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and Labour Market Entry**

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Inhalt

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Return and Onward Migration and Labour Market Entry: Empirical Analysis and Microsimulation Projection for Austria

Peter Huber, Martin Spielauer¹

Abstract

This paper examines return and onward migration of immigrants to Austria, taking into account immigration type, country of origin, and employment outcomes. The analysis is based on longitudinal administrative records of the Austrian Social Security Database of immigrants who entered Austria between 2009 and 2017. It is the first such study for Austria. We find that about 25% of immigrants leave Austria within less than a year of their arrival and 50% within 5.5 years. Return and onward migration is closely correlated with immigration type and origin. Refugees have a very low likelihood to leave Austria, whereas labour migrants a substantially higher one. Women are more likely to stay than men and immigrants from Turkey have the lowest return probabilities among all origin groups. Emigration is also closely correlated with labour market success, the likelihood to stay depending on the speed of labour market integration. The consequence of these patterns is that the composition of the stock of immigrants living in Austria differs from the structure of new immigrants entering the country. We apply dynamic microsimulation to project the size and structure of the first-generation immigrant population in Austria as well as its labour market integration up to 2060. Our simulation results suggest that eventually, over 90% of the resident immigrant population attains at least some labour market experience and that the differences in return and onward migration across immigrant groups work to shift the structure of the immigrant population in the direction of third-country nationals.

JEL-codes: J61, J11, C53

Keywords: Return migration, duration models, microsimulation

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1. Introduction

Return and onward migration is a common characteristic of international migration. Most studies find that about 30% to over 60% of immigrants to a country leave again within five years after arrival (see, e.g., Bratsberg et al., 2007; Bijwaard, 2004; Jensen – Pedersen, 2007; Dustmann, 1996; Böhning, 1987; Glytsos, 1988; OECD, 2008). This high incidence of temporary migration raises several policy issues for receiving countries since permanent migrants differ from temporary migrants concerning the acquisition of host country specific human capital, integration into social systems, savings, and labour force participation (Dustmann, 2000, 2008). It also has important implications for the long-run composition of the immigrant population residing in a country, as migrant groups differ in their propensity to return or move on. In consequence, several contributions have focused on the determinants of return or onward migration (e.g. Dustmann, 1996; Güngör – Tansel, 2005; Gundel – Peters, 2008; Sander, 2007). This research has often found a close link between the duration of residence of immigrants and their origin and gender – with women having lower return probabilities (e.g. Constant – Massey, 2003; Yang, 2006; Gundel – Peters, 2008). It has also found that in general, better integrated immigrants (in terms of wages and labour market integration as well as in terms of social contacts and language proficiency) are less likely to return (see Dustman, 1999, 2001; Kirdar, 2007; Schuß, 2016).

These results, however, are mostly based on data from the US and Germany or other EU countries. For Austria, only very little is known about the factors determining the duration of stay of immigrants. The current paper, therefore, uses Austrian Social Security data (ASSD), to present the first results on the duration of stay of immigrants in Austria. Based on survival analysis, we ask how the duration of stay is related to the type of migration, age at migration, gender and country of origin. Also, we present initial results concerning the impact of labour market integration on the duration of stay of immigrants. Further, we integrate our regression models into the WIFO microsimulation model microDEMS (see Spielauer et al., 2020) and project the long-run implications of our findings for the demographic composition and entry into the labour force of the immigrant population.

This paper primarily contributes to the literature on immigration to Austria which so far mainly focused on the impact of immigration on labour markets and the integration experiences of immigrants in Austria (see Jestl et al., 2019; Horvath, 2012; Horvath et al., 2020 for recent contributions). To the best of our knowledge, we provide the first analysis of the duration of stay of immigrants in Austria. We also contribute to the broader literature on return migration by considering the relationship between the entry status of immigrants and their duration of stay.

We find that about 25% of all immigrants leave Austria within less than a year after arrival and 50% within 5.5 years and that there is a considerable variation in return and onward migration among immigrant groups. Refugees have lower return hazards than the average migrant, and labour migrants, among other things due to the critical role of seasonal labour migration in Austria, substantially higher ones. Women are more likely to stay in Austria than men and immigrants from EU and EFTA countries have higher return probabilities than immigrants from Turkey,

Former Yugoslavian countries, and other third countries. Age at migration, by contrast, does not seem to have a substantial impact on the duration of stay of active aged immigrants. The duration of stay of immigrants in Austria is, however, closely correlated with labour market success. Return hazards are highest for immigrants who never obtain labour market access and increase with an increasing waiting time to labour market entry. Also, simulation results suggest that over a 40-year prediction horizon over 90% of the resident immigrant population attain at least some labour market experience and that the differential return hazards across immigrant groups work to shift the structure of the immigrant population in the direction of third-country nationals.

The remainder of the paper is structured as follows. The next section describes the data used, while the subsequent section presents the descriptive evidence on the return behaviour of immigrants and their respective characteristics in Austria. Section 4 develops an econometric framework for a more detailed quantitative analysis, and section 5 then presents the corresponding estimation results. Section 6 uses these results to simulate the structure of the immigrant population and its labour market entry. The final section summarises the main findings.

2. Data and definitions

We use data from the Austrian Social Security Database (ASSD). This is a large-scale administrative panel data set containing all persons who have been insured for at least one day in the Austrian social security system since the 1970s (see Zweimüller et al., 2009; Fink et al., 2010 for descriptions). It also is a standard data set of Austrian labour market research (e.g. Nekoei – Weber, 2017; Mahringer – Zulehner, 2015). It contains a daily calendar of the social security status of an individual and information on wages (up to the social security maximum) received when employed. It is a highly reliable source for measuring employment, unemployment and non-employment because social security insurance is compulsory for virtually all workers and their dependents in Austria. Workers are also likely to have a high incentive to register with this system, as registration is associated with access to the public health care and pension system². The ASSD is provided to researchers in the form of several specific tables by the Austrian ministry for social affairs. The most important of these for the current paper (MON_MIG_BUS) reports all individuals that have a migration background in Austria. It includes a personal identifier, migrant status and nationality at the time of arrival, current nationality, and the date of naturalisation where applicable. We refer to these persons as first-generation migrants as they entered Austria with foreign citizenship³. The data also identify persons born in Austria that were first

² Black market and other untaxed activities are, however, not registered. This is of lesser importance, despite anecdotal evidence suggesting that immigrants are disproportionately employed in black market or informal jobs, as the share of the shadow economy is rather low in Austria. It is estimated to amount to 9.8 to 9.9% of GDP which is the third lowest rank among the 158 countries considered by Leandro and Schneider (2017).

³ Some persons born in Austria may have acquired a foreign citizenship during their life and then returned to Austria (e.g. for their pension). These persons would be considered first-generation immigrants. We have no way to deal with this except by minimizing this source of error by focusing on active aged persons only.

insured as children of people with foreign citizenship. These persons are second-generation migrants and are excluded from the analysis, as our focus is on first-generation immigrants.

2.1 Sample, Entry date and status

We match these background data with individual social security spells. The day of arrival is defined as the first day of registration with the Austrian social security system. Accordingly, the last day of registration marks the day of exit⁴. For refugees, however, the day of entry is defined as the first day of a spell other than "health insurance as an asylum seeker" in the Austrian social security system. Thus we exclude persons whose asylum procedures were not completed or who did not receive a refugee status by the end of 2017 and focus only on accepted refugees and subsidiary protected people from the time that they have legal access to the labour market.⁵ This is because asylum seekers during their application phase can only obtain labour market access under very restrictive conditions. We also exclude individuals, who migrated to Austria at an age younger than 15 and older than 64 or enter as pensioners⁶, as our focus is on the link between labour market migration and duration of stay. We also exclude immigrants who entered Austria before January 1st 2009, because reliable information on the insurance status of dependents is only available from this time on. Finally, we identify cross-border commuters as persons, who still resided abroad at the time of entry into the Austrian social security system and omit them from the analysis because commuters, by definition, return when not employed.⁷ Through these definitions and restrictions, we obtain data on a total of 1,161,715 active aged foreign citizens that entered Austria for the first time in the period from January 1st 2009 to December 31st 2017. For these persons, we observe their complete (Austrian) employment history from January 2009 to December 2018. Furthermore, for each of these persons, we also determine the nature of their first spell.⁸ We distinguish three groups:

- Employed (either as an employee, as a self-employed or marginally-employed),
- Out of labour force (which includes insurance statuses such as a pension and persons insured as dependents of an employed),

⁴ Since insurance with the Austrian social security system is universal and compulsory for all immigrants in Austria the date of registry and deregistration is a fairly precise measure for time of entry and exit to Austria.

