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**Determinants of the Savings and Fixed Asset Holdings of Turkish Migrants in Germany***

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**Abstract**

The main purpose of this paper is to investigate whether or not migrants' links to their host and home countries have an impact on their savings and fixed asset holdings in these two countries. Using data from 590 Turkish households in Berlin, we find that migrants' links to Germany and Turkey encourage them to save and hold fixed assets in these countries. However, the impact on fixed asset holdings is stronger, in that migrants with stronger links to either country not only increase their fixed asset holdings in that country, but also reduce them in the other. These results shed new light on the short and long term saving behaviour of Turkish migrants.

**JEL Classification:** E21; F22; C25; D10.

**Keywords:** savings; fixed assets; Turkish migrants; household data; Germany.

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## 1. INTRODUCTION

Although Turkish migrants have established themselves as one of the largest migrant groups in Europe, empirical evidence of their economic behaviour remains largely anecdotal. Only one study, (Kumcu 1989), examines their savings, small number of studies focus on their remittances, for example Ulku (2010), Akkoyunlu and Kholodilin (2008), Aydas et al. (2005), Sayan (2004), and Koc and Onan (2004), and no study addresses their fixed asset holdings. Thus, starting from the hypothesis that migrants' connections to the host country encourage them to save and hold fixed assets in that country (Constant et al., 2008), and building on the existing body of work on migrants' savings, this study aims to offer a comparative analysis of the bank savings and fixed asset holdings of Turkish migrants in Germany and Turkey, paying particular attention to their links to both countries.

Given the growing share of migrant populations in the world economy, their decisions about how much to save and where to accumulate their savings and assets have major implications for the economies of both host and home countries. In particular, if migrants accumulate their savings and assets in their home countries, this could contribute significantly to the development of these migrant sending countries. However, if such transfers are large and persistent, they might have adverse effects on the host countries' economies. Therefore, in order to understand the consequences of migrants' savings and asset holdings for the economies of host and home countries, we first need to understand why migrants' make these choices. As is well documented by Johnson (1999) and Carroll (1999), migrants from different countries of origin exhibit different saving behaviours. However, contrary to the prevailing view, they point out that these differences cannot all be attributed to cultural differences. Rather, they can be explained by observable factors, making research on the savings of migrant groups from different origins more interesting and worthwhile.

Theoretical work on migrants' savings is led by Kumcu (1989), Galor and Stark (1990) and Dustmann (1995, 1997), who highlight the differences between the saving behaviour of migrants and the native population as well as between those migrants who do and do not intend to return to their home countries. Most empirical studies, such as Bauer and Sinning (2010), Piracha and Zhu (2007), Sinning (2010), and Dustmann and Mestres (2010), present evidence that temporary

migrants save more than both permanent migrants and natives, as predicted by theory.[1] In addition, Piracha and Zhu (2007) point out that migrants in Germany save predominantly for precautionary reasons because they face a more uncertain future than do natives, and Bauer and Sinning (2010) show that migrants' savings increase with the time spent in Germany. Furthermore, Kumcu (1989) and Dustmann and Mestres (2010) find that migrants from rural areas save more, while Merkle and Zimmermann (1992) and Sinning (2010) suggest that although length of education has no impact, having a German education has a positive impact on migrants' savings.[2] Regarding the saving behaviour of Turkish migrants, Kumcu concludes that coming from a rural background, intending to return to Turkey, income level and being married impact positively on savings whilst age has a negative impact.

Since Turkey is one of the biggest emigrant sending countries and most of its emigrant population resides in Germany, the savings and asset holdings of Turkish households in Germany could be important in promoting Turkey's economy and addressing its developmental needs. Against this backdrop, this study aims to add to the growing literature on the savings of migrants in that it is the first to examine the fixed asset holdings of Turkish migrants, and the second, after Kumcu (1989), to focus on their savings. In contrast to Kumcu, we use more comprehensive and up to date data and provide a comparative analysis of the savings and asset holdings of Turkish migrants in Germany and Turkey. To the best of our knowledge there is no other study which evaluates the determinants of the savings and fixed asset holdings of international migrants in their host and home countries.

The remainder of the paper is organised as follows. The next section presents the data and methodology, section four documents some stylized facts about the savings and fixed asset holdings of Turkish migrants, section five presents the econometric model and empirical findings and section six concludes.

[1] There are also a few studies that do not find any difference between the savings of migrants who do and do not return to their home countries, such as Merkle and Zimmermann (1992).

[2] There is no conclusive evidence from these studies on the impact of age, gender, education, wealth, size of household, and having spouse and children in the home country on savings.

## 3. DATA AND BASIC STATISTICS

Data was collected from May to July 2007, using a stratified random sampling strategy, from 590 Turkish households in eight major districts of Berlin, which contain 98% of Berlin's Turkish population. Berlin was chosen as the focus of the study as it is the site of the largest Turkish community outside Turkey. To ensure the right representation from each district, all the main parts of districts have been covered and the number of interviews in each district was proportionate to the size of Turkish population in those districts (Table 1). All interviewers were trained post graduate students, fluent in Turkish and German, who had experience in conducting interviews. The interviews were carried out face to face using pre-prepared questionnaires. The interviewees were approached mainly on main streets, parks, in front of houses, work places, cafés, shops, clubs, community centers and organizations. Only those households who were sending money to Turkey were included in the sample as the main focus of the project was to analyze the remittances of Turkish households and their savings and fixed asset holdings in Turkey.[3]

The longest established micro level database on migrant groups in Germany is the German Socio-Economic Panel Data (GSOEP) which has been collected yearly since 1984. This includes detailed demographic and socio-economic information on a nationwide sample of natives and migrants aged between 16 and 65. Although GSOEP data is the most comprehensive database on the major migrant groups in Germany, it includes small number of Turkish individuals, some of whom are from the same household, below the age of 18 and not economically active making the sample size too small to conduct a separate analysis for Turkish migrants. Our data covers 590 distinct households in Berlin and the minimum age of respondents is 21. It includes very detailed information on the social, economic and demographic backgrounds of the households, their savings and fixed asset holdings and their networks of family and friends both in Turkey and Germany, enabling us to provide an in-depth statistical and econometric analysis of their savings and fixed assets in both countries.

