

Thomas K. Bauer and Mathias G. Sinning

The Purpose of Remittances

Evidence from Germany

#109



Ruhr Economic Papers

Published by

Ruhr-Universität Bochum (RUB), Department of Economics
Universitätsstr. 150, 44801 Bochum, Germany

Technische Universität Dortmund, Department of Economic and Social Sciences
Vogelpothsweg 87, 44227 Dortmund, Germany

Universität Duisburg-Essen, Department of Economics
Universitätsstraße 12, 45117 Essen, Germany

Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI)
Hohenzollernstr. 1/3, 45128 Essen, Germany

Editors:

Prof. Dr. Thomas K. Bauer
RUB, Department of Economics
Empirical Economics
Phone: +49 (0) 234/3 22 83 41, e-mail: thomas.bauer@rub.de

Prof. Dr. Wolfgang Leininger
Technische Universität Dortmund, Department of Economic and Social Sciences
Economics – Microeconomics
Phone: +49 (0) 231 /7 55-32 97, email: W.Leininger@wiso.uni-dortmund.de

Prof. Dr. Volker Clausen
University of Duisburg-Essen, Department of Economics
International Economics
Phone: +49 (0) 201/1 83-36 55, e-mail: vclausen@vwl.uni-due.de

Prof. Dr. Christoph M. Schmidt
RWI
Phone: +49 (0) 201/81 49-227, e-mail: christoph.schmidt@rwi-essen.de

Editorial Office:

Joachim Schmidt
RWI, Phone: +49 (0) 201/81 49-292, e-mail: joachim.schmidt@rwi-essen.de

Ruhr Economic Papers #109

Responsible Editor: Christoph M. Schmidt
All rights reserved. Bochum, Dortmund, Duisburg, Essen, Germany, 2009
ISSN 1864-4872 (online) – ISBN 978-3-86788-121-0

The working papers published in the Series constitute work in progress circulated to stimulate discussion and critical comments. Views expressed represent exclusively the authors' own opinions and do not necessarily reflect those of the editors.

Ruhr Economic Papers

#109

Thomas K. Bauer and Mathias G. Sinning

The Purpose of Remittances

Evidence from Germany



Bibliografische Information der Deutschen Nationalbibliothek

Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über <http://dnb.d-nb.de> abrufbar.

ISSN 1864-4872 (online)

ISBN 978-3-86788-121-0

Thomas K. Bauer and Mathias G. Sinning*

The Purpose of Remittances – Evidence from Germany

Abstract

This paper examines the purpose of remittances using individual data of migrants in Germany. Particular attention is paid to migrants' savings and transfers to family members in the home country. Our findings indicate that migrants who intend to stay in Germany only temporarily have a higher propensity to save and save larger amounts in their home country than permanent migrants. A similar picture emerges when considering migrants' payments to family members abroad. The results of a decomposition analysis indicate that temporary and permanent migrants seem to have different preferences towards sending transfers abroad, while economic characteristics and the composition of households in home and host countries are less relevant.

JEL Classification: F22, D12, D91

Keywords: International migration, savings, remittances

May 2009

* Thomas K. Bauer, RWI, Ruhr-University Bochum and IZA Bonn; Mathias G. Sinning, Australian National University and IZA Bonn. – The authors thank Julia Bredtmann, Sebastian Otten and Matthias Vorell for helpful comments on an earlier draft of the paper. Financial support of the German Israeli Foundation (G.I.F. Research Grant No. G-989-232.4/2007) is gratefully acknowledged. – All correspondence to Thomas K. Bauer, RWI, Hohenzollernstr. 1-3, 45128 Essen, Germany, e-mail: bauer@rwi-essen.de.

1 Introduction

According to the World Bank (2008), recorded remittances to developing countries are estimated to reach \$US 283 billion worldwide in 2008, growing by 6.7% relative to 2007. Even though this number is regarded to represent a lower bound because of unrecorded remittance flows, therewith remittances are more than twice as large as total development aid and represent the largest source of foreign exchange for many countries. The growing importance of remittances for many developing countries generates a strong interest of policy makers and scientists on the motivation of migrants to transfer financial resources to their home country and the impact of these resources on the home countries' economy. Policy makers are in particular interested in potential measures to channel these remittances towards a productive use.

