PATTERNS OF WELFARE DEPENDENCE BEFORE AND AFTER A REFORM: EVIDENCE FROM FIRST GENERATION IMMIGRANTS AND NATIVES IN GERMANY

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This paper studies the patterns of welfare dependence among first generation immigrants and natives in Germany before and after a substantial recent reform of the welfare system. Using data from the German Socio-Economic Panel Study, the analysis presents life cycle trajectories of transfer receipt for immigrants and natives and studies the correlation between contextual factors and transfer receipt. We find no statistically significant differences in the probability of transfer receipt between immigrants and natives once socioeconomic characteristics are taken into account. Being a single parent, labor market status, and human capital are most closely correlated with the incidence of transfer receipt for both natives and immigrants. Interestingly, recent welfare reforms did not reverse prior patterns of welfare dependence.

1. Introduction

The disproportional participation of immigrants in welfare and cash benefit programs is a concern in numerous countries. Overall, empirical studies find for most countries that immigrants have higher rates of welfare receipt than natives. Most of the earlier studies on welfare dependence of immigrants cover the United States and Canada (e.g., Borjas and Trejo, 1991, 1993; Baker and Benjamin, 1995; Borjas and Hilton, 1996). European countries were investigated in a number of more recent studies. Sarvimäki (2011) describes the case of Finland where non-OECD immigrants are significantly more likely to receive means-tested public benefits than natives, and Hansen and Lofstrom (2011) show similar evidence for Sweden. Barrett and McCarthy (2008) survey the international literature and summarize that welfare dependence among non-European Union (EU) immigrants is higher than among natives in Denmark, the Netherlands, and France. However, the authors also discuss 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.

Recently, Dustmann *et al.* (2010) confirmed this specific result for immigrants to the United Kingdom.

The heterogeneity found in international comparisons suggests a close connection between national institutional frameworks and patterns of welfare dependence. Thus, thorough analyses of national welfare systems are crucial to understand welfare dependence patterns and immigrant–native gaps in welfare receipt. Such insight is particularly relevant in countries with rising shares of immigrants in the population. Since immigrant welfare use is a concern in many countries, it 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 (Kaestner and Kaushal, 2005).

We study the case of Germany which is of interest for two reasons: first, Germany experienced substantial immigration during the second half of the twentieth century. As of 2007, one in five residents had a "migration background": 8.9 percent of the population did not have German citizenship and an additional 9.9 percent were naturalized immigrants (BAMF, 2007). As in other countries, immigrants and their descendants are of specific importance for social and economic policy in Germany (Brücker *et al.*, 2002). Recently, the share of foreign citizens among welfare recipients was twice their population share (BA, 2010).

The second reason to investigate the German case rests in a recent reform of the institutional framework of minimum income protection. In 2005, two pre-reform benefit programs, i.e. unemployment assistance and social assistance, were combined to one single post-reform benefit, unemployment benefit II with substantially enhanced work incentives. Thus, it is of interest to study the recent situation in Germany 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 immigrants in the German welfare system, 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 because they are more likely to claim the benefits for which they are eligible. The authors find that conditional on other sociodemographic characteristics, immigrant households are no more likely to take up benefits than native households. Also, immigrants' greater propensity of benefit receipt is not related to immigrant status *per se*. Using SOEP data as well, Riphahn (2004) jointly modeled panel attrition, labor force status, and household social assistance dependence. Her results confirm the absence of *per se* immigrant–native welfare gaps after controlling for relevant characteristics.

The present study looks at the patterns of welfare dependence among first generation immigrants and natives based on data from the SOEP. We address three main issues. First, we present the development of welfare dependence over the life course comparing natives and immigrants. In this respect, our research is

related to the prior literature on the development of immigrant welfare dependence with increasing duration of stay, which is often interpreted as evidence for immigrant assimilation into the welfare state.[1] We contribute to the literature by applying semiparametric regression models as a particularly flexible method to estimate life cycle trajectories of transfer receipt. We compare life cycle patterns for natives and immigrants before and after the institutional reform.[2]

Second, we analyze 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. Here, we contribute to the literature by carefully comparing the patterns of separate benefit programs. Baker and Benjamin (1995) and Borjas and Hilton (1996) pointed out that the immigrant–native gap may differ depending on the specific transfer program studied.

