

Savings motive in immigration: An empirical analysis

Murat G. Kırdar

Department of Economics, Middle East Technical University, 06531 Ankara, Turkey

Abstract

This paper reviews the literature on the causes of migration decisions and examines the Turkish and ex-Yugoslavian guestworker migration to Germany in this context. The literature and empirical facts strongly suggest that the most important cause of immigration for these groups of migrants was the savings motive. Using a rich longitudinal dataset on these groups of immigrants, I establish this connection between migration and savings behavior using empirical methods.

Keywords: International Migration, Savings.

JEL Codes: J61, E21.

1. Introduction

The economic motivation of immigration, whether it is migration within a country or international migration, is higher earning opportunities. However, many times the migration decision does not end there; return migration is often observed, especially in international migration. Therefore, any theory about immigration should be able to explain return migration as well as the initial migration decision. One important theory that is put forward is the capital accumulation motive in immigration. This capital can be either human capital or physical capital. It could be optimal for residents of a country with lower wages to immigrate to a country with higher wages, accumulate assets throughout their residence in the host country and then return back to their home country to take advantage of the lower prices. As Borjas and Bratsberg (1996) claim, in this case, return migration is part of the optimal decision of immigration to

the host country. Mexican migration to the U.S. and the guestworker migration of the 1960's and 70's to Western Europe -which is the subject matter of this paper - can be characterized in this group. For other immigrants, it is the opportunity to acquire further human capital that brings them to a foreign country. This group of immigrants could also prefer to return back to their home country if the returns to the human capital acquired abroad are higher in the host country. Therefore, this case is similar to the case of immigration with a savings motive in that return whenever it is observed is part of the initial immigration decision.

In this paper, I examine the underlying economic motivation in the immigration of Turkish and ex-Yugoslavian guestworkers to Germany in the 1960's and 1970's under the bilateral agreements signed by the German government with Turkey in 1961 and with ex-Yugoslavia in 1968. According to these agreements, these guestworkers were supposed to work in Germany for a limited number of years and then go back to their home country. According to Böhning (1981), 5 in 10 Yugoslav, and 3 in 10 Turkish workers admitted to work during the years 1961-76 left during this period. Even though, as Martin reports, many of the guestworkers returned to their home countries within the intended period of time, some stayed longer. However, even those who stayed longer continued to return to their home countries and return migration of these immigrants has remained at a significant level. According to the Germany Federal Ministry of the Interior, around 45,000 Turks returned to Turkey each year on average between 1993 and 1998. Given that there are around 2 million Turkish immigrants in Germany, this roughly amounts to a 2 percent annual hazard rate.

Under the guest-worker recruitment scheme, the German government opened recruitment posts in the major cities of these countries. Potential immigrants who registered at these posts were matched with German employers. Since the demand was very high at times, the German agencies could be selective. According to Martin (1980) "With 10 Turks wanting to work in Germany for each one recruited by employers, the Germans could be selective, and they were. Some 30 to 40 percent of the Turks recruited to work in Germany were skilled workers in Turkey who worked as manual laborers in Germany. By 1970, for example, 40 percent of Turkey's carpenters and stonemasons were employed in Germany, often as assembly line or unskilled workers." Paine (1974) reports a similar

experience for Yugoslavia in that most of the urban migrants belonged to the skilled elite rather than the unemployed.

As Martin reports, most of these guestworkers took jobs as unskilled workers. Therefore, it is quite unlikely that their goal in moving to Germany was to acquire human capital. Even if they acquired some skills, these skills would be specific to the German labor market, which is a more capital-intensive production environment, and would not fit to the needs of the home country labor market. In addition, based on a survey of Turkish emigrants from Germany in Turkey, Dustmann and Kirchkamp (2002) report that only 6 percent worked as salaried workers after return whereas 51 percent of the returners were self-employed. The other 43 percent were retired. Another interesting fact that Dustmann and Kirchkamp report is that the median age of the retirees among the returners was 45. This suggests that some immigrants were able to accumulate enough assets by a relatively early age to spend the rest of their lives as rentiers. The facts that half of these migrants engaged in entrepreneurial activities after return and that most of the rest lived as rentiers suggest a savings motive for immigrating to Germany. If the goal of guestworkers was to accumulate assets, we would expect their saving rates to be high. Galor and Stark (1990) show that when immigrants come from countries with lower wages and prices, they would save more compared to natives as they plan to live the second period of their life in a country with lower prices. In addition, the ability of the immigrants to reach their wealth accumulation goal would determine the timing of their return to their home country. Based on an empirical investigation of Turkish households in Germany, Kumcu (1989), in fact, finds evidence for very high saving rates.