[3] The interviewers were asked to keep a record of the people who said they did not send money back home. They reported that on average about three out of every ten Turkish individuals they approached did not send any money home.

To assess the representativeness of our data on Turkish migrants in Germany, we compared the statistics of some of the key variables from our data with those from the national database as shown in Table 2. As can be seen, the proportions of Turkish individuals in our sample who were born in Germany and are of Kurdish origin are very similar to those obtained from the national statistics. However, compared to the national figures, those who are unemployed, intend to return to Turkey, hold German citizenship, and are in full time employment are over-represented in our sample by between 5% and 13%. Our data also seem to underestimate the monthly net household income by about €200, the size of household by one person, and the proportion of those whose spouses came from Turkey to Germany through the unification scheme by 14%, while it overestimates the duration of residency in Germany by about 5 years.

These discrepancies are not problematic considering that our sample includes only those who remit, and most of the differences cited above are below 10%. The only significant difference between our data and the national data is that men are over-represented in our sample, which is to be expected as we conducted the interviews in public spaces and work places, where women of Turkish origin are less likely to be found. In addition, our respondents were, on average, about 7 years older than those in the national sample. This was again not surprising since we included only those who were at least 21 years of age in order to capture economically active individuals. However, given that most of our questions were household level and that we asked about everyone in the household, this should be of no great concern. Thus, we can, to a large extent, generalize our results to all remittance sending Turkish migrants in Germany.

## 4. SAVING AND FIXED ASSET PROFILES OF TURKISH MIGRANTS

In this section we analyze the simple descriptive statistics of the full sample and sub-samples with different types of savings and fixed asset holdings. The results are reported in Tables 3 and 4. As the tables show, compared to the full sample, respondents with non-zero bank savings have higher incomes and are less likely to be unemployed and more likely to be German citizens and to have been educated in Germany. Comparing those with savings in Turkish and German banks, we find that the former have lower incomes but larger amounts of savings than the latter. They also tend to be older, retired, married, male, have primary level education and intend to return to Turkey. In addition, they are less likely to be German citizens or to have been educated in Germany.

Regarding the migrants with fixed asset holdings in Germany and Turkey, the statistics show that the former tend to have a higher income, more savings, a higher level of education and larger households than both those with fixed asset holdings in Turkey and those with non-zero bank savings. They are also more likely to have full time paid employment, own a business, have been educated in Germany, be German citizens, second generation Turkish migrants and born in Germany. In contrast, those who have fixed assets in Turkey, who constitute 63% of the full sample, tend to have the lowest incomes, be older and more likely to intend to return to Turkey. Although their savings are higher than the average saver and those who save in German banks, they are much lower than those who save in Turkish banks or have fixed asset holdings in Germany.

Table 5 presents the savings and fixed asset holdings of individuals in Turkey and Germany according to their key demographic and socio-economic characteristics. Similar to the findings in Tables 3 and 4, those who were born, educated and naturalized in Germany and are second generation have more savings, are more likely to have bank savings, save in German banks and have fixed asset holdings in Germany. Those who hold Turkish citizenship, were born and educated in Turkey and are first generation are more likely to save in Turkish banks and invest in Turkey. Comparing those in different types of employment, business owners have the most savings and are more likely to have fixed assets in general and in Germany in particular than those in full time waged employment or the self employed. Although self employed individuals have the lowest bank savings and are less likely to have savings in either type of bank, they are more likely than full time waged employees to have fixed assets both in Turkey and Germany.

The findings in Table 5 also reveal significant differences in savings and fixed asset holdings by gender, marital status and income levels. In particular, men have more savings and are more likely both to save in Turkish banks and to have fixed assets in Turkey compared to women. With regards to marital status, divorcees and the widowed save the least and are less likely to save and hold fixed assets than are married and single people. Married migrants have the most savings, and although the majority of them save in German banks, they save more in Turkish banks than do single people and are more likely to hold fixed assets in both countries. As expected, those from the high income group save the most and are more likely to save and hold fixed assets in either country.

Finally, in Figure 1 we present the patterns of total savings and savings in German and Turkish banks across age, years of education, size of household and duration of residency in Germany. As observed, consistent with life cycle theories, the total amount saved first increases and then decreases with age. The amount saved in German banks fluctuates with age, although tending to decrease, while the amount saved in Turkish banks stays steady until about retirement age, after which it starts to decline. Savings also seem to increase sharply with education level until about the end of secondary education, after which the increase slows down substantially, probably because of the inability of the better educated to save due to the costs of their education. Interestingly, the level of savings in Turkish banks has a clear negative correlation with education level while savings in German banks have a clear positive correlation.

