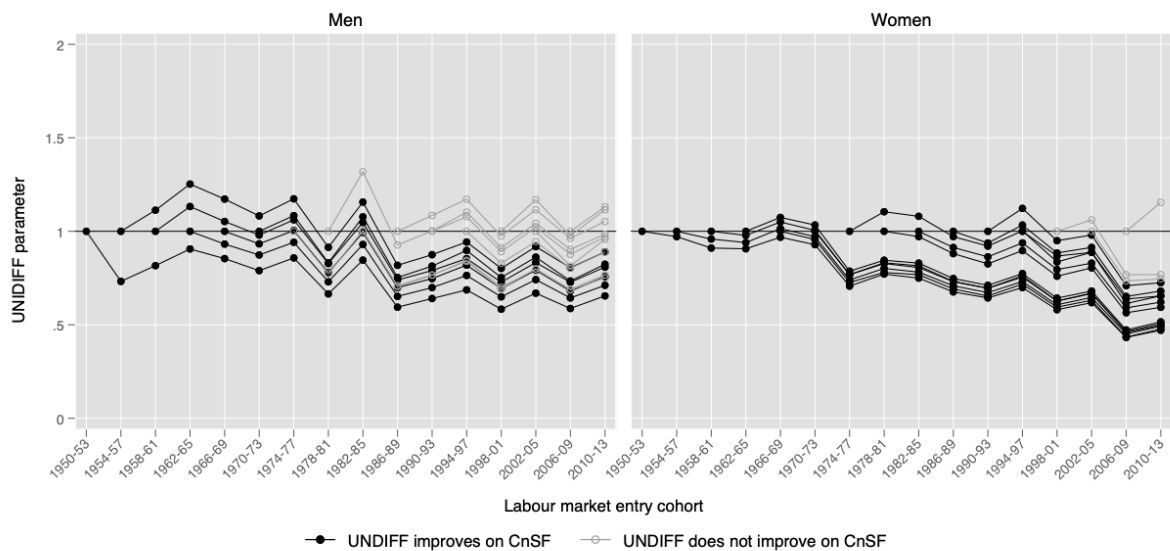


Figure 6. UNIDIFF parameters for labour market entry cohorts, ‘Moving windows approach’, UK

Note: Fit statistics are presented in Appendix Table A6. *Source:* UKHLS 2009-2016 EUL.

Both of our methodological approaches then paint a picture of striking similarity for Germany and the UK regarding long-term trends in relative mobility: an overall increase that levels off for individuals who entered the labour market after the mid-1970s. How far are these results in line with our expectations set out earlier? For Germany, we expected trends in social fluidity to look similar regardless of when class destination is measured in individuals' working lives due to relatively low levels of career mobility. In contrast, for the UK, we expected trends in social fluidity to differ when class destination is measured at labour market entry as compared to more advanced career stages due to relatively high levels of career mobility. Both of these expectations are confirmed by our results. Like past research, we also find a 'halting increase' in social fluidity for Germany (Hertel 2017; Pollak and Müller 2020). Yet, the same pattern of trends is observed for the UK as well, which is at odds with previous studies that measure class destination at later career stages and report either overall stability or trendless fluctuation (Bukodi and Goldthorpe 2018).

By studying mobility rates over a 70-year period, we contribute to the literature on long-term trends. However, we also aim to explore whether changes in social fluidity may be linked to shorter-term volatilities or cyclical changes in the economy and labour market. Past research already provided evidence for a negative impact of adverse economic conditions at labour market entry on future career progression that seems to vary for individuals from different social backgrounds (Blossfeld 1986, 1987; Bukodi and Goldthorpe 2011; Barone and Schizzerotto 2011). In a last step, we thus perform significance tests for differences in average global log-odds ratios (Figure 7)¹⁰ and fit the CnSF and UNIDIFF models to mobility tables of pairs of adjacent cohorts (Figure 8). If relative mobility followed periods of 'boom' and 'bust', these should appear when looking at more granular cross-cohort comparisons.

¹⁰ More precisely, we divide the difference in the average central four of global log-odds ratios by the standard error of this difference as described by Cox et al. (2009). According to the authors, using the central set of global log-odds ratios is preferable as they give a more precise result.

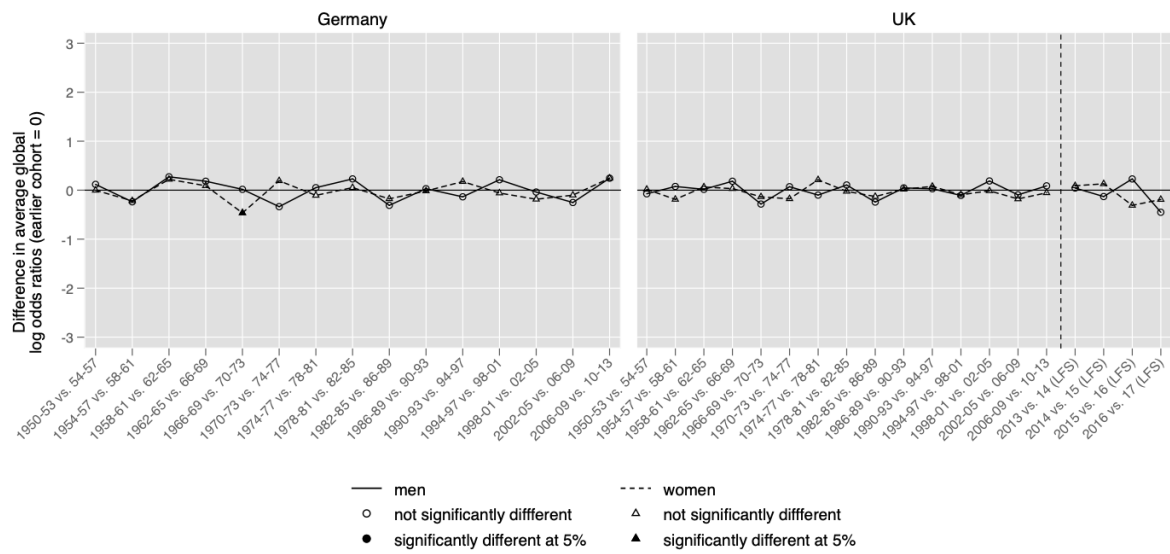


Figure 7. Significance test for differences in average global log odds ratios between adjacent labour market entry cohorts

Note: SOEP 1984-2016, UKHLS 2009-2016 EUL; UKLFS 2014-2017 Secure Access.

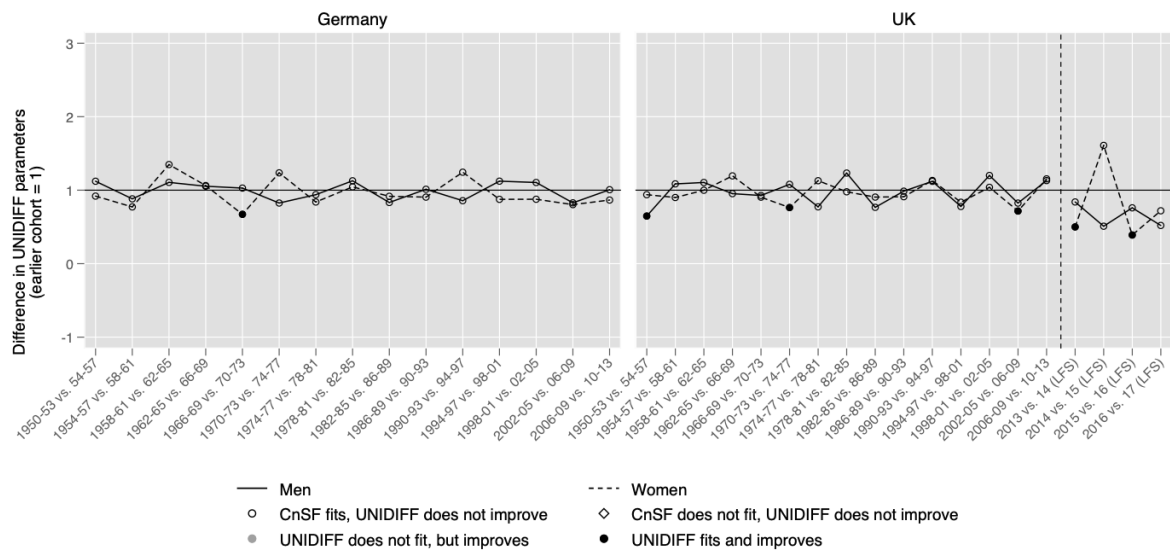


Figure 8. Results of fitting the CnSF and the UNIDIFF models to adjacent labour market entry cohorts

Note: Fit statistics are presented in Appendix Tables A7 and A8.

Source: SOEP 1984-2016, UKHLS 2009-2016 EUL; UKLFS 2014-2017 Secure Access.

Despite visible fluctuations, we do not find consistent differences in relative mobility rates between pairs of adjacent cohorts.¹¹ Insofar as there are significant differences, these show up in a rather unsystematic way and can neither be related to periods of growth nor crisis. For example, the UK was hit by a severe recession at the beginning of the 1980s and privatisation, extensive deregulation, and labour market re-structuring further contributed to soaring unemployment rates and economic inequality throughout the decade. Based on past research (Bukodi and Goldthorpe 2011), we expected individuals who entered the labour market during this time to experience decreases in social fluidity as class origin appears to matter more when economic conditions are critical. However, we do not observe a strengthening in the origin-destination association between the 1978-81 and 1982-85 cohorts. Likewise, the 2008 financial crisis had a large impact on the economies of Germany and the UK, leading to negative growth rates in both countries. We nevertheless see no decline in the level of social fluidity for the 2006-09 cohort compared to the 2002-05 cohort in either country. Short-term changes in economic conditions or labour market volatilities therefore do not seem to be associated with significant changes in relative mobility for labour market entrants. Notwithstanding, entering the labour market under unfavourable conditions may still have detrimental effects on individuals' career progression as shown by past research.

4.3 *Auxiliary analyses on relative rates*

We focus on individuals' first job in order to map long-term trends in intergenerational mobility that are 'adjusted' for intragenerational mobility and to explore the degree to which conditions at labour market entry may shape chances for relative mobility. To take account of cross-national differences in the extent to which first job is predictive of individuals' class destinations over the course of their careers, we conduct our analyses for Germany and the UK. The two countries are

¹¹ We obtain similar results if we compare cohorts over a period of 16 years by replacing the four-year labour market entry cohorts by eight-year cohorts. The results are presented in Appendix Figures A2 and A3.

known for their contrasting patterns of career mobility due to distinct institutional arrangements (Blossfeld et al. 2008). However, labour market entries and the nature of first jobs do not only differ between countries but are also changing over time. To assess how far these changes affect our trend estimates, we conduct an additional set of auxiliary analyses.¹²

As shown in Appendix Figures B1 and B2, the proportion of young workers found in some kind of ‘non-standard’ jobs, such as part-time or temporary employment, considerably increased over the past decades in our two countries (see also Bachmann et al. 2018; Allmendinger et al. 2013; Passaretta and Wolbers 2019). This growing flexibility may not only change patterns of labour market entry but can also affect changes in relative mobility rates, if the strength in the origin-destination association differed for individuals in standard and non-standard employment.

Indeed, we observe some significant differences in the origin-destination association between the two groups that is particularly pronounced for younger respondents in the UK (Tables B1 and B2). Yet, given that labour market entrants have become older over time as a result of longer educational trajectories (Bachmann et al. 2018), this effect can be expected to be rather negligible. Nevertheless, we further check for systematic differences in relative mobility rates between older and younger labour market entrants. As no differences appear in both countries (Table B3), we are confident that the growing proportion of non-standard employment among labour market entrants is unlikely to affect our findings.

5 Conclusion

Focussing on cohorts of labour market entrants, our objective is to offer a refinement of the study of over-time trends in intergenerational class mobility. We believe that this approach pinpoints changes in absolute and relative mobility more precisely than approaches relying on quasi-birth

¹² Due to space limitation, we can only give a brief summary, but detailed elaboration on what we do and all results from this exercise are presented in full in appendix B.

cohorts for two reasons. First, members of different cohorts are compared with each other when they are at similar stages in their careers. Cohort differences can therefore be unambiguously attributed to differences in *intergenerational* class mobility rather than also involving differences in *intragenerational* class mobility. Second, members of the same labour market entry cohort start their careers under the same institutional and economic conditions. The approach thus exactly accounts for the opportunity structures members of different cohorts are faced with, allowing to further scrutinise how far conditions at labour market entry shape chances for intergenerational class mobility.

To gauge the degree to which differences in observed trends in intergenerational class mobility between individuals at different career stages depend on levels of career mobility, we study men and women who entered the labour market in Germany and the UK. As expected, our results for Germany show great similarity with those of previous studies, while our findings for the UK are somewhat different. It therefore seems that in contexts with low levels of career mobility such as Germany, trends in intergenerational class mobility based on labour market entrants provide a reliable prediction of trends in intergenerational class mobility at all career stages. In other words, scholars do not necessarily need to ‘wait’ until survey respondents spent certain amounts of time in the labour market as chances for intergenerational class mobility seem to be determined from the very start. However, an important assumption is that levels of career mobility remain constant over time. By contrast, in contexts with high levels of career mobility such as the UK, the timing when to measure class destination is quite consequential. Compared to previous studies that measure individuals’ class destination at later career stages, we overestimate, at least to some extent, decreases in upward mobility, increases in downward mobility as well as increases in relative mobility. Or, put differently, we underestimate persistence in intergenerational inequality, when focussing on those who just embarked on their careers.

In addition, our results highlight how patterns of change in social fluidity are crucially affected by the design of the cross-cohort comparison. When looking at the entire period covered by our study,

we do observe a weakening of the origin-destination association for both Germany and the UK. Our ‘moving windows’ approach yet reveals that earlier increases in social fluidity levelled off for cohorts who entered the labour market since the mid-1970s. Furthermore, more fine-grained comparisons between adjacent labour market entry cohorts do not provide evidence that social fluidity follows cyclical developments of the economy or shorter-term volatilities in the labour market. In both countries, increases in social fluidity appear to progress rather slowly and came to a halt towards the end of the twentieth century.

The finding of very similar trends in social fluidity for labour market entrants in Germany and the UK warrants further reflection and raises the question to what extent initial increases that are followed by stability can be explained by historic idiosyncrasies of the two countries that simply coincided in their timing, or are in fact related to a common factor. Our results cast some doubt on the universal applicability of an education-based explanation that was put forward to account for the halting increases in social fluidity observed for quasi-birth cohorts (Breen and Müller 2020). In the UK, contrary to Germany, the OE and ED associations did not change much in the second half of the twentieth century. Moreover, the OED interaction that allows to assign education a central role in increasing social fluidity does not appear to be significant either (Bukodi and Goldthorpe 2016).

An alternative explanation accounting for the lack of sustained increases in both countries, but in the UK in particular, may be found in the possibility of a structural ‘limit’ in social fluidity as suggested by Bukodi and Goldthorpe (2018). In societies with a capitalist market economy, nuclear family system and liberal-democratic policy, such limit could exist as more advantaged families always seek to use their superior resources – economic, cultural or social – to maintain their children’s greater chances of success relative to those of children from less advantaged families. Beyond a certain point, parents may therefore block policy interventions aimed at creating greater educational equality or find some other ways for their children to avoid intergenerational downward mobility. This may become especially pressing at times when there is less ‘room at the

top', making it more difficult for children from advantaged backgrounds to maintain their parents' class positions. As we are unable to provide further evidence on the existence of such a limit in this paper, we leave its exploration to future research. However, as the absence of sustained increases in social fluidity are observed in two very different institutional contexts, explaining stability in relative rates might be one of the major puzzles to be solved by mobility scholars of the twenty-first century.

References

- Allmendinger, Jutta, Lena Hipp, and Stefan Stuth. 2013. *Atypical Employment in Europe 1996-2011*. WZB Discussion Paper P 2013-003. Berlin: Berlin Social Science Center.
- Bachmann, Ronald, Rahel Felder, and Marcus Tamm. 2018. *Labour Market Participation and Atypical Employment over the Life Cycle: A Cohort Analysis for Germany*. IZA Discussion Paper No. 12010. Bonn: IZA Institute of Labor Economics.
- Barbieri, Paolo Giorgio Cutuli, and Giampiero Passaretta. 2016. 'Institutions and the school-to-work transition: disentangling the role of the macro-institutional context'. *Socio-Economic Review* 16(1):161-183.
- Barone, Carlo, and Antonio Schizzerotto. 2011. 'Introduction'. *European Societies* 13(3):331-345.
- Becker, Rolf and Hans-Peter Blossfeld. 2017. 'Entry of men into the labour market in West Germany and their career mobility (1945-2008)'. *Journal of Labour Market Research* 50:113-130.
- Bell, Daniel. 1972. 'On Meritocracy and Equality'. *Public Interest* 29:29-68.
- Bethhäuser, Bastian. 2017. 'Fostering Equality of Opportunity? Compulsory Schooling Reform and Social Mobility in Germany'. *European Sociological Review* 33(5):633-44.
- Blossfeld, Hans-Peter. 1986. 'Career Opportunities in the Federal Republic of Germany, a Dynamic Approach to Study Life Course, Cohort and Period Effects'. *European Sociological Review* 2(3):208-25.
- . 1987. 'Entry into the Labor Market and Occupational Career in the Federal Republic: A Comparison with American Studies'. *International Journal of Sociology* 17(1-2):86-115.

- Blossfeld, Hans-Peter, Sandra Buchholz, Erzsébet Bukodi, Ellen Ebraliđze, Karin Kurz, Ilona Relikowski, and Paul Schmelzer. 2005. *Flexibility processes and social inequalities at labor market entry and in the early career*. flexCAREER Working Paper No. 1. Bamberg: Otto-Friedrich-University Bamberg.
- Blossfeld, Hans-Peter, Sandra Buchholz, Erzsébet Bukodi, Karin Kurz, eds. 2008. *Young Workers, Globalization and the Labour Market: Comparing Early Working Life in Eleven Countries*. Cheltenham: Edward Elgar.
- Breen, Richard, ed. 2004. *Social Mobility in Europe*. Oxford: Oxford University Press.
- Breen, Richard, and Janne Jonsson. 2007. 'Explaining Change in Social Fluidity: Educational Equalization and Educational Expansion in Twentieth-Century Sweden'. *American Journal of Sociology* 112(6):1775–1810.
- Breen, Richard, and Ruud Luijkx. 2004. 'Social Mobility in Europe between 1970 and 2000'. pp. 37–75 in *Social Mobility in Europe*, edited by R. Breen. Oxford: Oxford University Press.
- Breen, Richard, Ruud Luijkx, Walter Müller, and Reinhard Pollak. 2009. 'Nonpersistent inequality in educational attainment: Evidence from eight European countries'. *American Journal of Sociology*, 114(5):1475- 1521.
- Breen, Richard, and Waterl Müller, eds. 2020. *Education and intergenerational social mobility in Europe and the United States*. Stanford: Stanford University Press.
- Bukodi, Erzsébet. 2017. 'Cumulative Inequalities over the Life-Course: Life-Long Learning and Social Mobility in Britain'. *Journal of Social Policy* 46:367–404.
- Bukodi, Erzsébet. and John Goldthorpe. 2009. *Class Origins, Education and Occupational Attainment: Cross-Cohort Changes among Men in Britain*. CLS Working Paper 2009/3. London: Centre for Longitudinal Studies, Institute of Education.
- . 2016. 'Educational Attainment - Relative or Absolute - as a Mediator of Intergenerational Class Mobility in Britain'. *Research in Social Stratification and Mobility* 43:5–15.
- . 2011. 'Class Origins, Education and Occupational Attainment in Britain'. *European Societies* 13(3):347–75.
- . 2018. *Social Mobility and Education in Britain: Research, Politics and Policy*. Cambridge: Cambridge University Press.

- Bukodi, Erzsébet, John Goldthorpe, Lorraine Waller, and Jouni Kuha. 2015. 'The Mobility Problem in Britain: New Findings from the Analysis of Birth Cohort Data'. *The British Journal of Sociology* 66(1):93–117.
- Bukodi, Erzsébet, Marii Paskov, and Brian Nolan. 2020. 'Intergenerational Class Mobility in Europe: A New Account'. *Social Forces* 98(3):941–972.
- Buscha, Franz, and Patrick Sturgis. 2018. 'Declining social mobility? Evidence from five linked census in England and Wales 1971-2011'. *The British Journal of Sociology* 69(1):154–82.
- Cox, David, Michelle Jackson, and Shiwei Lu. 2009. 'On Square Ordinal Contingency Tables: A Comparison of Social Class and Income Mobility for the Same Individuals'. *Journal of the Royal Statistical Society* 172(2):483–93.
- Dale, Jocelyn. 1984. 'Local versus Global Association for Bivariate Ordered Responses'. *Biometrika* 71(3):507–14.
- Erikson, Robert. 1984. 'Social Class of Men, Women and Families'. *Sociology* 18(4):500–514.
- Erikson, Robert, and John Goldthorpe. 1992. *The Constant Flux: A Study of Class Mobility in Industrial Societies*. Oxford: Clarendon Press.
- . 2010. 'Has Social Mobility in Britain Decreased? Reconciling Divergent Findings on Income and Class Mobility'. *The British Journal of Sociology* 61(2):211–30.
- Featherman, David, and Richard Hauser. 1978. *Opportunity and Change*. New York: Academic Press.
- Ganzeboom, Harry, Ruud Luijkx, and Donald Treiman. 1989. 'Intergenerational Class Mobility in Comparative Perspective'. *Research in Social Stratification and Mobility* 8:3–84.
- Goebel, Jan, Markus M. Grabka, Stefan Liebig, Martin Kroh, David Richter, Carsten Schröder, and Jürgen Schupp. 2019. 'The German Socio-Economic Panel (SOEP)'. *Jahrbücher für Nationalökonomie und Statistik (Journal of Economics and Statistics)* 239(2):345–360.
doi: 10.5684/soep.v33.
- Goldthorpe, John, and Michelle Jackson. 2007. 'Intergenerational Class Mobility in Contemporary Britain: Political Concerns and Empirical Findings'. *The British Journal of Sociology* 58(4):525–46.
- Goldthorpe, John, Catriona Llewellyn, and Clive Payne. 1987. *Social Mobility and Class Structure in Modern Britain*. Second Edition. Oxford: Oxford University Press.

- Goldthorpe, John, and Colin Mills. 2004. 'Trends in Intergenerational Class Mobility in Britain in the Late Twentieth Century'. pp. 195–224 in *Social Mobility in Europe*, edited by R. Breen. Oxford: Oxford University Press.
- Groh-Samberg, Olaf. 2009. *Armut, soziale Ausgrenzung und Klassenstruktur: zur Integration multidimensionaler und längsschnittlicher Perspektiven*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Gugushvili, Alexi, Erzsébet Bukodi, and John Goldthorpe. 2017. 'The Direct Effect of Social Origins on Social Mobility Chances: 'Glass Floors' and 'Glass Ceilings' in Britain'. *European Sociological Review* 33(2):305–316.
- Hertel, Florian. 2017. *Social Mobility in the 20th Century: Class Mobility and Occupational Change in the United States and Germany*. Wiesbaden: Springer VS.
- Hout, Michael. 1988. 'More Universalism, Less Structural Mobility: The American Occupational Structure in the 1980s'. *American Journal of Sociology* 93(6):1358–1400.
- Jackson, Michelle, John Goldthorpe, and Colin Mills. 2005. 'Education, Employers and Class Mobility'. *Research in Social Stratification and Mobility* 23:3–34.
- Jonsson, Janne, and Colin Mills. 1993. 'Social Mobility in the 1970s and 1980s: A Study of Men and Women in England and Sweden'. *European Sociological Review* 9(3):229–48.
- Lareau, Annette, and Dalton Conley. 2008. *Social Class: How Does it Work?* New York: Russell Sage Foundation.
- Leuze, Kathrin. 2007. 'What Makes for a Good Start? Consequences of Occupation-Specific Higher Education for Career Mobility: Germany and Great Britain Compared.' *International Journal of Sociology* 37(2):29–53.
- Mayer, Karl Ulrich, and Silke Aisenbrey. 2007. 'Variations on a Theme: Trends in Social Mobility in (West) Germany for Cohorts Born between 1919 and 1971'. pp. 125–156 in *From Origin to Destination*, edited by S. Scherer, R. Pollack, G. Otte, and M. Gangl. Frankfurt am Main: Campus.
- Müller, Walter, and Reinhard Pollak. 2004. 'Social Mobility in West Germany: The Long Arms of History Discovered?' pp. 77–114 in *Social Mobility in Europe*, edited by R. Breen. Oxford: Oxford University Press.

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- . 2015. 'Bildung und soziale Mobilität in Deutschland'. *AStA Wirtschafts- und Sozialstatistisches Archiv* 9(1):5–26.
- OECD 2019. 'Labour Force Statistics: Population and labour force', *OECD Employment and Labour Market Statistics* (database). doi: 10.1787/data-00288-en (accessed: 2 April 2019).
- Office for National Statistics, Social Survey Division, Northern Ireland Statistics and Research Agency, Central Survey Unit. 2018. *Quarterly Labour Force Survey, 1992-2017: Secure Access*. 12th Edition. UK Data Service. doi: 10.5255/UKDA-SN-6727-13.
- Passaretta, Giampiero, and Maarten Wolbers. 2019. 'Temporary Employment at Labour Market Entry in Europe: Labour Market Dualism, Transitions to Secure Employment and Upward Mobility'. *Economic and Industrial Democracy* 40(2):382–408.
- Paterson, Lindsay, and Cristina Iannelli. 2008. 'Patterns of Absolute and Relative Social Mobility: A Comparative Study of England, Wales and Scotland'. *Sociological Research Online* 12(6):1–21.
- Pollak, Reinhard, and Walter Müller. 2020. 'Education as an Equalizing Force: How Declining Educational Inequality and Educational Expansion Have Contributed to More Social Fluidity in Germany'. pp. 122–49 in *Education and Intergenerational Social Mobility in Europe and the United States*, edited by R. Breen and W. Müller. Stanford, California: Stanford University Press.
- Rose, David, and Eric Harrison, eds. 2010. *Social Class in Europe: An Introduction to the European Socio-Economic Classification*. London/New York: Routledge.
- Ryder, Norman. 1965. 'The Cohort as a Concept in the Study of Social Change Author'. *American Sociological Review* 30(6):843–61.
- Scherer, Stefanie. 2005. 'Patterns of Labour Market Entry - Long Wait or Career Instability? An Empirical Comparison of Italy, Great Britain and West Germany.' *European Sociological Review* 21(5):427-440.
- Treiman, Donald. 1970. 'Industrialization and Social Stratification'. *Sociological Inquiry* 40(2):207–234.
- University of Essex, Institute for Social and Economic Research. 2017. *Understanding Society: Waves 1-7, 2009-2016 and Harmonised BHPS Waves 1-18, 1991-2009*. 9th Edition. UK Data Service. doi: 10.5255/UKDA-SN-6614-10.

- Wolbers, Maarten. 2007. 'Patterns of Labour Market Entry: A Comparative Perspective on School-to-Work Transitions in 11 European Countries'. *Acta Sociologica* 50(3): 189-210.
- Xie, Yu. 1992. 'The Log-Multiplicative Layer Effect Model for Comparing Mobility Tables'. *American Sociological Review* 57(3):380–380.

Appendix A

Table A1. Distribution of class of origin and class at labour market entry for men and women by labour market entry cohort, Germany

EseC	1950-53			1954-57			1958-61			1962-65		
	Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry	
	All	Men	Women	All	Men	Women	All	Men	Women	All	Men	Women
Class 1	4.34	5.70	1.12	4.73	4.74	0.68	5.17	6.61	0.83	5.88	8.17	1.25
Class 2	9.15	6.23	10.37	9.08	5.58	10.09	8.55	6.41	12.67	10.95	10.64	14.46
Class 3	3.88	7.03	16.59	6.33	9.26	22.00	7.13	10.01	34.06	7.84	11.20	29.61
Class 4	17.04	4.11	4.47	13.83	2.84	2.61	14.43	1.10	1.97	12.49	2.24	1.82
Class 5	4.94	1.99	3.99	4.62	1.89	2.95	4.87	2.30	2.70	5.00	2.35	2.73
Class 6	36.43	54.38	29.35	35.93	58.84	35.15	35.58	56.86	31.78	34.14	53.42	32.35
Class 7	24.21	20.56	34.13	25.47	16.84	26.53	24.27	16.72	15.99	23.71	11.98	17.77
N	1381	754	627	1832	950	882	1962	999	963	1771	893	878
EseC	1966-69			1970-73			1974-77			1978-81		
	Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry	
	All	Men	Women	All	Men	Women	All	Men	Women	All	Men	Women
Class 1	6.07	10.90	1.89	6.16	9.46	2.54	5.41	9.27	1.45	5.66	10.01	3.13
Class 2	9.89	10.43	17.61	9.19	12.36	18.03	8.72	10.69	20.09	9.56	9.28	19.50
Class 3	7.21	11.37	29.95	6.91	10.52	29.11	6.47	10.50	27.78	6.77	9.44	27.21
Class 4	12.16	1.04	0.80	12.58	1.25	0.66	11.74	1.89	0.45	10.14	1.06	0.48
Class 5	5.36	1.99	3.58	4.59	2.32	2.07	5.02	2.84	1.99	4.67	2.36	3.93
Class 6	34.95	51.85	29.65	35.00	49.71	32.21	35.28	50.24	33.76	34.06	51.10	31.46
Class 7	24.36	12.42	16.52	25.57	14.38	15.40	27.37	14.57	14.48	29.14	16.76	14.29
N	2060	1055	1005	2101	1036	1065	2162	1057	1105	2475	1229	1246
EseC	1982-1985			1986-1989			1990-1993			1994-1997		
	Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry	
	All	Men	Women	All	Men	Women	All	Men	Women	All	Men	Women
Class 1	5.00	12.08	3.45	5.08	10.98	4.60	6.33	11.76	5.32	5.97	16.64	6.49
Class 2	10.34	10.29	18.28	10.98	8.08	18.32	10.15	8.41	19.63	12.86	11.47	19.70
Class 3	7.76	8.10	25.70	9.96	8.77	25.71	9.89	8.94	25.36	10.81	9.40	24.47
Class 4	9.34	1.46	0.59	8.93	2.00	1.30	9.05	1.34	0.68	7.53	1.32	1.07
Class 5	4.65	1.33	3.84	4.77	2.62	5.16	3.92	2.46	6.00	3.41	4.23	6.49
Class 6	33.64	51.69	33.18	31.76	52.76	32.55	32.31	50.04	30.88	31.73	43.70	28.98
Class 7	29.26	15.06	14.96	28.50	14.78	12.36	28.35	17.05	12.13	27.69	13.25	12.81
N	3044	1507	1537	3058	1448	1610	2810	1343	1467	2282	1064	1218
EseC	1998-01			2002-05			2006-09			2010-13		
	Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry	
	All	Men	Women	All	Men	Women	All	Men	Women	All	Men	Women
Class 1	6.34	15.32	7.47	5.49	15.79	9.79	6.07	14.51	4.72	4.22	10.93	8.96
Class 2	11.54	11.60	20.60	13.03	9.05	21.16	12.63	8.71	22.79	14.17	12.58	21.79
Class 3	11.67	8.64	23.52	11.49	9.05	22.62	11.94	10.04	16.02	12.56	6.29	20.30
Class 4	7.11	1.97	1.00	8.43	1.15	0.66	7.33	1.79	2.05	6.44	1.99	0.60
Class 5	2.64	3.39	8.93	2.61	5.26	10.45	2.82	7.59	14.99	3.86	10.93	14.63
Class 6	32.60	44.64	26.71	31.39	43.59	22.88	29.91	36.83	27.31	28.15	38.08	21.19
Class 7	28.09	14.44	11.76	27.55	16.12	12.43	29.30	20.54	12.11	30.60	19.21	12.54
N	2011	914	1097	1364	608	756	935	448	487	637	302	335

Note: Unweighted distributions in per cent. *Source:* SOEP 1984-2016.

Table A2. Distribution of class of origin and class at labour market entry for men and women by labour market entry cohort, UK (UKHLS)

NS-SEC	1950-53			1954-57			1958-61			1962-65		
	Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry	
	All	Men	Women	All	Men	Women	All	Men	Women	All	Men	Women
Class 1	4.05	5.16	0.97	4.82	6.21	1.26	6.63	7.13	1.21	6.90	8.56	1.80
Class 2	8.48	7.00	10.47	8.57	6.66	14.20	9.87	11.64	11.98	10.96	10.56	13.73
Class 3	9.57	10.68	29.95	9.18	9.02	27.76	11.68	12.59	34.64	12.13	11.11	34.83
Class 4	21.35	12.71	5.64	21.09	11.98	7.16	18.61	12.35	7.96	18.62	13.78	6.91
Class 5	13.51	25.23	2.25	12.25	26.04	1.38	12.44	21.50	1.71	13.67	22.00	1.44
Class 6	13.38	24.49	30.92	15.66	24.26	30.78	15.58	20.07	28.80	15.51	18.56	25.85
Class 7	29.66	14.73	19.81	28.43	15.83	17.46	25.20	14.73	13.70	22.21	15.44	15.44
N	1164	543	621	1472	676	796	1835	842	993	2014	900	1114
NS-SEC	1966-69			1970-73			1974-77			1978-81		
	Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry	
	All	Men	Women	All	Men	Women	All	Men	Women	All	Men	Women
Class 1	8.73	12.12	1.60	8.16	12.34	2.28	9.11	11.70	2.64	10.06	10.74	3.19
Class 2	12.28	11.92	17.45	12.88	13.18	18.67	16.18	11.61	15.35	16.65	10.42	14.19
Class 3	11.50	12.44	33.87	14.94	12.90	35.90	14.12	13.01	33.76	15.18	10.74	32.11
Class 4	18.08	10.78	6.51	16.64	8.41	5.15	17.19	8.98	5.28	16.93	10.50	5.02
Class 5	12.80	23.32	2.08	12.61	23.18	1.10	10.11	21.09	2.36	10.71	21.40	2.51
Class 6	14.71	15.44	24.62	13.91	16.07	23.65	13.23	13.92	23.34	13.12	15.43	24.03
Class 7	21.91	13.99	13.87	20.86	13.93	13.26	20.05	19.69	17.27	17.36	20.76	18.94
N	2025	965	1060	2254	1070	1184	2615	1214	1401	2730	1257	1473
NS-SEC	1982-1985			1986-1989			1990-1993			1994-1997		
	Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry	
	All	Men	Women	All	Men	Women	All	Men	Women	All	Men	Women
Class 1	10.19	9.18	3.34	11.31	12.08	4.60	13.35	13.40	5.74	14.58	13.76	5.41
Class 2	16.87	10.06	14.22	18.65	11.03	15.18	19.24	13.48	18.48	20.08	13.76	17.65
Class 3	16.50	12.90	31.65	15.04	13.22	32.26	15.65	9.93	30.49	16.40	11.53	29.14
Class 4	15.89	11.22	6.29	17.47	11.33	6.04	15.74	9.26	6.26	14.68	7.81	5.35
Class 5	9.85	20.04	2.29	8.74	18.96	3.02	8.91	15.22	2.50	8.54	14.21	2.27
Class 6	12.52	18.37	24.90	12.02	16.47	23.46	11.85	17.54	21.28	11.84	18.68	24.47
Class 7	18.18	18.22	17.30	16.77	16.92	15.44	15.26	21.17	15.24	13.87	20.24	15.71
N	2898	1372	1526	2846	1324	1522	2567	1209	1358	2840	1344	1496
NS-SEC	1998-01			2002-05			2006-09			2010-13		
	Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry	
	All	Men	Women	All	Men	Women	All	Men	Women	All	Men	Women
Class 1	13.71	11.76	5.90	14.92	10.23	5.83	16.37	11.60	4.82	16.54	9.37	4.19
Class 2	20.92	12.81	18.86	23.05	11.87	17.41	22.78	11.60	14.29	21.79	11.10	16.38
Class 3	16.06	12.43	27.70	16.90	13.52	27.78	17.49	12.49	25.40	18.38	12.54	21.80
Class 4	15.50	7.57	4.48	13.82	9.37	4.55	11.97	8.03	4.64	12.28	7.64	4.93
Class 5	8.26	13.86	1.60	7.98	10.80	1.41	7.64	10.50	1.06	7.10	8.07	0.37
Class 6	12.03	19.10	23.28	10.93	21.89	25.16	11.72	24.43	29.39	11.86	24.21	30.54
Class 7	13.51	22.47	18.18	12.41	22.32	17.86	12.03	21.35	20.40	12.05	27.09	21.80
N	2963	1335	1628	2960	1398	1562	3158	1457	1701	1506	694	812

Note: Unweighted distributions in per cent. *Source:* UKHLS 2009-2016 End User License.

Table A3. Distribution of class of origin and class at labour market entry for men and women by labour market entry cohort, UK (UKLFS)

NS-SEC	2013			2014			2015			2016		
	Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry		Class of origin	Class at labour market entry	
		All	Men Women		All	Men Women		All	Men Women		All	Men Women
Class 1	20.24	8.93	5.71	21.32	9.75	5.03	22.28	8.87	5.17	24.37	10.67	5.56
Class 2	25.93	18.76	16.69	23.99	17.85	16.18	25.60	14.83	17.01	26.37	15.11	16.55
Class 3	12.49	12.20	19.18	13.43	9.62	18.09	12.75	14.45	19.38	11.69	11.11	20.80
Class 4	11.04	6.19	2.49	10.29	4.30	2.31	9.80	4.18	1.08	9.70	3.70	1.30
Class 5	8.72	7.83	1.76	8.37	6.46	1.21	8.84	7.10	1.94	6.79	7.70	1.77
Class 6	10.20	30.97	35.14	11.20	30.89	36.58	10.76	32.70	38.21	10.60	34.22	36.29
Class 7	11.38	15.12	19.03	11.39	21.14	20.60	9.97	17.87	17.22	10.47	17.48	17.73
N	1232	549	683	1785	790	995	1718	789	929	1521	675	846
2017												
NS-SEC	Class of origin	Class at labour market entry										
		All	Men Women									
Class 1	23.11	*	5.82									
Class 2	25.25	17.57	17.81									
Class 3	12.00	9.46	18.49									
Class 4	12.47	*	*									
Class 5	8.42	9.01	*									
Class 6	8.95	36.04	33.90									
Class 7	9.97	18.02	21.58									
N	514	222	292									

Note: Unweighted distributions in per cent. * Percentages suppressed for confidentiality reasons. *Source:* UKLFS 2014-2017 Secure Access.

Table A4. Comparison of NS-SEC allocation under simplified and full method, class destination at labour market entry

Full method	Simplified method							Total	Per cent
	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7		
Men									
Class 1	274	1	0	0	0	0	0	275	9.09
Class 2	6	491	26	14	0	0	0	537	17.75
Class 3	0	0	318	6	0	0	0	324	10.71
Class 4	4	10	9	34	12	16	33	118	3.90
Class 5	0	0	0	8	210	51	31	300	9.92
Class 6	0	0	0	16	0	916	0	932	30.81
Class 7	0	0	0	54	0	0	485	539	17.82
Total	284	502	353	132	222	983	549	3,025	100
Per cent	9.39	16.60	11.67	4.36	7.34	32.50	18.15	100	
Women									
Class 1	198	1	0	0	0	0	0	199	5.31
Class 2	2	623	40	18	0	0	0	683	18.24
Class 3	0	0	664	9	0	0	0	673	17.97
Class 4	1	1	17	12	2	11	33	77	2.06
Class 5	0	0	0	0	56	71	38	165	4.41
Class 6	0	0	0	2	2	1,283	0	1287	34.37
Class 7	0	0	0	24	0	0	637	661	17.65
Total	201	625	721	65	60	1365	708	3,745	100
Per cent	5.37	16.69	19.25	1.74	1.60	36.45	18.91	100	

Source: UKLFS 2014-2017 Secure Access.

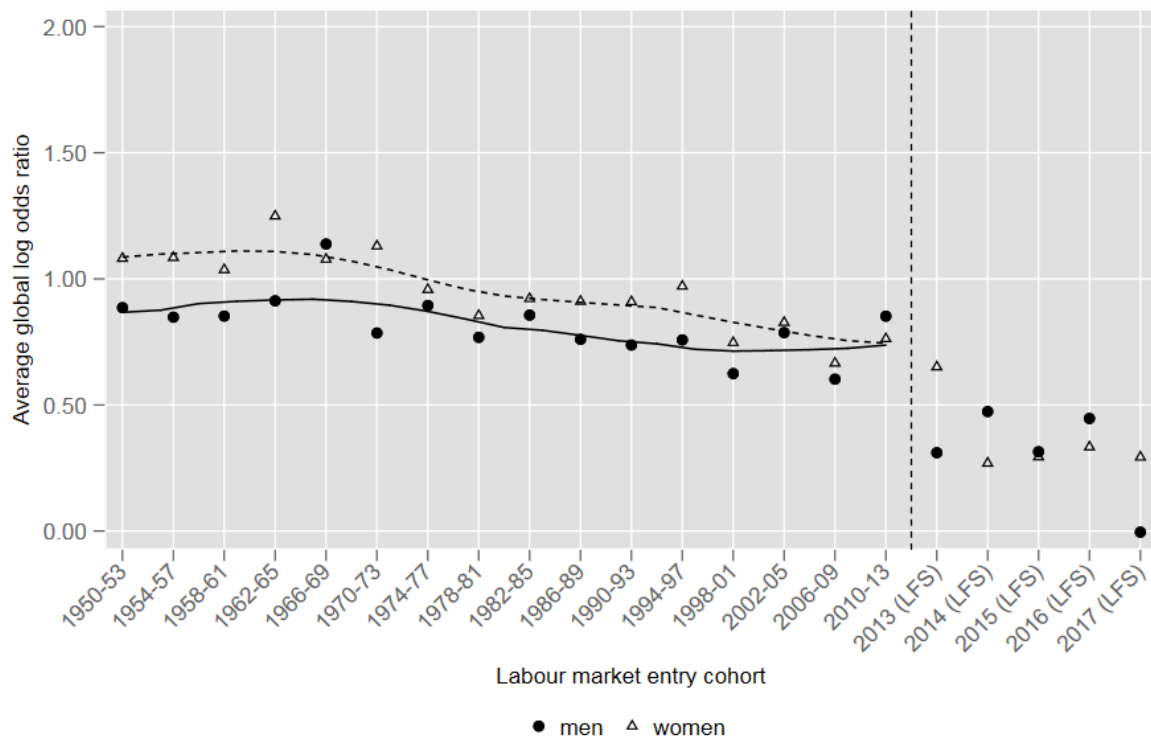


Figure A1. Average global log odds ratios by labour market entry cohort, UKHLS vs. UKLFS

Note: Local polynomial smoothing applied for men (solid line) and women (dashed line) to UKHLS data.

Source: UKHLS 2009-2016 End User License; UKLFS 2014-2017 Secure Access.

Table A5. Fitting log-linear models on tables of labour market entry cohort (C) by class of origin (O) by class at labour market entry (D), ‘Moving windows’ approach, Germany

	Men				Women			
	G ²	d.f.	p	DI	G ²	d.f.	p	DI
1950-53 - 2010-13 (16 cohorts)					1950-53 - 2010-13 (16 cohorts)			
1) OC DC OD	485.22	540	0.96	5.16	489.67	540	0.94	5.46
2) OC DC βC (OD)	445.51	525	0.99	4.87	439.06	525	1.00	5.13
2) - 1)	39.71	15	0.00		50.61	15	0.00	
1954-57 - 2010-13 (15 cohorts)					1954-57 - 2010-13 (15 cohorts)			
1) OC DC OD	455.74	504	0.94	5.08	452.47	504	0.95	5.34
2) OC DC βC (OD)	416.22	490	0.99	4.78	408.28	490	1.00	5.06
2) - 1)	39.52	14	0.00		44.18	14	0.00	
1958-61 - 2010-13 (14 cohorts)					1958-61 - 2010-13 (14 cohorts)			
1) OC DC OD	424.29	468	0.93	5.13	416.63	468	0.96	5.32
2) OC DC βC (OD)	389.67	455	0.99	4.82	377.25	455	1.00	5.05
2) - 1)	34.63	13	0.00		39.38	13	0.00	
1962-65 - 2010-13 (13 cohorts)					1962-65 - 2010-13 (13 cohorts)			
1) OC DC OD	394.09	432	0.90	5.17	387.64	432	0.94	5.31
2) OC DC βC (OD)	358.90	420	0.99	4.86	348.44	420	1.00	5.01
2) - 1)	35.19	12	0.00		39.20	12	0.00	
1966-69 - 2010-13 (12 cohorts)					1966-69 - 2010-13 (12 cohorts)			
1) OC DC OD	370.27	396	0.82	5.16	341.29	396	0.98	5.18
2) OC DC βC (OD)	340.33	385	0.95	4.85	307.48	385	1.00	4.89
2) - 1)	29.94	11	0.00		33.81	11	0.00	
1970-73 - 2010-13 (11 cohorts)					1970-73 - 2010-13 (11 cohorts)			
1) OC DC OD	329.80	360	0.87	5.05	297.75	360	0.99	4.98
2) OC DC βC (OD)	307.46	350	0.95	4.82	279.89	350	1.00	4.80
2) - 1)	22.34	10	0.01		17.86	10	0.06	
1974-77 - 2010-13 (10 cohorts)					1974-77 - 2010-13 (10 cohorts)			
1) OC DC OD	288.40	324	0.92	4.86	278.56	324	0.97	5.09
2) OC DC βC (OD)	277.77	315	0.94	4.76	260.66	315	0.99	4.90
2) - 1)	10.64	9	0.30		17.90	9	0.04	
1978-81 - 2010-13 (9 cohorts)					1978-81 - 2010-13 (9 cohorts)			
1) OC DC OD	246.38	288	0.96	4.81	249.88	288	0.95	5.09
2) OC DC βC (OD)	236.96	280	0.97	4.65	238.04	280	0.97	4.94
2) - 1)	9.43	8	0.31		11.83	8	0.16	
1982-85 - 2010-13 (8 cohorts)					1982-85 - 2010-13 (8 cohorts)			
1) OC DC OD	216.66	252	0.95	4.85	231.28	252	0.82	5.25
2) OC DC βC (OD)	208.07	245	0.96	4.65	220.26	245	0.87	5.09
2) - 1)	8.59	7	0.28		11.02	7	0.14	
1986-89-2010-13 (7 cohorts)					1986-89-2010-13 (7 cohorts)			
1) OC DC OD	172.53	216	0.99	4.84	204.04	216	0.71	5.59
2) OC DC βC (OD)	169.22	210	0.98	4.68	195.00	210	0.76	5.36
2) - 1)	3.31	6	0.77		9.04	6	0.17	
1990-93 - 2010-13 (6 cohorts)					1990-93 - 2010-13 (6 cohorts)			
1) OC DC OD	146.78	180	0.97	5.25	167.50	180	0.74	5.73
2) OC DC βC (OD)	143.58	175	0.96	5.10	157.93	175	0.82	5.43
2) - 1)	3.20	5	0.67		9.57	5	0.09	

Table A5. Continued.

	Men				Women			
	G ²	d.f.	p	DI	G ²	d.f.	p	DI
1994-97 - 2010-13 (5 cohorts)					1994-97 - 2010-13 (5 cohorts)			
1) OC DC OD	118.11	144	0.94	5.40	128.34	144	0.82	5.76
2) OC DC βC (OD)	114.75	140	0.94	5.23	119.18	140	0.90	5.40
2) - 1)	3.36	4	0.50		9.16	4	0.06	
1998-01 - 2010-13 (4 cohorts)					1998-01 - 2010-13 (4 cohorts)			
1) OC DC OD	86.80	108	0.93	5.91	89.60	108	0.90	5.67
2) OC DC βC (OD)	84.81	105	0.93	5.69	85.67	105	0.92	5.29
2) - 1)	1.99	3	0.57		3.93	3	0.27	
2002-05 - 2010-13 (3 cohorts)					2002-05 - 2010-13 (3 cohorts)			
1) OC DC OD	62.43	72	0.78	6.42	60.39	72	0.83	6.07
2) OC DC βC (OD)	60.73	70	0.78	6.05	60.23	70	0.79	6.03
2) - 1)	1.70	2	0.43		0.15	2	0.93	
2006-09 - 2010-13 (2 cohorts)					2006-09 - 2010-13 (2 cohorts)			
1) OC DC OD	35.18	36	0.51	6.43	16.73	36	1.00	4.49
2) OC DC βC (OD)	35.18	35	0.46	6.44	16.44	35	1.00	4.41
2) - 1)	0.00	1	0.98		0.29	1	0.59	

Source: SOEP 1984-2016.