I use the German Socio-Economic Panel to analyze the return migration and saving behavior of these immigrants. The hazard functions and saving profiles strongly suggest a savings motive in these immigrants' behavior. The hazard function over duration of residence has a hump shape. The hazard rates are lower at lower duration of residences because immigrants have not had enough time to accumulate high enough wealth. As duration of residence increases and they accumulate more wealth, the hazard rates increase. However, there is also a countervailing effect. Immigrants' acclimatization increases as they stay longer. Immigrants who can not save at a fast enough pace may choose never to return because their acclimatization increases faster than their wealth. As the proportion of this group of immigrants in the immigrant population increases, the hazard function

gains a downward slope. The saving rates indicate a downward-sloping profile by duration of residence because immigrants' whose saving rates are higher return earlier. The out-selection of immigrants who save more brings about the decrease in the saving rate profiles.

In section 2, I explain the data in more detail. Section 3 presents the results and section 4 concludes.

2. Data

Sample B (immigrant sample) of the 2000 version of the German Socio-Economic Panel (GSOEP) is used. GSOEP is a longitudinal data set that surveys households in Germany about a rich set of social and economic indicators, and it is conducted annually. The first wave was implemented in 1984; therefore, the panel length in the 2000 version that I use is 17 years. One nice feature of this data set is that it oversamples immigrants, which renders it an attractive source of information for studies on immigration.

The initial immigrant sample of the GSOEP (Sample B) has immigrants from five countries of which three are EU members -- Greece, Italy, and Spain -- and two are not, Turkey and ex-Yugoslavia. This study focuses on the immigrants from the two non-EU countries. A joint analysis on the immigrants from these two source countries is performed because the sample size for each group of immigrants is not large enough to conduct a study on its own. On the other hand, immigrants from these two source countries are taken separately from those from the EU member countries because while the macroeconomic conditions of the two non-EU member countries are relatively similar, their macroeconomic conditions are quite different from that of the EU countries.

There are 382 Turkish and 282 ex-Yugoslavian households in this sample. I keep households with a male household head who was 18 or older at the time of immigration because I want to analyze the return behavior of first generation immigrants, who made the decision to immigrate to Germany themselves. (313 of the 382 Turkish households and 229 of the 282 Yugoslavian households fall into this group.) When the household head is not a male, I take the male partner satisfying the same age-at-entry requirement (1 Turkish household and 5 Yugoslavian households are in this group.).I also drop 2 Turkish household heads who were older than 50 at the time of their entry to Germany. Therefore, the final sample of first-generation male household heads contains 312 Turkish and 234 ex-Yugoslavian immigrants.

The pieces of information I use are return migration, household income and saving information. If an immigrant returns to his home country, he is reported as "Moved Out of the Country" in the following survey year. For household income, I use the post-government household income as reported in the PSID-equivalent files of the GSOEP. Saving information is gathered from the question on average monthly saving levels. I aggregate these monthly saving levels to annual levels by multiplying them by twelve. Saving information is available only after 1991.

Table 1 presents the mean values of the variables used in the study by country of origin. Ex-Yugoslavian immigrants have been in Germany on average 1.2 years longer than Turkish immigrants. As a result, their mean age is slightly higher as well. Return migration is observed at a more frequent rate for Turkish immigrants. While the incidence of return for Turkish immigrants is 0.026, it is 0.012 for ex-Yugoslavian immigrants. The mean income levels of both groups of immigrants are similar; ex-Yugoslavian immigrants' average savings are somewhat higher, though.

Table 1
Table of Means by Country of Origin

	Turkish	ex-Yugoslavian
Age	47.1	48.2
Years of Residence	18.9	20.1
Incidence of Return	0.026	0.012
Household Income	51,054	50,262
Savings	2,572	3,629

Income and savings are in 1998 DM.

