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**Working Paper**

## Come back or stay? - Spend here or there?: Temporary versus permanent migration and remittance patterns in the Republic of Moldova

Kiel Advanced Studies Working Papers, No. 438

**Provided in Cooperation with:**

Kiel Institute for the World Economy – Leibniz Center for Research on Global Economic Challenges

*Suggested Citation:* Pinger, Pia R. (2007) : Come back or stay? - Spend here or there?: Temporary versus permanent migration and remittance patterns in the Republic of Moldova, Kiel Advanced Studies Working Papers, No. 438, Kiel Institute for the World Economy (IfW), Kiel

This Version is available at:

<https://hdl.handle.net/10419/27015>

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Working Paper No. 438

**Come Back or Stay? Spend Here or There?**

Temporary versus Permanent Migration and Remittance  
Patterns in the Republic of Moldova

by

Pia R. Pinger

April 2007

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# Come Back or Stay? Spend Here or There?

## Temporary versus Permanent Migration and Remittance Patterns in the Republic of Moldova

*Pia R. Pinger\**

April 19, 2007

### **Abstract**

This paper examines the determinants of temporary and permanent migration and the impact of the return decision on remittances patterns. Using a new detailed household dataset on migration in the Republic of Moldova, it is shown that return is determined by the economic conditions at home and abroad as well as by the legal status in the host country. Especially economic frustration turns out to be an important push factor for permanent migration. Besides, family ties play an important role, as do respective migrant networks. Concerning remittances, the results indicate that temporary migrants remit around 30% more than their permanent counterparts even though they often reside in lower wage countries. Overall, the findings indicate that temporary migration is relatively more favorable for developing countries as it fosters higher remittances, repatriation of skills and home savings.

**Keywords:** Permanent Migration, Temporary Migration, Remittances, Economic Development

**JEL classification:** F22, F24, O15

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*I am indebted to Toman O. Mahmoud and Dr. Matthias Lücke for excellent research advice and many helpful comments, as well as to Bettina Klemrath and Jonas Doern for continuous support. Special thanks also belong to DekaBank for generous scholarship funding.*

# 1 Introduction

In recent years, the idea of migration and remittances as means to enhance development and poverty reduction has gained in weight against the fears of brain drain and exploitation. For many developing countries remittances and savings by returning migrants are nowadays a more important source of external financing than development aid or foreign direct investment. Besides, migration can lead to knowledge and technology spillovers by migrants who import skills they have been able to acquire abroad<sup>1</sup>.

At the same time, a gradual shift in the public debate of most Western European countries has taken place that rediscover the economic benefits of inward migration for their aging economies and slowly start to accept their roles as immigration countries<sup>2</sup>. Consequently, it is important to identify when migration is most beneficial to construct good migration policies<sup>3</sup>.

This paper argues - in line with several other studies (Amin and Mattoo, 2005; Dustmann and Kirchkamp, 2002) - that migration is most beneficial if is temporary, i.e. if migrants leave their country with the intention to return some day for good. This is true not only for developed countries, attempting to import additional short-term labour, but also for developing countries. The latter can expect higher remittances, repatriated skills and technology spillovers via temporary migration. The idea is that a diaspora of return migrants develops that move abroad to sell their labour, but at the same time keep close ties with their home country.

In the face of this discussion, surprisingly little research exists so far that deals with the characteristics of permanent and temporary migration. While some attention has been devoted to the migration duration and its implications for savings and remittances, there is hardly any study known to the author that focuses explicitly on migrant characteristics and remittance behaviour for permanent and return migrants<sup>4</sup>. Hence, the present paper aims to fill this research gap by scrutinizing the determinants of return and respective remittance patterns. To this end, a new detailed micro dataset for the Republic of Moldova is used that focuses explicitly on migrant characteristics of current and ex-household members.

The remainder of this paper is structured in the following way: Section 2, summarizes the theoretical discussion on temporariness of migration that serves as a basis for later empirical hypotheses. Section 3 describes the data used and gives a short summary of the migration situation in the Republic of Moldova. Section 4 discusses estimation procedures and results. Section 5 concludes.

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<sup>1</sup>See IDC (2004) for an extensive discussion of the drawbacks and merits of migration for developing countries.

<sup>2</sup>See for example Süßmuth (2001) for Germany or Glover (2001) for Great Britain.

<sup>3</sup>Current policy papers on this issue are IDC (2004); IOM (2001); GCIM (2005).

<sup>4</sup>An exception to this is Dustmann (1992, 1997). However, the author takes on the host country perspective while the present paper focuses on the migrants' home country.

## 2 Theoretical Considerations and Related Literature

Much of the recent research conducted on migration has focused on various determining factors for migration and remittances in general (see e.g. Carrington et al. (1996); Mayda (2005); Rapoport and Docquier (2005)) or the consequences of freer migration for the welfare of host and source countries (Borjas, 1994, 1995; Docquier and Rapoport, 2004). Usually, these studies do not distinguish between temporary and permanent migration. However, Dustmann (1997, 2000) points out that the motivation to stay or leave is crucial to explain the economic behaviour of migrant workers and thus for the design of successful migration policies. Hence, this research focuses on the difference in characteristics of temporary and permanent migrants and their respective remittance behaviour. For three reasons, the return plans of migrants make a crucial difference for the emigration country. First, both savings and remittances repatriated to the host country are likely to be higher if the respective migrant plans to return some day and continues to entertain strong emotional linkages with his family. This is important, because remittances are today recognized to be an important and stable source of development finance (Ratha, 2003; Acosta, 2006). Second, only if a migrant returns, the respective sending country can benefit from the skills and experience acquired abroad (Iara, 2006; Stark et al., 1997a). Third, migrants are usually viewed to be intrinsically more prone to take risks and willing to alter their economic situation through migration and via expenditures on education and investment (Mesnard, 2004; Dustmann and Kirchkamp, 2002; Rapoport and Docquier, 2005). This means that migrants tend to be economically strong and "valuable" to the host country, rendering repatriation an important issue.

In the literature varying definitions for temporary and permanent migrants are used. Here, a temporary migrant is defined as a migrant who either intends to "accumulate more money abroad" and then return to the home country or who has returned a short time ago and does not plan to leave again. Similarly, a permanent migrant is defined to be someone who intends "to settle abroad" and does not want to return to the home country on a continuous basis<sup>5</sup>. Note that this definition assumes the position of the home country. A migrant may be a permanent migrant for the home country but a temporary migrant for several host countries. Furthermore, this definition does not necessarily suggest that temporary migrants are seasonal migrants or that long-term migrants have to stay permanently. Instead, permanent migrants may migrate on a seasonal basis at the moment in order to afford the resettlement for the entire family at a later point in time<sup>6</sup>.

