

Intergenerational Transmission of Welfare: Evidence from Germany

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February 14, 2021

*** Preliminary and Incomplete ***

We study the intergenerational transmission of welfare receipt in Germany. We first describe the correlation of welfare receipt experienced in the parental household and subsequent own welfare receipt of young adults. In a second step, we pursue several strategies to determine whether the observed correlations reflect causal effects. We take advantage of the long running German Socio-Economic Panel Survey (1984-2019) and contribute to a very sparse literature for the German case. We apply the Gottschalk (1996) estimation approach, look at sibling fixed effects, and use instrumental variables techniques. While our finding of strong positive correlations between parental and own welfare receipt confirm the international literature first results suggest that these correlations are spurious and do not hold up to controls for unobserved heterogeneities.

Keywords: welfare, social assistance, intergenerational mobility, causal effect, Gottschalk estimator, sibling fixed effects, instrumental variables

JEL Code: I32, I38, J62, C36

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1. Introduction

Equality of opportunity is at stake if parental well-being determines child well-being. In particular, the transmission of parental disadvantage to children is a challenge for society. Intergenerational transmission patterns have been studied intensely with respect to earnings and education outcomes (for surveys see e.g. Black and Devereux 2011 or Blanden 2013). In contrast, we focus on the intergenerational transmission of welfare receipt.

Internationally, most studies confirm positive correlations and causal effects of parental welfare receipt on the subsequent welfare receipt of the next generation. The literature discusses a number of mechanisms that may generate this effect: after experiencing parental welfare receipt youths may be better informed about application procedures and institutional features, they may be less affected by stigma concerns, and they may have gathered less information about the labor market compared to peers who grew up without welfare. If the experience of household welfare receipt increases the next generation's welfare receipt by any such mechanism the welfare program has negative externalities: ideally, the benefit should free the family from the threat of poverty. Welfare reforms must respond to intergenerational transmission effects; here, avoiding parental benefit dependence may protect the next generation, as well.

In this study, we investigate intergenerational transmission of welfare receipt in Germany. Our long running panel data allow us to study the transmission of welfare receipt affecting the childhood and early adult age of individuals born 1970-1991. Except for Siedler (2004) this is the first analysis of intergenerational welfare transmission for Germany. We consider parental welfare receipt at ages 10-18 and determine its association with and effect on adult outcomes observed at ages 25-29. We use an extended period of observation which allows us to compare the welfare transmission patterns before and after a major welfare reform effective in 2005.

In a first step, we describe the correlation of parent and child welfare receipt in terms of incidence and duration. While some prior studies could use only very few years of observations¹ we have longer running data and can study the relevance of the observation window for correlation measures. While we focus on youths' impressionable years (age 15-18) we also investigate whether the age of observing parental benefit receipt matters. We look into the potential mediation effect of child educational outcomes and compare patterns by child gender.

In a second step, we compare the intergenerational pattern before and after a major reform of the welfare system ("Hartz Reforms"). In the third and final step, we address the potential impact of unobservable heterogeneities which render parental welfare receipt endogenous to child outcomes. In particular, parental characteristics, such as human capital, attitudes towards work and family, health, addictions, and emotional well-being may affect both generations' welfare receipt. To account for such factors we consider the empirical strategy developed by Gottschalk (1996), apply sibling fixed effects and consider instrumental variable estimation. This allows us to be the first to offer an answer to the question whether parental welfare receipt causally affects the welfare receipt of the next generation in Germany.