Yet, the scientific literature on remittances has largely focused on the motives of migrants to remit (see, among others, Lucas and Stark, 1985; Bernheim et al., 1985; Cox, 1987; Cox and Rank, 1992; Ilahi and Jafarey, 1999; Amuedo-Dorantes and Pozo, 2006). A substantive number of theoretical papers has identified a variety of motives that may induce migrants to send remittances to their countries of origin. The main empirical challenge of this line of the literature lies in the differentiation of the explanatory power of different theories, since many of them come to similar testable hypotheses (Rapoport and Docquier (2006) provide an extensive recent survey of this literature).

Much less research exists on the impact of remittances on the individuals or families and the overall economy of the countries who receive the remittances. The focus of interest of this strand of literature concerns the use of remittances, in particular whether they are used for investments or consumption. If remittances are mainly used for investments, they may foster growth and the development of the economies receiving the remittances. However, remittances may be used

predominantly for consumption purposes, reducing the incentives to work and slowing down the development of the receiving economy. Microeconomic studies on the use of remittances are predominantly descriptive, relying mostly on individual and household surveys collected in the countries receiving remittances. The majority of studies on the use of remittances, however, is based on growth theories and use macroeconomic data to analyze the effects of remittances (see Rapoport and Docquier, 2006).

Using individual data of foreign-born staying in Germany, this paper combines both strands of this literature by analyzing the extent and the determinants of remittances focusing in particular on the intended purpose of these transfers as well as the role of return intentions. As a major immigration country, Germany represents an excellent example for the analysis of remittances. Even though the majority of migrants in Germany does not originate from developing countries, they remit a substantial part of their income. In 2004, remittance flows from Germany amounted to about \$US 10.4 billion (World Bank, 2006).

Our paper contributes to the existing literature in several respects. First, while most of the studies on remittances concentrate on migrants' transfers to developing countries using predominantly data collected in the country of origin of a migrant, the analysis in this paper focuses on remittances of migrants from traditional labor-exporting countries, such as Turkey, Italy, and Greece as well as refugees originating from former Yugoslavia using data obtained in Germany rather than in the countries of origin. Second, utilizing information on migrants' return intentions, the differences in the extent and the purpose of financial transfers to the home country between temporary and permanent migrants are analyzed.¹

¹Since economic theory suggests that the savings behavior depends on expectations about the future economic situation, return intentions may be considered as a strong predictor of migrants' savings. At the same time, it seems likely that

Finally, different from most of the existing literature, the analysis does not only concentrate on the extent of financial transfers to the home country and its determinants. The data used in our analysis rather allows us to differentiate between purposes of these transfers, i.e. whether they constitute savings in the home country or payments to family members. Existing studies on the use of remittances typically differentiate whether remittances are used for consumption, social purposes such as weddings or funerals, housing, debt repayment, or investments, such as investments in the human capital of family members or the establishment of a firm. In this context, the use of remittances for consumption or social purposes, for example, is often classified as being non-productive. However, in many cases even the consumptive use of remittances could be seen as being productive, if, for example, better food or the acquisition of air-conditioning increases the productivity of the household members. Although the information on the purpose of remittances in our data is rather limited in comparison to surveys available in many emigration countries, important insights may be gained from the analysis of migrants' savings, which foster investments in the countries of origin.

The paper proceeds as follows. In the next section we describe the data used in the empirical analysis and discuss the empirical strategy. Section 3 provides a detailed discussion of our results. Section 4 concludes.

2 Data and Empirical Strategy

The following analysis of the extent and purpose of remittances is based on the German Socio-Economic Panel (SOEP), a representative longitudinal study that includes German and immigrant households and started in 1984. The SOEP con-migrants who intend to return have strong incentives to send remittances to their country of origin.

tains information about socioeconomic and demographic characteristics, household composition, occupational biographies etc. The following analysis is restricted to immigrant workers aged between 18 and 65 years, where immigrants are defined as foreign-born persons who immigrated to Germany since 1948. Due to the small number of observations, the sample does not include ethnic migrants from Central and Eastern Europe who received German citizenship after immigration. Furthermore, since less than five percent of the migrant population live in East Germany, the analysis concentrates on immigrants residing in West Germany. Finally, since lag variables have to be generated for some of the explanatory variables of our model, the year 1984 is not considered in the empirical analysis.

For the period between 1985 and 1995, the SOEP provides detailed information about transfers of foreigners to their home country. Immigrants were asked whether they sent any financial transfers to their home country. Additionally, the amount of transfers for two different purposes of the remittances is observed, i.e. savings and support for the family. After 1995, only the amount of transfers to persons abroad is available. Hence, given the particular research question of this paper, the sample is limited to the period from 1985 to 1995.

