A Gendered Approach to Temporary Labour Migration and Cultural Norms. Evidence from Romania

Raluca Prelipceanu

Documents de Travail du
Centre d'Economie de la Sorbonne

CES Working Papers

A Gendered Approach to Temporary Labour Migration and Cultural Norms. Evidence from Romania

Raluca PRELIPCEANU

2008.74

CENTRE NATIONAL
DE LA RECHERCHE
SCIENTIFIQUE

Maison des Sciences Économiques, 106-112 boulevard de L'Hôpital, 75647 Paris Cedex 13
http://ces.univ-paris1.fr/cesdp/CES-docs.htm
ISSN : 1955-611X

A Gendered Approach to Temporary Labour Migration and Cultural Norms. Evidence from Romania[*]

Raluca Prelipceanu[†]

Abstract[*]

This paper analyses the determinants of the Romanian temporary labour migration during the transition period. First of all, we build a household level model in order to explain the decision to migrate in a couple. Then, by using a 10% sample of the Romanian 2002 Census we try to assess the importance of the gender bias for the migration decision. The main questions raised are "Do migration determinants differ according to gender?" and "Do local norms influence the propensity to migrate of women and that of men?". Our results prove the existence of important differences between the migration decision of men and that of women as well as the influence of cultural norms on gender roles on the latter's decision to migrate.

Keywords: temporary labour migration, gender inequality, household production, social norms

JEL classification: R23, J16, D13, 012

[*] [†] CES, University of Paris 1 Panthéon Sorbonne, 106-112 bd. de l'Hôpital, 75013 Paris, France
tel.: (+33) 612575516 Raluca.Prelipceanu@univ-paris1.fr and Centro Studi Luca d'Agliano (LdA).

[*] We thank Catherine Sofer, Alessandra Venturini, Olivier Donni, Olivia Ekert-Jaffé, Maria Laura di Tommasso, Michel Sollogoub and Dumitru Sandu for their suggestions. We are grateful to the Minnesotta Population Centre for providing the data and to the Robert Schuman Foundation for financial support. All remaining errors are ours.

"Gender is deeply embedded in determining who moves, how those moves take place, and the resultant futures of migrant women and families"(Monica Boyd).

Introduction

Women account for almost half of the stock of total migrant population at the world level (World Bank 2007). Since the 1960s the part of women in international migration flows has been on a constant rise. In spite of their growing importance in migration flows, research on the migration of women has been until now scarce. Furthermore, research on women migration has focused so far mainly on women migrating to North America. Studies that consider women migration in Europe are even scarcer and usually consider migrants in their countries of destination. Therefore, the interest of our study lies both in its focus on women's migration and on a new EU country.

Officially, Romania is considered to be the source country of about two and a half million migrants out of which more than half are females (NID 2007). In fact, the actual number of migrants is underestimated. Most of these migrants are young, over 50% of them being in the 26-39 age range. The part of women in migration flows from Romania has been steadily increasing since 1990 (see Appendix II). In 1992, women accounted for 51.63% of the permanent migration flows. Their part had reached 62.42% by 2005 (NIS 2006). According to NIS in 2006 highly-skilled migrants accounted for about 13% of total flows. The migration of young women triggers a double loss for the state of origin. First of all, it represents a loss in terms of their own human capital. This loss can be quite important as women's domination in highly-skilled migration flows from Eastern Europe was long acknowledged by migration specialists (Badie and de Wenden 2001), Romania making no exception to this trend. In addition, considering their age, most of these women are potential mothers, engendering another decrease in human capital by the loss of potential unborn population. Thus, women's migration contributes through its direct and indirect component to the overall decrease in Romanian population. This decrease has reached important figures and cannot be overlooked. It is estimated that between the last two censuses in 1992 and respectively 2002, Romania lost 1.1 million inhabitants. This decrease represents almost 5% of the overall Romanian population (see Appendix II). Official recorded migration accounted for a mere 12% of this decrease, whereas the rest was due to the natural decrease (27%) and especially to unrecorded migration (78%).

Although women are dominant in permanent migration flows, in the case of temporary labour migration flows men account for the most important part. In addition to push factors at home like the level of unemployment and low income, the composition of temporary labour migration flows is also shaped by the structure of the demand at destination and by the migration laws adopted by the host countries.