While there is a broad international literature describing intergenerational correlation in welfare receipt the number of studies identifying causal effects of minimum income programs is limited (for survey see e.g. Black and Devereux 2011). Early contributions use structural estimation approaches for survey data from the United States. Antel (1992) uses data from the National Longitudinal Survey of Youth (NLSY) where the treatment consists of one year of parental welfare receipt. He concludes that maternal welfare use is not endogenous and therefore causally affects daughters receipt. Levine and Zimmerman (1996) use similar data and methods. However, they conclude that it is not a welfare trap that we observe but much

¹ For example, Antel (1992), Moisio and Kauppinen (2011) and Kauppinen et al. (2014) observe parental welfare receipt only for one year, Levine and Zimmerman (1996) and Siedler (2004) uses only one year of adult outcomes.

rather a general poverty trap. Again focusing on mothers and daughters, they argue that parents receiving welfare transmit low earnings potentials to their children. This explains most of the observed correlation in welfare receipt.

Gottschalk (1996) studies U.S. welfare transmission using data from the Panel Study of Income Dynamics (PSID) and event study methods. He confirms Antel's (1992) findings of a causal relationship between mothers' and daughters' welfare receipt. Also based on PSID data, Pepper (2000) focuses on the comparison of alternative empirical approaches in addressing the endogeneity of maternal welfare receipt. He confirms strong correlation patterns but is careful to emphasize that any conclusion with respect to the causality of these correlations requires strong assumptions. Given such assumptions, he confirms that a causal relationship exists.

Mitnik (2010) offers a different perspective based on administrative data for the state of California. He compares individuals whose parents received welfare for different durations of time. Applying matching and sibling fixed effects estimators his is one of very few contributions that do not find causal effects of the length of exposure on individuals' own welfare receipt.

Again based on the PSID, the recent contribution of Hartley et al. (2017) is interesting because it studies the effect of the U.S. welfare reform on intergenerational transmission. The authors consider pairs of mothers and daughter for each of whom at least 5 years with potential welfare receipt are observed. To address the endogeneity of maternal welfare receipt they use a rich set of regional indicators as instruments. They apply a difference-in-differences strategy which takes advantage of the staggered introduction of welfare reforms. The authors find that the reform indeed reduced the level of intergenerational correlation of welfare receipt. However, they also point out that the overall intergenerational correlation in benefit dependence

is maintained when additional low income support programs are considered (e.g. food and disability assistance).²

The number of studies on minimum income and welfare programs in countries outside the U.S. is limited. Beaulieu et al. (2005) exploit administrative data on social assistance receipt in Quebec (Canada). Based on structural estimation approaches they confirm the existence of causal effects and conclude that parental welfare receipt is most influential when the child is aged either 7-9 or 16-17. Edmark and Hanspers (2015) apply sibling fixed effects estimation to Swedish register data. While they confirm strong intergenerational correlation in welfare receipt they find no causal effects once family fixed effects were considered.

De Haan and Schreiner (2018) is a more recent contribution applying causal methods to welfare correlations based on Norwegian register data. They investigate two separate benefit programs and apply bounds analyses with instrumental variables to determine causal effects. While a large share of intergenerational correlation is explained by shared characteristics within the family they do confirm the existence of significant causal transmission effects.

Boschman et al. (2019) apply the Gottschalk (1996) approach to administrative data from the Netherlands to investigate the causal nature of intergenerational correlation patterns in social assistance receipt. They confirm significant causal effects and study several mechanisms. As they find at most a small role for child education as a mediator and no beneficial effect of information they conclude that either parental role models affect the next generation's beliefs and norms or ethnic minorities suffer discrimination across generations.

The literatures on the transmission of disability (Dahl et al. 2014, Bratberg et al. 2015, Dahl and Gielen 2018) and unemployment benefits (Ekhaugen 2009, Maeder et al. 2015, Mueller et al. 2017, Grübl et al. 2020) apply similar methods to determine causal intergenerational transmission effects. They use instrumental variable approaches to address

² In addition to these causal estimation strategies several contributions describe the intergenerational correlations observed in the U.S. (see e.g. Page 2004, Ratcliffe 2002).

the endogeneity of parental benefit receipt, they consider sibling or family fixed effects methods, and apply the Gottschalk (1996) approach.