Finally, we compare the patterns of welfare dependence in the periods before and after the recent reform of the system of minimum income protection. This part of our analysis relates to Kaestner and Kaushal (2005) and Borjas (2001) who study the immigrant–native welfare gap before and after the U.S. reform. Borjas points out that welfare receipt among immigrants responded strongly to the massive changes even though the federal reform was in part counterbalanced by state initiatives. In the German case, the reform did not specifically target immigrants. Instead, the changes in eligibility rules might have affected immigrants disproportionately, thus increasing the immigrant–native welfare gap. This paper is the first contribution to evaluate such shifts before and after the reform and presents a case study of the German welfare reform.

We find similar life cycle patterns of welfare receipt for natives and immigrants and no evidence that immigrants' welfare dependence increases with duration of stay. Also, our results confirm prior studies in that it is not immigrant status *per se* which generates the immigrant–native gap in welfare dependence: 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 (for a discussion, see Caliendo, 2009). In this section, we first survey the main components of the German welfare system before and after the reform. Then we formulate

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

[2]Recently, Haisken-DeNew and Sinning (2010) showed that the extent of social deprivation was particularly concentrated among older immigrants compared to natives.

hypotheses about reform effects, and finally we reflect on the specific situation of immigrants in the German system.

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 replace up to 67 percent of previous net labor incomes. Before the reform, the maximum duration of benefit receipt reached 32 months for those above age 56. After the reform, the maximum duration of eligibility for the benefit, now referred to as unemployment benefit I (UB I), was reduced. Initially, i.e. from 2006 through 2007, it was cut to 18 months and since 2008 those above age 58 can receive UB I for up to 24 months.

Before the reform, those who had exhausted their unemployment benefit entitlement and those who were not (yet) entitled to unemployment benefits were eligible for unemployment assistance (*Arbeitslosenhilfe*), a tax-financed means-tested benefit. Unemployment assistance was also related to prior net labor incomes with a replacement rate of up to 57 percent. 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 other OECD countries (Jacobi and Kluve, 2007).

Prior to the reform, individuals could claim (additional) social assistance (*Sozialhilfe*) if their 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.[3] Although social assistance was never intended to support employable clients, about one in six unemployment assistance claimants also received a regular social assistance payment (Adema *et al.*, 2003).

In January 2005, the reform of the income support system came into effect: unemployment assistance and social assistance were combined in the so-called unemployment benefit II (UB II), a means-tested and tax-financed benefit (see Figure 1). Since then, individuals who exhaust their unemployment insurance benefit entitlement (i.e., UB I) may be eligible for UB II. The benefit covers the legally defined minimum income and, in contrast to unemployment assistance, is not related to prior earnings. Generally, individuals in need can claim UB II if they are able to work at least 15 hours per week. Those who are not able to work, for example due to sickness, disability, or care responsibilities, are as before entitled to social assistance.

For the majority of former unemployment assistance recipients, the reform implied a reduction in benefits (Lampert and Althammer, 2004). In addition, some unemployment assistance recipients lost their benefit eligibility altogether if they did not pass the stricter means test of UB II.[4] However, the share of former unemployment assistance recipients losing eligibility was estimated to reach only 7 percent (BA, 2005).

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[3]Since the means test considers household size, a given income renders large households more likely to be eligible for additional social assistance than small households.
[4]This may be the case if a partner earned an income which lifted household income beyond the means test or if the recipient or household members owned wealth beyond the admissible threshold.