Migration propensities also vary across regions within Romania, with some main sending regions where an important part of the labour force works abroad and others with very low migration rates. Whereas in some regions, migration is nowadays so embedded in social awareness that it has become a "rite of passage" for individuals as predicted by the cumulative causation theory (Massey, Goldring, and Durand 1994), it is unlikely that this 'social norm' applies also to women. One of the aims of our study is to find a possible explanation to this matter.

Why do we focus on women? There is nowadays a growing awareness on the part played by women in economic development. Studies show that gender is a critical source of intra-household heterogeneity that can shape resource allocations (Schultz, 1990, Udry 1996, Jacoby 1998, Duflo and Udry 2004) and that women's importance in the raising and education of children is crucial. As shown by several studies, women's preferences are more likely to be linked to their children's well-being than men's. For instance, Lundberg, Pollack and Wales (1997) looking into the changes brought by a British law that substitutes tax reduction for child benefits operated on fathers' paychecks with a direct cash payment to mothers, found that consumption patterns of households also changed, with a larger part of consumption expenditures going to clothes for children and women and less to alcohol and tobacco. Another study by Philips and Burton (1998) on Canadian couples also proves that child caring expenses were supported by women's exogenous income. Due to their role in child rearing women are directly involved in the human capital formation process which is a key variable in the endogenous growth theory.

Furthermore, women tend to remit a larger proportion of their resources than men, and focus those funds more on social welfare (UN 2006). Empirical studies show that women remit more than men and that they do so mainly for altruistic reasons performing an insurance function for their households, while men have more egoistic reasons (Lee et al. 1994, de la Brière 2002, Vanwey 2004). In Romania remittances have reached a very important level and stood at 4.3 billion euros in 2005, their amount being equal to inward FDI (NBR 2006). However, no study has tried so far to disentangle the origin of the remittance inflow.

In spite of this state of affairs, most of the studies on the determinants of migration do not take into account gender differences. Gender is used only as a control variable. However, it is most unlikely that man and women take the decision to migrate in the same way as determinants seem to differ between women and men. Empirical data show that migration patterns of men and women are different. Moreover, married women migrate less than men. This might be explained by the role men and women are supposed to play in society. Traditionally men have the culturally defined obligations of providing for the household and of protecting female members and dependants whereas women are responsible for domestic duties and play a key role in maintaining the integrity of the family (Le Vine 1993). Becker (1991) argues that the economic rationale for the fact that women are the main time contributors to domestic production lies in their comparative advantage in producing public household goods. On the other hand, migration prospects and patterns differ because women do not face the same income and employment opportunities neither in the home country nor in the foreign labour market. Moreover, due to the fact that men and women involve in different activities in their home country, the opportunity cost of migrating varies with gender as does the physical cost of migration. And last, risk aversion and perception of possible gain are different for women and for men.

Our paper is organized as follows: section two sets the background of our study. We proceed in section three with a review of the literature on the migration decision. Section four presents the theoretical model, whereas in section five we develop the empirical model. In section six we describe the data and the variables employed and in section seven we analyse our main results. Then we conclude.

2. Background

Gender is socially constructed. According to Monica Boyd (2003) gender represents a matrix of identities, behaviours, and power relationships that are constructed by the culture of a society in accordance with sex. The degree to which this social norm is binding varies across individuals and households as does the cost of deviating from the commonly accepted norm. This cost can be termed as social stigma. Link and Phelan (2001) consider that every stigma has four components explaining how stigma becomes a cost. In the first component of the stigma, people distinguish and label human differences. In the second, due to dominant cultural beliefs these labelled persons are linked to undesirable characteristics and to negative stereotypes. Then, they are placed in distinct categories in order to accomplish a separation of

“us" from “them". And last, labelled persons experience status loss and discrimination that leads to unequal outcomes.

However, gender is not immutable, but also prone to change and, in this sense, it is both socially constructed and reconstructed through time as the extent to which people believe in the norm is given by social interactions. By following the norm or departing from it, people can either reaffirm or change what gender means and how social relationships are built at a particular time and in a particular setting.