So far, little research has addressed the intergenerational welfare transmission in Germany. While there are number of studies on income and unemployment transmission³ research on welfare receipt is limited. Eberharter (2011) and Groh-Samberg (2014) describe the correlation of different dimensions of poverty. Schels (2018) estimates correlation patterns between parental socioeconomic status and youth benefit receipt in 2005. The study which is closest to our analysis is Siedler (2004). He used the data of the German Socioeconomic Panel to investigate intergenerational correlation in social assistance receipt for the years up until 2002. He focuses on young adults' benefit receipt observed at age 22 and applies regional characteristics as instruments to identify causal effects. Siedler finds that parental benefit receipt is not endogenous such that the strong correlation patterns can be interpreted as causal effects. The results are confirmed in non-parametric bounds analyses. He also finds that sons respond stronger to parental benefit receipt than daughters.

We contribute to the international literature by adding evidence comparable evidence from Germany, which has not been looked at in this respect before: this is the first paper to directly describe and investigate the parent to child transmission of welfare receipt in Germany. We offer a broad description of intergenerational correlation patterns and potential mediating effects. We study the heterogeneity of intergenerational welfare transmission before and after a reform and look at differences by gender. In addition, we provide several approaches to account for the endogeneity of parental welfare receipt in order to come closer to the true causal effect of parental welfare receipt on that of the next generation.

³ For contributions on intergenerational correlation of earnings see e.g., Schnitzlein (2014, 2016); for intergenerational correlation of unemployment see Maeder et al. (2015) or Mueller et al. (2017).

Our first results indicate the expected positive significant correlation between parent and child outcomes. First results of Gottschalk analyses suggest that these correlations do not reflect causal effects. The next sections describe the institutional background, our data and methods, the results and then conclude (partly not yet completed).

2. Institutional Background

The German constitution guarantees each resident the right to a dignified life. If an individual or household cannot muster the means for a dignified life the person or household can demand the support of the state. To redeem such claims different welfare state institutions provide for different groups such the unemployed, the elderly, the disabled, and those with generally insufficient financial means.⁴ In our analysis, we jointly consider all branches of the welfare state that provide means-tested minimum income support to individuals below retirement age. We label these transfers "welfare" benefits. As the welfare state underwent a major reform in 2005 we distinguish the pre- and post-reform institutions.

Generally, the unemployed are covered by the unemployment insurance. Unemployment benefits (Arbeitslosengeld) depend on the individual contributory record and replace up to 67 percent of previous net labor incomes. Before the reform, the maximum duration of benefit receipt reached 32 months. After the reform, the maximum duration of eligibility for the benefit, now referred to as unemployment benefit I (UB I), was shortened initially to 18 months and later it was extended again to 24 months.

Before the reform, those who had exhausted their unemployment benefit entitlement and those who based on their past contributions were not (yet) entitled to unemployment

⁴ "Sufficiency" is established as follows: first, the financial "need" of a given household are determined. They consist of administratively set amounts for all individuals in the household plus necessary housing expenditures. If earnings and wealth a household are insufficient to cover the calculated need the household can claim government support. Clearly, the needs of large households are larger than the needs of small household.

benefits were eligible for unemployment assistance (Arbeitslosenhilfe), a tax-financed means-tested benefit. Unemployment assistance was related to prior net labor incomes with a replacement rate of up to 57 percent and was provided without time limit - at most until retirement age.

In addition, prior to the reform individuals could claim (additional) social assistance (Sozialhilfe) if their household income, be it earnings, unemployment benefits, or unemployment assistance, fell below a legally defined subsistence level. Social assistance was a means-tested program for general income support. Since the means test considers household size, a given earned income renders large households (e.g. with many children) more likely to be eligible for additional social assistance than small households (e.g. with no children). Although social assistance was never intended to support employable clients, about one in six unemployment assistance claimants also received regular social assistance benefits.