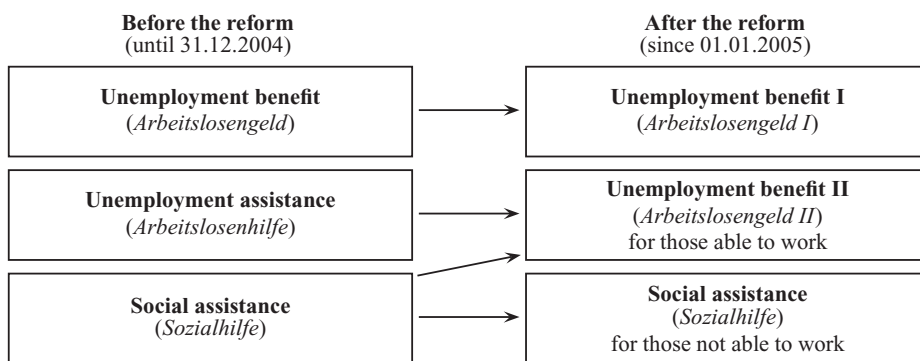| Before the reform (until 31.12.2004)		After the reform (since 01.01.2005)
Unemployment benefit (*Arbeitslosengeld*)	→	Unemployment benefit I (*Arbeitslosengeld I*)
Unemployment assistance (*Arbeitslosenhilfe*)	→	Unemployment benefit II (*Arbeitslosengeld II*) for those able to work
Social assistance (*Sozialhilfe*)	→	Social assistance (*Sozialhilfe*) for those not able to work

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).

In contrast, those who received social assistance before the reform are eligible for UB II as long as they are able to work. Their benefit amounts increased or decreased depending on individual circumstances. In most cases benefits increased due to the reform, although some benefit components, such as benefits for specific circumstances, were abolished. For instance, regular benefits amounted to 297 Euro for a single person household in West Germany before the reform and increased to 345 Euro when the reform came into effect (Arntz *et al.*, 2007).[5] We hypothesize that, as a consequence of the increase in benefit claims, the number of eligible individuals increased.

Furthermore, the regulations of earnings allowances and marginal tax rates were adjusted after the reform to increase work incentives (see, e.g., Dietz *et al.*, 2011; Sinn *et al.*, 2002): the maximum earnings allowance increased from about 160 to 280 Euro for single individuals and marginal tax rates declined.[6] We hypothesize that these changes also widened the group of benefit eligible individuals.

In addition to strengthening work incentives, the reform also requires welfare recipients to actively search for work: all recipients of UB II have to look for a job and are obliged to discuss their labor market engagement with the employment office. In contrast, prior social assistance benefits were paid independent of labor market status. As a result, we hypothesize that the association of unemployment and benefit receipt increased immediately after the reform.

[5]Expenses for rent, heating, health, and retirement insurance were at all times covered in addition. They are administered by the municipalities. For details, see BMAS (2010).

[6]Under the pre-reform social assistance rules, single individuals could earn up to about 70 Euro on top of social assistance benefits without deductions. The marginal tax rate on additional earnings up to 700 Euro amounted to 85 percent and monthly earnings beyond 700 Euro were taxed at 100 percent, i.e., the transfer was reduced by one Euro for every Euro earned. Slightly more generous rules applied for unemployment assistance benefits. After the reform, the tax-free UB II allowance increased to 100 Euro. Earnings between 100 and 800 Euro are taxed at 80 percent, earnings between 800 and 1200 Euro are taxed at 90 percent, and only earnings beyond 1200 Euro per month are taxed at 100 percent. These rules apply since October 2005, when the regulation that was originally introduced in January 2005 was modified to foster work incentives.

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 (Becker, 2006). Since then, benefit eligibility of single unemployed individuals under age 25 is conditional on remaining in the parental household. We expect a higher propensity of welfare receipt among young individuals immediately after the reform and an adjustment in the life cycle pattern of benefit receipt.

Overall, the "Hartz reforms" received much public attention and generated strong opposition. Certainly, the broad and mostly very critical public debate enhanced awareness of the new benefit program. In this situation, many observers expect an increase in the propensity to take up benefits given eligibility (e.g., Bruckmeier and Wiemers, 2011).

Within the unemployment insurance, i.e. with respect to unemployment benefit and unemployment assistance before the reform and UB I after the reform, immigrants are treated like natives. Their benefit eligibility depends exclusively on their contribution record. The situation is more complex in the minimum income support programs. Individuals without German citizenship can claim UB II if they are (i) permanently in Germany, (ii) physically able to work, and (iii) potentially allowed to take up employment; the last condition excludes, for example, asylum seekers. Ethnic Germans (*Aussiedler*) as well as naturalized immigrants are treated like natives.[7] Immigrants residing in Germany in order to find employment are generally not eligible for benefits. However, a long list of circumstances renders EU citizens eligible for UB II receipt even then (BMAS, 2009; Classen, 2009).