Table A6. Fitting log-linear models on tables of labour market entry cohort (C) by class of origin (O) by class at labour market entry (D), ‘Moving windows’ approach, UK

	Men				Women			
	G ²	d.f.	p	DI	G ²	d.f.	p	DI
1950-53 - 2010-13 (16 cohorts)					1950-53 - 2010-13 (16 cohorts)			
1) OC DC OD	474.60	540	0.98	6.20	561.15	540	0.26	5.85
2) OC DC βC (OD)	442.30	525	1.00	5.97	490.72	525	0.86	5.43
2) - 1)	32.30	15	0.01		70.43	15	0.00	
1954-57 - 2010-13 (15 cohorts)					1954-57 - 2010-13 (15 cohorts)			
1) OC DC OD	431.34	504	0.99	6.07	521.58	504	0.28	5.74
2) OC DC βC (OD)	403.19	490	1.00	5.85	456.67	490	0.86	5.31
2) - 1)	28.15	14	0.01		64.91	14	0.00	
1958-61 - 2010-13 (14 cohorts)					1958-61 - 2010-13 (14 cohorts)			
1) OC DC OD	406.01	468	0.98	6.06	481.60	468	0.32	5.62
2) OC DC βC (OD)	378.34	455	1.00	5.83	420.93	455	0.87	5.17
2) - 1)	27.68	13	0.01		60.67	13	0.00	
1962-65 - 2010-13 (13 cohorts)					1962-65 - 2010-13 (13 cohorts)			
1) OC DC OD	376.38	432	0.97	5.97	455.59	432	0.21	5.64
2) OC DC βC (OD)	349.66	420	0.99	5.75	400.00	420	0.75	5.20
2) - 1)	26.73	12	0.01		55.59	12	0.00	
1966-69 - 2010-13 (12 cohorts)					1966-69 - 2010-13 (12 cohorts)			
1) OC DC OD	341.91	396	0.98	5.91	419.49	396	0.20	5.61
2) OC DC βC (OD)	319.71	385	0.99	5.66	369.67	385	0.70	5.19
2) - 1)	22.19	11	0.02		49.82	11	0.00	
1970-73 - 2010-13 (11 cohorts)					1970-73 - 2010-13 (11 cohorts)			
1) OC DC OD	303.47	360	0.99	5.75	358.43	360	0.51	5.38
2) OC DC βC (OD)	284.92	350	1.00	5.50	320.80	350	0.87	5.01
2) - 1)	18.55	10	0.05		37.64	10	0.00	
1974-77 - 2010-13 (10 cohorts)					1974-77 - 2010-13 (10 cohorts)			
1) OC DC OD	264.92	324	0.99	5.63	312.41	324	0.67	5.28
2) OC DC βC (OD)	248.68	315	1.00	5.37	286.71	315	0.87	4.95
2) - 1)	16.24	9	0.06		25.70	9	0.00	
1978-81 - 2010-13 (9 cohorts)					1978-81 - 2010-13 (9 cohorts)			
1) OC DC OD	224.89	288	1.00	5.48	280.85	288	0.61	5.27
2) OC DC βC (OD)	213.97	280	1.00	5.29	257.33	280	0.83	4.91
2) - 1)	10.91	8	0.21		23.52	8	0.00	
1982-85 - 2010-13 (8 cohorts)					1982-85 - 2010-13 (8 cohorts)			
1) OC DC OD	190.88	252	1.00	5.37	239.86	252	0.70	5.20
2) OC DC βC (OD)	180.23	245	1.00	5.16	221.94	245	0.85	4.89
2) - 1)	10.65	7	0.15		17.92	7	0.01	
1986-89-2010-13 (7 cohorts)					1986-89-2010-13 (7 cohorts)			
1) OC DC OD	161.31	216	1.00	5.27	196.14	216	0.83	4.98
2) OC DC βC (OD)	158.49	210	1.00	5.22	182.69	210	0.91	4.74
2) - 1)	2.82	6	0.83		13.45	6	0.04	
1990-93 - 2010-13 (6 cohorts)					1990-93 - 2010-13 (6 cohorts)			
1) OC DC OD	119.96	180	1.00	4.95	159.51	180	0.86	4.85
2) OC DC βC (OD)	117.15	175	1.00	4.95	147.95	175	0.93	4.54
2) - 1)	2.81	5	0.73		11.56	5	0.04	

Table A6. Continued.

	Men				Women			
	G ²	d.f.	p	DI	G ²	d.f.	p	DI
1994-97 - 2010-13 (5 cohorts)					1994-97 - 2010-13 (5 cohorts)			
1) OC DC OD	98.53	144	1.00	4.78	130.58	144	0.78	4.79
2) OC DC βC (OD)	95.63	140	1.00	4.76	119.79	140	0.89	4.44
2) - 1)	2.90	4	0.57		10.79	4	0.03	
1998-01 - 2010-13 (4 cohorts)					1998-01 - 2010-13 (4 cohorts)			
1) OC DC OD	70.08	108	1.00	4.70	85.50	108	0.95	4.42
2) OC DC βC (OD)	68.43	105	1.00	4.68	79.77	105	0.97	4.13
2) - 1)	1.65	3	0.65		5.73	3	0.13	
2002-05 - 2010-13 (3 cohorts)					2002-05 - 2010-13 (3 cohorts)			
1) OC DC OD	53.73	72	0.95	4.96	57.03	72	0.90	4.22
2) OC DC βC (OD)	51.99	70	0.95	4.93	52.87	70	0.94	3.98
2) - 1)	1.74	2	0.42		4.16	2	0.13	
2006-09 - 2010-13 (2 cohorts)					2006-09 - 2010-13 (2 cohorts)			
1) OC DC OD	28.63	36	0.80	4.34	26.36	36	0.88	3.59
2) OC DC βC (OD)	28.27	35	0.78	4.43	25.95	35	0.87	3.62
2) - 1)	0.36	1	0.55		0.42	1	0.52	

Source: UKHLS 2009-2016 End User License.

Table A7. Fitting log-linear models on tables of labour market entry cohort (C) by class of origin (O) by class at labour market entry (D), adjacent cohorts, Germany

	Men				Women			
	G ²	d.f.	p	DI	G ²	d.f.	p	DI
1950-53 vs. 1954-57					1950-53 vs. 1954-57			
1) OC DC OD	30.69	36	0.72	3.92	33.62	36	0.58	4.62
2) OC DC βC (OD)	30.03	35	0.71	3.78	33.29	35	0.55	4.44
2) - 1)	0.66	1	0.42		0.32	1	0.57	
1954-57 vs. 1958-61					1954-57 vs. 1958-61			
1) OC DC OD	21.62	36	0.97	2.35	36.57	36	0.44	3.93
2) OC DC βC (OD)	20.71	35	0.97	2.31	34.08	35	0.51	3.91
2) - 1)	0.91	1	0.34		2.49	1	0.11	
1958-61 vs. 1962-65					1958-61 vs. 1962-65			
1) OC DC OD	25.46	36	0.90	2.61	41.00	36	0.26	4.18
2) OC DC βC (OD)	24.86	35	0.90	2.71	37.25	35	0.37	4.18
2) - 1)	0.60	1	0.44		3.75	1	0.05	
1962-65 vs. 1966-69					1962-65 vs. 1966-69			
1) OC DC OD	18.14	36	0.99	2.90	32.32	36	0.64	4.34
2) OC DC βC (OD)	17.93	35	0.99	2.81	32.09	35	0.61	4.24
2) - 1)	0.21	1	0.65		0.23	1	0.63	
1966-69 vs. 1970-73					1966-69 vs. 1970-73			
1) OC DC OD	20.73	36	0.98	3.14	33.23	36	0.60	3.51
2) OC DC βC (OD)	20.66	35	0.97	3.16	24.65	35	0.90	2.94
2) - 1)	0.07	1	0.79		8.58	1	0.00	
1970-73 vs. 1974-77					1970-73 vs. 1974-77			
1) OC DC OD	34.33	36	0.55	4.11	23.55	36	0.95	3.07
2) OC DC βC (OD)	31.45	35	0.64	3.54	21.36	35	0.97	2.99
2) - 1)	2.88	1	0.09		2.19	1	0.14	
1974-77 vs. 1978-81					1974-77 vs. 1978-81			
1) OC DC OD	22.42	36	0.96	2.92	23.22	36	0.95	3.41
2) OC DC βC (OD)	22.14	35	0.96	2.98	21.58	35	0.96	3.28
2) - 1)	0.28	1	0.60		1.64	1	0.20	
1978-81 vs. 1982-85					1978-81 vs. 1982-85			
1) OC DC OD	27.35	36	0.85	2.87	16.82	36	1.00	2.53
2) OC DC βC (OD)	26.10	35	0.86	2.73	16.69	35	1.00	2.56
2) - 1)	1.25	1	0.26		0.13	1	0.72	
1982-85 vs. 1986-89					1982-85 vs. 1986-89			
1) OC DC OD	34.25	36	0.55	3.11	37.21	36	0.41	3.20
2) OC DC βC (OD)	31.28	35	0.65	2.79	36.74	35	0.39	3.20
2) - 1)	2.98	1	0.08		0.47	1	0.49	
1986-89 vs. 1990-93					1986-89 vs. 1990-93			
1) OC DC OD	24.95	36	0.92	2.83	31.17	36	0.70	3.62
2) OC DC βC (OD)	24.94	35	0.90	2.82	30.62	35	0.68	3.54
2) - 1)	0.01	1	0.91		0.55	1	0.46	
1990-93 vs. 1994-97					1990-93 vs. 1994-97			
1) OC DC OD	28.85	36	0.80	3.36	37.71	36	0.39	4.17
2) OC DC βC (OD)	27.39	35	0.82	3.17	34.98	35	0.47	3.93
2) - 1)	1.45	1	0.23		2.73	1	0.10	

Note: Table continues on next page. *Source:* SOEP 1984-2016.

Table A7. Continued.

	Men				Women			
	G ²	d.f.	p	DI	G ²	d.f.	p	DI
1990-93 vs. 1994-97					1990-93 vs. 1994-97			
1) OC DC OD	28.85	36	0.80	3.36	37.71	36	0.39	4.17
2) OC DC β C (OD)	27.39	35	0.82	3.17	34.98	35	0.47	3.93
2) - 1)	1.45	1	0.23		2.73	1	0.10	
1994-97 vs. 1998-01					1994-97 vs. 1998-01			
1) OC DC OD	27.73	36	0.84	3.10	33.51	36	0.59	3.79
2) OC DC β C (OD)	27.04	35	0.83	3.07	32.52	35	0.59	3.80
2) - 1)	0.69	1	0.41		0.98	1	0.32	
1998-01 vs. 2002-05					1998-01 vs. 2002-05			
1) OC DC OD	24.56	36	0.93	3.75	27.33	36	0.85	3.74
2) OC DC β C (OD)	24.12	35	0.92	3.83	26.67	35	0.84	3.35
2) - 1)	0.44	1	0.51		0.66	1	0.42	
2002-05 vs. 2006-09					2002-05 vs. 2006-09			
1) OC DC OD	28.98	36	0.79	5.21	40.90	36	0.26	5.31
2) OC DC β C (OD)	28.03	35	0.79	4.90	40.20	35	0.25	5.15
2) - 1)	0.95	1	0.33		0.69	1	0.40	
2006-09 vs. 2010-13					2006-09 vs. 2010-13			
1) OC DC OD	35.18	36	0.51	6.43	16.73	36	1.00	4.49
2) OC DC β C (OD)	35.18	35	0.46	6.44	16.44	35	1.00	4.41
2) - 1)	0.00	1	0.98		0.29	1	0.59	

Source: SOEP 1984-2016.

Table A8. Fitting log-linear models on tables of labour market entry cohort (C) by class of origin (O) by class at labour market entry (D), adjacent cohorts, UK

	Men				Women			
	G ²	d.f.	p	DI	G ²	d.f.	p	DI
1950-53 vs. 1954-57								
1) OC DC OD	30.12	36	0.74	5.80	23.83	36	0.94	4.28
2) OC DC βC (OD)	24.92	35	0.90	5.13	23.81	35	0.92	4.26
2) - 1)	5.19	1	0.02		0.01	1	0.91	
1954-57 vs. 1958-61								
1) OC DC OD	19.12	36	0.99	4.06	49.67	36	0.06	5.59
2) OC DC βC (OD)	18.40	35	0.99	3.85	49.28	35	0.06	5.61
2) - 1)	0.71	1	0.40		0.39	1	0.53	
1958-61 vs. 1962-65								
1) OC DC OD	23.74	36	0.94	4.68	25.38	36	0.91	3.89
2) OC DC βC (OD)	23.43	35	0.93	4.71	25.37	35	0.88	3.89
2) - 1)	0.31	1	0.58		0.01	1	0.93	
1962-65 vs. 1966-69								
1) OC DC OD	30.75	36	0.72	5.15	53.09	36	0.03	5.93
2) OC DC βC (OD)	30.51	35	0.68	5.15	52.43	35	0.03	5.94
2) - 1)	0.23	1	0.63		0.66	1	0.42	
1966-69 vs. 1970-73								
1) OC DC OD	39.07	36	0.33	5.28	31.94	36	0.66	4.47
2) OC DC βC (OD)	38.94	35	0.30	5.29	31.39	35	0.64	4.38
2) - 1)	0.13	1	0.72		0.54	1	0.46	
1970-73 vs. 1974-77								
1) OC DC OD	36.42	36	0.45	4.50	31.23	36	0.69	3.78
2) OC DC βC (OD)	35.88	35	0.43	4.39	27.32	35	0.82	3.75
2) - 1)	0.54	1	0.46		3.91	1	0.05	
1974-77 vs. 1978-81								
1) OC DC OD	35.67	36	0.48	4.98	36.55	36	0.44	3.71
2) OC DC βC (OD)	30.27	35	0.70	4.51	33.85	35	0.52	3.80
2) - 1)	5.40	1	0.02		2.69	1	0.10	
1978-81 vs. 1982-85								
1) OC DC OD	41.39	36	0.25	4.89	39.13	36	0.33	3.43
2) OC DC βC (OD)	34.56	35	0.49	4.41	38.20	35	0.33	3.55
2) - 1)	6.83	1	0.01		0.93	1	0.33	
1982-85 vs. 1986-89								
1) OC DC OD	47.41	36	0.10	5.25	56.40	36	0.02	4.54
2) OC DC βC (OD)	41.25	35	0.22	5.09	56.20	35	0.01	4.57
2) - 1)	6.16	1	0.01		0.20	1	0.66	
1986-89 vs. 1990-93								
1) OC DC OD	38.17	36	0.37	4.61	38.74	36	0.35	4.09
2) OC DC βC (OD)	38.13	35	0.33	4.58	34.06	35	0.51	3.72
2) - 1)	0.04	1	0.84		4.68	1	0.03	

Note: Table continues on next page. *Source:* UKHLS 2009-2016 End User License; UKLFS 2014-2017 Secure Access.

Table A8. Continued.

	Men				Women			
	G ²	d.f.	p	DI	G ²	d.f.	p	DI
1990-93 vs. 1994-97					1990-93 vs. 1994-97			
1) OC DC OD	25.36	36	0.91	4.11	27.56	36	0.84	2.96
2) OC DC β C (OD)	24.74	35	0.90	4.17	26.74	35	0.84	2.98
2) - 1)	0.62	1	0.43		0.82	1	0.37	
1994-97 vs. 1998-01					1994-97 vs. 1998-01			
1) OC DC OD	18.57	36	0.99	3.55	29.20	36	0.78	3.22
2) OC DC β C (OD)	15.69	35	1.00	3.29	27.38	35	0.82	3.33
2) - 1)	2.89	1	0.09		1.82	1	0.18	
1998-01 vs. 2002-05					1998-01 vs. 2002-05			
1) OC DC OD	20.07	36	0.99	3.38	23.84	36	0.94	3.02
2) OC DC β C (OD)	18.72	35	0.99	3.04	23.76	35	0.93	2.98
2) - 1)	1.35	1	0.24		0.07	1	0.79	
2002-05 vs. 2006-09					2002-05 vs. 2006-09			
1) OC DC OD	27.76	36	0.84	4.15	25.20	36	0.91	3.32
2) OC DC β C (OD)	26.32	35	0.85	4.01	20.82	35	0.97	2.72
2) - 1)	1.44	1	0.23		4.38	1	0.04	
2006-09 vs. 2010-13					2006-09 vs. 2010-13			
1) OC DC OD	28.63	36	0.80	4.34	26.36	36	0.88	3.59
2) OC DC β C (OD)	28.27	35	0.78	4.43	25.95	35	0.87	3.62
2) - 1)	0.36	1	0.55		0.42	1	0.52	
2013 vs. 2014					2013 vs. 2014			
1) OC DC OD	35.30	36	0.50	5.77	39.25	36	0.33	4.99
2) OC DC β C (OD)	35.23	35	0.46	5.78	30.15	35	0.70	4.55
2) - 1)	0.07	1	0.79		9.10	1	0.00	
2014 vs. 2015					2014 vs. 2015			
1) OC DC OD	45.77	36	0.13	6.74	24.74	36	0.92	3.73
2) OC DC β C (OD)	42.72	35	0.17	6.08	20.92	35	0.97	3.44
2) - 1)	3.06	1	0.08		3.82	1	0.05	
2015 vs. 2016					2015 vs. 2016			
1) OC DC OD	26.44	36	0.88	4.71	46.02	36	0.12	5.46
2) OC DC β C (OD)	26.22	35	0.86	4.64	40.71	35	0.23	4.64
2) - 1)	0.22	1	0.64		5.30	1	0.02	
2016 vs. 2017					2016 vs. 2017			
1) OC DC OD	28.20	36	0.82	5.54	28.82	36	0.80	5.39
2) OC DC β C (OD)	26.44	35	0.85	4.01	26.88	35	0.84	3.61
2) - 1)	1.76	1	0.18		1.94	1	0.16	

Source: UKHLS 2009-2016 End User License; UKLFS 2014-2017 Secure Access.

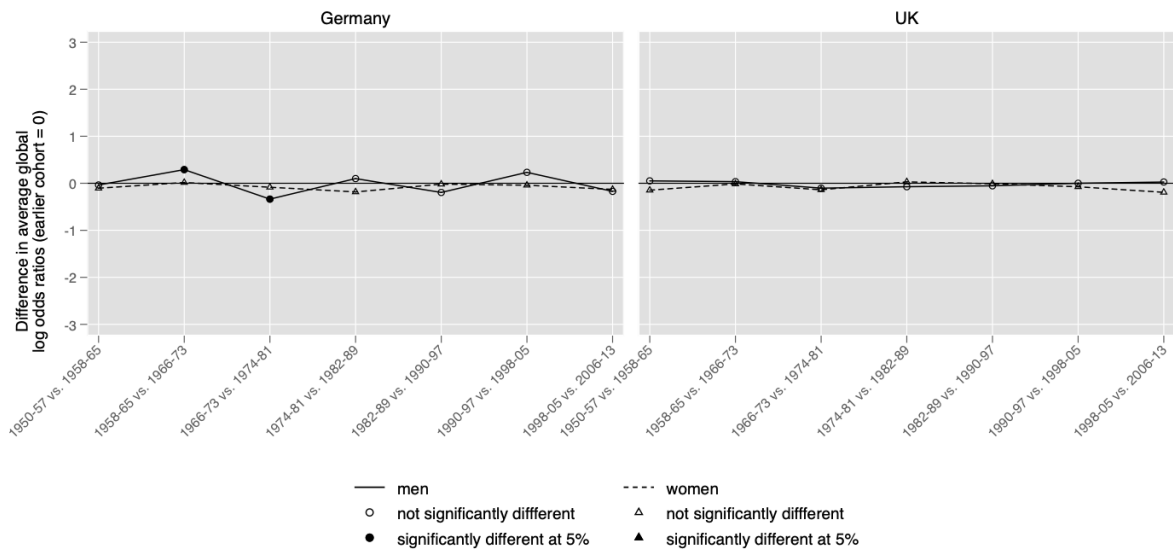


Figure A2. Significance test for differences in average global log odds ratios between adjacent eight-year labour market entry cohorts

Source: SOEP 1984-2016, UKHLS 2009-2016 End User License.

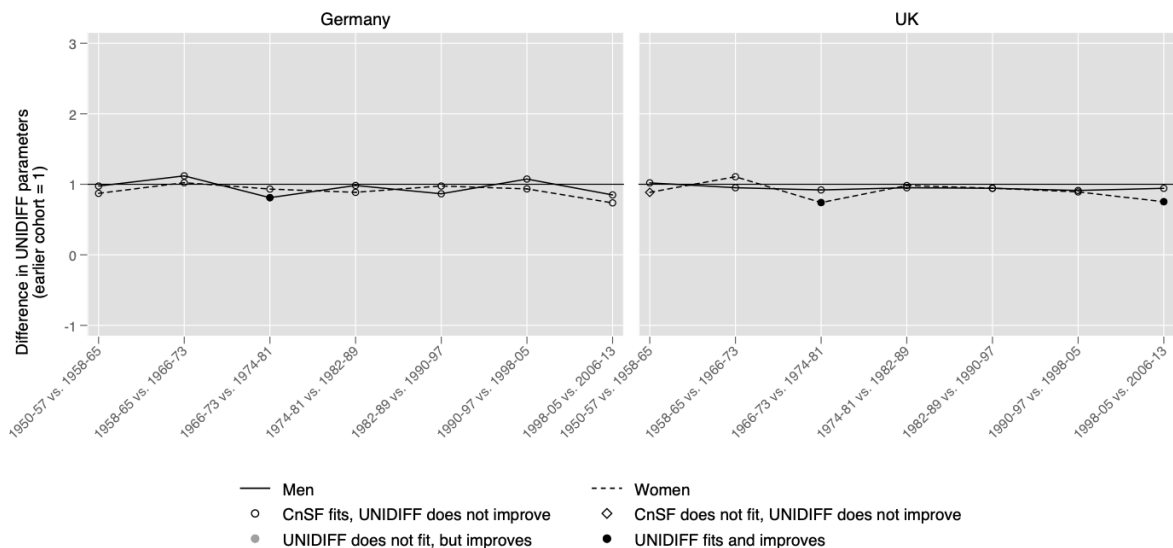


Figure A3. Fitting the CnSF and UNIDIFF models to adjacent eight-year labour market entry cohorts

Source: SOEP 1984-2016, UKHLS 2009-2016 End User License.

Appendix B

As shown in Figures B1 and B2, the proportion of part-time and temporary employment has markedly grown since the 1980s, especially for the very young, and in Germany. To see whether our trend estimates of relative mobility are affected by these developments, we examine whether the strength in the origin-destination association differs for respondents in standard and non-standard jobs. The SOEP only contains information on part-time employment for respondents' first job, whereas the UKLFS has additional information on temporary employment. For Germany, we therefore fit the CnSF and UNIDIFF models on a three-way table of full-time vs. part-time employment at labour market entry by class of origin and by class at labour market entry, separately for 16-year labour market entry cohorts and gender (Table B1). For the UK, we fit the CnSF and UNIDIFF models on a three-way table of full-time and permanent vs. part-time or temporary employment by class of origin and by class at labour market entry, separately for two age groups and gender (Table B2).

For German women, there seems to be no uniform differences in relative mobility between part-time and full-time labour market entrants in any cohort. For German men, the UNIDIFF only improves on the CnSF in the last cohort (1998-2013). For the UK, the results more consistently indicate that relative rates are higher, especially for young workers in non-standard jobs. However, we know that labour market entrants are becoming older over time as they tend to stay longer in education. The effect of changes in non-standard employment on trends in social fluidity trends are therefore likely to be small.

Nevertheless, using the SOEP and UKHLS, we further check for differences in relative mobility rates between older and younger labour market entrants. To do so, we fit three log-linear models on a four-way table of labour market entry cohort by age group (age 16-19 and age >19) by class of origin and by class destination at labour market entry (Table B3). All three models assume that

the distribution of origins and the distribution of destinations varies over cohort and age group. Furthermore, Model 1 assumes that the origin-destination association uniformly varies over age groups, Model 2 assumes that it uniformly varies across cohorts, while Model 3 assumes that it uniformly varies over both age groups and cohorts.

In both countries, Model 3 significantly improves on Model 1, i.e. adding a term for uniform cohort-differences to a model that accounts for age-specific relative rates leads to a better fit. However, Model 3 does not make a significant improvement on Model 2 that considers cohort-specific relative rates. This suggest that when allowing for cohort-variation in relative rates, no uniform differences between the two age groups appear. In other words, the strength in the origin-destination association does not seem to systematically differ between older and younger labour market entrants. Consequently, changes in the composition of labour market entrants also in terms of age do not seem to affect our estimates of over-time trends in relative mobility.

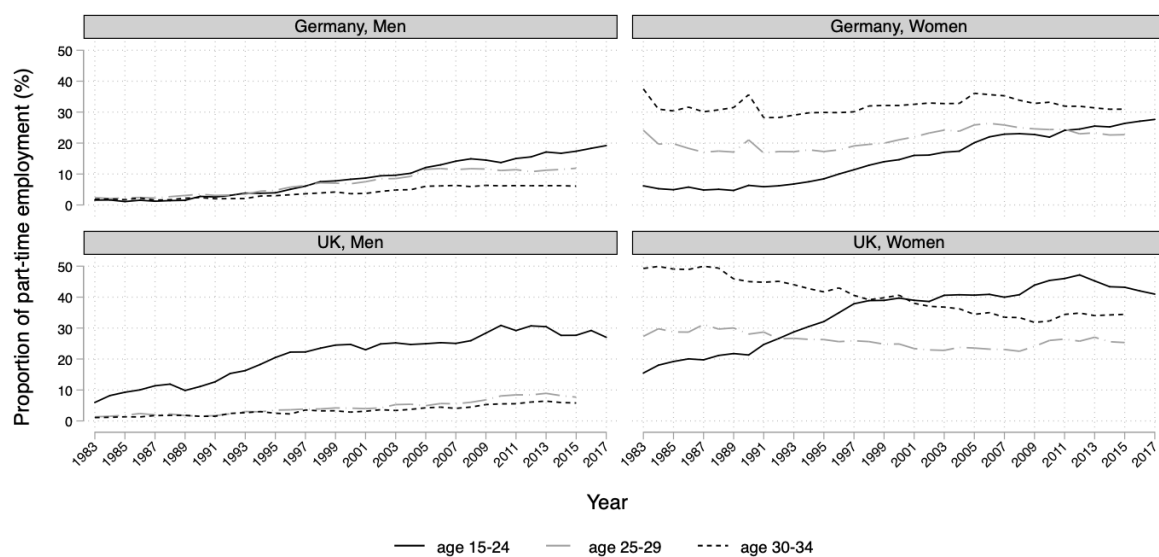


Figure B1. Proportion of men and women in part-time employment in three age groups by year

Source: OECD Employment and Labour Market Statistics.



Figure B2. Proportion of men and women aged 15-24 in temporary employment by year

Source: OECD Employment and Labour Market Statistics.

Table B1. Fitting two log-linear models on tables of full-time vs. part-time employment at labour market entry (P) by class of origin (O) by class at labour market entry (D), separately by labour market entry cohort, Germany

	G^2	d.f.	p	DI (%)
1950-65				
Men				
(1) OP PD OD	11.94	16	0.75	0.6
(2) OP PD β_P OD	11.93	15	0.68	0.6
(2) - (1)	0.01	1	0.91	
Women				
(1) OP PD OD	10.65	16	0.83	0.9
(2) OP PD β_P OD	10.17	15	0.81	0.9
(2) - (1)	0.48	1	0.49	
1966-81				
Men				
(1) OP PD OD	26.60	16	0.05	0.7
(2) OP PD β_P OD	26.58	15	0.03	0.8
(2) - (1)	0.02	1	0.89	
Women				
(1) OP PD OD	7.85	16	0.95	0.6
(2) OP PD β_P OD	7.00	15	0.96	0.6
(2) - (1)	0.86	1	0.35	
1982-97				
Men				
(1) OP PD OD	13.20	16	0.66	0.8
(2) OP PD β_P OD	13.05	15	0.60	0.8
(2) - (1)	0.15	1	0.70	
Women				
(1) OP PD OD	11.12	16	0.80	0.9
(2) OP PD β_P OD	10.56	15	0.78	0.9
(2) - (1)	0.56	1	0.45	
1998-2013				
Men				
(1) OP PD OD	17.22	16	0.37	2.3
(2) OP PD β_P OD	12.80	15	0.62	1.7
(2) - (1)	4.42	1	0.04	
Women				
(1) OP PD OD	29.93	16	0.02	3.1
(2) OP PD β_P OD	29.92	15	0.01	3.1
(2) - (1)	0.01	1	0.91	

Source: SOEP 1984-2016.

Table B2. Fitting two log-linear models on tables of standard vs. non-standard employment (N) by class of origin (O) by class of destination (D), separately by two age groups, UK

	G^2	d.f.	p	DI (%)
Aged 15-24				
Men				
(1) ON ND OD	14.33	16	0.57	2.7
(2) ON ND β_{NOD}	8.95	15	0.88	2.0
(2) - (1)	5.38	1	0.02	
Women				
(1) ON ND OD	17.51	16	0.35	2.3
(2) ON ND β_{NOD}	11.50	15	0.72	2.2
(2) - (1)	6.01	1	0.01	
Aged 25-34				
Men				
(1) ON ND OD	18.53	16	0.29	5.3
(2) ON ND β_{NOD}	18.53	15	0.24	5.3
(2) - (1)	0.00	1	0.98	
Women				
(1) ON ND OD	18.60	16	0.29	5.0
(2) ON ND β_{NOD}	18.58	15	0.23	4.9
(2) - (1)	0.02	1	0.89	

Note: Non-standard employment: part-time work and/or temporary contract.

Source: UKLFS 2014-2017 Secure Access.

Table B3. Fitting three log-linear models on tables of labour market entry cohort (C) by age (A) by class of origin (O) by class destination at labour market entry (D), Germany and UK

	G^2	d.f.	p	DI (%)
Germany				
(1) CAD CAO β_{AOD}	710.6	1115	1.000	5.7
(2) CAD CAO β_{COD}	680.9	1101	1.000	5.5
(3) CAD CAO $\beta_C \beta_{AOD}$	680.6	1100	1.000	5.5
(3) - (1)	30.1	15	0.012	
(3) - (2)	0.4	1	0.527	
UK				
(1) CAD CAO β_{AOD}	1012.7	1115	0.987	6.7
(2) CAD CAO β_{COD}	953.3	1101	1.000	6.5
(3) CAD CAO $\beta_C \beta_{AOD}$	952.2	1100	1.000	6.5
(3) - (1)	60.5	15	0.000	
(3) - (2)	1.1	1	0.294	

Note: Age group a: 16-19; age group b: >19. *Source:* SOEP 1984-2016, UKHLS 2009-2016.

Appendix C

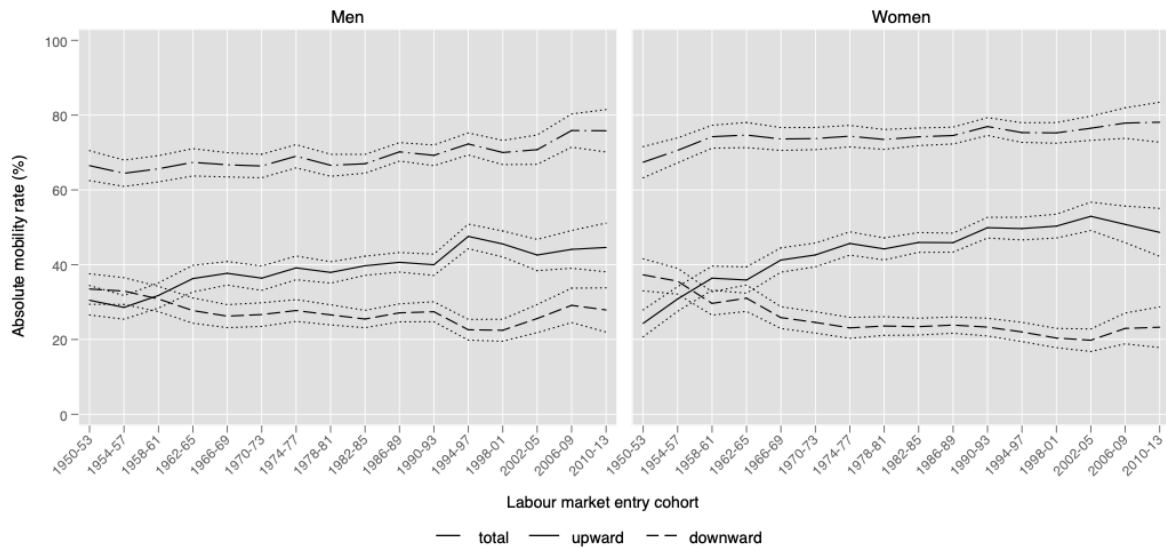


Figure C1. Absolute mobility rates by labour market entry cohort, Germany

Note: 95 per cent confidence intervals shown. $N_{\text{men}} = 15,144$; $N_{\text{women}} = 15,681$. Excluding respondents born in East Germany. *Source:* SOEP 1984-2016.

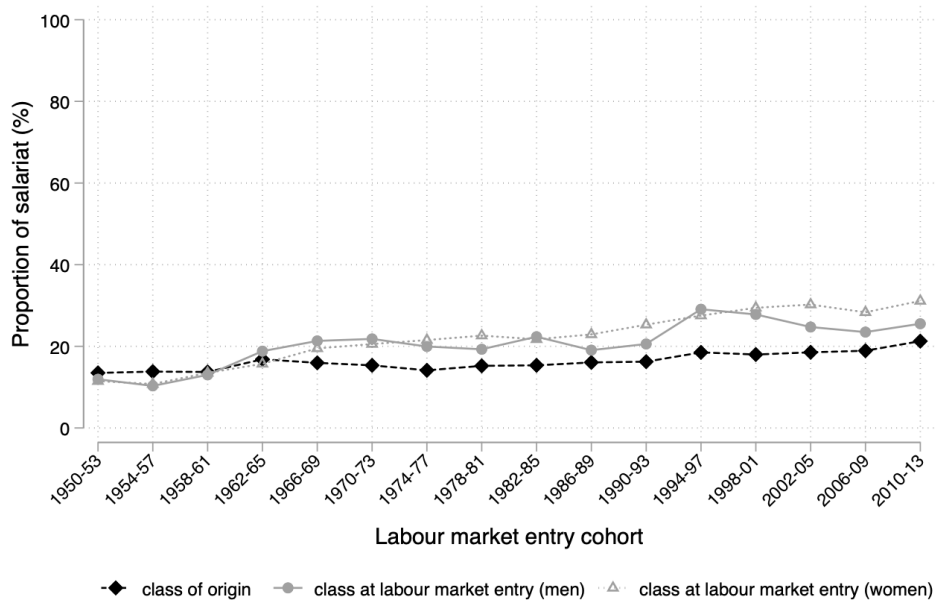


Figure C2. Proportion of respondents from salariat origins and proportion of respondents in salariat destinations at labour market entry by labour market entry cohort, Germany

Note: Excluding respondents born in East Germany. *Source:* SOEP 1984-2016.

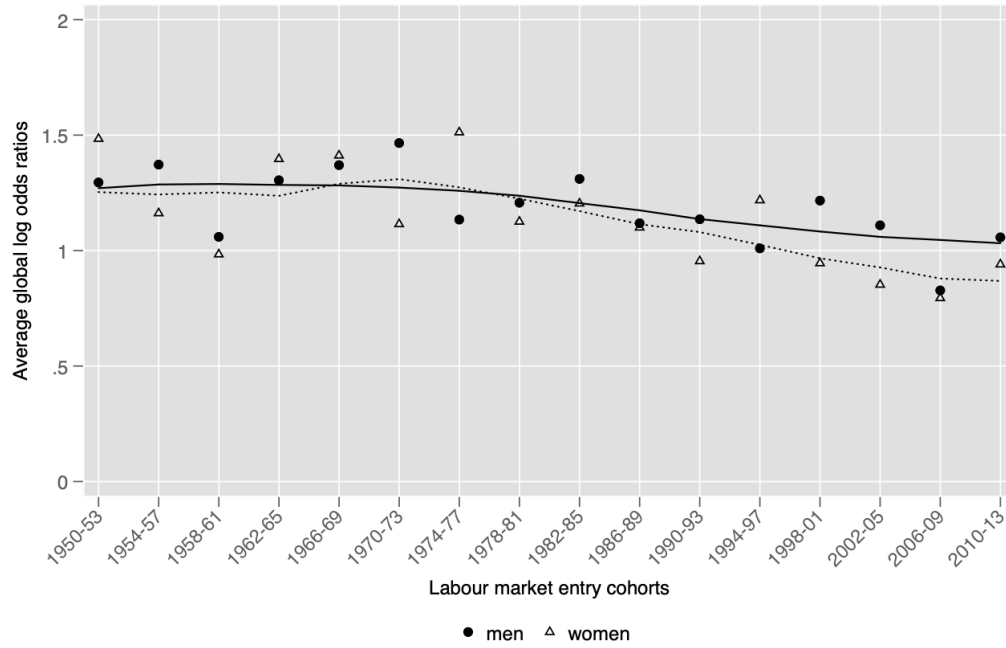


Figure C3. Average global log odds ratios by labour market entry cohort, Germany

Note: Local polynomial smoothing applied for men (solid line) and women (dashed line). Excluding respondents born in East Germany. *Source:* SOEP 1984-2016.

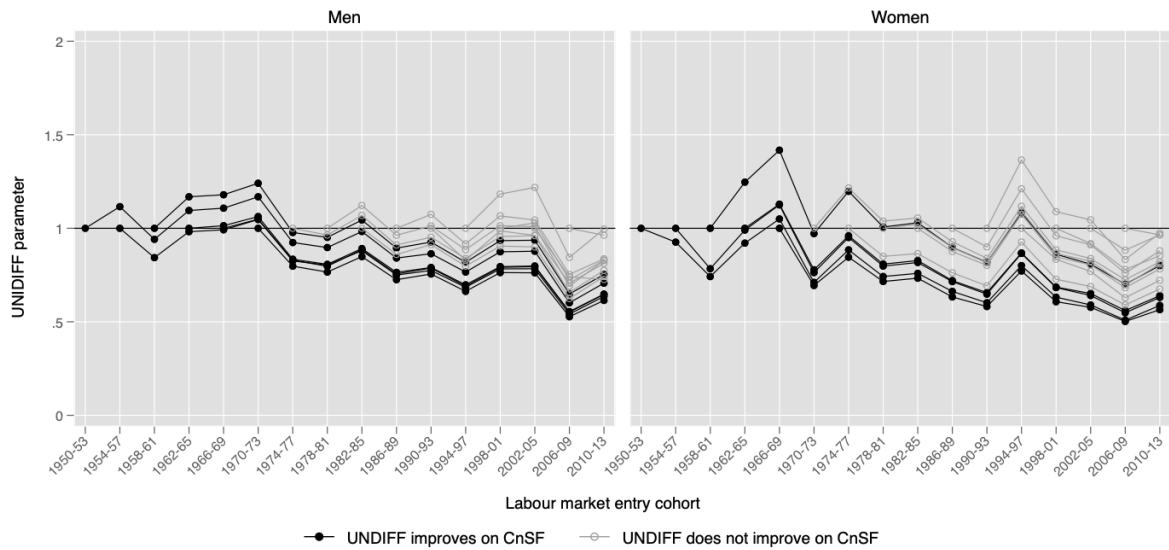


Figure C4. UNIDIFF parameters for labour market entry cohorts, 'Moving windows approach', Germany

Note: Excluding respondents born in East Germany. *Source:* SOEP 1984-2016.

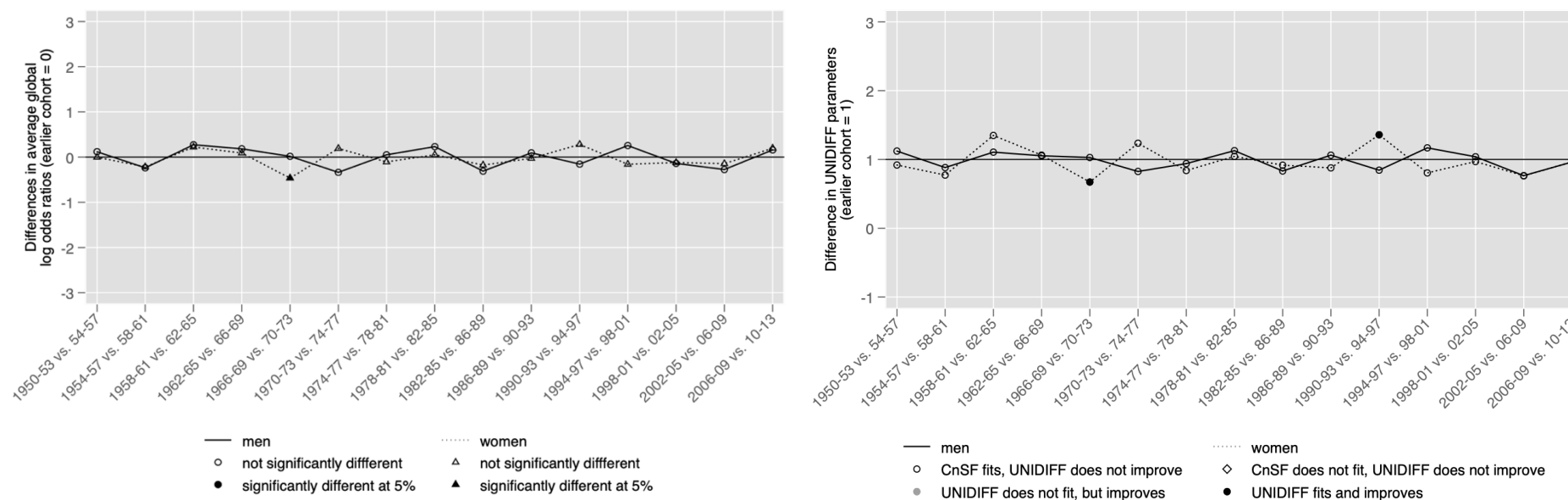


Figure C5. Significance test for differences in average global log odds ratios between adjacent labour market entry cohorts (left panel) and fitting the CnSF and UNIDIFF models to adjacent cohorts (right panel), Germany

Note: Excluding respondents born in East Germany. Estimates for difference in UNIDIFF parameters overlap in the last comparison for men and women (right panel).

Source: SOEP 1984-2016.

Why do Trends in Social Fluidity at Labour Market Entry and Occupational Maturity Differ?

Evidence from Germany and the UK

Nhat An Trinh

Abstract

This study examines how *intragenerational* class mobility can lead to differing over-time trends in *intergenerational* class mobility depending on when class destination is measured in individuals' careers. Specifically, it tackles the puzzle why increases in social fluidity are observed when class destination is measured at labour market entry, while only trendless fluctuation is found when class destination is measured 15 years later in Germany and the UK. Using data from the German Socio-Economic Panel (1984-2016) and the UK Household Longitudinal Survey (2009-2016) on respondents entering the labour market during the second half of the twentieth century, the analyses show that this divergence is driven by increases in 'counter mobility' that are subject to country-specific patterns. In the UK, rising counter mobility results from a growing proportion of individuals from salariat origins who enter the labour market in a lower class position but experience upward career mobility. In Germany, it is driven by a rising proportion of individuals from working class backgrounds who start their careers in a higher class but experience downward career mobility. No evidence for changes in origin-specific differences in upward and downward career mobility between individuals from different class origins are found. The results provide a strikingly similar picture for women and men in either country.

Keywords: Intergenerational mobility, intragenerational mobility, social class, life-course, over-time change, Germany, UK

1 Introduction

It is by now established practice to measure class destination at so-called ‘occupational maturity’ when assessing levels of social fluidity in terms of social class. Social fluidity, also known as relative intergenerational mobility, describes the association between individuals’ own class position and that of their parents’ net of distributional differences between the two generations. Occupational maturity refers to the stage in people’s careers, where job changes are unlikely to entail further changes in class positions (Goldthorpe, Llewellyn, and Payne 1987). Taking the class position that individuals occupy at this stage thus avoids estimates of social fluidity to be affected by movements between class positions that occur earlier in the working life when careers are more unstable. Accordingly, estimates of the relationship between class origin (parental class) and class destination (own class) at occupational maturity should provide a more accurate description of the intergenerational transmission of inequality than estimates based on class destination at labour market entry.

Any divergence between estimated levels of social fluidity measured at different points in the working life must hence be driven by intragenerational or career mobility. To date, a precise understanding of the relationship between career mobility and such divergence has yet eluded the literature. Although existing research is highly aware of the issue (e.g. Breen and Müller 2020), systematic inquiry into these differences and their causes, especially over time and across countries, is missing. How far differences between estimates taken from various points across the career vary historically or cross-nationally is therefore little understood.

The present paper takes up this task. Focussing on over-time trends, its main aim is to examine how career mobility shapes differences between changes in social fluidity measured at different career stages during the second half of the twentieth century. Two countries that represent distinctive and maximally contrasting class mobility regimes figure as case studies. The United Kingdom is known for its weak link between the educational system and labour market as well as

high labour market flexibility. Transitions from school to work thus tend to be unstable, and individuals change class positions multiple times over the course of their careers (Leuze 2007; Scherer 2005). Moreover, social fluidity is high relative to other countries (Bukodi, Paskov, and Nolan 2020). In Germany, the educational system and labour market, which is tightly regulated, are closely geared towards one another. Individuals therefore experience relatively modest levels of career mobility after a smooth transition into the labour market (Manzoni, Härkönen, and Mayer 2014; Scherer 2005). Given the highly stratifying educational system, social fluidity is low in international comparison (Pollak and Müller 2020). The UK and Germany thus vary profoundly with respect to levels of intra- as well as intergenerational mobility.

Despite these fundamental differences, over-time trends in social fluidity are strikingly similar in the two countries. Figure 1 shows changes in the origin-destination association for men and women who entered the labour market in the UK and Germany since the early 1950s. When class destination is measured at labour market entry, the strength in the association gradually declined over time, i.e. social fluidity increased. However, when class destination is measured at occupational maturity, this increase can no longer be observed. Instead, changes exhibit a pattern of trendless fluctuation. The picture is consistent in both countries for both genders.

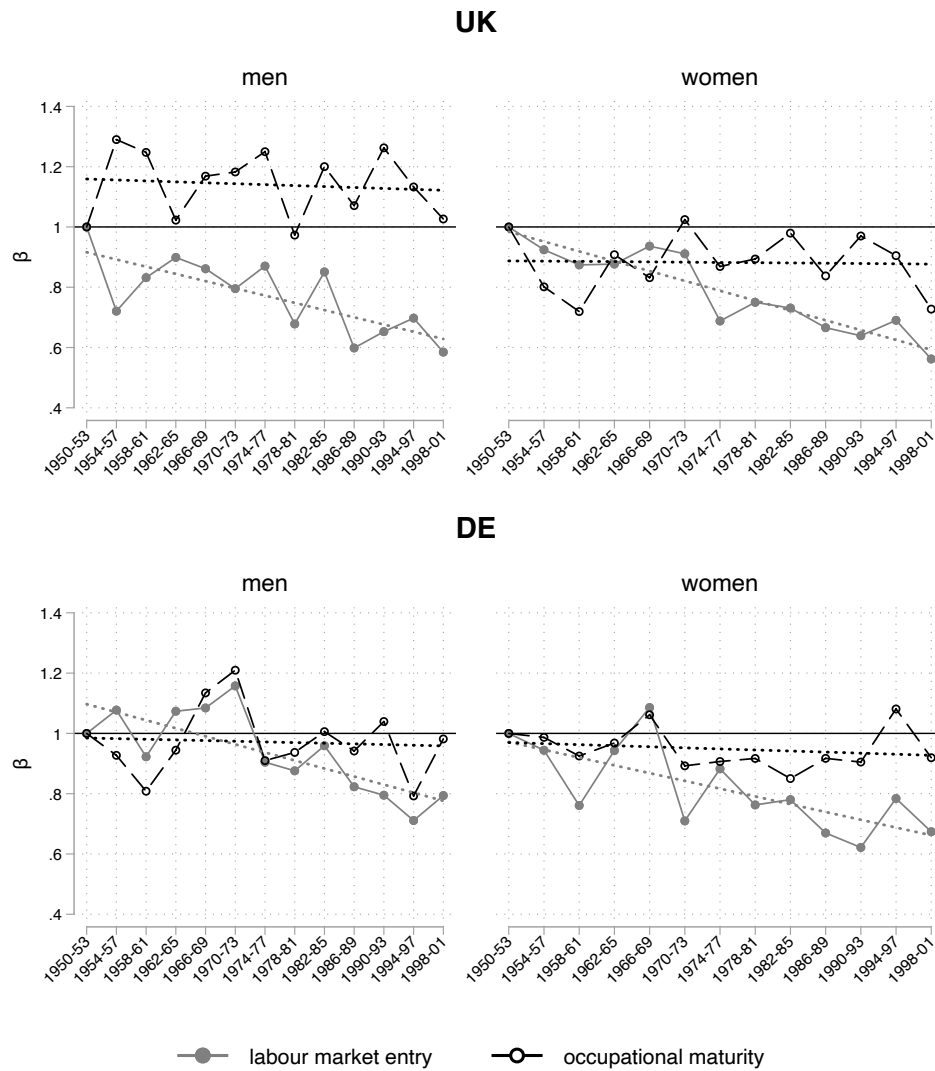


Figure 1. Social fluidity at labour market entry and occupational maturity by labour market entry cohort, UK and Germany 1950-2001

Note: Parameters from log-linear model of ‘Uniform differences’ (UNIDIFF) that allows the association between class origin and class at labour market entry, and class origin and class at occupational maturity to vary across labour market entry cohorts by a common, uniform factor. Linear fitted lines added. Occupational maturity is defined as being achieved 15 years after labour market entry. Social class is measured using the seven-class versions of NS-SEC (UK) and ESeC (Germany). The model only improves on the model of ‘Constant Social Fluidity’, which assumes no cross-cohort variation, when class destination is measured at labour market entry. UNIDIFF parameters for the association between class origin and class at labour market entry are similar to those shown in Figure 5 and Figure 6 of Paper 1 for the same cohorts. Model fit statistics are presented in appendix Table A1. *Source:* UKHLS 2009-2016, SOEP 1984-2016.