The reform came into effect in January 2005. It intended to activate the unemployed based on the idea of 'fordern and fördern', i.e., 'to assist and demand.' Since the reform, the employment offices explicitly demand individual effort. Job search incentives were increased by shorter durations of unemployment benefit payouts and by an intensified use of sanctions. The objective was to reduce transfer dependence and to shorten the periods of transfer receipt.

The prior benefit programs of unemployment assistance and social assistance were combined after the reform generating the so-called unemployment benefit II (UB II), a means-tested and tax-financed benefit. Since then, individuals who exhaust their unemployment insurance benefit entitlement (i.e., UB I) or whose unemployment benefit claim is insufficient to cover the financial need of the household may be eligible for UB II (possibly in addition to UB I). The UB II benefit covers the legally defined minimum income and, in contrast to unemployment assistance, is not related to prior earnings. Generally, individuals - including those who are employed - can claim UB II if they pass the means test and are physically able to work at least 15 hours per week. Their children or household members who are not able to

work can claim a benefit labelled Sozialgeld. Individuals in need who are not able to work, e.g. due to sickness, disability, or care responsibilities, are entitled to social assistance, which was not affected by the reform.

A final element of the reform affecting benefit eligibility concerns unemployed young adults below age 25. Initially, the UB II regulations were more generous than prior social assistance provisions. In particular, single unemployed young adults could leave the parental home and establish an independent household at the expense of the welfare office. This aspect of the reform was corrected in 2006: since then, benefit eligibility of single unemployed individuals below age 25 is conditional on remaining in the parental household. Independent claims against the UB II system are possible starting at age 25.

In our study we consider the receipt of unemployment assistance (Arbeitslosenhilfe) and social assistance (Sozialhilfe) before the reform and UB II, Sozialgeld and social assistance after the reform as the means tested minimum income support of interest. We label the combined institutions "welfare" throughout.

(To be completed: Description of welfare receipt time trends pre and post reform, expenditures, number of recipients)

3. Methods and Data

3.1 Methods

In the first step of our analysis, we describe the intergenerational correlation patterns of welfare receipt. We regress child welfare receipt on parent welfare receipt. We consider two different specifications of the regression model. In a basic specification, we do not consider a detailed set of control variables. In an extended specification, we account for heterogeneity along individual and parental background dimensions. In particular we control for individual year of birth, gender, immigration background, parity, parent year of birth, highest parental education,

parent immigration background, household size when the youth was age 17, federal state of residence when the child was age 17.

In the second step of our analysis, we apply the Gottschalk (1996) approach. This method explicitly accounts for the potential endogeneity of parental welfare as a regressor in the child welfare model. This endogeneity is interpreted as an omitted variable problem, where the omitted variable characterizes all household specific unobservables that are constant for parent and child (e.g., norms, values and attitudes, health, shared regional and labor market experiences). We measure parental welfare outcomes when the child is aged 30-35 and control for these in our basic and extended specifications (for similar applications of this method see Gottschalk 1996, Ekhaugen 2009, Maeder et al. 2015, Mueller et al. 2017, and Boschman et al. 2019). The identifying assumption in this approach is that later parent welfare receipt is not caused by earlier child welfare receipt and that the omitted unobservable is time constant. If these assumptions hold the difference of the coefficient of parental welfare receipt at age 10-18 (comprising the exogenous and endogenous elements of the correlation) and the coefficient on parental welfare receipt at age 30-35 (comprising the endogenous elements, only) provides the causal effect of experiencing parental welfare receipt during childhood.

In subsequent steps, we will exploit within-family correlation and instrumental variable techniques to identify the causal effect. The former method controls for family fixed effects in regressions on siblings only, the latter method considers exogenous predictors of parental welfare receipt (e.g., local unemployment, regional utilization of the welfare program (see Siedler 2004), chronic health problems) as instruments in order to identify a local average treatment effect.