⁵ Adult asylum seekers do not have access to the Austrian labour market except for seasonal work, and self-employed work. Minors among the asylum seekers are allowed to be employed as apprentices in a predefined list of occupations. According to estimates by Bock-Schappelwein and Huber (2015) between 2003 and 2014 between 300 and 1000 asylum seekers obtained a seasonal work permit annually.

⁶ This results in the exclusion of around 38.000 observations.

⁷ This is achieved by merging the data with data on residence spells of migrants. These are reported in the table JMIG_WOHNORT of the ASSD, which reports monthly information on the place (post code) of residence of a person registered with the Austrian Social Security System.

⁸ None of the migrants in our data starts their insurance with an unemployment spell. This accords with Austrian legislation as workers need a minimum employment time of one year to be eligible for unemployment benefits.

- Refugee, i.e. persons whose first registered spell was compulsory health insurance as an asylum seeker.⁹

We refer to all first-generation migrants with a first spell as employed as labour migrants, those starting as asylum seekers as refugees and all other first-generation migrants as other immigrants.

2.2 Descriptive statistics

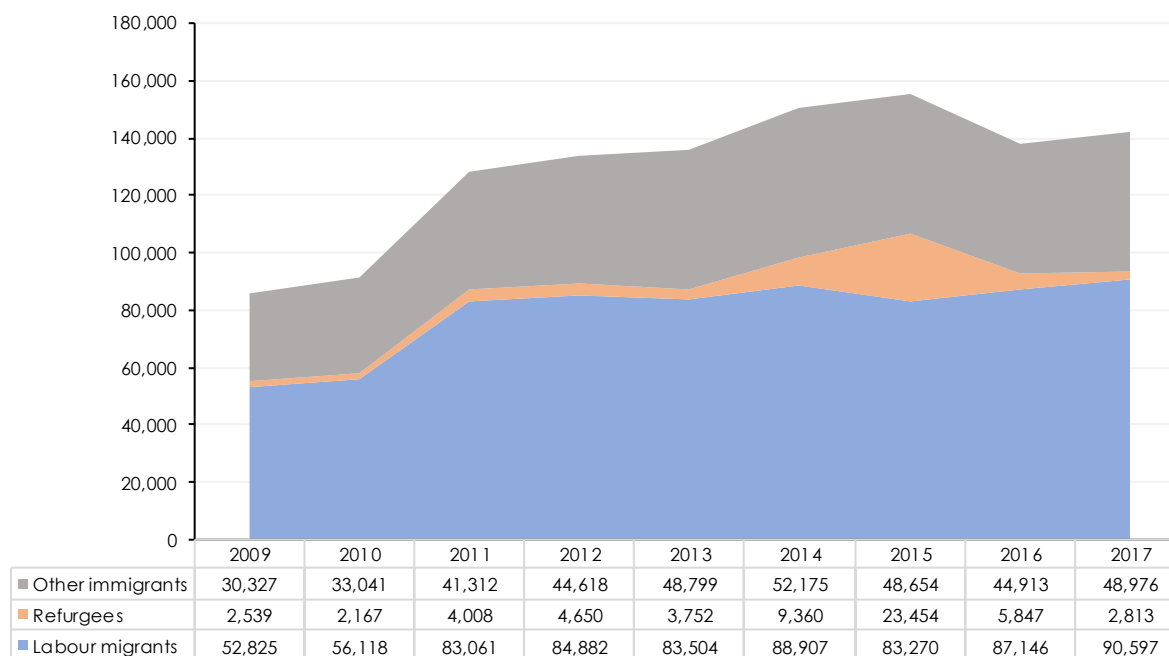
Figure 1 displays the distribution of migrants according to the nature of their first registration type in the Austrian social security system over time. For the largest part of the migrants arriving in Austria in that period (a total of 710,310 or 61.1%), the first social security spell was an employment spell. Of the remaining immigrants, a total of 58,590 (5.0%) entered the Austrian social security system as asylum seekers who later obtained refugee status and thus also labour market access. A further 292,815 (33.8%) entered the Austrian social security system in a spell that was not related to employment or asylum.

These numbers are slightly lower than those of the official migration statistics (which suggest that 1.18 million foreign citizens moved to Austria in the period 2009 to 2017); concerning our focus on active age immigrants, data are highly consistent.¹⁰ Migration statistics suggest that after liberalising migration with the countries that joined the EU in 2004 (on May 1st, 2011), migration to Austria substantially increased. According to migration statistics, 89,520 foreign citizens under the age of 65 migrated to Austria in 2009 and 94,196 in 2010. In contrast, after 2011, the average migration to Austria was 142,175 per year. According to the ASSD, these figures were 85,691 and 91,326 in 2009 and 2010 and on average 140,671 after that. The only immigrant group for which data from the ASSD differ substantially from official statistics are refugees. According to Austrian asylum statistics (see <https://www.bmi.gv.at/301/Statistiken/>), 106,127 refugees received refugee status in Austria between 2009 and 2017. According to the ASSD, this was the case for only 58,590. This difference is due to only considering refugees who entered as asylum seekers from 2009 to 2017. By contrast, the Asylum statistics count the number of positive asylum decisions in a year for all asylum seekers irrespective of the time when they arrived.

⁹ This is a special status given to asylum seekers on their first day after registering as an asylum seeker to ensure that they are eligible for the services of the Austrian health insurance system.

¹⁰ One immigrant group likely to be poorly captured in ASSD data are foreign students, who remain insured with their parents abroad. This is likely to be the reason for the lower share of EU/EFTA migrants our data, relative to official statistics.

Figure 1: Distribution of first registrations with the Austrian social security system of foreign citizens by type of immigration (2009 – 2017)



Source: ASSD, own calculations. Labour migrants = migrants whose first spell was an employment spell. Refugees = immigrants starting as asylum seekers from the date of recognition of their refugee status. Other immigrants = immigrants starting with other insurance spells than as employee or refugee.

2.2.1 Immigrant characteristics

Table 1 presents descriptive statistics on the time-invariant personal characteristics of these immigrants. These include their age at migration, their nationality at the time of entry, gender and the date of arrival. According to these statistics, the average age at entry was 31.3 years, 48.7% of immigrants being female. Furthermore, the largest share of immigrants to Austria (40.2%) arrived from Former Yugoslavia, closely followed by citizens from EU and EFTA countries (39.5%). In contrast, migrants from Turkey and other third countries accounted for only a small share of immigration. 82.7% of all immigrants entering the Austrian social security system held at least one employment spell in the course of their observed stay in Austria. There are substantial differences between the different types of immigrants. Refugees were the youngest at the time of immigration (28.8 years), 98.8% originating from third countries. They also had the lowest share of females. By contrast, labour migrants were the oldest group (32.6 years) upon entry. They disproportionately often originated from Former Yugoslav countries and the EU, while migrants from Turkey disproportionately entered the Austrian social security system with titles other than work and asylum. The latter is an indication of the ongoing family migration from Turkey.

Table 1: Descriptive Statistics on time-invariant characteristics of active age immigrants to Austria (averages for all cohorts entry 2009 to 2017)

	Overall		Labour migrants		Refugees		Other immigrants	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age at migration	31.31	11.51	32.61	11.40	28.79	10.06	29.32	11.58
Origin								
EU+EFTA countries	0.402	0.490	0.455	0.498	0.000	0.017	0.365	0.481
Former Yugoslavia	0.423	0.494	0.481	0.500	0.004	0.059	0.381	0.486
Turkey	0.037	0.190	0.017	0.128	0.008	0.090	0.080	0.271
Other	0.137	0.344	0.047	0.211	0.988	0.109	0.174	0.379
Gender								
Female	0.487	0.500	0.451	0.498	0.310	0.463	0.578	0.494
Male	0.513	0.500	0.549	0.498	0.690	0.463	0.422	0.494
Employment								
Share employed at least once	0.827	0.379	1.000	0.000	0.560	0.496	0.553	0.497
Observations	1,161,715		710,307		58,590		392,815	

Source: ASSD, own calculations. Std. Dev. = Standard Deviation. See footnote to Figure 1 for the definition of immigrant groups.