These patterns are in line with previous findings for the UK (Bukodi and Goldthorpe 2018; Paterson and Iannelli 2008; Trinh and Bukodi 2021) and somewhat differ from past research on Germany, which documents increases in social fluidity also when class destination is measured at later career stages (Hertel 2017; Pollak and Müller 2020). This discrepancy is likely due to different operationalisations of occupational maturity as will be discussed in more detail below. Looking at the UK and Germany therefore not only confirms that over-time trends in social fluidity can diverge depending on when class destination is measured. The comparative approach further allows to effectively scrutinise how career mobility affects historical change in the intergenerational reproduction of (dis-)advantage across varying institutional contexts. It can be expected that career mobility and its consequence for social fluidity play out differently in high- and low-mobility countries, although the observed differences between trends in social fluidity at labour market entry and occupational maturity may be the same.

The next section elaborates in greater depth on the theoretical relationship between career mobility and social fluidity, briefly discusses past research, and formulates expectations regarding how career mobility has affected observed differences between trends in social fluidity in the UK and Germany. Section 3 describes the data and variables used. The empirical analysis is presented in section 4. Finally, section 5 summarises the study's findings and highlights its contribution to social stratification and mobility research

2 Career mobility and social fluidity

2.1 Theoretical considerations

The degree to which career mobility drives differences between trends in social fluidity measured at different life stages depends on how far career mobility varies by origin class. If individuals from different class origins have varying levels of career mobility, differences in over-time trends in social

fluidity can result from precisely two processes: (1) origin-specific changes in career mobility or (2) changes in the distribution of origin classes.

The relationship between class origin (O), class destination at labour market entry (DE), and class destination at occupational maturity (DM) can be illustrated as follows:

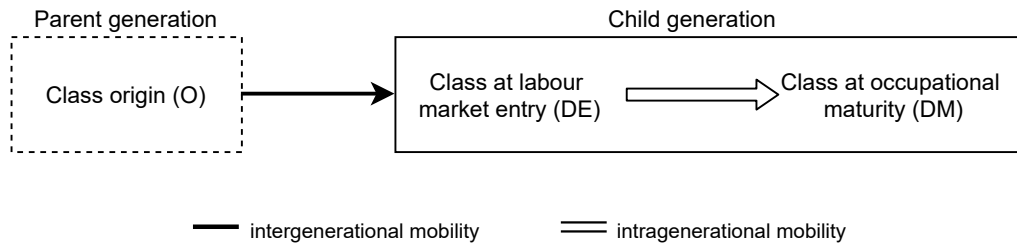


Figure 2. The relationship between class origin, class at labour market entry, and class at occupational maturity

As seen in Figure 2, O is connected to DM via DE. Hence, intergenerational class mobility measured at occupational maturity consists of two components. The first component is the link between O and DE, i.e. class mobility between the parent and child generation upon entering the labour market. The second component is the link between DE and DM, i.e. class mobility over the course of the child's career. The link between O and DM is hence a function of initial inter- as well as intragenerational mobility. Note that this study focusses on relative intergenerational class mobility or social fluidity, which is to be distinguished from absolute mobility. While the former takes class distributional differences between the parent and child generation into account, the latter allows these differences to drive trends in intergenerational mobility. The (log) odds ratio is the most commonly used measure of the strength in the origin-destination association net of class distributional differences (Breen 2004).

If there is no intragenerational mobility, i.e. individuals remain in the same class over the course of their career, class at labour market entry and class at occupational maturity are equivalent. In other words, DM is fully predicted by DE. Consequently, the strength of the O-DE and O-DM

associations are identical, and social fluidity at occupational maturity is completely determined by prevailing inequalities at labour market entry. By contrast, if individuals change class positions after entering the labour market, the strength of the O-DE and O-DM associations are likely to differ. Whether the O-DE association is stronger than the O-DM association, or vice versa, depends on patterns of career mobility for individuals from different class origins. More specifically, the difference in levels of social fluidity at labour market entry and occupational maturity is determined by inequalities in the *relative* importance of upward and downward career mobility.¹

For example, if individuals coming from higher origins are more likely to enter the labour market in a higher class position than their counterparts from lower origins, and those from higher origins are also more likely to experience upward rather than downward mobility than those from lower origins given their entry class, inequalities at labour market entry between the two groups continue to widen whilst individuals progress in their careers. Processes underlying the DE-DM link hence reinforce the strength of the O-DE association. As a result, social fluidity at occupational maturity is lower than at labour market entry. Conversely, if individuals coming from higher origins are more likely to enter the labour market in a higher class position but are more likely to experience downward rather than upward mobility compared to those from lower origins, inequalities at labour market entry between the two groups narrow. Thus, processes underlying the DE-DM association reduce the strength of the O-DE association. As a result, social fluidity at occupational maturity is higher than at labour market entry.

¹ It is important to note that the current discussion only applies to relative differences between upward and downward career mobility, and not their absolute magnitudes. Given that the odds ratio is a quotient, the extent to which absolute levels of career mobility affect differences between the O-DE and O-DM associations also depend on the absolute likelihood to enter the labour market in a specific class for each origin class. Accordingly, equal levels of career mobility among individuals from different origins are not a necessary condition for social fluidity at labour market entry and occupational maturity to coincide, unless the likelihood to enter a specific class does not vary by origin class. Also, the O-DE and O-DM associations must not necessarily differ given existing career mobility. That is, even if DE is not fully predictive of DM, the two associations can be of similar strength, if the importance of upward relative to downward mobility among individuals from different origins is comparable.

Accordingly, *origin-specific changes* in the relative importance of upward and downward career mobility determine how far trends in the O-DM association follow trends in the O-DE association. If the relative importance of upward mobility remains unchanged across all origin classes, over-time trends in the O-DE and O-DM association are similar. However, if patterns of career mobility change and differently so for individuals from different origins, trends in the O-DE and O-DM associations are likely to diverge. These origin-specific changes in upward relative to downward career mobility are the first process leading to differences between over-time trends in social fluidity at labour market entry and occupational maturity.

The most obvious case is when inequalities at labour market entry do not change, i.e. the O-DE association remains stable, while origin-specific patterns of career mobility vary between two time points. If the relative importance of upward mobility increases for individuals from higher class origins all else being equal, the DE-DM association weakens, because DE becomes less predictive of DM. Moreover, as those from higher origins become more likely to attain a higher destination due to career mobility, the O-DM association strengthens and inequalities at occupational maturity between individuals from different class origins rise. Thus, social fluidity at labour market entry remains stable, whereas social fluidity at occupational maturity falls. The same is true when the relative importance of upward mobility decreases for individuals from lower class origins.

Conversely, if the relative importance of upward mobility decreases for individuals from higher class origins all else being equal, the DE-DM association also weakens. In this case, however, those from higher origins become less likely to attain a higher destination. Thus, the O-DM association weakens and inequalities at occupational maturity between individuals from different origins decrease. In other words, social fluidity at labour market entry remains stable, whereas social fluidity at occupational maturity rises. The same is true when the relative importance of upward mobility increases for individuals from lower class origins. Depending on their direction, origin-specific changes in career mobility can thus either counteract or reinforce trends in the O-DE association.

A second process may yet account for differences between over-time trends in social fluidity measured at different career stages. If individuals from different origins have varying levels of career mobility, trends in social fluidity can diverge because of changes in the distribution of origin classes. Let's suppose that those from higher class origins are more likely to experience upward than downward career mobility compared to those from lower origins. If the proportion of individuals from higher origins increases, the strength in the DE-DM association changes just in the same way as it would change if those from higher origins became more likely or those from lower origins became less likely to experience upward career mobility. Conversely, a rise in the proportion of those from lower origins has similar effects on the DE-DM association like an increase in the likelihood for those from lower origins or a decrease in the likelihood for those from higher origins to be downwardly mobile. Trends in social fluidity at labour market entry and occupational maturity may hence diverge without any changes in individuals' levels of intragenerational mobility. Instead, the divergence results from *changes in the distribution of origin classes* given origin-based differences in career mobility.

2.2 Past research

Although research on intergenerational mobility in terms of social class has a long tradition, most work on career mobility focuses on movements along a continuous occupational status or earnings scale. Still, as individuals' occupation and earnings are highly correlated with their class position, it seems likely that intragenerational mobility within the class hierarchy follows similar patterns (Bukodi and Goldthorpe 2018).

For both the UK and Germany, prior work suggests that career mobility varies for individuals from different social origins in both their extent and significance. Manzoni, Härkönen and Mayer (2014) document steeper career progression for those from more advantaged backgrounds compared to those from less advantaged backgrounds (see also Stawarz, 2013). Upward career mobility thus tends to be more prevalent among the former than the latter. Furthermore, upward mobility also

appears to be more salient for individuals from higher origins. Through upward career mobility those from higher origins can avoid ending up in a class position that is lower than their parents' class. As argued by Breen and Goldthorpe (1997), maintaining a position in the class hierarchy that is of at least similar rank is a key driver of individual behaviour. Those from higher class backgrounds thus have a strong incentive to use upward career mobility as a channel to counteract initial undesirable outcomes at the start of their career.

This phenomenon according to which individuals revert to their class of origin is referred to in the literature as 'counter mobility'. Whilst it has mostly been investigated with regard to those from advantaged backgrounds (Bukodi 2017; Diewald, Schulz, and Baier 2015; Hillmert 2011), it is equally possible for individuals from disadvantaged backgrounds to be counter mobile. For these, counter mobility means losing the advantageous position that they initially gained at labour market entry through downward career mobility. Counter mobility therefore implies intergenerational mobility at labour market entry and intergenerational *immobility* at occupational maturity.

Regarding over-time trends, existing research on general changes in career mobility is scarce and inconclusive, while evidence on how changes differ by class origin is fully missing. For Germany, Becker and Blossfeld (2017) find that levels of career mobility have increased for cohorts born between the late 1920s and mid-1970s due to rising upward as well as downward mobility. Results from Hillmert (2011) and Stawarz (2015), however, point towards a lack of systematic change. For the UK, Bukodi and Goldthorpe (2011) only observe cohort-specific deviations from otherwise stable patterns in the strength of the DE-DM association for cohorts born between the mid-1940s and early 1970s.

Despite this gap in the literature on origin-specific changes in career mobility, it is nevertheless possible to formulate expectations with respect to the role played by career mobility in shaping differences in social fluidity of the kind displayed in Figure 1. The following section turns to these by revisiting the theoretical considerations spelled out above in light of what is known about counter mobility.

2.3 *Expectations*

Figure 1 shows rising social fluidity at labour market entry and trendless fluctuation in social fluidity at occupational maturity for men and women, who started their careers during the second half of the twentieth century in the UK and Germany. In both countries, inequalities in the likelihood to enter the labour market in a certain class thus declined, whereas inequalities in the likelihood to reach a certain class at occupational maturity remained unchanged.

As discussed above, two processes can account for these differing trends in social fluidity if patterns of career mobility differ by origin class. These are (1) origin-specific changes in career mobility and (2) changes in the distribution of origin classes. Given that social fluidity at occupational maturity remained stable despite increases in social fluidity at labour market entry, the two processes must have counteracted the favourable trend towards greater equality at labour market entry. In other words, the processes underlying the DE-DM association must have reversed changes in the O-DE association. For this to be the case, counter mobility must have gained in importance over time. That is, levels of counter mobility must have either increased, the proportion of those experiencing counter mobility risen, or both. Only if individuals increasingly revert to their class of origin over the course of their careers can social fluidity measured at occupational maturity remain stable while social fluidity at the beginning of their working life rise.

Accordingly, the following four scenarios offer possible explanations for the observed differences in over-time trends in social fluidity: First, the relative importance of upward mobility increased for those from higher origins; second, the relative importance of downward mobility increased for those from lower origins; third, those from higher origins are more likely to be upwardly than downwardly mobile and their proportion increased; and fourth, those from lower origins are more likely to be downwardly than upwardly mobile and their proportion increased.

As past research has so far remained silent on how upward and downward mobility rates have changed for individuals from different class backgrounds, while suggesting that origin-specific

differences in their importance do exist, all four explanations appear equally likely at this point. Moreover, these scenarios are not mutually exclusive and could simultaneously drive observed differences between trends in social fluidity at labour market entry and occupational maturity. The next section discusses the data and measures used to identify the applicable cause(s).

3 Data and variables

To examine how career mobility shapes observed differences between over-time trends in social fluidity at labour market entry and occupational maturity, I use data from the UK Household Longitudinal Study (UKHLS 2009-2016 End User License; University of Essex 2017) and the German Socio-Economic Panel (SOEP 1984-2016 v33; Goebel et al. 2019). Both surveys are high-quality, representative longitudinal datasets, allowing to estimate social fluidity at the two career stages using the same respondents. The sample is restricted to those who entered the labour market during the second half of the twentieth century. Respondents whose labour market trajectories were affected by the two world wars or who just entered the labour market in recent years are excluded. As employment trajectories significantly differ between East and West, only the West German sample is taken.

To measure trends over time, I follow a cohort approach. Labour market entry cohorts are chosen over birth cohorts, as those born in the same year do not necessarily start their careers at the same time due to different educational trajectories. Labour market entry cohorts therefore capture more precisely historical variation in the distribution of origin and destination classes at the beginning of respondents' careers. For each country, I construct four-year cohorts to reduce measurement error. The first cohort entered the labour market between 1950-1953 and the last cohort entered the labour market between 1998-2001. Overall, 13 cohorts are constructed for each country.² Since the

² In Paper 1, analyses were based on 16 cohorts and included respondents, who entered the labour market between 2002 and 2013. These are excluded here as respondents have not achieved occupational maturity at the time of survey.

precise date of labour market entry is not provided in the UKHLS, I take the year in which respondents first left full-time education as a proxy. In the SOEP, labour market entry is defined as the year in which respondents started their first job after having completed full-time education.

Table 1. The seven-class versions of the European Socio-Economic Classification (ESeC) and National Statistics Socio-Economic Classification (NS-SEC)

	ESeC	NS-SEC
Class 1	Large employers, higher managers and professionals	Higher managerial, administrative and professional occupations
Class 2	Lower managers and professionals, high-level supervisors	Lower managerial, administrative and professional occupations
Class 3	Intermediate occupations	Intermediate occupations
Class 4	Small employers and own account workers	Small employers and own account workers
Class 5	Lower supervisors and technicians	Lower supervisory and technical occupations
Class 6	Lower service, sales and technical occupations	Semi-routine occupations
Class 7	Routine occupations	Routine occupations

Note: The dotted lines indicate the five-class hierarchical ordering of the two schemes. Classes 1 and 2 are referred to as the salariat, Classes 3, 4 and 5 represent the intermediate classes, while Class 6 and 7 form the working class.

Social class is measured using the National Statistics Socio-Economic Classification (NS-SEC) for the UK and the European Socio-Economic Classification (ESeC) for Germany. Both classifications conceptualise social class in terms of employment relations and are therefore almost identical (see Table 1). For the operationalization of intergenerational mobility, I use the seven-class versions of the two schemes. For the operationalization of intragenerational mobility, I use their five-class collapses to maintain sufficient observations in each cell of the mobility table when further disaggregating by class of origin. Career mobility is hence considered in fully hierarchical terms, while the operationalization of social fluidity also takes horizontal movements between class

positions into account.³ Regarding class of origin, I distinguish between the salariat (Class 1 and 2), intermediate (Class 3, 4, and 5), and working class (Class 6 and 7).

Class destination at labour market entry is constructed using information on respondents' first job, while information on respondents' job 15 years after labour market entry or later is used to measure class destination at occupational maturity.⁴ Existing evidence suggests that occupational maturity is generally reached around age 35 (Bukodi and Goldthorpe 2011), which is why most studies only include respondents' in their 30s or older (Breen and Müller 2020). However, due to prolonged periods spent in education and training, respondents increasingly enter the labour market at older ages. Choosing a fix time interval between the two career stages thus ensures that class at occupational maturity remains comparable over time. In other words, instead of approximating occupational maturity using age, I identify occupational maturity based on time spent in the labour market.

Class origin is determined using parental class at age 14 according to the dominance approach (Erikson 1984). Hence, whenever mother's and father's class positions differ, I assign the higher parental class. Given that respondents with lower class destinations are less likely to provide information on their parents' class than those with higher class destinations, I perform multiple imputation by chained equations to correct for systematic missingness in class origins.⁵ After imputation, the analytical sample contains 30,223 observations for the UK and 28,949 observations for Germany. Appendix Tables A2 and A3 show the distributions of class origin, class at labour

³ Trends in social fluidity at labour market entry and occupational maturity look similar when the five-class collapse is used.

⁴ Since both UKHLS and SOEP record retrospective information to construct full employment histories, the characteristics and timing of respondents first job is always known. However, respondents might become survey members more than 15 years after they entered the labour market. In this case, class at occupational maturity is measured based on the first current class position reported.

⁵ Besides year and class at labour market entry, I use available information on individuals' highest educational attainment, age at labour market entry, class 15 years after labour market entry or later, (log) income as well as parental education and labour market participation to predict missing information on class origin. Class origin is imputed for 9.01 per cent of the analytical sample in the UKHLS, and 19.70 per cent of the analytical sample in the SOEP.

market entry, and class at occupational maturity by cohort for each country.⁶ All analyses are conducted separately for men and women to account for gender-specific patterns in employment trajectories, and their changes over time.

4 Empirical results

4.1 *Increases in counter mobility*

As elaborated above, an increase in counter mobility is the only possible explanation for why observed trends in social fluidity measured at different career stages diverge in the UK and Germany. Only if counter mobility increases can social fluidity at labour market entry rise and social fluidity at occupational maturity remain stable at the same time. In a first step, I hence examine whether rates of counter mobility have changed in the two countries. Counter mobility is measured as the proportion of individuals who enter the labour market in a different class position but reach the same position at occupational maturity compared to their class of origin. Thus, class origin and class destinations at labour market entry and occupational maturity are assigned according to the three-class versions of NS-SEC and ESeC distinguishing between the salariat, intermediate, and working class.

In line with expectations, I observe in both countries a small albeit consistent rise in counter mobility among individuals entering the labour market during the second half of the twentieth century. As shown in Figure 3, more recent labour market entry cohorts are more likely to experience counter mobility than earlier cohorts. The pattern is similar across genders and countries, although counter mobility is more prevalent in the UK than in Germany. In the UK,

⁶ For each corresponding cohort, the distribution of class at labour market entry is identical to the distribution shown in appendix Tables A1 and A2 of Paper 1. For those cohorts where differences between the distribution of class origin are visible, this is due to the use of class 15 years after labour market entry instead of class at age 36 or older for the imputation of class origin. These differences are however minimal.

counter mobility increased from around 17 and 14 per cent to 20 and 18 for men and women, respectively. In Germany, counter mobility increased from around 9 and 11 per cent to 11 and 14 for men and women, respectively. Increases in counter mobility were hence more pronounced for women than for men, which corresponds to a stronger observed divergence between trends in social fluidity at labour market entry and occupational maturity for women (see Figure 1).

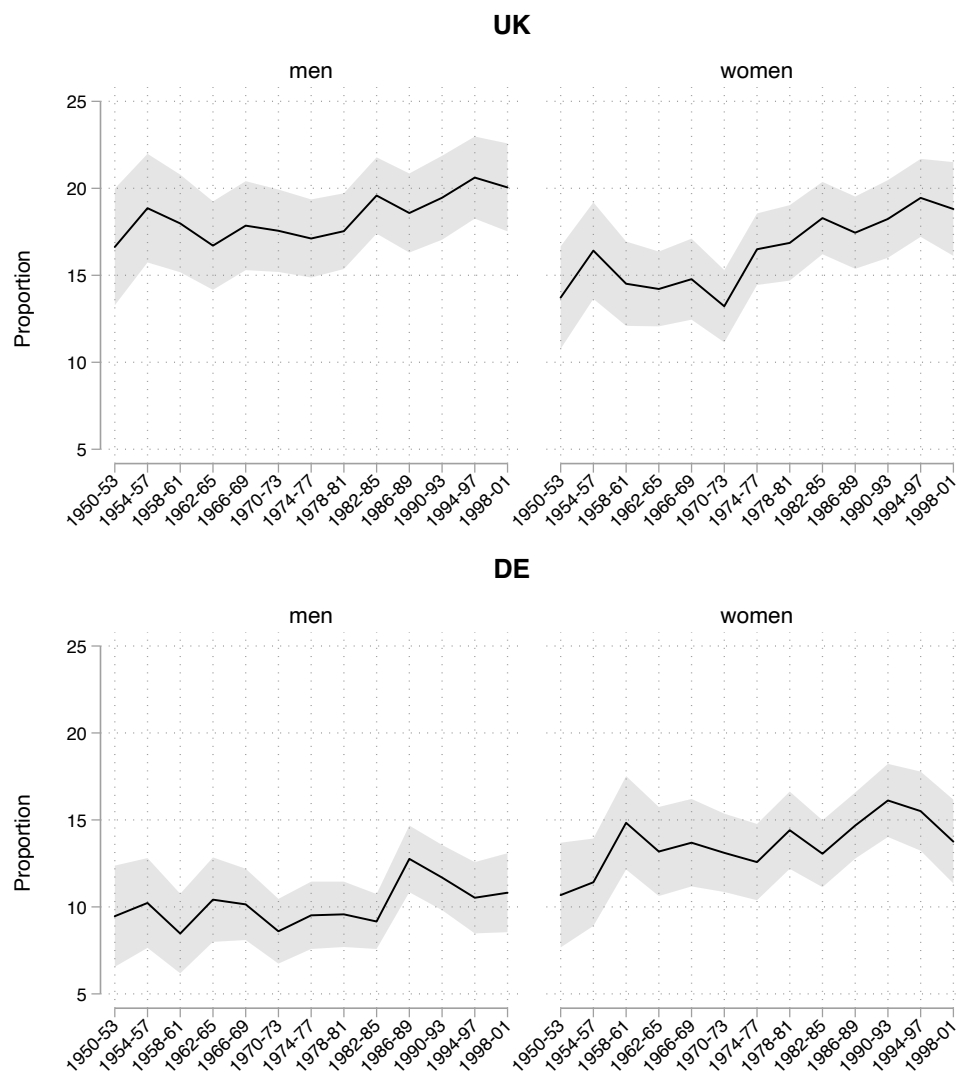


Figure 3. Counter mobility by labour market entry cohort, UK and Germany 1950-2001

Note: Counter mobility calculated as the proportion of individuals, who reach a similar class at occupational maturity but enter the labour market in a different class compared to their class of origin. Three-class collapses distinguishing between salariat, intermediate, and working class of NS-SEC and ESeC used. *Source:* UKHLS 2009-2016, SOEP 1984-2016.

The question now arises whether these increases are the result of origin-specific changes in career mobility or shifts in the distribution of origin classes. For the latter to be the case, individuals from different class origins need to exhibit distinct patterns of career mobility. Specifically, the importance of upward relative to downward career mobility must systematically differ. I therefore turn to examining differences in career mobility by class origin in a second step.

4.2 *Origin-specific differences in career mobility*

To throw light on origin-specific patterns of career mobility, I estimate average differences in the likelihood to experience upward mobility, downward mobility, or career immobility between individuals from salariat, intermediate and working class origins. A respondent is identified as being upwardly mobile if class at occupational maturity is higher than class at labour market entry. Analogously, a respondent is identified as being downwardly mobile if class at occupational maturity is lower than class at labour market entry. A respondent is considered career immobile if class at occupational maturity is the same as class at labour market entry. Multinomial logistic regression models that control for a linear cohort trend are used.⁷ The results, shown in columns (1), (3), (5), and (7) of Table 1 by country and gender, are displayed in terms of log odds ratios. Predicted probabilities will be presented further below.

⁷ Results are similar if cross-cohort variation is specified in terms of cohort fixed-effects.

Table 2. Relative importance of upward and downward career mobility by class of origin, multinomial logistic regression

	UK men		UK women		DE men		DE women	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Upward vs downward								
Salariat (ref.)								
Intermediate	-0.234*** (0.072)	-0.176* (0.075)	-0.103 (0.060)	-0.090 (0.066)	-0.019 (0.093)	-0.020 (0.095)	-0.068 (0.095)	-0.057 (0.100)
Working class	-0.438*** (0.080)	-0.388*** (0.080)	-0.149* (0.066)	-0.134 (0.071)	-0.343*** (0.090)	-0.342*** (0.094)	-0.316*** (0.086)	-0.292** (0.091)
Cohort	0.023** (0.007)	0.052** (0.015)	0.037*** (0.008)	0.042** (0.016)	-0.014 (0.008)	-0.013 (0.024)	0.020* (0.010)	(0.037) 0.022
Intermediate × cohort		-0.042* (0.019)		-0.008 (0.019)		0.003 (0.030)		-0.004 (0.027)
Working class × cohort		-0.033 (0.020)		-0.004 (0.019)		-0.002 (0.027)		-0.026 (0.024)
Upward vs immobile								
Salariat (ref.)								
Intermediate	-0.098 (0.058)	-0.065 (0.061)	0.021 (0.051)	0.053 (0.053)	0.169* (0.066)	0.164* (0.067)	0.105 (0.081)	0.118 (0.086)
Working class	-0.166* (0.067)	-0.138* (0.068)	0.124* (0.051)	0.164** (0.054)	-0.025 (0.061)	-0.030 (0.062)	0.050 (0.072)	0.070 (0.075)
Cohort	0.004 (0.006)	0.019 (0.013)	0.043*** (0.006)	0.062**** (0.011)	-0.010 (0.006)	-0.017 (0.016)	0.016* (0.008)	0.031 (0.017)
Intermediate × cohort		-0.021 (0.016)		-0.016 (0.015)		0.007 (0.021)		-0.012 (0.022)
Working class × cohort		-0.017 (0.016)		-0.038** (0.014)		0.008 (0.019)		-0.020 (0.019)
Downward vs immobile								
Salariat (ref.)								
Intermediate	0.136* (0.068)	0.110 (0.070)	0.124 (0.066)	0.143* (0.067)	0.188* (0.095)	0.184 (0.096)	0.173* (0.086)	0.175 (0.089)
Working class	0.272*** (0.069)	0.250*** (0.070)	0.274*** (0.067)	0.298*** (0.070)	0.318*** (0.088)	0.312** (0.092)	0.366*** (0.070)	0.362*** (0.074)
Cohort	-0.019* (0.007)	-0.034* (0.016)	0.005 (0.008)	0.020 (0.016)	0.004 (0.008)	-0.003 (0.024)	-0.004 (0.008)	-0.006 (0.018)
Intermediate × cohort		0.021 (0.020)		-0.008 (0.019)		0.004 (0.029)		-0.008 (0.023)
Working class × cohort		0.016 (0.020)		-0.034 (0.020)		0.010 (0.027)		0.006 (0.021)
N	14,051		16,172		14,249		14,700	

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Pooled sample of men and women, who entered the labour market between 1950-2001. Robust standard errors in parantheses. *Source:* UKHLS 2009-2016, SOEP 1984-2016.

When comparing differences in the likelihood to experience upward rather than downward career mobility, a clear gradient by class origin consistently appears. Those from intermediate and working class origins are always less likely to experience upward than downward mobility than their counterparts from salariat origin, and the gap is larger for those from a working class background. This pattern is particularly pronounced in the UK, where differences in the log odds ratios for those from intermediate and working class origins are sizable and statistically significant at 0.1 per cent, particularly among men. In Germany, only differences between men and women from salariat and working class backgrounds are statistically significant at conventional levels. Nevertheless, I find strong evidence for origin-specific patterns of career mobility. For individuals from higher class backgrounds, upward career mobility is more important than downward career mobility, corroborating findings of previous research (Bukodi 2017; Diewald et al. 2015; Hillmert 2011).

Changing the reference category from downward to immobility reveals that for men in the UK these origin-specific differences are driven by inequalities in upward as well as downward mobility. In the UK, men from intermediate and working class origins are both less likely to be upwardly mobile and more likely to be downwardly mobile compared to men from salariat origins. Differences in the likelihood to experience upward mobility are however not statistically significant between men from intermediate and salariat backgrounds. For the other three groups, differences in the relative importance of upward mobility primarily result from inequalities in downward mobility. While origin-specific differences in downward mobility are as marked as for men in the UK, differences in upward mobility are less clear cut and mostly statistically indistinguishable from zero.

Given these findings, it is possible that in the UK as well as Germany the observed divergence between trends in social fluidity at labour market entry and occupational maturity are either driven by origin-specific changes in career mobility, changes in the distribution of class origins or both.

4.2 *Origin-specific changes in career mobility*

To assess whether career mobility changed differently over time for individuals from salariat, intermediate and working class origins, I re-run the above model and include an interaction between the dummies for class origin and the linear term for labour market entry cohort. The coefficients for the linear cross-cohort trend in the odd columns of Table 1 suggest that the importance of upward relative downward career mobility has generally increased over time, except for men in Germany. However, although being statistically significant at 0.1 per cent, their size is small, implying that the rise in the relative importance of upward mobility is marginal. Adding the interaction tests whether this cross-cohort trend differs by origin class.

As seen in columns (2), (4), (6), and (8) of Table 1, no origin-specific differences in changes in the relative importance of upward mobility can be observed. The coefficients for the interaction are all negligible in size and statistically insignificant, except for men from intermediate origins in the UK. Calculating average marginal effects confirms that cross-cohort changes in the likelihood of upward mobility, downward mobility and career immobility were minimal and did not systematically vary by class origin (see appendix Figure A4).⁸ As a result, origin-specific changes in career mobility cannot explain why trends in social fluidity at labour market entry and occupational maturity look different in Germany and the UK. Rather, it must be the case that changes in the composition of class origins led to the observed divergence in trends of social fluidity.

⁸ Additional analyses that follow a log-linear modelling approach yield similar results. The model of ‘Uniform differences’ (UNIDIFF) improves on the model of ‘Constant Social Fluidity’ (CnSF) when allowing the strength of the DE-DM association to uniformly differ by labour market entry cohort for women in the UK and men in Germany. For these two groups, the UNIDIFF parameters indicate that the strength in the DE-DM weakened over time. However, when further allowing the DE-DM association to simultaneously vary by labour market entry and class of origin, no origin-specific trends are found. See appendix Table A4 and Figure A1 for test statistics and UNIDIFF parameters.

4.3 *Changes in the distribution of origin classes*

In line with prior work, the preceding analyses established that levels of career mobility vary for individuals from different class backgrounds. In the UK and Germany, individuals from salariat origins are significantly more likely to experience upward than downward mobility compared to those from working class origins. This pattern has not only been observed for both genders, but also persisted throughout the second half of the twentieth century. Accordingly, increases in counter mobility leading to the observed divergence in social fluidity trends could be driven by a growing proportion of respondents from salariat backgrounds.

To examine whether this is the case, Figures 4 and 5 show how the distribution of origin classes evolved for men in the UK and Germany alongside origin-specific levels of career mobility. The latter are presented in terms of predicted probabilities calculated based on columns (1), (3), (5), and (7) of Table 2. To highlight inequalities in the relative importance of upward mobility, absolute differences in the probability to experience upward and downward mobility are also indicated. The corresponding figures for women can be found in the appendix (Figures A2 and A3) as the picture is almost identical as for their male counterparts.

According to expectations, I observe a continuous and striking increase in the proportion of respondents from salariat origins in the UK that is accompanied by an equally marked decline in the proportion of respondents from working class backgrounds.⁹ As displayed in the left panel of Figure 4a, 45 per cent of men who entered the labour market in the early 1950s originated in the working class, while only 12 per cent grew up in salariat families. Five decades later, the same figures amount to 26 and 35 per cent, respectively. Thus, while at the beginning of the observation

⁹ Observed changes in the proportion of respondents from salariat origins for the UK and Germany are similar to those presented in Figure 3 of Paper 1 for the same cohorts.

period the majority of labour market entrants had a working class background, those from salariat origins formed a substantive proportion at the turn of the twenty-first century.

The same trend can be observed when further differentiating respondents by their class at labour market entry. As the proportion of respondents from salariat origins is generally on the rise, men who enter the labour market in the intermediate or working class also increasingly come from salariat origins. By contrast, the proportion of men from working class backgrounds decreases within all entry classes. The top panel of Figure 4b shows cross-cohort changes in the origin distributions separately for respondents who enter the labour market in the salariat, intermediate, and working class. As a growing proportion of individuals thus experiences intergenerational (downward) mobility at the beginning of their career, this pattern corresponds to the observed rise in social fluidity when measured at labour market entry.

The right panel of Figure 4a presents differences in the predicted probability to be upwardly and downwardly mobile for men from salariat, intermediate and working class origins, regardless of labour market entry class. Although men from all origins are more likely to experience upward than downward career mobility in the UK, those from salariat origins have the highest chance to move into a higher class over the course of their careers. Their probability amounts to 0.44 compared to 0.38 for men from working class origins. The difference is statistically significant at 95 per cent. Moreover, as shown in the bottom panel of Figure 4b, men from salariat backgrounds who enter the labour market in the working class are especially likely to improve their class position during their career. Both absolute levels as well as relative differences in the probability to be upwardly mobile are substantial. Men from salariat origins who start off in the working class have a 0.78 probability to find themselves in a higher class at occupational maturity, which is 18 percentage points higher than for their counterparts from working class origins. Thus, only a minority of men from salariat origins remains in the working class beyond labour market entry. Despite initial intergenerational downward mobility, most of them occupy a class position that is similar to their

parents' due to upward career mobility at a subsequent stage. As argued earlier, I take this as evidence for counter mobility among those from salariat backgrounds.¹⁰

Taken together, the results hence suggest that in the UK the divergent trends in social fluidity at labour market entry and occupational maturity are driven by changes in the distribution of origin classes towards those from higher class origins who experience counter mobility.

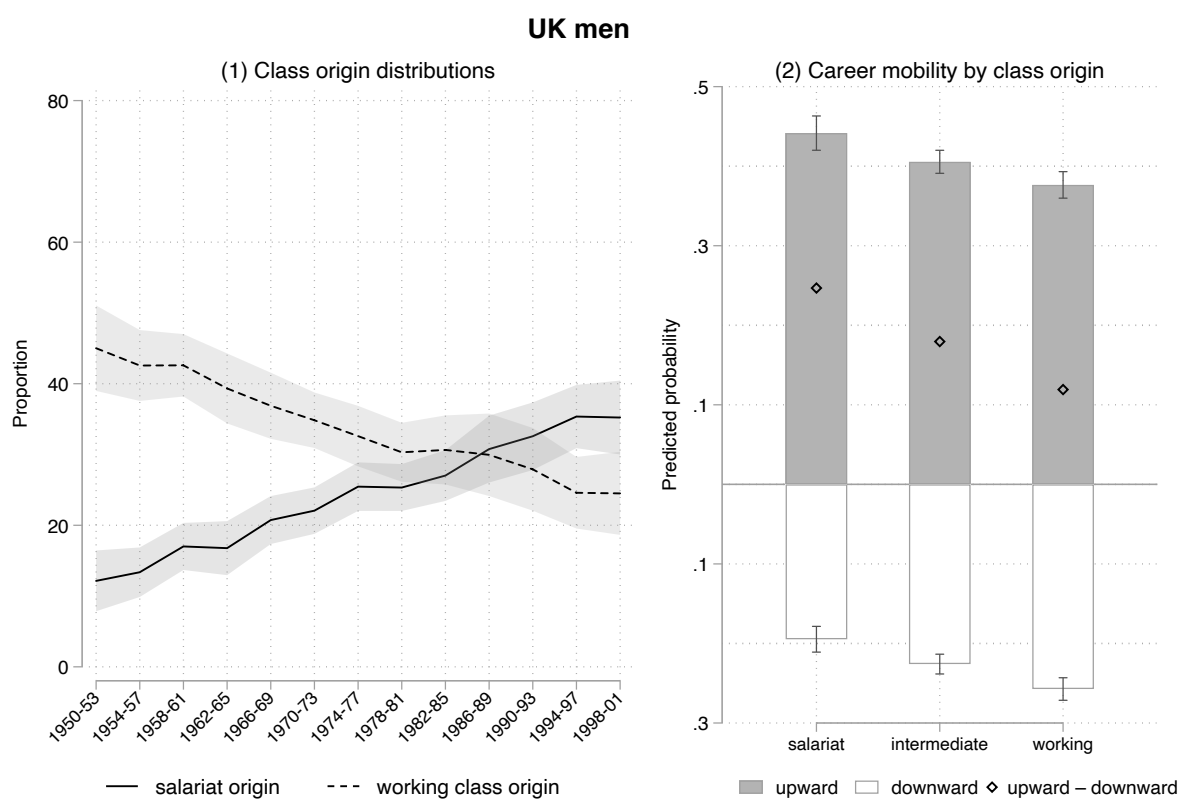


Figure 4a. Class origin distributions by labour market entry cohort and origin-specific career mobility rates, UK men

Note: 95 per cent intervals shown. Predicted probabilities for upward and downward career mobility calculated based on column (1) of Table 2 for the average labour market entry cohort. *Source:* UKHLS 2009-2016.

¹⁰ In fact, I also find evidence for counter mobility among men from working class backgrounds who enter the labour market in an intermediate class position or higher. As shown in the bottom panel of Figure 4b, these men are more likely to experience downward than upward career mobility. I observe a similar pattern for women in Germany (see appendix Figure A3b). However, since their proportion declines over time, this cannot contribute to rising counter mobility.

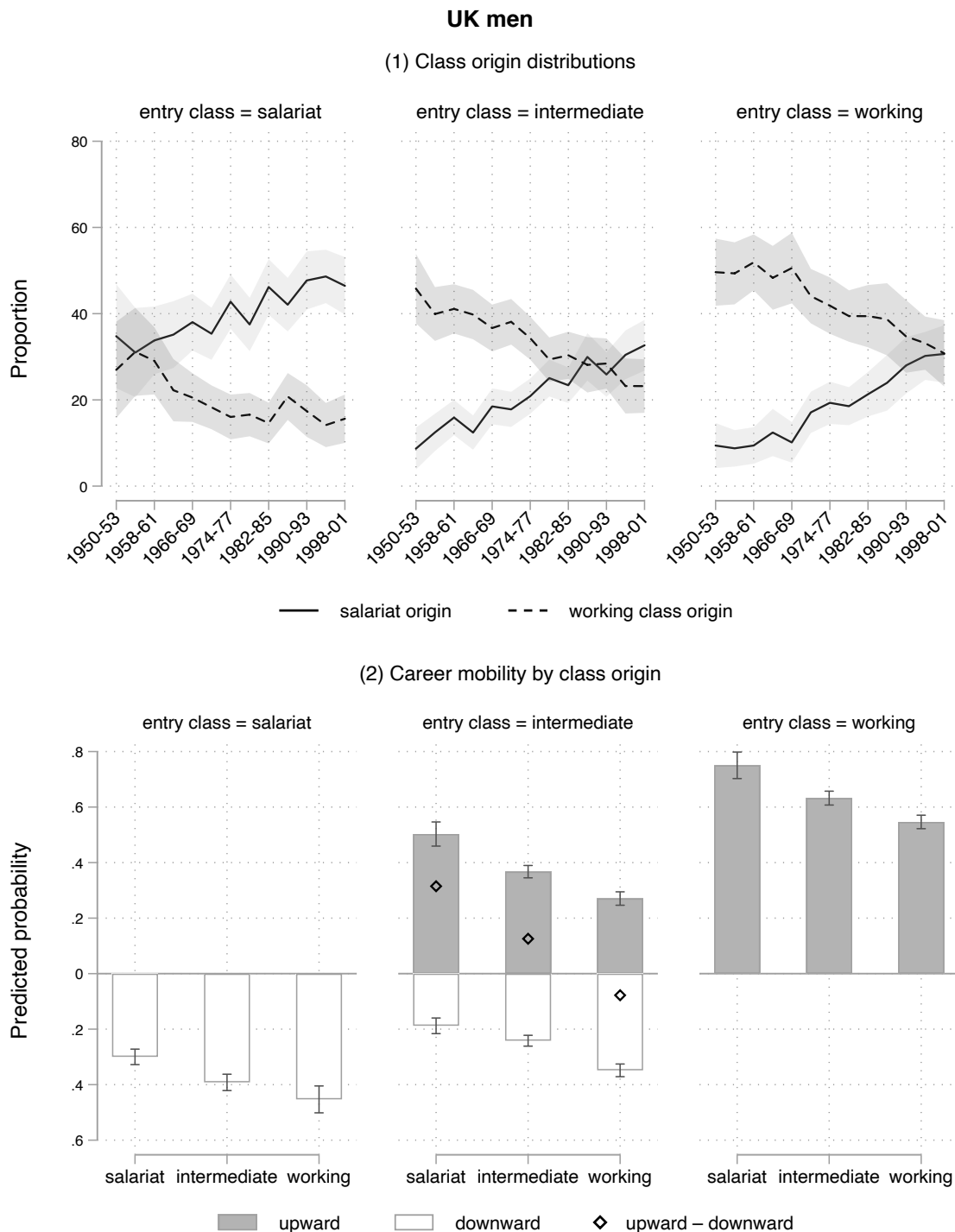


Figure 4b. Class origin distributions by labour market entry cohort and origin-specific career mobility rates, separately by class at labour market entry, UK men

Note: 95 per cent intervals shown. Predicted probabilities for upward and downward career mobility calculated for the average labour market entry cohort based on models shown in column (1) of Table 2, when run separately by class at labour market entry. *Source:* UKHLS 2009-2016.

When looking at Figure 5a, a comparable shift in the origin distributions is not visible for men in Germany. The overall proportion of those from salariat and working class origins remains essentially unaltered during the second half of the twentieth century. Around 60 per cent have a working class background, whereas only 15 per cent have parents in the salariat. However, when focusing on the origin distribution of men who enter the labour market in an intermediate or salariat position, as presented in Figure 5b, increases in the proportion of those from working class origins are visible. Their proportion rose particularly steadily among those starting off in an intermediate class position, increasing from around 40 to almost 60 per cent between the 1950s and 1990s. Thus, individuals who enter the labour market in a more advantageous position increasingly come from disadvantaged origins, which is consistent with the observed rise in social fluidity at labour market entry. In contrast to the UK, this increase is driven by a growing influx of those from lower class backgrounds into higher class destinations, who accordingly experience intergenerational (upward) mobility at labour market entry.

Men from working class origins who secure a higher position at labour market entry are however also significantly more likely to be downwardly mobile than those from intermediate and salariat origins. The bottom panel of Figure 5b indicates that men from working class origins who start off in either the salariat or intermediate class, have a ca. 30 per cent chance of losing this position over the course of their careers. In contrast, men whose parents held a position in the salariat themselves only have a 21 and 12 percent chance to experience downward career mobility, if they enter the labour market in the salariat and intermediate class, respectively.

Being unable to stay in a position that is above the working class, men from working class origins hence experience counter mobility through initial intergenerational upward mobility that is followed by downward career mobility. As their proportion increases over time, this trend further translates into differing trends between social fluidity when observed at occupational maturity instead of labour market entry.

Overall, these findings propose that in Germany the divergent trends in social fluidity observed at different career stages are the result of a growing proportion of individuals from working class origins who enter the labour market in more advantageous positions and then go on to experience downward career mobility. In both countries, differences in over-time trends in social fluidity are thus driven by increases in counter mobility. However, counter mobility patterns that are on the rise in Germany are of a fundamentally different kind than those increasing in the UK.

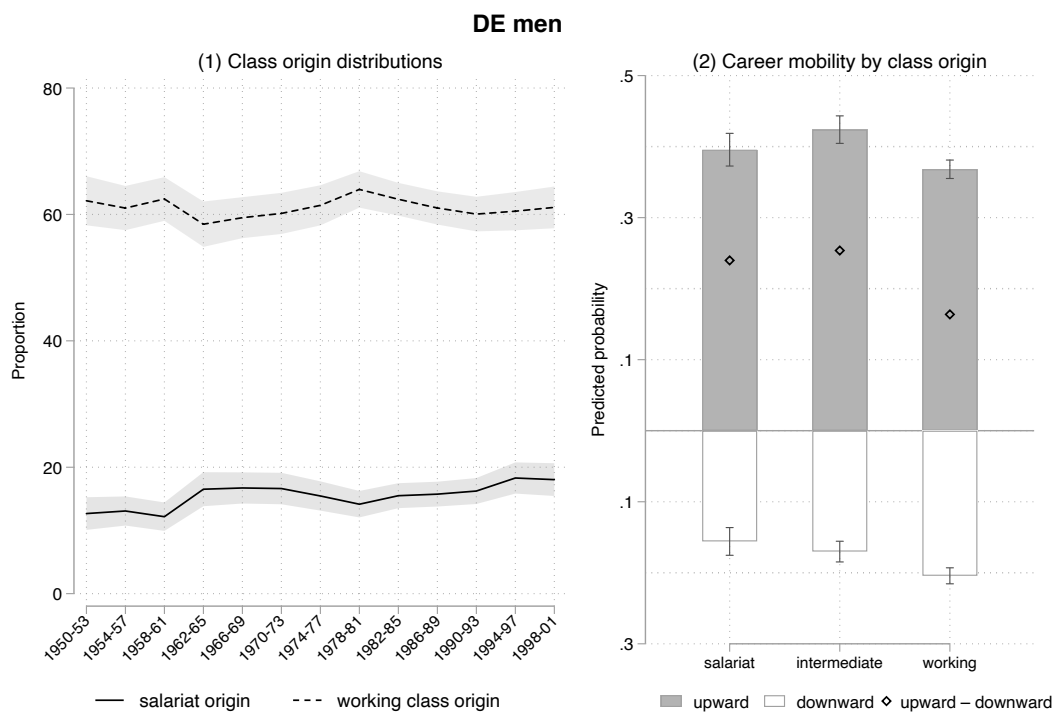


Figure 5a. Class origin distributions by labour market entry cohort and origin-specific career mobility rates, DE men

Note: 95 per cent intervals shown. Predicted probabilities for upward and downward career mobility calculated based on column (5) of Table 2 for the average labour market entry cohort. *Source:* SOEP 1984-2016.