In terms of how the length of residence in Germany impacts on savings, the figure shows that all types of savings increase during the first 30 years of residency and then start decreasing, most likely due to the usual life cycle affect on savings. The only difference is that the impact on savings in German banks is much greater. Lastly, as seen from the figure, the ability to save increases with household size until the household has about six members, after which it decreases sharply. However, those households who can continue to save seem to save more as their household gets bigger.

These results lead us to the conclusion that individuals' socio-economic characteristics, as well as their links to home and host countries, such as income, employment position, gender, marital status, age, country of education, citizenship and birth, and whether or not they intend to return, are the key factors affecting where households choose to save and hold fixed assets. Unsurprisingly, those with higher incomes and deeper roots in Germany tend to save and invest more in Germany than others. The number of children and siblings in Germany and Turkey they had, and whether their parents were in Turkey did not have any significant impact in terms of savings and fixed asset holdings. All types of savings first increase and then decrease with age and length of stay in Germany. Having gained insight into the savings and fixed assets profiles of Turkish migrants in Germany, in the next section we conduct a more rigorous analysis to examine the determinants of their savings and fixed asset holdings in Germany and Turkey.

## 5. ECONOMETRIC ANALYSIS

The econometric model is based both on general models of saving, such as the life cycle model of Modigliani (1986), the permanent income hypothesis of Friedman (1957) and the precautionary saving model of Caballero (1990) and models focusing more specifically on the saving behaviour of migrants, such as Kumcu (1989), Galor and Stark (1990), Merkle and Zimmerman (1992), and Dustmann (1995). The life cycle and permanent income models suggest that individuals smooth consumption over the course of their lives by saving more (less) when their expected income is less (more) than their current income, while precautionary models state that those facing more uncertainties in the future save more than others. The latter models draw attention to the differences in how migrant and native populations save. More specifically, they postulate that migrants save more than natives, and that temporary migrants save more than both permanent migrants and natives due to the differences in their labour market conditions and expected incomes. These studies also point out the importance of links to the home and host countries, years of education, size of household and having a rural background in determining the levels of savings and asset holdings of migrants. Accordingly, our econometric model is formulated as follows:

$$Saving_i = \alpha_0 + \alpha_1 X_{1,i} + \alpha_2 X_{2,i} + \alpha_3 X_{3,i} + \alpha_3 X_{4,i} + \lambda_i + \varepsilon_i . \qquad (1)$$

Given that we treat fixed asset holdings as a form of long term savings, we also use Equation 1 to estimate the determinants of the probability of having fixed assets. We measure savings as the probability of saving and the amount households save monthly per capita. We measure fixed asset holdings as the probability of having fixed assets, and distinguish between savings and fixed asset holdings in Turkey and Germany.[4] In the equation above, $X_1$ refers to the standard variables on the demographic and socio-economic characteristics of migrants (per capita income, employment status, age, education, country of education, citizenship and birth, marital status, gender); $X_2$ includes the household level variables (size of household, number of children and presence of

[4] For savings we had both a binary variable showing whether or not an individual had bank savings and, if so, the amount saved and the country of the bank in which savings are held. For fixed asset holdings, on the other hand, we only had a binary variable showing whether or not an individual had fixed asset holdings and, if so, in which countries they had them.

spouse in Germany); $X_3$ comprises variables measuring the households' links to Germany and Turkey (duration of residency in Germany, number of siblings in Germany and Turkey, presence of parents in Turkey, having a spouse from Turkey, whether or not they intend to return to Turkey); $X_4$ is the perception of the respondent about the investment climate in Turkey; and $\lambda$ is the district dummies.

We first estimated Equation 1 with Heckman's two step selection model to take into account a potential selection bias. However, we could not find any evidence of sample selection bias or dependence between the probability of saving and the amount saved. [5] Therefore, we estimated the probability of saving and the amount saved separately using the Probit and Tobit techniques, and fixed asset holdings using the Probit model. We eliminated the outliers using a generic command build in STATA and our diagnostic tests did not reveal any multicollinearity among the explanatory variables. The findings of the estimation of savings and fixed asset holdings are reported in the subsequent sections.

### 5.1. DETERMINANTS OF THE PROBABILITY AND AMOUNT OF SAVINGS

The first three columns of Table 6 report the findings for the probability of having bank savings. Consistent with the life cycle models, we find that income encourages and age discourages the probability of having bank savings.[6] Among the remaining variables, only having German education, the length of residence and the number of children in Germany are significant, all with a positive sign. In terms of the savings in German banks, we find that income, rootedness in Germany (such as the length of residency, number of children in Germany, having German citizenship and being educated in Germany) and the negative perception about the investment climate in Turkey have a positive impact on the probability of having savings in German banks, while age, household size, years of education and having a spouse from Turkey have a negative impact. The probability of having savings in Turkish banks, on the other hand, is increased by age,

[5] In the Heckman model, we employed different specifications for the determinants of the probability of saving and the amount saved, but could not find any evidence of dependence between these two variables in any of the regressions. This suggests that there is no selection bias in our model and that separate analysis of the decision to save and the amount saved is appropriate.

[6] Square of age was not significant in any of the regressions, therefore it is not included in the analysis.

having a German education, household size and intending to return to Turkey, as well as by income, and decreased by the perception that Turkey's investment environment is unattractive. Moreover, unlike the probability of having savings in German banks, the variables measuring the rootedness in Germany such as, being a German citizen, the length of residency in Germany and number of children in Germany, have no impact on the probability of having savings in Turkish banks.