2.3 Labour market integration

One purpose of the current paper is to analyse the link between labour market integration and the duration of stay of immigrants. Table 2 reports some statistics on the share of immigrants that have at least one employment spell during their residence in Austria as well as the time to reach this first employment spell. Since labour migrants, by definition, enter Austria employed, labour migrants are excluded from this analysis. For the remaining groups (i.e. refugees and other migrants), labour market integration is relatively rapid. Roughly 25% of immigrants entering Austria without employment obtain a job within three-quarters of a year and around 50% within 2.5 years. Refugees, however, take noticeably longer to obtain the first job. 25% of them have obtained their first job only after 1.2 years, while among other migrants this benchmark is reached within half a year. Consistent with the literature on labour market integration of refugees (e.g. Aydemir, 2010; Campell, 2014) refugees, however, catch up in later phases of their stay. Half of them find employment within three years, while for other immigrants this level is reached after 2.3 years.

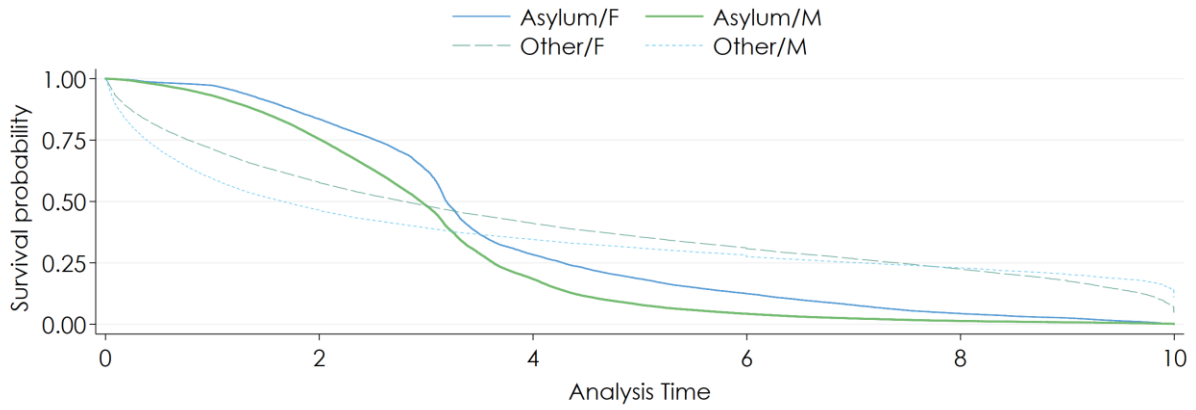
Table 2: Descriptive Statistics on durations to first employment by immigrant groups

	Share ever employed ¹	Duration ²	
		25%	50%
Total	0.730	0.709	2.568
Status³			
Refugees	0.961	2.136	3.075
Other immigrants	0.695	0.564	2.294
Region			
EU + EFTA countries	0.688	0.419	1.999
Former Yugoslavia	0.688	0.482	2.138
Turkey	0.824	0.652	1.818
Other	0.802	1.771	3.127
Gender			
Female	0.716	0.890	2.932
Male	0.746	0.556	2.171
Age			
16 to 25	0.739	0.794	2.324
26 to 45	0.730	0.548	2.585
46 to 64	0.690	0.972	3.877

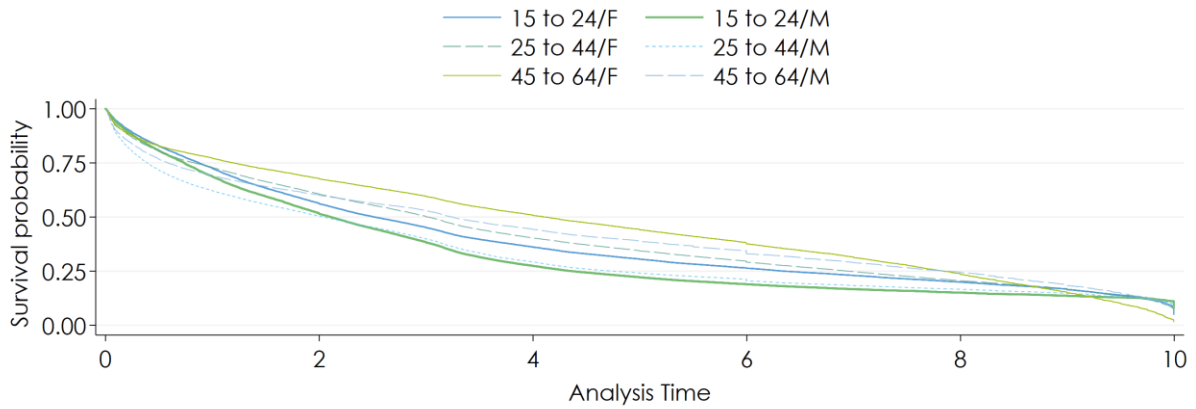
Source: ASSD, own calculations, excluding labour migrants. ¹ Column reports the share of persons in the data that were employed at least for one day during their observed residence in Austria. ² Columns report the quartiles of the duration distribution. The numbers in the first row mean that 25% of the observed persons obtain employment within 0.709 years, and 50% within 2.568 years. ³ See footnote to Figure 1 for definitions.

Figure 2: Survival time (Kaplan-Meier survival estimates) in non-employment (from first registration) by immigrant group, age at migration, country of origin and gender

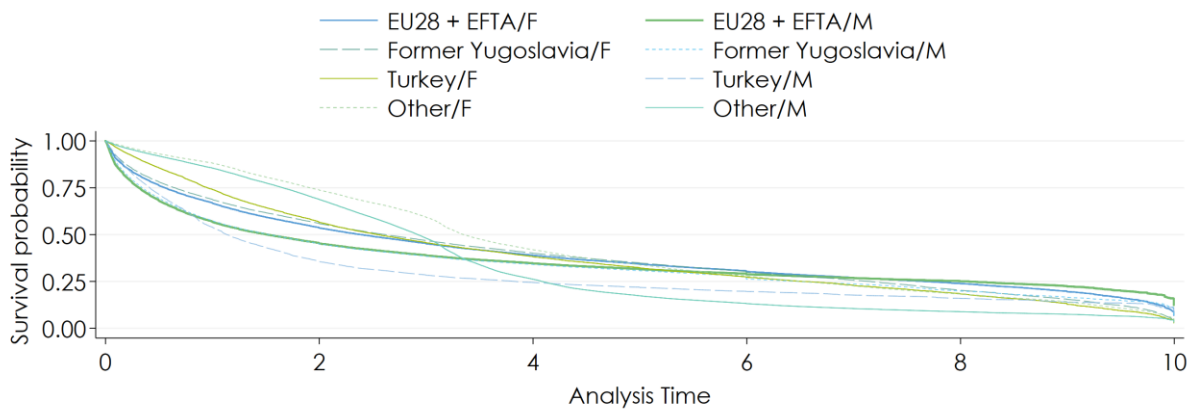
Status X Gender



Age X Gender



Region X Gender



Source: ASSD, own calculations. See footnote to Figure 1 for the definition of immigrant groups.

Immigrants from EU and EFTA countries as well as from Former Yugoslavia obtain their first job more rapidly than immigrants from other third countries as do men relative to women. 25% of the immigrants from EU and EFTA countries as well as from Former Yugoslavia obtain their first job within a half year. For immigrants from other third countries, this mark is reached after 1.8 years. Similarly, among immigrant men, 25% are employed within 0.6 years, while for immigrant women, this is the case after 0.9 years. Age at migration, by contrast, is non-linearly related to job access with the youngest (15 to 25-year-olds) and the oldest (45 to 64-year-olds) having the most extended "waiting times" to their first job.

