



Patterns of Welfare Dependence Before and After a Reform: Evidence from First Generation Immigrants and Natives in Germany

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(January 2011)

LASER Discussion Papers - Paper No. 47

(edited by A. Abele-Brehm, R.T. Riphahn, K. Moser and C. Schnabel)

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Abstract

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Keywords: immigration, unemployment benefit II, transfers, welfare state, Hartz reform

JEL Classification: I38, J61

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Acknowledgements: We would like to thank Anna Kim for valuable comments. The paper benefited from seminar discussions at the University of Erlangen-Nuremberg, the University of Bamberg and a workshop at IZA.

1 Introduction

While international comparisons show a substantial variety in patterns of welfare dependence, empirical studies find for most countries that immigrants have higher rates of welfare receipt than natives. Barrett and McCarthy (2008) conclude in an extensive survey of the international literature that welfare dependence among non-European Union (EU) immigrants is higher than among natives in Denmark, the Netherlands, and France, for instance.¹ However, the authors further summarize evidence that in some countries, such as the U.K., Spain, and Portugal, the welfare use of non-EU immigrants is similar to that of EU-citizens, and in Ireland, immigrants use even less welfare than natives. In addition, previous studies point to cross-country differences in assimilation patterns: while increasing welfare dependence among immigrants over their duration of stay is observed in the U.S., Canada, and Germany, the opposite is found for Sweden (cf. Hansen and Lofstrom 2003).

The heterogeneity found in international comparisons suggests a close connection of national institutional frameworks and patterns of welfare dependence. Thus, thorough analyses of national welfare systems are the key to understanding the patterns of welfare dependence and the immigrant-native gap. The need for accurate knowledge is particularly pressing in countries confronted with rising shares of immigrants in the population. Hence, immigrant welfare use is a concern in many countries and has prompted not only a growing literature but also a variety of policy reforms; exemplarily, the U.S. welfare reform of 1996 denied benefits to new immigrants (cf. Kaestner and Kaushal 2005 for an evaluation).

It is not least because of a recent reform of the system of minimum income protection that the case of Germany is of special interest to the study of welfare patterns among immigrants and natives. Germany experienced large inflows of immigrants during the second half of the twentieth century. As of 2007, one in five residents had a “migration background”: 8.9% of the resident population did not have German citizenship and an additional 9.9% were naturalized

¹ Most of the earlier studies on welfare dependence of immigrants cover the United States and Canada (e.g., Borjas and Trejo 1991, 1993, Borjas 1994, Baker and Benjamin 1995, Borjas and Hilton 1996, Bean et al. 1997).

immigrants (cf. Bundesamt für Migration und Flüchtlinge 2007). As in other countries, immigrants and their descendants play an important role for social and economic policy in Germany (cf. Brücker et al. 2002). Recently, the share of foreign citizens among welfare recipients in Germany was twice their population share (cf. Bundesagentur für Arbeit 2010b). In 2003-2005, a comprehensive reform changed the German institutional framework substantially by combining two pre-reform benefits, i.e. unemployment assistance and social assistance, to one single post-reform benefit, unemployment benefit II. Thus, it is worthwhile to provide new evidence on the German case and to compare the welfare patterns among immigrants and natives in the period before and after the reform; so far the literature on the welfare use of immigrants in Germany has focused on the period prior to the reform.

As an example of the prior literature on German minimum income protection, Kogan (2004) explored the unemployment dynamics among immigrants in Germany. She concludes that the high unemployment risk among immigrants is related to low levels of human capital and to immigrants' choice of occupations and industries. Castronova et al. (2001) used cross-sectional data from the German Socio-Economic Panel Study (SOEP) to analyze whether immigrants are on welfare because they are more likely to be eligible or, alternatively, because they are more likely to claim the benefits for which they are eligible. The authors show that immigrants' greater propensity of benefit receipt is not related to immigrant status *per se*. Conditional on other sociodemographic characteristics, immigrant households are no more likely to take up benefits than native households. Finally, using the 1984-1996 waves of the SOEP, Riphahn (2004) jointly modeled panel attrition, labor force status, and household social assistance dependence. She found that the longer immigrants live in the host country, the more likely they are to receive social assistance.

The present study looks at the patterns of welfare dependence among first generation immigrants and natives based on data from the SOEP and addresses three issues: first, we present the development of welfare dependence over the life course and study immigrant assimilation into the German welfare state. Such an increase in immigrant welfare dependence with increasing

duration of stay has been found in the prior literature.² We apply semiparametric regression models to estimate life cycle trajectories of transfer receipt, which we compare for immigrants and natives. Second, we compare the correlation of individual and household level characteristics with transfer receipt for both groups and ask to what extent the immigrant-native gap in welfare dependence can be attributed to immigrant status *per se* as opposed to observable characteristics. Finally, we compare the situation before and after the recent reform of the system of minimum income protection to reveal potential changes in the patterns of welfare dependence.

We contribute to the literature, first, by providing evidence from new and recent data. Second, we provide an innovative perspective on developments over the life cycle for natives and immigrants. Finally, our study is one of the first to compare the patterns of welfare receipt of natives and first generation immigrants in Europe's largest economy before and after the recent reform.

We find no evidence of immigrant assimilation into the welfare state and confirm the results of prior studies in that it is not immigrant status *per se* which generates the immigrant-native gap in welfare dependence. Instead, the immigrant-native difference in welfare receipt turns insignificant once contextual factors are accounted for. Except for the substantially higher levels of welfare receipt, the general patterns of welfare dependence do not differ in important ways before and after the reform. This suggests that the relevance of the institutional design of a national welfare system might be limited, at least in the short run.

2 Institutional Background

Between 2003 and 2005, the German government implemented a broad reform package to improve labor market services and to activate the unemployed ("Hartz Reform"). The reform implied profound changes for the unemployment insurance and for the system of minimum income protection. Key changes are discussed by Caliendo (2009) and depicted in Figure 1.

² See e.g., Borjas and Trejo (1991, 1993), Baker and Benjamin (1995), Borjas and Hilton (1996) for the U.S. and Canada, and Riphahn (2004) for Germany.

In Germany, workers who become unemployed are generally covered by the unemployment insurance. As an insurance benefit, unemployment benefits (*Arbeitslosengeld*) depend on the individual contributory record and are related to previous earnings. They replace up to 67% of previous labor incomes. Unemployment benefits can be claimed if the contribution period to the insurance exceeds 12 months within a given base period.³ The maximum duration of benefit receipt varies with age: before the reform, unemployment benefits could be received for up to one year for those below age 45. For those above age 45, the period of possible benefit receipt is longer and reached up to 32 months for those aged 57 and above. After the reform, the maximum duration of eligibility was reduced. Now, unemployed individuals generally receive the benefit, referred to as unemployment benefit I, for at most 12 months; for individuals above the age of 50, this period can extend to up to 24 months.

Until the end of 2004, those who had exhausted their unemployment benefit entitlement were eligible for unemployment assistance (*Arbeitslosenhilfe*), a tax-financed means-tested benefit. Similar to unemployment benefits, unemployment assistance was related to previous earnings, but it was less generous with a net replacement rate of up to 57%. Nevertheless, as unemployment assistance was generally paid without time limit—at most until the recipient reached the statutory retirement age—replacement rates for the long term unemployed were higher in Germany than in any other OECD country (cf. Jacobi and Kluge 2007).

If, e.g. in cases of low previous labor incomes, unemployment benefits or unemployment assistance fell below a legally defined subsistence level, individuals could additionally claim social assistance (*Sozialhilfe*). Social assistance is a means-tested program for general income support, which guarantees that every legal resident in Germany can lead a dignified life based on a socioculturally determined minimum income.⁴ Although social assistance was never intended to support employable clients, about one in six unemployment assistance claimants also received a regular social assistance payment (cf. Adema et al. 2003).