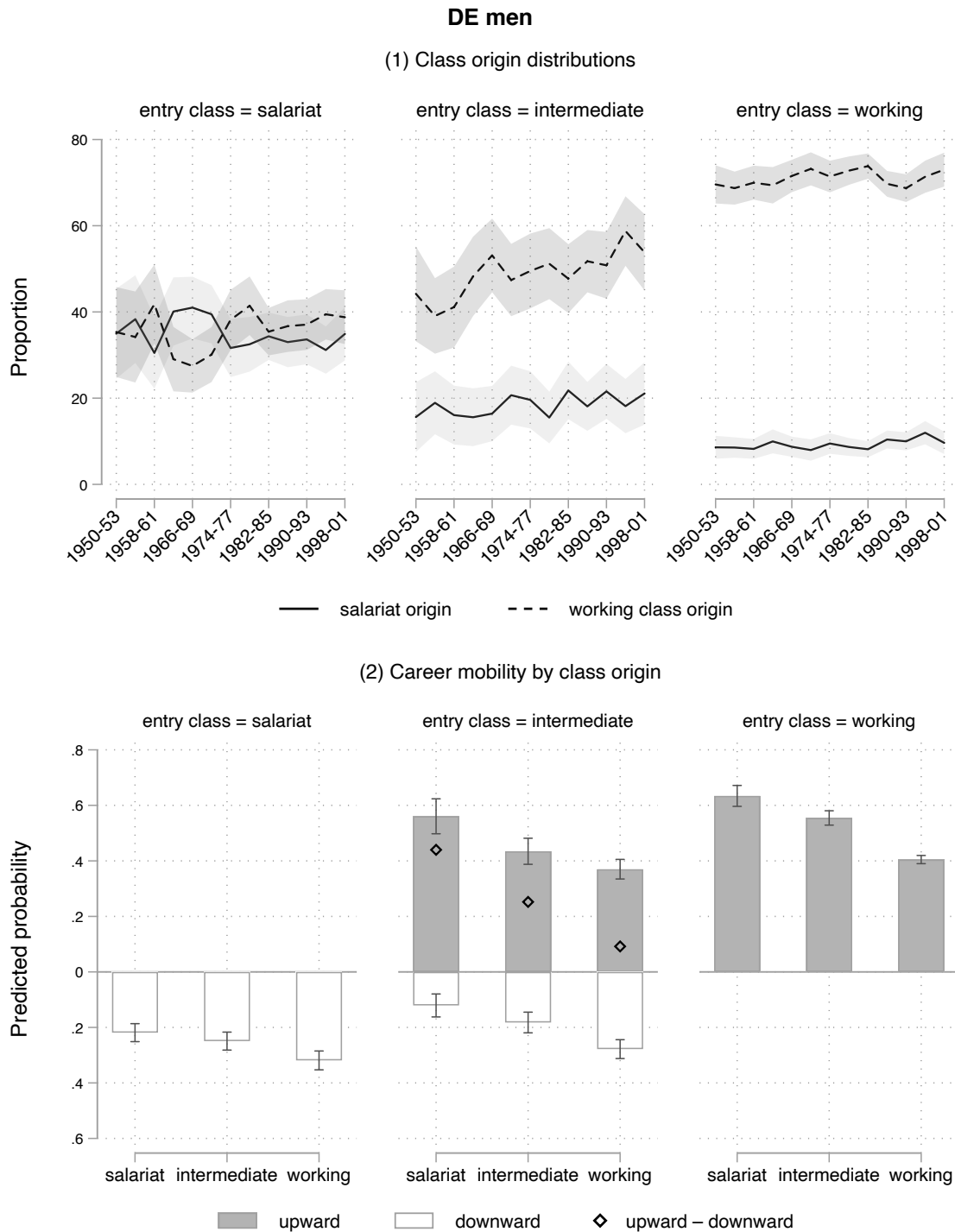


Figure 5b. Class origin distributions by labour market entry cohort and origin-specific career mobility rates, separately by class at labour market entry, DE men

Note: 95 per cent intervals shown. Predicted probabilities for upward and downward career mobility calculated for the average labour market entry cohort based models shown in column (5) of Table 2, when run separately by labour market entry class. *Source:* SOEP 1984-2016.

5 Conclusion

This study aimed at fostering a better understanding of why choosing when to measure class destination is important for the assessment of intergenerational social class mobility. Focussing on over-time trends in the origin-destination association during the second half of the twentieth century, I used data from the UK and Germany, and elaborated on the role of career mobility in shaping differences between trends in social fluidity measured at different career stages. Despite significant differences in their levels of intra- and intergenerational mobility, trends in social fluidity are remarkably similar in the two countries: when respondents' class destination is measured at the start of their careers, increases in social fluidity can be observed. However, when respondents' class destination is measured 15 years later, persistence in the strength of the origin-destination association is found. For the UK and Germany, historical variation in social fluidity thus tends to be over-estimated when respondents' first class rather than class at occupational maturity is used.

The theoretical discussion revealed that only increases in counter mobility can produce such a pattern. In the literature, counter mobility has mainly been discussed with respect to its importance for the upper classes, which allows them to stay in their parents' class despite failures to secure a position at the top of the class hierarchy right from the start (Bukodi and Goldthorpe 2018; Diewald et al. 2015). By enabling individuals to revert to their class of origin, counter mobility is therefore a key driver of intergenerational immobility. Accordingly, increases in counter mobility can offset changes towards greater equality and neutralize increases in social fluidity observed at labour market entry.

Consistent with this theoretical argument, the empirical findings show that the proportion of individuals who had a different class at labour market entry but were found in a similar class as compared to their parents increased from the 1950s onwards in the UK and Germany. Although slightly more pronounced for women than for men, increases in counter mobility were generally

modest. Still, they appear sufficient to have caused trends in social fluidity at labor market and occupational maturity to diverge. Further analyses show that growing counter mobility was not brought about by changes in career mobility that differed between individuals from different backgrounds. Neither did the importance of upward mobility increase among those from higher class origins, nor did downward mobility become more prevalent among those from lower class origins. In fact, origin-specific differences in the importance of upward relative to downward mobility remained remarkably stable for both men and women during the second half of the twentieth century. This lack of temporal variation in inequalities in career mobility patterns provides strong evidence against the expectation that origin-specific changes in the relative importance of upward mobility account for differing trends in social fluidity measured at different career stages. Consequently, changes in the distribution of origin classes remain as the only explanation for the observed difference.

For this second explanation to hold, patterns of career mobility must differ by class of origin. The results reveal that this is clearly the case for men and women in the UK and Germany. Individuals from salariat origins have a significantly greater chance to experience upward rather than downward career mobility compared to individuals from working class origins. Given such origin-specific differences in upward and downward mobility rates, individuals from salariat as well as working class origins both face a considerable likelihood to be counter mobile. However, increases in the proportion of the counter mobile were the result of somewhat differing changes in the distribution of origin classes in the UK and Germany. In the UK, increases in the proportion of the counter mobile were driven by increases in the number of labour market entrants from salariat origins, who enter the labour market in a lower class position but have a high chance of upward career mobility. In Germany, such increase was driven by a growth in the proportion of individuals from working class origins, who enter the labour market in a higher class job but are also likely to experience downward career mobility. Patterns of counter mobility are thus crucially different in the two

countries. Further research on the underlying mechanisms of counter mobility, and their cross-national differences, is thus needed.

In sum, the results presented here have provided again a vivid illustration of the significance of class distributional change for historical patterns of intergenerational social mobility. Given pronounced inequalities in intragenerational class mobility, these changes not only affect differences between conclusions derived from relative or absolute measures of intergenerational social class mobility – that is measures that consider or ignore distributional differences between the parent and child generation. Moreover, they affect how trends in social fluidity measured at different stages in individuals' careers evolve over time. Future work should build on this.

References

- Becker, Rolf, and Hans-Peter Blossfeld. 2017. 'Entry of Men into the Labour Market in West Germany and Their Career Mobility (1945–2008): A Long-Term Longitudinal Analysis Identifying Cohort, Period, and Life-Course Effects'. *Journal for Labour Market Research* 50(1):113–30.
- Breen, Richard, ed. 2004. *Social Mobility in Europe*. Oxford: Oxford University Press.
- Breen, Richard, and John H. Goldthorpe. 1997. 'Explaining Educational Differentials Towards a Formal Rational Action Theory'. *Rationality and Society* 9(3):275–305.
- Breen, Richard, and Walter Müller, eds. 2020. *Education and Intergenerational Social Mobility in Europe and the United States*. Stanford, California: Stanford University Press.
- Bukodi, Erzsébet. 2017. 'Cumulative Inequalities over the Life-Course: Life-Long Learning and Social Mobility in Britain'. *Journal of Social Policy* 46(2):367–404.
- Bukodi, Erzsébet, and John H. Goldthorpe. 2011. 'Class Origins, Education and Occupational Attainment in Britain'. *European Societies* 13(3):347–75.
- . 2018. *Social Mobility and Education in Britain: Research, Politics and Policy*. Cambridge University Press.

- Bukodi, Erzsébet, Marii Paskov, and Brian Nolan. 2020. 'Intergenerational Class Mobility in Europe: A New Account'. *Social Forces* 98(3):941–972.
- Diewald, Martin, Wiebke Schulz, and Tina Baier. 2015. 'Intergenerational Downward Mobility in Educational Attainment and Occupational Careers in West Germany in the Twentieth Century'. *European Sociological Review* 31(2):172–83.
- Erikson, Robert. 1984. 'Social Class of Men, Women and Families'. *Sociology* 18(4):500–514.
- Goebel, Jan, Markus M. Grabka, Stefan Liebig, Martin Kroh, David Richter, Carsten Schröder, and Jürgen Schupp. 2019. 'The German Socio-Economic Panel (SOEP)'. *Jahrbücher für Nationalökonomie und Statistik (Journal of Economics and Statistics)* 239(2):345–360.
doi: 10.5684/soep.v33.
- Goldthorpe, John, Catriona Llewellyn, and Clive Payne. 1987. *Social Mobility and Class Structure in Modern Britain*. Second Edition. Oxford: Oxford University Press.
- Hertel, Florian R. 2017. *Social Mobility in the 20th Century: Class Mobility and Occupational Change in the United States and Germany*. Wiesbaden: Springer VS.
- Hillmert, Steffen. 2011. 'Occupational Mobility and Developments of Inequality Along the Life Course'. *European Societies* 13(3):401–23.
- Leuze, Kathrin. 2007. 'What Makes for a Good Start? Consequences of Occupation-Specific Higher Education for Career Mobility: Germany and Great Britain Compared'. *International Journal of Sociology* 37(2):29–53.
- Manzoni, Anna, Juho Härkönen, and Karl Ulrich Mayer. 2014. 'Moving on? A Growth-Curve Analysis of Occupational Attainment and Career Progression Patterns in West Germany'. *Social Forces* 92(4):1285–1312.
- Paterson, Lindsay, and Cristina Iannelli. 2008. 'Patterns of Absolute and Relative Social Mobility: A Comparative Study of England, Wales and Scotland'. *Sociological Research Online* 12(6):1–21.
- Pollak, Reinhard, and Walter Müller. 2020. 'Education as an Equalizing Force: How Declining Educational Inequality and Educational Expansion Have Contributed to More Social Fluidity in Germany'. pp. 122–49 in *Education and Intergenerational Social Mobility in Europe and the United States*, edited by R. Breen and W. Müller. Stanford, California: Stanford University Press.

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- Scherer, Stefani. 2005. 'Patterns of Labour Market Entry - Long Wait or Career Instability? An Empirical Comparison of Italy, Great Britain and West Germany'. *European Sociological Review* 21(5):427–40.
- Stawarz, Nico. 2013. 'Inter- und Intragenerationale Soziale Mobilität'. *Zeitschrift für Soziologie* 42(5):385–404.
- Stawarz, Nico. 2015. 'Soziale Mobilität in Deutschland Revisited'. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie* 67(2):269–91.
- Trinh, Nhat An, and Erzsébet Bukodi. 2021. 'Intergenerational Class Mobility of Labour Market Entrants in Germany and the UK since the 1950s'. *European Sociological Review* jcab028.
- University of Essex, Institute for Social and Economic Research. 2017. *Understanding Society: Waves 1-7, 2009-2016 and Harmonised BHPS Waves 1-18, 1991-2009*. 9th Edition. UK Data Service. doi: 10.5255/UKDA-SN-6614-10.

Appendix

Table A1. Testing for uniform differences in the O-DE and O-DM associations across labour market entry cohorts, UK and Germany 1950-2001

		(1) O-DE association				(2) O-DM association		
		df	F	p-value		df	F	p-value
UK men	12	2494.03	1.89	0.031	12	527.58	0.59	0.851
UK women	12	3291.45	2.63	0.002	12	558.36	0.74	0.711
DE men	12	1431.69	2.56	0.002	12	301.12	1.27	0.232
DE women	12	1618.08	2.78	0.001	12	310.06	0.44	0.947

Note: ‘O’ refers to class of origin, ‘DE’ refers to class destination at labour market entry, and ‘DM’ refers to class destination at occupational maturity. To account for the multiply imputed structure of the data, a re-expressed model fitted to individual-level data was estimated instead of the usual log-linear model fitted to tabular data (Jann and Seiler 2019)¹. This re-expressed model is more flexible, allowing to correctly adjust coefficients and standard errors according to Rubin’s rule (Rubin 1987)² as well as to include multiple or continuous layer variables amongst others. The test statistics for the model of ‘Uniform differences’ against the model of ‘Constant Social Fluidity’ are therefore obtained from an F distribution. UNIDIFF parameters shown in Figure 1. *Source:* UKHLS 2009-2016, SOEP 1984-2016.

¹ Jann, Ben, and Simon Seiler. 2019. ‘udiff: Stata module to estimate the generalized unidiff model for individual-level data’. Statistical Software Components S458711, Boston College Department of Economics, revised 03 Apr 2020.

² Rubin, Donald. 1987. *Multiple Imputation for Nonresponse in Surveys*. New York: Wiley.

Table A2. Distribution of class of origin (O), class at labour market entry (DE) and at occupational maturity (DM) by labour market entry cohort, UK

NS-SEC	1950-53					1954-57					1958-61					1962-65				
	O	DE		DM		O	DE		DM		O	DE		DM		O	DE		DM	
	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women
Class 1	4.23	5.16	0.97	14.17	2.36	4.90	6.21	1.26	15.08	1.94	6.69	7.13	1.21	19.26	3.97	7.04	8.56	1.80	14.94	3.95
Class 2	8.55	7.00	10.47	22.72	22.07	8.70	6.66	14.20	18.45	23.69	9.92	11.64	11.98	19.44	24.41	10.96	10.56	13.73	16.72	22.72
Class 3	9.66	10.68	29.95	5.47	30.06	9.33	9.02	27.76	5.83	27.82	11.74	12.59	34.64	6.69	32.38	12.25	11.11	34.83	8.65	33.51
Class 4	21.45	12.71	5.64	9.52	1.62	21.06	11.98	7.16	10.88	3.14	18.63	12.35	7.96	12.94	2.71	18.68	13.78	6.91	13.65	3.45
Class 5	13.35	25.23	2.25	11.05	3.06	12.22	26.04	1.38	13.64	3.05	12.47	21.50	1.71	11.82	2.65	13.73	22.00	1.44	11.12	1.99
Class 6	13.14	24.49	30.92	17.62	18.24	15.50	24.26	30.78	15.77	18.98	15.37	20.07	28.80	12.86	17.23	15.13	18.56	25.85	14.79	16.48
Class 7	29.62	14.73	19.81	19.46	22.58	28.28	15.83	17.46	20.35	21.39	25.19	14.73	13.70	16.98	16.66	22.20	15.44	15.44	20.12	17.91
N	1164	543	621	543	621	1472	676	796	676	796	1835	842	993	900	993	2014	900	1114	842	1114
NS-SEC	1966-1969					1970-1973					1974-77					1978-81				
	O	DE		DM		O	DE		DM		O	DE		DM		O	DE		DM	
	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women
Class 1	8.88	12.12	1.60	21.22	5.26	8.29	12.34	2.28	24.70	5.94	9.26	11.70	2.64	19.37	5.65	10.20	10.74	3.19	21.74	8.42
Class 2	12.40	11.92	17.45	20.14	27.95	12.95	13.18	18.67	21.29	30.03	16.20	11.61	15.35	22.14	31.14	16.71	10.42	14.19	19.94	29.07
Class 3	11.43	12.44	33.87	6.21	32.42	14.94	12.90	35.90	6.97	31.72	14.21	13.01	33.76	7.18	30.73	15.19	10.74	32.11	6.93	31.38
Class 4	18.03	10.78	6.51	10.31	2.42	16.69	8.41	5.15	8.11	2.42	17.17	8.98	5.28	10.93	1.59	16.87	10.50	5.02	8.17	2.20
Class 5	12.75	23.32	2.08	11.48	2.39	12.60	23.18	1.10	9.45	1.93	10.06	21.09	2.36	10.60	2.19	10.78	21.40	2.51	11.70	2.51
Class 6	14.46	15.44	24.62	14.22	14.46	13.69	16.07	23.65	13.24	13.03	13.02	13.92	23.34	12.41	14.90	12.90	15.43	24.03	13.87	13.48
Class 7	22.05	13.99	13.87	16.42	15.09	20.84	13.93	13.26	16.24	14.95	20.08	19.69	17.27	17.36	13.80	17.36	20.76	18.94	17.66	12.94
N	2025	965	1060	965	1060	2254	1070	1184	1070	1184	2615	1214	1401	1257	1401	2730	1257	1473	1214	1473
NS-SEC	1982-85					1986-89					1990-1993					1994-1997				
	O	DE		DM		O	DE		DM		O	DE		DM		O	DE		DM	
	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women
Class 1	10.38	9.18	3.34	21.21	9.64	11.55	12.08	4.60	21.44	9.79	13.58	13.40	5.74	24.90	10.51	14.82	13.76	5.41	23.05	10.61
Class 2	16.93	10.06	14.22	20.87	27.82	18.80	11.03	15.18	21.45	28.01	19.29	13.48	18.48	20.31	29.95	20.23	13.76	17.65	18.40	30.08
Class 3	16.60	12.90	31.65	6.61	31.86	15.03	13.22	32.26	7.73	30.87	15.74	9.93	30.49	7.38	29.19	16.43	11.53	29.14	7.99	28.43
Class 4	16.00	11.22	6.29	9.42	2.54	17.48	11.33	6.04	8.65	2.72	15.80	9.26	6.26	8.12	3.49	14.74	7.81	5.35	10.31	3.19
Class 5	9.81	20.04	2.29	10.74	1.95	8.84	18.96	3.02	11.28	1.91	8.87	15.22	2.50	11.56	1.68	8.48	14.21	2.27	10.61	1.41
Class 6	12.19	18.37	24.90	13.08	13.32	11.81	16.47	23.46	11.80	14.38	11.61	17.54	21.28	11.12	12.35	11.46	18.68	24.47	12.94	14.64
Class 7	18.09	18.22	17.30	18.07	12.87	16.49	16.92	15.44	17.67	12.32	15.12	21.17	15.24	16.61	12.83	13.83	20.24	15.71	16.70	11.63
N	2898	1372	1526	1372	1526	2846	1324	1522	1324	1522	2567	1209	1358	1344	1358	2840	1344	1496	1209	1496
NS-SEC	1998-2001																			
	O	DE		DM																
	All	Men	Women	Men	Women															
Class 1	13.84	11.76	5.90	24.51	12.30															
Class 2	21.15	12.81	18.86	21.34	29.90															
Class 3	15.95	12.43	27.70	7.03	26.64															
Class 4	15.46	7.57	4.48	7.97	4.02															
Class 5	8.27	13.86	1.60	10.06	1.57															
Class 6	11.76	19.10	23.28	12.70	13.74															
Class 7	13.57	22.47	18.18	16.39	11.83															
N	2963	1335	1628	1335	1628															

Note: Unweighted distributions in per cent. Source: UKHLS 2009-2016.

Table A3. Distribution of class of origin (O), class at labour market entry (DE) and at occupational maturity (DM) by labour market entry cohort, Germany

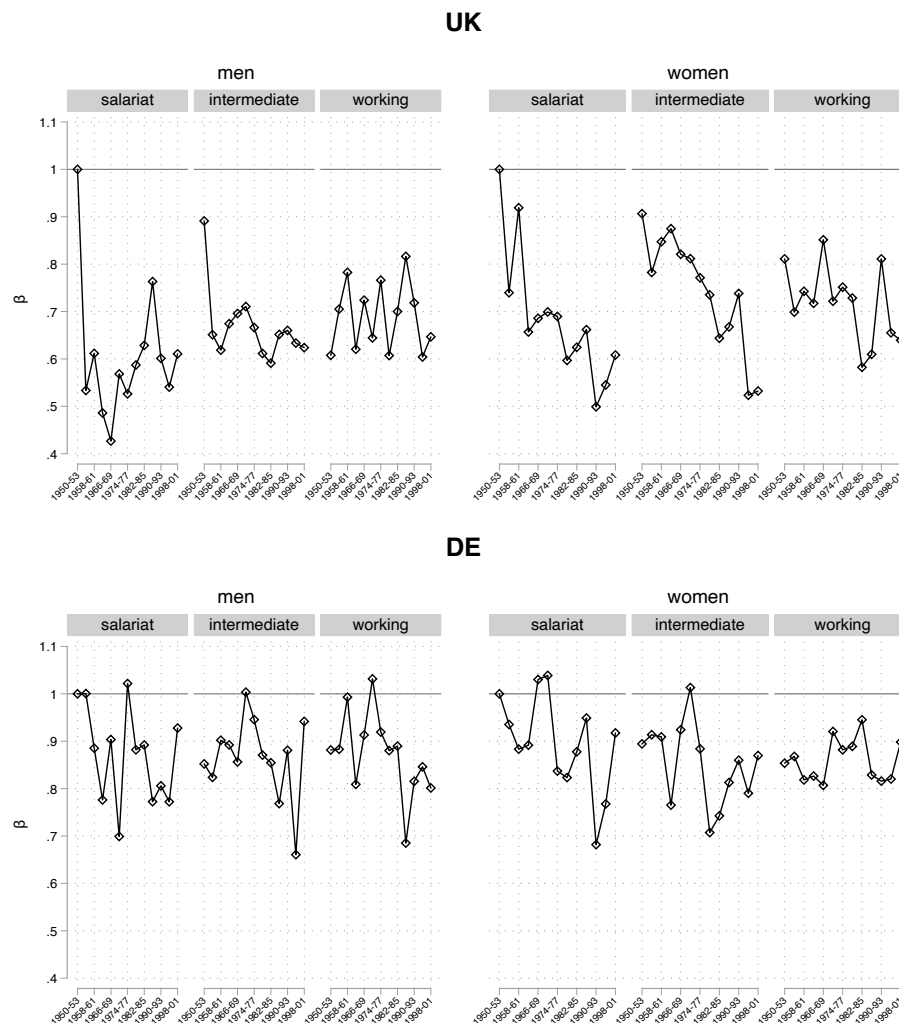
ESeC	1950-53					1954-57					1958-61					1962-65				
	O	DE		DM		O	DE		DM		O	DE		DM		O	DE		DM	
	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women
Class 1	4.27	5.70	1.12	11.64	1.78	4.77	4.74	0.68	11.15	1.94	5.21	6.61	0.83	16.23	2.96	5.97	8.17	1.25	14.25	3.31
Class 2	9.04	6.23	10.37	15.52	12.31	9.30	5.58	10.09	17.45	10.50	8.56	6.41	12.67	19.99	14.30	10.88	10.64	14.46	16.83	15.13
Class 3	3.93	7.03	16.59	4.66	18.30	6.26	9.26	22.00	5.24	21.07	6.92	10.01	34.06	5.50	25.91	7.84	11.20	29.61	5.16	25.22
Class 4	17.29	4.11	4.47	8.29	7.68	13.80	2.84	2.61	8.44	6.62	14.45	1.10	1.97	8.02	5.89	12.63	2.24	1.82	6.86	4.98
Class 5	5.15	1.99	3.99	8.52	3.02	4.59	1.89	2.95	8.12	2.18	4.93	2.30	2.70	5.93	1.71	5.02	2.35	2.73	9.46	1.76
Class 6	36.39	54.38	29.35	26.57	20.65	36.01	58.84	35.15	26.33	21.76	35.86	56.86	31.78	25.80	21.70	34.26	53.42	32.35	26.74	22.79
Class 7	23.93	20.56	34.13	24.79	36.25	25.27	16.84	26.53	23.27	35.92	24.06	16.72	15.99	18.53	27.54	23.41	11.98	17.77	20.71	26.80
N	1381	754	627	754	627	1832	950	882	950	882	1962	999	963	893	963	1771	893	878	999	878
ESeC	1966-1969					1970-1973					1974-77					1978-81				
	O	DE		DM		O	DE		DM		O	DE		DM		O	DE		DM	
	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women
Class 1	6.06	10.90	1.89	17.97	4.33	6.15	9.46	2.54	16.90	4.44	5.49	9.27	1.45	16.43	4.11	5.66	10.01	3.13	16.01	4.53
Class 2	9.89	10.43	17.61	19.40	17.41	9.11	12.36	18.03	19.93	16.65	8.73	10.69	20.09	17.71	20.47	9.50	9.28	19.50	18.88	19.64
Class 3	7.03	11.37	29.95	5.68	25.36	6.88	10.52	29.11	6.32	24.20	6.29	10.50	27.78	5.60	23.21	6.69	9.44	27.21	5.64	24.84
Class 4	12.33	1.04	0.80	7.19	4.40	12.65	1.25	0.66	6.15	4.71	11.85	1.89	0.45	7.27	4.36	10.19	1.06	0.48	8.79	4.33
Class 5	5.38	1.99	3.58	6.44	1.42	4.65	2.32	2.07	5.26	2.09	4.99	2.84	1.99	6.37	2.08	4.67	2.36	3.93	6.37	1.73
Class 6	35.12	51.85	29.65	24.66	22.13	35.00	49.71	32.21	25.08	20.96	35.06	50.24	33.76	25.36	21.77	34.08	51.10	31.46	23.75	23.67
Class 7	24	12.42	16.52	18.66	24.95	25.56	14.38	15.40	20.35	26.95	27.58	14.57	14.48	21.26	23.99	29.22	16.76	14.29	20.56	21.27
N	2060	1055	1005	1055	1005	2101	1036	1065	1036	1065	2162	1057	1105	1229	1105	2475	1229	1246	1057	1246
ESeC	1982-85					1986-89					1990-1993					1994-1997				
	O	DE		DM		O	DE		DM		O	DE		DM		O	DE		DM	
	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women	All	Men	Women	Men	Women
Class 1	4.99	12.08	3.45	17.43	6.52	5.13	10.98	4.60	17.61	7.93	6.25	11.76	5.32	23.17	9.07	5.96	16.64	6.49	18.08	10.05
Class 2	10.25	10.29	18.28	19.72	18.28	10.88	8.08	18.32	18.19	19.94	10.09	8.41	19.63	19.63	21.25	12.82	11.47	19.70	18.61	20.56
Class 3	7.76	8.10	25.70	5.43	25.35	9.92	8.77	25.71	6.28	24.78	9.90	8.94	25.36	6.16	22.44	10.75	9.40	24.47	6.20	23.07
Class 4	9.43	1.46	0.59	7.23	4.70	9.00	2.00	1.30	7.62	4.35	9.04	1.34	0.68	5.52	4.25	7.64	1.32	1.07	6.66	3.83
Class 5	4.63	1.33	3.84	6.66	1.77	4.78	2.62	5.16	7.09	1.90	3.96	2.46	6.00	4.55	1.49	3.43	4.23	6.49	5.44	1.56
Class 6	33.61	51.69	33.18	23.64	21.26	31.81	52.76	32.55	23.78	20.99	32.41	50.04	30.88	23.58	21.74	31.68	43.70	28.98	23.64	22.04
Class 7	29.33	15.06	14.96	19.90	22.13	28.47	14.78	12.36	19.43	20.12	28.36	17.05	12.13	17.38	19.76	27.72	13.25	12.81	21.37	18.88
N	3044	1507	1537	1507	1537	3058	1448	1610	1448	1610	2810	1343	1467	1064	1467	2282	1064	1218	1343	1218
ESeC	1998-2001																			
	O	DE		DM																
	All	Men	Women	Men	Women															
Class 1	6.35	15.32	7.47	23.17	11.84															
Class 2	11.50	11.60	20.60	21.40	22.12															
Class 3	11.71	8.64	23.52	5.90	21.63															
Class 4	7.13	1.97	1.00	5.75	4.39															
Class 5	2.65	3.39	8.93	5.15	1.47															
Class 6	32.48	44.64	26.71	20.72	21.07															
Class 7	28.18	14.44	11.76	17.91	17.47															
N	2011	914	1097	914	1097															

Note: Unweighted distributions in per cent. Source: SOEP 1984-2016.

Table A4. Testing for uniform differences in the DE-DM association, UK and Germany

	(1) DE-DM varies by cohort				(2) DE-DM varies by cohort and origin			
	df	F	p-value		df	F	p-value	
UK men	12	2277.90	0.77	0.686	38	798.00	0.80	0.796
UK women	12	513.97	3.16	0.000	38	447.94	1.62	0.013
DE men	12	599.29	1.81	0.043	38	334.74	0.86	0.704
DE women	12	416.74	0.87	0.576	38	328.78	0.67	0.933

Note: Model (1) allows the association between class at labour market entry (DE) and class at occupational maturity (DM) to uniformly vary across labour market entry cohorts. Model (2) allows the association between class at labour market entry and class at occupational maturity to uniformly vary across labour market entry cohorts and class of origin. UNIDIFF parameters from Model (2) are shown in Figure A1. *Source:* UKHLS 2009-2016, SOEP 1984-2016.

**Figure A1. Uniform differences in the DE-DM association by labour market entry cohort and class of origin, UK and Germany 1950-2001**

Note: UNIDIFF parameters from Model 2 in Table A.4. Individuals from salariat origins who entered the labour market in 1950-53 are taken as reference ($\beta=1$). *Source:* UKHLS 2009-2016, SOEP 1984-2016.

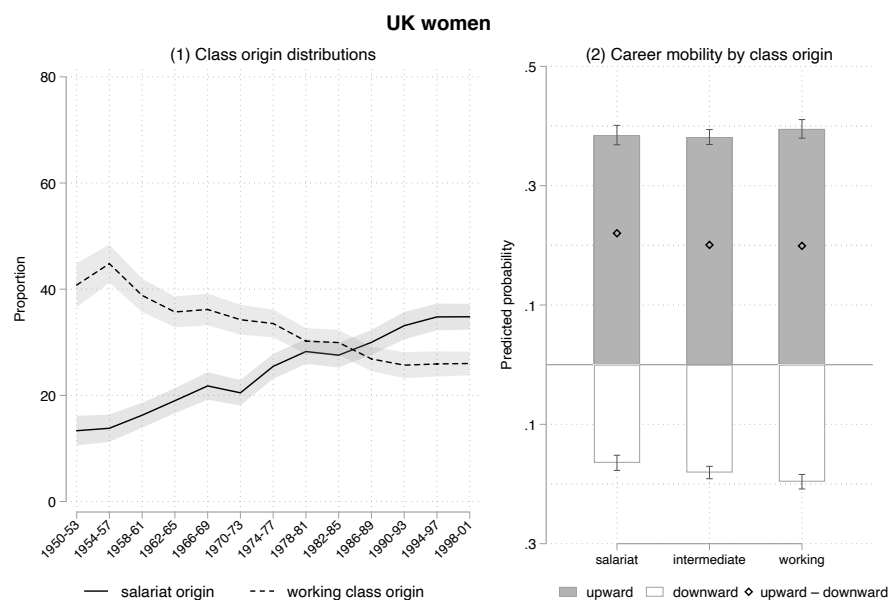


Figure A2a. Class origin distributions by labour market entry cohort and origin-specific career mobility rates, UK women

Note: 95 per cent intervals shown. Predicted probabilities for upward and downward career mobility calculated based on column (3) in Table 2 for the average labour market entry cohort. *Source:* UKHLS 2009-2016.

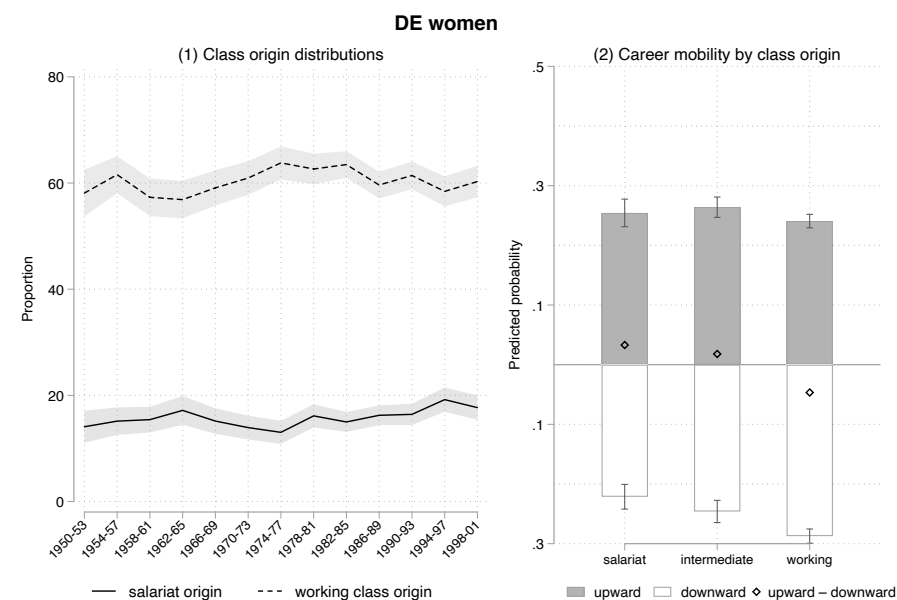


Figure A3a. Class origin distributions by labour market entry cohort and origin-specific career mobility rates, DE women

Note: 95 per cent intervals shown. Predicted probabilities for upward and downward career mobility calculated based on column (7) in Table 2 for the average labour market entry cohort. *Source:* SOEP 1984-2016.

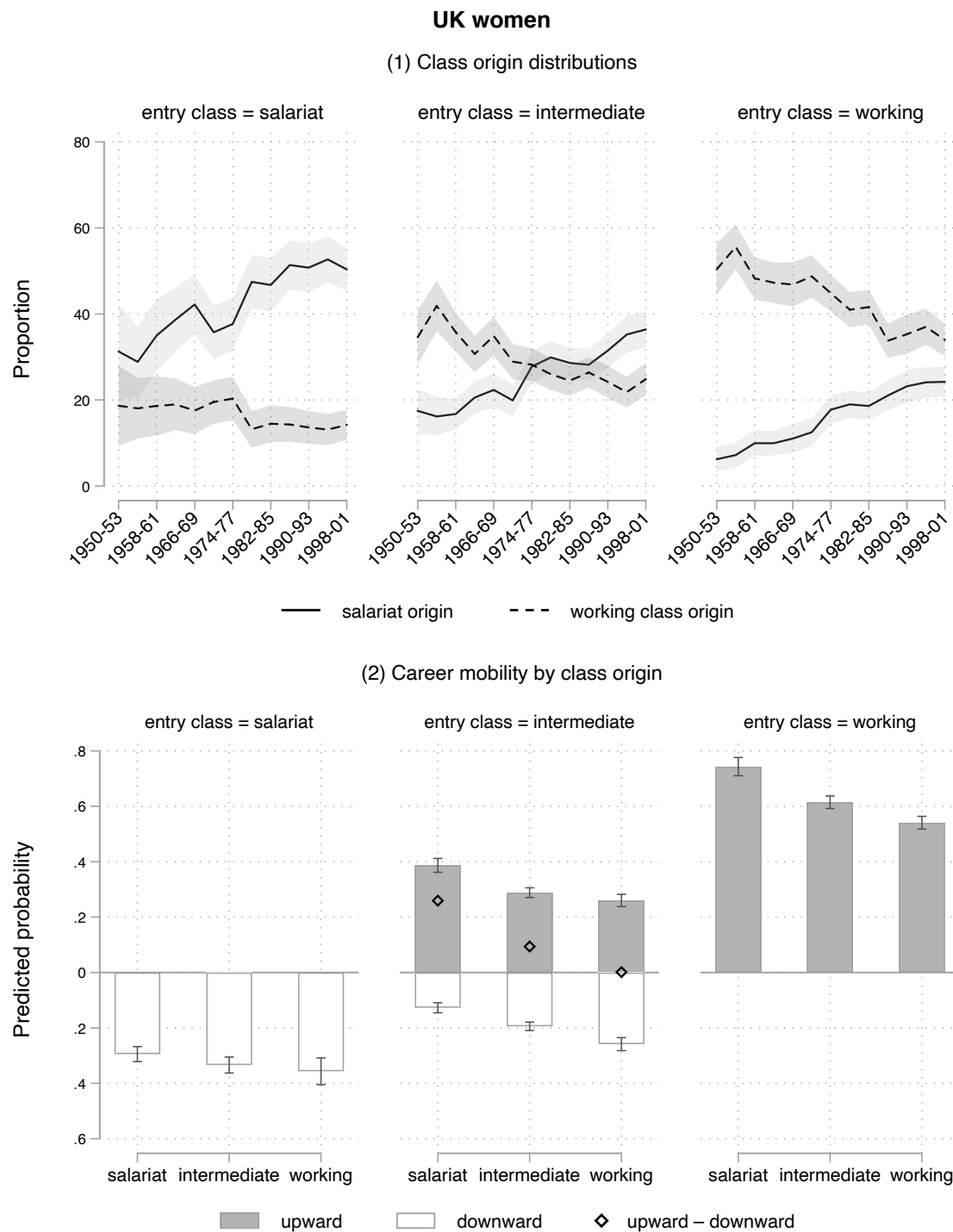


Figure A2b. Class origin distributions by labour market entry cohort and origin-specific career mobility rates, separately by class at labour market entry, UK women

Note: 95 per cent intervals shown. Predicted probabilities for upward and downward career mobility calculated for the average labour market entry cohort based on models shown in column (3) of Table 2, when run separately by class at labour market entry. *Source:* UKHLS 2009-2016.

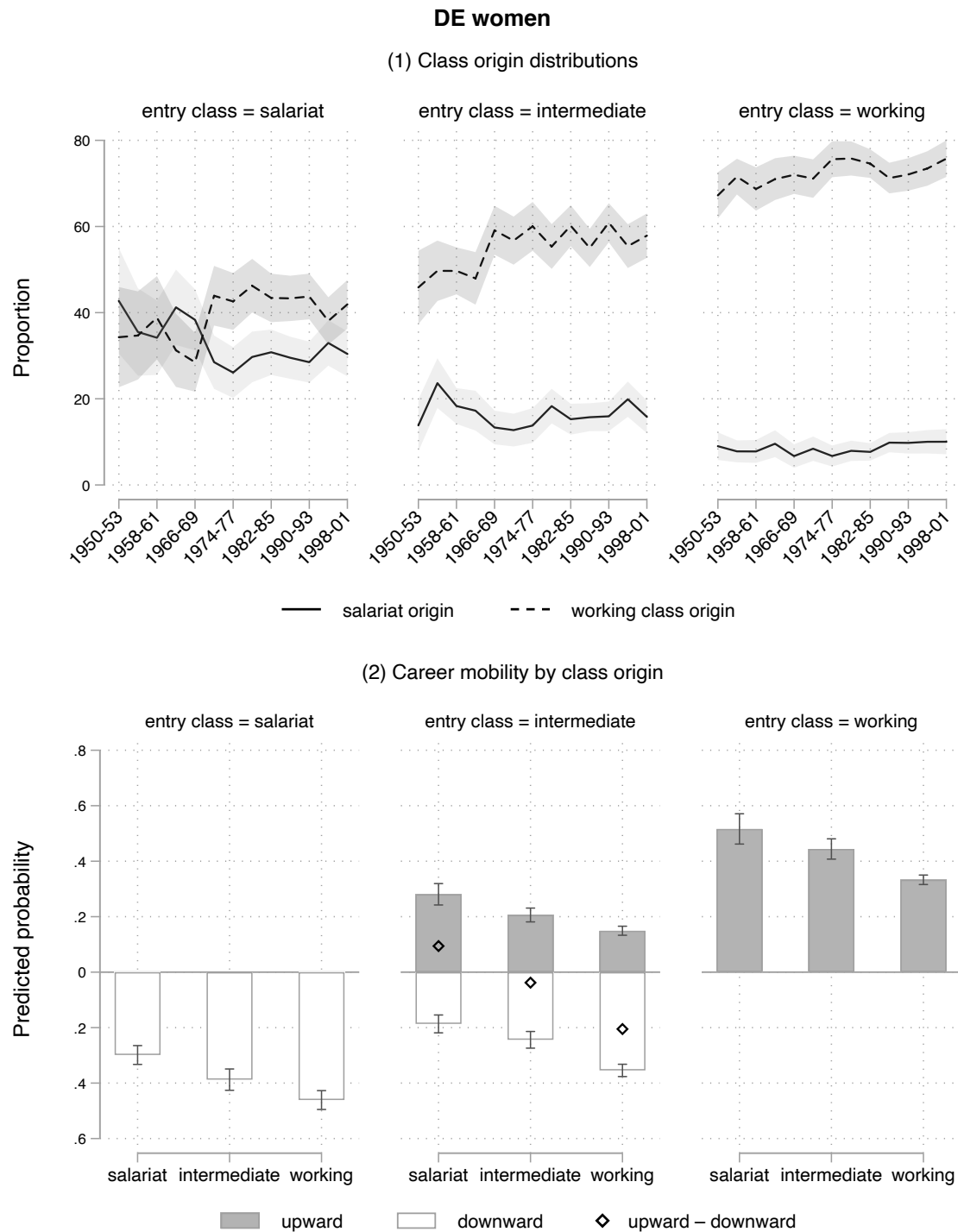


Figure A3b. Class origin distributions by labour market entry cohort and origin-specific career mobility rates, separately by class at labour market entry, DE women

Note: 95 per cent intervals shown. Predicted probabilities for upward and downward career mobility calculated for the average labour market entry cohort based on models shown in column (7) of Table 2, when run separately by class at labour market entry. *Source:* SOEP 1984-2016.

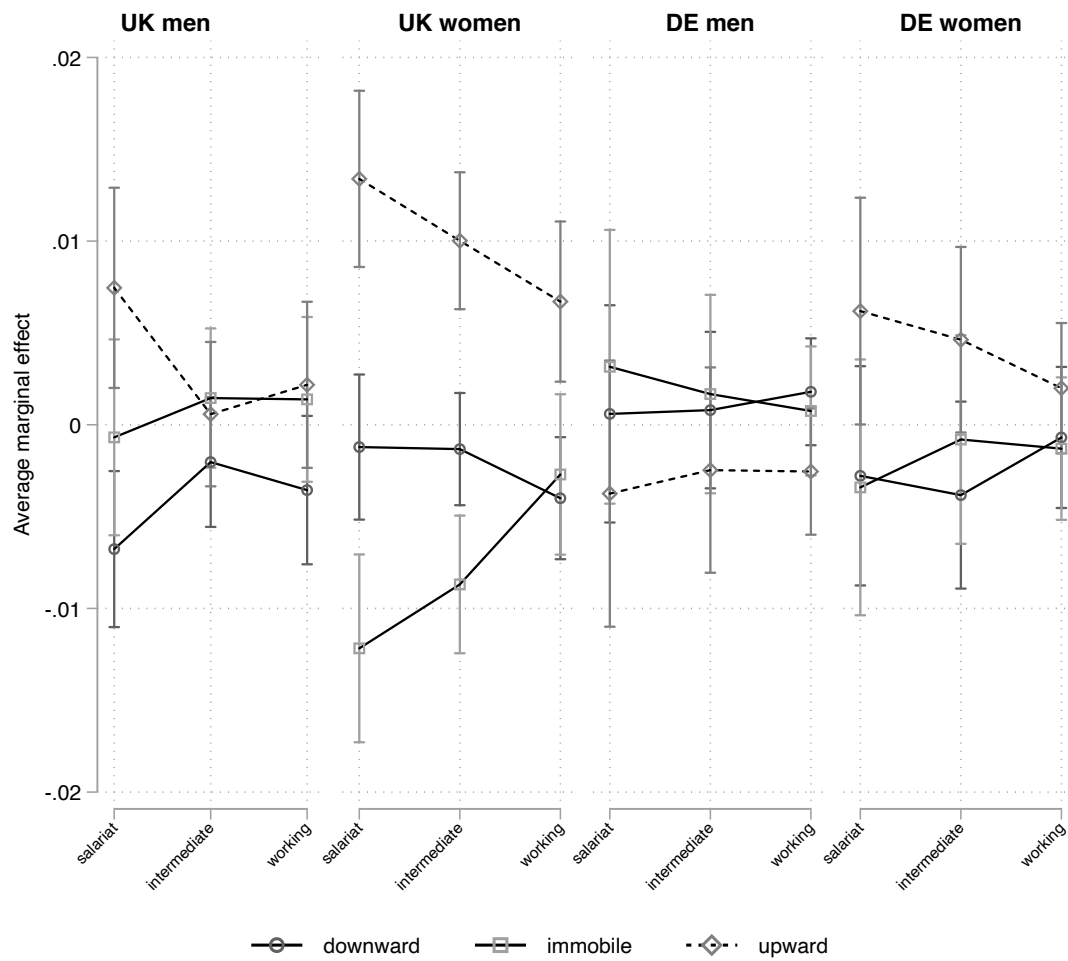


Figure A4. Average marginal effect of linear cohort trend on probability to experience downward, upward or career immobility by class of origin, UK and DE 1950-2001

Note: 95 per cent intervals shown. Average marginal effects calculated based on columns (2), (4), (6), and (8) of Table 2. *Source:* UKHLS 2009-2016, SOEP 1984-2016.

The Effect of Social Benefit Reform on Educational Inequality[†]

Nhat An Trinh

Abstract

Cross-country research argues that the design of welfare states and social protection systems shapes the intergenerational transmission of inequality. Studies that examine this relationship within a country are however lacking from the literature. Based on a quasi-experimental research design using difference-in-differences estimation and data from the Socio-Economic Panel, I analyse whether the educational disadvantage of children of long-term unemployment assistance recipients increased after changes to eligibility criteria, benefit levels and conditionality were introduced in Germany in 2005. I find that differences in the probability to enter the academic secondary school track between children of parents receiving long-term unemployment assistance one year before the transition and children of parents not receiving unemployment or social benefits increased by 13 percentage points. In part, this was driven by the introduction of means-testing that changed the composition of unemployment assistance recipients. However, further decreases in the financial conditions of these already disadvantaged families following reductions in benefit levels appear as the main driver of the observed effect. Changes in parental subjective wellbeing due to increased benefit conditionality and stigma do not seem to play a significant mediating role. The findings highlight the important contribution of social policy to prevailing levels of social mobility and equality of opportunity.

Keywords: Social benefits, unemployment assistance, social mobility, educational inequality, Hartz reform, Germany

[†] The current version of this paper has been invited to be revised and resubmitted to the *Journal of Social Policy* for publication.

1 Introduction

To date, research struggles to pinpoint the degree to which the design of welfare states and social protection systems compensates or reinforces the degree to which disadvantage is transferred from parents to their children. Most studies adopt comparative, cross-national designs to investigate the association between public institutions and the intergenerational transmission of inequality (Beller and Hout 2006; Esping-Andersen 2014; Bukodi et al. 2018; Lindemann and Gangl 2020). Unfortunately, however, these do not allow for a robust estimation of causal relationships given issues of unobserved heterogeneity. The small number of studies that are able to exploit exogenous variation are limited to assessing the impact of educational systems (Pischke and von Wachter 2008; Sturgis and Buscha 2015; Betthäuser 2017). Whether and how characteristics of social protection systems determine opportunities for intergenerational social mobility remains therefore unclear.

During the early 2000s, Germany's labour market and social protection system underwent radical reorganisation that led to an unprecedented shift from conservative Bismarckian principles of social insurance towards greater activation and employment flexibilization. These so-called 'Hartz reforms' figure prominently in social policy research (e.g. Champion and Bonoli 2011; Eichhorst and Marx 2011; Fervers 2019; Fleckenstein 2008) and remain a recurring and contested subject of public and political debate although more than a decade has passed (Süddeutsche Zeitung 2019; Der Spiegel 2020). Implemented in 2003 and 2004, Hartz I-III comprised the introduction of new and the reform of existing active labour market policies. In contrast, Hartz IV modified unemployment and social benefit regulations in 2005. Its main feature was to merge unemployment assistance for the long-term unemployed and social assistance for those in need into one benefit scheme. As a result, individuals who are unemployed for more than a year lost their insurance-based claim to earnings-related benefits. Long-term unemployment assistance is now only provided

if household incomes fall below subsistence level and has become highly conditional on active job search and participation in active labour market programmes.

The German Hartz IV reform thus offers a unique opportunity to study the impact of the social protection system on the intergenerational transmission of inequality based on a natural experiment. By removing earnings-related benefits for the long-term unemployed and increasing benefit conditionality for those in need, it seems likely that the reform not only affected the generation of current workers but also the outcomes and opportunities of their offspring. Still, we lack evidence on such intergenerational effects of the reform. These effects might be particularly detrimental and arguably unjust, as children who experience parental unemployment form already a disadvantaged group. There is consistent evidence showing that children of unemployed parents have lower levels of educational attainment compared to children of parents who work (Coelli 2011; Kalil and Wightman 2011; Brand 2015; Lohmann and Groh-Samberg 2017; Lindemann and Gangl 2019). Lower educational attainment, in turn, translates into poorer labour market outcomes and life chances more broadly. It is therefore vital to know whether the reform reinforced the transmission of disadvantage across generations, thereby widening inequalities within the child's generation.