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<sup>5</sup>Note that this definition differs markedly from the one employed in Cuc et al. (2005) and Görlich and Trebesch (2006), where migrants are considered permanent if they simply stay abroad for longer than six months/one year.

<sup>6</sup>For the specific case of Moldova, these may be migrants, who now are seasonal workers in Russia that want to accumulate enough money to be able to settle in Western Europe at a later point in time.

Furthermore, the intention to return or stay may diverge from the actual outcome. It merely reflects a long-term decision that influences the economic behaviour of individual migrants<sup>7</sup>.

### 2.1 Determining Factors of the Return Decision

So far, the issue of temporariness of migration has merely been addressed in form of the optimal migration duration (Dustmann and Kirchkamp, 2002; Stark et al., 1997b) or with respect to the labour market performance of migrants in face of their return plans (Chiswick, 1978; Borjas, 1987; Galor and Stark, 1991). The latter includes the decision to invest in country-specific skills or to participate in the foreign labour market (see Dustmann (1999, 2000)). However, it is important to identify certain characteristics of permanent migrants to be able to design migration policies that target repatriation.

The return decision of a particular migrant reflects the utility maximizing behaviour of each migrant, who compares the discounted flow of utilities of staying in either location. These utilities thus depend on a number of observable and unobservable characteristics. First, individual characteristics that express the net earnings possibilities abroad should have a positive influence on staying permanently (Stark et al., 1997b)<sup>8</sup>. This absolute earnings differential is usually larger for those individuals that are better educated or have more work experience abroad as well as for those that are employed legally. Similarly, the type of sector a migrant is employed in abroad is likely to influence this differential as does the country of destination. Second, as far as family composition is concerned, being married and having small children should reduce the likelihood that someone wishes to stay permanently (Dustmann, 1992). This is true, because emotional costs are larger if the family is permanently torn apart as are the economic costs if the entire family migrates. Furthermore, permanent migration is probably less likely the larger the overall family, because migration then means the loss of many family and community ties. Likewise, a migrant from a household located in urban locations is more likely to leave permanently, because community ties in cities are not as strong as in rural areas. Third, a higher age should reduce the probability to leave on a permanent basis, because adaptation and assimilation costs are increasing with age. Fourth, variables that express the political and economic frustration of a migrant should exert a positive influence on the wish to stay abroad. Individuals that have a dislike for the conditions in their home country will be more likely to leave forever (Dustmann, 2000). This dislike may be expressed by the perceived living standard at home, but also by the migrant's motivation. Someone, who migrates due to unemployment, to increase consumption or to raise money for investment expresses that he derives utility from living in the home country and that it is only temporary circumstances that lead him to leave the country. On the other hand, someone who says that life abroad is better, expresses his dissatisfaction with the home

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<sup>7</sup>Dustmann (2000) also points out that "a useful definition for return migration for empirical work should be oriented on ex-ante intentions rather than on ex-post realizations" (p.21).

<sup>8</sup>Dustmann (2003) shows that this need not always be the case.

country situation, fostering permanent migration. Turning, this argument around, a positive perception about the environment abroad is also likely to exert a negative influence on the return decision (Dustmann, 1992). In this respect, the duration of stay abroad positively influences the decision to stay permanently, as migrants who have found work and made social contacts abroad assimilate and integrate (Dustmann, 1992). Moreover, the legal status should play a role, i.e. whether someone holds a work and/or residence permit. Costs are presumably higher if a migrant stays abroad illegally, has no residence permit or holds down an illegal job. Not abiding the law may lead to imprisonment and fines and it also likely entails costs related to emotional stress and anxiety.

Last, network effects may play an important role on migration decisions as emphasized e.g. by Palloni et al. (2001) or in Görlich and Trebesch (2006). Thus, for example, knowing other migrants or receiving help at destination can be assumed to facilitate a permanent settlement. The same is true for the presence of family abroad. Besides, individuals that know many other migrants from their region having migrated with a particular return intention are likely to "herd" and imitate their behaviour. Also, persons who know either many permanent or many temporary migrants will have access to other types of networks, i.e. that provide access to different destinations and work opportunities.

## 2.2 The Influence of the Return Decision on Remittances

Related to the characteristics of temporary and permanent migrants is their remittance behaviour. With respect to return intentions, it is conjectured that migrants save and remit more, if they plan to return to the home country (Galor and Stark, 1990). Using data for Germany, Merkle and Zimmermann (1992) find that plans to return to the home country significantly and positively affect remittances. This is intuitive, because returnees at least partly benefit from their remittances after return, such that remittances can be considered a special form of savings. In other words, temporary migrants will try to transfer as much consumption as possible to the time after their return while permanent migrants will be more induced to save and spend their money in the foreign country (Merkle and Zimmermann, 1992). Besides, it can be assumed that remittances of immigrants who do not plan to return to their home country are merely altruistic and thus much lower (Bauer and Sinning, 2005)<sup>9</sup>. In line with this motive of altruism, remittances of temporary migrants are often higher, because their nuclear family stays in the home country (Poirine, 1997). Furthermore, permanent migrants usually pay part of their income on "integration costs" that is to learn the language to buy a house and for socializing purposes (Glytsos, 1997). Hence, overall it can be assumed that migrants who plan to return are significantly more likely to remit and that the amount of remittances is higher.

Apart from the central question of the return decision, studies on remittances find that a higher

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<sup>9</sup>Other motives for the decision to remit are summarized in (Rapoport and Docquier, 2005).

income of migrants, a lower income of the family and closer family ties all increase the probability that a migrant remits and the amount remitted. On the other hand, a larger family or other migrant family members decrease the amount remitted (Rodriguez, 1996). Moreover, remittances increase with age but at a decreasing rate (Merkle and Zimmermann, 1992). Besides, several researchers found that remittances increase with years of schooling, indicating that an initial education investment by the family is repaid by the respective migrant (Lucas and Stark, 1985; Rapoport and Docquier, 2005).