3. Results

In this section, I present the results of the empirical investigation. I examine the return behavior immigrants using non-parametric hazard functions and their saving behavior by their saving rate profiles. Both the hazard functions and the saving rate profiles are examined first by duration of residence, then by age.

3.1. Return migration and saving behavior by duration of residence

3.1.1. Return migration

Figure 1 presents the nonparametric (Kaplan-Meier) hazard contributions and the smooth hazard function by duration of residence

in Germany. In smoothing the hazard contributions, I used a nonparametric smoothing technique that uses locally weighted regressions.¹ The interesting feature of the hazard function is that it has a hump shape between 3 and 30 years of residence. The hazard function starts rising after 3 years of residence and reaches its peak between 10 and 15 years of residence before going down to its lowest level at around 30 years of residence. The hazard rate is just above three percent at its peak. This type of a hazard function can be rationalized in a setting where the goal of immigration is to accumulate wealth. Immigrants that realize very high earnings could save at a fast pace. Therefore, the duration needed for them to accumulate high enough wealth to make return back to the home country preferable would be short. However, since this is conditional on the realization of earnings that are well above the average, this group immigrants that return at shorter duration of residences would be a small minority. Therefore, the hazard function is initially low in the below figure. As the duration of residence rises, not only the very high earners but many immigrants would start reaching a sufficient level of wealth that makes return back home preferable. As a result, the hazard rates rise as it is in the below graph. There are also immigrants who do not achieve high enough earnings throughout their residence to save at a fast enough pace to counteract their increasing acclimatization that comes with longer duration of residence. Since the proportion of this type of immigrants in the population increases as we move past the hump (because the other types exit the sample), the hazard function starts going down.

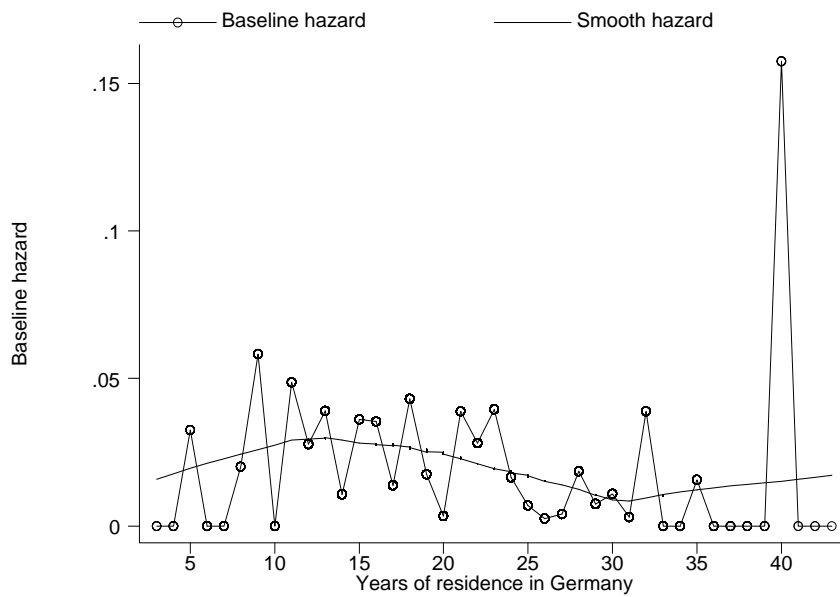
The hazard function in Figure 1 also displays an increasing profile after 30 years of residence. This is likely to arise from the fact that many immigrants start reaching retirement age after 30 years of residence - given the mean age of entry is around 28 for Turkish immigrants and 26 for Yugoslavian immigrants- and their return coincides with their retirement. (This fact is also illustrated later in Figure 4.)

We could see a hump-shaped hazard profile when the motive of immigration is to accumulate human capital as well. The above argument that rationalizes the hump-shaped hazard function with a wealth accumulation motive has also implications about the saving behavior of these immigrants. Therefore, next I analyze the saving rate

¹ Figure 1 includes observations between 3 and 43 years of residence. Since all of the immigrants in the sample entered Germany before 1981 and the sample starts at 1984, the shortest duration of residence we observe is 3 years.

profile of these immigrants and see whether it is consistent with the above assertion.