Figure 2 presents non-parametric Kaplan-Meier estimates of the survival rates of the newly arrived immigrants in non-employment. It adds to the findings reported in Table 2, by once more showing the initially substantially slower labour market integration of refugees relative to others, that is, however, more than compensated for in the ten years of our observation period. Women have lower transition probabilities to employment (and longer duration in non-employment) than men in all subgroups. Young immigrants – probably due to education enrolment – are initially slower at obtaining their first employment but catch up with older immigrants in later phases of their stay. Differences across countries of origin apply mainly to the early phases of migration (with immigrants from other third countries showing substantially slower labour market integration) and diminish with a longer duration of stay. In general, therefore, differences in the speed of labour market integration of immigrants seem primarily to apply to the early phases of the integration process.

3. Descriptive Evidence

Consistent with the results of the international literature, our data suggest substantial return and onward migration among immigrants to Austria (see Table 3). In total, 48.5% of the immigrants we observe had left by the end of 2017. 25% of the observed immigrants stayed in Austria for less than 10.5 months, while 50% returned or moved on within 5.5 years. Again, these figures vary substantially across immigrant groups and are closely linked to the origin, gender, and immigration type. Among labour migrants, 25% return (or move onward) within half a year and 50% within 4.1 years. Among refugees, less than 25% left by the end of the observation period; among the other immigrants, 25% return after 1.2 years and 50% after 7.0 years. Similarly, 25% of the immigrants from EU and EFTA countries and Former Yugoslavia return within 0.5 respectively within 0.7 years while among immigrants from Turkey and from other countries this mark is reached only after 7.0 respectively 3.7 years.

Men have higher rates of onward and return migration than women. 25% of men return within 0.6 years, while among women, this mark is only reached after 1.1 years. Age at migration, by contrast, is less closely correlated to the duration of stay. For all age groups of active age, 25% of the immigrants return within 0.8 to 1 year and 50% within 5 to 6 years.

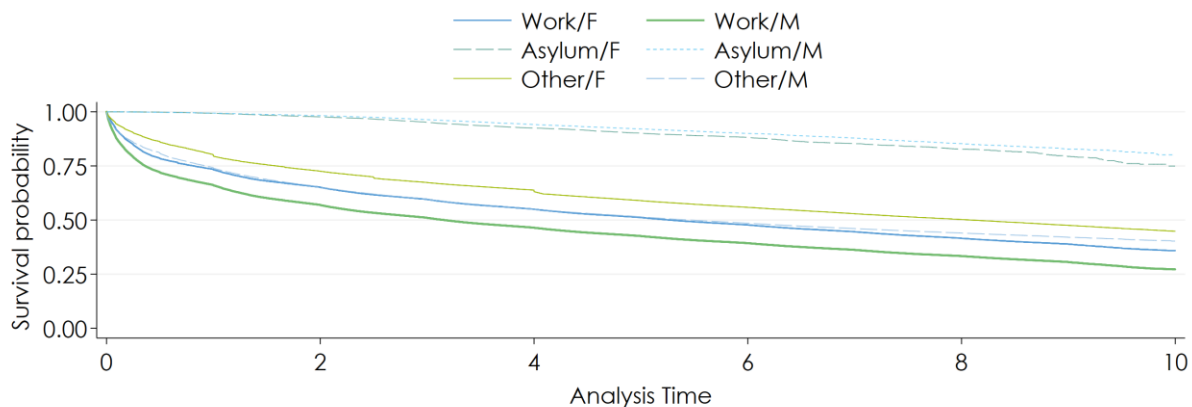
Table 3: Descriptive Statistics on durations of stay in Austria

	Share leaving	25%	Duration	50%
Total	0.485	0.871		5.492
Status				
Labour migrants	0.541	0.498		4.055
Refugees	0.075	.		.
Other immigrants	0.445	1.205		7.003
Origin				
EU + EFTA countries	0.549	0.501		3.704
Former Yugoslavia	0.510	0.704		5.054
Turkey	0.226	6.965		.
Other	0.295	3.663		.
Gender				
Female	0.452	1.139		6.667
Male	0.517	0.586		4.493
Age Group				
16 to 25	0.487	0.778		5.421
26 to 45	0.479	0.994		5.706
46 to 64	0.502	0.745		5.024

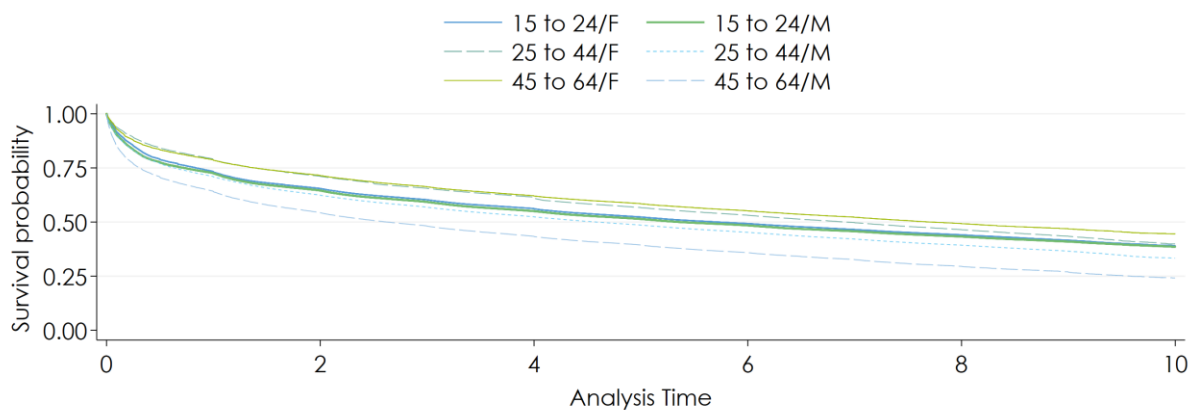
Source: ASSD, own calculations. ¹ Column reports the share of persons in the data that left Austria in the observation period. ² Columns report the quartiles of the duration distribution. The numbers in the first row mean that 25% of the persons observed leave Austria within 0.871 years and 50% within 5.492 years. See footnote Figure 1 for the definition of immigrant groups.

Figure 3: Survival time (Kaplan-Meier survival estimates) in Austria (from first registration) by immigrant group, age at migration, country of origin and gender

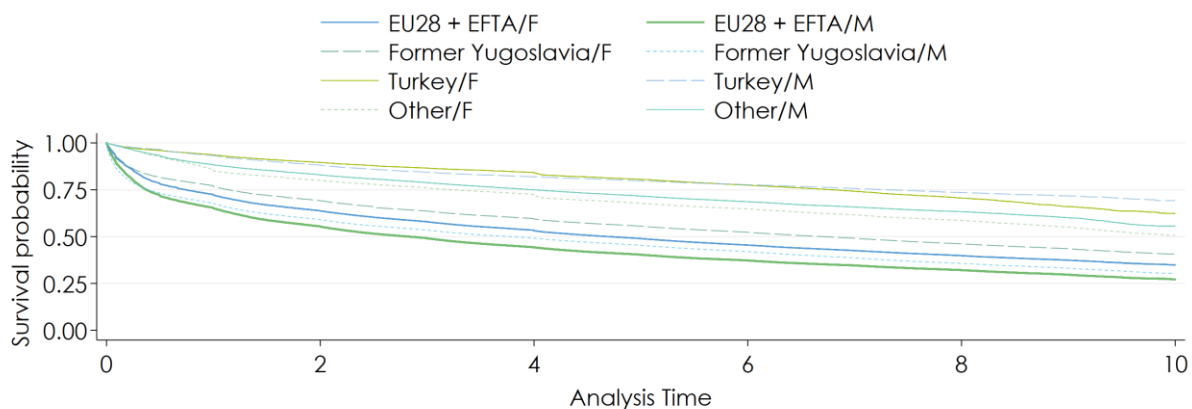
Status X Gender



Age X Gender



Region X Gender



Source: ASSD, own calculations. See footnote to Figure 1 for the definition of immigrant groups.