³ The required base period was changed several times.

⁴ Note that the means test considers the number of individuals living in a given household. Therefore, a given amount of earnings or unemployment transfer renders large households more likely to be eligible for additional social assistance benefits than small households.

In January 2005, the reform of the income support system for the long-term unemployed came into effect and unemployment assistance and social assistance were combined in the so-called unemployment benefit II. Since then, individuals who exhaust their unemployment benefit I entitlement may be eligible for unemployment benefit II, a means-tested and tax-financed benefit. The benefit covers the legally defined minimum household income and, in contrast to unemployment assistance, is not related to prior earnings. A report of the Federal Ministry of Labour and Social Affairs points out that the expiration of unemployment benefit I generates a substantially higher transition rate to unemployment benefit II eligibility among households with foreign than with German heads (cf. Bundesministerium für Arbeit und Soziales 2009). This appears to be connected to the fact that foreigners' households and their needs are larger while their wealth is lower than that of average native households. Figure 2 presents the reciprocity rates of social assistance benefit prior to the reform and of unemployment benefit II after the reform, separately for native and foreign citizens.

For most former unemployment assistance recipients, the reform implied a benefit cut. Generally, individuals in need who had never contributed to the unemployment insurance can claim unemployment benefit II without receiving unemployment benefit I first if they are able to work at least 15 hours per week. Those not capable to work, e.g. due to sickness, disability, or care responsibilities, are as before entitled to social assistance instead of unemployment benefit II. The stipulations of the social assistance program were generally left unchanged compared to the pre-reform situation.

Within the unemployment insurance, immigrants are treated like natives. Their eligibility for insurance benefits depends exclusively on their contribution record. The situation is more complex in the minimum income support programs of social assistance and unemployment benefit II. Individuals without German citizenship can claim unemployment benefit II if they are (i) permanently in Germany, (ii) physically able to work, and (iii) either allowed to take up employment or if their employment could potentially be permitted. The last condition varies by immigrant status and country of origin and is legally complex. Asylum seekers are not eligible because they receive separate asylum seeker benefits. Ethnic Germans (*Aussiedler*)

as well as naturalized immigrants are treated like natives.⁵ Immigrants residing in Germany in order to find employment are generally not eligible for benefits. However, a long list of circumstances renders EU citizens (and those treated like them, such as citizens of Switzerland, Norway, Iceland, and Liechtenstein) eligible for unemployment benefit II receipt even then (for further details, cf. Classen 2009 or Bundesministerium für Arbeit und Soziales 2009).

An important issue is whether immigrants run the risk of losing their right to stay in Germany upon receipt of welfare benefits of either type. In some situations the prolongation of the right to stay or an improvement in immigrant status can be refused if an immigrant is eligible for public means-tested support. Special protection is granted to migrants from signatory states of the European Convention on Social and Medical Assistance of 1953.⁶ These immigrants can stay in Germany even if they receive welfare benefits (cf. Classen 2009).

3 Data

Our empirical analysis uses data from the Socio-Economic Panel Study (SOEP), a household panel survey, which oversamples the immigrant population from guest worker countries, in particular from Turkey, Greece, former Yugoslavia, Spain, and Italy (cf. Wagner et al. 2007).⁷ Since 1994 the SOEP interviews a subsample of individuals who immigrated to West Germany after 1984, which mainly includes ethnic Germans who immigrated after 1988.

We consider all respondents who are not born in Germany as first generation immigrants independent of their citizenship. The definition of first generation immigrants is based on information about their country of origin, which, in general, is equivalent to the country of birth. In case of missing values, the variable is imputed using proxy information, such as citizenship (for details, cf. Frick et al. 2007). With the immigration year at hand, we can determine the number

⁵ Ethnic Germans are former German citizens or those belonging to the German people. After World War II, they migrated to West Germany from regions in Eastern Europe and Asia and were granted German citizenship immediately upon entry (cf. Kurthen 1995, Dietz 1999).

⁶ This covers immigrants from EU member states, Iceland, Norway, and—importantly—Turkey.

⁷ The data used in this paper were extracted using the Stata Add-On package PanelWhiz v2.0. The programs to retrieve the SOEP data are available upon request. Haisken-DeNew and Hahn (2006) describe PanelWhiz in detail.

of years these individuals have lived in Germany. Our sample of natives considers those born in Germany and holding German citizenship. Second generation immigrants are not included in the analysis.⁸

The sample further excludes household heads who are disabled at the time of the interview because unemployment benefit II and unemployment assistance are granted only to individuals with full earning capacity. Finally, the sample is restricted to household heads of working age (18-65 years of age). As the proportion of immigrant households is negligible in East Germany, the present analysis refers to West Germany only (for similar sample selection criteria, cf. Kogan 2004 and Riphahn 2004). In our sample approximately 15% of households are headed by first generation immigrants and 85% by natives (cf. Table 1). Among the first generation immigrants, roughly half hold a foreign citizenship. These are mostly former guest workers, who immigrated during the late 1960s and early 1970s. The other half of first generation immigrant households are ethnic Germans, who mostly arrived after the fall of the iron curtain in 1989.⁹

Figure 3 shows the distribution of first generation immigrants by source countries. Representing one-fifth of the immigrant sample, Turks are the single largest ethnic group in our sample. Immigrants from the other typical guest worker countries (i.e. Italy, Greece, Yugoslavia, and Spain) represent approximately another 20% of the immigrant population, while immigrants from the Central and East European (CEE) countries constitute almost 30%.¹⁰

Since the welfare programs changed in 2005, our dependent variable depends on the year of the interview. In any survey year t the SOEP gathers information on benefit receipt in the previous calendar year $t - 1$. Based on the survey years 2003 and 2004, we measure social assistance and unemployment assistance receipt in 2002 and 2003. Because the benefit reform occurred rather unexpectedly in 2005, we expect substantial measurement error in the benefit

⁸ We excluded respondents who are not first generation immigrants and who (1) are born in Germany and have a foreign nationality, *or* (2) are born in Germany and acquired German citizenship later in life, *or* (3) are descendants of first generation immigrants.

⁹ The number of household observations drops from 8,614 household years for the early to 7,915 for the late sampling period. In our estimations we consider an indicator of subsequent panel attrition in order to control for potentially biasing effects (cf. Riphahn 2004).

¹⁰ The CEE countries here comprise the following countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Poland, Romania, Slovakia, and Slovenia.

information on 2004 collected in 2005. Therefore we omit data collected in the 2005 survey. Based on the survey years 2006 and 2007, we study the receipt of unemployment benefit II in 2005 and 2006.

We consider households as the unit of analysis because social assistance and unemployment benefit II transfers are provided at the household level. Since unemployment assistance is coded at the individual level, we define a pre-reform household to be a transfer recipient if at least one person in the household received unemployment assistance. Table 2 describes the observed patterns of transfer receipt. The bottom row confirms the immigrant-native gap in transfer dependence across all three transfer programs. Generally, dependence rates are highest among single parent households. Table 3 confirms that the share of single parent households is comparable in the native and immigrant samples. Among immigrants we observe a high transfer dependence for multiple generation households, which, however, make up no more than 2% of all immigrant households. In comparison, natives have a higher share of single person households (23.7% compared to 12.1% among immigrants), while a substantially higher share of the immigrant sample resides in households of couples with children (56.8% among immigrants compared to 42.4% among natives).¹¹

Our contextual variables consider characteristics of the household, of the household head, and immigrant-specific covariates. Descriptive statistics are provided in Table 4. They confirm the heterogeneity of the two subsamples regarding the average household size and composition. Native heads of households are more likely to be female and higher educated than their first generation immigrant counterparts. The two subsamples also differ with respect to current and past unemployment experience, which is substantially higher among immigrants. Disregarding citizenship, about 70% of our immigrant sample originate in Turkey, Central and Eastern Europe, or the EU.