(to be completed)

3.2 Data

We apply data from the German Socio-Economic Panel Study (SOEP) (Wagner et al. 2007). The SOEP is an annual household panel which started in 1984 and has been running continuously since. We use all available survey waves (1984-2019).

As we are interested in describing intergenerational welfare receipt our sample considers all individuals aged 25-29 (period t_1) if there are at least two panel observations available on them in this young adult age; in principle this would limit our sample to birth cohorts 1956 (age 28 in 1984) to 1993 (age 26 in 2019). Next, we connect the information on the adult individuals with data on the parental household during their youth. We gather information on welfare receipt of the parents in the period when our individuals were aged 10-18 (period t_0). We consider all those in our sample for whom parental welfare receipt information is available at least in for the calendar years when they were aged 15-18; however, we also consider any available information for the time since they reached age 10. This restricts the observed birth cohorts to 1969 (age 15 in 1984) to 1993. Given these sample restrictions we observe 2,255 different individuals for whom both information on own welfare receipt at age 25-29 as well as on parental welfare receipt at least between their age 15-18 is available.

When we apply the Gottschalk (1996) approach to account for endogenous parental welfare receipt we focus on the subsample of observations for whom additionally parental welfare receipt is observed when the child observation is aged 30-35 (t_2). As we require at least one valid parental welfare indicator this limits the relevant birth cohort to 1969 to 1989 (age 30 in 2019). With this additional sample restriction, we observe 1,125 different individual observations.

We consider three different measures of welfare receipt for both parent and child. First, an indicator of the incidence of welfare receipt, second, a continuous measure of the number of years for which welfare receipt was observed and third - given that we observe individuals and parents for varying numbers of years - a measure that reflects the share of observation years for which welfare receipt is observed. **Table 1** shows descriptive statistics. We find that about 13

and 14 percent of young adults and parents ever received means-tested welfare benefits (to be added: comparison with aggregate data). Even though young adults are observed at most for 5 years and parents at most for 9 years the duration of benefit receipt is similar in both groups with 0.6 year among young adults and 0.4 years among parents which in both cases comes down to about 6 percent of the observed annual observations. **Table 2** shows correlation coefficients for the three welfare measures for parents and their children. Within each generation the three different welfare measures are highly correlated. In contrast, the intergenerational correlation is substantially weaker with .19 for the welfare incidence, .186 for the number of years and .24 for the share of observation years on welfare. Clearly, at first inspection correlations appear to exist.

4. Results and Robustness

We present our first OLS estimation results based on the basic specification in **Table 3**. In these models we only control for parental welfare receipt when the individual was a teenager and missing value controls. Because some individuals are not observed for each year of age between 10 and 18 and 25 and 29 we use a set of missing data indicators to separately control for each potentially missing year of age. This reduces any bias that may result from measurement error in welfare measures.

The first set of descriptive regression results confirm **Table 2** and indicate that the correlations between parent and subsequent child welfare receipt are positive and highly statistically significant. Having experienced welfare receipt in the parental household is associated with an increased probability of own welfare receipt as a young adult by 18.5 percentage points. This correlation is very large relative to the mean propensity of own welfare receipt of about 13 percent. Similarly, the continuous welfare indicators confirm strong and significant correlation patterns of welfare receipt. First results suggest that these patterns hold up when additional control variables are considered (to be completed).

We also considered first regressions along the Gottschalk (1996) approach starting out with only the basic regression specification. **Table 4** summarizes the first estimation results which show statistically significant effects of parental welfare receipt on young adult welfare receipt both, if parental outcomes are measured during childhood and when parental outcomes are measured after young adult welfare outcomes. *Prima facie*, these results suggest that the positive correlation between parent and child welfare receipt does not reflect an equal sized causal effect. In fact, with respect to the first outcome (i.e., incidence of welfare receipt) the total effect turns out to be significantly negative at -0.212. Also, the overall outcome for the number of years on welfare is negative while insignificantly so. The result in the third column is about zero. If these results hold up to further scrutiny, refinements and robustness test they may lead us to reject a significant positive causal intergenerational welfare transmission in Germany. (to be completed)

5. Conclusions

Most of the international literature suggests that experiencing parental welfare receipt in childhood is correlated with and causally determines own welfare receipt later in life. Causal analyses have not yet been provided for Germany and we take up this important topic in our research. The German application is particularly interesting because we can compare causal transmission patterns before and after a reform that was initiated to add work incentives to the welfare system and help clients to become independent of welfare (for prior comparative analyses see e.g. Riphahn and Wunder 2013, 2016).