We follow the existing empirical literature on remittances and apply a binary Probit model to investigate the effects of relevant determinants on the propensity to transfer money to the home country and use a Tobit model to account for the censored nature of the outcome variable when investigating the amount of these transfers (Merkle and Zimmermann, 1992; Rodriguez, 1996; Cox et al., 1987; Bauer and Sinning, 2009). In order to provide a comprehensive descriptive analysis of behavioral differences between temporary and permanent migrants, particular attention is paid to isolating the part of the differences in remittances which can be explained by differences in socioeconomic characteristics from the

part attributable to differences in coefficients, using the decomposition method proposed by Blinder (1973) and Oaxaca (1973). To perform this decomposition, the empirical models are estimated separately for temporary (t) and permanent (p) migrants. For the linear regression models of groups $g = (t, p)$,

$$y_g^* = \mathbf{x}'_g \gamma_g + \eta_g, \quad (1)$$

Blinder (1973) and Oaxaca (1973) propose the decomposition²

$$\bar{y}_t^* - \bar{y}_p^* = (\bar{\mathbf{x}}_t - \bar{\mathbf{x}}_p)' \hat{\gamma}_t + \bar{\mathbf{x}}_p' (\hat{\gamma}_t - \hat{\gamma}_p). \quad (2)$$

Bauer and Sinning (2008) show that a decomposition of the outcome variable similar to equation (2) is not appropriate for nonlinear regression models, because the conditional expectations $E(y_g | \mathbf{x}_g)$ may differ from $\bar{\mathbf{x}}_g' \hat{\gamma}_g$. They propose to decompose the mean difference of y using conditional expectations evaluated at different coefficient estimates, i.e.

$$\begin{aligned} \Delta_{tp} &= E_{\gamma_t}(y_t | \mathbf{x}_t) - E_{\gamma_p}(y_p | \mathbf{x}_p) \\ &= [E_{\gamma_t}(y_t | \mathbf{x}_t) - E_{\gamma_t}(y_p | \mathbf{x}_p)] + [E_{\gamma_t}(y_p | \mathbf{x}_p) - E_{\gamma_p}(y_p | \mathbf{x}_p)]. \end{aligned} \quad (3)$$

To apply this decomposition to different nonlinear models, one has to estimate the sample counterparts $S(\hat{\gamma}_g, \mathbf{x}_g)$ and $S(\hat{\gamma}_h, \mathbf{x}_g)$ of the conditional expectations $E_{\gamma_g}(y_g | \mathbf{x}_g)$ and $E_{\gamma_h}(y_g | \mathbf{x}_g)$ for $g, h = (t, p)$ and $g \neq h$. In the empirical analysis, the decomposition results of Probit and Tobit models will be reported.³

We differentiate between temporary and permanent migrants using information on return intentions, with temporary migrants being defined as the group

²Note that an alternative decomposition exists for equation (2). The choice of the decomposition equation, however, did not affect the results of the empirical analysis qualitatively. Consequently, the estimates of the alternative decomposition are not presented in this paper. They are available from the authors upon request.

³A detailed discussion of the decomposition for these models is provided by Bauer and Sinning (2008).

of migrants who intend to return to their country of origin, while permanent migrants are considered as those who intend to stay in Germany forever. The set of explanatory variables considered include socioeconomic and demographic characteristics such as age, gender, years of education, and current income. Economic theory suggests that wealth accumulation depends on permanent rather than current income. Therefore, we follow Blau and Graham (1990) and add a measure of the predicted current income as a proxy variable for permanent income to our specification. It can further be expected that migrants are more likely to send transfers abroad if they face higher income risks in their host country (Amuedo-Dorantes and Pozo, 2006). To account for this possibility, we use the standard deviation of the average net income in the last five years as a proxy for income risk.

Following the analysis of Lucas and Stark (1985), a number of empirical studies have shown that marital status as well as household size and household composition in the migrants' home and host country are decisive determinants of remittances (see, among others, Hodinott, 1994; de la Briere et al., 2002). Unfortunately, the SOEP does not provide information about the household size of migrants in their home country. Apart from the marital status and the household size in Germany, the set of regressors includes dummy variables indicating whether the spouse or children of the respondent live abroad.