By taking up this task, this study makes two contributions to the literature. Firstly, it expands the existing micro- and macro-economic evidence on the reform's effect on unemployment levels and duration (Krause and Uhlig 2012; Launov and Wälde 2013; Hochmuth et al. 2019), job matching efficiency (Hertweck and Sigrist 2012), and wages (Bradley and Kügler 2019) by analyses that focus on inequality-generating processes that occur within families rather than the labour market. Investigating the outcomes of children of benefit recipients allows to identify long-lasting social consequences, which might have neither been anticipated nor intended when the reform was first devised. As a result, the current study contributes to an encompassing understanding of one of the most drastic welfare state transformations in Germany's recent history.

Secondly, the study sheds further light on the role of public institutions and policy in fostering social mobility and equality of opportunity. Past research suggests that social policies can work as an institutional moderator of the association between social origin and social destination. Employing hierarchical modelling techniques to analyse data from 21 countries, Lindemann and Gangl (2020) show that generous unemployment benefits mitigate the negative effect of parental unemployment on children's transition into tertiary education. However, by using a quasi-experimental approach focussing on a single country, it is possible to pinpoint even more precisely how characteristics of the unemployment and social protection system shape educational inequalities.

Did the educational disadvantage of children whose parents receive long-term unemployment assistance increase after the implementation of the Hartz IV reform? This is the question the present study seeks to answer.

In Germany, the transition from primary to secondary school around age 10-12 constitutes a critical moment in children's educational careers. Due to rigid and highly stratifying tracking practices, secondary school track has long-lasting consequences on overall academic achievements and subsequent labour market trajectories (Neugebauer et al. 2013). Being adversely affected by parental unemployment before this transition can therefore be highly detrimental for future training and labour market opportunities. For this reason, secondary school track is chosen as children's outcome of interest. Investigating the reform's effect on later transitions, such as from secondary to tertiary education, is unfortunately not possible with the data at hand.

The next section outlines in greater detail Germany's unemployment and social benefit system before and after the reform. I then elaborate on why the reform likely led to lower educational outcomes for children of unemployment assistance recipients. The subsequent section describes the analytical strategy followed by the presentation of the empirical findings. A discussion of their implications for future research and policymaking is provided in the final section.

2 The German unemployment and social benefit system before and after 2005

In the comparative welfare state literature, Germany is considered a key representative of the conservative welfare state regime (Esping-Andersen 1990). Organised based on the principle of social insurance, its welfare institutions centre around the worker and are underpinned by strong tripartite partnerships between employees, employers, and the state.

Until the early 2000s, Germany's protection of the unemployed consisted of two pillars (Hassel and Schiller 2010). Both aimed at safeguarding the individual from experiencing a drop in living standards due to unemployment. The first pillar was 'Arbeitslosengeld', i.e. *unemployment benefits* from social insurance. These were generally paid for 12 months to individuals with social insurance contributions of at least 12 months before becoming unemployed. Depending on overall contributions, older individuals could even receive benefits for up to 36 months. Benefit levels were equivalent to 67 and 60 percent of previous earnings for individuals with and without children, respectively. The second pillar was 'Arbeitslosenhilfe', i.e. tax-funded *unemployment assistance*. Transfers from unemployment assistance were in principle unlimited and paid to individuals, whose claim to unemployment benefits expired. They were therefore also conditional on social insurance contributions. Replacement rates amounted to 57 and 53 percent for individuals with and without children, respectively. Payments could only cease if recipients repeatedly refused to accept work that was comparable to their previous employment or current benefit levels (Bäcker and Koch 2004).

Implemented on January 1, 2005, the Hartz IV reform combined the second pillar of unemployment protection with means-tested basic income support for those in need. Before the reform, 'Sozialhilfe', i.e. tax-funded *social assistance*, provided all individuals in need who were not covered by unemployment insurance with a minimum social security net. Its main purpose was to reduce poverty and to guarantee a legally defined socio-cultural subsistence level within

households. Thus, individuals received social assistance only upon passing a means test, and refusal to take up work was strictly sanctioned with benefit cuts. There was hence a clear difference in benefit generosity and conditionality for individuals whose entitlement to social benefits was based on previous employment and social contribution records vis-à-vis financial hardship. After the reform, this distinction eroded. Since 2005 entitlement to earnings-related benefits ends with the expiration of unemployment benefits, which older workers can now receive for a shorter maximum duration of 18 months (Bäcker 2017). Individuals who remain unemployed for a longer period are only eligible for means-tested basic income support. Figure 1 illustrates how benefit schemes and benefit levels change by unemployment duration before and after the reform.

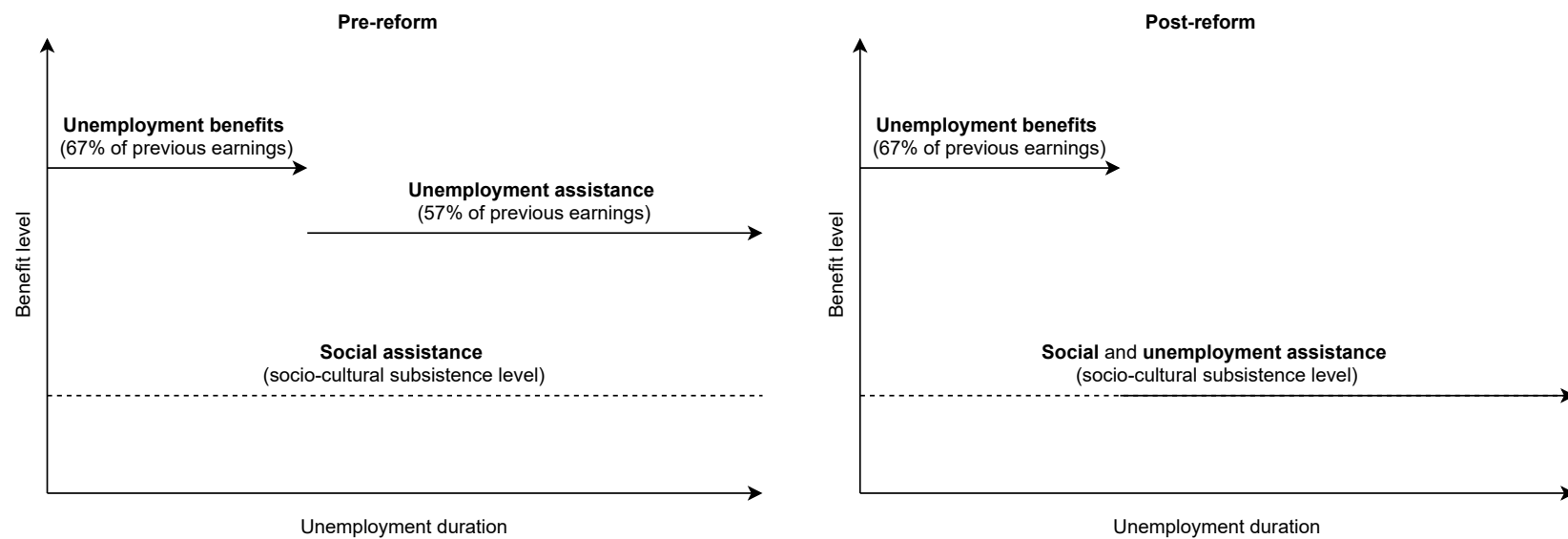


Figure 1. Benefit schemes and benefit levels by unemployment duration, pre- and post-reform

The main objective behind this dramatic policy shift was to reduce long-term unemployment and welfare dependence (Jacobi and Kluve 2006). During the 2000s, the proportion of long-term unemployed among all unemployed had increased to almost 40 percent (Bundesagentur für Arbeit 2019). For this purpose, the reform also redefined the category of people in need and divided them into two groups based on their ability to work (Goebel and Richter 2007). Individuals who can work for at least 3 hours per day need to apply to the newly created unemployment assistance scheme called ‘Arbeitslosengeld II’ (ALGII).

It is important to note that ALGII is therefore not only accessible to individuals without employment but can also be claimed by those on low incomes as an in-work benefit (Eichhorst and Marx 2011). Individuals who cannot work for at least 3 hours per day, and who do not share a household with someone eligible for unemployment assistance, continue to receive social assistance. While benefit levels are similar, the main difference between the two schemes is that unemployment assistance is now highly conditional on active job search and participation in activation measures as well as related labour market programmes. Accordingly, harsh sanctions for non-compliance were introduced for recipients of unemployment assistance.² By contrast, sanctions for recipients of social assistance were omitted after the reform as they are no longer subject to labour market integration. Table 1 gives an overview of the main characteristics of the unemployment and social benefit schemes that were in place before and after the introduction of the reform in 2005.

² Sanctions are divided into three steps. Refusal to accept a job offer could be penalised with 30 per cent benefit cuts if occurred for the first time, and 60 per cent benefit cuts if occurred for the second time. Additional violations within the same year could lead to loss of the entire benefit. Moreover, recipients could be sanctioned with 10 per cent benefit cuts if they miss appointments at the public employment agency. In November 2019, the Federal Constitutional Court ruled that sanctions of more than 30 per cent are unconstitutional (Der Tagesspiegel 2019).

Table 1. Unemployment and social benefit schemes, pre- and post-reform

	Pre-reform			Post-reform		
	Unemployment benefits (<i>Arbeitslosengeld</i>)	Unemployment assistance (<i>Arbeitslosenhilfe</i>)	Social assistance (<i>Sozialhilfe</i>)	Unemployment benefits (<i>Arbeitslosengeld</i>)	Unemployment assistance (<i>Arbeitslosengeld II</i>)	Social assistance (<i>Sozialhilfe</i>)
Aim	Status maintenance	Status maintenance	Poverty alleviation	Status maintenance	Poverty alleviation	Poverty alleviation
Benefit type	Earnings-related individual-level benefit	Earnings-related individual-level benefit	Means-tested household-level benefit	Earnings-related individual-level benefit	Means-tested household-level benefit	Means-tested household-level benefit
Eligibility	Unemployed with social insurance contributions	Unemployed who received unemployment benefits	Individuals in need	Unemployed with social insurance contributions	Individuals in need who are able to work	Individuals in need who are unable to work
Benefit level	60 percent (67 percent w/children) of previous earnings	53 percent (57 percent w/children) of previous earnings	Socio-cultural subsistence level	60 percent (67 percent w/children) of previous earnings	Socio-cultural subsistence level	Socio-cultural subsistence level
Maximum duration	12 months if age < 45 18 months if age 45-56 36 months if age > 56	n/a	n/a	12 months if age < 55 18 months if age > 54	n/a	n/a
Sanctions	n/a	Moderate	Strict	n/a	Strict	n/a

Note: Own illustration based on Bäcker and Koch (2004), Boucarde (2007), Hassel and Schiller (2010). White-shaded columns indicate unemployment insurance scheme(s). Grey-shaded columns indicate basic income support scheme(s).

3 Hartz IV and educational inequality

Over the past decades, levels of education have greatly increased in Germany due to vast educational expansion (Pollak and Müller 2020). Nevertheless, family background is still a strong predictor of children's academic achievements (Shavit and Blossfeld 1993; Blossfeld 2018) and social mobility low by international comparison (Bukodi et al. 2020). The reform might have contributed to these persisting inequalities by reducing the educational outcomes of children of unemployment assistance recipients against concurrent efforts towards greater educational equalisation.

Two mechanisms are conceivable through which the reform reduced educational outcomes for children living in families that receive unemployment assistance and lowered their chances to attend academic secondary school. First, the reform changed the composition of unemployment assistance recipients towards the more disadvantaged by altering eligibility criteria. Second, the reform adversely affected parental resources and wellbeing by altering benefit levels and benefit conditionality.

As described in the previous section, the introduction of strict means-testing implies that since 2005 a smaller group of the long-term unemployed is eligible for unemployment assistance compared to before. Only those receive the benefit, whose incomes fall below subsistence level. Families that can maintain a higher level of income, e.g. because one parent is still employed and earns sufficiently well, are excluded. Families receiving unemployment assistance after the reform are therefore likely to form a more socio-economically disadvantaged group than families receiving unemployment assistance before the reform. Specifically, the proportion of low educated, working class, or single parents could be higher. Consequently, a decline in the transition rates into the academic secondary school track among children of unemployment assistance recipients might be observed.

However, there is evidence that the reform also had a direct impact on family resources and wellbeing. Goebel and Richter (2007) show that more than 50 per cent of individuals who switched unemployment assistance schemes in 2005 experienced a loss in income following changes in benefit levels. In the first year of the reform two in three households receiving unemployment assistance had incomes below 60 per cent of median income, and the poverty gap³ was with 18.5 per cent almost twice as high as the poverty gap for households receiving unemployment assistance one year before.

These reductions in the financial resources of unemployment assistance recipients could lead to lower education in the second generation by affecting their performance in school as well as choices regarding educational careers (Boudon 1974). On the one hand, parents have fewer means to advance their children's learning through buying additional material such as books and computers. They are also less likely to afford private tutoring lessons or summer schools (Duncan and Brooks-Gunn 1997; Kaushal et al. 2011). On the other hand, their ability to finance longer periods of education and training is reduced, even if their children performed well in school. They are hence less likely to opt for the academic educational trajectory that takes significantly more time to complete than the vocational qualification route. The former requires at least three additional years of school even before starting university.

Moreover, the reform turned the receipt of unemployment assistance into a more taxing experience, aggravating the well-documented negative effects of unemployment on individuals' subjective wellbeing (Clark 2003; Oesch and Lipps 2013). Deter (2021) reports that the reform led to lower levels of life satisfaction among the long-term unemployed. As explained earlier, recipients of unemployment assistance are now strictly monitored by public employment agencies in their efforts to find work and are required to participate in active labour market programmes.

³ The poverty gap measures the extent to which individuals' income are below 60 per cent of median income.

Additionally, policymakers used language of blame and contempt, creating a dooming narrative around social benefit recipients, when introducing the Hartz reforms to the public (Fohrbeck et al. 2014).⁴ Over and above the psychological costs of lower incomes (Kahneman and Deaton 2010), parents receiving unemployment assistance after the reform are therefore exposed to greater stress as well as stigmatisation compared to parents receiving unemployment assistance before the reform.

This in turn can lead to poorer academic performance among their children. Parental emotional wellbeing creates a stable home environment for children's flourishing development (Kalil 2013) and ensures parents' capacity to offer effective help with school-related activities such as doing homework (Murray et al. 2006). Thus, given the detrimental effects of lower benefit levels and stricter benefit conditionality on family resources and wellbeing, children of unemployment assistance recipients might be less likely to transition to academic secondary school after the reform.

In some part, I hence expect negative selection to account for lower educational outcomes among children of unemployment assistance recipients. Nevertheless, this process is to be considered an integral part of the reform. As the pool of eligible families is restricted to those on low incomes, the reform's potential negative consequences on family resources and wellbeing are exclusively channelled towards the most disadvantaged and economically vulnerable, worsening their conditions even further. If this is the case, it follows that the reform increased educational inequality by reinforcing the intergenerational transmission of disadvantage at the very bottom of society.

⁴ In colloquial language, the term 'hartzten' even developed, referring to people being lazy, free-riding, and passively dependent on social welfare.

4 Analytical strategy

4.1 Data

All analyses are based on the Socio-Economic Panel (SOEP 1984-2017 v34; Goebel et al. 2019), which is Germany's largest representative, longitudinal survey. Since 1984, around 30,000 individuals in ca. 11,000 households are interviewed every year on different aspects of their life including education, labour market participation, economic conditions, and family composition. The main analytical sample consists of children who transitioned from primary to secondary school between 2001–2010 and is split symmetrically into a pre- and post-reform group. Children who made the transition between 2001-2005 belong to the pre-reform group and children who transitioned between 2006-2010 form part of the post-reform group. For 2,464 children this transition is directly observed. Using information on average transition age by birth year and state of residence, I further impute year of transition for another 327 children, who were already in secondary school by the time of the survey.⁵

4.2 Key variables

As discussed in the introduction, the transition from primary to secondary school is a crucial moment in the educational career of German children. This transition usually takes place after grade four around age 10, except for two federal states, where children transition two years later.⁶ Traditionally, three types of secondary schools exist in the German educational system. The lower (Hauptschule) and intermediate (Realschule) secondary schools provide vocational education, whereas the upper secondary school (Gymnasium) focusses more on academic education.

⁵ In the pre- and post-reform group, the proportion of children for whom year of transition is imputed is 13.32 per cent and 9.56 per cent, respectively.

⁶ In Berlin and Brandenburg, children transition to secondary school after grade six.

However, over the past decades, this three-track system increasingly moved towards a two-tiered system that was accompanied by the creation of comprehensive schools offering different school leaving degrees under the same roof (Becker et al. 2017). Following previous research (Lohmann and Groh-Samberg 2017; Müller et al. 2017), I therefore measure children's secondary school track using a binary variable that takes the value 1 if they enter upper secondary school, and 0 if they attend any of the other secondary schools, comprehensive schools included. Despite recent changes to Germany's secondary school structure, the upper secondary school has kept its status and prestige and exists in all federal states as the only school that exclusively offers the university entrance exam (Abitur). It therefore provides direct access to tertiary education and is also increasingly required for more demanding post-secondary vocational programmes.

Parental benefit receipt one year before children transition to secondary school is the key explanatory variable. I thus focus on changes in the immediate, short-term association between parental benefit receipt and children's chances to enter the academic secondary school track. As the effect of parental benefit receipt might take longer than one year to fully materialise, this is a conservative measure of the association between parental benefit receipt and children's educational outcomes. However, measuring parental benefit shortly before the transition allows to focus on cohorts that entered secondary school directly after the introduction of the reform. If more time was allowed for the effect to develop, later cohorts would need to be used and observed changes in educational inequality could be less confidently attributed to the reform.

Parental benefit receipt is measured based on the annual individual as well as household questionnaires, which collect information on benefit type and total number of months the benefit was claimed each year. I distinguish between four categories: (1) no benefits, (2) unemployment benefits, (3) unemployment assistance, and (4) social assistance. Since ALGII is not only accessible to the unemployed but also to workers on low incomes, I use information on past benefit receipt to assign recipients of ALGII the relevant benefit category, i.e. unemployment assistance or social

assistance. Recall that before the reform, unemployment assistance was only paid to those whose claim to unemployment benefits expired. Parents who reported unemployment benefits immediately before receiving ALGII are therefore comparable to recipients of the old unemployment assistance scheme. Accordingly, ALGII is coded as unemployment assistance if it was directly preceded by unemployment benefits or the old unemployment assistance scheme during the previous three years.⁷ Parents who did not receive unemployment benefits or the old unemployment assistance scheme during this period before obtaining ALGII are identified as recipients of social assistance.

Parents might receive benefits from multiple schemes during a year. Also, they can receive different benefits at the same time because transfers from unemployment insurance are paid as an individual-level benefit, whereas basic income support is targeted at the entire household. I therefore measure parental benefit receipt on the household level. Parents are considered receiving social assistance if it was claimed for at least three months in a given year regardless of any other benefit received. Parents are considered receiving unemployment assistance if unemployment assistance was received for at least three months and social assistance was not reported for more than two months. Similarly, parents are considered receiving unemployment benefits if these were received for at least three months, and none of the other benefits were reported for more than two months. Children are considered living in no-benefit households if social assistance, unemployment assistance, or unemployment benefits were not received for more than two months. Periods of benefit receipt of less than three months appear rather transitional and are therefore unlikely to have significant consequences for children's education. The four benefit categories are hence

⁷ For the majority of children, this overall period of four years spans the entire time spent in primary education. It therefore seems plausible that changes from unemployment benefits to unemployment assistance have the greatest impact on secondary school transitions during this period. In addition, parents who receive ALGII continuously for more than four years, regardless of whether this was preceded by unemployment benefits or not, are likely to constitute a rather specific group and are more comparable to recipients of social assistance than unemployment assistance.

mutually exclusive, comparable across the pre- and post-reform period, and comprise all children who made the transition from primary to secondary school during the stated observation window.

4.3 *Modelling*

To identify the effect of the reform on changes in the probability to enter the academic secondary school track for children of unemployment assistance recipients, I adopt a quasi-experimental research design based on difference-in-difference estimation (Angrist and Pischke 2008). Although the reform was implemented simultaneously across Germany and thus affected the entire population at the same time, it seems plausible that families that did not receive any of the benefits discussed were least affected by the reform. Children living in such families are therefore taken as reference group against which pre- and post-reform differences in transitions to the academic track of children with parents receiving unemployment assistance are compared. For completeness and to account for potential spill-over effects, I also compare pre- and post-reform differences between children living in families, where parents do not receive benefits and where parents receive unemployment benefits or social assistance.

For unbiased identification, the difference-in-difference estimator rests on the so-called ‘common trends assumption’. This assumption states that in the absence of treatment trends in the outcome of interest are similar for the two groups that are compared against one another. Accordingly, the probability to enter the academic track for children of benefit recipients and those who do not receive benefits should follow a similar trend before as well as after the reform. I scrutinise the validity of this assumption by means of two placebo identification tests. The first assumes that the reform was already implemented in 2001. Prior to the 2005 Hartz reform, Germany’s unemployment and social benefit system was modified for the last time in 1997. Children who transitioned to secondary school between 1998-2001 ($N=1,109$) are hence identified as pre-treatment group, whereas children who made the transition between 2002-2005 ($N=1,202$) form

the post-treatment group. As mentioned in the introduction, Hartz IV was part of an entire reform package. This placebo test thus also inspects whether changes in educational inequalities could be ascribed to any of the other three reforms that were introduced before. Analogously, the second placebo analysis assumes that the reform was not implemented until 2009. Children who transitioned to secondary school between 2006-2009 ($N=1,001$) are now assigned to the pre-treatment group and children who made the transition between 2010-2013 ($N= 2,046$) are chosen as post-treatment group. Comparing these cohorts examines whether observed changes in educational inequality might be driven by some event other than the reform, which occurred after 2005 (e.g. financial crisis). As shown in appendix Table A1, I do not find indication for a violation of the common trends assumption as the placebo reform interactions are all statistically insignificant and negligible in size.⁸

Using ordinary-least-squares regression, I estimate linear probability models of the following form:⁹

$$\pi_{it} = \alpha + \beta_b BEN_{ibt-1} + \sigma REFORM_{t-1} + \lambda_b (BEN_{ibt-1} \times REFORM_{t-1}) + \varphi X_{it-1} + \phi (X_{it-1} \times REFORM_{t-1}) + \tau_{t-1} + \varepsilon_{it}$$

where π_{it} stands for the probability for child i to enter the academic track after primary school in year t . BEN_{ibt-1} denotes a set of dummies for parental benefit receipt b in year $t - 1$, i.e. one year before the child's transition. $REFORM_{t-1}$ is a dummy that indicates whether parental benefit receipt is observed before or after the reform. It takes the value 0 if parental benefit receipt is observed in year $t - 1 < 2005$, and 1 otherwise. $BEN_{ibt-1} \times REFORM_{t-1}$ identifies whether the

⁸ Appendix Figure A1 gives an overview of the different transition cohorts that are used as pre- and post-treatment groups in the main and placebo analyses.

⁹ To directly compare coefficients across models (Breen et al. 2013; Mood 2010), OLS is preferred over logistic regression. Cox and Wermuth (1992) show that when response categories contain between 20 and 80 per cent of the observations, the two methods yield similar results. Indeed, appendix Tables A2 and A3 show that the results do not substantively differ when logistic regression is used.

association between children's transition to the academic track in t and parental benefit receipt b in $t - 1$ changed after the reform relative to children whose parents did not receive any benefits. X_{it-1} and $X_{it-1} \times REFORM_{t-1}$ denote a vector of covariates and their interaction with the reform dummy. The interaction is included to model potential changes in the association between these covariates and secondary school transitions across the two periods. τ_{t-1} is a year fixed-effect that takes note of other trends occurring during the same period, such as the rise in comprehensive schools.¹⁰ ε_{it} stands for the error term.

The baseline model includes controls for the child's sex, age at the transition from primary to secondary school as well as the state where the transition took place¹¹. I then add a term for net equivalised household income minus transfers from unemployment and social assistance in $t - 1$. Controlling for pre-benefit household income allows to examine how far observed changes in the probability to transition to the academic track for children of unemployment assistance recipients are driven by the introduction of strict means-testing, and thus selection. To take account of further differences between families receiving unemployment assistance before and after the reform, controls for a range of socio-demographic characteristics are added to the model. These are the number of children younger than 15 in the household, whether living with a single parent, mean parental age (squared), parental migration background, parental education, and parental social class in $t - 1$. Social class is measured using the European Socio-Economic Classification (Rose and Harrison 2007). In cases where mother's and father's education or class position differ, the higher is taken according to the dominance approach (Erikson 1984).

¹⁰ To achieve identification of the reform dummy, the sums of coefficients referring to the pre-reform period (2000–2004) and of the coefficients referring to the post-reform period (2005–2009) are constrained to zero.

¹¹ For children, for whom year of transition is imputed, state of residence for the year that comes closest to the transition is used.

To precisely estimate the short-term association between parental benefit receipt and transitions to the academic track, I further control for benefit duration by adding a term that measures the number of consecutive years parents received the benefit during their child's primary education, i.e. whether the benefit had been received for one, two, three or four years. Where parents did not receive benefits one year before the transition, the number of consecutive years spent without benefits is counted.¹²

Next, I include terms for total net equivalised household income as well as parental life satisfaction in $t - 1$. I do so to test for the mediating effects of changes in family resources and wellbeing due to reduced benefit levels and increased benefit conditionality. Parental life satisfaction is measured on a scale from 0 to 10, where higher values indicate higher life satisfaction. In cases where mother's and father's life satisfaction differ, the lower value is taken. Unfortunately, the SOEP does not provide more detailed information on parents' stress level and parent-child interactions for the observation period in question. Table 2 displays the distributions of all variables included in the analysis, separately for the pre- and post-reform groups.

¹² As might be expected, additional analyses show that long-term parental benefit receipt is more strongly associated with educational disadvantage than short-term parental benefit receipt, and particularly so since 2005. The unconditional gap in the probability to enter the academic track between children whose parents received unemployment assistance for three years and those whose parents did not receive benefits amounts to 26 percentage points before the reform and 56 percentage points after the reform. Controlling for adverse selection and changes in socio-demographic characteristics of long-term unemployment assistance recipients, this pre- and post-reform difference remains at 29 percentage points and is statistically significant at 5 per cent. There is hence some evidence that the reform also reinforced the negative effect of parental long-term unemployment assistance receipt on children's educational outcomes. Again, reductions in benefit generosity seem most likely to account for the observed change. See appendix Table A5 and Figure A2 for the results in terms of average marginal effects and predicted probabilities.

Table 2. Descriptives

	Pre-reform		Post-reform			Pre-reform		Post-reform	
	Per cent / Mean	SD	Per cent / Mean	SD		Per cent / Mean	SD	Per cent / Mean	SD
Child characteristics					Parental characteristics				
Academic secondary school track	33.40		38.59		Benefit receipt				
Year started secondary school					No benefit receipt	86.43		87.33	
2001	24.83				Unemployment benefits	4.88		3.27	
2002	19.26				Unemployment assistance	5.25		2.60	
2003	20.26				Social assistance	3.44		6.80	
2004	17.76								
2005	17.89				Benefit duration				
2006			23.99		1 year	24.52		13.34	
2007			22.82		2 years	14.51		8.81	
2008			20.64		3 years	11.82		8.14	
2009			16.53		4 years	49.16		69.71	
2010			16.02						
Federal state of secondary school					Education				
Schleswig-Holstein	3.00		2.35		Primary	7.13		6.29	
Hamburg	1.25		1.59		Lower secondary	43.28		39.68	
Lower Saxony	10.44		9.98		Upper secondary	20.51		24.66	
Bremen	0.44		0.50		Post-secondary	29.08		29.36	
North Rhine-Westphalia	20.76		21.81						
Hesse	7.44		8.39		Social class				
Rhineland-Palatinate	6.94		6.63		Salariat	41.84		47.48	
Baden-Württemberg	14.57		14.26		Intermediate class	24.89		25.59	
Bavaria	17.01		16.86		Working class	30.83		24.50	
Saarland	1.38		1.09		Never worked	2.44		2.43	
Berlin	2.81		1.68						
Brandenburg	3.69		2.43		Age	39.06	5.02	40.06	4.89
Mecklenburg-Vorpommern	1.50		1.51		Single parent	8.82		12.16	
Saxony	3.75		5.70		Migration background	25.02		24.24	
Saxony-Anhalt	2.63		2.10		Life satisfaction	6.66	1.69	6.62	1.72
Thuringia	2.38		3.10						
					Household characteristics				
Age at transition to secondary school	10.61	0.77	10.46	0.70	Number of children age 0-14	1.90	0.86	1.87	0.87
Female	48.59		48.41		Pre-benefit income (2000 Euros)	16996	8963	17372	10705
					Total income (2000 Euros)	17243	8703	17833	10282
N	1,599		1,192		N	1,599		1,192	

Source: SOEP 1984-2017.

5 Empirical findings

Table 3 presents OLS estimates for children's probability to transition to the academic secondary school track between 2001 and 2010 in Germany. Column (1) shows the main effects of parental benefit receipt, accounting for the reform dummy and set of baseline controls. Living in families that received unemployment or social benefits is associated with substantively lower chances to transition to the academic track. On average, children whose parents received unemployment benefits are 16 percentage points less likely to transition to the academic track than children whose parents did not receive benefits. For children of unemployment and social assistance recipients the gap amounts to 26 and 31 percentage points, respectively.

These large differences, which are statistically significant at 1 per cent, are not surprising. Whether parents receive benefits or not depends on their position in the labour market and financial situation. Both are known to be highly predictive of children's educational attainment (Becker and Nietfeld 1999; Lohmann and Groh-Samberg 2017). Moreover, the observed gradient in the probability to transition to the academic track corresponds to differences in the characteristics and target groups of the three benefit schemes (see Table 1). Given that recipients of unemployment benefits enjoy more generous replacement rates and are exposed to shorter periods of unemployment than recipients of unemployment assistance, educational disadvantages are plausibly smaller for children of the former than the latter. Conversely, families that claim social assistance generally struggle the most with financial hardship and poverty. It is thus reasonable that the greatest disadvantage is observed for children of social assistance recipients.

Table 3. Inequalities in transition to academic track, pre- and post-reform (OLS)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Baseline	+ Reform interaction	+ Pre-benefit HH income	+ Socio- demographics	+ Benefit duration	+ Total HH income	+ Parental life satisfaction
Parental benefit receipt (ref.: No benefits)							
Unemployment benefits	-0.164*** (0.040)	-0.131** (0.052)	-0.061 (0.049)	-0.005 (0.045)	0.029 (0.048)	0.029 (0.048)	0.036 (0.048)
Unemployment assistance	-0.255*** (0.035)	-0.223*** (0.043)	-0.067 (0.046)	-0.054 (0.046)	-0.028 (0.047)	-0.036 (0.063)	-0.022 (0.063)
Social assistance	-0.306*** (0.029)	-0.331*** (0.034)	-0.140*** (0.038)	-0.122*** (0.046)	-0.105** (0.046)	-0.111* (0.063)	-0.111* (0.063)
Reform	0.041** (0.018)	0.312** (0.134)	0.326** (0.129)	0.802 (0.713)	0.777 (0.715)	0.755 (0.716)	0.697 (0.720)
Unemployment benefits × Reform		-0.094 (0.079)	-0.094 (0.076)	-0.100 (0.073)	-0.106 (0.079)	-0.087 (0.079)	-0.083 (0.078)
Unemployment assistance × Reform		-0.129* (0.066)	-0.105 (0.071)	-0.102 (0.070)	-0.118* (0.071)	-0.032 (0.091)	-0.031 (0.091)
Social assistance × Reform		0.052 (0.056)	0.040 (0.063)	0.041 (0.068)	0.035 (0.068)	0.126 (0.096)	0.138 (0.096)
Year- and state- fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2,791	2,791	2,791	2,791	2,791	2,791	2791

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Pre-treatment cohorts: 2001-2005, post-treatment cohorts: 2006-2010. Robust standard errors in parentheses. All models control for child's sex, age at transition from primary to secondary school, state- and year-fixed effects. Socio-demographic controls include number of children age 0-14 in the household, living with single parent, parental age(-squared), parental migration background, parental education, and parental social class one year before transition. Full results shown in appendix Table A4. *Source:* SOEP 1984-2017.

In column (2), the interaction with the reform dummy is included. The main effects for parental benefit receipt now denote average differences in the probability to transition to the academic track during the pre-reform period, and the interactions with the reform dummy identify changes in these differences after the reform. Their sums hence indicate post-reform inequalities in the probability to transition to the academic track. In line with expectations, I observe a sizable drop in the probability to enter the academic track for children of unemployment assistance recipients that is statistically

significant at 10 per cent. For children who made the transition before 2006, parental unemployment assistance receipt is associated on average with a 22 percentage-point lower chance to enter the academic track relative to having parents that did not receive benefits. After the reform, this gap increased to 35 percentage points. Differences in the probability to attend the academic track between children of unemployment assistance recipients and children living in families, where no benefits were claimed, thus increased by 13 percentage points.

By contrast, the interaction terms for the other two benefit types are much smaller. The coefficient for parental unemployment benefit receipt is negative and the coefficient for parental social assistance receipt is positive. There is hence indication that inequalities for children of unemployment benefit recipients also increased, while inequalities for children of social assistance recipients somewhat declined. However, both coefficients are not statistically significant.

In column (3), a term for net equivalised household income before transfers from unemployment and social assistance is added. I thereby control for potential differences between unemployment assistance recipients before and after the reform that arise from the introduction of means-testing. The interaction between the reform dummy and parental unemployment assistance decreases by around one fifth. Nevertheless, the estimated post-reform gap in academic track attendance for children of unemployment assistance recipients still amounts to 17 percentage points, which is statistically significant at 5 per cent, whereas the estimated pre-reform gap of 7 percentage points no longer is.

Accounting for additional socio-demographic characteristics in column (4) and benefit duration in column (5) substantially reduces pre-reform differences between children of unemployment assistance recipients and parents that did not receive benefits. However, post-reform differences between these two groups decrease by only 2 percentage points and remain statistically significant at 5 per cent.

Figure 2 plots the predicted probabilities to transition to the academic track by parental benefit receipt before and after the reform. Controlling for observed levels of pre-benefit income, socio-demographic characteristics and benefit duration, children of parents receiving unemployment assistance one year before the transition to secondary school had a probability of 32 per cent to enter the academic track before the reform, corresponding to a less than 3 percentage-point gap compared to children of parents not receiving any kind of benefits. After the reform, this probability declined to 24 per cent and translated into a 15 percentage-point gap.

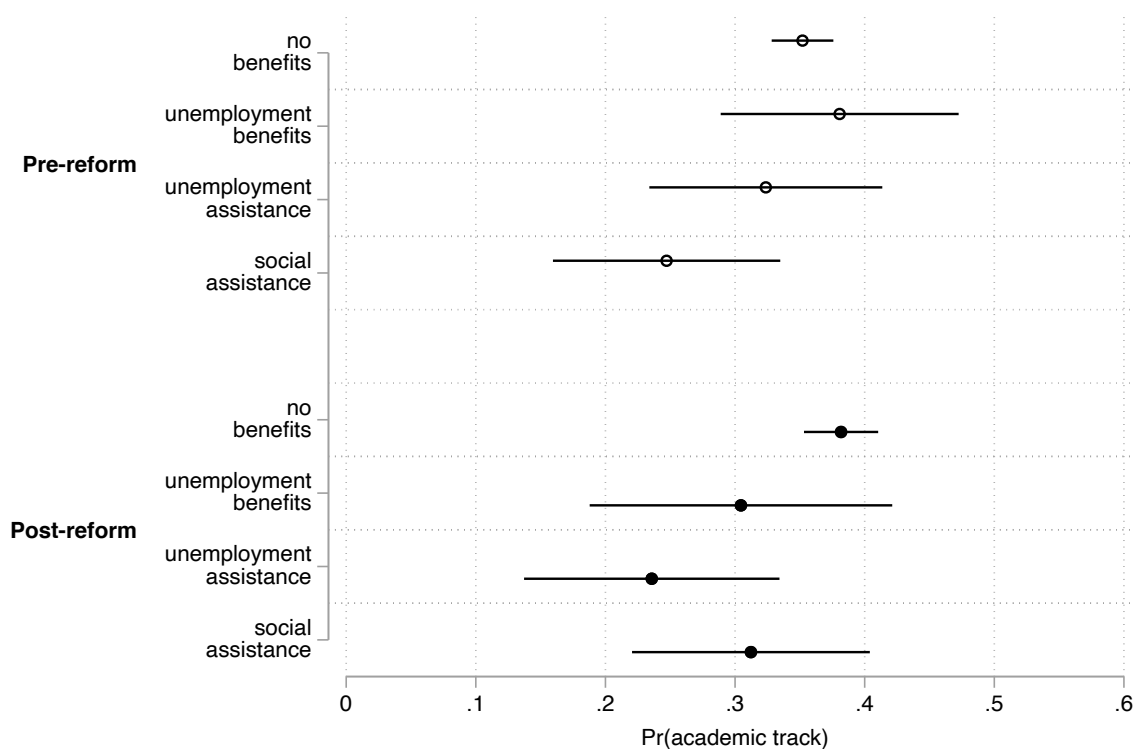


Figure 2. Predicted probabilities to transition to academic secondary school track, pre- and post-reform

Note: Based on Table 3, column (5). 95 per cent confidence intervals shown. *Source*: SOEP 1984-2017.

The reform thus shifted the composition of unemployment assistance recipients towards the more disadvantaged, which in turn accounts for roughly 20 per cent of the estimated reform effect on inequalities in secondary school track attainment. This change in the composition of unemployment assistance recipients is an important observation. It means that it is the most disadvantaged families, who are affected by the reform's potential adverse consequences on family resources and wellbeing. If so, the reform perpetuated the intergenerational transmission of inequality at the very bottom of society.

Indeed, adding a term for total net equivalised household income in column (6) drastically reduces the interaction coefficient to minus 3 percentage points. I therefore no longer observe meaningful pre- and post-reform differences in the gap to enter the academic track between children of unemployment assistance recipients and those living in no-benefit families. Controlling for parental life satisfaction in column (7) does not change the overall picture further, rendering it unlikely that parental life satisfaction plays a substantive mediating role. A worsening in family's financial resources following reductions in benefit levels therefore appears as the main driver of the observed decline in the probability to enter the academic track for children of unemployment assistance recipients.

6 Discussion

This study examined how far radical and still contested changes to Germany's unemployment and social benefit system in 2005 affected educational inequality. Exploiting exogenous variation induced by the Hartz IV reform, which altered eligibility criteria, benefit levels, and conditionality for long-term unemployment assistance, it overcame methodological limitations of prior work that relied on the comparison of different countries to determine the impact of the welfare state and social protection system on the intergenerational transmission of inequality.

I find that children of unemployment assistance recipients experienced a 13 percentage-point decrease in their probability to enter the academic secondary school track after the reform was implemented. To some extent, this effect was brought about by alterations of eligibility criteria and the introduction of means-testing, which shifted the composition of unemployment assistance recipients towards the more socio-economically disadvantaged. The main driver, however, appears to be a further worsening in the financial conditions of these already disadvantaged parents after the reform replaced earnings-related benefits with means-tested basic income support for those who remained unemployed for more than a year (Goebel and Richter 2007). Although past studies document a negative effect of the reform on the subjective well-being of these long-term unemployed (Deter 2021), changes in parental life satisfaction do not seem to contribute to the observed decline in children's chances to transition to the academic track.

The results are in line with the existing, albeit small, literature on the capacity of generous social policies to alleviate the adverse effects of parental unemployment on children's education (Lindemann and Gangl 2020). They show that even in Germany, where education is generally free of charge, benefit generosity is an important instrument by which the welfare state can effectively protect workers as well as their children against the detrimental consequences of unemployment. More attention therefore needs to be directed towards the role played by social protection systems and the welfare state in moderating the intergenerational relationship.

For researchers, this means to extend the present analyses to different contexts and settings. By focussing on a single country, this study significantly complements comparative, cross-country research on the impact of social protection systems on the intergenerational transmission of disadvantage. Nevertheless, this study comes with its own challenges and limitations. To take full advantage of the quasi-experimental method, changes to unemployment assistance would ideally have

been implemented in different federal states at varying times. Moreover, data limitations do not allow to look at other educational outcomes and follow children until their final educational attainment. Finally, life satisfaction is only a crude measure of parents' psychological resources and does not precisely capture parenting styles and behaviour. Future research may therefore benefit from scrutinising whether similar increases in educational inequality are observed as a consequence of social benefit reform across different countries and time periods. Extending the analysis to other outcomes of children that go beyond education seems likewise important as well as the inclusion of more comprehensive measures of emotional wellbeing to determine the significance of parental psychological resources (or the lack thereof) more precisely.

For policymakers, the findings highlight that decisions about the design of welfare systems and benefit schemes have far-reaching consequences. Replacing earnings-related with means-tested long-term unemployment assistance undermined the protective function of the conservative welfare state, leading to the reinforcement of disadvantage at the very bottom of society in Germany. Some may consider this problematic. Whether overall reductions in long-term unemployment and welfare dependence can justify the observed increase in educational inequality for such a vulnerable group is therefore subject to moral and political deliberation. The present analyses act as an important reminder that changes to public institutions that directly affect people's livelihoods require careful consideration. Balancing trade-offs may go beyond a single generation.

References

- Angrist, Joshua, and Jörn-Steffen Pischke. 2008. *Mostly Harmless Econometrics*. Princeton University Press.
- Bäcker, Gerhard. 2017. *Chronologie Gesetzlicher Neuregelungen: Arbeitsförderung/SGB III & Arbeitsrecht 1998-2016*. Universität Duisburg-Essen.
- Bäcker, Gerhard, and Angelika Koch. 2004. *Absicherung Bei Langzeitarbeitslosigkeit: Zentrale Unterschiede Zwischen Zukünftigem Arbeitslosengeld II, Bisheriger Arbeitslosenhilfe Und Bisheriger Sozialhilfe*. Universität Duisburg-Essen.
- Becker, Michael, Marko Neumann, and Hanna Dumont. 2017. 'Recent Developments in School Tracking Practices in Germany: An Overview and Outlook on Future Trends'. *Orbis Scholae* 10(3):9–25.
- Beller, Emily, and Michael Hout. 2006. 'Welfare States and Social Mobility: How Educational and Social Policy May Affect Cross-National Differences in the Association between Occupational Origins and Destinations'. *Research in Social Stratification and Mobility* 24(4):353–65.
- Bethhäuser, Bastian. 2017. 'Fostering Equality of Opportunity? Compulsory Schooling Reform and Social Mobility in Germany'. *European Sociological Review* 33(5):633–44.
- Blossfeld, Pia Nicoletta. 2018. *Changes in Inequality of Educational Opportunity*. Wiesbaden: Springer Fachmedien Wiesbaden.
- Boudon, Raymond. 1974. *Education, Opportunity, and Social Inequality: Changing Prospects in Western Society*. New York: Wiley.
- Bradley, Jake, and Alice Kügler. 2019. 'Labor Market Reforms: An Evaluation of the Hartz Policies in Germany'. *European Economic Review* 113:108–35.
- Brand, Jennie E. 2015. 'The Far-Reaching Impact of Job Loss and Unemployment'. *Annual Review of Sociology* 41(1):359–75.

- Breen, Richard, Kristian Bernt Karlson, and Anders Holm. 2013. 'Total, Direct, and Indirect Effects in Logit and Probit Models'. *Sociological Methods & Research* 42(2):164–91.
- Bukodi, Erzsébet, Ferdinand Eibl, Sandra Buchholz, Sonia Marzadro, Alessandra Minello, Susanne Wahler, Hans-Peter Blossfeld, Robert Erikson, and Antonio Schizzerotto. 2018. 'Linking the Macro to the Micro: A Multidimensional Approach to Educational Inequalities in Four European Countries'. *European Societies* 20(1):1–39.
- Bukodi, Erzsébet, Marii Paskov, and Brian Nolan. 2020. 'Intergenerational Class Mobility in Europe: A New Account'. *Social Forces* 98(3):941–972.
- Bundesagentur für Arbeit (2019), *Berichte: Blickpunkt Arbeitsmarkt – Arbeitsmarktsituation von langzeitarbeitslosen Menschen*, Nürnberg.
- Champion, Cyrielle, and Guiliano Bonoli. 2011. 'Institutional Fragmentation and Coordination Initiatives in Western European Welfare States'. *Journal of European Social Policy* 21(4):323–34.
- Clark, Andrew. 2003. 'Unemployment as a Social Norm: Psychological Evidence from Panel Data'. *Journal of Labor Economics* 21(2):323–51.
- Coelli, Michael B. 2011. 'Parental Job Loss and the Education Enrollment of Youth'. *Labour Economics* 18(1):25–35.
- Cox, David, and Nanny Wermuth. 1992. 'A Comment on the Coefficient of Determination for Binary Responses'. *The American Statistician* 46(1):1–4.
- Der Spiegel (2020). 'Grüne wollen Hartz IV grundlegend verändern'. Available at: <https://www.spiegel.de/politik/deutschland/gruene-wollen-hartz-iv-grundlegend-veraendern-a-41c1af5e-6f19-47ec-8dc5-9ec51aef78c8> (accessed: 1 December 2020).
- Der Tagesspiegel (2019). 'Sanktionen sind teilweise verfassungswidrig'. Available at: <https://www.tagesspiegel.de/politik/hartz-iv-urteil-sanktionen-sind-teilweise-verfassungswidrig/25183746.html> (accessed: 4 December 2020).
- Deter, Max. 2021. 'Hartz and Minds: Happiness Effects of Reforming an Employment Agency'. *Journal of Happiness Studies* 22(4):1819–1838.

- Duncan, Greg, and Jeanne Brooks-Gunn, eds. 1997. *Consequences of Growing up Poor*. New York: Russell Sage Foundation.
- Eichhorst, Werner, and Paul Marx. 2011. 'Reforming German Labour Market Institutions: A Dual Path to Flexibility'. *Journal of European Social Policy* 21(1):73–87.
- Erikson, Robert. 1984. 'Social Class of Men, Women and Families'. *Sociology* 18(4):500–514.
- Esping-Andersen, Gøsta. 1990. *The Three Worlds of Welfare Capitalism*. Cambridge, UK: Polity Press.
- . 2014. 'Welfare Regimes and Social Stratification'. *Journal of European Social Policy* 25(1):124–34.
- Fervers, Lukas. 2019. 'Economic Miracle, Political Disaster? Political Consequences of Hartz IV'. *Journal of European Social Policy* 29(3):411–27.
- Fleckenstein, Timo. 2008. 'Restructuring Welfare for the Unemployed: The Hartz Legislation in Germany'. *Journal of European Social Policy* 18(2):177–88.
- Fohrbeck, Anna, Andreas Hirsland, and Philipp Ramos Lobato. 2014. 'How Benefits Recipients Perceive Themselves through the Lens of the Mass Media - Some Observations from Germany'. *Sociological Research Online* 19(4):74–81.
- Goebel, Jan, Markus M. Grabka, Stefan Liebig, Martin Kroh, David Richter, Carsten Schröder, and Jürgen Schupp. 2019. 'The German Socio-Economic Panel (SOEP)'. *Jahrbücher für Nationalökonomie und Statistik (Journal of Economics and Statistics)* 239(2):345–360.
doi: 10.5684/soep.v34
- Goebel, Jan, and Maria Richter. 2007. 'Nach Der Einführung von Arbeitslosengeld II: Deutlich Mehr Verlierer Als Gewinner Unter Den Hilfeempfängern'. *DIW Wochenbericht* 74(50):753–62.
- Hassel, Anke, and Christof Schiller. 2010. 'Die Politische Dynamik von Arbeitsmarktreformen in Deutschland Am Beispiel Der Hartz IV-Reform'. *Abschlussbericht*.
- Hertweck, Matthias, and Oliver Sigrist. 2012. 'The Aggregate Effects of the Hartz Reforms in Germany'. *University of Konstanz Working Paper* 38.