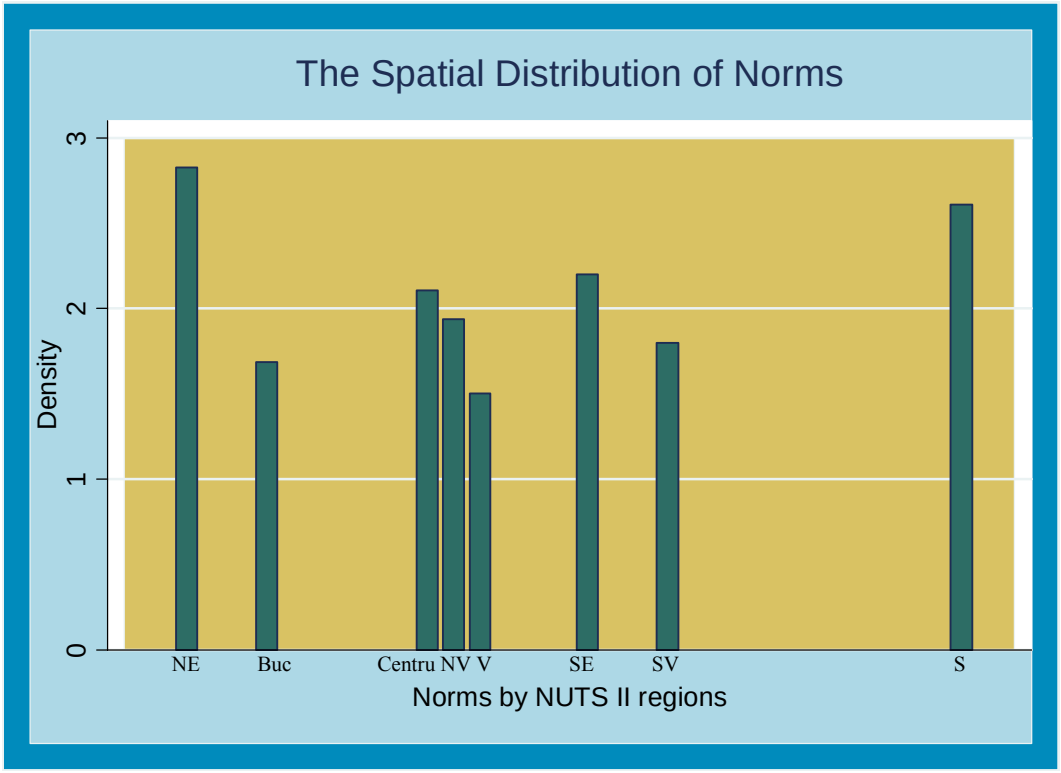
It is in this sense that the culture of the sending society plays an important part in determining the likelihood that women will migrate. As stated by Boyd (2003) a woman's position in her sending community influences at the same time her ability to autonomously decide to migrate and to access the resources necessary to do so and the opportunity she has to migrate.

How was gender defined in 2002 Romania? In 2002 many of the patriarchal values of a traditional society were still dominant in Romania especially in rural areas. Men are seen as income providers whereas women do most of the household chores.

The 2000 Romanian Gender Barometer shows the main roles assigned by society to men and women. Over 63% of the people interviewed considered that it is women’s duty more than men’s to undertake the housework and 70% said that it is men’s duty more than women’s to provide for their household. Moreover, 78% of the people think that a woman must follow her spouse. The majority (53%) also believe that men are not as able as women to raise children. In 83% of the cases the man is the head of the family. However, in the majority of cases (61%) the woman is seen as the mistress of the house and in almost half of the cases (45%) the woman decides how the income of the household should be spent. For 40% of the cases the budget allocation decision is taken jointly by both spouses. At the level of domestic activities, in almost 90% of the households interviewed women are the ones to do the cooking, the cleaning, to wash clothes and dishes and to do the ironing. In what child rearing is concerned, according to 70% of the respondents, women are those who look after the child daily, supervise his homework, take him to the doctor and collect him from school. Most of the men (76%) think that their wife is more skilled when it comes to these activities, though 71% of the interviewees consider that both parents should be involved in child rearing. At the same time, in 80% of the households, men wash the family car and do the plumbing. The 2002 National Report on the Equality of Chances between Men and Women also emphasizes the fact that women involve in bringing up children, taking care of the elderly and other household activities like cooking or doing the laundry, whereas the main role of men is to

provide for their household and to do small household jobs like plumbing. All this points to a clear gender division when it comes to domestic tasks.