¹¹ Similar patterns are described in a recent government study on welfare use among immigrants (cf. Bundesministerium für Arbeit und Soziales 2009).

4 Econometric model

We study the extent to which immigrants and natives participate in welfare programs. In particular, we discuss whether immigrants differ in their welfare receipt and which contextual factors are associated with benefit receipt. We use natives' probability of receiving transfers as a benchmark and build on the framework introduced by Chiswick (1978). A regression model that describes the probability of receiving minimum income transfers for immigrants and natives simultaneously can be written for individual i as:

$$y_i = \alpha_0 + \alpha_1 age_i + \delta_0 I_i + \delta_1 age_i \times I_i + \theta YSM_i + \mathbf{x}'_i \boldsymbol{\beta} + \varepsilon_i . \quad (1)$$

The propensity to receive transfers, y , is modelled as a function of age, the number of years since migration to the host country (YSM), and further socioeconomic characteristics of the household (\mathbf{x}). The indicator I describes whether the head of household is a first generation immigrant. $\alpha_0, \alpha_1, \delta_0, \delta_1, \theta$, and $\boldsymbol{\beta}$ denote the coefficients, ε is an idiosyncratic error term.

Chiswick (1978) assumes that the acquisition of host country-specific human capital improves immigrants' labor market integration, their assimilation in the host country, and thus their independence of public transfer programs. Borjas (1985) pointed out that cross-sectional data is not suitable to identify such an assimilation effect separately from, e.g., changes in immigrant cohorts' characteristics, because assimilation is a dynamic process that occurs over time. Based on our short windows with only two annual observations, we are not able to reliably identify the effects of assimilation and of changes in cohort characteristics, respectively. Hence, it must remain open whether a correlation between transfer receipt and years since migration is the result of assimilation or of a change in the characteristics of subsequent immigrant cohorts.

In step 1 of our analysis we extend specification 1 above using a semiparametric additive estimation with binary interaction to describe transfer receipt over the life cycle:

$$y_i = \beta_0 + f_{I_i}(age_i) + h(YSM_i) + \mathbf{x}'_i \boldsymbol{\beta} + \varepsilon_i , \quad (2)$$

where f_1 and f_0 are smooth functions of age for immigrants ($I_i = 1$) and natives ($I_i = 0$), respectively. h denotes a smooth function of years since migration (YSM) with value zero for natives. Because f_1 , f_0 , and h do not rely on functional form assumptions, the model allows for a highly flexible estimation of the relationship between the probability of receiving transfers and the life cycle variables, age and YSM. The estimation is implemented using penalized (P-spline) regressions.¹² We follow Brumback et al. (1999) who demonstrate that the estimation of the P-spline smoother can easily be done within a mixed model framework. A formal description of the estimation framework is provided in Appendix B.

In further steps of our analysis we investigate the role of contextual factors in detail using a parametric linear probability model based on equation 1. The model is estimated with robust standard errors to correct for the heteroskedasticity in the error term. In addition, we include an individual-specific random effect to take into account that the data contain repeated observations on the same households. Thus, we can reliably determine the statistical significance of the coefficients.

5 Results

5.1 Differences in Welfare Program Participation: Life Cycle Trajectories

In this subsection, we discuss the life cycle trajectories of transfer receipt for first generation immigrants and natives. In Figure 4 we separately present the life cycle patterns of transfer receipt for social assistance, unemployment assistance, a composite indicator of the two programs, and unemployment benefit II. We compare the joint effect of age and years since migration for immigrants to the effect of age for the probability of transfer receipt among natives.

We derive this graphical representation in two steps. First, we estimate the semiparametric regression model introduced in equation 2. Next, we simulate the probability of transfer re-

¹² For a comprehensive introduction to semi- and nonparametric regression models, cf. e.g. Ruppert et al. (2003), Wu and Zhang (2006).

ceipt over the life cycle for immigrants and natives based on these estimation results. For the graphical representation in the top row of Figure 4 (panel A), the semiparametric regression was estimated including only age and years since migration without further covariates. This unconditional regression model reflects the unadjusted probability of transfer receipt over the life cycle. Because differences in transfer receipt between immigrants and natives may be due to variables that are correlated with immigrant status, we next apply a regression model that controls for socioeconomic characteristics. The transfer patterns obtained from these regressions are provided in the bottom row of Figure 4 (panel B). Note that in simulating the predicted probabilities for immigrants, age and years since migration cannot vary independently: staying one extra year in the host country is equivalent to an increase in age by one. We predict transfer probabilities for an immigrant, who enters the host country at the age of 25; a movement along the x -axis implies a simultaneous increase in years since migration and in age. For natives, the x -axis represents age only. We consider one specific household type in our simulation exercise.¹³ We calculated confidence bands for the predicted probabilities to assess the statistical significance of the differences between immigrants and natives using a bootstrap approach with 100 replications.

Except for social assistance receipt, the immigrant-native gap in transfer receipt is generally statistically significant in panel A, where no further covariates are considered. This confirms descriptive statistics, in which immigrants have a considerably higher probability of transfer receipt than natives. With respect to social assistance and unemployment benefit II, we observe a negative slope of transfer dependence among young first generation immigrants and—except for unemployment assistance receipt—no increase in benefit receipt over the life cycle, which would have been expected in a scenario of assimilation into the welfare state. Keeping the limitations of our almost cross-sectional data in mind, this might be interpreted as evidence for a decreasing dependence of transfer receipt with a longer duration of stay—the opposite of what has been confirmed for the U.S. and Germany in prior studies. At the same time, we cannot

¹³ We consider the following household type: married couple with one child, male household head with 15 years of full-time experience and two years of previous unemployment, currently employed, and medium level of vocational training. For immigrants, these additional assumptions apply: non-EU citizenship, vocational degree obtained in Germany, and good language skills.

reject the interpretation that more recent (i.e. younger) immigrants depend on social assistance and unemployment benefit II to a higher extent than earlier (i.e. now older) immigrant cohorts.

The conclusions change slightly, when we additionally control for socioeconomic characteristics. With the inclusion of the covariates, the immigrant-native gap disappears for all transfer programs (cf. Figure 4 panel B): now the immigrant and native curves are closer to each other, their confidence bands overlap, and both curves exhibit similar profiles. This suggests that immigrant status *per se* is not correlated with the observed higher immigrant transfer dependence. Instead, immigrants' characteristics appear to be behind the gap in transfer rates. Here, immigrants' probability of welfare receipt increases *ceteris paribus* after age 40, just as it is the case for natives.

A comparison of the composite indicator with unemployment benefit II yields that conditional transfer trajectories are similar before and after the reform. This suggests that the life cycle pattern of transfer receipt has not changed substantially due to the reform. However, the probability of transfer receipt after the reform exceeds prior levels, which may be due to increased take up (cf. Kayser and Frick 2001, Riphahn 2001).¹⁴ Overall, the life cycle patterns of transfer dependence among natives and immigrants hardly differ.

5.2 Parametric Estimation Results

In this subsection, we present results obtained from linear probability models based on Equation 1. The specification considers (1) characteristics of the household, (2) characteristics of the household head, and (3) immigrant-specific variables, such as years since migration, language skills, or region of origin.

In a first step, we investigate the immigrant-native gap in welfare use conditioning on household and household head characteristics only and omitting immigrant-specific variables. The

¹⁴ Various studies showed that before the recent reform more than half of the eligible households did not take up the social assistance benefits, which they were eligible for. Possible reasons for the low take up are low claim amounts, social stigma, and the expectation of a short period of eligibility (cf. Wilde and Kubis 2005).

estimation results are presented in Table 5. The coefficient of the first generation immigrant indicator is small and statistically insignificant for all three transfer programs (cf. bottom of Table 5). This suggests that there is no excess welfare dependence among immigrants *per se*. The other coefficient estimates indicate that households with many children, single parents, those with high unemployment experience and low human capital are most likely to receive minimum income support.¹⁵

The second step in our parametric analysis addresses the question whether the correlation patterns of welfare dependence differ for natives and immigrants. We estimate Equation 1 with a full vector of interaction effects for the immigrant sample and now also consider immigrant-specific control variables. The estimation results of the linear model for the three transfer programs are presented in Table 6.