Using data on El Salvador and Nicaragua, Funkhouser (1995) has shown that the self-selection of migrants has an important influence on remittances. Other studies indicate that the savings behavior may also be affected by cultural background (Carroll et al., 1994, 1999). Based on these results, we include source country indicators to control for variations in the remittance behavior across countries of origin. Finally, since migrants' remittances typically decline as the duration of residence in the host country increases (DeVoretz and Vadean, 2005)

and savings of more established immigrants in their host countries tend to be higher than those of more recent immigrant cohorts (Bauer et al., 2008), differences between immigration cohorts are taken into account by controlling for the number of years since migration. Descriptive statistics and a detailed description of the definitions of all variables used in the analysis are given in Tables A1 and A2 of the Appendix. After excluding all observations with missing values on one of the variables used, the data set contains 7,976 person-year-observations of 1,535 individuals.

Table 1 provides some descriptive statistics on the remittance behavior of temporary and permanent migrants. It shows that temporary migrants have a higher propensity to transfer money to their home country than permanent migrants and that they transfer higher amounts. Specifically, 8% of the temporary migrants report savings in their home country compared to 3% of the permanent migrants. Conditional on saving abroad, temporary migrants save almost 238€ per month or 21.9% of their income while permanent migrants save only 179€ or 16.8% of their income. The picture appears to be different when considering transfers to family members abroad. About one third of temporary migrants and about 27% of the permanent migrants send remittances to family members abroad. Conditional on sending money to their family members, temporary and permanent migrants send almost a similar amount.

3 Estimation Results

To investigate differences in the propensity to save and the amount of savings between temporary and permanent migrants, Probit and Tobit regressions were estimated using a pooled sample of the two groups. The estimates of these models – which are available upon request – indicate that the probability to accumu-

late wealth in the home country is 4.4% higher for migrants who intend to return to their home country in comparison to those who decide to stay in Germany permanently. Temporary migrants further save about 10% more than permanent migrants. Both results are in accordance with theoretical models on the impact of return intentions and the intended duration of stay on migrants' savings behavior (Galor and Stark, 1990; Dustmann, 1997). A similar picture emerges when considering payments to family members in the home country: temporary migrants have a higher probability (7.6%) to support their family members abroad and transfer more money (15.9%) than permanent migrants.

Panels A and B of Table 2 show the estimation results of the Probit and Tobit model for savings in the home country separately for temporary and permanent migrants. The results of the Probit estimations indicate significant differences in the effects of the determinants of savings in the home country between the two groups. While the savings propensity of temporary migrants increases significantly with age and current income, these factors have no significant influence on the savings propensity of permanent migrants. Variation in past income has a negative impact on savings of temporary migrants, with the coefficient being significant at the 10%-level. This result may indicate that a higher income uncertainty leads migrants to hold their savings in the host country in order to have quick access to savings in the case of an income reduction. This would also imply that these migrants hold predominantly liquid assets. The data set, however, does not provide the information necessary to test this hypothesis. Finally, the propensity of temporary migrants to save abroad is increasing when children are living in the country of origin. For permanent migrants, the propensity to save abroad is only affected significantly by the household size, with savings abroad decreasing with the household size in the host country.

The Tobit estimates indicate that among temporary migrants the amount of

savings is increasing with current income. Furthermore, compared to unmarried temporary migrants, migrants being married save more abroad. Note, however, that both coefficients are statistically significant at a 10%-level only. For permanent migrants the amount of saving is decreasing with education and the household size and increasing with higher permanent income. Again, these coefficients are statistically significant at a 10%-level only. Finally, permanent migrants save significantly less when the spouse resides in the home country.

In sum, both the economic situation and the composition of the household in home and host countries seem to have a considerable though, heterogenous impact on savings of temporary and permanent migrants. At the same time, the explanatory power of our empirical models is rather low, with only a few coefficients being significant at conventional levels. This result is not surprising, given the relatively low proportion of migrants saving abroad (see Table 1).

The overall picture changes substantially when considering transfers to family members abroad. The Probit estimates reported in Table 3 suggest that temporary and permanent migrants are much more similar concerning these transfers if compared to saving abroad. For both groups the propensity to transfer to family members abroad is increasing with age, current income and when the spouse or children are living in the home country, while it is decreasing with years since migration and household size and it is lower for females. Note that all estimated effects are in line with standard theories on the determinants of remittances (see Rapoport and Docquier, 2006).

A similar pattern may also be observed when analyzing the amount of transfers to family members. The Tobit estimates shown in Table 3 indicate that the amount of transfers is increasing with age and are higher when children live abroad for both groups of migrants. For temporary migrants the amount of savings is decreasing with household size and variation in past income and increasing with

current income. Different to permanent migrants, temporary migrants whose spouse lives abroad also transfer significantly more money. Note that female permanent migrants transfer a significantly lower amount, while this coefficient is insignificant for temporary migrants. Finally, source country effects on the propensity to remit and the amount of remittances are similar for temporary and permanent migrants.