Finally, in a third specification, we add a first analysis of the link between labour market integration and return and onward migration decisions of refugees and other immigrants. To this end, we include the speed of integration into the Austrian labour market as an explanatory variable in the analysis by measuring the length of the period from immigration to the first employment spell. Thus letting τ be the time (measured in years) an immigrant takes to enter first employment in Austria, we define the variable ($z(t)$) as:

$$z(t) = \begin{cases} 0 & \text{if } \tau \geq t \\ 1 & \text{if } \tau < \alpha_1 \\ 2 & \text{if } \alpha_1 \leq \tau < \alpha_2 \\ \dots & \dots \dots \\ n & \text{if } \alpha_{n-1} \tau < t \end{cases}$$

We differentiate between persons who took less than half a year, half a year to one year, one to two, two to four, four to six, and more than six years, to obtain their first job in Austria. We estimate a piecewise constant hazard model with time-varying dependent variable of the form (see, e.g., Heinzl et al., 1996):

$$h(t) = h_0(t) \exp(\beta x + \gamma z(t)) \quad (3)$$

Table 4: Estimation results for semiparametric Cox hazard rates

	Overall	Labour migrant	Refugee	Other immigrants
26 to 45	0.87 *** (45.57)	0.79 *** (66.49)	1.10 *** (3.01)	1.07 *** (13.81)
46 to 64	0.93 *** (17.41)	0.85 *** (32.74)	1.29 *** (4.42)	1.11 *** (13.82)
Refugee	0.13 *** (129.01)			***
Other immigrant	0.81 *** (69.51)			
EU-EFTA	1.42 *** (65.37)	1.41 (41.56)	3.33 *** (3.18)	1.39 *** (45.80)
Former Yugoslavia	1.24 *** (39.76)	1.23 *** (24.93)	2.23 *** (6.05)	1.23 *** (29.25)
Turkey	0.43 *** (75.29)	0.30 *** (53.19)	1.60 *** (4.37)	0.50 *** (52.24)
Male	1.29 *** (94.13)	1.31 *** (81.12)	0.81 ** (6.62)	1.27 *** (49.58)
Observations	1,161,715	710,310	58,590	392,815

Source: ASSD, own calculations. Numbers in brackets are t-values, ***(**) (*) indicate statistical significance of the coefficient at the 1% (5%) (10%) level.

5. Estimation Results

5.1 Duration of residence

Table 4 shows the results of estimating the Cox proportional hazard model in equation (1). The first column presents results of a pooled estimate for all immigrant groups, while the remaining

columns show estimation results for each immigrant type separately. We report exponentiated coefficients such that the estimated parameters $\hat{\beta}$ of this analysis indicate the factor by which the hazard for the respective group changes relative to the baseline hazard of the respective reference group (i.e. 15 to 25-year-old female labour migrants from other third countries). Furthermore, due to a large number of observations, almost all coefficient estimates are statistically significant at all conventional significance levels. Thus, these estimates indicate that overall refugees and other migrants have a lower hazard rate and thus a higher probability to stay in Austria (and a longer expected duration of stay) than labour migrants. For refugees, the hazard of returning or moving onward is only 0.12 times that of labour migrants, whereas for other migrants this factor is 0.81.

For the active aged immigrants in our sample, there seem to be no substantial changes in return hazards with age. Although the coefficients of the individual age groups are statistically significantly different from each other, these differences are small. They suggest that the hazard to leave is by a factor of 0.9 lower in the age groups above 26 compared to 16-to 25-year-olds. Interestingly, this age effect differs among immigrant groups. Return hazards increase with age at migration for refugees and (less strongly) other immigrants but decrease with age at migration for labour migrants. Also, men have 1.3 times higher return hazards than women (these gender differences being relatively similar across immigrant groups). Among the origin groups, immigrants from Turkey have the lowest return hazards, while those from the EU and EFTA countries have the highest. In aggregate, the hazard of returning among Turkish immigrant is only 44% of that of immigrants from other third countries, while for immigrants from Former Yugoslavia and EU or EFTA countries this ratio is 1.2 and 1.4 respectively.

The results of the piecewise constant hazard model (see Table 5) corroborate these findings, as most coefficients remain unchanged by this shift in the specification. They, however, add to previous findings by suggesting a strong duration dependence of the duration of stay of immigrants other than refugees in particular in the early periods of stay. For labour migrants, the return hazard in the first month of stay – after controlling for the other influence factors – is 0.9. It then falls to 0.5 for the one month to one-quarter period and 0.3 respectively 0.1 in the subsequent two periods. After one year, this coefficient does not change substantially anymore and ranges between 0.08 and 0.05.

Similarly, for other migrants, the return hazard is 0.6 initially and then declines to 0.3 in the period from one month two one quarter. After one year it reduces to 0.1 and subsequently continues to range between 0.08 to 0.04. For refugees, by contrast, hazard rates are low throughout but increase over time. They initially reach less than 0.0001 in the first quarter after receiving the refugee status and rise after that, reaching 0.03 after six years.

Table 5: Piecewise constant rate estimates of the duration of stay in Austria (excluding labour market entry)

	Overall	Work	Asylum	Other
tp1 (one month)	0.843 *** (26.45)	0.931 *** (7.74)	0.001 *** (12.61)	0.575 *** (60.14)
tp2 (one quarters)	0.415 *** (135.21)	0.479 *** (79.93)	0.003 *** (31.05)	0.253 *** (145.17)
tp3 (two quarter)	0.238 *** (212.12)	0.269 *** (138.24)	0.006 *** (44.19)	0.156 *** (188.30)
tp4 (one year)	0.129 *** (302.89)	0.121 *** (217.22)	0.009 *** (67.70)	0.121 *** (235.48)
tp5 (two years)	0.102 *** (352.34)	0.107 *** (241.15)	0.014 *** (90.27)	0.079 *** (290.68)
tp6 (four years)	0.074 *** (405.25)	0.075 *** (278.77)	0.024 *** (97.63)	0.057 *** (333.30)
tp7 (6 years)	0.061 *** (387.58)	0.062 *** (274.08)	0.024 *** (78.88)	0.048 *** (297.75)
tp8 (longer)	0.058 *** (348.80)	0.063 *** (249.29)	0.031 *** (68.10)	0.040 *** (258.09)
26 to 45	0.874 *** (45.97)	0.788 *** (67.07)	1.101 ** (3.03)	1.075 *** (13.89)
46 to 64	0.931 *** (17.54)	0.851 *** (32.97)	1.292 *** (4.41)	1.112 *** (13.90)
Asylum	0.128 *** (129.17)			
EU-EFTA	0.810 *** (70.15)			
Former Yugoslavia	1.420 *** (65.78)	1.415 *** (41.86)	3.370 *** (3.21)	1.392 *** (46.07)
Turkey	1.237 *** (39.90)	1.231 *** (25.00)	2.277 *** (6.20)	1.236 *** (29.48)
Other	0.428 *** (75.58)	0.301 *** (53.36)	1.614 *** (4.43)	0.502 *** (52.42)
Male	1.293 *** (94.80)	1.310 *** (81.73)	0.809 *** (6.51)	1.271 *** (49.89)
Observations	6,361,192	3,735,574	384,571	2,241,047

Source: ASSD, own calculations. Numbers in brackets are t-values, ***(**) (*) indicate statistical significance of the coefficient at the 1% (5%) (10%) level.