- Hochmuth, Brigitte, Britta, Christian Merkl, and Hermann Gartner. 2019. 'Hartz IV and the Decline of German Unemployment: A Macroeconomic Evaluation'. *LAB Discussion Paper* Nr. 3.
- Jacobi, Lena, and Jochen Kluve. 2006. 'Before and After the Hartz Reforms: The Performance of Active Labour Market Policy in Germany'. *IZA Discussion Paper* No. 2100.
- Kahneman, Daniel, and Angus Deaton. 2010. 'High Income Improves Evaluation of Life but Not Emotional Well-Being.' *PNAS* 107(38):16489–93.
- Kalil, Ariel. 2013. 'Effects of the Great Recession on Child Development' edited by S. Danziger. *The ANNALS of the American Academy of Political and Social Science* 650(1):232–50.
- Kalil, Ariel, and Patrick Wightman. 2011. 'Parental Job Loss and Children's Educational Attainment in Black and White Middle-Class Families'. *Social Science Quarterly* 92(1):57–78.
- Kaushal, Neeraj, Katherine Magnuson, and Jane Waldfogel. 2011. 'How Is Family Income Related to Investments in Children's Learning?' pp. 187–206 in *Whither opportunity? Rising inequality and the uncertain life chances of low-income children*, edited by R. Murnane and G. J. Duncan. New York: Russell Sage Foundation.
- Krause, Michael U., and Harald Uhlig. 2012. 'Transitions in the German Labor Market: Structure and Crisis'. *Journal of Monetary Economics* 59(1):64–79.
- Launov, Andrey, and Klaus Wälde. 2013. 'Estimating Incentive and Welfare Effects of Nonstationary Unemployment Benefits'. *International Economic Review* 54(4):1159–98.
- Lindemann, Kristina, and Markus Gangl. 2019. 'Parental Unemployment and the Transition to Vocational Training in Germany: Interaction of Household and Regional Sources of Disadvantage'. *European Sociological Review* 35(5):684–700.
- Lindemann, Kristina, and Markus Gangl. 2020. 'Parental Unemployment and the Transition into Tertiary Education: Can Institutions Moderate the Adverse Effects?' *Social Forces* 99(2):616–47.
- Lohmann, Henning, and Olaf Groh-Samberg. 2017. 'Elterliche Arbeitslosigkeitsdynamiken und Bildungsverläufe vom Ende der Grundschulzeit bis zum jungen Erwachsenenalter'. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie* 69(4):623–50.

- Mood, Carina. 2010. 'Logistic Regression: Why We Cannot Do What We Think We Can Do, and What We Can Do About It'. *European Sociological Review* 26(1):67–82.
- Müller, Steffen, Regina T. Riphahn, and Caroline Schwientek. 2017. 'Paternal Unemployment during Childhood: Causal Effects on Youth Worklessness and Educational Attainment'. *Oxford Economic Papers* 69(1):213–38.
- Murray, Lynne, Matt Woolgar, Carla Martins, Anna Christaki, Alison Hipwell, and Peter Cooper. 2006. 'Conversations around Homework: Links to Parental Mental Health, Family Characteristics and Child Psychological Functioning'. *British Journal of Developmental Psychology* 24(1):125–49.
- Neugebauer, Martin, David Reimer, Steffen Schindler, and Volker Stocké. 2013. 'Inequality in Transitions to Secondary and Tertiary Education in Germany'. pp. 56–88 in *Determined to Succeed?: Performance Versus Choice in Educational Attainment*, edited by M. Jackson. Stanford: Stanford University Press.
- Oesch, Daniel, and Oliver Lipps. 2013. 'Does Unemployment Hurt Less If There Is More of It Around? A Panel Analysis of Life Satisfaction in Germany and Switzerland'. *European Sociological Review* 29(5):955–67.
- Pischke, Jörn-Steffen, and Till von Wachter. 2008. 'Zero Returns to Compulsory Schooling in Germany: Evidence and Interpretation'. *The Review of Economics and Statistics* 90(3):592–98.
- Pollak, Reinhard, and Walter Müller. 2020. 'Education as an Equalizing Force: How Declining Educational Inequality and Educational Expansion Have Contributed to More Social Fluidity in Germany'. pp. 122–49 in *Education and Intergenerational Social Mobility in Europe and the United States*, edited by R. Breen and W. Müller. Stanford, California: Stanford University Press.
- Rose, David, and Eric Harrison. 2007. 'The European Socio-Economic Classification: A New Social Class Schema for Comparative European Research'. *European Societies* 9(3):459–90.
- Shavit, Yossi, and Hans-Peter Blossfeld, eds. 1993. *Persistent Inequality: Changing Educational Attainment in Thirteen Countries*. Boulder, Colo: Westview Press.
- Sturgis, Patrick, and Franz Buscha. 2015. 'Increasing Inter-Generational Social Mobility: Is Educational Expansion the Answer?' *The British Journal of Sociology* 66(3):512–33.

Süddeutsche Zeitung (2019), 'Der Abschied von Hartz IV ist ein nötiger Neuanfang'. Available at: <https://www.sueddeutsche.de/wirtschaft/pro-und-contra-zur-sozialen-wende-der-spd-der-abschied-von-hartz-iv-ist-ein-noetiger-neuanfang-1.4325088> (accessed: 29 November 2020).

Appendix

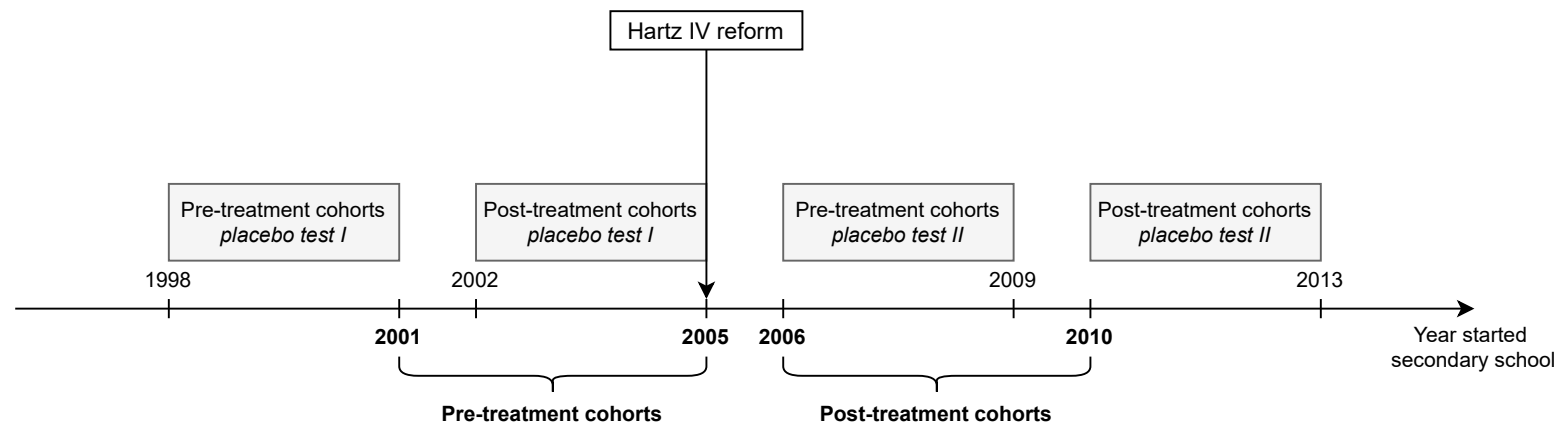


Figure A1. Overview of pre- and post-treatment cohorts in main and placebo analyses

Table A1. Inequalities in transition to academic track, placebo analyses (OLS)

	Placebo test I		Placebo test II	
	(1) Baseline	(2) + Reform interaction	(3) Main effects	(4) + Reform interaction
Parental benefit receipt (ref.: No benefits)				
Unemployment benefits	-0.160*** (0.038)	-0.159*** (0.052)	-0.252*** (0.041)	-0.271*** (0.060)
Unemployment assistance	-0.189*** (0.035)	-0.150*** (0.050)	-0.305*** (0.056)	-0.351*** (0.055)
Social assistance	-0.329*** (0.034)	-0.305*** (0.038)	-0.295*** (0.021)	-0.296*** (0.049)
Reform	0.069*** (0.020)	0.272** (0.135)	0.001 (0.019)	-0.206 (0.131)
Unemployment benefits × Reform		0.008 (0.078)		0.047 (0.083)
Unemployment assistance × Reform		-0.082 (0.070)		0.078 (0.129)
Social assistance × Reform		-0.021 (0.057)		0.004 (0.055)
Age at transition (ref.: 9)				
10	0.158*** (0.038)	0.146*** (0.054)	0.079** (0.035)	0.125* (0.064)
11	0.147*** (0.038)	0.165*** (0.053)	-0.023 (0.036)	0.029 (0.065)
12	0.069 (0.047)	0.117* (0.070)	-0.182*** (0.043)	-0.102 (0.084)
13	0.132 (0.114)	0.443*** (0.168)	-0.173* (0.102)	0.928*** (0.133)
14	-0.241** (0.110)	-0.238 (0.181)	-0.414*** (0.089)	-0.127 (0.126)
10 × Reform		0.048 (0.077)		-0.071 (0.077)
11 × Reform		-0.011 (0.076)		-0.080 (0.078)
12 × Reform		-0.043 (0.096)		-0.109 (0.098)
13 × Reform		-0.472** (0.213)		-1.192*** (0.168)
14 × Reform		(omitted)		-0.365** (0.164)
Female	0.007 (0.019)	0.017 (0.027)	0.012 (0.017)	0.001 (0.030)
Female × Reform		-0.022 (0.038)		0.015 (0.036)
Year- and state-fixed effects	Yes	Yes	Yes	Yes
N	2,311	2,311	3,047	3,047

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Placebo test I: Pre-treatment cohorts: 1998-2001, post-treatment cohorts: 2002-2005. Placebo test II: Pre-treatment cohorts: 2006-2009, post-treatment cohorts: 2010-2013. Robust standard errors in parentheses. *Source:* SOEP 1984-2017.

Table A2. Inequalities in transition to academic track, pre- and post-reform (Logit)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Baseline	+ Reform interaction	+ Pre-benefit HH income	+ Socio- demographics	+ Benefit duration	+ Total HH income	+ Parental life satisfaction
Parental benefit receipt (ref.: No benefits)							
Unemployment benefits	-0.806*** (0.226)	-0.641** (0.281)	-0.305 (0.276)	-0.013 (0.275)	0.176 (0.292)	0.174 (0.292)	0.225 (0.297)
Unemployment assistance	-1.414*** (0.266)	-1.214*** (0.299)	-0.467 (0.315)	-0.468 (0.348)	-0.328 (0.355)	-0.173 (0.495)	-0.108 (0.492)
Social assistance	-1.964*** (0.316)	-2.808*** (0.746)	-1.865** (0.756)	-1.747** (0.824)	-1.653** (0.837)	-1.528 (0.959)	-1.535 (0.971)
Reform	0.188** (0.083)	1.571** (0.663)	1.587** (0.699)	4.496 (4.552)	4.272 (4.597)	4.359 (4.616)	4.140 (4.648)
Unemployment benefits × Reform		-0.495 (0.468)	-0.529 (0.463)	-0.692 (0.497)	-0.726 (0.536)	-0.544 (0.539)	-0.523 (0.536)
Unemployment assistance × Reform		-1.219 (0.783)	-1.008 (0.800)	-1.113 (0.819)	-1.198 (0.826)	-0.579 (0.954)	-0.540 (0.949)
Social assistance × Reform		1.154 (0.835)	1.211 (0.859)	1.046 (0.927)	1.028 (0.938)	1.808 (1.173)	1.926 (1.194)
Year- and state-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2,791	2,791	2,791	2,791	2,791	2,791	2,791

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Pre-treatment cohorts: 2001-2005, post-treatment cohorts: 2006-2010. Robust standard errors in parentheses. All models control for child's sex, age at transition from primary to secondary school, state- and year-fixed effects. Socio-demographic controls include number of children age 0-14 in the household, living with single parent, parental age(-squared), parental migration background, parental education, and parental social class one year before transition. *Source:* SOEP 1984-2017.

Table A3. Predicted probabilities to transition to academic track, pre- and post-reform (Logit)

	Model	Parental benefit receipt	Pr(academic track)		First differences	Second differences
			Pre-reform	Post-reform	$\Delta = \text{post} - \text{pre}$	$\Delta \text{UA} - \Delta \text{NB}$
(2)	+ Reform interaction	No benefit (NB)	0.368*** (0.013)	0.413*** (0.015)	0.047** (0.020)	-0.141** (0.062)
		Unemployment assistance (UA)	0.151*** (0.037)	0.069* (0.042)	-0.093 (0.059)	
(3)	+ Pre-benefit HH income	No benefit	0.351*** (0.012)	0.393*** (0.014)	0.044** (0.019)	-0.121* (0.065)
		Unemployment assistance	0.263*** (0.053)	0.157* (0.082)	-0.077 (0.063)	
(4)	+ Socio-demographic	No benefit	0.354*** (0.012)	0.384*** (0.014)	0.030 (0.018)	-0.112* (0.063)
		Unemployment assistance	0.273*** (0.055)	0.153** (0.078)	-0.082 (0.060)	
(5)	+ Benefit duration	No benefit	0.355*** (0.012)	0.379*** (0.014)	0.022 (0.019)	-0.108* (0.063)
		Unemployment assistance	0.297*** (0.059)	0.153** (0.078)	-0.086 (0.061)	
(6)	+ Total HH income	No benefit	0.352*** (0.013)	0.372*** (0.014)	0.023 (0.019)	-0.099 (0.071)
		Unemployment assistance	0.322*** (0.082)	0.250** (0.118)	-0.076 (0.069)	
(7)	+ Parental life satisfaction	No benefit	0.352*** (0.013)	0.371*** (0.014)	0.023 (0.019)	-0.098 (0.071)
		Unemployment assistance	0.333*** (0.082)	0.265** (0.120)	-0.075 (0.069)	

Note: Based on Table A2. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Pre-treatment cohorts: 2001-2005, post-treatment cohorts: 2006-2010. Standard errors in parentheses. *Source:* SOEP 1984-2017.

Table A4. Inequalities in transition to academic track, pre- and post-reform, full results (OLS)

	(1) Baseline	(2) + Reform interaction	(3) + Pre-benefit HH income	(4) + Socio- demographics	(5) + Benefit duration	(6) + Total HH income	(7) + Parental life satisfaction
Parental benefit receipt (ref.: No benefits)							
Unemployment benefits	-0.164*** (0.040)	-0.131** (0.052)	-0.061 (0.049)	-0.005 (0.045)	0.029 (0.048)	0.029 (0.048)	0.036 (0.048)
Unemployment assistance	-0.255*** (0.035)	-0.223*** (0.043)	-0.067 (0.046)	-0.054 (0.046)	-0.028 (0.047)	-0.036 (0.063)	-0.022 (0.063)
Social assistance	-0.306*** (0.029)	-0.331*** (0.034)	-0.140*** (0.038)	-0.122*** (0.046)	-0.105** (0.046)	-0.111* (0.063)	-0.111* (0.063)
Reform	0.041** (0.018)	0.312** (0.134)	0.326** (0.129)	0.802 (0.713)	0.777 (0.715)	0.755 (0.716)	0.697 (0.720)
Unemployment benefits × Reform		-0.094 (0.079)	-0.094 (0.076)	-0.100 (0.073)	-0.106 (0.079)	-0.087 (0.079)	-0.083 (0.078)
Unemployment assistance × Reform		-0.129* (0.066)	-0.105 (0.071)	-0.102 (0.070)	-0.118* (0.071)	-0.032 (0.091)	-0.031 (0.091)
Social assistance × Reform		0.052 (0.056)	0.040 (0.063)	0.041 (0.068)	0.035 (0.068)	0.126 (0.096)	0.138 (0.096)
Age at transition (ref.: 9)							
10	0.145*** (0.037)	0.161*** (0.047)	0.134*** (0.045)	0.129*** (0.046)	0.129*** (0.046)	0.129*** (0.046)	0.130*** (0.046)
11	0.100*** (0.037)	0.160*** (0.047)	0.156*** (0.045)	0.158*** (0.046)	0.158*** (0.046)	0.158*** (0.046)	0.158*** (0.046)
12	0.015 (0.047)	0.091 (0.059)	0.100* (0.057)	0.111* (0.057)	0.111* (0.057)	0.112* (0.057)	0.113* (0.058)
13	0.055 (0.127)	0.041 (0.128)	0.085 (0.125)	0.126 (0.128)	0.128 (0.129)	0.129 (0.129)	0.128 (0.129)
14	-0.174** (0.073)	-0.234* (0.120)	-0.156 (0.116)	-0.153 (0.134)	-0.179 (0.138)	-0.178 (0.138)	-0.180 (0.139)
10 × Reform		-0.040 (0.075)	-0.024 (0.074)	-0.050 (0.070)	-0.052 (0.069)	-0.048 (0.070)	-0.053 (0.070)
11 × Reform		-0.144* (0.075)	-0.131* (0.073)	-0.134* (0.070)	-0.136* (0.070)	-0.132* (0.070)	-0.136* (0.070)
12 × Reform		-0.194** (0.095)	-0.182** (0.092)	-0.183** (0.090)	-0.185** (0.090)	-0.179** (0.091)	-0.182** (0.091)
13 × Reform		0.840*** (0.177)	0.774*** (0.172)	0.797*** (0.175)	0.767*** (0.178)	0.709*** (0.180)	0.712*** (0.180)
14 × Reform		0.042 (0.167)	0.005 (0.161)	0.051 (0.183)	0.068 (0.186)	0.084 (0.185)	0.029 (0.188)
Female	0.008 (0.018)	0.007 (0.023)	0.008 (0.023)	0.027 (0.022)	0.025 (0.022)	0.026 (0.022)	0.025 (0.022)
Female × Reform		-0.005 (0.036)	0.007 (0.035)	-0.010 (0.034)	-0.010 (0.034)	-0.010 (0.034)	-0.007 (0.034)

Table A4 continued.

Pre-benefit income	0.015*** (0.001)	0.006*** (0.002)	0.006*** (0.002)	0.003 (0.016)	0.003 (0.016)
Pre-benefit income × Reform	-0.002 (0.002)	0.001 (0.002)	0.001 (0.002)	0.027 (0.020)	0.028 (0.020)
HH members age 0-14		0.018 (0.013)	0.019 (0.013)	0.019 (0.013)	0.017 (0.013)
HH members age 0-14 × Reform		-0.000 (0.019)	-0.000 (0.019)	0.001 (0.019)	0.001 (0.019)
Parental age		0.025 (0.021)	0.021 (0.021)	0.021 (0.021)	0.021 (0.021)
Parental age square		-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Parental age × Reform		-0.031 (0.035)	-0.028 (0.035)	-0.027 (0.035)	-0.024 (0.035)
Parental age square × Reform		0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Parental migration background		0.015 (0.027)	0.013 (0.027)	0.013 (0.027)	0.010 (0.027)
Parental migration background × Reform		-0.017 (0.042)	-0.015 (0.042)	-0.014 (0.042)	-0.009 (0.042)
Single parent		0.023 (0.036)	0.027 (0.036)	0.027 (0.036)	0.026 (0.037)
Single parent × Reform		-0.004 (0.055)	-0.006 (0.056)	0.001 (0.056)	-0.004 (0.056)
Parental education (ref. Primary)					
Lower secondary		0.035 (0.035)	0.035 (0.035)	0.035 (0.035)	0.031 (0.036)
Upper secondary		0.079* (0.043)	0.076* (0.043)	0.076* (0.043)	0.073* (0.043)
Post-secondary		0.247*** (0.047)	0.249*** (0.047)	0.249*** (0.047)	0.244*** (0.047)
Lower secondary × Reform		-0.065 (0.062)	-0.065 (0.063)	-0.065 (0.062)	-0.062 (0.062)
Upper secondary × Reform		0.014 (0.073)	0.017 (0.074)	0.016 (0.073)	0.019 (0.073)
Post-secondary × Reform		0.017 (0.079)	0.015 (0.080)	0.017 (0.080)	0.017 (0.079)
Parental social class (ref.: Salariat)					
Intermediate		-0.102*** (0.033)	-0.104*** (0.033)	-0.104*** (0.033)	-0.102*** (0.033)
Working		-0.192*** (0.034)	-0.191*** (0.034)	-0.191*** (0.034)	-0.188*** (0.034)

Table A4 continued.

Never worked				-0.168**	-0.160**	-0.161**	-0.145**
				(0.068)	(0.068)	(0.068)	(0.068)
Intermediate × Reform				0.063	0.067	0.067	0.068
				(0.050)	(0.050)	(0.050)	(0.050)
Working × Reform				0.119**	0.120**	0.123**	0.125**
				(0.053)	(0.053)	(0.053)	(0.053)
Never worked × Reform				0.152	0.138	0.152	0.141
				(0.110)	(0.110)	(0.110)	(0.110)
Benefit duration (ref. 1 year)							
2 years					0.018	0.018	0.020
					(0.036)	(0.036)	(0.036)
3 years					0.050	0.049	0.051
					(0.041)	(0.041)	(0.041)
4 years					0.056*	0.056*	0.059**
					(0.030)	(0.030)	(0.030)
2 years × Reform					-0.084	-0.087	-0.092
					(0.062)	(0.062)	(0.062)
3 years × Reform					-0.080	-0.077	-0.082
					(0.069)	(0.069)	(0.069)
4 years × Reform					-0.041	-0.043	-0.048
					(0.049)	(0.049)	(0.049)
Total HH income						0.003	0.003
						(0.016)	(0.016)
Total HH income × Reform						-0.026	-0.027
						(0.020)	(0.020)
Parental life satisfaction							0.016**
							(0.007)
Parental life satisfaction × Reform							-0.001
							(0.010)
Year- and state-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2,791	2,791	2,791	2,791	2,791	2,791	2,791

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Pre-treatment cohorts: 2001-2005, post-treatment cohorts: 2006-2010. Robust standard errors in parentheses. Net equivalised pre-benefit and total benefit HH income in thousands (2000 Euros).

Source: SOEP 1984-2017.

Table A5. Inequalities in transition to academic track, pre- and post-reform, long-term effects (OLS)

	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline	+ Reform interaction	+ Pre-benefit HH income	+ Socio- demographic	+ Total HH income	+ Parental life satisfaction
Parental benefit receipt (ref.: No benefits)						
Unemployment benefits	-0.325*** (0.070)	-0.330*** (0.080)	-0.225*** (0.076)	-0.191*** (0.070)	-0.192*** (0.070)	-0.198*** (0.071)
Unemployment assistance	-0.304*** (0.057)	-0.263*** (0.066)	-0.072 (0.069)	-0.026 (0.069)	-0.060 (0.104)	-0.068 (0.107)
Social assistance	-0.401*** (0.040)	-0.436*** (0.044)	-0.161*** (0.051)	-0.166** (0.069)	-0.214** (0.100)	-0.218** (0.102)
Reform	0.069*** (0.025)	0.260 (0.180)	0.363** (0.181)	1.211 (1.002)	1.231 (1.002)	1.094 (1.020)
Unemployment benefits × Reform		0.052 (0.159)	0.054 (0.154)	0.075 (0.155)	0.085 (0.163)	0.099 (0.162)
Unemployment assistance × Reform		-0.292** (0.119)	-0.330*** (0.126)	-0.288** (0.117)	-0.120 (0.192)	-0.089 (0.202)
Social assistance × Reform		0.097 (0.082)	-0.005 (0.092)	0.061 (0.109)	0.266 (0.191)	0.302 (0.196)
Year- and state-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1,760	1,760	1,760	1,760	1,760	1,760

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Long-term effects calculated as sums of coefficients one, two and three years before transition to secondary school. Pre-treatment cohorts: 2001-2005, post-treatment cohorts: 2008-2010. Children who transitioned in 2006 and 2007 are excluded as the period of parental long-term benefit receipt covers both pre- as well as post-reform period. Standard errors in parentheses. All models control for child's sex, age at transition from primary to secondary school, state- and year-fixed effects. Socio-demographic controls include parental age(-squared), parental migration background, parental education one year before transition and number of children age 0-14 in the household, living with single parent, parental social class one, two and three years before transition. *Source:* SOEP 1984-2017.

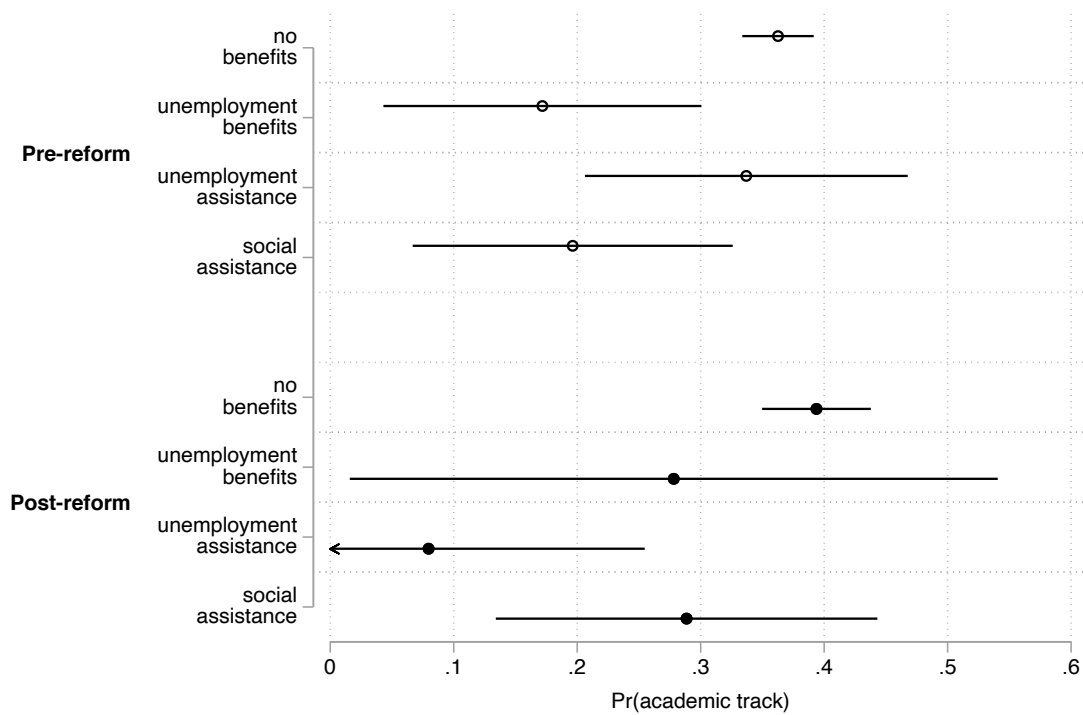


Figure A2. Predicted probabilities to transition to academic track, pre- and post-reform, long-term effects

Note: Based on Table A5, column (4). 95 per cent confidence intervals shown. *Source:* SOEP 1984-2017.

Parental Employment and Children's Education in Historical Perspective

Nhat An Trinh

Abstract

Against the background of growing labour market dualization and the rise of precarious forms of employment, this study examines over-time trends in parental work arrangements, and potential changes in the association between parental employment and children's education in Germany. Using data from the Socio-Economic Panel on children born between 1985 and 2008, I find that parental work arrangements have grown more heterogenous and unequal with respect to the level of economic security they convey. This trend was mainly driven by the rise in temporary, irregular, and marginal employment among mothers, who increasingly entered the labour market over time. The analyses further show that parental insecure employment, and particularly mothers' insecure employment, is associated with lower chances for children to attend the academic secondary school track, even when the other parent is securely employed. However, I find no substantive evidence for a weakening in the overall association between parental employment and children's education over time. Despite significant transformations in the realms of work, pursuing gainful employment remains one of the key mechanisms through which parents can protect their children from unfavourable outcomes.

Keywords: Insecure employment, labour market dualization, female labour market participation, educational inequality, social mobility, Germany

1 Introduction

A wide breath of studies shows that children's opportunities and outcomes are strongly shaped by their parents' economic condition. Parents' economic condition in turn crucially depends on their degree of labour market attachment. Previous research therefore finds negative short- and long-term effects of parental unemployment on children's attainment and wellbeing, including their mental health, non-cognitive skills, education and own labour market careers (Brand and Simon Thomas 2014; Bubonya, Cobb-Clark, and Wooden 2017; Kalil and Ziol-Guest 2008; Lindemann and Gangl 2019; Lohmann and Groh-Samberg 2017; Macmillan et al. 2018; Müller, Riphahn, and Schwientek 2017). Based on these findings, employment in the first generation can be considered an important safeguard against unfavourable outcomes in the second generation.

Research however also documents significant transformations in the world of work. Over the past decades, precarious forms of employment have increasingly emerged as a result of deregulation and flexibilization (Kalleberg 2000, 2009). A secondary labour market characterised by low-pay, irregular, and temporary jobs now exists in many post-industrial societies alongside a primary sector that provides secure permanent and full-time work (Eichhorst and Marx 2021; Emmenegger et al. 2012; Rueda 2005). Employment arrangements have therefore become more differentiated and unequal, leading to rising heterogeneity in the economic conditions of the working population. Consequently, the question arises whether the overall relationship between parental employment, i.e. whether parents participate in the labour market or not, and children's life chances has weakened over time. Given the growth of insecure jobs, being per se employed no longer appears as a guarantee for families' good financial standing. Parental employment may thus have become less predictive of children's prospects since the 'age of dualization' (Emmenegger et al. 2012).

Acknowledging the increasing prevalence of precarious and economically insecure work, a growing body of research studies the consequences of so-called 'non-standard' or 'atypical' employment on

workers and their families (e.g. Benach et al. 2014; Inanc 2020; Kalleberg 2009). Based on large-scale, cross-sectional data, findings for Germany confirm that a substantial proportion of children is nowadays exposed to parental employment conditions that do not align with standard definitions of permanent employment contracts or daily work schedules. Moreover, these employment conditions are associated with significant educational disadvantage for children (Bethhäuser, Trinh, and Fasang 2021). Still, little is known how far the rise in economically insecure work has altered parents' employment conditions, and how it relates to children's outcomes, in a more fundamental and long-lasting way. Evidence on over-time trends in parental work arrangements with a specific focus on insecure employment is also missing.

The latter is however needed to also better understand the intergenerational implications of rising female labour market participation that has been observed across many countries. While seeing more mothers pursuing gainful work may first appear as a positive trend for children's opportunities in adulthood, disadvantages could be perpetuated if mothers tend to work in more insecure forms of employment – and especially so, if fathers are likewise increasingly found in such types of jobs. Existing research shows that gender differences in the likelihood to hold fixed-term or low-paid jobs do exist (Körner, Meinken, and Puch 2013; Morgenroth, Schels, and Teichler 2021; Van Lancker 2012). The rise in insecure forms of employment might therefore come with unexpected consequences for children growing up in dual-earner families.

By examining trends in parental work arrangements of children born between the mid-1980s and late-2000s in Germany, the present study contributes towards closing this gap. Traditionally known for rigid labour market regulation and strong employment protection, Germany experienced one of the highest growth rates in temporary and agency work among the group of OECD countries over the past three decades (Walwei 2014). Reform of the social protection system during the early 2000s gave further rise to a dramatic expansion of low-paid work. The growing influx of women into the labour force also led to a departure from the initially dominant male-breadwinner family model. Germany hence appears as a particularly suitable case to explore changes in parental

employment and their consequences for the intergenerational transmission of inequality in the face of significant labour market structural change.

To analyse the effects of mothers' and fathers' insecure employment jointly, I exclusively focus on children who grow up in families where two parents are present. Doing so allows to explore how far the consequences of one parent's insecure employment depend on the other parents' employment status. It is imaginable that potential negative effects may be weaker if the other parent is securely employed. Likewise, consequences could be worse if the other parent is not employed or if both parents are insecurely employed. Due to its consistent importance for individuals' prospects and wellbeing, the empirical analysis focusses on education as children's outcome of interest. As educational attainment highly depends on parental background in Germany (Müller and Pollak 2010; Pollak and Müller 2020), the country also presents a context, in which changes in work arrangements are most likely to alter the relationship between parents' employment and children's education.

Specifically, I seek to address the following three research questions: First, how far have parental work arrangements, particular with respect to insecure employment, changed over time? Second, how far has the association between parental employment and children's education changed over time? Third, in so far as changes can be observed, are these driven by changes in the association between mothers', fathers', or both parents' employment and children's education?

The next section describes key trends in Germany's labour market since the 1980s and explains how these trends can be expected to weaken the relationship between parental employment and children's education. I then elaborate in section 3 on the analytical strategy, including the data, measures, and methods used. Section 4 presents the empirical results. Section 5 summarises the study's key findings and discusses implications for policy alongside avenues for future research.

2 **Growing labour market dualization, rising female labour market participation, and children's education in Germany**

For most part of the second half of the twentieth century, strong labour market institutions ensured that gainful employment was of high quality and delivered effective protection against economic insecurity and hardship in Germany. Permanent full-time work was the dominant contractual arrangement, and jobs were highly secure, provided decent pay, and offered access to status-maintaining social insurance. A single (male) earner was hence sufficient to support an entire family (Eichhorst and Marx 2011).

From the mid-1980s onwards, changes in employment protection legislation however led to a growth in temporary and more flexible forms of work. Deregulation incentivised the rise of fixed-term contracts, agency work, as well as marginal employment (Palier and Thelen 2010). The latter is specific to the German context and refers to employment at only few or irregular hours that is exempt from taxes and social insurance contributions and generally low-paid (*geringfügige Beschäftigung*).

The introduction of the 'Hartz reforms' during the early 2000s further substantiated the formation of a low-wage segment in Germany's labour market. The second of these four reforms increased the monthly earnings threshold for tax and social insurance payments to 400 Euro¹ and removed restrictions on the maximum number of hours worked. Employers as well as employees thus increasingly perceived these so-called 'mini-jobs' as alternative to the standard employment relationship and permanent contracts declined in importance (Fertig and Kluve 2006; Jacobi and Schaffner 2008). The proportion of workers employed permanently and for more than 31 hours per week decreased from 67.1 to 52.9 per cent between 1991 and 2011. In comparison, the

¹ In 2013, this threshold was further increased to 450 Euro.

proportion of temporary, agency, and marginal employees increased from 6.9 to 15.9 per cent during the same period (Walwei 2014).

Contributing to growing labour market dualization and segmentation, these shifts in work arrangements led to rising heterogeneity in employment contracts and increased economic insecurity among the labour force. Past research shows that temporary and agency workers have lower wages, face a higher risk of unemployment, and also experience higher levels of subjective job insecurity (Giesecke 2009; Morgenroth et al. 2021; Muñoz de Bustillo and de Pedraza 2010). Moreover, those in marginal employment need to rely on additional sources of income, such as a partner's earnings or in-work benefits, since wages fall below subsistence level due to the legally defined maximum.² In Germany, being employed has therefore become less and less a guarantee for economic security, which is reflected in rising levels of in-work poverty since the 1990s (Brülle et al. 2019).

The long-standing literature on intergenerational social mobility and educational inequality recognises families' economic condition as an important predictor of children's educational attainment. On the one hand, the availability of financial resources enables parents to purchase books, computers, and other learning material or to hire private tutors to directly advance their children's performance in school (Duncan and Brooks-Gunn 1997; Hao and Yeung 2015; Kaushal, Magnuson, and Waldfogel 2011; Reardon 2011). On the other hand, economic resources influence educational decisions given the child's performance. The more secure parents' financial position, the greater their ability and willingness to support longer periods spent in education, which generally leads to higher qualifications. The relative costs of pursuing, and potentially failing, a

² Because of the latter, the marginally employed (*geringfügig Beschäftigte*) have also little incentive to move to higher paying jobs as social insurance contributions, taxation, or benefit cuts can result in lower net income. They therefore tend to remain trapped in low-paying jobs, which comes with additional long-term disadvantages due to e.g. the lack of accrued pension rights (Lietzmann, Schmelzer, and Wiemers 2017; Voss and Weinkopf 2012).

chosen educational pathway are also lower the more economic resources are available (Breen and Goldthorpe 1997; Breen, van de Werfhorst, and Jäger 2014).

This second mechanism, also known as ‘secondary effect’ of social origin (Boudon 1974), is particularly relevant in the German context, where children are sorted into different school tracks around age 10 (Neugebauer et al. 2013). As switching tracks after this point is rare, early educational choices are highly consequential for overall educational attainment and later labour market careers. Furthermore, families who are economically vulnerable have a strong incentive to send their children on a non-academic trajectory since apprenticeships are already paid and integrated into the social insurance system. Choosing the academic over the vocational route hence comes with significant (short-term) opportunity costs.

Given such strong dependence of children’s education on their family’s financial standing, children of parents working in insecure employment are likely to have lower educational attainment than children of parents working in secure employment. Evidently, it is possible that the degree to which children of insecurely employed parents are subject to educational disadvantage depends on other parental characteristics. For example, children of parents working in academia are less likely to be affected by temporary employment conditions due to higher levels of parental education that may compensate for lower economic resources. However, prior work on Germany has shown that children of temporary employed parents are significantly less likely to attend the academic secondary school track compared to children of permanently employed parents even after controlling for parental education or social class (Betthäuser et al. 2021). Thus, as the proportion of economically insecure work arrangements increases, the number of children at risk of educational disadvantage likely grows. In other words, educational outcomes among children of working parents are more likely to vary. Consequently, parental employment becomes less predictive of children’s education and their relationship weakens over time with growing labour market dualization.

In Germany, a weakening in the association between parental employment and children's education is also particularly conceivable as the number of mothers joining the labour force has steadily increased. Between 1974 and 2004, the proportion of mothers aged 18-45 who remain outside of the labour market substantially declined from 55.5 to 30.4 per cent (Konietzka and Kreyenfeld 2010). This trend is important to understand the intergenerational implications of rising heterogeneity in employment conditions as women are disproportionately employed in economically insecure work. For instance, 65 per cent of the exclusively marginally employed in 2010 were female. Gender differences in the likelihood to be insecurely employed have partly been attributed to the joint taxation of married couples, which induces the secondary earner to participate in the labour market at reduced hours or to only take up low-paying work (Blömer, Brandt, and Preichl 2021; Körner et al. 2013). Growing up in a dual-earner family might therefore not necessarily go along with greater educational advantage compared to growing up in a single-earner family, if both parents are not securely employed. Whether the positive effects of one parent's secure employment can counterbalance the other parent's insecure employment is theoretically plausible but has so far not been subject to empirical inquiry.

In what follows, I hence describe the steps taken to analyse (1) how far parental work arrangements have changed over time with a particular focus on insecure employment, (2) how far these changes further translated into changes in the association between parental employment and children's education, and (3) whether these changes, if any can be observed, are driven by changes in the association between mothers', fathers', or both parents' employment and their children's education.

3 Analytical strategy

My analysis proceeds in four steps. First, I describe trends in parental work arrangements for children born between the mid-1980s and late-2000s. Second, I show that parental insecure employment is negatively associated with children's education in Germany. Third, I examine

whether the overall association between parental employment and children's education has changed across birth cohorts. Finally, I explore whether observed changes are due to changes in the association between mothers', fathers', or both parents' employment and their children's education.

All four steps draw on data from the Socio-Economic Panel collected between 1984-2019 (v36eu; Goebel et al. 2019). Established in 1984, the SOEP is one of the longest-running panel studies available and provides representative, longitudinal information on households residing in Germany on a yearly basis. I focus on children, who were born between 1985 and 2008, and use *all* information on maternal and paternal employment for the years available when the child was between 6 and 10 years old.³ I hence concentrate on the entire stage in children's life that is spent in primary education as well as the historical period after reunification of West and East Germany in 1990. Although non-biological parents are considered, same-sex parents are excluded as are single-parent families. While the proportion of children excluded due to the latter restriction increases across birth cohorts from around 14 to 35 per cent, differences in the likelihood to experience parental insecure employment between children living with one as compared to two parents do not significantly vary over time. If anything, these differences appear to decrease. I further exclude parents, who were younger than age 16 when their child was born and who studied, pursued vocational training, or worked in workshops for people with disabilities. Overall, the sample consists of 14,786 person-year observations that are nested in 4,246 individual children.

The dependent variable is *children's secondary school track*, which indicates whether children attend the academic track or not after primary school. Because of rigid and highly stratifying sorting, the transition to secondary school represents a critical moment in children's educational careers and is

³ For 80 per cent of the analytical sample, complete information on all five observation years is available. The proportion of children, for whom information is available for one, two, three, and four years, is around 5 per cent each. Re-running the analyses on the sample of children with complete information between the age of 6 and 10 does not produce substantively different results. See appendix B.

highly consequential for future labour market success in Germany (Neugebauer et al. 2013).⁴ Historically, the German educational system distinguishes between three types of tracks that provide different school leaving degrees. The lower (Hauptschule) and intermediate (Realschule) track focus on basic and vocational education, whereas the upper track (Gymnasium) prepares pupils for academic education. More recently, differences between these tracks have somewhat diminished, partly because of the creation of comprehensive schools (Becker, Neumann, and Dumont 2017). Nonetheless, children still need to successfully complete the academic track to enter tertiary education. Upper secondary school therefore continues to offer the most prestigious and advantageous track type in all sixteen federal states.

Two sets of independent variables are used to operationalise parental employment and work arrangements. The first set measures *parents' joint employment status* and focuses on capturing the degree of parental labour market participation more generally. I distinguish between three categories: (1) both parents employed, (2) one parent employed, and (3) no parent employed. Note that each annual parental employment status between the age of 6 and 10 is considered on its own. Refraining from constructing a summary measure for this period or taking information from only a single year allows to capture variation in parental employment more precisely and avoids making arbitrary assumptions about timing.⁵

The second set differentiates between *mother's* and *father's employment status* and additionally captures differences in economic security among working parents. I distinguish between the following categories: (1) securely employed, (2) insecurely employed, and (3) not employed. Parents are considered securely employed if they work on a permanent, open-ended contract. They are

⁴ Except for two federal states, i.e. Berlin and Brandenburg, where the transition occurs after six years, children usually enter secondary school after four years of primary school around age 10.

⁵ Sensitivity analyses that use information from the year that comes closest to when children enter secondary school still produce qualitatively similar results. The negative association between parents' insecure employment and children's probability to attend the academic track even appears somewhat stronger. See appendix C.

identified as being insecurely employed if they work on a temporary, fixed-term contract or if they reported to be in irregular or marginal employment. Part-time employment is not considered as economically insecure. While temporary, irregular, and marginal work are highly associated with discontinuous employment and thereby expose families to considerable economic and labour market risks, part-time employment can still be subject to strong protection (Giesecke 2009). In Germany, efforts towards flexibilization and deregulation also mostly focused on creating new forms of fixed-term employment rather than changing the existing conditions of part-time work (Eichhorst and Marx 2011). Consequently, I do not classify part-time employment as economically insecure unless it is temporary, irregular, or marginal. Parents who indicate that they are not employed are assigned the residual category. In the case of fathers, this was mainly due to unemployment (64 per cent), while for mothers, inactivity was the primary reason (61 per cent).

Besides calculating simple proportions by birth cohort to map over-time trends in parental work arrangements and children's academic track attendance, I employ linear probability models to examine the strength and a potential weakening in their association. A linear term for children's year of birth, which is centred at zero for the 1985 cohort, is used to model change over time. The following covariates are included as additional controls: Children's sex, whether they have a migrant background, and mother's age at birth (squared) present the set of time-invariant controls, while children's age, whether they live in East Germany, number of children in the household below age 15 as well as parents' education between the age of 6 and 10 are time-varying. Depending on which parental employment status variable is used, parents' education is measured either separately using a four-category version of ISCED-97 or jointly taking the higher value if mother's and father's education differ. To account for the dependent structure of the observations, I cluster standard errors at the child's level. Table 1 provides summary statistics for all variables used in the analysis.

Table 1. Summary statistics

	Per cent / Mean	SD	Min	Max
Academic track attendance	47.44			
Birth cohort	1994.94	5.62	1985	2008
Age	8.19	1.40	6	10
Female	49.15			
Migrant background	25.68			
Living in East Germany	20.41			
Mother's age at birth	28.66	5.15	16	48
Children in HH < age 15	2.06	0.89	1	8
Parents' joint employment status				
No parent employed	4.95			
One parent employed	41.71			
Both parents employed	53.34			
Father's employment status				
Securely employed	86.02			
Insecurely employed	4.73			
Not employed	9.25			
Mother's employment status				
Securely employed	41.50			
Insecurely employed	16.14			
Not employed	42.36			
Parents' education				
Primary	4.84			
Lower secondary	41.93			
Upper secondary	22.12			
Post-secondary	31.11			
Father's education				
Primary	8.96			
Lower secondary	49.78			
Upper secondary	16.62			
Post-secondary	24.64			
Mother's education				
Primary	14.28			
Lower secondary	50.56			
Upper secondary	17.22			
Post-secondary	17.94			
N	14,786	14,786	14,786	14,786

Source: SOEP 1984-2019.

4 Empirical results

To describe how parental work arrangements have changed for children born between 1985 and 2008 in Germany, Figure 1 presents the proportions of the three categories of parents' joint employment status outlined above as well as of fathers' and mothers' secure, insecure, and non-employment by birth cohort based on three-year moving averages. According to expectations, the proportion of children that is growing up in dual-earner families has markedly increased over time. At around 45 per cent, the proportion of children living in families in which only one parent is employed, given that both parents are present, almost equalled the proportion of children living in families in which both parents are employed for cohorts born during the mid-1980s and early-1990s. For cohorts born thereafter, the proportion of children whose parents are both employed started to continuously rise. Its peak was reached for children born during the mid-2000s at around 75 per cent. For more recent cohorts, the data suggest that their proportion has slightly dropped again. Conversely, the proportion of children having only one employed parent, given that both parents are present, decreased to around 21 per cent with a small reversal in this decline for cohorts born after the mid-2000s. The proportion of children with no employed parent also more than halved, decreasing from around 10 to less than 5 per cent over the observation period. Growing up in a family, in which none of the two parents is employed, thus seems to be a generally rare phenomenon in Germany that further diminished over time.

In line with previous studies (Konietzka and Kreyenfeld 2010), the significant rise in dual-earner families was pre-dominantly driven by the increasing influx of mothers into the labour market. The proportion of 6- to 10-year-olds whose mother is not employed dropped from ca. 50 per cent for earlier cohorts to around 25 per cent for children born during the mid-2000s. This dramatic decline in the proportion of non-employed mothers is mirrored in the rising proportion of children whose mother is securely employed. Their proportion increased from less than 40 per cent for cohorts born before the mid-1990s to almost 60 per cent for more recent cohorts. Moreover, I observe a

consistent and non-negligible increase in the proportion of children exposed to insecure maternal employment. For cohorts born between 1985 and 2008, the proportion of children whose mother was temporary, irregularly, or marginally employed doubled from around 10 to almost 20 per cent. Children have therefore not only seen increasing levels of maternal employment, but maternal employment has also become more heterogenous and likely to be economically insecure. While only 1 out of 4 children of employed mothers experienced maternal insecure employment among cohorts born during the mid-1980s, the same ratio rose to 2 in 5 for children born two decades later.

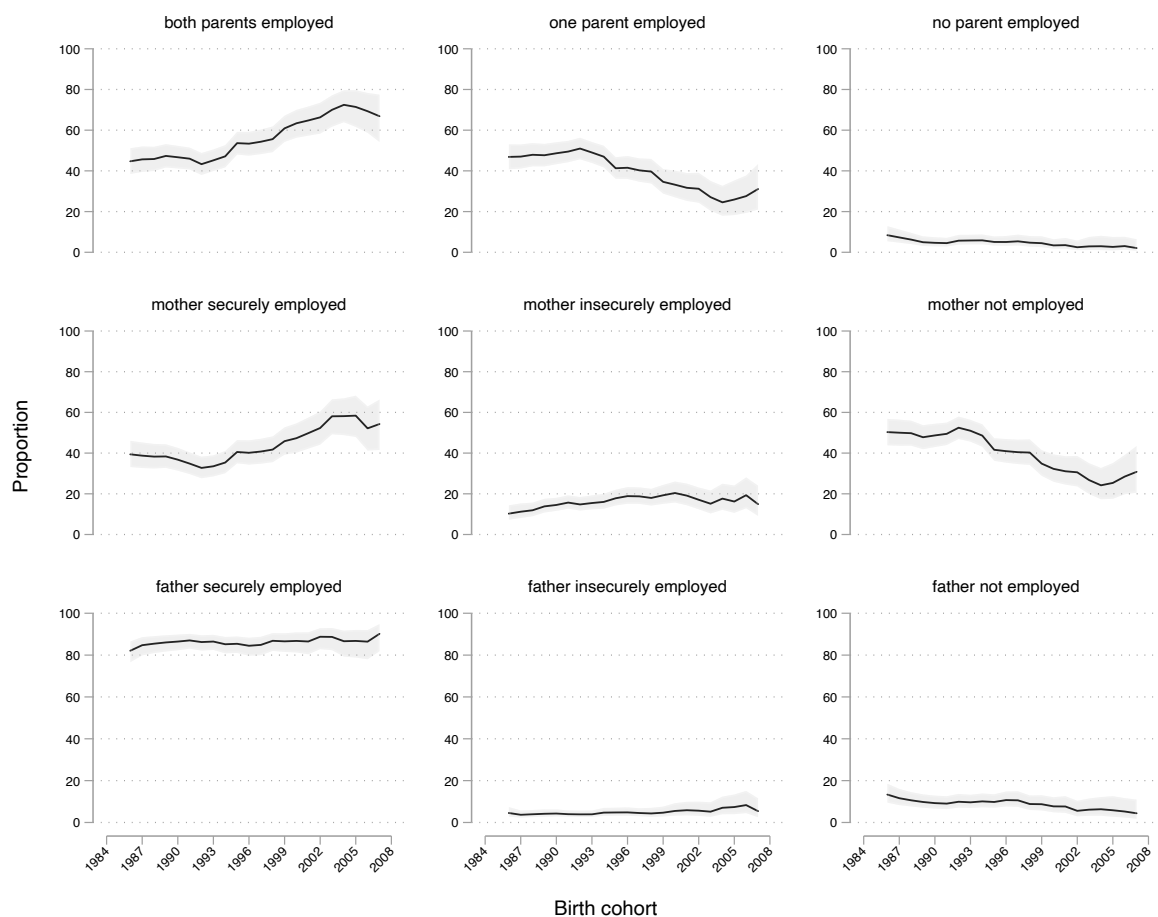


Figure 1. Father's, mother's, and parents' joint employment status by birth cohort, 1985-2008

Note: Three-year moving averages. 95 confidence intervals shown. Based on 4,246 children. Parents' employment observed during age 6-10. *Source:* SOEP 1984-2019.