The last three columns of Table 6 report the findings of the Tobit analysis of the amount of bank savings. We observe that the factors that are associated with having a greater amount of savings are very similar to those which increased the probability of savings as reported in the first three columns. The main difference is that having a German education promotes the probability of having bank savings but does not affect the amount of savings. In terms of the savings in German and Turkish banks, the results show that both the probability and amount of savings in German banks are positively affected by income, having negative perception about the investment climate in Turkey, and rootedness in Germany, i.e. having German citizenship, duration of residency and number of children in Germany, and negatively affected by age, size of household, and having a spouse from Turkey. They are both independent of linkages to Turkey. The probability and amount of savings in Turkish banks are both determined positively by income and size of household, however, age, having German education, return intention and having negative perception about the investment climate in Turkey have no impact on the amount saved in Turkish banks, though they affect its probability. Moreover, the number of siblings in Turkey promotes the amount saved in Turkish banks.

To sum up, consistent with the findings of Kumcu (1989), both the probability and the amount of total bank savings are determined by income and age. Different from Kumcu, we find that the number of children and duration of residency in Germany promote both the probability and the amount of total bank savings while return intention having no impact on either of them. Putting these results together, we can infer that income and age are the most important determinants of both the probability and amount of all types of bank savings, with an exception that age has no impact on the amount saved in Turkish banks. As expected, rootedness in Germany such as having German citizenship, duration of residency and number of children in Germany promote both the

probability and amount of savings in German banks. Similarly, linkages to Turkey, such as return intention and number of siblings in Turkey promote the savings in Turkish banks.

### 5.2. DETERMINANTS OF THE PROBABILITY OF FIXED ASSET HOLDINGS

In this section we investigate the determinants of long term savings by estimating the probability of holding fixed assets. The results for different samples are documented in Table 7. As the first column shows, income, age, being born in Germany, being married, intending to return to Turkey and household size increase the probability of holding fixed assets, while years of education, being a German citizen, having a spouse in Germany and the number of children in Germany make it less likely and duration of residency has no impact. These results are in stark contrast to the factors that influence the probability of having savings, in that having roots in Germany has a positive impact on the probability of having bank savings but a negative impact on the probability of holding fixed assets. Also, intending to return to Turkey has a positive impact on fixed assets but no impact on bank savings.

The findings for fixed asset holdings in Germany are reported in the second column of Table 7. As shown, income, having full time employment, German citizenship and education, being born in Germany, having a spouse in Germany and the number of children in Germany have a positive impact, whereas being male, having a spouse from Turkey and the number of siblings in Germany have a negative impact on the probability of having fixed assets in Germany. As the last column shows, the probability of having fixed assets in Turkey is positively affected by income, age, being married, intending to return to Turkey and household size, and negatively affected by having German citizenship, a spouse in Germany and number of children in Germany. These, combined with the findings in Table 6, imply that households with closer links to Germany (Turkey) are more likely to have both bank savings and fixed assets in Germany (Turkey). Different from the findings for savings, linkages to one country have a negative impact on the probability of having fixed asset in the other country.

In brief, for Turkish migrants living in Berlin, we can infer that the factors that influence whether they have bank savings are different from the factors that determine whether they hold fixed assets. Their savings are positively affected by income and rootedness in Germany and negatively affected

by age. Their fixed asset holdings, on the other hand, are positively affected by age and links to Turkey and negatively affected by rootedness in Germany. Bank savings and fixed asset holdings in Germany and Turkey, on the other hand, are both positively affected by migrants' links to the respective countries, although the impact of these links on fixed asset holdings is stronger, in that links to Germany (Turkey) not only encourage fixed asset holdings in Germany (Turkey) but also discourage fixed asset holdings in Turkey (Germany).

## 6. CONCLUSION

This paper carried out a comparative analysis of the savings and fixed asset holdings of Turkish migrants in Germany and Turkey using an up to date database from 590 Turkish households in Berlin. To the best of our knowledge, there is no other study of the determinants of fixed asset holdings of Turkish migrants and Kumcu (1989) is the only study examining their saving behaviour. There is also a lack of literature on the comparative econometric analysis of the savings and fixed asset holdings of international migrants in their host and home countries.

The analysis revealed some interesting results. First, consistent with the findings of previous studies, the demographic and socio-economic characteristics of Turkish migrants are important determinants of their savings and fixed asset holdings. As expected, income is the most important positive determinant of all types of savings and fixed asset holdings. However, while age is also important, it has a negative effect on total savings and savings in German banks but a positive effect on savings in Turkish banks, total fixed assets and fixed assets in Turkey. Interestingly, having a larger household encourages both savings and fixed asset holdings in Turkey and discourages savings in Germany, implying that the scale effect works only for savings and assets held in Turkey.

Second, as expected, we find that negative perceptions of the investment climate in Turkey promote savings in German banks and reduce those in Turkish bank. However, such perceptions have no impact on the fixed asset decisions of households, suggesting that any concerns households may have about the Turkish economy do not significantly affect their long term investment decisions. This is probably related to the fact that fixed asset holdings, especially property ownership, are less vulnerable to economic crises compared to bank savings.

Third, and most importantly, the rootedness of Turkish migrants in Germany and their links to Turkey strongly influence their decisions about savings and fixed asset holdings in both countries. In particular, we find that those who are more firmly rooted in Germany are more likely to save and to save larger amounts, while they are less likely to hold fixed assets. However, once they decide to have fixed assets, rootedness in Germany has a positive impact on fixed asset holdings in Germany, providing support for Constant et al. (2008), and negative impact on fixed asset holdings in Turkey. It also encourages German bank savings while having no impact on Turkish bank savings. Migrants with stronger links to Turkey, on the other hand, are more likely to save in Turkish banks and to hold fixed assets in Turkey, and are less likely to have fixed assets in Germany. The later finding is in contrast to those of Constant et al. (2008) who did not find migrants' attachment to their home country to have a negative impact on their property holdings in the host country.