Table 6: Piecewise constant rate estimates of the duration of stay in Austria (including labour market entry)

	Overall	Asylum	Other
tp1 (one month)	0.524 *** (69.74)	0.001 *** (12.42)	0.533 *** (67.65)
tp2 (one quarters)	0.239 *** (150.43)	0.004 *** (30.57)	0.244 *** (148.10)
tp3 (two quarter)	0.154 *** (189.73)	0.006 *** (43.96)	0.157 *** (187.29)
tp4 (one year)	0.127 *** (230.77)	0.009 *** (68.05)	0.129 *** (227.95)
tp5 (two years)	0.090 *** (274.68)	0.013 *** (91.34)	0.091 *** (271.71)
tp6 (four years)	0.071 *** (298.47)	0.022 *** (96.72)	0.070 *** (296.69)
tp7 (6 years)	0.061 *** (258.52)	0.020 *** (75.80)	0.060 *** (255.92)
tp8 (longer)	0.053 *** (220.77)	0.024 *** (63.71)	0.051 *** (217.88)
labour market entry immediately to 1/2 year	0.611 *** (71.73)	7.338 *** (39.18)	0.599 *** (74.13)
labour market entry 1/2 year to one year	0.557 *** (53.25)	2.735 *** (16.73)	0.542 *** (54.78)
labour market entry one to two years	0.618 *** (40.17)	1.536 *** (8.27)	0.598 *** (41.66)
labour market entry two to four years	0.751 *** (20.64)	1.166 *** (3.02)	0.724 *** (22.25)
labour market entry four to six years	0.928 *** (2.94)	1.102 *** (1.07)	0.901 *** (3.90)
labour market entry six years or more	1.269 *** (4.95)	1.456 *** (2.28)	1.230 *** (4.13)
26 to 45	1.086 *** (16.12)	1.065 *** (1.97)	1.085 *** (15.64)
46 to 64	1.045 *** (5.81)	1.351 *** (5.13)	1.040 *** (5.06)
Asylum	0.145 *** (118.25)	1.000 *** (0.00)	1.000 ***
EU-EFTA	1.510 *** (56.90)	3.861 *** (3.57)	1.505 *** (56.60)
Former Yugoslavia	1.338 *** (40.14)	1.927 *** (4.94)	1.335 *** (39.86)
Turkey	0.534 *** (47.85)	1.361 *** (2.84)	0.530 *** (48.23)
Male	1.343 *** (61.12)	0.691 *** (10.87)	1.355 *** (62.43)
Observations	2,954,876	440,886	2,513,990

Source: ASSD, own calculations. Numbers in brackets are t-values, ***(**) (*) indicate statistical significance of the coefficient at the 1% (5%) (10%) level.

The results of the piecewise constant hazard model with time-varying dependent variables (Table 6) suggest a strong link between labour market integration and return hazards. Interestingly, there are pronounced differences between migrant groups. In particular, for other immigrants, the hazard increases with the waiting time to a job and is higher than for the reference group of immigrants who never find a job only for those who wait for more than six years. In contrast, for refugees – who overall have low return hazards – hazards are highest for those who find a job quickly. It is by a factor 7.8 higher for refugees finding jobs within six months than among refugees that did not find a job. Subsequently, it falls monotonically with increasing waiting time to the first job up until a waiting time of four to six years (where it is by a factor of 1.3 higher than in the reference group), to then slightly increase to a factor of 1.5.

5.2 Time to first employment spell

Given this indication of the importance of the speed of labour market integration for return decisions, Table 7 shows the estimation results of a piecewise constant hazard rate model for the time refugees and other immigrants take to enter employment.¹¹ In line with the Kaplan-Meier estimates, estimation results indicate that refugees initially have a substantially lower chance to enter employment, which, however, then increases much stronger with the duration of the non-employment period than for other immigrants. For refugees, the hazard of moving into employment within the first six months of their stay in Austria is estimated at 0.04, while the equivalent rate for other immigrants is 0.42. For refugees, this risk increases with the duration of non-employment, while it decreases with the duration of non-employment for other immigrants. At a non-employment duration of 1 to 2 years, the employment risk of the two groups is about equal. After that, the chances for a refugee without Austrian labour market experience to obtain employment are higher than those of other immigrants. After six years, the baseline employment hazard of refugees is estimated at 0.54 and that of other immigrants at 0.13.

Immigrants that are neither labour migrants nor refugees from third countries have lower employment hazards than all other origin groups, and employment hazards for men are substantially higher than for women. Thus, for other immigrants from EU-EFTA and Former Yugoslav countries hazards are by a factor of 1.3 higher than for immigrants from other third countries and that of other immigrants from Turkey is by a factor 1.4 higher. Similarly, employment hazards of male refugees and other migrants are by a factor of 1.4 respectively 1.2 higher than for female migrants of those groups.

¹¹ Labour migrants are excluded from these models, as they enter Austria with employment by definition.

Table 7: Piecewise constant rate estimates of the duration of non-employment in Austria

	Overall	Asylum	Other
tp1 (1/2 year)	0.346 *** (180.74)	0.036 *** (112.96)	0.413 *** (148.07)
tp2 (1/2 to 1 year)	0.184 *** (247.00)	0.059 *** (118.30)	0.219 *** (217.80)
tp3 (1 to 2 years)	0.162 *** (289.27)	0.157 *** (138.54)	0.174 *** (266.24)
tp4 (2 to 4 years)	0.170 *** (299.15)	0.473 *** (73.30)	0.127 *** (312.37)
tp5 (4 to 6 years)	0.126 *** (279.68)	0.541 *** (44.82)	0.102 *** (277.83)
tp6 (6 or more years)	0.141 *** (233.23)	0.540 *** (30.90)	0.128 *** (230.05)
26 to 45	0.984 *** (4.22)	0.951 *** (5.68)	1.000 *** (0.02)
46 to 64	0.762 *** (45.67)	0.755 *** (16.67)	0.775 *** (40.12)
Other	1.428 *** (56.15)		
EU-EFTA	1.320 *** (49.40)	0.427 *** (2.95)	1.313 *** (47.84)
Former Yugoslavia	1.350 *** (53.63)	0.637 *** (6.11)	1.334 *** (50.93)
Turkey	1.429 *** (46.44)	0.913 *** (1.93)	1.438 *** (46.18)
Male	1.201 * (50.86)	1.388 (35.13)	1.186 * (43.95)
Observations	1,553,511	232,214	1,321,297

Source: ASSD, own calculations. Numbers in brackets are t-values, ***(**) (*) indicate statistical significance of the coefficient at the 1% (5%) (10%) level.

5.3 Heterogeneity among immigrant groups

Given the heterogeneity among different immigrant groups, we estimated the piecewise-constant hazard regression models also separately for various subgroups of immigrants built by region of origin, status at entry and gender (Table A1 in the appendix). These separate models also serve as the basis for our simulation exercise below.¹² Concerning the duration of stay in Austria, the results indicate significant group-specific gender differences in the duration of stay. For labour and other immigrants from EU and EFTA countries as well as from Former Yugoslavia, return hazards are substantially larger among men than women in the first quarter year of residence in Austria, but comparable after that. In contrast, for immigrants from other third countries and refugees, these hazards are of a similar magnitude throughout. These findings are

¹² In these specifications, due to the low number of asylum seekers from the EU, Former Yugoslav countries, and Turkey, we do not further differentiate asylum seekers by region of residence.

consistent with the interpretation that gender-differences in return hazards stem from a higher propensity of immigrant men from EU and EFTA countries as well as from Former Yugoslavia to take up temporary (i.e. seasonal) employment in Austria relative to other immigrant groups.

For other immigrants, regardless of origin and gender, return hazards are highest among young immigrants aged 15 to 25, which may be an indication of education migration among the younger cohorts in this group. In contrast, among labour migrants return hazards increase with age at migration both for Turkish men and women, which may indicate substantial retirement migration among that group of labour migrants. Furthermore, rapid labour entry is more strongly associated with lower return hazards among men than for women among other immigrants. These gender differences might be attributed to family return migration decisions in which women are the tied movers (i.e. in which the speed of labour market integration of the male breadwinner, also determines the duration of stay of their spouse).

Concerning labour market integration, group-specific differences are less pronounced. Nonetheless, they point to higher employment hazards of men than women in the first year of their residence in Austria for all origin country groups as well as indicating a lower employment hazard for immigrants arriving at higher ages for most immigrant groups

6. Simulation Results

The pronounced differences in return and onward migration hazards by immigrant group impact on the long-run evolution and structure of the migrant population residing in Austria and its labour market experience. To illustrate these long-run implications, we integrated the duration models estimated in Table A1 into the WIFO microsimulation model microDEMS (see Spielauer et al., 2020 for a description). We projected the stock and structure of first-generation immigrants arriving since 2009 as well as the share of immigrants with labour market experience in Austria up to 2060. microDEMS implements a competing risk approach: once having entered Austria, immigrants are at risk of three events – first labour market entry, emigration, and mortality. According to the hazard regression models, first entry into employment alters emigration risks. Each year, a new cohort of immigrants enters the country, size and structure reflecting historical (2009-2016) or projected values. We use the 2009-2016 average as the base of our projection, which results in approximately 129,000 immigrants per year, a number consistent with Statistic Austria's population projection (i.e. numbers of immigrants age 15-64). Consequently, over the 2009-2059 time period, about 6.9 million immigrants arrive in Austria. Of these, by assumption, the largest part (42.3%) stems from Former Yugoslavia and a further 40% originate from former EU and EFTA countries; 60.4% arrive as work migrants, 5% as refugees, and 34.5% with other social security statuses.