Table 4 reports the results of our decomposition analysis. The estimates of the Probit decomposition provide evidence for significant differences in the propensity to save or remit between temporary and permanent migrants. The major part of the gap in the propensity to save (almost 90%) may be attributed to different coefficients, suggesting that the gap is a result of behavioral differences between temporary and permanent migrants rather than differences in observable characteristics between the two groups. A similar part of the gap in the propensity to remit (almost 70%) is explained by different coefficients, indicating that temporary and permanent migrants seem to have different preferences towards sending transfers to their country of origin, while economic characteristics and the composition of households in the home and host countries play a relatively minor role. At the same time, about 30% of the overall gap in the propensity to remit may be explained by observed characteristics, suggesting that different economic restrictions or household compositions may at least explain a part of the difference in the propensity to remit.

The estimates of the Tobit decomposition reveal that temporary migrants save significantly more (about 17€ per month) than permanent migrants, while the raw gap in the amount of remittances is insignificant. Although the major part of the savings gap between the two groups (about 75%) may be attributed to differences in observed characteristics, this part is not significant. This result is in line with the heterogenous effects and the low explanatory power of the Tobit

estimates reported in Table 2. Since differences in the amount of remittances are relatively small (less than 10€ per month), we observe that a very large share of the gap (about 150%) is unexplained. This result may be explained by relatively large variations in the Tobit estimates presented in Table 3 and small differences in the observed characteristics between the two groups (see Appendix-Table A1).

4 Conclusions

This paper examines the extent and the determinants of remittances, using individual data of foreign-born staying in Germany. We differentiate between temporary and permanent migrants using information on return intentions, with temporary migrants being defined as the group of migrants who intend to return to their country of origin, while permanent migrants are considered as those who intend to stay in Germany forever. While most of the studies on remittances concentrate on migrants' transfers to developing countries using predominantly data collected in the country of origin of a migrant, the analysis of this paper focuses on remittances of migrants from traditional labor-exporting countries, such as Turkey, Italy and Greece as well as refugees originating from former Yugoslavia using data obtained in Germany rather than in the countries of origin. In order to provide a comprehensive descriptive analysis of behavioral differences between temporary and permanent migrants, particular attention is paid to the isolation of the part of the differences in remittances that can be explained by differences in socioeconomic characteristics from the part attributable to differences in coefficients using the decomposition method proposed by Blinder (1973) and Oaxaca (1973).

Our findings indicate that the probability to accumulate wealth in the home country is higher for temporary migrants than for permanent migrants. Tempo-

rary migrants further save about 10% more than permanent migrants. A similar picture emerges when considering migrants' payments to family members in the home country. The results of a Probit decomposition suggest that the major part of the gap in the propensity to save or remit can be attributed to different coefficients, indicating that temporary and permanent migrants seem to have different preferences towards sending transfers to their country of origin, while economic characteristics and the composition of households in home and host countries play a relatively minor role. Due to the small unconditional gap in the amount of savings and remittances, evidence derived from a Tobit decomposition is rather mixed.

Figures and Tables

Table 1: Savings and remittances: Descriptive Statistics.

	Temporary migrants	Permanent migrants
Proportion of migrants saving abroad	0.08 (0.27)	0.03 (0.16)
Savings abroad (in € per month)	19.34 (115.00)	4.53 (48.63)
Savings abroad if > 0 (in € per month)	237.69 (332.92)	178.78 (250.58)
Proportion of migrants sending remittances to family members abroad	0.34 (0.47)	0.27 (0.45)
Payments to family members (in € per month)	55.08 (120.52)	44.96 (120.67)
Payments to family members if > 0 (in € per month)	160.71 (159.41)	165.01 (183.50)
Observations	5,195	2,781

Table 2: Savings Abroad: Temporary vs. Permanent Migrants – 1985-1991, 1993, 1995.