The policy implications of these findings are that the governments of migrant sending countries should pursue long term policies to keep their emigrant population connected to their home countries and provide an attractive investment environment to attract their capital holdings. These policies should be effective given that it is not how long migrants have been absent from their home countries that affects their decision to invest back home, but their country of citizenship, birth, education, and familial links, and to some extent their perceptions of the investment climate in the home country, some of which are amenable to policy changes. The host countries on the other hand need to formulate serious long term integration policies to increase the savings and asset holdings of migrants in the host countries.

**Table 1: Distribution of the Turkish Population and Data across the Districts of Berlin**

| | Total Residents | Total Foreigners | Turkish Residents | Turkish Residents % of Total Foreign Residents | Turkish Residents % of Total Residents | Number of Households in the Database |
|---|---|---|---|---|---|---|
| Berlin total | 3,328,291 | 444,027 | 120,684 | 27.18% | 3.63% | 590 |
| Kreuzberg | 250,184 | 57,635 | 23,535 | 40.83% | 9.4% | 106 |
| Mitte | 315,205 | 86,108 | 30,153 | 35.02% | 9.56% | 145 |
| Neukölln | 301,953 | 66,069 | 26,451 | 40.04% | 8.76% | 144 |
| Tempelhof/Schöneberg | 329,450 | 50,801 | 13,707 | 26.98% | 4.16% | 70 |
| Spandau | 217,821 | 22,789 | 7,258 | 31.85% | 3.33% | 30 |
| Reinickendorf | 246,607 | 22,998 | 6,370 | 27.70% | 2.58% | 46 |
| Charlottenburg/Wilmersdorf | 217,821 | 55,337 | 7,344 | 13.27% | 2.38% | 33 |
| Steglitz/Zehlendorf | 284,972 | 28,618 | 3,409 | 11.91% | 1.2% | 17 |

Source: Statistical Office Berlin (2003).

**Table 2. Comparison of the Descriptive Statistics of the Key Variables from Nationwide Data and Our Data**

| | Nationwide data | Our data |
|---|---|---|
| Monthly net income of HH[1] | €2070 | €1857 |
| Size of household[1] | 3.8 | 3 |
| Years in Germany[1] | 19.9 | 25 |
| Intention to return[1] | 30%** | 43% |
| Born in Germany[2] | 17% | 16% |
| Spouse from Turkey[2,a] | 53% | 39% |
| Unemployed[3] | 13% | 18% |
| Age[4] | 34.6* | 42 |
| Kurdish[4] | 22% | 21% |
| German citizenship[4] | 31% | 40% |
| Full- time employment[4] | 27%** | 36% |
| Male[5] | 54.2% | 73% |

Sources: 1. Erdem and Shmidt (2008) 2. Mueller (2006) 3. Kirdar (2009). 4. European Stability Initiative (2008) 5.Sen (2003)
* This figure includes all age groups, whereas our data includes only those who are at or above the age of 21, making the average age higher. **According to the figures reported in ESI (2008), 38 percent of Turkish academics in Germany intend to return to Turkey. ***The full-time employment rate reported in ESI (2008) includes only those individuals with full social security. Our definition of full-time employment includes all full-time employees, regardless of whether or not they have social security.
a/This refers to those spouses who came from Turkey to Germany through unification scheme.

**Table 3. Mean Values of the Key Variables for Different Samples**

| | Full Sample | Total Savers | Savers in German Banks | Savers in Turkish Banks | Fixed asset holders | Fixed asset holders in Germany | Fixed asset holders in Turkey |
|---|---|---|---|---|---|---|---|
| Sample size | 589 | 391 | 304 | 57 | 416 | 139 | 374 |
| Per capita saving | 62 | 91 | 96 | 116 | 89 | 111 | 85 |
| Per capita non-zero saving amount | 99 | 99 | 96 | 116 | 100 | 118 | 96 |
| Total savings | 153 | 225 | 238 | 278 | 232 | 315 | 225 |
| Total non-zero savings | 244 | 244 | 238 | 278 | 261 | 338 | 253 |
| Per capita income | 701 | 753 | 764 | 711 | 724 | 841 | 695 |
| Income | 1857 | 1991 | 1934 | 2022 | 2012 | 2478 | 1977 |
| Age | 42 | 41 | 39 | 45 | 44 | 41 | 45 |
| Education years | 11 | 11 | 11 | 11 | 11 | 12 | 10 |
| Years spent in Germany | 25 | 25 | 25 | 27 | 27 | 27 | 27 |
| Size of household | 3 | 3 | 3 | 3 | 3 | 4 | 3 |
| Number of children in Germany | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Number of siblings in Germany | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Number of siblings in Turkey | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

Source: Author's data and calculations. Note: The figures show the mean values of the key variables across the samples that have savings and fixed asset holdings in Germany or Turkey.