### 3 Data

The data used for the empirical analysis stems from a new and comprehensive household survey undertaken in the Republic of Moldova, where migration is today one of the most prominent social phenomena. The considerable importance of migration in Moldova as well as a detailed and wide-ranging dataset containing information on both current and ex-household members provide an ideal basis for analysing permanent and temporary migration and remittance patterns. In the following part recent evidence on migration and remittances in Moldova will shortly be summarized, followed by a description of the dataset.

#### 3.1 Migration and Remittances in the Republic of Moldova

Over the last ten years, migration has been on a continuous rise in Moldova such that nowadays it can be considered a mass phenomenon (Görlich and Trebesch, 2006). Various estimates of the number of migrants range from 25% to up to 50% of the economically active population<sup>10</sup>. Concerning their overall number, the department of migration in Moldova estimates that there are about 600,000 migrants (August 2004), compared to a working population of around 1,6 million. Around 80% of these migrants have left the country after 1998 when the poverty situation of the poorest country in Europe aggravated (Cuc et al., 2005).

Correspondingly, the surge of migration has taken place for economic reasons that have dramatically worsened the employment possibilities in Moldova. The secession of the industrial Transnistrien region shortly after independence as well as the 1998 crisis has hit hard on the Moldovan economy. In addition, the regulatory environment is poor and administrative hurdles act as barriers to investment (Munteanu, 2005a,b)<sup>11</sup>.

Several recent studies provide information on the characteristics of Moldova's migrants as well as on their migration behaviour (Görlich and Trebesch, 2006; IOM, 2005; Cuc et al., 2005; Ruggiero,

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<sup>10</sup>Official statistics report that about one forth of the active population is migrating, the IMF estimates the number to be as high as 40% (end of 2004), while unofficial estimates range even higher (Cuc et al., 2005; Munteanu, 2005a).

<sup>11</sup>For a more detailed explanation of the economic and political reasons for such high migration rates see Görlich and Trebesch (2006) and Cuc et al. (2005).



2005). These studies find that the typical migrant in Moldova is male, in his mid-thirties and married. Besides, most migrants stem from large families living in rural Moldova and have below-average education (Cuc et al., 2005).

Concerning the migrants' household characteristics, Görlich and Trebesch (2006) find that the probability of migration increases with household size, but decreases with the number of dependant children living in the household. Moreover, the authors find that both the perception of poverty and network effect to exert a considerable influence on the likelihood of migration. If a household perceives itself as poor, it has a much higher probability (up to 52%) to cope with this situation via sending a migrant than households with a better perception about their economic situation. Hence, migration in Moldova seems foremost a strategy for poor people to increase consumption levels (Cuc et al., 2005). For these poor households networks are of considerable importance as they often lack the resources and information to make a first move and instead rely on Moldova's well-established migrational networks (Görlich and Trebesch, 2006).

In general, the Moldovan migrant population can be divided into two broad groups. First, there is a majority of rural migrants that have large families, are mostly male and relatively poor. This group tends to migrate to Russia or other CIS countries, where migration costs are low and seasonal work in construction abound. A second group predominantly originates from wealthier and better-educated urban households. These migrants tend to be female and leave for Western EU countries, mostly Italy and Spain, where they find employment in households, health care or tourism (Ruggiero, 2005). This group is generally older and stays longer as the costs of migrating to these destinations are much higher (Cuc et al., 2005).

In line with the number of migrants, also the amount and importance of remittances in the Republic of Moldova is surging. According to World Bank estimates, the country receives the third largest amount of remittances as a share of GDP worldwide (in 2004). Migrants' funds represent today over 20% of GDP in Moldova and remittances bring in half as much foreign exchange as the country's exports (Mansor and Quillin, 2007). The importance of remittances for the Moldovan economy is also reflected by the fact that remittances are about eight times as high as foreign direct investment (Schrooten, 2006). Clearly, such large amounts of remittances imply that much of the private spending power and consumption-driven GDP growth in Moldova depends on remittances.

Information on remittance patterns of Moldovan migrants is contained in the reports by Ghencea and Gudumac (2004); Cuc et al. (2005); Ruggiero (2005) and Görlich et al. (2006). These authors find that the amount of remittances is generally positively correlated with the age of the migrant and negatively with the year of first departure, indicating that the amount remitted decreases with the length of stay (Cuc et al., 2005; Ruggiero, 2005). Furthermore, being married has a positive impact on the amount remitted, as does the amount of earnings. The latter is supported by the fact that migrants in high-wage EU countries usually remit more than migrants in the CIS states. Last, a second migrant in the family significantly reduces remittances,

which is not surprising, because then two or more migrants can share the burden of supporting the family (Görlich et al., 2006).

Concerning permanent and temporary migration much less preliminary information is available. An earlier survey conducted by CBS-AXA in 2004 found that at the time around 12% of all migrants expected their family member to stay abroad on a continuous basis, while another 65% expected the migrant to return only after having accumulated more savings (IOM, 2005). In the long run, the phenomenon of permanent migration can be expected to increase as indicated by a recent survey conducted by the International Republican Institute and Baltic Surveys Ltd. referenced in Cuc et al. (2005). According to this survey, 43% of all Moldovans under the age of 30 would like to migrate permanently and only a lower fraction of 33% indicate that they would prefer to leave the country on a temporary basis.

### 3.2 Data and Sample Description

The data used for the present study stems from a new cross-sectional household survey that has been conducted from June to August 2006 with the aim to obtain more information about migration and remittance patterns in the Republic of Moldova<sup>12</sup>. For the purpose of studying temporary and permanent migration, the data used is unique and exceptionally well-suited, because it contains not only information on migrants that are still considered part of the household, but also information on those migrants that are former household members, meaning that they have left for a long time (often permanently) to settle abroad. Thus, detailed information can be explored about a larger number of permanent migrants than is usually the case in source country micro datasets. Overall, the data at hand reports information of about 3940 randomly selected households from all over the country of which 1495 reported the migration behaviour of at least one current or ex-household member working abroad in either 2005 or during the first half of 2006. Since some of these households have several migrants abroad, the dataset comprises migration details of a total of 2081 migrants.

The survey contains screening questions directed at the household and demographic characteristics such as age, education, occupation or family status of all household members. The same demographic particulars were also collected for the household's migrants that are either family members or ex-family members or friends. Besides, additional detailed information about migrant family or ex-family members is available concerning their motivation to migrate, the country of departure, the number of leaves and the type of occupation abroad. Also, information about departure ways and the use of networks by these migrants is included. Other household questions comprise expenditures, cash or in-kind transfers sent or received, the use of these remittances as well as the household's perceived living standard in Moldova.