Based on these assumptions, Table 8 compares the size of the cumulated immigrant inflow to the evolution of the stock of immigrants predicted to reside in Austria. Table 9 compares the structure of the cumulative inflow and the resident immigrant population by origin. Due to emigration and mortality, only 27% (1.8 out of 6.9 million) of the 2009-2059 immigrants are still

present in Austria by 2060. This proportion is higher for women – 30% compared to 23% – as women have a lower emigration risk (and lower mortality).

Despite the higher proportion of male immigrants, the gender-specific differences in emigration risks lead to an increasing proportion of women among the resident immigrant population.

Table 8: Simulated cumulative immigrants' inflow and resulting immigrant stock by gender and year

	Female	Male	Total
Cumulated Inflow			
2020	768,333	820,065	1,588,399
2030	1,410,161	1,501,944	2,912,105
2040	2,052,589	2,183,240	4,235,830
2050	2,692,489	2,867,082	5,559,572
2060	3,331,373	3,551,906	6,883,278
Stock			
2020	445,905	409,067	854,973
2030	665,348	590,000	1,255,348
2040	822,441	697,284	1,519,725
2050	933,648	771,608	1,705,256
2060	1,012,208	822,846	1,835,054
Stock as a share of inflow			
2020	0.58	0.50	0.54
2030	0.47	0.39	0.43
2040	0.40	0.32	0.36
2050	0.35	0.27	0.31
2060	0.30	0.23	0.27

Source: microDEMS, ASSD.

Table 9: Simulated origin country structure of cumulative immigrants' inflow and resulting immigrant stock by year

	EU-EFTA	EX-Yugoslavia	Turkey	Other
Cumulated Inflow				
2020	39.4	42.6	4.1	13.9
2030	39.6	42.5	4.1	13.8
2040	39.6	42.4	4.2	13.8
2050	39.7	42.3	4.2	13.8
2060	39.7	42.3	4.2	13.9
Stock				
2020	32.8	40.9	5.9	20.3
2030	31.5	40.1	6.7	21.7
2040	30.8	39.3	7.4	22.5
2050	30.0	38.9	7.9	23.2
2060	29.3	38.7	8.3	23.6

Source: microDEMS, ASSD.

Return migration also shifts the composition by origin towards immigrants originating from Turkey and third countries, mostly at the expense of immigrants from the EU and EFTA (see Table 9).

While 40% of immigrants come from EU and EFTA countries, this group constitutes less than 30% of the stock in 2060. By contrast, the share of immigrants from Turkey in the immigrant inflow is just above 4% and that of immigrants from other third countries just below 14%, while at the end of the observation period 8.3% of the immigrants still residing in Austria are from Turkey and 23.6% are from other third countries.

Table 10: Simulated share of immigrants with some labour market experience by year and region of origin

	EU-EFTA	EX-Yugoslavia	Turkey	Other	All
2020	86.7	85.4	77.5	67.3	81.7
2030	89.2	88.5	84.8	77.5	86.1
2040	90.2	89.8	87.7	82.2	88.0
2050	90.7	90.5	89.5	84.6	89.1
2060	91.3	91.1	90.7	85.2	89.7

Source: microDEMS, ASSD.

The proportion of immigrants with labour market experience increases over time, as most immigrants integrate into the Austrian labour market over time. While in 2020, 82% of immigrants have entered the Austrian labour market at some point, this number rises to 90% in 2060. This progress is particularly pronounced among immigrants from other third countries and immigrants from Turkey (i.e. the groups with the lowest employment initially). For the latter, the share of immigrants with labour market experience residing in Austria increases by 13.2 percentage points over the simulation period while for the former, the increase is 17.9 percentage points. While immigrants from Turkey thereby catch up with EU-EFTA and Ex-Yugoslavian immigrants, immigrants from other countries still fall behind by six percentage points. This gap thus may be evidence of more protracted problems of labour market integration of immigrants from other third countries.

7. Conclusions

This paper provides a first analysis of the extent of return and onward migration in Austria by origin and immigration type, based on Austrian Social Security data (ASSD) and focusing on immigrant cohorts from 2009 to 2017. Based on survival analysis, we find that on average, 25% of all immigrants leave Austria within less than a year of their arrival and 50% within 5.5 years. There is a considerable variation in these rates among immigrant groups. In particular, the entry status of immigrants is a powerful predictor of return migration. Refugees have lower return hazards than the average migrant, and labour migrants, among other things due to the critical role of seasonal labour migration in Austria, substantially higher ones. Also, women have lower return hazards than men and immigrants from EU and EFTA countries have higher return probabilities than immigrants from Turkey, Ex-Yugoslavia and other third countries. The duration of stay of immigrants in Austria is also closely correlated to labour market success. Return hazards are highest for immigrants who never obtain labour market access and increase with an

increasing waiting time to labour market entry. Our simulation results suggest that eventually, over 90% of the resident immigrant population attains at least some labour market experience and that the differential return hazards across immigrant groups work to shift the structure of the immigrant population in the direction of third-country nationals.

We also document interesting differences in return hazards as well as their determinants across different migrant groups. In particular, male labour and other immigrants from EU and EFTA countries as well as from Former Yugoslavia have substantially larger return hazards in the first quarter year of residence in Austria than women from these groups. In contrast, hazards are comparable after that initial period. Also, rapid labour entry is more strongly associated with lower return hazards among men than women for non-labour-immigrants. This could be an indication that gender-specific differences in the risk of return are also related to the different propensity of men and women of particular migrant groups to take up temporary (i.e. seasonal) employment in Austria.

While our results provide several novel insights into onward and return migration and its importance for demographic developments in Austria, our approach also leaves several topics for future research. In particular, one of the limitations of the current paper is that data do not allow for analysis by education groups, which precludes an analysis of the potential self-selection mechanisms that may be relevant among return immigrants (see, e.g. Borjas – Bratsberg, 1996). Future research, therefore, may focus on these self-selection mechanisms using other data sets. Other topics for future research could include a more detailed analysis of the interaction of duration of stay of immigrants with different migration motives or a more causally oriented analysis on the impact of specific policy measures (e.g. naturalisation) on return migration patterns. In terms of exploiting the strengths of dynamic microsimulation, we have made only limited use of the microWELT model. In a supplementary study (Horvath et al., 2020), we used microDEMS to investigate the link between education and labour market integration of first and second-generation immigrants in Austria. Integrating these approaches, as well as a more detailed capture of differentials in family dynamics – e.g. family types and fertility – of immigrants by background to a more comprehensive model, is subject to future research.