**Table 4. Fractions of the Key variables for Different Samples**

| | Full Sample (%) | Total Savers (%) | Savers in German Banks (%) | Savers in Turkish Banks (%) | Fixed asset holders (%) | Fixed asset holders in Germany (%) | Fixed asset holders in Turkey (%) |
|---|---|---|---|---|---|---|---|
| Sample size | 589 (100%) | 391 (67%) | 304 (52%) | 57 (10%) | 416 (71%) | 139 (24%) | 374 (63%) |
| Fulltime | 36 | 40 | 42 | 33 | 32 | 39 | 32 |
| Self employed | 5 | 4 | 5 | 2 | 24 | 8 | 6 |
| Own business | 11 | 12 | 12 | 11 | 14 | 27 | 12 |
| Retired | 11 | 9 | 7 | 21 | 14 | 6 | 16 |
| Unemployed | 19 | 14 | 15 | 14 | 19 | 13 | 20 |
| German citizen | 40 | 44 | 47 | 33 | 38 | 58 | 37 |
| German education | 47 | 55 | 56 | 40 | 47 | 65 | 45 |
| Born in Germany | 16 | 20 | 22 | 16 | 17 | 23 | 14 |
| First generation | 14 | 14 | 11 | 23 | 18 | 9 | 20 |
| Second generation | 27 | 32 | 37 | 19 | 25 | 35 | 23 |
| Married | 72 | 73 | 71 | 77 | 76 | 78 | 77 |
| Male | 69 | 69 | 66 | 70 | 71 | 68 | 72 |
| Return plan | 43 | 45 | 42 | 53 | 45 | 44 | 46 |
| Spouse in Germany | 71 | 72 | 70 | 74 | 74 | 78 | 73 |
| Spouse from Turkey | 39 | 36 | 34 | 39 | 39 | 32 | 40 |
| Parents in Turkey[a] | 45 | 24 | 45 | 44 | 42 | 41 | 41 |
| Political Instability | 39 | 40 | 43 | 30 | 41 | 43 | 40 |
| Primary | 23 | 22 | 20 | 35 | 25 | 12 | 26 |
| Secondary | 20 | 20 | 23 | 7 | 20 | 19 | 20 |
| High school | 12 | 9 | 9 | 9 | 12 | 12 | 13 |
| University | 13 | 14 | 14 | 14 | 10 | 12 | 10 |

Source: Author's data and calculations.

a/This only includes those spouses who came from Turkey to Germany through unification scheme.

**Table 5. Savings and Fixed Assets by Key Demographic and Socioeconomic Indicators**

| | N | Non-zero Saving amount | Total Savers (%) | Savers in GB (%) | Savers in TB (%) | Fixed Asset holders (%) | FA holders in Germany (%) | FA holders in Turkey (%) |
|---|---|---|---|---|---|---|---|---|
| ***Citizenship status*** | | | | | | | | |
| Turkish | 344 | 224 | 63 | 52 | 16 | 72 | 17 | 67 |
| German | 230 | 268 | 75 | 67 | 13 | 68 | 34 | 59 |
| ***Country of Education*** | | | | | | | | |
| Turkey | 298 | 228 | 59 | 48 | 15 | 71 | 16 | 67 |
| Germany | 275 | 258 | 77 | 69 | 16 | 70 | 33 | 60 |
| ***Country of Birth*** | | | | | | | | |
| Turkey | 479 | 235 | 65 | 55 | 16 | 70 | 22 | 65 |
| Germany | 95 | 277 | 82 | 73 | 11 | 73 | 34 | 56 |
| ***Generation*** | | | | | | | | |
| First Generation | 81 | 186 | 65 | 49 | 23 | 90 | 14 | 90 |
| Second Generation | 160 | 258 | 79 | 72 | 9 | 66 | 30 | 53 |
| ***Occupation*** | | | | | | | | |
| Full time employee | 207 | 267 | 76 | 67 | 15 | 64 | 26 | 56 |
| Self Employed | 30 | 241 | 57 | 53 | 10 | 78 | 34 | 69 |
| Own Business | 66 | 456 | 73 | 64 | 20 | 85 | 55 | 66 |
| ***Gender*** | | | | | | | | |
| Male | 396 | 259 | 68 | 58 | 17 | 73 | 23 | 66 |
| Female | 178 | 214 | 69 | 60 | 12 | 66 | 25 | 57 |
| ***Marital Status*** | | | | | | | | |
| Single | 84 | 229 | 73 | 63 | 13 | 60 | 24 | 49 |
| Married | 414 | 254 | 69 | 58 | 17 | 74 | 25 | 67 |
| Divorced | 76 | 200 | 58 | 51 | 9 | 62 | 14 | 58 |
| ***Income Level*** | | | | | | | | |
| High Income | 104 | 399 | 83 | 69 | 23 | 50 | 50 | 76 |
| Low Income | 247 | 149 | 57 | 48 | 13 | 59 | 13 | 55 |

Source: Author's data and calculations.