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<sup>12</sup>The survey was implemented by CBS AXA and financed by the Swedish International Development Cooperation Agency (SIDA)

### 3.2.1 The Sample

The sample used for this analysis contains personal characteristics of those 1618 migrants and their households (1218) for which information about the return plans of the migrant and about the most important other variables is available<sup>13</sup>.

Information about whether someone migrates legally, works legally, has a residence permit abroad is sensitive and difficult to obtain. Hence, for these three questions, if the answer was refused or left a blank, it was assumed that the answer should have been "illegal". Furthermore, around 100 respondents did not want to answer the question whether the respective migrant received help at destination or by whom. In those cases it was assumed that some form of help was available, possibly by illegal facilitators. Last, the response rate for the year of first departure and for the amount of years a family receives remittances was low when compared to other questions. In these cases the answer was imputed based on information of migrants with similar characteristics.

## 3.3 Descriptive Statistics

The descriptive statistics in Table 1 give a summary overview over the data at hand as well as a first indication in how far the group of permanent migrants differs from the one of temporary migrants. In Table 1, the variables included in later analysis are listed and grouped according to remittance indicators, personal characteristics, migration information, network information and household variables. In the three columns of the table, the overall mean, the mean for permanent migrants and the mean for temporary migrants of each variable are reported. Furthermore, in the last column the difference in mean is assessed either by means of a t-test if the variable is comprised of normal data or by a Pearson's chi-square test for the difference in the frequency of categorical variables.

### 3.3.1 Description of Variables

Table 1 shows that the largest fraction in our sample consists of temporary migrants, indicating that this is the form of migration that occurs most often in Moldova (IOM, 2005; Cuc et al., 2005)<sup>14</sup>. The variables on a migrant's personal characteristics comprise a migrant's age, gender, education and whether he or she is married. Furthermore, this category includes whether a person holds the Moldovan nationality and whether he or she is a student. Migration information is a set of variables that mainly contains information about the costs and benefits of staying and returning. The latter include not only information about the legal status of the stay abroad but

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<sup>13</sup>Note that the answer to the questions concerning migration was either given by the migrant himself or, if not currently present in the household, by another family member.

<sup>14</sup>It has to be acknowledged that only those permanent migrants are comprised in the analysis that are still in contact with their (ex) families, i.e. the amount of permanent migrants in the sample is likely to be biased downwards.

also about motives for migration that can give further hints with respect to costs and benefits. Likewise, these variables include a dummy for the destination as a proxy for living conditions, earnings possibilities and the cost of migration.

Concerning migration networks, the list of variables includes indicators as to whether a migrant received help at destination or whether his family is present abroad. It is hypothesized that the presence of other migrants ensures that part of the own culture is exported to the foreign country encouraging a longer stay. Furthermore, for the phenomenon of "herding" is accounted for by including a variable that comprises the information of whether a migrant knows other migrants and whether there is a high prevalence of permanent and temporary migration from the region of origin in Moldova.

Next to personal, migration and network variables, another important set of variables included are those characteristics that can be attributed to the migrants' households. The latter include the household size, the percentage of children or highly educated household members as well as information about the residence area and perceived living standard. Similar to other indicators of migrant satisfaction, a high (low) perceived living standard in Moldova should increase the probability to return (stay).

Regarding the remittance behaviour, the dependent variable included in later analysis evaluates the overall amount remitted by the migrant. A first nonparametric comparison shows that remittances tend indeed to be higher if a migrant plans to stay only temporarily.

### 3.3.2 Prima Facie Comparison of Groups

The information about differences in mean and frequency in Table 1 give a first indication about what characterizes the two groups of migrants under scrutinization. Concerning personal characteristics, it can be observed that it is merely the education level and the nationality that distinguishes permanent from temporary migrants. Among the group of permanent migrants the percentage of people with tertiary education is about ten percentage points higher than for the group of temporary migrants, while the reverse is true for nationality. Astonishingly, the two groups do neither significantly differ with respect to age, nor with respect to the family status. Furthermore, around 60% of temporary migrants are male while this is true for less than half of the permanent migrants, reflecting the dichotomy of Moldovan migration described earlier.

Other eye-catching differences displayed in Table 1 are those variables that reflect the general satisfaction of a migrant or his family with the situation in Moldova. The fact that a much larger fraction of permanent migrants left for the reason of a better life abroad confirms the presumption by Glytsos (1997) that the mere purpose of migration for permanent migrants is migration itself, while for temporary migrants it is raising money to increase