	A. Temporary Migrants			
	Probit		Tobit	
	Marginal effect	Standard error	Marginal effect	Standard error
Age	0.001***	0.001	0.379	0.300
Female	0.001	0.026	-2.566	10.912
Current income $\times 10^2$	0.006***	0.001	1.202*	0.731
Variation in past income $\times 10^2$	-0.007*	0.003	-0.191	1.012
Permanent income $\times 10^2$	0.010	0.008	1.959	3.824
Years of education	-0.005	0.003	-1.185	1.439
Household size	-0.001	0.002	-0.789	1.215
Married	0.016	0.012	9.031*	5.087
Spouse lives abroad $_{(t-1)}$	-0.013	0.018	-0.272	8.925
Children live abroad $_{(t-1)}$	0.030**	0.014	8.836	7.332
Years since migration	-0.001	0.001	0.611	0.488
Country of origin: Turkey (Reference group)				
Country of origin: Italy	-0.002	0.011	-5.712	5.216
Country of origin: Greece	-0.010	0.012	-11.413***	3.785
Country of origin: Ex-Yugoslavia	0.003	0.011	-5.751	4.152
Country of origin: Other	0.018	0.015	-0.414	6.473
Observations		5,195		
	B. Permanent Migrants			
	Probit		Tobit	
	Marginal effect	Standard error	Marginal effect	Standard error
Age	-0.001	0.001	-0.051	0.071
Female	-0.019	0.015	-0.916	2.136
Current income $\times 10^2$	0.001	0.001	0.205	0.177
Variation in past income $\times 10^2$	-0.001	0.002	-0.345	0.331
Permanent income $\times 10^2$	0.002	0.006	1.321*	0.766
Years of education	-0.001	0.002	-0.541*	0.318
Household size	-0.003**	0.001	-0.574*	0.313
Married	0.011	0.006	-0.729	1.677
Spouse lives abroad $_{(t-1)}$	-0.016	0.006	-2.329***	0.679
Children live abroad $_{(t-1)}$	0.007	0.012	0.384	1.521
Years since migration	-0.001	0.001	0.027	0.115
Country of origin: Turkey (Reference group)				
Country of origin: Italy	-0.012*	0.005	-1.320	1.087
Country of origin: Greece	-0.001	0.009	-1.283	0.946
Country of origin: Ex-Yugoslavia	0.003	0.007	-0.264	1.037
Country of origin: Other	0.008	0.010	1.845	2.702
Observations		2,781		

Notes: Weighted estimates based on weights provided by the SOEP. Standard errors are adjusted in order to take repeated observations of households into account. The regression further includes year dummies. * significant at 10%-level; ** significant at 5%-level; *** significant at 1%-level.

Table 3: Payments to Family Members Abroad: Temporary vs. Permanent Migrants
– 1985-1991, 1993, 1995.

	A. Temporary Migrants			
	Probit		Tobit	
	Marginal effect	Standard error	Marginal effect	Standard error
Age	0.006***	0.000	1.729***	0.450
Female	-0.123**	0.045	1.663	20.972
Current income $\times 10^2$	0.013***	0.002	3.637***	1.319
Variation in past income $\times 10^2$	-0.007	0.004	-3.701*	1.958
Permanent income $\times 10^2$	-0.003	0.016	5.765	7.106
Years of education	-0.006	0.005	-0.880	2.322
Household size	-0.032***	0.004	-7.829***	2.064
Married	-0.004	0.023	-8.874	9.186
Spouse lives abroad $_{(t-1)}$	0.325***	0.040	46.635**	18.250
Children live abroad $_{(t-1)}$	0.336***	0.023	63.091***	11.323
Years since migration	-0.005***	0.001	-1.212	0.941
Country of origin: Turkey (Reference group)				
Country of origin: Italy	-0.193***	0.016	-16.578	10.829
Country of origin: Greece	0.009	0.022	-0.962	9.816
Country of origin: Ex-Yugoslavia	0.056***	0.020	12.560*	7.420
Country of origin: Other	-0.129***	0.020	-25.968***	6.224
Observations		5,195		
	B. Permanent Migrants			
	Probit		Tobit	
	Marginal effect	Standard error	Marginal effect	Standard error
Age	0.006***	0.000	1.604***	0.525
Female	-0.144***	0.047	-32.424*	18.595
Current income $\times 10^2$	0.011***	0.003	-1.457	2.689
Variation in past income $\times 10^2$	-0.012	0.008	2.727	4.021
Permanent income $\times 10^2$	-0.026	0.020	-2.018	8.330
Years of education	0.001	0.006	0.772	3.592
Household size	-0.014***	0.004	-2.079	2.940
Married	0.032	0.023	-7.703	11.935
Spouse lives abroad $_{(t-1)}$	0.059	0.051	17.848	18.054
Children live abroad $_{(t-1)}$	0.281***	0.042	56.120***	14.712
Years since migration	-0.005***	0.001	-0.672	0.778
Country of origin: Turkey (Reference group)				
Country of origin: Italy	-0.168***	0.015	-34.207***	6.715
Country of origin: Greece	-0.059**	0.022	-16.047**	7.544
Country of origin: Ex-Yugoslavia	0.034*	0.021	12.155	9.957
Country of origin: Other	-0.157***	0.014	-31.796***	4.703
Observations		2,781		

Notes: See Notes to Table 2.