**Table 6. Analysis of the Probability and Amount of Savings**

| | Probit estimation of probability of savings | | | Tobit estimation of the amount of savings | | |
|---|---|---|---|---|---|---|
| | Full Sample | Germany | Turkey | Full Sample | Germany | Turkish |
| Log of per capita income | 0.557 | 0.311 | 0.480 | 1.454 | 1.230 | 3.545 |
| | (3.57)*** | (2.19)** | (3.03)*** | (4.31)*** | (3.16)*** | (2.53)** |
| Fully employed | 0.077 | 0.141 | -0.074 | 0.185 | 0.546 | -1.948 |
| | (0.56) | (1.06) | (0.46) | (0.60) | (1.56) | (1.49) |
| Retired | 0.219 | -0.025 | 0.456 | 0.174 | 0.065 | 0.728 |
| | (0.91) | (0.10) | (1.45) | (0.29) | (0.09) | (0.36) |
| Age | -0.017 | -0.020 | 0.025 | -0.074 | -0.078 | 0.105 |
| | (1.69)* | (2.01)** | (2.07)** | (3.20)*** | (2.91)*** | (1.19) |
| Years of education | -0.025 | -0.034 | 0.018 | -0.055 | -0.069 | 0.040 |
| | (1.35) | (1.84)* | (0.87) | (1.26) | (1.39) | (0.24) |
| Having German citizenship | 0.193 | 0.260 | -0.134 | 0.411 | 0.685 | -0.646 |
| | (1.46) | (2.07)** | (0.86) | (1.39) | (2.02)** | (0.53) |
| Having German education | 0.408 | 0.391 | 0.372 | 0.181 | 0.635 | 0.286 |
| | (2.26)** | (2.25)** | (1.70)* | (0.45) | (1.36) | (0.18) |
| Born in Germany | 0.377 | 0.209 | 0.021 | 0.942 | 0.546 | 1.730 |
| | (1.63) | (0.98) | (0.08) | (1.98)** | (1.03) | (0.89) |
| Duration of residency in Germany | -0.071 | -0.072 | -0.009 | -0.128 | -0.135 | -0.026 |
| | (2.49)** | (2.59)*** | (0.27) | (2.01)** | (1.88)* | (0.10) |
| Sq. of duration of residency in Germany | 0.002 | 0.002 | -0.000 | 0.004 | 0.003 | 0.000 |
| | (2.43)** | (2.54)** | (0.37) | (2.57)** | (2.07)** | (0.03) |
| Married | 0.367 | 0.261 | 0.237 | 0.615 | 0.922 | 0.668 |
| | (1.39) | (1.04) | (0.81) | (0.96) | (1.27) | (0.26) |
| Male | -0.121 | -0.054 | 0.023 | -0.267 | -0.187 | -0.036 |
| | (0.90) | (0.41) | (0.13) | (0.87) | (0.54) | (0.03) |
| Return intention | 0.158 | 0.005 | 0.383 | 0.139 | 0.069 | 1.580 |
| | (1.27) | (0.04) | (2.72)*** | (0.51) | (0.22) | (1.42) |
| Size of household | -0.094 | -0.156 | 0.177 | -0.287 | -0.457 | 1.070 |
| | (1.24) | (1.96)** | (2.46)** | (1.80)* | (2.49)** | (1.76)* |
| Spouse in Germany | 0.041 | 0.095 | -0.150 | 0.216 | 0.133 | -0.598 |
| | (0.16) | (0.38) | (0.52) | (0.34) | (0.19) | (0.25) |
| Spouse from Turkey[a] | -0.205 | -0.205 | 0.119 | -0.639 | -0.551 | -0.027 |
| | (1.63) | (1.65)* | (0.82) | (2.19)** | (1.66)* | (0.02) |
| Number of children in Germany | 0.239 | 0.227 | -0.000 | 0.454 | 0.512 | 0.203 |
| | (3.50)*** | (3.27)*** | (0.01) | (3.09)*** | (3.08)*** | (0.36) |
| Number of siblings in Germany | -0.026 | -0.036 | 0.042 | -0.089 | -0.095 | 0.099 |
| | (0.70) | (1.03) | (1.04) | (1.07) | (1.00) | (0.29) |
| Having parents in Turkey | -0.080 | -0.036 | -0.120 | -0.062 | -0.081 | -0.194 |
| | (0.90) | (0.43) | (1.19) | (0.32) | (0.36) | (0.25) |
| Number of siblings in Turkey | 0.009 | -0.028 | 0.047 | 0.052 | -0.053 | 0.464 |
| | (0.27) | (0.81) | (1.16) | (0.67) | (0.58) | (1.65)* |
| Investment climate in Turkey | 0.105 | 0.213 | -0.298 | 0.533 | 0.629 | -0.844 |
| | (0.87) | (1.80)* | (2.10)** | (1.96)* | (2.04)** | (0.75) |
| Observations | 569 | 569 | 569 | 558 | 528 | 528 |