# Come Back or Stay? Spend Here or There?

Variable	Means			Person $\chi^2$ or t-test	
	overall	perm.	temp.	comp.	means/frequ.
N	1618	479	1139		
% of sample	100	29.60	70.40		
<b>Remittances</b>					
Remitter (yes=1)	44.81	39.25	47.15	$\chi^2$	8.51***
Amount remitted (all) <sup>‘</sup>	1155.08	639.34	1335.64	t	-5.97***
Remit (below 25% of wg) <sup>“</sup>	24.62	46.78	17.08	$\chi^2$	82.64***
Remit (25-50% of wg) <sup>“</sup>	27.45	24.03	28.61	$\chi^2$	1.83
Remit (50-75% of wg) <sup>“</sup>	21.24	10.73	24.82	$\chi^2$	20.63***
Remit (75-100% of wg) <sup>“</sup>	19.06	3.43	24.38	$\chi^2$	49.44***
<b>Migrant characteristics</b>					
Age	35.31	35.2	35.35	t	0.89
Gender (male=1)	57.85	48.85	61.63	$\chi^2$	22.59***
Married (yes=1)	72	71.61	72.17	$\chi^2$	0.05
At most primary edu (yes=1)	5.32	4.8	5.53	$\chi^2$	0.36
At most secondary edu (yes=1)	34.92	28.18	37.75	$\chi^2$	13.59***
At most tertiary edu (yes=1)	59.77	67.01	56.72	$\chi^2$	14.87***
Nationality (Moldovan=1)	73.49	68.68	75.5	$\chi^2$	8.05***
Student (yes=1)	8.96	14.41	6.67	$\chi^2$	24.71***
<b>Migration information</b>					
Legal migrant, last time (yes=1)	76.33	82.25	73.84	$\chi^2$	13.22***
Residence permit (yes=1)	71.69	84.34	66.37	$\chi^2$	53.65***
Migrate to invest, bus + hh-inv. (yes=1)	14.46	10.65	16.07	$\chi^2$	8.01***
Migrate because unemployed (yes=1)	34.30	31.32	35.56	$\chi^2$	2.69
Migrate to inc. daily cons. (yes=1)	41.84	26.1	48.46	$\chi^2$	69.33***
Migrate because life abroad is better (yes=1)	8.9	24.43	2.37	$\chi^2$	202.31***
Migrate to CIS (yes=1)	59.77	47.39	64.97	$\chi^2$	43.33***
Migrate to EU (yes=1)	29.79	35.49	27.39	$\chi^2$	10.57***
Average year of first departure	2000.45	1998.48	2001.28	t	-9.24***
Work abroad legally?	74.91	84.34	70.94	$\chi^2$	32.23***
Work abroad in low-wage sectors <sup>+</sup>	52.9	36.95	59.61	$\chi^2$	69.50***
Work abroad in low-med wage sectors <sup>++</sup>	21.76	26.51	19.75	$\chi^2$	9.05***
Work abroad in up-med. wage sectors <sup>+++</sup>	8.47	15.03	5.71	$\chi^2$	37.83***
Work abroad in high-wage sectors <sup>++++</sup>	10.69	13.78	9.39	$\chi^2$	6.79***
<b>Network Information</b>					
Contact to other migrants (yes=1)	75.59	72.03	77.09	$\chi^2$	4.67**
Help at destination (yes=1)	61.06	58.66	62.07	$\chi^2$	1.65
Family at destination (yes=1)	37.45	38.83	36.87	$\chi^2$	0.55
Permanent migration in district of origin (%)	5.62	6.3	5.32	t	7.98***
Temporary migration in district of origin (%)	13.51	11.88	14.2	t	-9.07***
<b>Household Variables</b>					
HH-size	3.83	3.11	4.13	t	-12.77***
% of hh-members that are children ( $\leq 15$ )	13.76	8.38	16.02	t	-8.33***
% of hh-members that have higher education	57.96	83.48	47.23	t	10.77***
Sex of hh-head (male=1)	78.92	69.52	82.88	$\chi^2$	37.76***
Age of hh-head	50.32	54.93	48.38	$\chi^2$	8.98***
Residence area (urban=1)	30.22	45.72	23.71	$\chi^2$	77.50***
Living standard today: very good or good (yes=1)	25.15	21.09	26.87	$\chi^2$	5.98**
Living standard today: satisfactory (yes=1)	49.51	50.31	49.17	$\chi^2$	0.18
Living standard today: bad/very bad (yes=1)	24.41	27.97	22.91	$\chi^2$	4.68**
Test for equal variances:	<sup>+</sup> agriculture, mining & industry, const.			<sup>‘</sup> (N=725)	
Barlett's $\chi^2$	<sup>++</sup> services, culture & arts, healthcare			<sup>“</sup> (N=918)	
Test for equal means:	<sup>+++</sup> trans., comm., educ.				
t-test for normal variables	<sup>++++</sup> trade, non-gov. sector, finances				
<i>Pearson - <math>\chi^2</math> test for categorical (binary) variables</i>					

Table 1: Summary statistics for permanent and temporary migrants, Moldova 2006

consumption. Besides, a large fraction of permanent migrants' households think that their present living standard is bad or very bad indicating that perceived poverty functions as another push factor for permanent migration.

As far as household characteristics are concerned, households with temporary migrants have on average one member more than households of permanent migrants. Furthermore, permanent migrant households have fewer children, are more often headed by a female and/or older person and are more often located in urban Moldova. Last, the legal conditions, the respective earnings possibilities as well as the prevalence of other migrants with the same return intension in the home district seem to be important determinants or return.

## 4 Empirical Analysis

This section comprises the empirical analysis including a presentation of the methodology, the major findings and their interpretation. In a first instance, the determinants for the decision to stay permanently are scrutinized, closely followed by an examination of the respective remittance patterns of both groups of migrants.

### 4.1 Determinants of the Decision to Leave Permanently

This first part of the empirical analysis examines the factors that influence the return decision as well as the most important differences of characteristics across groups. The decision between staying abroad or returning home is a qualitative and mutually exclusive choice that can best be estimated by a standard probit model. To this end a variable is defined with

$$Y = \begin{cases} 0 & \text{stay temporarily;} \\ 1 & \text{stay permanently.} \end{cases} \quad (1)$$

This variable expresses the decision to stay or return that is assumed to be taken by each individual migrant who seeks to maximize utility. As described earlier, the latter is related to a range of observable migrant and household characteristics. The probit model

that estimates this relationship by means of log-likelihood estimation has the following functional form:

$$\text{Prob}(y = 1|X) = \phi(X'\beta). \quad (2)$$

Here,  $\beta$  denotes a vector of coefficients and  $\phi$  the standard normal distribution. Correspondingly,  $X$  is a vector of variables that comprise household variables, individual migrant's characteristics as well as general migration and network information. For convenience of interpretation, marginal effects are estimated, evaluated at the sample means of the data.

The results of this estimation are displayed in Table 2 and comprise the analysis of the sample of 1618 migrants from 1202 different households. As shown by the significance of coefficients, household variables, indicators of relative wages as well as the perceived living standard at home and abroad influence the likelihood to migrate permanently.

Concerning personal characteristics, the age of the household head has a small but significantly positive effect on the decision to migrate permanently. Yet, this positive coefficient partly expresses that permanent migrants usually "transfer" the position of the household head to their parents, while temporary migrants are more likely to continue to function as household head even if they migrate abroad. Other household characteristics that are quantitatively more important for the decision to migrate permanently are the number of persons in the household, the number of adults with higher education and the household location. The negative and highly significant coefficient for the number of household members indicates that one additional person living in the household decreases the probability of permanent migration by around 5%. This seems to prove true the presumption that a larger family decreases the propensity for permanent migration, because it means a "loss" of many loved ones. Besides, for a large family it is more costly to take all family members along when migrating permanently. With this in mind, it may seem astonishing that the coefficient for the percentage of household members being children is insignificant. In fact, this reflects the well-known social problem of many deserted children in Moldova, who are (too) easily left behind by their migrating parents (Rooke, 2007).