Table 4: Decomposition Analysis – 1985-1995.

	Savings	Remittances
$\widehat{\Delta}^{\text{Probit}}$	0.055*** [0.007]	0.069*** [0.016]
Explained Part	0.006** [0.003] (11.5)	0.021** [0.007] (30.9)
Unexplained Part	0.049*** [0.007] (88.5)	0.047*** [0.015] (69.1)
$\widehat{\Delta}^{\text{Tobit}}$	16.739*** [2.497]	9.282 [6.416]
Explained Part	12.631 [12.547] (75.5)	-4.686 [8.756] (-50.4)
Unexplained Part	4.108 [11.396] (24.5)	13.968** [6.722] (150.4)
N_t	5,195	5,195
N_p	2,781	2,781

Notes: Bootstrapped (50 replications) standard errors in brackets.

Percentages of the raw differential are reported in parentheses.

* significant at 10%-level; ** significant at 5%-level; *** significant at 1%-level.

References

- Amuedo-Dorantes, C. and Pozo, S. (2006), 'Remittances as Insurance: Evidence from Mexican Immigrants', *Journal of Population Economics* 19, 227-254.
- Bauer, T. K. and Sinning, M. G. (2008), 'An Extension of the Blinder-Oaxaca Decomposition to Non-Linear Models', *Advances in Statistical Analysis* 92, 197-206.
- Bauer, T. K. and Sinning, M. G. (2009), 'The Savings Behavior of Temporary and Permanent Migrants in Germany', *Journal of Population Economics*, forthcoming.
- Bauer, T. K., Cobb-Clark, D. A., Hildebrand, V. A. and Sinning, M. G. (2008), 'A Comparative Analysis of the Nativity Wealth Gap', *Economic Inquiry*, forthcoming.
- Bernheim, B. D., Shleifer, A. and Summers, L. H. (1985), 'The Strategic Bequest Motive', *Journal of Political Economy* 93, 1045-1076.
- Blau, F. D. and Graham, J. W. (1990), 'Black-White Differences in Wealth and Asset Composition', *The Quarterly Journal of Economics* 105, 321-339.
- Blinder A. S. (1973), 'Discrimination: Reduced Form and Structural Estimates', *Journal of Human Resources* 8, 436-455.
- Carroll, C. D., Rhee, B. and Rhee, C. (1994), 'Are There Cultural Effects on Saving? Some Cross-Sectional Evidence', *Quarterly Journal of Economics* 109, 685-699.
- Carroll, C. D., Rhee, B. and Rhee, C. (1999), 'Does Cultural Origin Affect Saving Behavior? Evidence from Immigrants', *Economic Development* 48, 33-50.

- Cox, D. (1987), 'Motives for Private Transfers', *Journal of Political Economy* 95, 508-546.
- Cox, D., Eser, Z. and Jimenez, E. (1987), 'Motives for Private Transfers Over the Life Cycle: An Analytical Framework and Evidence for Peru', *Journal of Development Economics* 55, 57-80.
- Cox, D. and Rank, M. R. (1992), 'Inter-Vivos Transfers and Intergenerational Exchange', *The Review of Economics and Statistics* 74, 305-314.
- de la Briere, B. A., de Janvry, S. L. and Sadoulet, E. (2002), 'The Roles of Destination, Gender, and Household Composition in Explaining Remittances: An Analysis for the Dominican Sierra', *Journal of Development Economics* 68, 309-328.
- DeVoretz, D. J. and Vadean, F. P. (2005), 'A Model of Foreign-Born Transfers: Evidence from Canadian Micro Data', *IZA Discussion Papers No. 1714*, 1-34.
- Durand, J., Kandel, W., Parrado, E. A. and Massey, D. S. (1996), 'International Migration and Development in Mexican Communities', *Demography* 33, 249-264.
- Dustmann, C. (1997), 'Return Migration, Uncertainty and Precautionary Savings', *Journal of Development Economics* 52, 295-316.
- Funkhouser, E. (1995), 'Remittances from International Migration: A Comparison of El Salvador and Nicaragua', *Review of Economics and Statistics* 77, 137-146.
- Galor, O. and Stark, O. (1990), 'Migrants' Savings, the Probability of Return Migration and Migrants' Performance', *International Economic Review* 31, 463-467.