In all three models, the main effects of household head characteristics are jointly statistically significant at the 1% level. The main effects of household characteristics are jointly significant in the regressions for social assistance and unemployment benefit II. As indicated in the bottom row of Table 6 the vector of all immigrant-specific coefficients, i.e. interaction terms plus the immigrant-specific variables, are jointly statistically significant in the social assistance model but not in the unemployment assistance and in the unemployment benefit II models. When tested separately, neither the estimated interaction terms of the household characteristics nor of the household head characteristics are jointly significant in any of the models. Overall, there is no support for the hypothesis that the correlation of contextual factors and transfer receipt differs significantly for natives and immigrants.

The estimation results show that not all strong correlations are statistically significant and, vice versa, not all significant correlations are substantively important. Generally, transfer dependence is associated with being a single parent households, with current or past unemployment of the head of household, and with low levels of work experience and formal education. These general patterns hold for both subsamples and across all three programs.

¹⁵ These results are robust to estimations using sampling weights.

An inspection of the results for the immigrant-specific controls yields a convex pattern of transfer dependence in years since migration, which roughly matches the evidence presented in Figures 4.5, 4.7, and 4.8. Relative to those of Turkish and “other” countries of origin, first generation immigrants from Central and Eastern Europe and from EU countries are less likely to depend on minimum income support. Having received formal training abroad is associated with higher transfer dependence, as is, surprisingly, a good command of the German language. The latter might indicate that mostly those able to communicate find their way through the requirements of the social benefits administration. This would suggest a failure of the minimum income support system.

In a final step of our parametric analysis, we ask whether the transition from social assistance plus unemployment assistance to unemployment benefit II affected level and patterns of transfer receipt among natives and first generation immigrants. Descriptive statistics yield that the total share of households in benefit receipt increased substantially over time: in our data, we observe an increase in the share of benefit receiving native households from 3.7% before the reform to 7.6% afterwards, the shares among first generation immigrant households increased from 8.5% to 15.2%. A number of factors might explain this general increase in transfer dependence. First, the share of eligible individuals who chose not to take-up their benefits may have declined in a situation in which the benefit reform was broadly and critically discussed.¹⁶ Second, initial regulations eased the entry into welfare dependence for young claimants, which was modified already one year after the reform was introduced. Third, the legally defined subsistence level is higher under unemployment benefit II than under the social assistance regime. Therefore, a larger number of individuals became newly eligible.¹⁷ Finally, as regular unemployment insurance benefits I are paid for a shorter period of time, the unemployed now move to unemployment benefit II sooner, if they passed the means-test.

In order to compare the patterns of welfare dependence before and after the reform we pooled the annual samples and regressed an indicator of “any” benefit receipt on our baseline

¹⁶ For first evidence on this point and a more detailed discussion of reasons for declining non-take-up, see Bruckmeier and Wiemers (2010). These authors find no significant differences in take-up behavior for natives and immigrants.

¹⁷ The net of rent minimum income rate for one adult increased from 297 Euro under the social assistance regime in 2004 to 345 Euro under unemployment benefits II in 2005 (for West Germany).

specification controlling for an additional indicator of whether the observation year is after the reform (i.e. 2006 or 2007). Table 7 provides these estimation results separately for natives and first generation immigrants in columns 1 and 3.¹⁸ The coefficients of the postreform indicators are positive and statistically significant. For natives, they suggest an average increase in the propensity to receive any benefits by about 3% and for immigrants by about 6%, which approximately reflects the increase in aggregate numbers (cf. Table 4).

These *ceteris paribus* postreform coefficients might hide more substantial shifts in the correlation patterns of characteristics and transfer receipt. We estimated fully interacted specifications which allow for separate correlation patterns of the covariates before and after the reform. The coefficients are presented in columns 2 and 4 of Table 7, separately for natives and first generation immigrants. The top half of the table presents the main effects while the bottom half holds the coefficients of the postreform interaction effects.

The additionally estimated interaction terms are jointly highly statistically significant for both subsamples, suggesting that the correlation patterns of benefit receipt differ between the pre- and the post-reform periods. We observe substantial shifts in the coefficients of household characteristics, which reflects the changes in correlation patterns pointed out already in Table 6. Generally, single households without children are more likely to receive benefits after the reform than before, which may be due to the increased minimum income levels. Among natives, we find a significant change in the life cycle pattern of benefit receipt which could be expected based on Figures 4.7 and 4.8 and may be related to the initially eased access of young adults to the benefit. In both subsamples, the largest post-reform shift is connected to the correlation of benefit receipt with the labor market status of the head of the household. In particular, having an unemployed head of household is more strongly correlated with benefit receipt after than before the reform. This is plausible, as prior to the reform, social assistance benefit recipients were not required to be registered as unemployed, while now unemployment benefit II recipients are. Overall, the changes in correlation patterns are jointly statistically significant, however they provide no indication of substantively modified welfare dependence patterns.

¹⁸ The results are robust to estimations using sampling weights.

6 Conclusions

We investigate welfare participation of first generation immigrants and natives in Germany. The analysis considers benefit receipt both before and after a substantial reform of the welfare system in 2005, when social assistance and unemployment assistance were combined into one single program, unemployment benefit II.

In an analysis of life cycle trajectories of benefit receipt, we find no evidence for a linkage between immigrant status *per se* and the probability of receiving transfers, neither before nor after the reform. In this respect, our analysis confirms previous studies on immigrant welfare dependence in Germany. Graphical representations of life cycle trajectories of transfer receipt show that the probability of receiving transfers is characterized by similar profiles for immigrants and natives. Since the propensity of welfare receipt among young immigrants declines as they accumulate host country-specific human capital, we find less evidence for immigrant assimilation into welfare than prior studies (e.g., Riphahn 2004). This may be related to changes in the immigrant population, it may be due to changes in the labor market situation, and finally, it might be related to institutional changes in the benefit system, which now approaches benefit recipients in a more demanding fashion than it used to be the case.

These results are confirmed in parametric analyses, which yield no significant difference in welfare dependence between the two subsamples once characteristics are controlled for. Generally, not even the correlation of the contextual variables with welfare dependence differs significantly for the two subsamples. For both subsamples, transfer dependence is correlated with human capital variables and the labor market status of the household head. In addition, higher previous work experience is associated with a reduced risk of welfare dependence. Households with children and especially single parent households have a statistically significantly higher likelihood of transfer receipt than others.

Finally, we investigated whether the reform itself affected the correlation patterns of transfer dependence and contextual variables. For a variety of predominantly institutional reasons the general propensity of welfare receipt should have increased after the reform for both subsamples. We find that the labor force status of the household head is more tightly correlated

with benefit receipt after than before the reform. Also, the composition of benefit receiving households differs slightly after compared to before the reform. Generally, however, welfare dependence patterns were not substantively modified by the reform, which seems to imply that the relevance of the institutional design of a national welfare system might be limited, at least in the short run.

Our parametric analyses show that the immigrant-native differences in welfare dependence can be explained to a large extent by differences in a few characteristics: individuals with unemployment experience, low levels of formal education, and in large households are mostly in need of public minimum income support. This type of person is more likely to be found in the immigrant population than among natives. To reduce welfare dependence among immigrants poor human capital endowment and labor market integration should be the targets of policy interventions.