Figure 1



On the Romanian labour market women work mostly in the health sector, financial services, education, in trade and telecommunications and in agriculture. In 2002, the average wage gap between men and women stood at 8.5%. This wage gap can be explained partly by gender discrimination and partly by differences in skills. However, these differences could also be triggered to a certain extent by discrimination. Due to the socially assigned roles, women are less likely to invest in skills that could be useful on the labour market and throughout their life acquire skills necessary to domestic production in which they are prone to specialize. Baker and Jacobsen (2005) emphasize that while this customary gender distribution of labour determines skill acquisition and improves household efficiency, it clearly disadvantages one gender.

3. Literature Review

Most of the models taking into account migration have thus far considered migration either as being an outcome of a decision process at the level of the household or of an individual decision making process.

The beginnings: the individual migration model

In the seminal work by Todaro (1969) and in that of Harris and Todaro (1970) migration occurs as a consequence of income maximization. The decision is taken at the individual level following a cost-benefit analysis. Thadani and Todaro (1984) admit that while these models can explain male migration, they are not fit for women's migration. The individual model does not allow for differences in the determinants of migration between men and women failing to explain the gender selectivity of internal migration except with reference to individual income and employment differences. Therefore as Thadani and Todaro (1984) argued it is "sex-specific … to male migration" and as a consequence "special … rather than general". The Thadani and Todaro (1984) model suggests that a distinguishing feature of female internal migration compared to male migration is the importance of marriage as a reason to migrate. However, tests run by Behrman and Wolfe (1984) and by Findley and Diallo (1993) prove that while women's migration may seem social in nature it is determined mainly by economic variables at destination.

The joint-migration model

One of the drawbacks of the Todaro model is that it treats migration as an individual, as opposed to a household-level decision. Even if migration might occur in response to expected income differentials (among other factors), it is unlikely that individuals make the decision to move without considering the household of which they are a member.

We now turn to a strand of literature that attempts to address this issue. The first contribution placing the migration decision at the level of the family is that of Mincer (1978) who argues that migration is motivated by the "net family gain rather than net personal gain". His model considers that migration is undertaken jointly by family members so that some family members may be "tied movers" or "tied stayers" (Mincer 1978). A tied mover is one whose individual gain from migration is negative when the overall family gain from migration is positive. In contrast, a tied stayer is one whose individual gain from not migrating is negative when the overall family gain from not migrating is positive (Pfeiffer et al. 2007). According to Compton and Pollack (2004) women are more likely than men to be tied movers, while men are more likely to be tied stayers than tied movers. Frank (1978) argues that expectations of migration based on the maximization of net family welfare could explain the male-female wage gap. As their opportunity set is limited by their spouses' location choices, women do not have an incentive to invest in their own human capital. One of the joint model's drawbacks is that it does not consider possible frictions between household members over migration

decisions (Cooke 2003). It is assumed that each individual is endowed with the same bargaining power. The tied mover hypothesis has been empirically tested both for developed and developing economies and internal and international migrants. Studies of couple migration by Spitze (1984), Bird and Bird (1985), Morrison and Lichter (1988), Shihadeh (1991), Cackely (1993) Cooke and Bailey (1996), and Jacobsen and Levin (1997) are consistent with this joint-migration framework. For instance, in a study of international immigrants to Canada, a developed country, Baker and Benjamin (1997) found that women in immigrant families take on "dead-end" jobs to finance their spouses' investments in human capital until the migrant men can obtain more stable employment. Similarly, Chattopadyhyav (1998) finds a negative impact of joint migration on women's economic achievements. A more recent study by Cooke (2003) acknowledges a positive effect of migration on income which is due to an increase in the husband's, not the wife's income.

The New Economics of Labour Migration and models of 'split' migration

The New Economics of Labour Migration (NELM) originating in the works of Oded Stark builds on the Mincerian model. One of the advantages of the NELM is that it allows for the possibility of "split" migration. Although individual household members may recur to migration, the household survives as an economic and social unit in the home area in spite of the changes brought to its demographic composition. In this model, migration is undertaken by individuals as members of larger social units, usually households, and both determinants and impacts of migration are analyzed in the context of households and of home communities. According to this approach, the migration decision occurs rather as a consequence of capital, credit or insurance market imperfections or of relative deprivation than of labour market inequalities (Stark and Levhari 1982, Stark 1991, Stark and Taylor 1991). Migration acts as insurance for the households which undertook risky agricultural activities. Migrants enter into implicit contractual arrangements with other household members in which the latter fund the costs of migration and migrants subsequently provide remittances in return. In this cooperative game framework, both the migrant and nonmigrant parties must increase their utility or expected income in comparison to other relevant alternatives in order for migration to occur. Migrants honour their obligations either for altruistic reasons or because they expect subsequent benefits such as inheritance (Lucas and Stark 1985). Lucas and Stark find that remittances are larger to families with higher per capita incomes, to households with drought-sensitive assets during dry periods and to those who have provided their daughters with higher levels of education. This supports the idea that in the case of daughters remittances are in part