Figure 1
Kaplan-Meier Hazard Contributions and Hazard Function by Duration of Residence for Return Migration

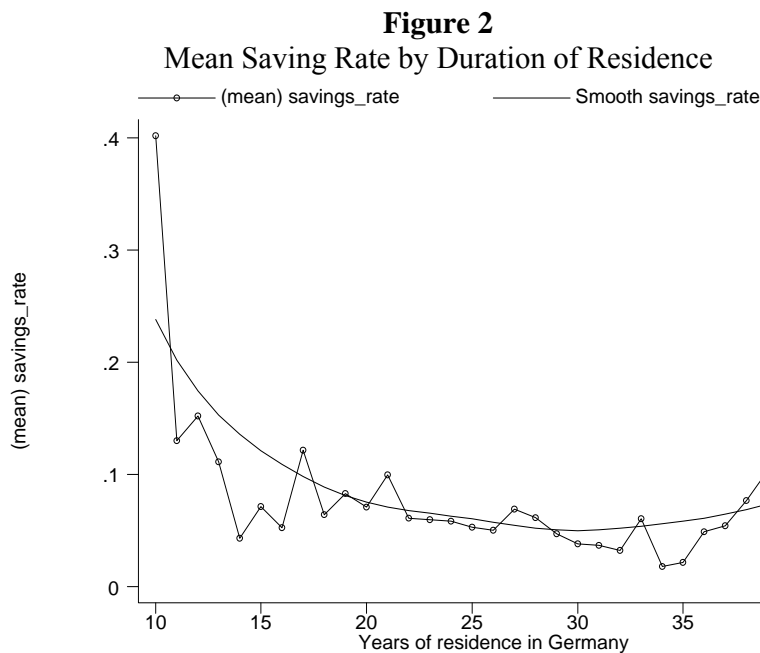


3.1.2. Saving profile

Figure 2 illustrates the mean saving rate profile by duration of residence.² Saving rates exhibit a decreasing profile until 30 years of residence. This fact is consistent with the suggested explanation of the hump-shaped profile of the hazard function within the first 30 years of residence. Immigrants who save at a faster pace -which would be due to their higher earnings capacity and/or their strong preference for returning home as soon as possible- return to their home country sooner. Consequently, as duration of residence increases, the sample contains a higher fraction of immigrants who save less. In other words, immigrants with higher propensity to save are selected out. Therefore, we see a downward-sloping saving rate profile.

² Saving information is available only after 1991; therefore, the saving rate profile starts at 10 years of residence.

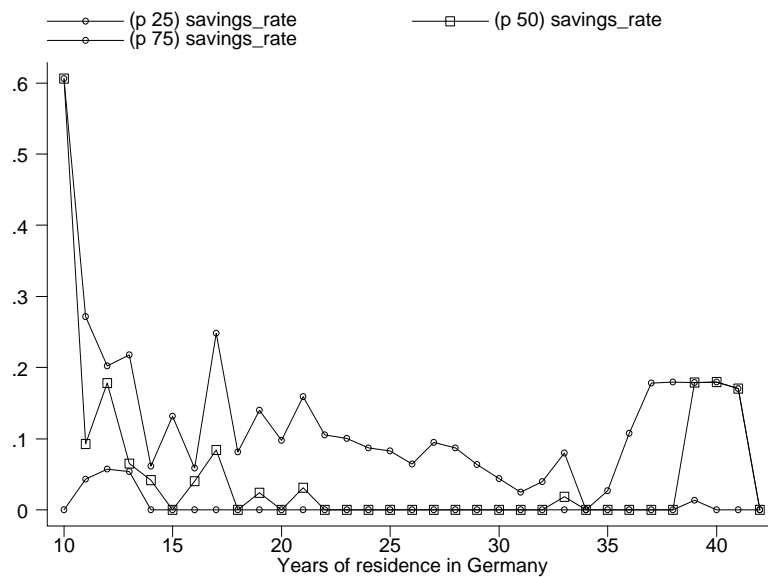
There is a slight increase in the saving rates after 30 years of residence. Remember that in the hazard function, there was a similar increase in the same interval. It seems that after 30 years of residence, as immigrants approach or reach retirement -after which hazard rates indicate a rise-, the shortness of the remaining time left in Germany provides an additional impetus to save.