An important issue is whether welfare receipt affects immigrants' right to stay in Germany: 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 means-tested public support. Special protection is granted to migrants from signatory states of the European Convention on Social and Medical Assistance of 1953.[8] These immigrants can stay in Germany even if they receive welfare benefits (Classen, 2009).

As regulatory changes do not differ for natives and immigrants, the expected surge in transfer receipt after the reform affects the native–immigrant welfare gap only if the relevant mechanisms affect the two groups differently. With respect to benefit take-up, prior studies show no difference for natives and immigrants (see, e.g., Kayser and Frick, 2001; Riphahn, 2001; Wilde and Kubis, 2005; Frick and Groh-Samberg, 2007; Bruckmeier and Wiemers, 2011). Similarly, the claiming behavior of young individuals (i.e., those below age 25) in the first year after the reform should be of limited relevance for either group. Only the shift to higher benefits and reduced marginal tax rates might affect the groups differently if their income distributions vary and, for example, immigrants' incomes are centered more closely around the benefit eligibility threshold. BMAS (2009) points out that

[7]Ethnic Germans are former German citizens or those belonging to the German people. After World War II, they migrated to West Germany and were granted German citizenship (Kurthen, 1995; Dietz, 1999).

[8]This covers immigrants from EU member states, Iceland, Norway, and—importantly—Turkey.

the expiration of UB I generates a substantially higher transition rate to UB II receipt among immigrant households because immigrant households and thus their needs are larger while their income and wealth are smaller than those of natives.[9]

Overall, we expect that three mechanisms affect the number of transfer recipients after the reform: (a) the increase in benefits and the more generous treatment of earned incomes renders a larger number of individuals eligible; (b) initial regulations eased young claimants' entry to welfare receipt; and (c) following the intense public debate, non take-up of benefits may have declined (STBA, 2008).

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 (Wagner *et al.*, 2007).[10] Since 1994 the SOEP also interviews a subsample of individuals who immigrated to West Germany after 1984, which mainly includes ethnic Germans.

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, see Frick *et al.*, 2007). With the immigration year at hand, we can determine the number 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.[11]

The sample further excludes household heads who are disabled at the time of the interview because UB 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, our analysis refers to West Germany only (for a similar sample selection, see Kogan, 2004; Riphahn, 2004). In our sample approximately 15 percent of households are headed by first generation immigrants and 85 percent by natives (see 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

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[9]We find similar evidence in our data where both mean and median equivalized household incomes of immigrants are below those of natives.

[10]Haug (2010) and Kahanec and Zimmermann (2010) discuss the validity of SOEP data for the analysis of immigration-related questions. 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.

[11]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.

TABLE 1

Sᴀᴍᴘʟᴇ Hᴏᴜsᴇʜᴏʟᴅs ʙʏ Iᴍᴍɪɢʀᴀᴛɪᴏɴ Sᴛᴀᴛᴜs ᴀɴᴅ Cɪᴛɪᴢᴇɴsʜɪᴘ

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

Note: Number of household-year observations in parentheses.
Source: SOEP 2003, 2004, 2006, 2007.
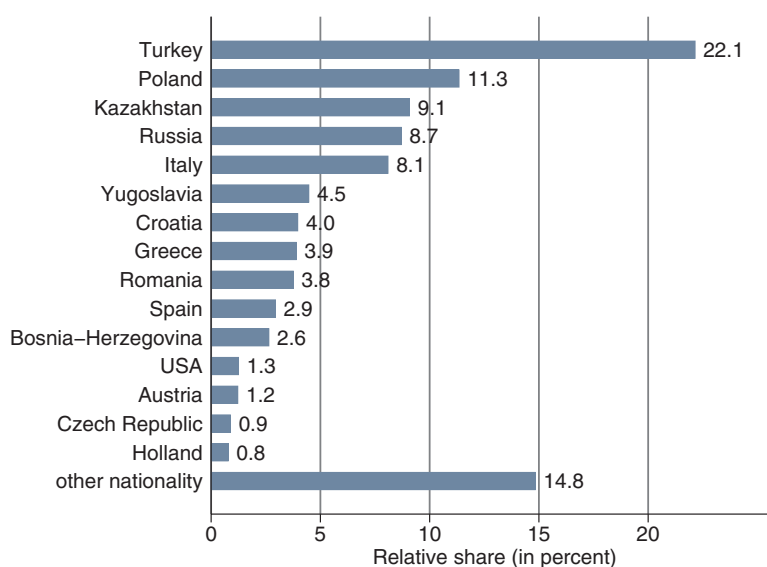
Figure 2. First Generation Immigrants by Country of Origin
Source: SOEP 2003, 2004, 2006, 2007. $nT = 2,953$.