In contrast, changes in fathers' employment were much more subtle. The proportion of children growing up with a father who was not employed decreased from around 13 to 4 per cent across all cohorts.⁶ This trend was paralleled by a rise in both secure as well as insecure paternal employment. While the former increased from around 82 to 90 per cent, the latter rose from 4 to 8 per cent. Fathers are hence considerably less likely to be found in insecure employment or out of work compared to mothers. Over-time trends also display a picture of greater stability. I therefore observe little change in the ratio of children exposed to paternal insecure versus secure employment, which only slightly increased from around 1 to 1.7 out of 20 children.

The proportion of children who experience insecure parental employment during their primary school years thus increased over time. When adding the figures for mothers and fathers together, the proportion of children living with at least one insecurely employed parent rose from 14 to 28 per cent. As this trend was mainly driven by mothers, whose overall employment levels increased over the same period, children living in dual-earner families were particularly affected. Among these, the proportion of children whose mother or father is temporary, irregularly, or marginally employed rose from ca. 20 to close to 30 per cent. For children growing up in single-earner families, the same proportion remained stable at around 3 per cent. See appendix Figure A1 for cross-cohort trends in all nine possible combinations of maternal and paternal secure, insecure, and non-employment.

Provided that a negative association between parents' insecure employment and children's education exists, it thus seems possible that this compositional shift rendered parental employment

⁶ This stands somewhat in contrast to the development of the general unemployment rate amongst dependently employed men after 1991 in Germany. According to official statistics, which use a narrower definition of unemployment than the SOEP, unemployment increased from 6.4 per cent in 1991 to 12.2 per cent in 1997 and remained at a similar level until 2006. From 2007 onwards, unemployment continuously declined. In 2018, 6.2 per cent of dependently working men were unemployed (Bundesagentur für Arbeit 2020). These divergent trends suggest that the observed decline in paternal non-employment may in part driven by a decrease in the number of inactive fathers. However, unemployment trends among specific demographic groups, like fathers of 6- to 10-year-olds, could also simply differ from the general population.

less predictive of children's educational attainment. More specifically, the association between having *two* employed parents and attending the academic school track may have weakened following the rising prevalence of insecure work. However, before exploring these changes in further detail, I turn to examining whether having an insecurely employed parent is indeed related to educational disadvantage in the next step.

Table 2 shows results from linear probability models that regress children's academic secondary school track attendance on fathers' and mothers' employment status. Corroborating findings of previous research (Betthäuser et al. 2021), columns (1) and (2) show that children of fathers and mothers who are insecurely employed are on average less likely to attend the academic track in Germany compared to children of fathers and mothers who are securely employed. The gap is similar for both parents and amounts to 5.5 percentage points for fathers and 6.6 percentage points for mothers, controlling for the other parent's employment status.

Note that the educational disadvantage associated with insecure maternal employment is not much smaller than compared to maternal non-employment. The latter relates to a 9.9 percentage points lower chance to attend the academic track. By contrast, having a father who is not employed instead of securely employed is associated with a gap that is double in size. Fathers' non-employment thus appears to be more consequential for children's educational opportunities than their insecure employment as well as mothers' non-employment. This is likely because fathers tend to be the main earner, who also generate higher incomes from labour. Past research shows that a considerable gender wage gap exists in Germany (Kunze 2018).

Table 2. Association between father's and mother's employment status and children's academic track attendance

	(1)	(2)	(3)	(4)	(5)
Father's employment (ref. securely employed)					
insecurely employed	-0.062* (0.027)	-0.055* (0.027)	-0.025 (0.045)	-0.011 (0.045)	-0.036 (0.039)
not employed	-0.208*** (0.022)	-0.198*** (0.022)	-0.154*** (0.038)	-0.137*** (0.037)	-0.048 (0.035)
Mother's employment (ref. securely employed)					
insecurely employed		-0.066*** (0.019)	-0.062** (0.020)	-0.042* (0.020)	-0.019 (0.019)
not employed		-0.099*** (0.016)	-0.089*** (0.017)	-0.043* (0.017)	-0.015 (0.016)
Father insecurely employed × Mother insecurely employed			-0.036 (0.076)	-0.031 (0.071)	-0.036 (0.060)
Father insecurely employed × Mother not employed			-0.052 (0.057)	-0.035 (0.056)	-0.003 (0.048)
Father not employed × Mother insecurely employed			-0.035 (0.055)	-0.015 (0.053)	-0.036 (0.050)
Father not employed × Mother not employed			-0.076 (0.046)	-0.063 (0.045)	-0.058 (0.041)
Birth cohort				0.002 (0.001)	-0.000 (0.001)
Female				0.045** (0.016)	0.048** (0.015)
Migrant background				-0.093*** (0.020)	-0.029 (0.020)
Living in East Germany				0.060** (0.021)	0.010 (0.020)
Mother's age at birth				0.023 (0.014)	-0.002 (0.013)
Mother's age at birth ²				-0.000 (0.000)	0.000 (0.000)
Children in HH < age 15				0.002 (0.009)	-0.026** (0.008)
Age				0.000 (0.002)	-0.003 (0.002)
Father's education (ref. primary)					
Lower secondary					0.055* (0.027)
Upper secondary					0.179*** (0.033)
Post-secondary					0.331*** (0.033)
Mother's education (ref. primary)					
Lower secondary					0.104*** (0.024)
Upper secondary					0.229*** (0.030)
Post-secondary					0.322*** (0.031)
Constant	0.497*** (0.009)	0.548*** (0.012)	0.543*** (0.013)	-0.084 (0.199)	0.234 (0.188)
N	14,786	14,786	14786	14786	14786

Note: * p<0.05, ** p<0.01, *** p<0.001. Based on 4,246 children born between 1985-2008. Parents' employment observed during age 6-10. Clustered standard errors in parentheses. Source: SOEP 1984-2019.

To examine whether the consequences of mothers' and fathers' insecure employment depends on the other parents' employment status, an interaction term between both parents' employment status is added to the model in column (3). The main effects thus indicate differences in the chances to attend the academic track between children of securely and insecurely employed fathers and mothers, given that the other parent is securely employed. The coefficient for fathers' insecure employment decreases by 55 per cent and is no longer statistically significant. This suggests that having a mother who is securely employed can to some degree compensate for the negative implications of paternal insecure employment. However, the reverse does not seem to hold. The coefficient for mothers' insecure employment only marginally decreases in size and remains statistically significant at 1 per cent. Although not statistically significant, the negative interaction effects indicate larger disadvantages in secondary track attainment for children who lack a securely employed parent. Children of parents who are both insecurely employed are 3.6 percentage points less likely to attend the academic track compared to children of one securely and one insecurely employed parent. The negative association between fathers' insecure employment and children's academic track attendance is even larger if the mother is not employed. Still, children without employed parents experience the greatest educational disadvantage in terms of opportunities to attend the academic track compared to children of both securely employed parents.

In column (4), controls for child and family characteristics except for parents' education are added. All coefficients related to fathers' and mothers' insecure employment become smaller. Nevertheless, the main effects remain sizable and statistically significant at 5 per cent for mothers. Only when further accounting for parents' education in column (5), does the coefficient for mothers' insecure employment become statistically insignificant. The negative effect of having a mother who is insecurely employed is thus largely driven by her lower levels of education. By contrast, the coefficient for fathers' insecure employment increases again upon controlling for parents' education and is also larger as compared to column (3). This suggests that fathers, who are temporarily, irregularly, or marginally employed tend to be higher educated. Parental education, in

turn, strongly and positively predicts children's chances to attend the academic track – the reason why disadvantages related to fathers' insecure employment can be offset by their higher education.

I therefore find supportive evidence that a negative relationship between parents' insecure employment and their children's education exists. This relationship is particularly strong for mothers, since a sizable and significant effect can be observed even when the father is securely employed. The results yet also show that this relationship is differently linked to fathers' and mothers' education. Having established that parental insecure employment may adversely affect children's educational opportunities, I now continue to explore whether the rise in insecure work arrangements led to a decline in the positive effect of having two employed parents on children's education over time.

To begin, Figure 2 shows three-year moving averages in the proportion of children attending the academic track by birth cohort, separately for children living in families in which parents are both employed and in which parents are not both employed. The latter group consists of children with only one employed parent and children without employed parents. The two are combined as the proportion of children without employed parents is very small and has further decreased over time as discussed above. In general, the proportion of children who attend the academic track increased over time. Furthermore, children whose parents are both employed are more likely to attend the academic track compared to other children. However, the gap is more pronounced for children born before the mid-1990s. For these, the respective proportions differ by around 12 percentage points. For subsequent cohorts, this difference became increasingly narrower, especially for children born at the turn of the century, although somewhat growing again for cohorts born after the early 2000s. Based on Figure 2, there is hence some indication that increases in insecure employment may have contributed to a weakening in the relationship between parental employment and educational attainment for children living in dual-earner families.



Figure 2. Proportion of children attending the academic track by parents' joint employment status and birth cohort, 1985-2008

Note: Three-year moving averages. Based on 4,246 children. Parents' employment observed during age 6-10.

Source: SOEP 1984-2019.

To shed further light on this question, Table 3 displays results from linear probability models using the two-category version of parents' joint employment status as main independent variable similar to Figure 2. Net of differences in socio-demographic characteristics and parental education, children whose parents are both employed are on average 3.4 percentage points more likely to attend the academic track than children whose parents are not both employed. As shown in column (3), this gap is significant at 5 per cent.

Table 3. Changes in the association between parents' joint employment status and children's academic track attendance

	(1)	(2)	(3)	(4)	(5)	(6)
Both parents employed	0.094*** (0.014)	0.062*** (0.014)	0.034* (0.013)	0.077** (0.025)	0.075** (0.025)	0.079** (0.026)
Birth cohort	0.007*** (0.001)	0.002 (0.002)	0.000 (0.001)	0.003 (0.002)	-0.038 (0.033)	-0.028 (0.033)
Both parents employed × birth cohort				-0.004 (0.002)	-0.004 (0.002)	-0.005* (0.002)
Female		0.045** (0.016)	0.047** (0.015)	0.048** (0.015)	0.090** (0.029)	0.090** (0.029)
Migrant background		-0.100*** (0.020)	-0.053** (0.019)	-0.053** (0.019)	-0.087* (0.037)	-0.086* (0.037)
Living in East Germany		0.050* (0.021)	0.010 (0.020)	0.010 (0.020)	-0.079* (0.036)	-0.078* (0.036)
Mother's age at birth		0.029* (0.014)	0.006 (0.013)	0.006 (0.013)	0.004 (0.025)	0.006 (0.026)
Mother's age at birth ²		-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Children in HH < age 15		0.002 (0.009)	-0.017* (0.008)	-0.017* (0.008)	-0.039* (0.015)	-0.036* (0.015)
Age		-0.000 (0.002)	-0.003 (0.002)	-0.002 (0.002)	-0.008 (0.005)	-0.008 (0.005)
Parental education (ref. primary)						
Lower secondary			0.096** (0.031)	0.094** (0.031)	0.092** (0.032)	0.149** (0.052)
Upper secondary			0.266*** (0.035)	0.265*** (0.035)	0.265*** (0.035)	0.262*** (0.060)
Post-secondary			0.499*** (0.034)	0.498*** (0.034)	0.496*** (0.034)	0.499*** (0.058)
Female × birth cohort					-0.004 (0.003)	-0.004 (0.003)
Migrant background × birth cohort					0.003 (0.003)	0.003 (0.003)
Living in East Germany × birth cohort					0.009** (0.003)	0.009** (0.003)
Mother's age at birth × birth cohort					0.001 (0.002)	0.001 (0.002)
Mother's age at birth ² × birth cohort					-0.000 (0.000)	-0.000 (0.000)
Children in HH < age 15 × birth cohort					0.002 (0.001)	0.002 (0.001)
Age × birth cohort					0.001 (0.000)	0.001 (0.000)
Lower secondary × birth cohort						-0.007 (0.006)
Upper secondary × birth cohort						-0.001 (0.006)
Post-secondary × birth cohort						-0.001 (0.006)
Constant	0.359*** (0.017)	-0.239 (0.198)	0.063 (0.188)	0.045 (0.188)	0.296 (0.358)	0.209 (0.359)
N	14,786	14,786	14,786	14,786	14,786	14,786

Note: * p<0.05, ** p<0.01, *** p<0.001. Based on 4,246 children born between 1985-2008. Parents' employment observed during age 6-10. Clustered standard errors in parentheses. *Source:* SOEP 1984-2019.

In column (4), an interaction between children's year of birth and parents' joint employment status is included to examine whether this difference has changed over time. As shown in Figure 1, the rise in insecure employment among working mothers and fathers unfolded in a continuous, steady manner. Changes over-time are therefore modelled by means of a linear term for children's year of birth. Choosing a linear term also tests whether the association between parental employment and children's academic track attendance has changed in a more permanent, enduring way for cohorts born between the mid-1980s and late-2000s.⁷

The negative sign of the interaction coefficient in column (4) suggests that inequalities have decreased. However, the coefficient is very small and only becomes statistically significant at 5 per cent when also accounting for cross-cohort changes in parental education. In column (5), interactions between children's year of birth and all child and family characteristics except for parents' education are added to explicitly model compositional shifts in these characteristics over time. Following Table 2 that revealed differences in the relationship between fathers' and mothers' insecure employment and education, the interaction with parental education is added in column (6) in a separate step. According to column (6), differences in the probability to attend the academic track shrink on average by 0.05 percentage points for each subsequent birth cohort. The association between having parents who are both employed and attending the academic school track thus weakened to only a minimal degree. Moreover, supposing that I found evidence for a decline in the strength of the association between parents' employment and children's education, this would have been counteracted by a parallel rise in their education.

Table 4 repeats the above analysis and disentangles parents' joint employment status further into separate terms for mothers and fathers. Like in Table 3, I only distinguish between employed and not employed parents and thus collapse mothers' and fathers' employment status into the two

⁷ Using cohort dummies or a logarithmic transformation of children's year of birth does not alter the results in a substantive way. See appendix D.

categories. I do so to examine whether the significant interaction effect is driven by changes in the effect of mothers', fathers', or both parents' employment. The larger interaction effect for mothers' employment in columns (4)-(6) suggests that the observed decline is driven by a reduction in the effect of mothers' employment on children's probability to attend the academic track. This seems plausible as the rise in insecure employment mainly occurred among mothers and because maternal insecure employment also appears more consequential than paternal insecure employment. However, as already mentioned, the observed decrease is substantively minor and not statistically significant.

Table 4. Changes in the association between father's and mother's employment status and children's academic track attendance

	(1)	(2)	(3)	(4)	(5)	(6)
Father employed	0.189*** (0.021)	0.170*** (0.021)	0.080*** (0.020)	0.088* (0.038)	0.086* (0.037)	0.086* (0.037)
Mother employed	0.069*** (0.014)	0.037* (0.015)	0.014 (0.014)	0.048 (0.025)	0.045 (0.026)	0.052* (0.026)
Birth cohort	0.006*** (0.001)	0.002 (0.001)	-0.000 (0.001)	0.003 (0.004)	-0.043 (0.033)	-0.035 (0.033)
Father employed × birth cohort				-0.001 (0.004)	-0.001 (0.004)	-0.001 (0.004)
Mother employed × birth cohort				-0.004 (0.002)	-0.003 (0.002)	-0.004 (0.002)
Female		0.045** (0.016)	0.049** (0.015)	0.049** (0.015)	0.095** (0.029)	0.099*** (0.029)
Migrant background		-0.093*** (0.020)	-0.029 (0.020)	-0.029 (0.020)	-0.071 (0.037)	-0.064 (0.038)
Living in East Germany		0.063** (0.021)	0.010 (0.020)	0.010 (0.020)	-0.080* (0.036)	-0.069 (0.037)
Mother's age at birth		0.025 (0.014)	-0.001 (0.013)	-0.001 (0.013)	-0.008 (0.025)	-0.005 (0.026)
Mother's age at birth ²		-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Children in HH < age 15		-0.000 (0.009)	-0.026** (0.008)	-0.026** (0.008)	-0.049** (0.015)	-0.050** (0.015)
Age		0.000 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.010* (0.005)	-0.010* (0.005)
Father's education (ref. primary)						
Lower secondary			0.055* (0.027)	0.055* (0.027)	0.051 (0.027)	0.106* (0.048)
Upper secondary			0.180*** (0.033)	0.180*** (0.033)	0.177*** (0.033)	0.153* (0.063)
Post-secondary			0.331*** (0.033)	0.331*** (0.033)	0.327*** (0.032)	0.419*** (0.061)
Mother's education (ref. primary)						

Table 4 continued.

	0.105***	0.104***	0.108***	0.104*		
Lower secondary	(0.024)	(0.024)	(0.024)	(0.044)		
	0.231***	0.231***	0.236***	0.238***		
Upper secondary	(0.030)	(0.030)	(0.030)	(0.058)		
	0.323***	0.323***	0.325***	0.236***		
Post-secondary	(0.031)	(0.031)	(0.031)	(0.059)		
Female			-0.005	-0.005		
× birth cohort			(0.003)	(0.003)		
Migrant background			0.004	0.003		
× birth cohort			(0.003)	(0.004)		
Living in East Germany			0.009**	0.008*		
× birth cohort			(0.003)	(0.003)		
Mother's age at birth			0.002	0.001		
× birth cohort			(0.002)	(0.002)		
Mother's age at birth ²			-0.000	-0.000		
× birth cohort			(0.000)	(0.000)		
Children in HH < age15			0.002	0.002		
× birth cohort			(0.001)	(0.001)		
Age × birth cohort			0.001	0.001		
			(0.000)	(0.000)		
Father lower secondary				-0.006		
× birth cohort				(0.005)		
Father upper secondary				0.001		
× birth cohort				(0.006)		
Father post-secondary				-0.010		
× birth cohort				(0.006)		
Mother lower secondary				0.001		
× birth cohort				(0.004)		
Mother upper secondary				0.000		
× birth cohort				(0.006)		
Mother post-secondary				0.009		
× birth cohort				(0.006)		
Constant	0.199***	-0.319	0.116	0.095	0.410	0.325
	(0.024)	(0.199)	(0.188)	(0.191)	(0.360)	(0.363)
N	14,786	14,786	14,786	14,786	14,786	14,786

Note: * p<0.05, ** p<0.01, *** p<0.001. Based on 4,246 children born between 1985-2008. Parents' employment observed during age 6-10. Clustered standard errors in parentheses. *Source:* SOEP 1984-2019.

6 Discussion

This study contributes to the literature on the relationship between children's opportunities and outcomes, and their parents' participation in the labour market. By taking a more nuanced and differentiated look at the employment conditions of working parents, I go beyond existing research that treats parental employment as a homogenous phenomenon. Particularly, I study how far the relationship between parental employment and children's educational attainment has changed in the face of significant labour market transformations that happened in – but were not limited to – Germany since the mid-1980s.

In line with previous research that looks at the entire labour force, my findings show that parental work arrangements have grown more unequal and diverse with respect to the level of economic security they convey. For children born in Germany between 1985 and 2008 and who lived with both parents between the age of 6 and 10, this was mainly due to the rise in temporary, irregular, and marginal employment among mothers, who progressively entered the labour market. As a result, children growing up in dual-earner families became increasingly exposed to economically insecure forms of parental employment. My analyses further confirmed that having a mother or father who pursues such type of work is associated with a lower chance to attend the academic secondary school track compared to having a mother or father who is economically secure, i.e. permanently, employed. Importantly, the negative effect of maternal insecure employment cannot be compensated by the presence of a securely employed father net of important child and family characteristics. Children of insecurely employed parents, and particularly mothers, are thus likely to experience additional disadvantages at later life stages given the significance of this transition for overall educational attainment in the German context.

Given these observations in conjunction with findings from past research, it seemed plausible to suggest that the overall positive association between parental employment and children's chances

to attend the academic track might have weakened over time. However, results from the empirical investigation do not allow to adopt this conclusion with certainty. Observed decreases in inequality in academic track attendance between children of parents who are and who are not both employed are negligible and only statistically significant when simultaneously accounting for cross-cohort shifts in parents' socio-demographic characteristics, specifically their education. Given the lack of more substantial evidence, such conclusion is therefore not warranted.

On the aggregate level, it therefore appears that the growing prevalence of insecure work has so far not affected one of the key mechanisms by which parents in contemporary, post-industrial societies can protect their children from unfavourable outcomes. Participating in the labour market and pursuing gainful employment, regardless of whether it is permanent, temporary, irregular, or marginal, rather than not remains beneficial for the second generation. Employment conditions nevertheless matter for the outcomes of children as they determine families' financial standing and degree of economic security. It is therefore important for future research to closely monitor and assess on-going labour market developments in Germany and elsewhere. Policy efforts geared towards removing obstacles for women to take up more secure and economically rewarding forms of employment are also needed, especially as the influx of mothers into the labour market is likely to continue. In the absence of these, it may well be the case that economic inequalities among working parents are about to grow further. If so, the positive association between parental employment and children's education may diminish at some later point.

Likewise, it seems important for future studies to pay closer attention to concomitant trends that could either offset or reinforce potential changes in the intergenerational consequences of parents' labour market participation. For example, I found indication that at the same time as insecure employment grew amongst parents, their levels of education also rose. As a result, a weakening in the association between parental employment and children's chances to attend the academic track could only be observed after controlling for changes in parents' own educational attainment. Trends that go into the opposite direction are yet also easily thought of. For instance, the number

of children growing up in single-parent households has steadily increased over time. If single parents also increasingly enter economically insecure jobs, this may reinforce a decline in the positive implications of parental work and contribute to greater segmentation in parental employment conditions. It would thus be important to extend the current analysis to children who are raised by only one parent. Unfortunately, data limitations did not allow to look at this group in greater detail.

Finally, more work needs to be done on uncovering the mechanisms through which economically insecure work arrangements hinder favourable outcomes in the second generation. In this study, I primarily focused on established differences in the financial resources of workers, who are temporarily, irregularly, or marginally employed. However, past research also provides evidence that such types of jobs can be associated with significant emotional strain (Inanc 2020; Schumann and Kuchinke 2020). Parents' psychological resources are yet another set of means through which parents ensure their children's flourishing development (Brooks–Gunn et al. 1995). Focussing on the financial disadvantages associated with economically insecure work thus captures only one dimension through which transformations in the world of labour generate inequalities for the current and next generation. Moreover, shedding light on the psychological implications of insecure employment is likely to contribute to a better understanding of the stronger effect of mothers' insecure employment on their children's educational attainment. Recent research highlights that women are more unsettled by temporary contracts than men (Morgenroth et al. 2021), pointing towards important gender differences in the effects of insecure work arrangements that may translate into gendered implications of parental insecure employment for children's opportunities.

References

- Becker, Michael, Marko Neumann, and Hanna Dumont. 2017. 'Recent Developments in School Tracking Practices in Germany: An Overview and Outlook on Future Trends'. *Orbis Scholae* 10(3):9–25.
- Benach, Joan, Alejandra Vives, Marcelo Amable, Christophe Vanroelen, Gemma Tarafa, and Carles Muntaner. 2014. 'Precarious Employment: Understanding an Emerging Social Determinant of Health'. *Annual Review of Public Health* 35:229–53.
- Bethhäuser, Bastian, Nhat An Trinh, and Anette Fasang. 2021. *The Temporal Dimension of Parental Employment. Fixed-Term Contracts, Non-Standard Work Schedules, and Children's Education in Germany*. Berlin: Cluster of Excellence 2055 'Contestations of the Liberal Script -SCRIPTS'.
- Blömer, Maximilian, Przemyslaw Brandt, and Andreas Preichl. 2021. *Raus Der Der Zweiterverdienerinnenfalle: Reformvorschläge Zum Abbau von Fehlanreizen Im Deutschen Steuer- Und Sozialversicherungssystem*. Gütersloh: Bertelsmann Stiftung.
- Boudon, Raymond. 1974. *Education, Opportunity, and Social Inequality: Changing Prospects in Western Society*. New York: Wiley.
- Brand, Jennie E., and Juli Simon Thomas. 2014. 'Job Displacement among Single Mothers: Effects on Children's Outcomes in Young Adulthood'. *American Journal of Sociology* 119(4):955–1001.
- Breen, Richard, and John H. Goldthorpe. 1997. 'Explaining Educational Differentials Towards a Formal Rational Action Theory'. *Rationality and Society* 9(3):275–305.
- Breen, Richard, Herman G. van de Werfhorst, and Mads Meier Jæger. 2014. 'Deciding under Doubt: A Theory of Risk Aversion, Time Discounting Preferences, and Educational Decision-Making'. *European Sociological Review* 30(2):258–70.
- Brooks–Gunn, Jeanne, Brett Brown, Greg J. Duncan, and Kristin Anderson Moore. 1995. *Child Development in the Context of Family and Community Resources: An Agenda for National Data Collections*. Washington, DC: The National Academy of Sciences.

- Brülle, Jan, Markus Gangl, Asaf Levanon, and Evgeny Saburov. 2019. 'Changing Labour Market Risks in the Service Economy: Low Wages, Part-Time Employment and the Trend in Working Poverty Risks in Germany'. *Journal of European Social Policy* 29(1):115–29.
- Bubonya, Melisa, Deborah A. Cobb-Clark, and Mark Wooden. 2017. 'Job Loss and the Mental Health of Spouses and Adolescent Children'. *IZA Journal of Labor Economics* 6(6):1–27.
- Bundesagentur für Arbeit. 2020. *Arbeitslosigkeit Im Zeitverlauf*. Nürnberg: Statistik der Bundesagentur für Arbeit.
- Duncan, Greg, and Jeanne Brooks-Gunn, eds. 1997. *Consequences of Growing up Poor*. New York: Russell Sage Foundation.
- Eichhorst, Werner, and Paul Marx. 2011. 'Reforming German Labour Market Institutions: A Dual Path to Flexibility'. *Journal of European Social Policy* 21(1):73–87.
- Eichhorst, Werner, and Paul Marx. 2021. 'How Stable Is Labour Market Dualism? Reforms of Employment Protection in Nine European Countries'. *European Journal of Industrial Relations* 27(1):93–110.
- Emmenegger, Patrick, Silja Häusermann, Bruno Palier, and Martin Seeleib-Kaiser, eds. 2012. *The Age of Dualization: The Changing Face of Inequality in Deindustrializing Societies*. Oxford University Press.
- Fertig, Michael, and Jochen Kluve. 2006. 'Alternative Beschäftigungsformen in Deutschland: Effekte Der Neuregelung von Zeitarbeit, Minijobs Und Midijobs'. *Vierteljahrshefte Zur Wirtschaftsforschung* 75(3):97–117.
- Giesecke, Johannes. 2009. 'Socio-Economic Risks of Atypical Employment Relationships: Evidence from the German Labour Market'. *European Sociological Review* 25(6):629–46.
- Goebel, Jan, Markus M. Grabka, Stefan Liebig, Martin Kroh, David Richter, Carsten Schröder, and Jürgen Schupp. 2019. 'The German Socio-Economic Panel (SOEP)'. *Jahrbücher Für Nationalökonomie Und Statistik* 239(2):345–60. doi: 10.5684/soep.core.v36eu
- Hao, Lingxin, and Wei-Jun Jean Yeung. 2015. 'Parental Spending on School-Age Children: Structural Stratification and Parental Expectation'. *Demography* 52(3):835–60.

- Inanc, Hande. 2020. 'Varieties of Precarity: How Insecure Work Manifests Itself, Affects Well-Being, and Is Shaped by Social Welfare Institutions and Labor Market Policies'. *Work and Occupations* 47(4):504–11.
- Jacobi, Lena, and Sandra Schaffner. 2008. 'Does Marginal Employment Substitute Regular Employment? A Heterogeneous Dynamic Labor Demand Approach for Germany'. *Ruhr Economic Papers* #56.
- Kalil, Ariel, and Kathleen M. Ziol-Guest. 2008. 'Parental Employment Circumstances and Children's Academic Progress'. *Social Science Research* 37(2):500–515.
- Kalleberg, Arne L. 2000. 'Nonstandard Employment Relations: Part-Time, Temporary and Contract Work'. *Annual Review of Sociology* 26(1):341–65.
- Kalleberg, Arne L. 2009. 'Precarious Work, Insecure Workers: Employment Relations in Transition'. *American Sociological Review* 74(1):1–22.
- Kaushal, Neeraj, Katherine Magnuson, and Jane Waldfogel. 2011. 'How Is Family Income Related to Investments in Children's Learning?' pp. 187–206 in *Whither opportunity? Rising inequality and the uncertain life chances of low-income children*, edited by R. Murnane and G. J. Duncan. New York: Russell Sage Foundation.
- Konietzka, Dirk, and Michaela Kreyenfeld. 2010. 'The Growing Educational Divide in Mothers' Employment: An Investigation Based on the German Micro-Censuses 1976-2004'. *Work, Employment and Society* 24(2):260–78.
- Körner, Thomas, Holger Meinken, and Katharina Puch. 2013. *Wer Sind Die Ausschließlich Geringfügig Beschäftigten? Eine Analyse Nach Sozialer Lebenslage*. Wiesbaden: Statistisches Bundesamt, Wirtschaft und Statistik.
- Kunze, Astrid. 2018. 'The Gender Wage Gap in Developed Countries'. pp. 368–94 in *The Oxford Handbook of Women and the Economy*, edited by S. L. Averett, L. M. Argys, and S. D. Hoffman. Oxford University Press.
- Lietzmann, Torsten, Paul Schmelzer, and Jürgen Wiemers. 2017. 'Marginal Employment for Welfare Recipients: Stepping Stone or Obstacle?' *Labour* 31(4):394–414.

- Lindemann, Kristina, and Markus Gangl. 2019. 'The Intergenerational Effects of Unemployment: How Parental Unemployment Affects Educational Transitions in Germany'. *Research in Social Stratification and Mobility* 62:100410.
- Lohmann, Henning, and Olaf Groh-Samberg. 2017. 'Elterliche Arbeitslosigkeitsdynamiken und Bildungsverläufe vom Ende der Grundschulzeit bis zum jungen Erwachsenenalter'. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie* 69(4):623–50.
- Macmillan, Lindsey, Paul Gregg, John Jerrim, and Nikki Shure. 2018. 'Children in Jobless Households across Europe: Evidence on the Association with Medium-and Long-Term Outcomes'. *Journal of Poverty and Social Justice* 26(3):335–58.
- Morgenroth, Nicolas, Brigitte Schels, and Nils Teichler. 2021. 'Are Men or Women More Unsettled by Fixed-Term Contracts? Gender Differences in Affective Job Insecurity and the Role of Household Context and Labour Market Positions'. *European Sociological Review* jcab060.
- Müller, Steffen, Regina T. Riphahn, and Caroline Schwientek. 2017. 'Paternal Unemployment during Childhood: Causal Effects on Youth Worklessness and Educational Attainment'. *Oxford Economic Papers* 69(1):213–38.
- Müller, Walter, and Reinhard Pollak. 2010. 'Weshalb Gibt Es so Wenige Arbeiterkinder in Deutschlands Universitäten?' pp. 303–42 in *Bildung als Privileg*, edited by R. Becker and W. Lauterbach. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Muñoz de Bustillo, Rafael, and Pablo de Pedraza. 2010. 'Determinants of Job Insecurity in Five European Countries'. *European Journal of Industrial Relations* 16(1):5–20.
- Neugebauer, Martin, David Reimer, Steffen Schindler, and Volker Stocké. 2013. 'Inequality in Transitions to Secondary School and Tertiary Education in Germany'. pp. 56–88 in *Determined to Succeed?*, edited by M. Jackson. Stanford University Press.
- Palier, Bruno, and Kathleen Thelen. 2010. 'Institutionalizing Dualism: Complementarities and Change in France and Germany'. *Politics & Society* 38(1):119–48.
- Pollak, Reinhard, and Walter Müller. 2020. 'Education as an Equalizing Force: How Declining Educational Inequality and Educational Expansion Have Contributed to More Social Fluidity in Germany'. pp. 122–49 in *Education and Intergenerational Social Mobility in Europe and the United States*, edited by R. Breen and W. Müller. Stanford, California: Stanford University Press.

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- Reardon, Sean F. 2011. 'The Widening Achievement Gap between the Rich and the Poor: New Evidence and Possible Explanations'. Pp. 91–116 in *Whither opportunity: Rising inequality, schools, and children's life chances*, edited by R. Murnane and G. J. Duncan. New York: Russell Sage Foundation.
- Rueda, David. 2005. 'Insider-Outsider Politics in Industrialized Democracies: The Challenge to Social Democratic Parties'. *American Political Science Review* 99(1):61–74.
- Schumann, Paul, and Lars Kuchinke. 2020. 'Do(n't) Worry, It's Temporary: The Effects of Fixed-Term Employment on Affective Well-Being'. *Journal of Happiness Studies* 21(7):2557–82.
- Van Lancker, Wim. 2012. 'The European World of Temporary Employment: Gendered and Poor?' *European Societies* 14(1):83–111.
- Voss, Dorothea, and Claudia Weinkopf. 2012. 'Niedriglohnfalle Minijob'. *WSI Mitteilungen* 1/2021.
- Walwei, Ulrich. 2014. 'Times of Change: What Drives the Growth of Work Arrangements in Germany?' *Journal for Labour Market Research* 47(3):183–204.

Appendix A

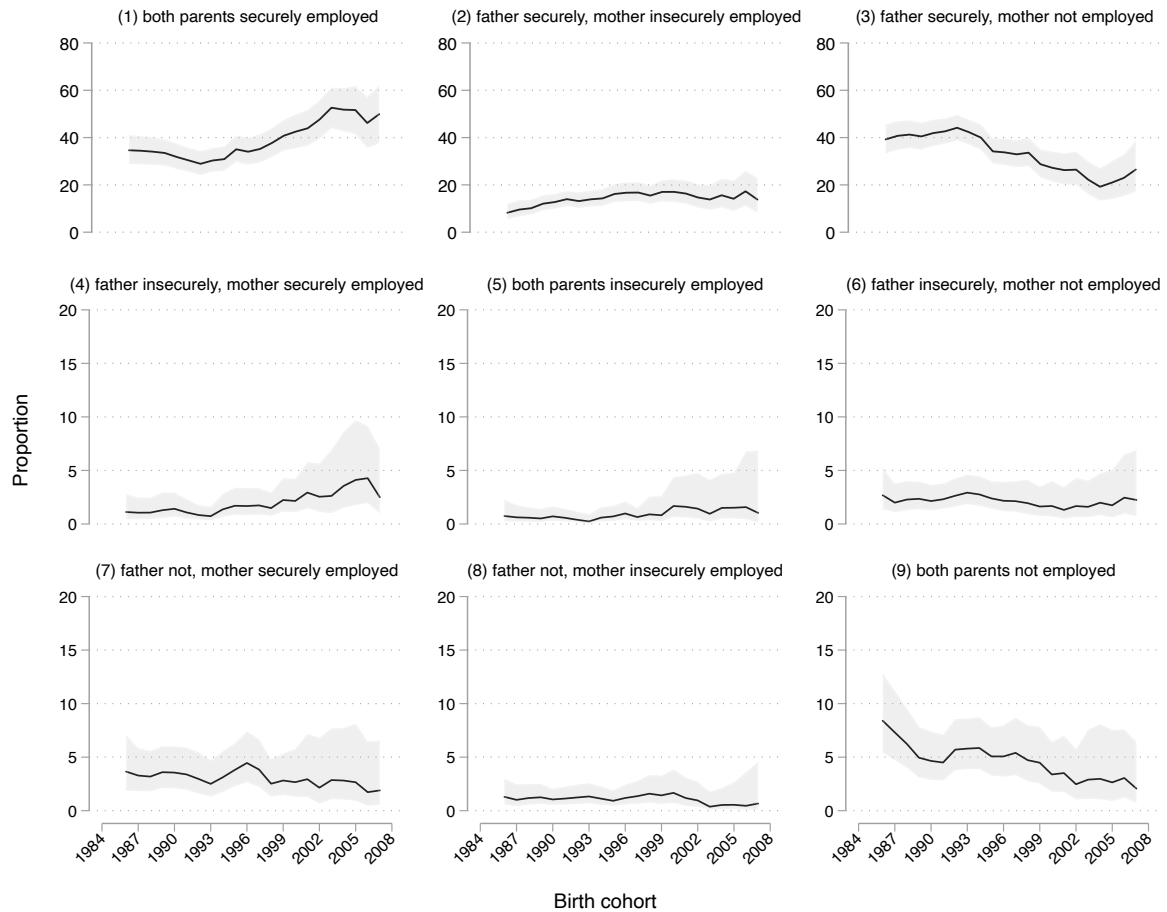


Figure A1. Combinations of father's and mother's employment status by birth cohort, 1985-2008

Note: Three-year moving averages. 95 confidence intervals shown. Based on 4,246 children. Parents' employment observed during age 6-10. *Source:* SOEP 1984-2019.

Appendix B

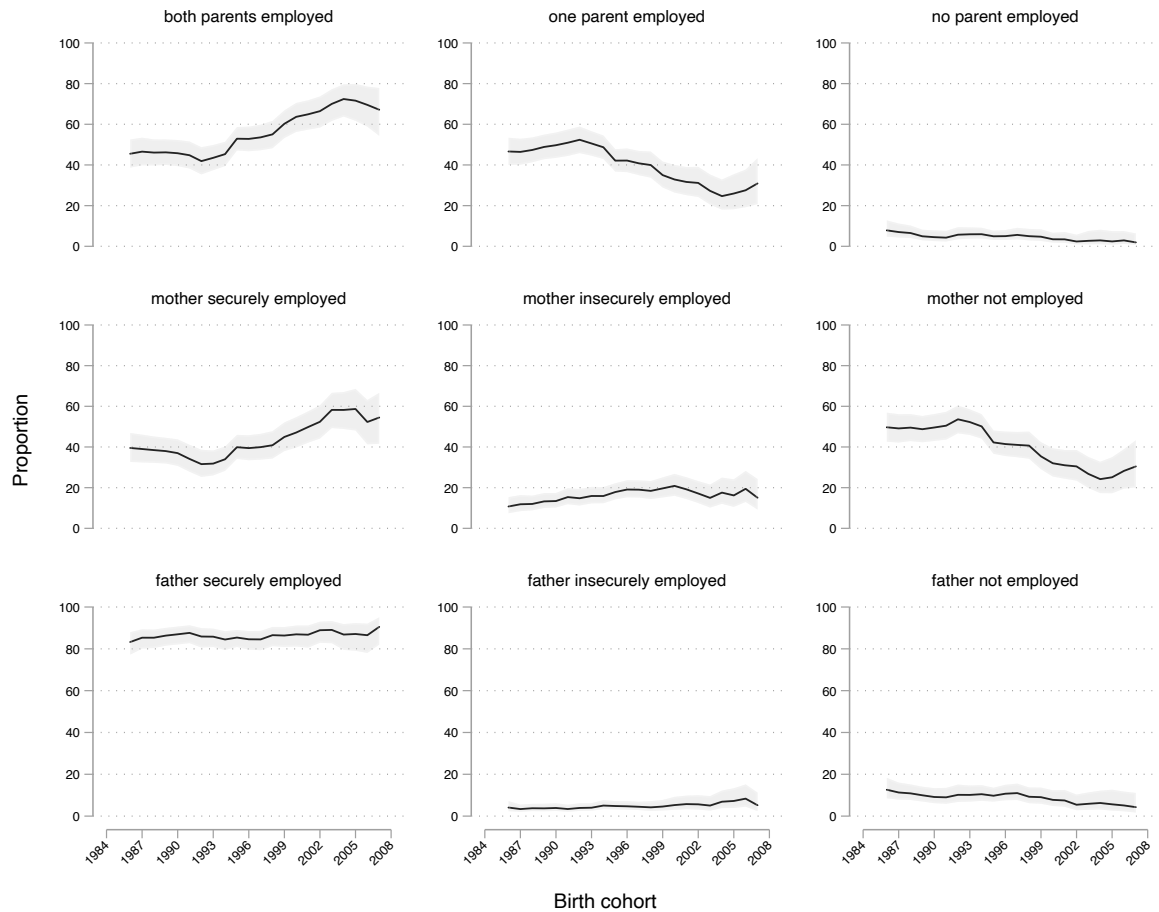


Figure B2. Father's, mother's, and parents' joint employment status by birth cohort, 1985-2008

Note: Three-year moving averages. 95 confidence intervals shown. Parents' employment observed during age 6-10. Based on 3,400 children for whom information on all years available. *Source:* SOEP 1984-2019.

Table B1. Association between father's and mother's employment status and children's academic track attendance, five observations per child

	(1)	(2)	(3)	(4)	(5)
Father's employment (ref. securely employed)					
insecurely employed	-0.059 (0.030)	-0.054 (0.030)	-0.010 (0.048)	-0.005 (0.048)	-0.035 (0.042)
not employed	-0.201*** (0.024)	-0.193*** (0.024)	-0.136*** (0.041)	-0.113** (0.039)	-0.028 (0.037)
Mother's employment (ref. securely employed)					
insecurely employed		-0.060** (0.020)	-0.052* (0.022)	-0.030 (0.021)	-0.009 (0.020)
not employed		-0.092*** (0.017)	-0.080*** (0.019)	-0.027 (0.019)	-0.001 (0.018)
Father insecurely employed × Mother insecurely employed			-0.071 (0.080)	-0.056 (0.076)	-0.058 (0.063)
Father insecurely employed × Mother not employed			-0.072 (0.062)	-0.051 (0.062)	-0.010 (0.052)
Father not employed × Mother insecurely employed			-0.057 (0.060)	-0.030 (0.057)	-0.047 (0.054)
Father not employed × Mother not employed			-0.098* (0.049)	-0.091 (0.048)	-0.081 (0.045)
Birth cohort				0.003 (0.002)	-0.000 (0.001)
Female				0.036* (0.018)	0.040* (0.017)
Migrant background				-0.105*** (0.022)	-0.038 (0.022)
Living in East Germany				0.059** (0.023)	-0.002 (0.022)
Mother's age at birth				0.027 (0.015)	0.001 (0.014)
Mother's age at birth ²				-0.000 (0.000)	0.000 (0.000)
Children in HH < age 15				-0.002 (0.010)	-0.030*** (0.009)
Age				-0.002 (0.002)	-0.003 (0.002)
Father's education (ref. primary)					
Lower secondary					0.053 (0.029)
Upper secondary					0.174*** (0.035)
Post-secondary					0.325*** (0.036)
Mother's education (ref. primary)					
Lower secondary					0.105*** (0.026)
Upper secondary					0.226*** (0.032)
Post-secondary					0.342*** (0.034)
Constant	0.495*** (0.010)	0.543*** (0.013)	0.536*** (0.014)	-0.115 (0.219)	0.201 (0.205)
N	13,035	13,035	13,035	13,035	13,035

Note: * p<0.05, ** p<0.01, *** p<0.001. Parents' employment observed during age 6-10. Based on 3,400 children for whom information on all years available. Clustered standard errors in parentheses. *Source:* SOEP 1984-2019.

Table B2. Changes in the association between parents' joint employment status and children's academic track attendance, five observations per child

	(1)	(2)	(3)	(4)	(5)	(6)
Both parents employed	0.086*** (0.015)	0.049** (0.016)	0.022 (0.015)	0.070* (0.028)	0.065* (0.028)	0.069* (0.028)
Birth cohort	0.007*** (0.002)	0.002 (0.002)	0.000 (0.001)	0.003 (0.002)	-0.031 (0.035)	-0.020 (0.035)
Both parents employed × birth cohort				-0.005* (0.002)	-0.004 (0.002)	-0.005 (0.003)
Female		0.035* (0.018)	0.039* (0.017)	0.040* (0.017)	0.070* (0.033)	0.070* (0.033)
Migrant background		-0.111*** (0.022)	-0.063** (0.021)	-0.063** (0.021)	-0.112** (0.042)	-0.108* (0.042)
Living in East Germany		0.049* (0.023)	0.001 (0.021)	0.000 (0.021)	-0.108** (0.039)	-0.110** (0.039)
Mother's age at birth		0.034* (0.015)	0.009 (0.014)	0.009 (0.014)	0.014 (0.028)	0.016 (0.028)
Mother's age at birth ²		-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Children in HH < age 15		-0.001 (0.010)	-0.022* (0.009)	-0.022* (0.009)	-0.048** (0.017)	-0.046** (0.017)
Age		-0.002 (0.002)	-0.003 (0.002)	-0.002 (0.002)	-0.010* (0.004)	-0.010* (0.004)
Parental education (ref. primary)						
Lower secondary			0.106** (0.034)	0.104** (0.034)	0.101** (0.035)	0.174** (0.057)
Upper secondary			0.271*** (0.038)	0.269*** (0.038)	0.269*** (0.038)	0.269*** (0.067)
Post-secondary			0.511*** (0.037)	0.511*** (0.037)	0.508*** (0.038)	0.535*** (0.065)
Female × birth cohort					-0.003 (0.003)	-0.003 (0.003)
Migrant background × birth cohort					0.005 (0.004)	0.004 (0.004)
Living in East Germany × birth cohort					0.010** (0.003)	0.010** (0.003)
Mother's age at birth × birth cohort					0.001 (0.002)	0.000 (0.002)
Mother's age at birth ² × birth cohort					0.000 (0.000)	0.000 (0.000)
Children in HH < age 15 × birth cohort					0.002 (0.002)	0.002 (0.002)
Age × birth cohort					0.001* (0.000)	0.001* (0.000)
Lower secondary × birth cohort						-0.008 (0.006)
Upper secondary × birth cohort						-0.001 (0.007)
Post-secondary × birth cohort						-0.004 (0.007)
Constant	0.356*** (0.018)	-0.277 (0.217)	0.031 (0.206)	0.013 (0.206)	0.211 (0.397)	0.120 (0.397)
N	13,035	13,035	13,035	13,035	13,035	13,035

Note: * p<0.05, ** p<0.01, *** p<0.001. Parents' employment observed during age 6-10. Based on 3,400 children for whom information on all years available. Clustered standard errors in parentheses. *Source:* SOEP 1984-2019.

Table B3. Changes in the association between father's and mother's employment status and children's academic track attendance, five observations per child

	(1)	(2)	(3)	(4)	(5)	(6)
Father employed	0.184*** (0.023)	0.161*** (0.023)	0.072** (0.022)	0.088* (0.042)	0.083* (0.041)	0.082* (0.042)
Mother employed	0.063*** (0.016)	0.027 (0.016)	0.004 (0.015)	0.043 (0.028)	0.038 (0.028)	0.043 (0.029)
Birth cohort	0.007*** (0.002)	0.002 (0.002)	-0.000 (0.001)	0.003 (0.004)	-0.036 (0.035)	-0.030 (0.035)
Father employed × birth cohort				-0.002 (0.004)	-0.001 (0.004)	-0.001 (0.004)
Mother employed × birth cohort				-0.004 (0.002)	-0.004 (0.003)	-0.004 (0.003)
Female		0.036* (0.018)	0.040* (0.017)	0.041* (0.017)	0.075* (0.032)	0.079* (0.032)
Migrant background		-0.105*** (0.022)	-0.038 (0.022)	-0.038 (0.022)	-0.095* (0.042)	-0.087* (0.044)
Living in East Germany		0.061** (0.023)	-0.003 (0.022)	-0.004 (0.022)	-0.114** (0.039)	-0.113** (0.041)
Mother's age at birth		0.029 (0.015)	0.002 (0.014)	0.002 (0.014)	0.002 (0.028)	0.004 (0.028)
Mother's age at birth ²		-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Children in HH < age 15		-0.003 (0.010)	-0.031*** (0.009)	-0.031*** (0.009)	-0.058** (0.018)	-0.059*** (0.018)
Age		-0.002 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.010* (0.004)	-0.010* (0.004)
Father's education (ref. primary)						
Lower secondary			0.054 (0.029)	0.054 (0.029)	0.048 (0.029)	0.101 (0.054)
Upper secondary			0.174*** (0.035)	0.174*** (0.035)	0.171*** (0.035)	0.133 (0.070)
Post-secondary			0.325*** (0.036)	0.326*** (0.036)	0.322*** (0.036)	0.400*** (0.069)
Mother's education (ref. primary)						
Lower secondary			0.106*** (0.026)	0.105*** (0.026)	0.111*** (0.026)	0.115* (0.049)
Upper secondary			0.228*** (0.032)	0.227*** (0.032)	0.234*** (0.032)	0.238*** (0.066)
Post-secondary			0.343*** (0.034)	0.342*** (0.034)	0.347*** (0.034)	0.305*** (0.067)
Female × birth cohort					-0.003 (0.003)	-0.004 (0.003)
Migrant background × birth cohort					0.006 (0.004)	0.005 (0.004)
Living in East Germany × birth cohort					0.010** (0.003)	0.010** (0.003)
Mother's age at birth × birth cohort					0.001 (0.002)	0.001 (0.002)
Mother's age at birth ² × birth cohort					-0.000 (0.000)	-0.000 (0.000)
Children in HH < age15 × birth cohort					0.002 (0.002)	0.003 (0.002)
Age × birth cohort					0.001* (0.000)	0.001* (0.000)

Table B4 continued.