By now, the SOEP household panel survey has covered a sufficient number of years to allow an analysis of intergenerational welfare correlation. First results show that we the correlations are strong but causality may not be observed. (to be completed)

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Table 1 Descriptive Statistics on Measures of Welfare Receipt

	Observations	Mean	Std. Dev.	Min	Max
Welfare receipt t_1 (age 25-29)					
ever (0/1)	2,255	0.12949	0.33582	0	1
number (yrs)	2,255	0.55299	1.48393	0	5
share (yrs)	2,255	0.06384	0.19044	0	1
Welfare receipt t_0 (age 10-18)					
ever (0/1)	2,255	0.14191	0.34903	0	1
number (yrs)	2,255	0.43282	1.36270	0	9
share (yrs)	2,255	0.05670	0.17697	0	1

Source: SOEP (1984-2019), own calculations

Table 2 Correlation Patterns of Welfare Receipt Indicators

	Welfare receipt t_1 (child)			Welfare receipt t_0 (parent)		
	ever (0/1)	number (yrs)	share (yrs)	ever (0/1)	number (yrs)	share (yrs)
Welfare receipt t_1 (child)						
ever (0/1)	1.000	0.9664	0.8694	0.1914	0.2023	0.2018
number (yrs)	0.9664	1.000	0.8044	0.1739	0.1861	0.1844
share (yrs)	0.8694	0.8044	1.000	0.2271	0.2446	0.2438
Welfare receipt t_0 (parent)						
ever (0/1)	0.1914	0.1739	0.2271	1.000	0.7881	0.7881
number (yrs)	0.2023	0.1861	0.2446	0.7812	1.000	0.9645
share (yrs)	0.2018	0.1844	0.2438	0.7881	0.9645	1.000

Source: SOEP (1984-2019), own calculations for sample of 2,255 observations.

Table 3 OLS Estimation Results for the Basic Specification

	Dependent variables: Welfare receipt t_1		
	(1) ever (0/1)	(2) number (yrs)	(3) share (yrs)
ever (0/1), t_0	0.185*** (7.00)		
number (yrs), t_0		0.206*** (6.55)	
share (yrs), t_0			0.262*** (6.55)
Observations	2,255	2,255	2,255
R-Squared	0.0422	0.0541	0.0656
Adjusted R-Squared	0.0375	0.0494	0.0610

Source: SOEP (1984-2019), own calculations. t statistics in parentheses (robust standard errors).

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.05$

Table 4 Gottschalk Approach Estimation Results for the Basic Specification

	Dependent variables: Welfare receipt t_1		
	(1) ever (0/1)	(2) number (yrs)	(3) share (yrs)
ever (0/1), t_0	0.119*** (3.08)		
ever (0/1), t_2	0.331*** (4.54)		
number (yrs), t_0		0.193*** (3.09)	
number (yrs), t_2		0.350*** (4.33)	
share (yrs), t_0			0.194*** (3.08)
share (yrs), t_2			0.186*** (3.87)
Gottschalk effect	-0.212** (2.35)	-0.110 (1.43)	0.008 0.090
Observations	1,125	1,125	1,125
R-Squared	0.0676	0.0667	0.0892
Adjusted R-Squared	0.0576	0.0567	0.0794

Source: SOEP (1984-2019), own calculations. t statistics in parentheses (robust standard errors).

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.05$