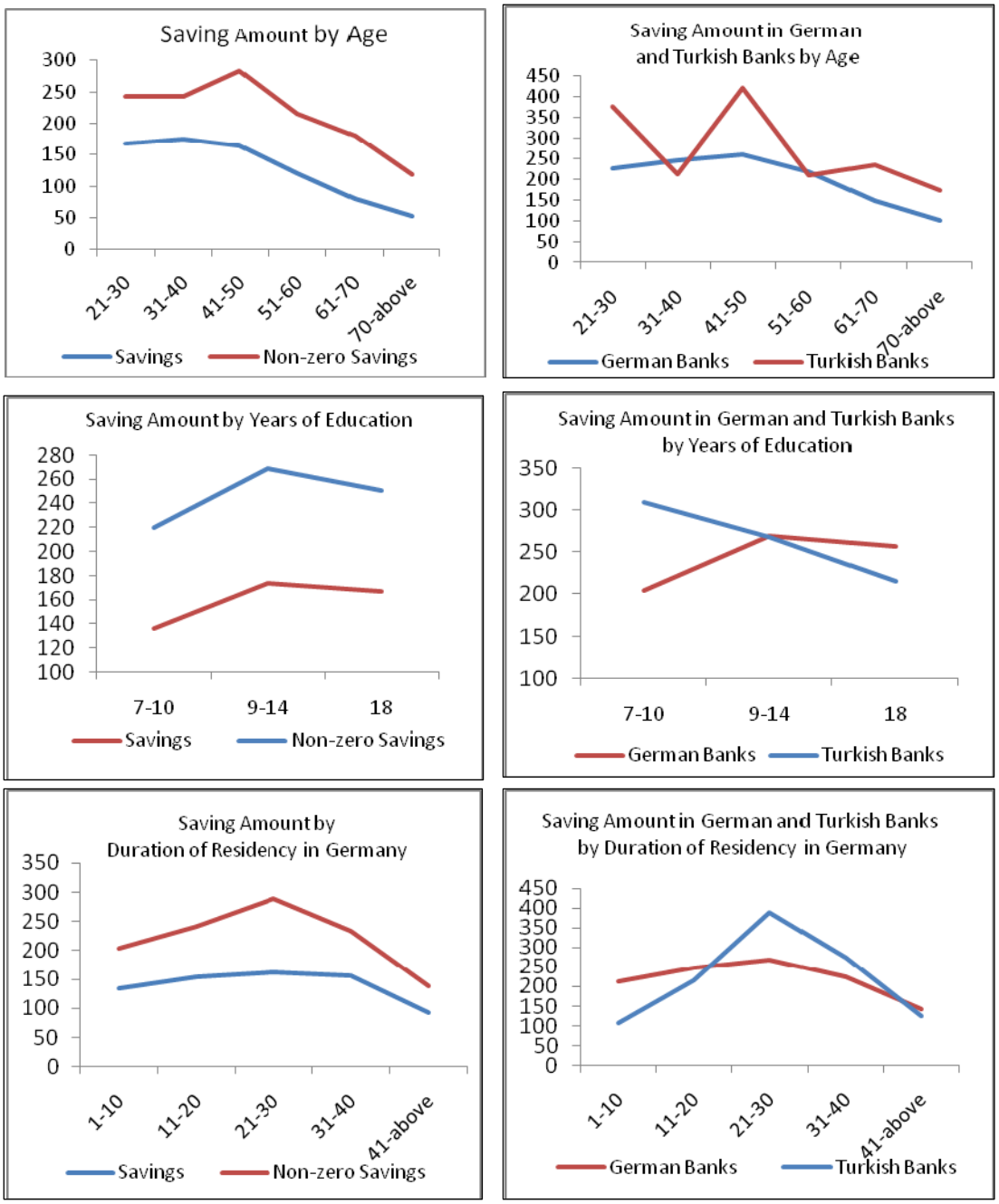
Robust z statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%
a/This only includes those spouses who came from Turkey to Germany through unification scheme.

**Table 7. Probit Analysis of Fixed Asset Holdings**

| | Full Sample | Germany | Turkey |
|---|---|---|---|
| Log of per capita income | 0.833 | 0.651 | 0.550 |
| | (5.36)*** | (4.07)*** | (3.74)*** |
| Fully employed | -0.073 | 0.522 | -0.222 |
| | (0.51) | (3.20)*** | (1.60) |
| Retired | 0.539 | 0.168 | 0.423 |
| | (1.57) | (0.58) | (1.27) |
| Age | 0.045 | 0.010 | 0.049 |
| | (3.97)*** | (0.90) | (4.38)*** |
| Years of education | -0.033 | -0.011 | -0.027 |
| | (1.65)* | (0.54) | (1.40) |
| German citizen | -0.333 | 0.372 | -0.344 |
| | (2.41)** | (2.69)*** | (2.60)*** |
| German education | 0.278 | 0.531 | 0.295 |
| | (1.47) | (2.77)*** | (1.62) |
| Born in Germany | 0.573 | 0.389 | 0.290 |
| | (2.60)*** | (1.76)* | (1.37) |
| Duration of residency in Germany | 0.029 | -0.025 | 0.023 |
| | (1.01) | (0.79) | (0.77) |
| Sq. of duration of residency in Germany | -0.001 | 0.000 | -0.001 |
| | (1.09) | (0.35) | (0.90) |
| Married | 0.518 | -0.036 | 0.863 |
| | (1.77)* | (0.11) | (2.47)** |
| Male | 0.091 | -0.256 | 0.168 |
| | (0.66) | (1.73)* | (1.26) |
| Return intention | 0.242 | -0.036 | 0.275 |
| | (1.90)* | (0.28) | (2.20)** |
| Size of household | 0.550 | 0.074 | 0.510 |
| | (4.49)*** | (1.02) | (4.82)*** |
| Spouse in Germany | -0.571 | 0.539 | -1.086 |
| | (1.92)* | (1.67)* | (3.07)*** |
| Spouse from Turkey[a] | -0.154 | -0.339 | -0.042 |
| | (1.14) | (2.42)** | (0.32) |
| Number of children in Germany | -0.217 | 0.172 | -0.226 |
| | (2.26)** | (2.44)** | (2.64)*** |
| Number of siblings in Germany | -0.025 | -0.064 | -0.011 |
| | (0.65) | (1.71)* | (0.31) |
| Having parents in Turkey | -0.036 | -0.138 | -0.013 |
| | (0.42) | (1.44) | (0.16) |
| Number of siblings in Turkey | 0.002 | 0.027 | 0.007 |
| | (0.06) | (0.65) | (0.19) |
| Investment climate in Turkey | 0.169 | 0.044 | 0.072 |
| | (1.31) | (0.35) | (0.59) |
| Observations | 584 | 584 | 584 |

Robust z statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%
a/This only includes those spouses who came from Turkey to Germany through unification scheme.

**Figure 1.Saving Patterns by Key Indicators**




Notes: Income and savings are in net monthly amounts in Euros, and remittances are yearly amounts in Euros. Source: Authors' Data (2007) and authors' calculations.

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