There is a problem in interpreting the levels of the mean saving profile above. In the sample, saving levels are censored below zero because no question is asked about dissavings in the GSOEP. In other words, dissavings are grouped with zero savings. (Given the fact that around one-half of all the recorded saving information is zero, the incidence of dissaving could be considerable.) Therefore, next I examine the median along with the 25th and 75th percentile saving rate profiles. These are displayed in Figure 3. The median saving rate profile shows a decreasing profile. An important fact is that after 21 years of residence, the median saving rate is zero (except for after 38 years of residence where the sample size becomes very small). Half of the immigrants have either zero or negative saving levels after twenty-one years of residence because this a sample out of which the "savers" are selected out. Between ten and twenty-one years of residence, the median saving rate shows a precipitous decline. The median saving

rate goes down from a level above twenty percent to zero within a period of ten years. The 75th percentile saving rate profile also shows a decreasing profile. It goes down from around thirty percent to almost zero at 35 years of residence. On the other hand, the 25th percentile saving rate is always zero after 14 years of residence and under ten percent before that.

Figure 3
 Median, 25th, and 75th Percentile Saving Rates by Duration of Residence



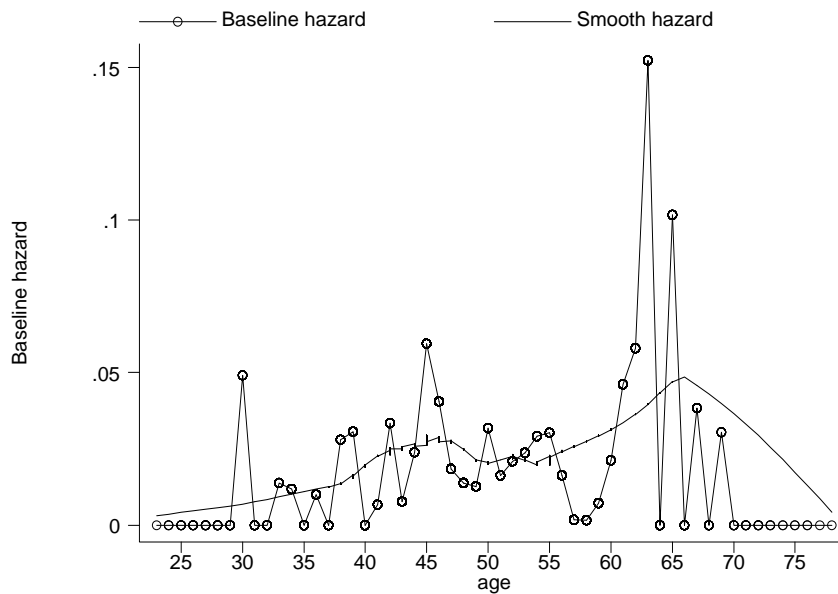
3.2. Return migration and saving behavior by age

3.2.1. Return migration

Figure 4 displays the Kaplan-Meier hazard contributions and the smooth hazard function by age. A salient feature of the hazard function by age is that it monotonically increases from age 25 to age 45. This is another evidence of the savings motive in immigration for these immigrants. Younger immigrants simply have not had enough time in Germany to accumulate sufficient wealth to make the return home preferable. As they age and increase their wealth in Germany, it becomes preferable to return home for more and more immigrants. Therefore, we see a rising hazard function profile until age 45. The hazard function is relatively flat between the ages 45 and 55 at a level around 2.5 percent. After age 55, hazard contributions fall. This is

expected because immigrants would rather wait a few more years until they reach retirement and leave after that.