In this respect, evidence from other countries suggests that it is insufficient that immigrants find employment upon entry in the host country, as “labor migrants [...] have found it difficult to sustain employment careers comparable to those of natives” (Bratsberg et al. 2010, p. 668). This suggests two policy implications: one is to apply more selective immigration policies based on human capital criteria. However, this can neither hinder subsequent family reunification nor does it limit the incentive effects of a functioning welfare state. Additionally, one may aim to reduce welfare dependence among immigrants by initiating training programs designed to their specific needs.¹⁹ As long as continued immigration is advocated to counter demographic imbalances in modern welfare states, efforts to reduce welfare dependence among first generation immigrants need to follow at least one of these recommendations.

¹⁹ Bundesministerium für Arbeit und Soziales (2009) list specific recommendations as to how the welfare administration might improve the supply of training programs for first generation immigrants in general, and for those with human capital deficits in particular.

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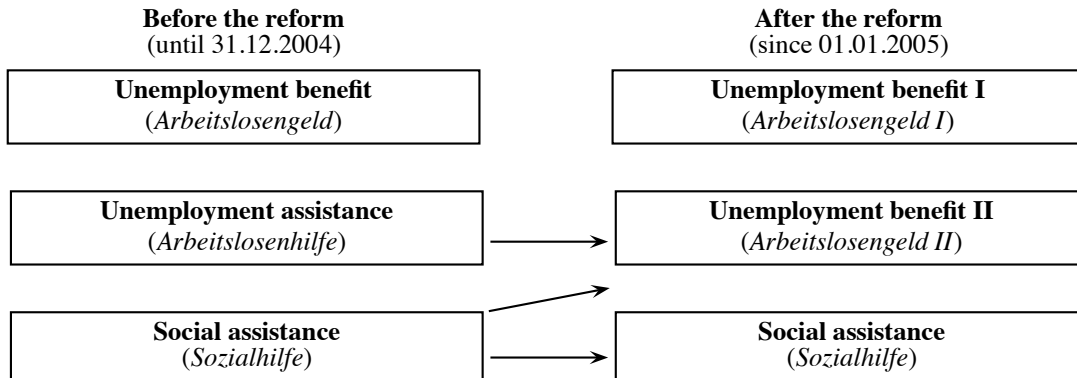
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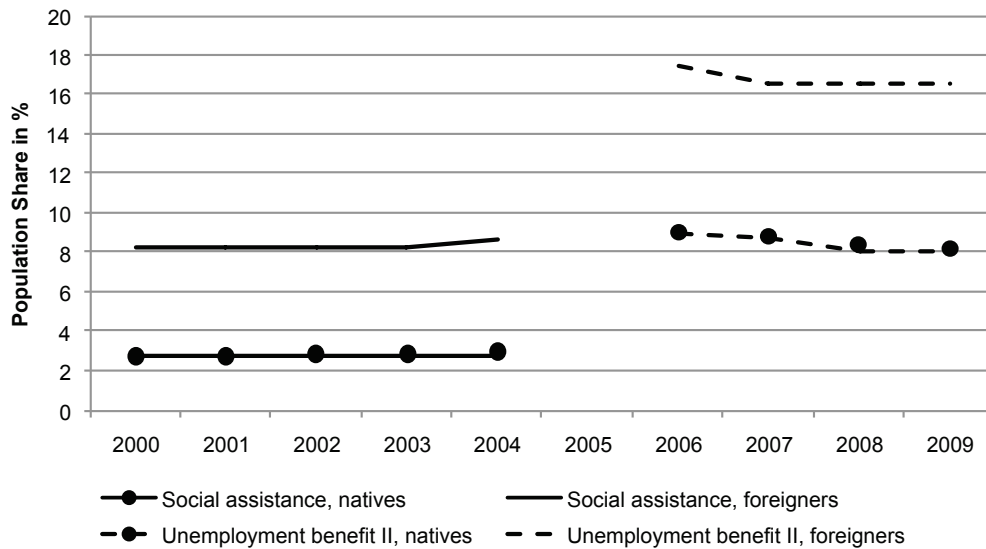
A Tables and Figures

Figure 1: Minimum Income Support in Germany



Note: For further details on the reform of the German minimum income support system, see e.g. Caliendo (2009).

Figure 2: Reciprocity Rates of Social Assistance and Unemployment Benefit II Before and After the Reform



Source: Bundesagentur für Arbeit (2006), Bundesagentur für Arbeit (2007), Bundesagentur für Arbeit (2008), Bundesagentur für Arbeit (2009), Bundesagentur für Arbeit (2010a), Statistisches Bundesamt (2004), Statistisches Bundesamt (2007), Statistisches Bundesamt (2010)

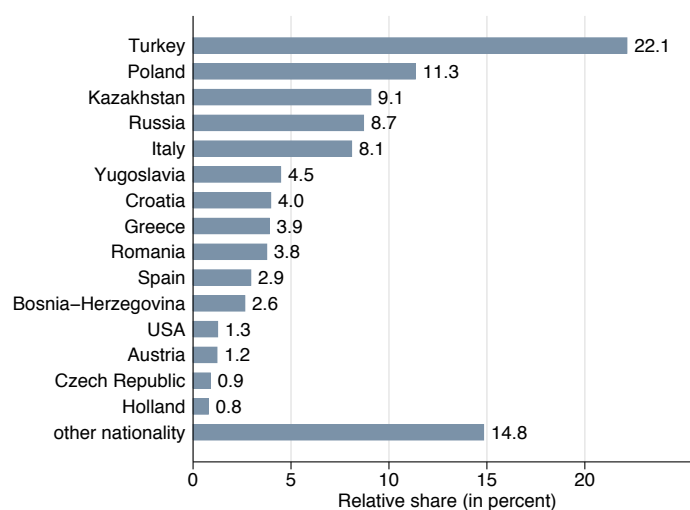
Table 1: Sample Households by Immigration Status and Citizenship

Sample	Immigration status			Total
	Natives	Immigrants with German citizenship	Immigrants with foreign citizenship	
2003, 2004	83.57% (8,614)	8.03% (828)	8.40% (866)	100% (10,308)
2006, 2007	86.28% (7,915)	7.24% (664)	6.49% (595)	100% (9,174)
Total	84.84% (16,529)	7.66% (1,492)	7.50% (1,461)	100% (19,482)

Note: Number of household-year observations in parentheses.

Source: SOEP 2003, 2004, 2006, 2007.

Figure 3: First Generation Immigrants by Country of Origin



Source: SOEP 2003, 2004, 2006, 2007. $nT = 2,953$.

Table 2: Observed Probability of Welfare Use (in %)

Household type	Social assistance		Unemployment assistance		Unemployment benefit II	
	Natives	Immigrants	Natives	Immigrants	Natives	Immigrants
Single person	0.008	0.020	0.034	0.055	0.080	0.166
Couple without children	0.006	0.020	0.015	0.084	0.039	0.065
Single parent	0.139	0.126	0.075	0.070	0.272	0.349
Couple with children	0.008	0.022	0.012	0.051	0.060	0.145
Multiple generation HH	0.017	0.114	0.086	0.200	0.143	0.174 [†]
Other combination	0.000	0.000 [†]	0.034	0.000 [†]	0.065	0.000 [†]
Total	0.017	0.032	0.023	0.061	0.076	0.152

Note: [†] Calculation is based on less than 30 observations.

Source: For social assistance and unemployment assistance SOEP 2003, 2004 and for unemployment benefit II SOEP 2006, 2007.

Table 3: Share of Household Types (in %)

Household type	Natives	Immigrants	Total
Single person	23.65	12.12	21.90
Couple without children	24.89	18.73	23.96
Single parent	7.45	9.21	7.72
Couple with children	42.40	56.82	44.59
Multiple generation household	0.60	1.96	0.81
Other combination	1.00	1.15	1.02

Source: SOEP 2003, 2004, 2006, 2007.