repayment for schooling expenses, while in the case of sons remittances go to families with larger inheritable livestock herds.

The work of Hoddinott (1994) on rural-urban migration in Kenya builds on a unitary household model. Hoddinott's model only takes into account sons and parents. His main argument is that daughters usually migrate for marriage or for studies. According to Hoddinott, sons are the ones who involve in labour migration and send remittances to their family.

Another paper by Agesa and Kim (2001) equally develops a household decision model of migration applied to Kenya. They test the split model against the joint migration model. Their approach is based on an intertemporal expected utility model. They consider that men can either migrate alone or with the entire family placing the emphasis on the psychic cost of separation. In their model, women can only be tied movers. The interest of an intertemporal migration model lies in the fact that it allows for the family to be reunited at a later stage. Even if initially, only the husband migrates adopting a split migration strategy, he may be joined later by the rest of the family transforming this split migration into a joint family migration.

The framework of these models is the unitary approach to the household. The unitary household model relies on the assumption that husbands and wives maximize jointly a common utility function under the common household budget constraint. Preferences are exogenous and aggregated across family members. Household resources are entirely pooled. Each household member is considered to have an equal weight in the household utility function. In particular, some family members sacrifice their own income earning potential knowing that they would be compensated for by sharing rules which allow them to benefit from overall higher household earnings. Therefore these models are not very adequate to study gender migration.

Recent developments of household migration models

More recent papers take into account cooperative models of the intra-household decision making process. For example, Chen et al. (2006, 2007) consider the migration decision in the context of a cooperative model of intra-household bargaining with long-run renegotiation arrangements. The key assumption of the model is the possibility of renegotiation. If the marriage contract is renegotiable, the wage increase that migrant women are likely to experience at destination would improve their bargaining position inside the household. On the other hand, if renegotiation is not feasible, women can be negatively affected, as the ex-

ante arrangement is no longer optimal for the spouse who experiences a wage increase requiring on his behalf a higher market effort for a comparatively lower surplus. They test their model on German data and find that renegotiation opportunities are weak for migrant women. Although women may financially benefit from migration, this is not due to an improvement in labour market opportunities, but sooner to an increase in their market effort, with little relief from domestic work, thus leading to an amplification of their burden.

Another recent paper by Gemici (2007) equally analyses the migration decision in a cooperative Nash-bargaining household model comparing joint and split migration decisions. The threat point is the value of divorce. Upon divorce, individuals make employment and migration decisions as single agents. The household bargaining process provides the mechanism by which costs or gains from relocation are shared between spouses. When the costs borne by one of the spouses are too high relative to the gains from marriage or his/her partner's gains from relocation, the couple divorce. The results obtained by Gemici show that when joint family migration occurs the spouse who benefits from household migration in terms of labour market outcomes are the husbands. Women are in this case the 'trailing' spouse. Moreover, when single, men are able to take best advantage of the different job opportunities across locations. At the same time, when single, women have higher wages.

Our paper relies on a similar approach as these last papers considering the possibility of split or joint temporary migration of the spouses.

4. Theoretical model

Our framework is the collective household model. The collective household model was developed first by Chiappori (1988, 1992), Bourguignon et al. (1993), Browning et al. (1994), Browning and Chiappori (1998). In this approach, the household is modelled as a two-person economy. Each individual has distinct utility functions that she maximizes subject to different budget constraints. The decision process regarding consumption and labour supply leads to a Pareto-efficient resource allocation. This model was extended to take into account household production and household consumption patterns.