The dummy variable indicating whether a household is located in urban Moldova is significantly positive meaning that an urban household location increases the likelihood of permanent migration by around 10%. The reason is possibly that community ties are much



lower in cities than in the countryside, decreasing the emotional costs of staying abroad. Besides, city dwellers tend to be better informed about the situation abroad and thus more prone to choose a "high-quality-of-life" destination. The same is true for households with a higher general education level as expressed by the positive coefficient of "percentage of adults with higher education". Furthermore, a large number of well-education adults in the household imply a high probability for the migrant himself to have a good education, which in turn raises his/her earning possibilities abroad as well as the likelihood to stay legally (Drinkwater et al., 2003). With respect to this argumentation, it is astonishing that the dummy indicating whether a migrant has tertiary education is significantly negative. A possible reason for this negative coefficient could be, however, that better educated people cannot only expect higher earnings abroad, but also more attractive employment possibilities in the home country encouraging return. Moreover, it should be noted, that the variables for the number of household members, urban location and the number of people with higher education express family wealth and the possibility to finance migration to a high-wage/high living standard country. In fact, most of the poorer and less-well educated population in Moldova live in the countryside and mostly in large families. These households are less able to finance migration to an attractive EU country, but send their migrants mostly to Russia to raise money for consumption (Munteanu, 2005a).

In line with this statement that a richer household means a better choice of destination and the ability to incur higher migration costs, it amounts strangely that the coefficient for a good/very good living standard is significantly negative. Furthermore, a look at the coefficients indicates that migrant stemming from a household, which perceives its living standard as good or very good is around 8% less likely to leave the country permanently than someone from a household who thinks its living standard is bad or very bad. This shows that the perception of living standards expresses not overall poverty, but rather overall satisfaction with the personal economic situation in Moldova. If satisfaction is high, the probability to migrate permanently decreases. The latter fact is supported by the high positive coefficient of "better life abroad", which indicates that migrants who leave because they think that life abroad is better are almost 50% more likely not to return afterwards.

Personal characteristics, which make up for the second block of variables included in the model, are of astonishingly little importance for the decision to migrate permanently. The coefficient of age is negative and significant as expected, because younger migrants face lower costs of integration abroad. The coefficient shows that with every year a migrant is older, the likelihood of staying abroad increases by around 0.7%. The coefficient for citizen-



Variables	1	2	3	4
<b>Household info:</b>				
No of people in hh	-0.0439*** (-4.13)	-0.0494*** (-4.61)	-0.0455*** (-4.39)	-0.0505*** (-4.85)
% of Children (< 15) in hh	-0.0005 (-0.57)	-0.0003 (-0.31)		
% of adults with higher edu. in hh	0.0012*** (3.15)	0.0012*** (3.18)	0.0012*** (3.28)	0.0007** (2.28)
Age of hh-head	0.0038*** (2.9)	0.0047*** (3.53)	0.0039*** (3.22)	0.0043*** (3.51)
Urban	0.0946*** (2.73)	0.119*** (3.52)	0.0945*** (2.82)	0.0972*** (2.88)
Living standard bad	0.0366 (1.03)	0.0397 (1.14)	0.0369 (1.04)	0.0495 (1.4)
Living standard good	-0.0867** (-2.53)	-0.0602* (-1.69)	-0.0896*** (-2.64)	-0.0885** (-2.58)
<b>Personal characteristics:</b>				
Age	-0.007*** (-4.32)	-0.004*** (-2.67)	-0.0066*** (-4.41)	-0.007*** (-4.66)
Male	-0.0551* (-1.85)	-0.0543* (-1.85)	-0.0573* (-1.93)	-0.0461 (-1.59)
Married	0.0157 (0.5)	0.0436 (1.39)		
Primary Education	-0.0552 (-0.99)	-0.0334 (-0.58)		
Tertiary Education	-0.098*** (-2.67)	-0.0749*** (-2.05)	-0.0953*** (-2.67)	
Moldovan	-0.0084 (-0.26)	-0.007 (-0.22)		
Student	-0.0318 (-0.67)	0.0238 (0.52)		
<b>Reason for migration:</b>				
To invest	-0.0218 (-0.54)	-0.0249 (-0.63)		
To increase daily cons.	-0.1039*** (-3.53)	-0.1192*** (-4.15)	-0.1009*** (-3.46)	-0.095*** (-3.27)
Better life abroad	0.4983*** (7.71)	0.5066*** (8.47)	0.4959*** (7.61)	0.4951*** (7.61)
<b>Ease of migration/stay:</b>				
Legal migration	-0.0022 (-0.06)			
Residence Permit	0.1079*** (3.09)		0.1074*** (3.19)	0.1066*** (3.21)
Legal Employment	0.0751** (2.1)		0.0746** (2.1)	0.0726** (2.02)
<b>Wage info:</b>				
Low-wage sector	-0.0286 (-0.77)	-0.0667* (-1.91)	-0.0244 (-0.65)	-0.0214 (-0.57)
Upper-middle wage sector	0.1712*** (3.01)	0.1821*** (3.39)	0.1687*** (2.94)	0.1705*** (2.98)
High-wage sector	0.0568 (1.16)	0.0207 (0.44)	0.0577 (1.15)	0.0543 (1.1)
CIS	-0.1712*** (-3.98)		-0.1656*** (-3.87)	-0.1608*** (-3.78)
EU	0.0196 (0.44)		0.0214 (0.48)	0.015 (0.34)
Year of first departure	-0.0229*** (-5.72)		-0.0231*** (-5.78)	-0.0231*** (-5.88)
<b>Network variables:</b>				
Know a migrant	-0.0119 (-0.32)	-0.0139 (-0.37)	-0.0529* (-1.75)	
Help at destination	-0.0511* (-1.66)	-0.0523* (-1.76)		
Family at destination	0.0402 (1.24)	0.0459 (1.43)		
% of people in district that are permanent migs	0.032*** (4.98)	0.0305*** (4.7)	0.0311*** (4.93)	0.0309*** (4.87)
% of people in district that are temporary migs	-0.0081** (-2.33)	-0.0101*** (-2.89)	-0.0082** (-2.45)	-0.0077** (-2.31)
Constant	yes	yes	yes	yes
N	1618	1618	1618	1618
Log likelihood	-634.426	-694.005	-636.833	-642.969
AIC	588.486	620.938	584.126	593.559
Pseudo $R^2$	35.45	29.39	35.21	34.58
***, ** indicates significance at 10%, 5% and 1% level respectively; observations are clustered by household, robust standard errors reported; probability change (%) in response to a change of the regressors at mean				

Table 2: Regression results for the marginal effect on the decision to stay permanently

ship also has the expected signs, but is not significantly different from zero. Astonishingly, also the family status seems to have no influence on whether someone wants to stay abroad or not. However, since the data contains no information about whether the partner of a particular migrant is abroad or in Moldova, one may presume that those migrants who decided to leave permanently have either already taken their families abroad or are planning to do so. This presumption is reinforced by the positive coefficient for "family at destination" in the bottom part of Table 2. The coefficient for the gender dummy is negative and slightly significant, which merely reflects the dichotomy of migration in Moldova, i.e. that it is mostly women who manage to find well-paid job in Western European households.