Father lower secondary × birth cohort						-0.006 (0.005)
Father upper secondary × birth cohort						0.003 (0.006)
Father post-secondary × birth cohort						-0.008 (0.006)
Mother lower secondary × birth cohort						-0.000 (0.005)
Mother upper secondary × birth cohort						-0.000 (0.006)
Mother post-secondary × birth cohort						0.004 (0.006)
Constant	0.200** (0.027)	-0.335 (0.218)	0.099 (0.205)	0.071 (0.210)	0.342 (0.399)	0.273 (0.401)
N	13,035	13,035	13,035	13,035	13,035	13,035

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Parents' employment observed during age 6-10. Based on 3,400 children for whom information on all years available. Clustered standard errors in parentheses. *Source:* SOEP 1984-2019.

Appendix C

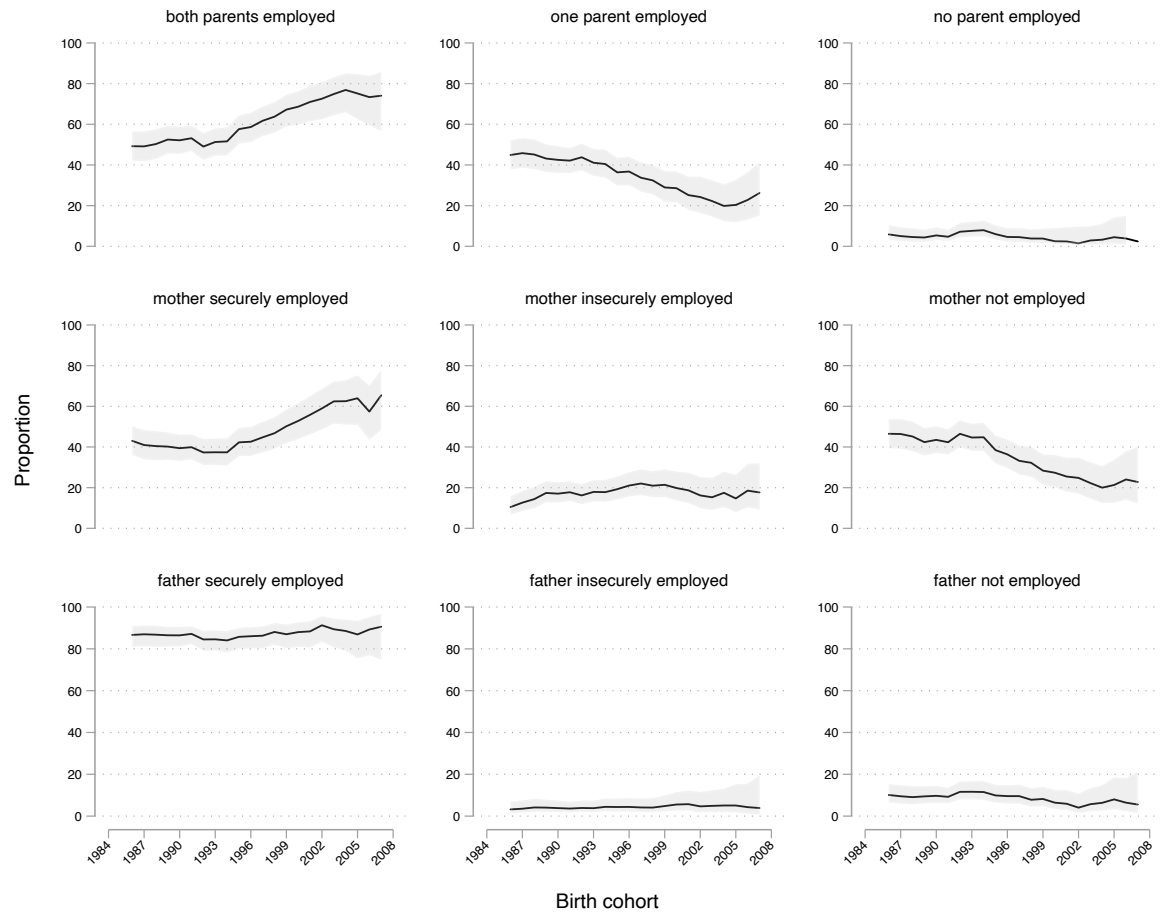


Figure C3. Father's, mother's, and parents' joint employment status by birth cohort, 1985-2008

Note: Three-year moving averages. 95 confidence intervals shown. Based on 3,537 children. Parents' employment observed during age 6-10. Year that comes closest to transition to secondary school chosen. *Source:* SOEP 1984-2019.

Table C4. Association between father's and mother's employment status and children's academic track attendance, one observation per child

	(1)	(2)	(3)	(4)	(5)
Father's employment (ref. securely employed)					
insecurely employed	-0.121** (0.041)	-0.111** (0.041)	-0.067 (0.069)	-0.034 (0.066)	-0.042 (0.060)
not employed	-0.215*** (0.027)	-0.199*** (0.027)	-0.231*** (0.048)	-0.221*** (0.047)	-0.120** (0.044)
Mother's employment (ref. securely employed)					
insecurely employed		-0.071** (0.024)	-0.072** (0.025)	-0.059* (0.025)	-0.025 (0.024)
not employed		-0.104*** (0.018)	-0.105*** (0.020)	-0.078*** (0.021)	-0.041* (0.020)
Father insecurely employed × Mother insecurely employed			-0.062 (0.123)	-0.059 (0.113)	-0.042 (0.109)
Father insecurely employed × Mother not employed			-0.072 (0.090)	-0.066 (0.088)	-0.042 (0.078)
Father not employed × Mother insecurely employed			0.043 (0.085)	0.069 (0.084)	0.028 (0.083)
Father not employed × Mother not employed			0.049 (0.060)	0.059 (0.060)	0.051 (0.055)
Birth cohort				0.001 (0.001)	-0.000 (0.001)
Female				0.058*** (0.016)	0.056*** (0.015)
Migrant background				-0.087*** (0.020)	-0.026 (0.020)
Living in East Germany				0.041 (0.021)	-0.005 (0.021)
Mother's age at birth				0.023 (0.014)	-0.003 (0.014)
Mother's age at birth ²				-0.000 (0.000)	0.000 (0.000)
Children in HH < age 15				0.028** (0.010)	-0.004 (0.009)
Father's education (ref. primary)					
Lower secondary					0.054 (0.028)
Upper secondary					0.167*** (0.034)
Post-secondary					0.329*** (0.033)
Mother's education (ref. primary)					
Lower secondary					0.104*** (0.024)
Upper secondary					0.230*** (0.030)
Post-secondary					0.311*** (0.032)
Constant	0.498*** (0.009)	0.548*** (0.013)	0.548*** (0.013)	-0.114 (0.205)	0.181 (0.197)
N	3,537	3,537	3,537	3,537	3,537

Note: * p<0.05, ** p<0.01, *** p<0.001. Parents' employment observed during age 6-10. Year that comes closest to transition to secondary school chosen. Robust standard errors in parentheses. *Source*: SOEP 1984-2019.

Table C5. Changes in the association between parents' joint employment status and children's academic track attendance, one observation per child

	(1)	(2)	(3)	(4)	(5)	(6)
Both parents employed	0.112*** (0.017)	0.096*** (0.018)	0.061*** (0.016)	0.093** (0.029)	0.097** (0.030)	0.098*** (0.030)
Birth cohort	0.006*** (0.001)	0.001 (0.001)	0.000 (0.001)	0.002 (0.002)	-0.064* (0.033)	-0.054 (0.033)
Both parents employed × birth cohort				-0.004 (0.003)	-0.005 (0.003)	-0.005 (0.003)
Female		0.058*** (0.016)	0.056*** (0.015)	0.056*** (0.015)	0.100*** (0.028)	0.101*** (0.028)
Migrant background		-0.094*** (0.020)	-0.050** (0.019)	-0.050* (0.020)	-0.064 (0.035)	-0.060 (0.035)
Living in East Germany		0.036 (0.021)	-0.004 (0.020)	-0.004 (0.020)	-0.079* (0.034)	-0.079* (0.034)
Mother's age at birth		0.028* (0.014)	0.004 (0.013)	0.004 (0.013)	-0.021 (0.024)	-0.019 (0.024)
Mother's age at birth ²		-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Children in HH < age 15		0.029** (0.009)	0.007 (0.009)	0.007 (0.009)	-0.006 (0.015)	-0.004 (0.016)
Parental education (ref. primary)						
Lower secondary			0.083* (0.033)	0.082* (0.033)	0.084* (0.033)	0.143** (0.051)
Upper secondary			0.257*** (0.036)	0.256*** (0.036)	0.259*** (0.036)	0.277*** (0.059)
Post-secondary			0.485*** (0.035)	0.484*** (0.035)	0.485*** (0.035)	0.508*** (0.056)
Female × birth cohort					-0.005 (0.003)	-0.005* (0.003)
Migrant background × birth cohort					0.001 (0.003)	0.001 (0.004)
Living in East Germany × birth cohort					0.008** (0.003)	0.008** (0.003)
Mother's age at birth × birth cohort					0.004 (0.002)	0.004 (0.002)
Mother's age at birth ² × birth cohort					-0.000 (0.000)	-0.000 (0.000)
Children in HH < age 15 × birth cohort					0.001 (0.001)	0.001 (0.001)
Lower secondary × birth cohort						-0.008 (0.006)
Upper secondary × birth cohort						-0.004 (0.007)
Post-secondary × birth cohort						-0.004 (0.007)
Constant	0.357*** (0.017)	-0.306 (0.201)	0.007 (0.192)	-0.008 (0.193)	0.441 (0.344)	0.362 (0.346)
N	3,537	3,537	3,537	3,537	3,537	3,537

Note: * p<0.05, ** p<0.01, *** p<0.001. Parents' employment observed during age 6-10. Year that comes closest to transition to secondary school chosen. Robust standard errors in parentheses. *Source*: SOEP 1984-2019.

Table C6. Changes in the association between father's and mother's employment status and children's academic track attendance, one observation per child

	(1)	(2)	(3)	(4)	(5)	(6)
Father employed	0.190*** (0.027)	0.177*** (0.027)	0.086*** (0.025)	0.072 (0.049)	0.076 (0.048)	0.077 (0.048)
Mother employed	0.075*** (0.017)	0.060*** (0.018)	0.031 (0.017)	0.059* (0.029)	0.064* (0.030)	0.066* (0.030)
Birth cohort	0.006*** (0.001)	0.001 (0.001)	-0.000 (0.001)	0.000 (0.005)	-0.069* (0.033)	-0.065 (0.034)
Father employed × birth cohort				0.002 (0.005)	0.001 (0.005)	0.001 (0.005)
Mother employed × birth cohort				-0.003 (0.003)	-0.004 (0.003)	-0.004 (0.003)
Female		0.059*** (0.016)	0.056*** (0.015)	0.056*** (0.015)	0.105*** (0.028)	0.106*** (0.028)
Migrant background		-0.089*** (0.020)	-0.028 (0.020)	-0.029 (0.020)	-0.046 (0.035)	-0.035 (0.037)
Living in East Germany		0.047* (0.021)	-0.003 (0.021)	-0.003 (0.021)	-0.076* (0.034)	-0.072* (0.035)
Mother's age at birth		0.023 (0.014)	-0.003 (0.014)	-0.003 (0.014)	-0.031 (0.024)	-0.031 (0.025)
Mother's age at birth ²		-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001 (0.000)	0.001 (0.000)
Children in HH < age 15		0.026** (0.010)	-0.004 (0.009)	-0.004 (0.009)	-0.016 (0.016)	-0.016 (0.016)
Father's education (ref. primary)						
Lower secondary			0.054 (0.028)	0.053 (0.028)	0.052 (0.028)	0.086 (0.047)
Upper secondary			0.168*** (0.034)	0.168*** (0.034)	0.167*** (0.034)	0.135* (0.061)
Post-secondary			0.330*** (0.033)	0.329*** (0.033)	0.327*** (0.033)	0.382*** (0.059)
Mother's education (ref. primary)			0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Lower secondary			0.105*** (0.024)	0.104*** (0.024)	0.108*** (0.024)	0.135** (0.042)
Upper secondary			0.232*** (0.030)	0.231*** (0.030)	0.234*** (0.030)	0.277*** (0.056)
Post-secondary			0.313*** (0.032)	0.312*** (0.032)	0.314*** (0.032)	0.289*** (0.057)
Female × birth cohort					-0.006* (0.003)	-0.006* (0.003)
Migrant background × birth cohort					0.002 (0.003)	0.000 (0.004)
Living in East Germany × birth cohort					0.008** (0.003)	0.008* (0.003)
Mother's age at birth × birth cohort					0.004 (0.002)	0.004 (0.002)
Mother's age at birth ² × birth cohort					-0.000 (0.000)	-0.000 (0.000)
Children in HH < age15 × birth cohort					0.001 (0.001)	0.001 (0.002)

Table C4 continued.

Father lower secondary						-0.004
× birth cohort						(0.005)
Father upper secondary						0.002
× birth cohort						(0.006)
Father post-secondary						-0.007
× birth cohort						(0.006)
Mother lower secondary						-0.004
× birth cohort						(0.005)
Mother upper secondary						-0.005
× birth cohort						(0.006)
Mother post-secondary						0.002
× birth cohort						(0.006)
Constant	0.201***	-0.378	0.050	0.050	0.533	0.495
	(0.028)	(0.202)	(0.195)	(0.199)	(0.348)	(0.352)
N	3,537	3,537	3,537	3,537	3,537	3,537

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Parents' employment observed during age 6-10. Year that comes closest to transition to secondary school chosen. Robust standard errors in parentheses. *Source:* SOEP 1984-2019.

Appendix D

Table D1. Changes in the association between parents' joint employment status and children's academic track attendance, cohort dummies

	(1)	(2)	(3)	(4)	(5)	(6)
Both parents employed	0.094*** (0.014)	0.062*** (0.014)	0.034* (0.013)	-0.028 (0.055)	0.019 (0.063)	-0.000 (0.064)
Birth cohort (ref. 1985)						
1986	-0.102 (0.053)	-0.101 (0.053)	-0.063 (0.049)	-0.083 (0.061)	-1.799 (1.354)	-1.932 (1.351)
1987	-0.042 (0.053)	-0.042 (0.053)	-0.029 (0.050)	-0.086 (0.061)	-2.822* (1.349)	-2.913* (1.325)
1988	-0.063 (0.052)	-0.075 (0.053)	-0.045 (0.048)	-0.090 (0.060)	-1.679 (1.237)	-1.842 (1.232)
1989	-0.026 (0.053)	-0.041 (0.054)	-0.019 (0.050)	-0.064 (0.063)	-2.195 (1.309)	-2.328 (1.289)
1990	0.008 (0.051)	-0.002 (0.051)	0.019 (0.047)	-0.010 (0.061)	-1.364 (1.352)	-1.523 (1.323)
1991	-0.056 (0.052)	-0.070 (0.051)	-0.042 (0.047)	-0.117* (0.056)	-2.937* (1.285)	-2.890* (1.269)
1992	-0.026 (0.050)	-0.047 (0.051)	-0.040 (0.047)	-0.047 (0.060)	-2.053 (1.298)	-2.111 (1.293)
1993	-0.017 (0.052)	-0.055 (0.052)	-0.043 (0.048)	-0.107 (0.058)	-2.708* (1.241)	-2.822* (1.226)
1994	-0.012 (0.051)	-0.049 (0.051)	-0.041 (0.046)	-0.061 (0.056)	-1.104 (1.240)	-1.079 (1.193)
1995	0.030 (0.052)	-0.019 (0.053)	-0.030 (0.048)	-0.015 (0.060)	-1.181 (1.290)	-1.298 (1.268)
1996	0.047 (0.053)	-0.010 (0.053)	-0.018 (0.049)	-0.079 (0.061)	-2.987* (1.334)	-2.961* (1.319)
1997	0.056 (0.053)	0.004 (0.053)	-0.007 (0.049)	-0.046 (0.062)	-3.088* (1.428)	-2.962* (1.428)
1998	-0.016 (0.055)	-0.079 (0.055)	-0.058 (0.051)	-0.076 (0.065)	-2.438 (1.365)	-2.471 (1.339)
1999	0.058 (0.056)	-0.001 (0.056)	-0.022 (0.051)	-0.051 (0.067)	-4.112** (1.352)	-4.107** (1.340)
2000	-0.004 (0.058)	-0.062 (0.057)	-0.059 (0.054)	-0.035 (0.074)	-1.439 (1.225)	-1.780 (1.208)
2001	0.053 (0.062)	-0.008 (0.062)	-0.024 (0.057)	0.085 (0.080)	-1.348 (1.428)	-1.401 (1.431)
2002	0.106 (0.061)	0.025 (0.061)	0.025 (0.056)	0.026 (0.075)	-2.469 (1.647)	-2.794 (1.630)
2003	0.016 (0.063)	-0.072 (0.063)	-0.070 (0.057)	-0.074 (0.086)	-4.446** (1.609)	-4.596** (1.600)
2004	0.098 (0.067)	0.008 (0.067)	0.027 (0.062)	-0.031 (0.088)	-1.958 (1.545)	-1.845 (1.516)
2005	0.040 (0.070)	-0.061 (0.068)	-0.082 (0.064)	-0.069 (0.097)	0.195 (1.601)	0.155 (1.670)
2006	0.076 (0.082)	-0.006 (0.084)	0.027 (0.076)	0.041 (0.100)	-2.257 (2.022)	-0.146 (3.162)
2007	0.030 (0.077)	-0.043 (0.077)	-0.058 (0.070)	-0.076 (0.093)	-5.136** (1.895)	-5.650** (1.912)
2008	0.160 (0.097)	0.061 (0.095)	0.088 (0.090)	0.032 (0.152)	-2.726 (2.178)	-3.354 (2.816)

Table D1 continued.

Both parents employed × 1986				0.050 (0.082)	0.021 (0.091)	0.045 (0.092)
Both parents employed × 1987				0.131 (0.080)	0.099 (0.087)	0.129 (0.088)
Both parents employed × 1988				0.104 (0.078)	0.062 (0.084)	0.073 (0.085)
Both parents employed × 1989				0.101 (0.078)	0.017 (0.084)	0.044 (0.085)
Both parents employed × 1990				0.068 (0.076)	0.010 (0.083)	0.034 (0.084)
Both parents employed × 1991				0.176* (0.075)	0.094 (0.082)	0.112 (0.083)
Both parents employed × 1992				0.023 (0.075)	-0.017 (0.083)	-0.000 (0.083)
Both parents employed × 1993				0.156* (0.078)	0.103 (0.084)	0.128 (0.085)
Both parents employed × 1994				0.051 (0.073)	0.009 (0.079)	0.019 (0.079)
Both parents employed × 1995				-0.016 (0.077)	-0.056 (0.083)	-0.030 (0.083)
Both parents employed × 1996				0.119 (0.077)	0.062 (0.084)	0.082 (0.084)
Both parents employed × 1997				0.088 (0.080)	0.046 (0.087)	0.074 (0.087)
Both parents employed × 1998				0.046 (0.082)	-0.015 (0.091)	0.006 (0.091)
Both parents employed × 1999				0.066 (0.084)	0.007 (0.088)	0.018 (0.088)
Both parents employed × 2000				-0.017 (0.088)	-0.049 (0.094)	-0.044 (0.096)
Both parents employed × 2001				-0.153 (0.094)	-0.188 (0.099)	-0.192* (0.098)
Both parents employed × 2002				0.021 (0.092)	-0.015 (0.103)	-0.001 (0.102)
Both parents employed × 2003				0.030 (0.101)	-0.050 (0.116)	-0.048 (0.117)
Both parents employed × 2004				0.104 (0.104)	0.074 (0.112)	0.071 (0.111)
Both parents employed × 2005				0.009 (0.111)	0.121 (0.110)	0.136 (0.114)
Both parents employed × 2006				0.001 (0.124)	-0.109 (0.125)	-0.073 (0.119)
Both parents employed × 2007				0.049 (0.116)	0.031 (0.117)	0.066 (0.106)
Both parents employed × 2008				0.106 (0.154)	-0.069 (0.159)	-0.080 (0.161)
Controls for child and family characteristics	No	Yes	Yes	Yes	Yes	Yes
Control for parental education	No	No	Yes	Yes	Yes	Yes
Parental employment status × cohort dummies	No	No	No	Yes	Yes	Yes
Controls for child and family characteristics × cohort dummies	No	No	No	No	Yes	Yes

Table D1 continued.

Control for parental education × cohort dummies	No	No	No	No	No	Yes
Constant	0.418*** (0.040)	-0.166 (0.201)	0.099 (0.192)	0.131 (0.194)	2.110* (1.025)	2.147* (1.003)
N	14,786	14,786	14,786	14,786	14,786	14,786

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Based on 4,246 children born between 1985-2008. Parents' employment observed during age 6-10. Clustered standard errors in parentheses. *Source:* SOEP 1984-2019.

Table D2. Changes in the association between parents' joint employment status and children's academic track attendance, log transformed cohort trend

	(1)	(2)	(3)	(4)	(5)	(6)
Both parents employed	0.097*** (0.014)	0.063*** (0.014)	0.035* (0.013)	0.092* (0.039)	0.102* (0.041)	0.110** (0.041)
Log birth cohort	0.051*** (0.011)	0.014 (0.012)	0.001 (0.011)	0.014 (0.014)	-0.308 (0.257)	-0.250 (0.258)
Both parents employed × log birth cohort				-0.026 (0.018)	-0.031 (0.018)	-0.035 (0.019)
Female		0.045** (0.016)	0.047** (0.015)	0.048** (0.015)	0.124** (0.047)	0.126** (0.047)
Migrant background		-0.101*** (0.020)	-0.053** (0.019)	-0.053** (0.019)	-0.099 (0.058)	-0.096 (0.060)
Living in East Germany		0.051* (0.021)	0.010 (0.020)	0.010 (0.020)	-0.177** (0.055)	-0.173** (0.055)
Mother's age at birth		0.029* (0.014)	0.006 (0.013)	0.006 (0.013)	-0.007 (0.041)	-0.004 (0.041)
Mother's age at birth ²		-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.001)	-0.000 (0.001)
Children in HH < age 15		0.002 (0.009)	-0.017* (0.008)	-0.017* (0.008)	-0.048* (0.024)	-0.044 (0.024)
Age		-0.000 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.018* (0.009)	-0.018* (0.009)
Parental education (ref. primary)						
Lower secondary			0.096** (0.031)	0.094** (0.031)	0.095** (0.032)	0.192* (0.082)
Upper secondary			0.266*** (0.035)	0.265*** (0.035)	0.268*** (0.035)	0.278** (0.097)
Post-secondary			0.499*** (0.034)	0.497*** (0.034)	0.499*** (0.034)	0.500*** (0.092)
Female					-0.034 (0.021)	-0.036 (0.021)
× log birth cohort						
Migrant background					0.020 (0.026)	0.018 (0.027)
× log birth cohort						
Living in East Germany					0.085*** (0.024)	0.083*** (0.025)
× log birth cohort						
Mother's age at birth					0.010 (0.018)	0.009 (0.018)
× log birth cohort						
Mother's age at birth ²					-0.000 (0.000)	-0.000 (0.000)
× log birth cohort						
Children in HH < age 15					0.013 (0.011)	0.011 (0.011)
× log birth cohort						
Age					0.007 (0.004)	0.007 (0.004)
× log birth cohort						
Lower secondary						-0.047 (0.041)
× log birth cohort						
Upper secondary						-0.009 (0.047)
× log birth cohort						
Post-secondary						-0.004 (0.045)
× log birth cohort						
Constant	0.310*** (0.026)	-0.248 (0.198)	0.064 (0.188)	0.038 (0.189)	0.624 (0.581)	0.506 (0.583)
N	14,786	14,786	14,786	14,786	14,786	14,786

Note: * p<0.05, ** p<0.01, *** p<0.001. Based on 4,246 children born between 1985-2008. Parents' employment observed during age 6-10. Clustered standard errors in parentheses. Source: SOEP 1984-2019.

Table D3. Changes in the association between father's and mother's employment status and children's academic track attendance, log transformed cohort trend

	(1)	(2)	(3)	(4)	(5)	(6)
Father employed	0.190*** (0.021)	0.170*** (0.021)	0.080*** (0.020)	0.036 (0.058)	0.036 (0.057)	0.038 (0.058)
Mother employed	0.072*** (0.014)	0.038** (0.015)	0.014 (0.014)	0.064 (0.040)	0.074 (0.042)	0.083* (0.042)
Log birth cohort	0.049*** (0.011)	0.014 (0.012)	-0.005 (0.011)	-0.010 (0.027)	-0.371 (0.256)	-0.333 (0.259)
Father employed × log birth cohort				0.021 (0.027)	0.021 (0.027)	0.020 (0.027)
Mother employed × log birth cohort				-0.023 (0.018)	-0.028 (0.019)	-0.032 (0.019)
Female		0.045** (0.016)	0.049** (0.015)	0.049** (0.015)	0.134** (0.046)	0.138** (0.046)
Migrant background		-0.093*** (0.020)	-0.029 (0.020)	-0.030 (0.020)	-0.093 (0.059)	-0.073 (0.063)
Living in East Germany		0.064** (0.021)	0.010 (0.021)	0.010 (0.021)	-0.186*** (0.055)	-0.169** (0.056)
Mother's age at birth		0.024 (0.014)	-0.001 (0.013)	-0.001 (0.013)	-0.021 (0.041)	-0.019 (0.041)
Mother's age at birth ²		-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.001)	0.000 (0.001)
Children in HH < age 15		-0.000 (0.009)	-0.026** (0.008)	-0.026** (0.008)	-0.060* (0.025)	-0.061* (0.025)
Age		0.000 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.020* (0.009)	-0.020* (0.009)
Father's education (ref. primary)						
Lower secondary			0.055* (0.027)	0.054* (0.027)	0.053* (0.027)	0.112 (0.078)
Upper secondary			0.180*** (0.033)	0.180*** (0.033)	0.179*** (0.033)	0.072 (0.102)
Post-secondary			0.331*** (0.033)	0.330*** (0.032)	0.329*** (0.033)	0.454*** (0.097)
Mother's education (ref. primary)						
Lower secondary			0.105*** (0.024)	0.105*** (0.024)	0.109*** (0.024)	0.145* (0.069)
Upper secondary			0.231*** (0.030)	0.231*** (0.030)	0.235*** (0.030)	0.323*** (0.096)
Post-secondary			0.323*** (0.031)	0.323*** (0.031)	0.326*** (0.031)	0.215* (0.091)
Female × log birth cohort					-0.038 (0.020)	-0.040 (0.020)
Migrant background × log birth cohort					0.028 (0.026)	0.019 (0.028)
Living in East Germany × log birth cohort					0.088*** (0.024)	0.082** (0.025)
Mother's age at birth × log birth cohort					0.013 (0.018)	0.012 (0.018)
Mother's age at birth ² × log birth cohort					-0.000 (0.000)	-0.000 (0.000)
Children in HH < age15 × log birth cohort					0.014 (0.011)	0.015 (0.011)
Age × log birth cohort					0.008* (0.004)	0.008* (0.004)

Table D3 continued.

Father lower secondary						-0.028
× log birth cohort						(0.037)
Father upper secondary						0.044
× log birth cohort						(0.046)
Father post-secondary						-0.057
× log birth cohort						(0.045)
Mother lower secondary						-0.018
× log birth cohort						(0.032)
Mother upper secondary						-0.038
× log birth cohort						(0.043)
Mother post-secondary						0.048
× log birth cohort						(0.041)
Constant	0.152***	-0.329	0.121	0.133	0.827	0.731
	(0.031)	(0.200)	(0.188)	(0.197)	(0.582)	(0.588)
N	14,786	14,786	14,786	14,786	14,786	14,786

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Based on 4,246 children born between 1985-2008. Parents' employment observed during age 6-10. Clustered standard errors in parentheses. *Source:* SOEP 1984-2019.

Conclusion

Inquiry into the intergenerational transmission of inequality is a highly productive field within the social sciences and builds on a long-standing tradition. The doctoral present thesis contributes to this research agenda by focusing on over-time trends in the relationship between parental background and individuals' outcomes and opportunities. Its main objective has been to examine how changes in the intergenerational transmission of inequality unfold against the backdrop of significant changes in the realms of employment, occupation, and labour. Four pieces of quantitative empirical research were conducted to achieve this goal. The first two papers look at trends in intergenerational social class mobility since the 1950s, comparing Germany and the UK. The third and fourth paper investigate whether levels of educational inequality in Germany have changed as a result of labour market institutional reform during the mid-2000s or growing insecure employment from the mid-1980s onwards.

Main findings and contribution

Significant change in the social mobility experience due to class distributional shifts

The distinction between absolute and relative rates is key to the study of intergenerational social mobility, particularly when conducted from a historical point of view. Paper 1 and Paper 2 show that the structure of employment relations has changed in significant ways over time, leading to important modifications in the distribution of origin and destination classes. These changes require careful consideration to achieve an accurate depiction and understanding of trends in intergenerational social mobility.

In Germany, changes in the distribution of origin classes were relatively modest. The proportion of individuals coming from salariat, intermediate, and working class backgrounds therefore remained comparable across cohorts, who entered the labour market from the 1950s onwards. Changes in the distribution of destination classes were more pronounced. As the salariat expanded and the working class shrank, an increasing proportion of individuals entered the labour market in higher class positions. As a result, Paper 1 finds gradual increases in absolute upward mobility and a continuous decline in absolute downward mobility for labour market entry cohorts over the entire second half of the twentieth century. This trend seems likely to continue during the twenty-first century.

In the UK, by contrast, it was the distribution of origin classes that experienced extensive upgrading. A growing proportion of individuals now has parents who occupy salariat positions, while the proportion of individuals coming from working class backgrounds diminished. Trends in the distribution of class destinations yet did not keep pace. Over time, the proportion of salariat destinations at labour market entry increased relatively little compared to the rise in the proportion of salariat origins. Consequently, I observe an ongoing increase in absolute downward mobility and decrease in absolute upward mobility.

Trends in the upward and downward component of absolute mobility were therefore crucially driven by class structural change. These class structural shifts not only affected the directly observable and tangible experience of *intergenerational* social class mobility. In subsequent analyses, Paper 2 finds that distributional changes in class origins also altered prevailing levels of *intragenerational* mobility, as patterns of career mobility are found to significantly differ between individuals from different class backgrounds.

In both Germany and the UK, those from salariat origins are more likely to experience upward rather than downward mobility over the course of their careers as compared to individuals from working class origins. These inequalities in the relative importance of upward mobility stayed

constant during the period I examine. However, given the expansion of salariat origins in the UK, the proportion of individuals experiencing upward rather than downward career mobility increased over time. Importantly, these are the same individuals who have become increasingly more likely to enter the labour market in a lower class position, thus experiencing intergenerational downward mobility at the beginning of their working life. Through upward career mobility, however, they are likely to occupy a similar class like their parents at a later stage in their careers. This group of people has been referred to as the ‘counter mobile’, i.e. individuals who experience intergenerational mobility at labour market entry and intergenerational immobility at occupational maturity.

In Germany, the prevalence of counter mobility has also grown larger. Counter mobility however rose for a different reason as changes in the overall distribution of origin classes were not as marked as in the UK. Observed counter mobility is therefore of a distinct kind and was mainly driven by those from working class origins, who increasingly entered the labour market in a higher class. Due to the expansion of salariat destinations, the chance to start one’s career in a more advantageous position generally rose. The proportion of individuals from working class backgrounds thus increased among those who achieved an intermediate or salariat position at labour market entry. However, as those from working class backgrounds are particularly likely to experience downward career mobility, many of them eventually revert to their origin class over the course of their careers despite initial upward intergenerational mobility.

Over-time trends in the experience of inter- as well as intragenerational social class mobility are thus found to exhibit significant country differences. Moreover, both have been pivotally driven by class structural change. This second finding critically adds to the empirical knowledge and theoretical understanding of social stratification processes. As I am aware, the importance of class distributional change has only been discussed with respect to trends in *intergenerational* social mobility. Its apparent role in shaping trends in *intragenerational* social mobility has not been emphasised so far. The two are however intricately related, as Paper 1 and Paper 2 reveal. Interestingly, I do not observe differences between men and women. In Germany and the UK,

observed changes in class origin and destination distributions as well as patterns of career mobility are very similar for the two genders.

Persistent stability in the strength of the origin-destination association

Despite opposing changes in absolute intergenerational social class mobility in the two countries under study, trends in relative intergenerational social mobility paint a picture of striking similarity. In Germany and the UK, social fluidity, i.e. the association between class origin and class destination that is net of class distributional differences between the parent and child generation, is mostly found to be constant throughout the second half of the twentieth century. Only when measured at labour market entry do I observe significant increases in social fluidity for men and women, who entered the labour market during the 1950s and 1960s. This weakening of the origin-destination association does however not sustain for later labour market entry cohorts. When measured 15 years after labour market entry, changes in social fluidity are reduced to trendless fluctuation for the entire observation period.

Population-level trends in the strength of origin-destination association therefore do not appear to exhibit long-lasting or systematic temporal variation that could straightforwardly be linked to larger societal developments. While this observation has been made before and is in line with pioneering work by Featherman and Hauser (1978) or Erikson and Goldthorpe (1992), the present analyses contribute to the existing literature in several important ways.

First, a lack of sustained over-time change is observed even when individuals' class destination is measured at labour market entry. As argued in Paper 1, using their first class position guarantees that individuals are always observed at the same career stage. Estimated trends in intergenerational social class mobility are therefore net of intragenerational mobility. The latter may lead to bias if cohorts that are compared against one another are observed at different career stages. Moreover, taking individuals' first class position allows to precisely pin down whether economic, labour

market, or institutional conditions encountered at labour market entry affect intergenerational mobility prospects. As argued by prior work, labour market entry presents a vulnerable stage in individuals' careers. Early disadvantages due to e.g. adverse labour market circumstances can have strong and enduring 'scarring' effects on future employment trajectories that could differ for individuals from different backgrounds (Barone and Schizzerotto 2011; Bukodi and Goldthorpe 2011). If changes in such conditions matter for trends in intergenerational social mobility, this association is most likely to appear and become visible when respondents are observed right upon embarking on their careers. It hence provides the most sensitive test.

However, given the lack of consistent change in social fluidity measured at labour market entry, it seems unlikely for a systematic association between specific conditions at labour market entry and intergenerational social class mobility to exist. More fined-grained comparisons between adjacent labour market entry cohorts also do not provide evidence that trends in social fluidity follow developments of the business cycle or shorter-term fluctuations of the labour market.

Second, the analyses in Paper 1 show that the design of the cross-cohort comparison matters in significant ways for conclusions about over-time change. By adopting what Erzsébet Bukodi and I call a 'moving windows approach', it was possible to highlight and identify the precise patterns of change and to avoid what otherwise would have been a naïve and too optimistic interpretation of the data. The successive exclusion of individual cohorts allowed us to understand that social fluidity measured at labour market entry did not increase over the entire observation period but was limited to only earlier cohorts.

Third, by exploring in greater depth why trends in social fluidity measured at labour market entry and occupational maturity diverge, Paper 2 discovered that stability in social fluidity at more advanced career stages is driven by mounting levels of counter mobility in both Germany and the UK. In other words, changes in patterns of intragenerational social mobility neutralised favourable developments towards greater equality in class attainment observed at labour market entry. Taking

a life-course perspective thus helped to explain persistence in the origin-destination association over time. It thereby advances understanding of the underlying mechanisms of over-time change and feeds into the debate about the role of individual-level behaviour vis-à-vis institutions in driving temporal variation in the intergenerational transmission of inequality.

Individual-level behaviour versus institutions as drivers of social fluidity

As discussed at the end of Paper 1, striking country resemblance in trends of social fluidity hints at the possibility that processes underlying the intergenerational transmission of inequality are mainly rooted in individual-level behaviour rather than contextual or institutional factors. Our coherent finding of halting increases is in line with Bukodi and Goldthorpe's (2018) idea that a structural limit could exist in the degree to which opportunities can be equalised in societies with a capitalist market economy, nuclear family system, and liberal-democratic policy. As proposed, more advantaged families are not only constantly seeking to maintain their children's greater chances of success relative to those of children from less advantaged families but also have the resources to interfere with policies aimed at fostering equality of opportunity to prevent their children from experiencing intergenerational downward mobility. This intervention, so they argue, becomes particularly salient at times when there is less 'room at the top', making it more difficult for children from better-off backgrounds to achieve advantaged positions in adulthood.

The results of Paper 2 on origin-specific differences in the relative importance of upward career mobility lend support to this argument. In line with prior work that identified career mobility as an important mechanism through which individuals from more advantaged backgrounds can compensate and correct for earlier failures, those from more salariat origins are more likely than those from intermediate and working class origins to be upwardly mobile during their careers. Moreover, it was shown that rising social fluidity at labour market entry in the UK was counteracted by counter mobility among those from more advantaged backgrounds who increasingly experienced intergenerational downward mobility due to declining opportunities to enter the

labour market in salariat positions. Taken together, these findings are consistent with the notion that maximum levels of social fluidity are defined by those at the top of the class hierarchy.

Unfortunately, the results generated in Paper 2 for Germany remain somewhat silent on the issue. There, increases in social fluidity were offset by counter mobility among those from less advantaged backgrounds who increasingly experienced intergenerational upward mobility at labour market entry but were also likely to move downwards in their subsequent career. More advantaged families might have therefore seen no need to interfere, because higher class attainment among those from less advantaged backgrounds did not pose a lasting challenge to their own children's outcomes. Evidence neither in favour nor against the existence of a limit in social fluidity through the actions of more advantaged families is therefore provided by the German case.

Instead, investigations solely focussing on Germany highlight a role for institutions in the intergenerational transmission of inequality. Although trends in social fluidity remained stable on the aggregate, Paper 3 finds that policies can matter by affecting outcomes and opportunities of specific subgroups of the population. Using the 2005 Hartz IV reform as a critical example, Paper 3 shows that welfare state retrenchment reinforced the intergenerational transmission of disadvantage for those already at the bottom of society. How far children of parents who are exposed to substantial labour market risks and unemployment can expect decent life outcomes in the future thus seems to be in part a function of direct policy choice.

Likewise, deregulation leading to the growth of economically insecure forms of employment and rising labour market segmentation have significantly shaped parental work arrangements over time. While the adverse consequences of parental insecure work documented in Paper 4 have so far not translated into an overall weakening of the positive relationship between parental employment and children's academic achievements, the findings suggest that children of insecurely employed parents are faced with a significant risk of doing worse compared to children of securely employed parents. Effects of single reforms or policies within one specific domain might never be so large

to move overall levels of social fluidity. Nonetheless, they appear to have substantial and severe implications for affected families that are carried forward to the next generation.

Policy implications

Promoting social fluidity and reducing the degree to which inequality is intergenerationally transmitted can be a desirable policy goal for reasons of social justice and welfare. A weaker origin-destination association indicates that the allocation of positions in the social hierarchy is not determined by parental background, reflecting meritocratic principles and greater equality of opportunity. It further ensures that the talent of those unfortunate to be born into disadvantaged families is not “wasted” for the efficient production of economic wellbeing. The empirical results generated by this doctoral thesis can guide policymakers in designing effective tools for the pursuit of this goal.

The first implication for policy is that increases in upward intergenerational mobility do not have to go hand in hand with a weakening in the origin-destination association. In public and political discourse, the debate is often centred around improving opportunities for those from humble backgrounds to be upwardly mobile. It thereby neglects the fact that for social fluidity to increase, those from privileged origins also need to move downward unless more advantaged positions are generated to create more space at the top. In a fixed class structure, relative mobility is a zero-sum game.

Secondly, it seems insufficient to equalise opportunities only at the start of individuals’ careers. To make sure that those coming from different social origins have the prospect of doing equally well, policy needs to pay attention to processes that unfold beyond the point of labour market entry. These processes may continue to last for a significant amount of time until individuals reach stable and mature career stages. The importance of intragenerational mobility for overall class attainment yet shows that achieving intergenerational social mobility may in fact be a life-long endeavour.

Furthermore, the observation that social fluidity has mostly remained stable in Germany and the UK since the 1950s – be it because families at the top have the means and motivation to act against equality-enhancing state interventions or not – suggests that improving social fluidity may only result from concerted policy effort. Past research struggled to robustly link trends in educational inequality and intergenerational social mobility to relevant changes in educational systems. While certain features of the educational system may be conducive whereas others detrimental for social fluidity, they may not be the only institutional aspects on which transmission of disadvantage from parents to their children depends. Particularly, institutions that can shelter families from economic insecurity or soften the adverse financial consequences of events like unemployment appear to protect children who live in such families from experiencing unfavourable outcomes themselves. A strong welfare state that not only compensates for inequalities between children but also between their parents thus appears as an essential prerequisite for advancing equality of opportunity. A labour market that provides decent and economically secure jobs is further needed to minimise the degree to which parents become reliant on state support in the first place.

Avenues for future research

This doctoral thesis is far from providing exhaustive and conclusive evidence on the patterns and drivers of trends in the intergenerational transmission of inequality. Answering questions on some aspects, it elicits further questions regarding others.

In the first instance, it seems useful to extend the analysis on the relationship between inter- and intragenerational social mobility, and its implications for changes in the intergenerational transmission of inequality, to include other countries and time periods. The results on Germany and the UK for cohorts entering the labour market during the second half of the twentieth century suggest that the life-course perspective may be a fruitful approach for generating better understanding of temporal variation – or the lack of it – in social fluidity. It would be important to

find out whether the observed patterns also hold in other contexts and generalise into an empirical regularity. Given limits in cross-country data availability, exploiting variation at the subnational level might be a promising direction for future work (cf. Betthäuser, Kaiser, and Trinh 2021). The considerations on the theoretical relationship between career mobility and social fluidity spelled out in Paper 2 may inform such research plan.

The literature may also benefit from further inquiry into the mechanisms of career and especially counter mobility, and how these differ between individuals from different backgrounds. Few studies currently deal with how exactly those from advantaged backgrounds achieve upward mobility after an unfavourable start into their careers. Bukodi (2017) highlights life-long learning as a potential way. Other strategies like the intergenerational transmission of employers or the bequest of family business still await closer examination in the context of counter mobility. According to my reading of the literature, counter mobility among those from disadvantaged backgrounds has received by contrast no explicit scholarly attention. It therefore appears as a neglected and underexplored social phenomenon, which warrants theoretical as well as empirical inspection.

Regarding research into the institutional determinants of intergenerational social mobility, existing efforts have mainly focused on identifying the impact of single policies or policy fields, such as those related to education and educational reform. Paper 3 and Paper 4 aimed at complementing this strand of the literature by bringing changes in institutional arrangements that are more closely connected to the domain of work and labour into the spotlight. However, in addition to analysing these policy developments in isolation, it seems likewise important to consider and quantify their effects on trends in the intergenerational transmission of inequality together. Casting a joint perspective allows to determine whether policies in the realm of education and labour went into the same direction or cancelled each other out, providing an additional explanation for observed stability in social fluidity. Moreover, it would generate more accurate evidence on which kinds of policies have the greatest potential to reduce the intergenerational transmission of disadvantage to

foster equality opportunity. These questions may be answered by analysing different policy trends in conjunction, and by distinguishing between policies that act on the parental generation and those that act on the child generation more explicitly.

In addition, closer examination of the effects of drastic policy change or incremental institutional transformations on smaller societal groups seems required. The impact of policies and institutions on intergenerational social mobility might not show on the larger scale. Nevertheless, they could vitally shape opportunities and life chances, leading to inequalities between specific subgroups of children as shown in Paper 3 and 4. In the face of ongoing demographic trends, these groups could grow larger over time and represent a significant part of the population in the future. Thus, before dismissing the role of institutions in the intergenerational transmission of inequality, studies need to carefully show that policies neither benefit nor worsen the outcomes and opportunities of all groups of children. This would also include looking at a more diverse set of outcomes among the second generation. The focus on children's transition from primary to secondary school was a plausible and justifiable methodological choice due to its critical importance for educational trajectories in the German context. However, it only provides an approximation of overall educational attainment and does not necessarily say something about other consequences that institutional arrangements could have on children from different social backgrounds.

Finally, studies aimed at uncovering the precise mechanisms through which parents' labour market and employment conditions further translate into inequalities among the second generation present another avenue for future research. Besides affecting families' financial resources, prior work shows that membership in a low social class, economically insecure employment, and unfavourable events such as unemployment have detrimental effects on workers' physical and psychological wellbeing (Clark 2003; Inanc 2020; Kaiser and Trinh 2021; Schumann and Kuchinke 2020). It seems likely that these adverse consequences also hamper parents' ability to offer a supportive home environment that fosters children's flourishing development, thereby contributing to the transmission of disadvantage from one generation to the next. These mechanisms thus need to be

incorporated into the empirical analyses to provide a better understanding of the intergenerational relationship, and changes therein. In light of rising female labour market participation, more mothers are pursuing gainful employment and are exposed to labour market risks. This provides additional opportunity to disentangle the association between children's life chances and parents' employment conditions by fathers and mothers. While no evidence was found that trends in intergenerational social mobility differ for sons and daughters, results from Paper 4 show that a stronger association between children's academic track attendance and mothers' insecure employment seems to exist. Considering these potentially heterogeneous effects of parents thus promises to advance knowledge on how trends in the intergenerational transmission of inequality unfold in the face of ongoing labour market-related change.

References

- Barone, Carlo, and Antonio Schizzerotto. 2011. 'Introduction'. *European Societies* 13(3):331–45.
- Bethhäuser, Bastian, Caspar Kaiser, and Nhat An Trinh. 2021. 'Regional Variation in Inequality of Educational Opportunity across Europe'. *Socius: Sociological Research for a Dynamic World* 7:237802312110198.
- Bukodi, Erzsébet. 2017. 'Cumulative Inequalities over the Life-Course: Life-Long Learning and Social Mobility in Britain'. *Journal of Social Policy* 46(2):367–404.
- Bukodi, Erzsébet, and John H. Goldthorpe. 2011. 'Class Origins, Education and Occupational Attainment in Britain'. *European Societies* 13(3):347–75.
- . 2018. *Social Mobility and Education in Britain: Research, Politics and Policy*. Cambridge: Cambridge University Press.
- Clark, Andrew. 2003. 'Unemployment as a Social Norm: Psychological Evidence from Panel Data'. *Journal of Labor Economics* 21(2):323–51.
- Erikson, Robert, and John H. Goldthorpe. 1992. *The Constant Flux: A Study of Class Mobility in Industrial Societies*. Oxford: Clarendon Press.

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- Featherman, David L., and Robert Mason Hauser. 1978. *Opportunity and Change*. New York: Academic Press.
- Inanc, Hande. 2020. 'Varieties of Precarity: How Insecure Work Manifests Itself, Affects Well-Being, and Is Shaped by Social Welfare Institutions and Labor Market Policies'. *Work and Occupations* 47(4):504–11.
- Kaiser, Caspar, and Nhat An Trinh. 2021. 'Positional, Mobility, and Reference Effects: How Does Social Class Affect Life Satisfaction in Europe?' *European Sociological Review* 37(5):713–730.
- Schumann, Paul, and Lars Kuchinke. 2020. 'Do(n't) Worry, It's Temporary: The Effects of Fixed-Term Employment on Affective Well-Being'. *Journal of Happiness Studies* 21(7):2557–82.