first generation immigrant households are ethnic Germans, who mostly arrived after the fall of the iron curtain in 1989.[12]

Figure 2 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 20

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[12]The number of household observations drops from 10,308 household years for the early to 9,174 for the late sampling period. In our estimations we consider an indicator of subsequent panel attrition in order to control for potentially biasing effects (Riphahn, 2004).

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.

percent of the immigrant population, while immigrants from the Central and East European (CEE) countries constitute almost 30 percent.[13]

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 $t - 1$ using the same question. 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, the benefit information on 2004 collected in 2005 might contain some measurement error. Therefore we omit data collected in the 2005 survey. Based on the survey years 2006 and 2007, we study the receipt of UB II in 2005 and 2006.

We consider households as the unit of analysis because social assistance and UB II are provided at the household level. Since unemployment assistance is coded at the individual level, we define a pre-reform household to be a recipient of unemployment assistance 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 percent of all immigrant households. In comparison, natives have a higher share of single person households (23.7 percent compared to 12.1 percent among immigrants); a substantially higher share of the immigrant sample resides in households of couples with children (56.8 percent among immigrants compared to 42.4 percent among natives).[14]

[13]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.

[14]Similar patterns are described in a recent government study on welfare use among immigrants (BMAS, 2009). In a study based on data taken from the German Microcensus, Rudolph (2008) presents recipiency rates for the entire population on a slightly different set of transfer programs. Using population-weighted SOEP data for the entire population on these programs, our data replicate the recipiency rates of his study.

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.

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.

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:

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

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 socio-economic characteristics of the household ($\mathbf{x}$). The indicator I describes whether the head of household is a first generation immigrant. α_0, α_1, δ_0, δ_1, θ, 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, for example, 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

TABLE 4
DESCRIPTIVE STATISTICS

| | Sample 1 (2003, 2004) | | | | Sample 2 (2006, 2007) | | | |
| | Natives | | Immigrants | | Natives | | Immigrants | |
Variable	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Social assistance receipt (0/1)	0.017	0.130	0.032	0.176	–		–	
Unemployment assistance receipt (0/1)	0.023	0.149	0.061	0.240	–		–	
Unemployment benefit II receipt (0/1)	–		–		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 (0/1)	0.073	0.260	0.084	0.278	0.076	0.266	0.102	0.303
HH type: couple with kids (0/1)	0.431	0.495	0.583	0.493	0.416	0.493	0.549	0.498
HH type: single no kids (0/1)	0.231	0.421	0.119	0.323	0.243	0.429	0.125	0.331
HH type: other (0/1)	0.017	0.129	0.032	0.177	0.015	0.122	0.029	0.169
HH type: couple no kids (0/1) (reference)	0.248	0.432	0.182	0.386	0.250	0.433	0.195	0.396
Sex: female (0/1)	0.388	0.487	0.295	0.456	0.406	0.491	0.349	0.477
Health: good/very good (0/1)	0.597	0.490	0.553	0.497	0.570	0.495	0.531	0.499
Out of labor force (0/1)	0.026	0.160	0.028	0.164	0.031	0.175	0.027	0.162
Unemployed (0/1)	0.046	0.210	0.122	0.327	0.047	0.211	0.110	0.314
Work experience (in years)	19.01	11.29	19.83	11.57	19.48	11.13	20.01	11.48
Unemployment experience (in years)	0.557	1.554	1.466	2.537	0.657	1.812	1.688	2.740
Married or widowed (0/1)	0.624	0.484	0.802	0.398	0.608	0.488	0.789	0.408
Divorced (0/1)	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 (0/1)	0.000	0.000	0.642	0.479	0.000	0.000	0.593	0.492
Attrition from sample[†] (0/1)	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 (0/1)	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 (0/1)	–		0.221	0.415	–		0.222	0.415
Central and East European Countries (CEE) (0/1)	–		0.311	0.463	–		0.303	0.460
EU (non CEE) (0/1)	–		0.208	0.406	–		0.199	0.399
Household-year observations	8614		1694		7915		1259	