The collective household model has two different lines of application. The first line analyses the implications of this model for household consumption, whereas the second line of application deals with its importance for labour market outcomes of the household members and especially time allocation. Household models were only recently developed to take into account household production as first advocated by Apps and Rees (1997). However, Apps

and Rees (1997) and Chiappori (1997) show that in the case of household production of a non-marketable domestic good the derivatives of the sharing rule are not retrievable and the model cannot be identified. On the other hand, Bourguignon (1999), considering children as a public consumption good shows that the sharing rule can be identified up to a constant. Consequently, this allows for an analysis of how individual budgets change if the household budget constraint changes. Several more recent studies have equally taken into account the effect of children on the consumption pattern and on the labour supply of family members. Models by Apps and Rees (2002), Chiappori, Blundell and Meghir (2004), Bargain and Donni (2007) follow this line of thought.

Collective household models have so far taken into account mainly on the time dimension, considering the bargaining process to be directly linked to the allocation of time by family members. Like recent models developed by Chen et al. (2005 and 2007), Gemici (2007) our model focuses on the spatial dimension of the bargaining process.

Assumption 1 In order to simplify our model we consider that the household is made up of two decision makers. Other persons in the household are also considered, but these persons do not have bargaining power. Each individual is characterized by her own preferences.

Assumption 2 The members consume a composite private good C_i but they also derive utility from the existence of a household public good G (children).

$$\mu\, U_i + (1 - \mu)\, U_j$$

$U_{i,j}$ represents the utility of the husband and respectively the wife, μ is the Pareto weight attached to each member's preference, comprised between 0 and 1. μ is called the "distribution of power" index (Browning and Chiappori 1998) and captures the household decision-making process and its result. It can be a function of prices, income, individual heterogeneity in preferences and, eventually, distribution factors.

Assumption 3 The utility function has the standard Walrasian properties. It is strictly quasi-concave, increasing and twice-differentiable. Each member is endowed with direct preferences on her own leisure and consumption.

We write an egoistic utility function:

$$U_i\,(C_i,\, G)$$

Assumption 4 We consider the utility function to be separable with respect to public consumption:

$$U_{i=}\, W_i\, [U_i\,(C_i),\, G]$$

Assumption 5 We consider as in Chiappori et al. (2004) that the public good, that is children, requires both investment in consumption and production. The price of the public domestic good is likely to be endogenous and specific to each household.

The public good is produced with a constant returns to scale technology using two complementary inputs: Z and time input of the mother h_j. The production function is strictly increasing, twice-differentiable and concave.

$$G = f(Z, h_j)$$

Assumption 6 Following Apps and Rees (2002) we consider Z to be a normal consumption good as part of the composite good C:

$$C = C_i + C_j + Z$$

The price of the consumption good is set to unity.

Assumption 7 For simplicity, we do not consider leisure. In this case, the woman divides her time between market labour and household production, whereas the man works only in the labour market so his time is supplied entirely in the labour market. There is specialization inside the household like in the traditional Becker (1991) model, but this specialization is not complete. The woman has a higher productivity than the man in domestic production and is the one to specialize in the production of the domestic public good. However, she also works in the labour market.

The woman's market labour supply is:

$t_j = T_j - h_j$, where T_j is the woman's total time endowment

The man's market labour supply is:

$$T_i = t_i$$

Assumption 8 (the Pareto efficiency assumption) The Pareto efficiency assumption implies the efficiency of the collective decision process which, in the case of the collective household model, supposes the existence of a sharing rule.

However, the sharing rule in itself is not equivalent to efficiency. The sharing rule depends on the income of the two members and on distribution factors (s_i). Income is usually considered to be made of labour and non-labour income. We simplify the framework and consider that the family budget is made up only of labour income (w_i and w_j). The sharing rule is conditional on the first step decision of domestic good consumption. In this case, the sharing rule depends directly on the income earned on the labour market and not on non-labour income. However, as the labour income is endogenous, the sharing rule will also be endogenous.

$$\Phi\ (w_i,\ w_j,\ \ldots s_{i\ldots})$$

We set a dummy $d^m = 1$ if the individual migrates and to zero otherwise. The household members face the following possible migration strategies:

(1) The husband migrates:

$$U_i^m = d_j^m \cdot U_i^m \text{(knowing that j migrates)} + (1\text{-}d_j^m)\ U'^m_i \text{(knowing that j does not migrate)}$$

(2) The husband does not migrate:

$$U_i^{nm} = d_j^m \cdot U_i^{nm} \text{(knowing that j migrates)} + (1\text{-}d_j^m)\ U'^{nm}_i \text{(knowing that j does not migrate)}$$

A similar set of strategies is available for the wife.