Table 4: Descriptive Statistics

Variable	Sample 1 (2003, 2004)				Sample 2 (2006, 2007)			
	Natives		Immigrants		Natives		Immigrants	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Social assistance receipt	0.017	0.130	0.032	0.176	—	—	—	—
Unemployment assistance receipt	0.023	0.149	0.061	0.240	—	—	—	—
Unemployment benefit II receipt	—	—	—	—	0.076	0.265	0.152	0.359
Number of children in HH	0.642	0.940	0.957	1.166	0.601	0.913	0.877	1.094
Number of persons in HH	2.617	1.298	3.214	1.503	2.561	1.277	3.137	1.477
HH type: single with kids	0.073	0.260	0.084	0.278	0.076	0.266	0.102	0.303
HH type: couple with kids	0.431	0.495	0.583	0.493	0.416	0.493	0.549	0.498
HH type: single no kids	0.231	0.421	0.119	0.323	0.243	0.429	0.125	0.331
HH type: other	0.017	0.129	0.032	0.177	0.015	0.122	0.029	0.169
Sex: female	0.388	0.487	0.295	0.456	0.406	0.491	0.349	0.477
Health: good/very good	0.597	0.490	0.553	0.497	0.570	0.495	0.531	0.499
Out of labor force	0.026	0.160	0.028	0.164	0.031	0.175	0.027	0.162
Unemployed	0.046	0.210	0.122	0.327	0.047	0.211	0.110	0.314
Experience	19.01	11.29	19.83	11.57	19.48	11.13	20.01	11.48
Unemployment experience	0.557	1.554	1.466	2.537	0.657	1.812	1.688	2.740
Married or widowed	0.624	0.484	0.802	0.398	0.608	0.488	0.789	0.408
Divorced	0.129	0.335	0.107	0.310	0.138	0.345	0.123	0.329
Education in years	12.54	2.695	10.93	2.369	12.70	2.746	11.19	2.449
Education abroad	0.000	0.000	0.642	0.479	0.000	0.000	0.593	0.492
Attrition from sample [†]	0.068	0.252	0.084	0.278	0.033	0.178	0.055	0.228
Age	43.07	10.94	43.74	10.93	43.54	10.75	44.55	10.77
Lang. skills: good	1.000	0.000	0.629	0.483	1.000	0.000	0.467	0.499
Years since migration (YSM)	—	—	23.44	10.50	—	—	26.02	10.36
Turks	—	—	0.221	0.415	—	—	0.222	0.415
Central and East European Countries (CEE)	—	—	0.311	0.463	—	—	0.303	0.460
EU (non CEE)	—	—	0.208	0.406	—	—	0.199	0.399
Household-year observations	8,614	—	1,694	—	7,915	—	1,259	—

Note: [†]For observations in the last wave of data, we assume that nobody attrits from the survey.

Source: SOEP 2003, 2004, 2006, 2007.

Figure 4: Predicted Life Cycle Probability of Transfer Receipt

A. Unconditional regression models (control variables omitted)

Before the reform

Fig. 4.1: Social assistance

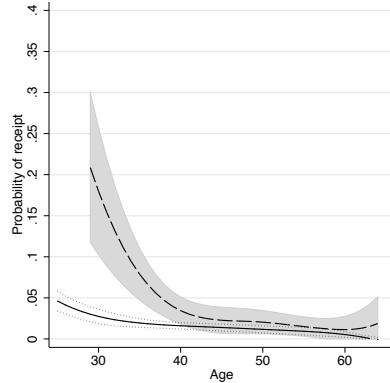


Fig. 4.2: Unemployment assistance

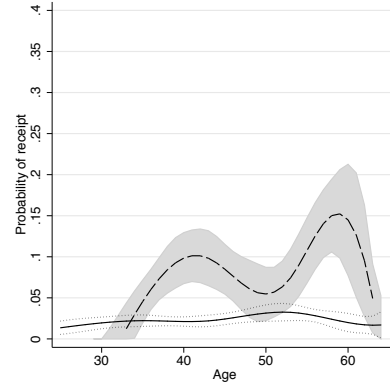
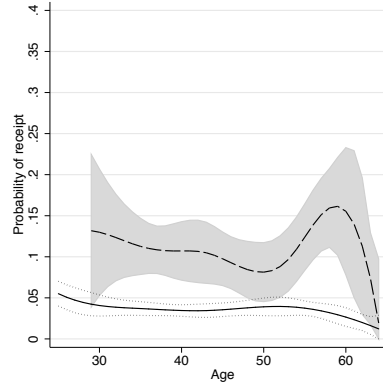
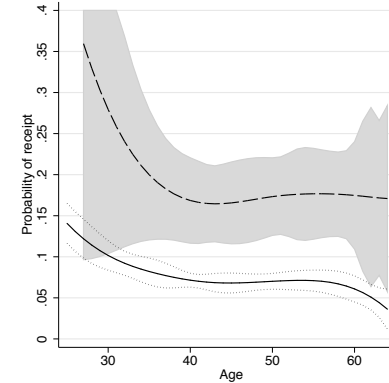


Fig. 4.3: Composite indicator



After the reform

Fig. 4.4: Unemployment benefit II



B. Conditional regression models (control variables included)

Before the reform

Fig. 4.5: Social assistance

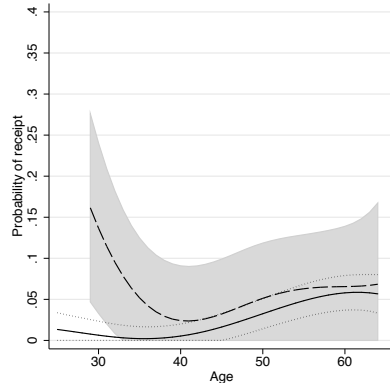


Fig. 4.6: Unemployment assistance

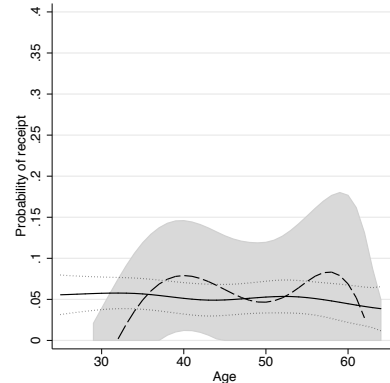
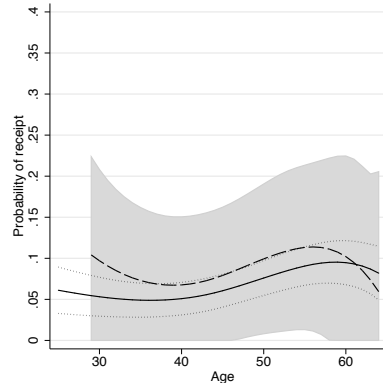
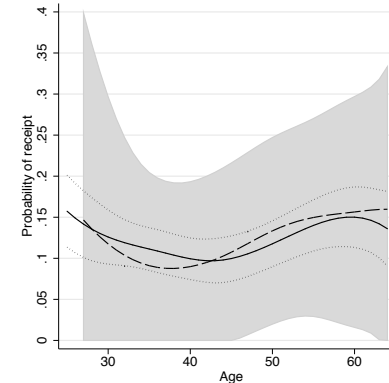


Fig. 4.7: Composite indicator



After the reform

Fig. 4.8: Unemployment benefit II



Note: Solid lines represent natives, dashed lines are for immigrants. Immigrants are assumed to arrive in the host country at age 25. For immigrants, an increase on the x -axis is tantamount to an increase of both age and years since migration. As no immigrants with YSM below 2 or 4 are observed in the data, the predictions for immigrants commence at age 25 plus the minimum YSM observed, to avoid out of sample predictions. For natives, the x -axis represents age only. 95%-confidence bands are based on bootstrapped standard errors (100 replications). Shaded areas represent confidence bands for immigrants, dotted lines those for natives.

Source: SOEP 2003, 2004, 2006, 2007.