Note: [†]For observations in the last wave of data, we assume that nobody attrits from the survey.
Source: SOEP 2003, 2004, 2006, 2007.

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:

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

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 spline (P-spline) regressions.[15] 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 the Appendix.

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 3 we separately present the life cycle patterns of transfer receipt for social assistance, unemployment assistance, a composite indicator of the two programs, and UB 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). Then, we simulate the probability of transfer receipt over the life cycle for immigrants and natives based on these estimation results. For the graphical representation in panel A of Figure 3, 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

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[15]For a comprehensive introduction to semi- and non-parametric regression models, see, e.g., Ruppert *et al.* (2003) and Wu and Zhang (2006).
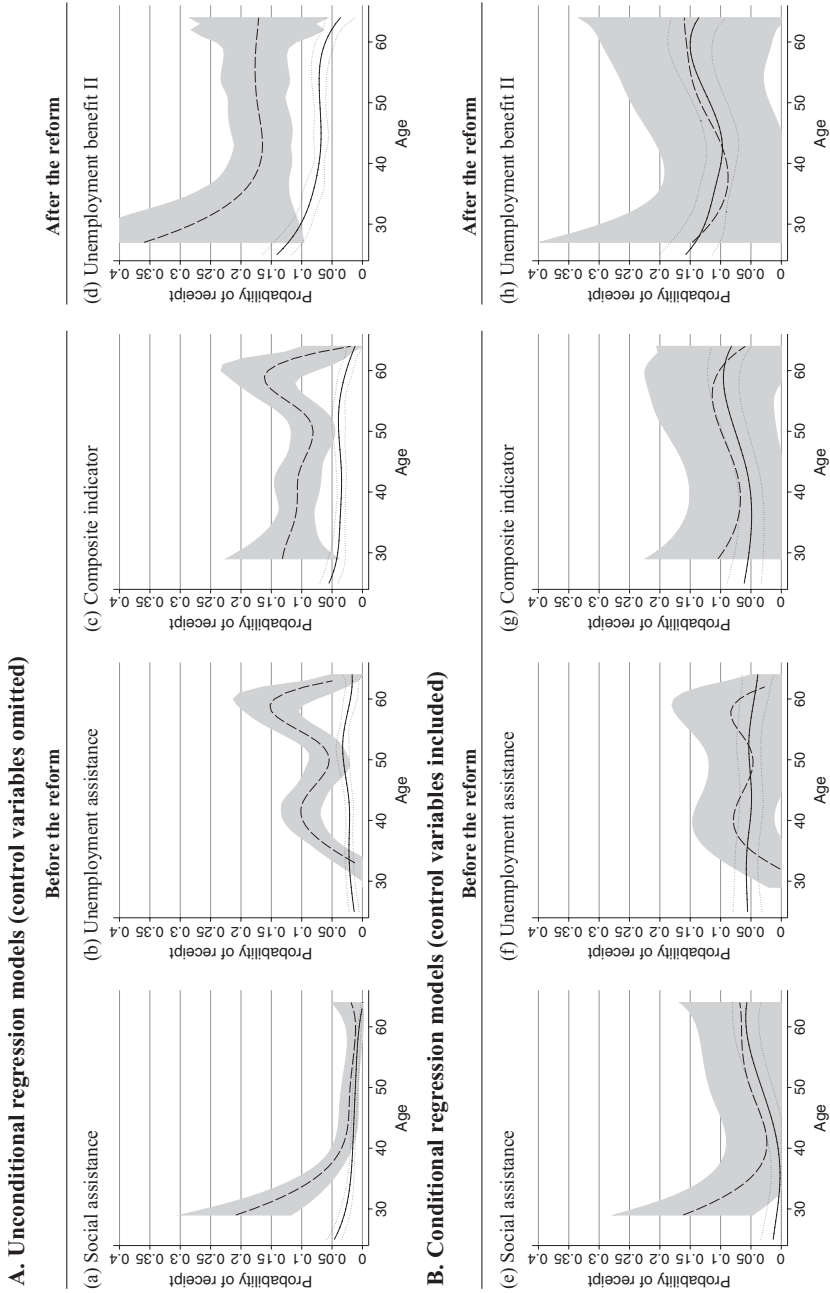
Figure 3. Predicted Life Cycle Probability of Transfer Receipt