Turning to the migration information, the previous migration duration as well as the legal status of migration and employment matter for the decision to return. First, the coefficient for the year of first departure is significant and indicates that with every year a migrant stays abroad longer, his probability of wanting to return decreases by around 2%. Second, the coefficients of "residence permit" and "legal employment" indicated that a legal residence status abroad together with a legal opportunity to work increase the likelihood to stay by around 20%. Again this reinforces the hypothesis that the utility of staying abroad raises considerably if the stay is legalized and emotional stress from fears of getting caught in illegal work or stay are reduced. Besides, both a residence permit and legal work probably increase the job opportunities and the wage earned abroad, which provides a further incentive to stay (see e.g. Dustmann (2003)).

This hypothesis of a higher relative wage to be earned abroad or better job opportunities is also reflected in the impact that sectoral employment has on the probability of return. The results indicate that those migrants who find employment in transport, communication or education are less likely to return than their counterparts in low-wage sectors such as construction and agriculture. Yet, the sector effect does not vanish even if the destination is included as a variable. Instead, the coefficients for the destination and especially the significantly negative sign for the CIS destination ascertain the presumption that a lower wage abroad and a lower general living standard decrease the propensity to stay considerably (17%).

Last, concerning network effects the findings show a certain degree of "herding" in the migration behaviour and give an indication for the fact that permanent and temporary migrants make use of different types of networks. Hence, while it is largely unimportant whether a migrant receives help at destination, knows other migrants in general or has already some part of the family in the foreign country, it is very important whether there

exist many other temporary or permanent migrants in the district of origin<sup>15</sup>. This shows that individuals that know many other migrants from their region that having migrated with a particular return intention are likely to imitate their behaviour and also obtain access to different types of networks.

Several robustness checks have been performed to see how the significance of variables changes with different model specifications and to the inclusion of further variables. First of all, the variable "year of first departure" was dropped, because uncertainty in the imputation adds extra variance that can generate a bias of results and give incorrect standard errors and test statistics. Yet, the exclusion of that variable hardly affects the coefficients or standard errors of the other variables. As a second specification check, the variables indicating legal migration, legal employment and residence permit were dropped, because a certain degree of endogeneity bias may arise from these variables as those migrants that want to stay permanently will also be more likely to make an effort to obtain a correct legal status for migration and work. Again the results are not much affected except for the fact that the dummy for employment in low-wage sectors suddenly becomes significant if "residence permit" is dropped, indicating that people in low-wage sectors have more difficulties to obtain a legal status.

Apart from the variables reported in the output, several other specifications have been examined. Thus for example, the number of elderly household members was included in the model as well as a variable for the number of male or female household members, but both variables proved insignificant. Apart from that "age<sup>2</sup>" also proved insignificant indicating that there is no non-linear relationship between the age of a migrant and his/her return decision. Last, it was examined whether a larger migrant community at destination would have an effect on the return decision, assuming that more peers abroad increase the likelihood of stay. Yet, all variables that reflect the size of the migrant community were also found to be insignificant.

## 4.2 The Influence of the Return Decision on Remittances

The present section focuses on the question in how far the return decision influences the height of remittances to be explained by a difference in motives for sending money home. The latter is assumed to be merely altruistic for permanent migrants, while it can be shown that temporary migrants view the sending of remittances as a special form of saving.

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<sup>15</sup>Moldova counts 36 districts. In every district around 350 people were sampled of which around 50 are migrants.

Dep. Var Variables	Remittances		
	Tobit 1	Tobit 2	Tobit 3
Permanent Migrant	-0.3051** (-2.11)	-0.2757** (-1.96)	-0.2772** (-1.99)
<b>Controls</b>			
No of people in HH	0.071* (1.82)	0.0812** (2.2)	0.0786** (2.14)
% of Children (j15) in hh	0.0039 (1.19)		
No of migrants from HH	-0.2208*** (-3.05)	-0.2293*** (-3.23)	-0.2273*** (-3.21)
Nuclear	0.3212** (2.25)	0.3631*** (2.78)	0.3624*** (2.79)
Liv. stan. before mig.: good	0.515*** (4.64)	0.5030*** (4.54)	0.5005*** (4.54)
Liv. Stan. before mig.: bad	-0.1314 (-0.55)	-0.1399 (-0.59)	-0.1334 (-0.57)
Age	-0.002 (-0.31)	-0.0033 (-0.55)	-0.0033 (-0.55)
Male	0.0206 (0.16)		
Married	0.1208 (0.89)		
Primary Edu	0.0219 (0.08)	0.0432 (0.15)	0.0527 (0.19)
Tertiary Edu	0.1672 (1.47)	0.1578 (1.39)	0.1488 (1.34)
Low-wage sector	-0.0123 (-0.08)	0.0391 (0.3)	
Upper-middle wage sector	-0.1248 (-0.53)	-0.0365 (-0.16)	
High-wage sector	-0.0665 (-0.34)	-0.1016 (-0.52)	
EU	0.3198* (1.68)	0.3101* (1.65)	0.4206*** (3.75)
CIS	-0.1042 (-0.54)	-0.1257 (-0.67)	
Seasonal Migrant	-0.1299 (-1.02)		
Years remitted	0.0008*** (6.05)	0.0008*** (6.17)	0.0008*** (6.25)
<i>Yearsremitted</i> <sup>2</sup>	-0.0000*** (-4.41)	-0.0000*** (-4.51)	-0.0000*** (-4.56)
Constant	5.5019*** (16.13)	5.5800*** (16.8)	5.4906*** (19.09)
N	713	713	723
Log likelihood	-1239.753	-1241.540	-1242.080
AIC	2523.505	2519.081	2512.161
Pseudo <i>R</i> <sup>2</sup>	6.08	5.95	5.91
Left-censored obs. (<= 0)	16	16	16
Uncensored obs.	697	697	697
Right-censored obs. (<= 0)	0	0	
*, **, *** indicates significance at 10%, 5% and 1% level respectively observations are clustered by household, robust standard errors reported			