- Hodinott, J. (1994), 'A Model of Migration and Remittances Applied to Western Kenya', *Oxford Economic Papers No. 46*, 459-476.
- Ilahi, N. and Jafarey, S. (1999), 'Guestworker Migration, Remittances and the Extended Family: Evidence from Pakistan', *Journal of Development Economics* 58, 485-512.
- Lucas, R. E. B. and Stark, O. (1985), 'Motivations to Remit: Evidence from Botswana', *The Journal of Political Economy* 93, 901-918.
- Merkle, L. and Zimmermann, K. F. (1992), 'Savings, Remittances, and Return Migration', *Economics Letters* 38, 129-134.
- Oaxaca, R. L. (1973), 'Male-Female Wage Differentials in Urban Labor Markets', *International Economic Review* 14, 693-709.
- Rapoport, H. and F. Docquier (2006), 'The Economics of Migrants' Remittances', in S. Kolm and J.M. Ythier (eds.), *Handbook of the Economics of Giving, Altruism and Reciprocity Vol. 2*, Elsevier.
- Rodriguez, E. R. (1996), 'International Migrants' Remittances in the Philippines', *The Canadian Journal of Economics* 29, 427-432.
- World Bank (2006), 'Global Economic Prospects 2006: Economic Implications of Remittances and Migration', World Bank.
- World Bank (2008), 'Outlook for Remittance Flows 2008-2010: Growth Expected to Moderate Significantly, but Flows to Remain Resilient', *Migration and Development Brief 8*. World Bank.

Appendix – Tables

Table A1: Descriptive statistics, 1985-1995.

Variable	Temporary migrants		Permanent migrants	
	Mean	Standard Deviation	Mean	Standard Deviation
Socioeconomic characteristics				
Age	41.2	10.3	40.5	10.2
Female	0.281	0.450	0.275	0.446
Current income	864.19	349.21	910.07	356.45
Variation in past income streams	116.96	149.92	127.82	139.93
Permanent income	851.51	235.92	903.69	244.67
Years of education	9.3	1.8	9.6	2.0
Household composition				
Household size	3.5	1.6	3.5	1.6
Married	0.778	0.415	0.723	0.448
Spouse lives abroad	0.077	0.267	0.080	0.271
Children live abroad	0.119	0.324	0.071	0.256
Migration background				
Years since migration	19.134	5.648	20.057	6.320
Country of origin: Turkey	0.424	0.494	0.409	0.492
Country of origin: Italy	0.195	0.396	0.197	0.398
Country of origin: Greece	0.110	0.313	0.065	0.247
Country of origin: Ex-Yugoslavia	0.212	0.408	0.276	0.447
Country of origin: Other	0.060	0.238	0.052	0.223
N	5,195		2,781	

Table A2: Definition of variables.

Variable	Description
Savings and remittances	
Savings abroad	Real average monthly amount of savings abroad in € (base year 2000).
Payments to family members abroad	Real average monthly amount of payments to family members abroad in € (base year 2000).
Socioeconomic characteristics	
Age	Age of respondent in years.
Female	1 if respondent is female; 0 otherwise.
Current income	Net real income last month in € (base year 2000).
Variation in past income streams	Standard deviation of current net income over the last 5 years.
Permanent income	Estimated real permanent income in € (base year 2000).
Years of education	Education of respondent in years.
Household composition	
Household size	Number of persons in household.
Married	1 if respondent is married; 0 otherwise.
Spouse lives abroad	1 if spouse of respondent lives abroad; 0 otherwise.
Children live abroad	1 if children of respondent live abroad; 0 otherwise.
Migration background	
Intended return migration	1 if respondent intends to return to the home country, 0 otherwise.
Years since migration	Duration of German residence in years.
Country of origin: Turkey	1 if respondent originates from Turkey; 0 otherwise.
Country of origin: Italy	1 if respondent originates from Italy; 0 otherwise.
Country of origin: Greece	1 if respondent originates from Greece; 0 otherwise.
Country of origin: Ex-Yugoslavia	1 if respondent originates from former Yugoslavia; 0 otherwise.
Country of origin: Other	1 if respondent originates from other OECD member country (reference category); 0 otherwise.