Notes: 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 (YSM). 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.

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 panel B of Figure 3. 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.[16] We calculate 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 UB 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 reject the interpretation that more recent (i.e., younger) immigrants depend on social assistance and UB 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 (see Figure 3, 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 UB 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 (Kayser and Frick, 2001; Riphahn,

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[16]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.

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 (in years)	−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	

Notes: 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. $nT = 9174$. $n = 5115$.

2001).[17] 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 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 (see bottom of Table 5). This suggests that there is no excess welfare dependence among immigrants *per se*. The other

[17]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 benefit amounts, social stigma, and the expectation of a short period of eligibility (Wilde and Kubis, 2005).

coefficient estimates indicate that households with many children, single parents, and those with long unemployment experience and low human capital are most likely to receive minimum income support.[18]

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. Table 6 shows the estimation results of the linear model for the three transfer programs. In all three models, the main effects of household head characteristics are jointly statistically significant at the 1 percent level. The main effects of household characteristics are jointly significant in the regressions for social assistance and UB 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 UB II models. When tested separately, neither the estimated interaction coefficients 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 household, with current or past unemployment of the head of household, and with low levels of work experience and formal education. These patterns hold for both subsamples and across all three programs.

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 Figure 3e, g and h. 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. Interestingly, immigrants' years of education are hardly correlated with welfare participation. This result is plausible if education effects work through employment and unemployment for this group. As expected, having received formal training abroad is associated with higher transfer dependence, as is, surprisingly, a good command of the German language.[19] If this result can be corroborated in causal effect analyses (Dustmann and Fabbri, 2003), it suggests that mostly those able to communicate find their way through the requirements of the social benefits administration. In this case, policy makers should take into consideration that non-institutional obstacles, such as language barriers, limit access to the minimum income support system for specific population groups.

In a final step of our parametric analysis, we ask whether the transition from social and unemployment assistance to UB II affected level and patterns of transfer receipt among natives and immigrants. Descriptive statistics yield that the total

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[18]These results are robust to estimations using sampling weights.

[19]This result is robust to the inclusion of further variables measuring the degree of cultural and social integration, such as visits at/from Germans or German newspaper reading. The additional estimation results are available upon request. A similar result was obtained by Riphahn (1998).

TABLE 6

ESTIMATION RESULTS: EMPIRICAL CORRELATES OF TRANSFER RECEIPT (FULLY INTERACTED MODEL, POOLED SAMPLES)

	Social Assistance				Unemployment Assistance				Unemployment Benefit II			
	Main Effects		Interactions		Main Effects		Interactions		Main Effects		Interactions	
Variable	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 (in years)	-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			

Notes: 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. $nT = 9174$. $n = 5115$.

share of households in benefit receipt increased substantially after the reform: in our data, we observe an increase in the share of benefit receiving native households from 3.7 percent before the reform to 7.6 percent afterwards; the shares among first generation immigrant households increased from 8.5 percent to 15.2 percent. In Section 2 we discussed factors that might explain this general increase in transfer dependence and its potential heterogeneity for the native and immigrant households. The hypothesis that the propensity to take up benefits increased after the reform has already been tested and could not be rejected by Bruckmeier and Wiemers (2011). However, they find no differences between natives and foreigners. As additional factors behind rising recipiency rates, we discussed the brief additional eligibility of young claimants and the extended range of eligible households. The latter point might be more important among immigrant than native households.