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8. Appendix

Table A1: Piecewise constant return hazard estimation for immigrant groups

Migrant type Origin	EU EFTA		Labour Former YU		Turkey		Other		Asylum Other		EU EFTA		Former YU		Other Turkey		Other	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
A. Duration of Stay																		
tp1 (one month)	1.19 (16.13)	1.52 (49.52)	1.29 (24.53)	1.71 (68.73)	0.24 (14.05)	0.16 (18.17)	0.46 (15.56)	0.44 (20.10)	0.00 (0.05)	0.00 (10.56)	0.87 (8.80)	1.02 (1.48)	0.75 (19.24)	1.14 (9.13)	0.12 (28.24)	0.11 (24.71)	0.19 (38.22)	0.22 (31.39)
tp2 (one quarters)	0.81 (21.86)	0.89 (14.74)	0.60 (47.50)	0.67 (45.48)	0.16 (20.98)	0.10 (25.79)	0.44 (21.90)	0.48 (24.58)	0.00 (15.21)	0.00 (26.49)	0.55 (42.80)	0.54 (39.92)	0.27 (75.83)	0.38 (57.66)	0.06 (38.07)	0.07 (32.73)	0.17 (54.57)	0.15 (45.72)
tp3 (two quarter)	0.54 (61.20)	0.54 (67.30)	0.31 (94.25)	0.31 (110.89)	0.04 (22.26)	0.03 (27.03)	0.21 (34.97)	0.30 (37.86)	0.00 (24.40)	0.00 (37.93)	0.31 (72.53)	0.33 (64.50)	0.15 (96.71)	0.19 (82.53)	0.05 (43.62)	0.06 (36.36)	0.26 (59.05)	0.24 (49.32)
tp4 (one year)	0.23 (132.46)	0.23 (145.67)	0.14 (147.83)	0.16 (172.26)	0.03 (29.63)	0.03 (36.36)	0.16 (47.67)	0.19 (55.49)	0.01 (42.24)	0.01 (60.42)	0.20 (105.32)	0.21 (93.30)	0.13 (124.34)	0.14 (106.32)	0.06 (58.85)	0.13 (48.77)	0.32 (69.11)	0.29 (57.46)
tp5 (two years)	0.19 (170.25)	0.19 (184.50)	0.13 (186.64)	0.14 (214.28)	0.05 (42.78)	0.04 (49.54)	0.13 (60.88)	0.15 (70.27)	0.02 (59.10)	0.02 (88.39)	0.14 (131.82)	0.17 (111.16)	0.11 (147.69)	0.12 (122.77)	0.05 (71.67)	0.12 (55.21)	0.13 (101.56)	0.16 (77.69)
tp6 (four years)	0.14 (202.50)	0.14 (219.64)	0.10 (223.97)	0.10 (255.14)	0.03 (49.54)	0.02 (57.29)	0.08 (72.27)	0.10 (83.69)	0.03 (65.83)	0.01 (97.96)	0.11 (145.02)	0.11 (124.27)	0.09 (159.05)	0.08 (133.78)	0.04 (79.76)	0.12 (55.24)	0.10 (112.46)	0.15 (78.82)
tp7 (6 years)	0.11 (160.51)	0.11 (172.67)	0.08 (188.27)	0.08 (211.38)	0.03 (42.26)	0.02 (46.24)	0.07 (59.39)	0.07 (69.09)	0.02 (46.00)	0.01 (70.71)	0.10 (113.48)	0.08 (102.01)	0.07 (127.58)	0.06 (110.91)	0.06 (66.47)	0.10 (41.56)	0.11 (82.52)	0.12 (56.36)
tp8 (longer)	0.10 (128.38)	0.10 (140.16)	0.09 (155.33)	0.10 (159.51)	0.03 (36.62)	0.02 (39.09)	0.08 (51.07)	0.09 (58.83)	0.04 (37.22)	0.01 (58.67)	0.08 (94.06)	0.06 (85.61)	0.06 (101.15)	0.04 (84.73)	0.08 (57.60)	0.13 (32.82)	0.12 (63.68)	0.10 (41.73)
26 to 45	0.62 (62.44)	0.80 (34.10)	0.76 (32.54)	0.94 (9.69)	1.09 (0.99)	1.33 (4.55)	0.82 (7.34)	0.94 (3.05)	0.97 (0.57)	1.13 (3.08)	0.80 (15.32)	0.79 (16.35)	0.58 (34.67)	0.65 (27.30)	0.38 (15.43)	0.12 (34.38)	0.31 (28.22)	0.24 (36.43)
46 to 64	0.57 (56.10)	0.92 (8.07)	0.70 (34.45)	1.31 (28.88)	2.96 (11.49)	3.99 (12.25)	1.01 (0.17)	1.32 (7.70)	1.08 (0.87)	1.61 (6.09)	0.74 (12.84)	0.75 (12.16)	0.50 (26.44)	0.67 (15.90)	0.40 (12.99)	0.12 (27.26)	0.37 (19.63)	0.28 (24.85)
Labour market entry																		
Immediately to 1/2 year									5.04 (14.40)	8.94 (36.09)	0.78 (9.64)	0.86 (5.46)	0.52 (23.00)	0.82 (6.80)	0.39 (13.22)	0.14 (23.68)	0.40 (19.65)	0.33 (21.51)
1/2 year to one year									2.73 (6.91)	2.94 (15.45)	0.88 (4.43)	1.20 (5.44)	0.56 (17.70)	1.22 (5.60)	0.48 (9.83)	0.27 (14.08)	0.39 (19.06)	0.37 (16.47)
One to two years									1.45 (3.02)	1.68 (8.57)	1.00 (0.03)	1.47 (5.69)	0.80 (3.96)	1.97 (10.47)	0.53 (5.22)	0.39 (6.29)	0.35 (12.33)	0.48 (6.47)
Two to four years									0.92 (0.72)	1.31 (4.39)	1.30 (2.35)	1.76 (3.73)	1.15 (1.29)	3.25 (8.14)	0.92 (0.57)	0.48 (3.13)	0.50 (5.34)	0.70 (1.78)
Four to six years									0.58 (2.69)	1.48 (3.69)	0.77 (23.36)	1.09 (7.12)	1.33 (24.82)	1.65 (40.06)	1.30 (6.70)	1.32 (5.83)	0.67 (24.25)	1.03 (1.45)
Six years or more									0.57 (1.63)	2.25 (3.96)	0.62 (27.94)	1.00 (0.20)	1.15 (8.59)	2.14 (46.73)	1.32 (6.33)	1.09 (0.64)	0.74 (8.77)	0.98 (0.52)
Observations																		

Source: ASSD, own calculations. Numbers in brackets are t-values, ***(**) (*) indicate statistical significance of the coefficient at the 1% (5%) (10%) level.

Table A1 (continued): Piecewise constant non-employment hazard estimation for immigrant groups

Migrant type	EU EFTA		Labour Former YU		Turkey		Other		Asylum Other		EU EFTA		Former YU		Other Turkey		Other	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
B. Duration of non-employment																		
tp1 (1/2 year)									0.03	0.05	0.53	0.76	0.61	0.82	0.36	0.64	0.18	0.36
									(56.87)	(90.73)	(74.89)	(30.20)	(60.52)	(23.46)	(50.56)	(26.98)	(101.43)	(61.67)
tp2 (1/2 to 1 year)									0.02	0.10	0.25	0.35	0.31	0.41	0.34	0.54	0.13	0.24
									(53.57)	(95.60)	(112.13)	(80.78)	(99.25)	(71.27)	(48.08)	(30.51)	(100.43)	(68.11)
tp3 (1 to 2 years)									0.15	0.22	0.21	0.22	0.25	0.27	0.33	0.40	0.17	0.23
									(83.39)	(118.12)	(143.60)	(115.09)	(130.30)	(104.31)	(60.18)	(45.27)	(123.09)	(85.01)
tp4 (2 to 4 years)									0.48	0.65	0.15	0.13	0.21	0.16	0.25	0.18	0.16	0.17
									(50.25)	(50.99)	(170.53)	(138.02)	(152.51)	(126.72)	(74.35)	(64.64)	(141.90)	(101.04)
tp5 (4 to 6 years)									0.42	0.87	0.12	0.09	0.18	0.13	0.21	0.10	0.14	0.13
									(38.55)	(9.82)	(137.40)	(107.13)	(121.11)	(95.16)	(61.34)	(54.34)	(116.84)	(79.51)
tp6 (6 or more years)									0.58	0.66	0.15	0.09	0.27	0.14	0.34	0.11	0.17	0.10
									(20.29)	(13.70)	(114.86)	(89.90)	(82.31)	(57.99)	(47.32)	(49.55)	(97.01)	(63.20)
26 to 45									1.03	0.93	1.16	1.18	0.72	0.93	0.64	1.45	1.25	1.17
									(1.64)	(7.34)	(16.26)	(15.59)	(36.67)	(6.60)	(19.65)	(15.18)	(18.66)	(9.88)
46 to 64									0.89	0.69	0.96	0.87	0.68	0.64	0.44	0.76	0.98	0.76
									(4.24)	(17.00)	(3.09)	(9.53)	(30.69)	(26.87)	(29.33)	(3.22)	(0.70)	(7.43)
Observations																		

Source: ASSD, own calculations. Numbers in brackets are t-values, ***(**) (*) indicate statistical significance of the coefficient at the 1% (5%) (10%) level.