Table 5: Estimation Results: Empirical Correlates of Transfer Receipt (Baseline Model, Pooled Samples)

Variable	Social assistance		Unemployment assistance		Unemployment benefit II	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Number of children in HH	0.013***	(0.003)	0.003	(0.003)	0.014**	(0.006)
Number of persons in HH	0.002	(0.004)	0.003	(0.004)	0.003	(0.007)
HH type: single with kids	0.088***	(0.014)	0.010	(0.009)	0.122***	(0.018)
HH type: couple with kids	-0.005	(0.007)	-0.008	(0.007)	0.016	(0.012)
HH type: single no kids	-0.010*	(0.006)	0.000	(0.006)	0.014	(0.012)
HH type: other	0.009	(0.018)	0.015	(0.015)	0.003	(0.026)
Age	-0.003*	(0.002)	0.001	(0.001)	-0.011***	(0.003)
Age squared/100	0.005***	(0.002)	-0.002	(0.002)	0.014***	(0.003)
Sex: female	0.004	(0.003)	-0.005	(0.004)	-0.003	(0.007)
Health: good or very good	-0.005**	(0.002)	-0.003	(0.003)	-0.015***	(0.005)
Out of labor force	0.015	(0.013)	0.008	(0.005)	0.065***	(0.020)
Unemployed	0.026**	(0.011)	0.131***	(0.017)	0.163***	(0.021)
Experience	-0.002***	(0.001)	0.000	(0.000)	-0.003***	(0.001)
Unemployment experience	0.009***	(0.002)	0.036***	(0.003)	0.052***	(0.004)
Married or widowed	-0.026***	(0.007)	-0.012**	(0.006)	-0.013	(0.011)
Divorced	-0.016*	(0.009)	0.012	(0.009)	0.030**	(0.014)
Education	-0.004***	(0.001)	-0.001	(0.001)	-0.008***	(0.001)
Attrition from sample	0.007	(0.005)	-0.000	(0.006)	0.005	(0.014)
1st generation immigrant	-0.002	(0.006)	-0.006	(0.006)	-0.006	(0.011)
Constant	0.141***	(0.036)	-0.012	(0.029)	0.378***	(0.061)
R-squared	0.1204		0.2644		0.3091	

Note: Linear probability models with household-specific random effects. Native and first generation immigrant samples are pooled. Heteroskedasticity-robust standard errors are in parentheses. Significance level: * <0.1 , ** <0.05 , *** <0.01 .

Source: For social assistance and unemployment assistance: SOEP 2003, 2004. $nT = 10308$. $n = 5609$. For unemployment benefit II: SOEP 2006, 2007. $nT = 9174$. $n = 5115$.

Table 6: Estimation Results: Empirical Correlates of Transfer Receipt (Fully Interacted Model, Pooled Samples)

Variable	Social assistance				Unemployment assistance				Unemployment benefit II			
	Main effects		Interactions		Main effects		Interactions		Main effects		Interactions	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
No. of children in HH	0.009***	(0.003)	0.018**	(0.009)	0.006*	(0.003)	-0.009	(0.011)	0.017***	(0.006)	-0.021	(0.017)
No. of persons in HH	0.006	(0.005)	-0.018**	(0.008)	-0.000	(0.005)	0.006	(0.011)	-0.002	(0.008)	0.023	(0.020)
HH type: single w. kids	0.087***	(0.015)	0.002	(0.038)	0.014	(0.010)	-0.021	(0.030)	0.111***	(0.019)	0.069	(0.059)
HH type: couple w. kids	-0.007	(0.008)	0.008	(0.016)	-0.001	(0.007)	-0.032	(0.023)	0.015	(0.013)	0.022	(0.032)
HH type: single no kids	-0.008	(0.007)	-0.003	(0.020)	-0.000	(0.007)	-0.016	(0.025)	0.005	(0.012)	0.056	(0.045)
HH type: other	-0.010	(0.016)	0.090*	(0.052)	0.012	(0.015)	0.007	(0.042)	0.007	(0.029)	-0.013	(0.071)
Attrition from sample	0.004	(0.006)	0.016	(0.012)	0.003	(0.006)	-0.016	(0.020)	0.000	(0.014)	0.038	(0.046)
Age	-0.003**	(0.002)	0.005	(0.006)	0.000	(0.001)	0.003	(0.006)	-0.012***	(0.003)	0.001	(0.010)
Age squared/100	0.006***	(0.002)	-0.004	(0.006)	-0.001	(0.001)	-0.004	(0.006)	0.014***	(0.003)	-0.000	(0.011)
Sex: female	0.003	(0.003)	0.009	(0.013)	-0.002	(0.004)	-0.014	(0.015)	-0.003	(0.007)	-0.008	(0.027)
Health: good/very good	-0.002	(0.002)	-0.015*	(0.008)	0.000	(0.003)	-0.024**	(0.011)	-0.014***	(0.005)	-0.007	(0.017)
Out of labor force	0.020	(0.015)	-0.029	(0.034)	0.003	(0.005)	0.031*	(0.018)	0.072***	(0.021)	-0.068	(0.060)
Unemployed	0.029**	(0.014)	-0.011	(0.023)	0.113***	(0.019)	0.057	(0.037)	0.144***	(0.025)	0.064	(0.049)
Experience	-0.002***	(0.001)	-0.001	(0.002)	0.000	(0.000)	0.000	(0.001)	-0.003***	(0.001)	-0.002	(0.003)
Unemployment exp.	0.010***	(0.003)	-0.002	(0.005)	0.038***	(0.004)	-0.007	(0.007)	0.054***	(0.005)	-0.010	(0.009)
Married or widowed	-0.028***	(0.007)	-0.003	(0.029)	-0.012*	(0.006)	-0.015	(0.027)	-0.011	(0.012)	-0.024	(0.044)
Divorced	-0.011	(0.009)	-0.045	(0.034)	0.015*	(0.009)	-0.038	(0.033)	0.028**	(0.014)	0.001	(0.055)
Education	-0.005***	(0.001)	0.004	(0.003)	-0.000	(0.001)	-0.002	(0.003)	-0.008***	(0.001)	0.007	(0.005)
1st generation immigrant	0.033	(0.115)	—	—	-0.043	(0.113)	—	—	-0.052	(0.204)	—	—
Years since mig. (YSM)	-0.013***	(0.004)	—	—	0.005	(0.003)	—	—	-0.005	(0.006)	—	—
YSM (squared)	0.000***	(0.000)	—	—	-0.000	(0.000)	—	—	0.000	(0.000)	—	—
Education abroad	0.011	(0.015)	—	—	0.028*	(0.016)	—	—	0.030	(0.028)	—	—
Lang. skills: good	0.003	(0.012)	—	—	0.001	(0.014)	—	—	0.031*	(0.016)	—	—
Turks [‡]	0.005	(0.017)	—	—	0.018	(0.023)	—	—	-0.006	(0.039)	—	—
CEE countries [‡]	-0.016	(0.016)	—	—	-0.020	(0.017)	—	—	-0.052*	(0.028)	—	—
EU (non CEE) [‡]	-0.014	(0.015)	—	—	-0.020	(0.018)	—	—	-0.065**	(0.033)	—	—
Constant	0.143***	(0.040)	—	—	-0.004	(0.033)	—	—	0.373***	(0.066)	—	—
R-squared		0.1320				0.2709				0.3128		
Significance test [†]		0.0001				0.1464				0.1597		

Note: Linear probability model with household-specific random effects. Native and first generation immigrant samples are pooled. Heteroskedasticity-robust standard errors are in parentheses. [†]The row labeled significance test presents the p-value of a joint test of statistical significance of the vector of interaction effects (including the immigrant indicator, YSM variables, and three country of origin indicators). [‡]Reference category includes all other countries of origin. Significance level: *<0.1, **<0.05, ***<0.01.