In order to describe the *ceteris paribus* shift in the level of welfare dependence around the reform, we pooled the annual samples and regressed an indicator of "any" benefit receipt on our baseline 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 immigrants in columns (1) and (3).[20] The coefficients of the post-reform 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 percentage points, which reflects the increase in aggregate numbers (see Table 4). This higher increase among immigrants agrees with our expectation that the increased eligibility is more likely to affect immigrant households.

Next, we study changes in correlation patterns of household characteristics and transfer receipt separately for the two subsamples. We estimated fully interacted specifications that allow for different correlations of covariates and transfer receipt before and after the reform. The coefficients are presented in columns (2) and (4) of Table 7. The top half presents the main effects while the bottom half holds the coefficients of the post-reform interactions.

The additionally estimated interaction terms are jointly highly statistically significant for both subsamples, suggesting that the correlation patterns of benefit receipt changed after the reform. In general, the correlations reflect the reform effects hypothesized in Section 2. In particular, the empirical results indicate an increase in the association of being unemployed and benefit receipt after the reform for both natives and immigrants. This finding supports the hypothesis that job search activities, including regular reporting of unemployment status, have received greater weight after the reform. Furthermore, for young benefit recipients below age 25, we find the expected adjustment in the life cycle patterns of benefit receipt after the reform with significant coefficient estimates for natives. The initially increased generosity of benefit eligibility for young adults may be held responsible for this particular pattern. Finally, we observe a significantly increased propensity to receive UB II among single person households. This may reflect the increase in the eligible minimum income range after the reform. Since the means

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[20]The results are robust to estimations using sampling weights.

TABLE 7

ESTIMATION RESULTS: PRE-/POST-REFORM CORRELATIONS BY SUBSAMPLE

	Natives				Immigrants			
	(1)		(2)		(3)		(4)	
Variable	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 (in years)	−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)
Post-reform	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)
Post-reform 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 (in years)	–	–	−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	

Notes: 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): $nT = 2953$. $n = 996$.

test explicitly takes into account the household size and household income, the effect may be watered down in households with more complicated structures.[21]

6. Conclusions

We investigate welfare participation of first generation immigrants and natives in Germany. This study 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. We find that conditional on observable characteristics, the German welfare reform did not affect the immigrant–native welfare gap. In that respect it differs from the outcomes of the U.S. welfare reform of 1996, where immigrant welfare participation declined steeply relative to that of natives (Borjas, 2001). 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. Also, we find a general decline in the propensity of welfare receipt among young immigrants as they accumulate host country-specific human capital, both before and after the reform. However, this result may be related to changes in the composition of the immigrant population, it may be due to changes in the labor market situation over time, and it may indicate behavior changes over subsequent cohorts.

Our 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 significantly higher likelihood of transfer receipt than others. These patterns hold across all transfer programs.

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 for both subsamples after the reform. 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 changed slightly after the reform. Generally, however, patterns of welfare receipt were not substantively modified. This suggests that the relevance of the institutional design of a national welfare system might be limited, at least in the short run.

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[21]A referee suggested re-estimating the specifications in Table 7, adding indicators for the individual labor force status in the preceding period to approximate control variables for the impact of the economic cycle. The results discussed above are robust to this specification change.

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 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, human capital endowment and labor market integration should be the targets of policy interventions. Apparently, welfare reforms that focus on work incentives and closer supervision of those in need of support are not sufficient to change overall welfare recipiency patterns in the short run.

In this respect, our results corroborate the evidence from other countries, i.e. that it is insufficient that immigrants find employment upon entry in the host country (Bratsberg *et al.*, 2010). This then suggests two policy implications that are relevant to countries with similar immigrant–native welfare gaps: one is to apply more selective immigration policies based on human capital criteria. However, this can neither stop subsequent family reunification nor does it limit the incentive effects of a welfare state. Additionally, one may aim to reduce welfare dependence among immigrants by initiating training programs designed to their specific needs. Future research should pay more attention to the effectiveness of policy measures for immigrants.[22] 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.

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[22]BMAS (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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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:

Appendix: Estimation of the Semiparametric Models