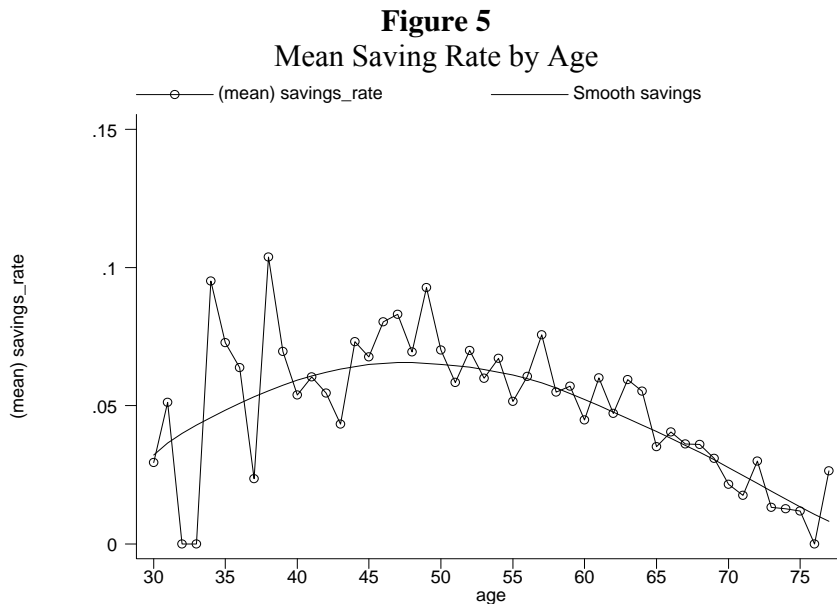
Figure 4
Kaplan-Meier Hazard Contributions and Hazard Function by Age for Return Migration



As can also be seen from Figure 4, the smoothed hazard function peaks at around age 65. This peak at age 65 is clearly due to retirement. In the hazard contributions, there are two significant peaks in this range: One at age 63 and the other at age 65. This arises from the features of the German retirement system. The normal age of retirement is 65; that is why, we see the peak at age 65. In addition, conditional on a long service period -which is 35 years-, early retirement is possible at age 63. This is the cause of the peak at age 63. After age 60 and before the early retirement age of 63, we see the hazard contributions rising as well. According to the German retirement system, conditional on having long periods of unemployment spells, workers can retire after age 60. In addition, the unemployment rate for immigrants between the ages 50 and 60 is very high and therefore many have long periods of unemployment spells. The increase in the hazard contributions after age 60 and before age 63 must be a result of early retirement of unemployed immigrants.

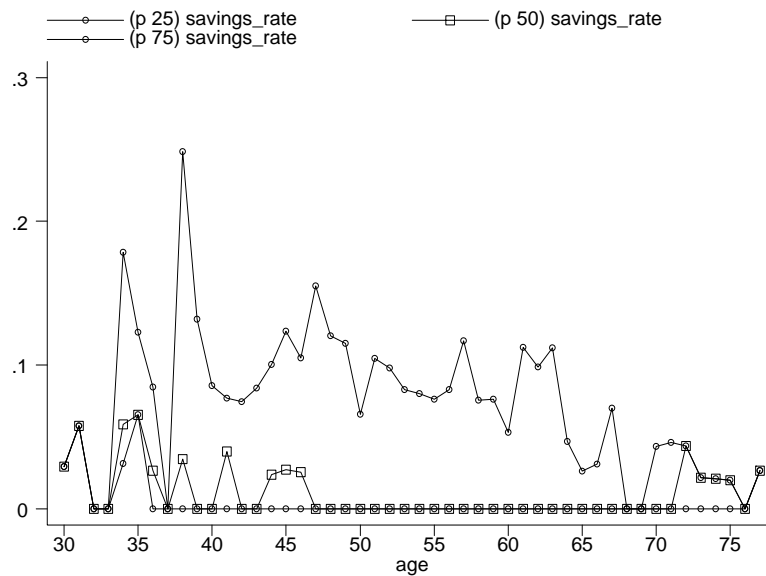
3.2.2. Saving profile

Figure 5 illustrates the mean saving rate profile by age and Figure 6 the median, 25th percentile and 75th percentile profiles by age. The mean saving rate profile in Figure 5 is hump-shaped where the mean saving rate is increasing from age 30 to 45. However, as can be seen in Figure 6, the median saving rate profile by age is downward sloping, similar to the saving rate profile by duration of residence above. Therefore, the median saving rate profile by age is consistent with the selection argument present above, which claims that immigrants with higher propensity to save return earlier. The median saving rate is zero after age 46 until very old ages (where the sample size becomes small). Before age 46, the median saving rate is always less than ten percent.