Source: For social assistance and unemployment assistance: SOEP 2003, 2004. $nT = 10308$. $n = 5609$. For unemployment benefit II: SOEP 2006, 2007. $nT = 9174$. $n = 5115$.

Table 7: Estimation Results: Pre-/Post-Reform Correlations by Subsample

Variable	Natives				Immigrants			
	(1)		(2)		(3)		(4)	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
No. of children in HH	0.014***	(0.004)	0.018***	(0.004)	-0.001	(0.012)	0.015	(0.011)
No. of persons in HH	0.001	(0.005)	-0.002	(0.006)	0.007	(0.012)	-0.006	(0.011)
HH type: single w. kids	0.099***	(0.014)	0.083***	(0.016)	0.145***	(0.039)	0.097**	(0.040)
HH type: couple w. kids	0.005	(0.009)	-0.005	(0.010)	0.001	(0.020)	-0.029	(0.024)
HH type: single no kids	-0.002	(0.008)	-0.014	(0.009)	0.007	(0.027)	-0.034	(0.031)
HH type: other	-0.008	(0.016)	-0.018	(0.019)	0.056	(0.042)	0.081	(0.055)
Attrition from sample	0.003	(0.007)	0.004	(0.008)	0.007	(0.022)	0.004	(0.022)
Age	-0.007***	(0.002)	-0.004**	(0.002)	-0.002	(0.006)	-0.003	(0.007)
Age squared/100	0.008***	(0.002)	0.006***	(0.002)	0.003	(0.007)	0.004	(0.007)
Sex: female	-0.000	(0.005)	0.002	(0.005)	-0.016	(0.017)	-0.023	(0.019)
Health: good/very good	-0.007**	(0.003)	0.000	(0.004)	-0.037***	(0.011)	-0.038***	(0.013)
Out of labor force	0.051***	(0.014)	0.024*	(0.014)	0.010	(0.042)	-0.001	(0.050)
Unemployed	0.149***	(0.017)	0.112***	(0.022)	0.252***	(0.029)	0.192***	(0.036)
Experience	-0.002***	(0.001)	-0.001**	(0.001)	-0.003*	(0.002)	-0.002	(0.002)
Unemployment exp.	0.051***	(0.004)	0.049***	(0.004)	0.036***	(0.005)	0.036***	(0.006)
Married or widowed	-0.024***	(0.008)	-0.033***	(0.009)	-0.033	(0.030)	-0.038	(0.035)
Divorced	0.015	(0.011)	0.007	(0.012)	-0.022	(0.034)	-0.054	(0.041)
Education	-0.006***	(0.001)	-0.005***	(0.001)	-0.001	(0.003)	-0.000	(0.004)
Education abroad	—	—	—	—	0.034**	(0.016)	0.049***	(0.016)
Lang. skills: good	—	—	—	—	0.024*	(0.012)	0.015	(0.017)
Turks	—	—	—	—	-0.014	(0.022)	-0.018	(0.025)
CEE	—	—	—	—	-0.052***	(0.018)	-0.053**	(0.021)
EU (non CEE)	—	—	—	—	-0.059***	(0.020)	-0.060***	(0.021)
Postreform	0.032***	(0.003)	0.199***	(0.069)	0.061***	(0.012)	-0.020	(0.204)
Constant	0.245***	(0.042)	0.177***	(0.046)	0.099	(0.123)	0.174	(0.139)
Postreform interactions:								
No. of children in HH	—	—	-0.007	(0.007)	—	—	-0.032*	(0.017)
No. of persons in HH	—	—	0.005	(0.008)	—	—	0.032*	(0.019)
HH type: single w. kids	—	—	0.032	(0.021)	—	—	0.085	(0.057)
HH type: couple w. kids	—	—	0.020	(0.015)	—	—	0.057	(0.039)
HH type: single no kids	—	—	0.023*	(0.012)	—	—	0.083*	(0.048)
HH type: other	—	—	0.021	(0.033)	—	—	-0.106	(0.080)
Age	—	—	-0.006**	(0.003)	—	—	-0.001	(0.010)
Age squared/100	—	—	0.007**	(0.003)	—	—	0.002	(0.011)
Sex: female	—	—	-0.005	(0.007)	—	—	0.016	(0.028)
Health: good/v. good	—	—	-0.015**	(0.006)	—	—	0.003	(0.019)
Out of labor force	—	—	0.052**	(0.023)	—	—	0.039	(0.082)
Unemployed	—	—	0.082**	(0.034)	—	—	0.141**	(0.057)
Experience	—	—	-0.001	(0.001)	—	—	-0.002	(0.003)
Unemployment exp.	—	—	0.001	(0.006)	—	—	-0.003	(0.007)
Married or widowed	—	—	0.020	(0.012)	—	—	0.008	(0.047)
Divorced	—	—	0.019	(0.015)	—	—	0.068	(0.056)
Education	—	—	-0.003***	(0.001)	—	—	-0.002	(0.005)
Attrition from sample	—	—	0.000	(0.016)	—	—	0.025	(0.051)
Education abroad	—	—	—	—	—	—	-0.026	(0.022)
Lang skills: good	—	—	—	—	—	—	0.015	(0.023)
Turks	—	—	—	—	—	—	0.009	(0.039)
CEE countries	—	—	—	—	—	—	0.004	(0.031)
EU (non CEE)	—	—	—	—	—	—	0.001	(0.035)
R-squared	0.2912		0.2980		0.3175		0.3292	

Note: Linear probability models with household-specific random effects. Heteroskedasticity-robust standard errors are in parentheses. Dependent variable: combined welfare indicator (social assistance, unemployment assistance, unemployment benefit II). Significance level: * < 0.1, ** < 0.05, *** < 0.01.

Source: SOEP 2003, 2004, 2006, 2007. Columns (1) and (2) (Natives): $nT = 16529$. $n = 5626$. Columns (3) and (4) (First Generation Immigrants): $nT = 2953$. $n = 996$.

B Estimation of the semiparametric models

The semiparametric additive estimation model with binary interaction

$$y_i = \beta_0 + f_{I_i}(age_i) + h(YSM_i) + \mathbf{x}'_i \boldsymbol{\beta} + \varepsilon_i \quad (3)$$

can be written in detail as (cf. Coull et al. 2001, Ruppert et al. 2003):

$$\begin{aligned} y_i = & \alpha_0 + \sum_{j=1}^p \alpha_j age_i^j + \sum_{k=1}^{K_a} u_k^{(1)} (age_i - \kappa_k^a)_+^p \\ & + I_i \left(\delta_0 + \sum_{j=1}^p \delta_j age_i^j + \sum_{k=1}^{K_a} u_k^{(2)} (age_i - \kappa_k^a)_+^p \right) \\ & + \sum_{j=1}^p \theta_j YSM_i^j + \sum_{k=1}^{K_{ysm}} u_k^{(3)} (YSM_i - \kappa_k^{ysm})_+^p + \mathbf{x}'_i \boldsymbol{\beta} + \varepsilon_i. \end{aligned} \quad (4)$$

The mixed-model formulation of this P-spline model can be obtained assuming $u_k^{(t)} \sim \text{i.i.d.}(0, \sigma_u^2)$ for all knot coefficients ($t = 1, 2, 3$). The knot points inside the range of age are denoted $\kappa_1^a, \dots, \kappa_{K_a}^a$, the knot points inside the range of YSM are $\kappa_1^{ysm}, \dots, \kappa_{K_{ysm}}^{ysm}$. The term $\delta_0 + \sum \delta_j age_i^j$ represents the deviation between f_1 and f_0 , and the term $\sum u_k^{(2)} (age_i - \kappa_k^a)_+^p$ represents deviations from the overall smooth term $\sum u_k^{(1)} (age_i - \kappa_k^a)_+^p$ (for details, cf. Coull et al. 2001). We estimated the model with the command `-xtmixed-` implemented in Stata 11 MP using third-order polynomials (i.e., $p = 3$).