(1) If the wife migrates:

$$U_j^m = d_i^m \cdot U_j^m \text{ (knowing that i migrates)} + (1\text{-}d_i^m)\ U'^m_j \text{(knowing that i does not migrate)}$$

(2) If the wife does not migrate:

$$U_j^{nm} = d_i^m \cdot U_j^{nm} \text{(knowing that i migrates)} + (1\text{-}d_i^m)\ U'^{nm}_j \text{(knowing that j does not migrate)}$$

We consider p^m, p^{nm} to be the prices of the composite good at destination and respectively in the home country, w_i^m, w_i^{nm} the expected wage at destination and the wage in the home country, τ the migration cost and Φ_i^m, Φ_i^{nm} the sharing rules when i migrates and respectively when i does not migrate.

Assumption 9 We consider that only women raise children.

Consequence Therefore, if the mother leaves children are left with other females in the household. In this case we consider e_j to be the time input in household production by other females in the household and γ to be a productive efficiency parameter as we assume that the mother has the highest productivity in domestic production.

$$\text{G= G}\ (d_j^m e_j \gamma + (1 - d_j^m) h_j)$$

Assumption 10 Upon migrating the Pareto weights (the distribution of power) of the spouses change as the bargaining power of the woman increases with income ($\mu_j^m > \mu_j^{nm}$)[1]. Still,

[1] Note that there is anthropological and sociological evidence that a woman's actual contribution to the household budget influences how much say she has in household decision making. Even though due to the fact

intra-household resource allocation is optimal as there is bargaining on the surplus obtained from migration ($w^m - w^{nm}$).

Consequence: Though by migrating the wife's labour income goes up and so the Pareto weight changes in her favour generating a disutility for her husband, this might still be upset by a high surplus obtained from migration so that in the end there is net gain for the husband (Lundberg and Pollack 2003).

Assumption 11 Following Vijverberg (1993), we consider the wage at destination to be determined by r_i^m which is the average market determined productivity, by individual characteristics z^e and by a random component ε_i^m .

$$w_i^m = \widetilde{w}(r_i^m, z^e) + \varepsilon_i^m$$

The utility maximization program writes:

$$\text{Max } [\, d_i^m U_i^m + (1 - d_i^m) U_i^{nm} \,]$$

$$\text{s.t. } u_j \geq \bar{u}_j$$

$$d_i^m [p^m C_i^m + \eta] + (1 - d_i^m)[p^{nm} C_i^{nm}] \leq d_i^m \Phi_i^m + (1 - d_i^m) \Phi_i^{nm}$$

G= G ($d_j^m e_j \gamma + (1 - d_j^m) h_j$) , where γ is a productive efficiency parameter

$$e_j \leq \bar{e}_j$$

$$h_j \leq \bar{h}_j$$

$$0 < \gamma < 1$$

$$w_i^m = \widetilde{w}(r_i^m, z^e) + \varepsilon_i^m$$

We then write the first order conditions of the model:

$$\vartheta L / \vartheta C_i^m = \vartheta U_{C_i^m} / \vartheta C_i^m - \lambda p^m = 0$$
$$\vartheta L / \vartheta C_i^{nm} = \vartheta U_{C_i^{nm}} / \vartheta C_i^{nm} - \lambda p^{nm} = 0$$

We derive the following Marshallian demands for consumption:

$$C_i = C_i(w_i^m, w_i^{nm}, p^m, p^{nm}, \tau, \Phi_i^m, \Phi_i^{nm}, G)$$

---

that the woman works in the household her husband is able to supply labour on the market and earn a wage, she will not have as much power as she would if she earned it herself (Mencher, 1988, Riley, 1998).

In the case of women we have a similar system of Marshallian demands:

$$C_j = C_j(w_j^m, w_j^{nm}, p^m, p^{nm}, \tau, \Phi_j^m, \Phi_j^{nm}, G)$$
$$h_j = h_j(w_j^m, w_j^{nm}, p^m, p^{nm}, \tau, \Phi_j^m, \Phi_j^{nm}, G)$$

Marshallian demands have the usual properties of demand functions. They are homogenous of degree zero and convex in prices and incomes.