The hump-shaped mean saving rate profile and the downward-sloping median saving rate profile can be reconciled by examining the 75th percentile saving rate in Figure 6. The 75th percentile saving rates also increase on average until age 45. This implies that even though fewer people have positive saving as immigrants reach age 45, the ones that save save a higher fraction of their income. Therefore, despite a downward-sloping median saving profile due to the out-selection immigrants with high propensity to save, we observe an increasing mean saving rate profile until age 45 because those who are willing to save save a higher fraction of their income.

Figure 6
Median, 25th, and 75th Percentile Saving Rates by Age



The downward sloping median saving rate profile could be originating from the features of German institutional setting. However, as illustrated by Börsch-Supan et al., the median saving rate profile for ethnic Germans is relatively flat between the ages 30 and 55. Therefore, the downward sloping shape of the median saving rate profile between these ages is particular to Turkish and ex-Yugoslavian immigrants in Germany.

4. Conclusions

In this paper, I review the causes of migration proposed in the literature and examine the Turkish and ex-Yugoslavian guestworker migration to Germany as well as their return migration in this context. I find that the findings of the literature and empirical facts provided by the German Socio-Economic Panel strongly suggest that the main reason for this immigration was the savings accumulation motive.

The literature on guestworker migration reveals that the macroeconomic environment, the type of jobs that Turkish and ex-Yugoslavian immigrants took in Germany, and their labor market behavior after return all point to savings accumulation as the underlying motivation in the immigration of these workers to Germany. Lower prices in Turkey and ex-Yugoslavia compared to

Germany created a strong wealth accumulation motive. In addition, the jobs that these immigrants took in Germany were mostly blue-collar jobs that did not require special skills and did not allow them to acquire new skills. Moreover, studies indicate that a very tiny fraction of these immigrants were wage-earners after returning to their home country. This implies that even if they acquired new skills, only very few would transfer these skills to the domestic labor market. Therefore, human capital accumulation was unlikely to be the underlying motivation of the immigration of these workers to Germany.

Using a longitudinal dataset on Turkish and ex-Yugoslavian immigrants in Germany, I analyze their return migration behavior along with their saving behavior. I find that the hazard function by duration of residence is hump-shaped and the saving-rate profile by duration of residence is downward-sloping. These two facts together suggest that there is indeed a savings motive in the immigration of these immigrants. The hazard rates are initially low because immigrants simply have not had enough time to accumulate wealth. As their duration of residence increases and they accumulate more wealth, it becomes preferable for more and more immigrants to return and, therefore, the hazard rates increase. Simultaneously, we observe the decreasing profile of the saving rates as immigrants who are able to and choose to save at a fast pace realize their goals sooner and return. In other words, as the immigrants with higher saving propensity are selected out of the sample, we observe the decreasing profile of the saving rates by duration of residence.

I also find evidence for the savings motivation of these immigrants when I analyze the hazard function by age. Hazard rates increase until age 45 because younger immigrants simply have not had enough time to accumulate much wealth. As they become older and increase their duration of residence and, therefore, wealth, hazard rates increase. In accordance with this, I find that median saving rates decrease by age as immigrants that save at a fast pace return at earlier ages.

Another significant finding from the duration analysis by age is the strong influence of retirement on the return behavior of immigrants. There is a remarkable hike in the hazard rates at around age 65, the age of retirement.

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Özet

Göç kararında tasarruf motivasyonu: Ampirik bir değerlendirme

Bu makale hanehalklarının göç ve geri dönüş kararlarının nedenleri üzerindeki literatürü irdeleyerek, Türk ve Yugoslav işçilerinin Almanya'ya 'konuk işçi' olarak göçünü bu kapsamda değerlendirir. Bu ampirik çalışmanın sonuçları bu göçmenlerin Almanya'ya gidiş nedenleri arasındaki en önemli faktörün tasarruf biriktirmek olduğunu ortaya koymaktadır. Göç ve tasarruf davranışları arasındaki bu ilişki zengin bir panel veri tabanı kullanarak incelenmiştir.