Table 3: Remittances and HH-savings (marginal effects)

To evaluate the benefits of repatriation, it is examined how the return decision affects the amount of remittances sent by each migrant<sup>16</sup>. The dependant variable, remittances, is limited to the non-negative range and contains relatively many zeros, as around 80 migrant families indicated that they received zero remittances. Out of these, only those migrants are included that are abroad for longer than six months, which is assumed to be the time it may take to find a job and start remitting. To adequately deal with the problem of zeros, a tobit model is estimated, where the zero observations are treated as corner solutions and are censored in the left tail of the distribution

$$y^* = X'\beta + \epsilon \quad , \quad (3)$$

where  $y = 0$  if  $y^* \leq 0$  and  $y = y^*$  if  $y^* > 0$ . Here, again  $X$  is a vector of variables, including a dummy for staying permanently, personal, migration and household characteristics. To ensure homoscedasticity the dependent variable "amount remitted" was transformed by taking logarithms after adding an arbitrary constant (1) to each observation ( $\ln(y+1)$ ). The results of the tobit estimations are displayed in Table 3. Next to personal, migration and household variables, three new variables were included as control. First, "nuclear" was constructed as a dummy to indicate whether a migrant's nuclear family is still living in Moldova. Second, "seasonal" signifies whether an individual only migrates seasonally, i.e. whether she never stays abroad longer than for six months in a row. Third, the number of years that a migrant is already sending remittances is included, as several studies show that remittances usually increase over the years as a migrant gains experience on the foreign labour market (see e.g. Borjas (1985)). After some time, remittances then usually decrease again as the migrant becomes more and more detached, for why a squared term of "years remitted" has to be included as well.

As expected, the coefficient for "permanent" is significantly negative, indicating that migrants who choose to stay permanently abroad remit a lower overall sum. To learn something about the size of this impact the marginal effects were computed. The latter are displayed in Table 3 and show that the amount remitted is on average reduced by around 30% if a migrant decides to stay abroad permanently. This is an astonishingly large difference in absolute terms, especially when considering that most temporary migrants reside in low-income countries. For developing countries like Moldova that have high migration

<sup>16</sup>The survey contains information about the overall amount of remittances sent by each migrant. Yet, the answers given to these questions are often missing, which leads to a further reduction of the sample size (713 migrants, 621 households).

prevalence, repatriation of migrants thus seems paramount to ensure high remittances.

One possible explanation for the discrepancy in the respective amount remitted is that temporary migrants consider remittances indeed a special form of saving, i.e. they remit with the intention that the money will be saved in the home country. This is congruent with the findings of previous studies indicating that temporary migrants work harder and save more than do permanent migrants (Galor and Stark, 1990, 1991).

Robustness checks have again been performed for this part of remittances and home saving. It is found that the impact of "permanent" on the amount remitted is significant and robust to the inclusion of other variables and or after sample restrictions. To further ascertain this result an ordered probit model has been estimated using not the overall amount remitted, but the fraction of income sent home by each migrant (not displayed). The results of this estimation are even more significant than the tobit results and attest that temporary migrants are also more likely to remit a larger fraction of their income than permanent migrants do.

## 5 Conclusion

The present research sheds some light on the issue of temporary and permanent migration not only with respect to the determinants of the migrants' return decision, but also concerning their remittance behaviour. On hands of new and unique dataset of the Republic of Moldova, it was examined how temporary and permanent migrants differ in their characteristics, offering additional insights about what influences the return decision. Furthermore, the difference in remittances sent between these two groups of migrants has been assessed.

Concerning the decision to stay abroad, this research reveals that the four key determinants for the return decision relate to the existing relationships at home and abroad, to the perceived economic situation in the source country, the sector of employment at destination and the legal status of a respective migrant in the host country. First, the findings show that emotional ties with many loved ones at home reduce the likelihood of leaving permanently, while family presence abroad increases it. At the same time, the number of children (younger than 15) in the household has a rather low influence on the return decision. Instead, "herding" effects seem to be strong as migrants are much influenced in their return decision by the behaviour of other migrants from the same district, indicating that networks differ for temporary and permanent migrants. Second, a considerable push

factor seems to be frustration with the economic situation at home and abroad. Third, a high relative wage earned seems to foster the stay abroad as does a longer migration experience. Last, if residence and work abroad is legalized, this considerably reduces the likelihood of return.

With respect to the remittance patterns of temporary and permanent migrants, the results provide some evidence that temporary migrants remit around 30% more per year than permanent migrants do. This is a very surprising and relevant result for the case of Moldova as temporary migrants often reside in lower income countries than their permanent counterparts. These findings underline the presumption that temporary migrants transfer most utility enhancing behaviour to a point after return, i.e. that remittances and savings are the main purpose of migration.

Policy implications arising from the present study suggest that it is in the interest of source countries like Moldova to foster the return of migrants to ensure higher remittances in the form of "home savings". Furthermore, with respect to their characteristics, this study shows that Moldova's permanent migrants stem for the most part from richer and better educated households, i.e. that have good chances to succeed at home and abroad. Thus, the present study shows that it should be a special interest by migrant sending countries to support temporary migration programs, to provide incentives for migrant repatriation and for the evolution of a Diaspora. Such migration policy design should consider cooperation between migrant sending and migrant receiving countries, the optimal length of legal residence granted, the choice of migrants that can obtain a legal status and foremost the appropriate measures that could function as an incentive to eventually return to the host country.

Although this study provides important new home country insights on temporary and permanent migration, it is limited for two reasons. First, the results are not per se generalizable as there may exist differences in social norms and expectations concerning the return of migrants and their remittances. Hence, similar analysis for other countries would provide valuable insights in this respect. Second, due to the lack of a time dimension we could not account all unobservable migrant characteristics, which may affect the results. Future research should thus be directed at repeating this analysis for other countries, but also to further disentangle the mass of migrants. Besides, it would be interesting to see how permanent migrants or migrants without family in the home country could be induced to remit part of their income for investments in the sending country. Here, financial market development and remittance investment channels merit further investigation.

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