The next step is to substitute the consumption bundles in the utility function. For the optimal consumption bundle we obtain the indirect utility function. The optimal consumption choices, or the demand, depend on prices and income. Indirect utility functions are homogeneous of degree zero, nonincreasing in prices and strictly increasing in income, quasiconvex and continuous.

$$V_i(p^m, p^{nm}, w_i^m, w_i^{nm}, \tau, \Phi_i^m, \Phi_i^{nm}, G) = d_i^m V_i^m(p^m, w_i^m, \tau, \Phi_i^m, G) + (1 - d_i^m) V_i^{nm}(p^{nm}, w_i^{nm}, \Phi_i^{nm}, G)$$

and respectively:

$$V_j(p^m, p^{nm}, w_j^m, w_j^{nm}, \tau, \Phi_j^m, \Phi_j^{nm}, G) = d_j^m V_j^m(p^m, w_j^m, \tau, \Phi_j^m, G) + (1 - d_j^m) V_j^{nm}(p^{nm}, w_j^{nm}, \Phi_j^{nm}, G)$$

As set forward by Pollack and Wachter (1975) we replace G with the inputs used to produce it.

$$V_j(p^m, p^{nm}, w_j^m, w_j^{nm}, \tau, \Phi_j^m, \Phi_j^{nm}, G) = d_j^m V_j^m(p^m, w_j^m, \tau, \Phi_j^m, \gamma, e_j) + (1 - d_j^m) V_j^{nm}(p^{nm}, w_j^{nm}, \Phi_j^{nm}, h_j)$$

The migration decision of women depends on the shadow value of children, whereas the men take $\overline{G}$ as set. The fact that women are involved in domestic production leads to an increase in their opportunity cost of migrating. This cost is likely to be specific to each household, depending on the shadow value allocated to children. This value is completely endogenous in the case where women do not work in the labour market.

Assumption 12: In our model we assume that women work on the labour market.

Consequence:

If the woman does not migrate the shadow value of children depends on her market wage:

$$p^*(w_j^{nm})$$

If the woman migrates the shadow value of children depends on the expected wage at destination as well as on the availability of other household members that could substitute the

woman in taking care of the children and on the productivity of these members in child rearing.

$$p^*(w_j^m, e_j, \gamma)$$

Whereas domestic production is exogenously given in the case of men, it is binding in that of women.

At the same time, the sharing rule is conditional on income and distribution factors:

$$\Phi_i^m(w_i^m, d_j^m w_j^m, (1-d_j^m)w_j^{nm}, ...s_i...)$$
$$\Phi_i^{nm}(w_i^{nm}, d_j^m w_j^m, (1-d_j^m)w_j^{nm}, ...s_i...)$$
$$\Phi_j^m(w_j^m, d_i^m w_i^m, (1-d_i^m)w_i^{nm}, ...s_i...)$$
$$\Phi_j^{nm}(w_j^{nm}, d_i^m w_i^m, (1-d_i^m)w_i^{nm}, ...s_i...)$$

Usually, the sharing rules can be identified at the best up to a constant. In our model the ex-post sharing rule is linked to the ex-ante sharing rule (see Appendix III). We do not really care if the sharing rules are identified or not. The focus of our model does not lie on the sharing rule in itself, our interest lies sooner with the distribution of power inside the household (Browning and Gørtz 2006), which as the sharing rule is likely to be influenced by existing norms in society. Moreover, the distribution of power is a much broader concept than the sharing rule as it also refers to preferences on consumption.

However in our model, both sharing rules and the distribution of power are endogenous. What does an endogenous distribution of power mean? We consider that labour income directly affects the distribution of power as argued by Basu (2006). In turn, labour income depends directly on time allocated to the labour market. Women would have the incentive to allocate more time to the labour market in order to raise their intra-household power and less time to leisure and domestic production than Pareto optimal. The household can reach in this case a suboptimal equilibrium with women spending less time in domestic production (Iyigun and Walsh 2007).

Assumption 13 There exists a social norm such that $h_j \geq \overline{h}_j$ In this case the time supplied to domestic production is set by the social norm and cannot fall below the level of $\overline{h}_j$ [2]. Household domestic supply is bounded from below by the social code of behaviour.

Consequence: Therefore, the time supplied to market labour can be written as $T_j - \overline{\mathrm{h}}_{\mathrm{j}}$.

[2] Burda et al. (2007) consider a similar model but with leisure fixed by the social norm.

If norms are binding, the existence of social norms may impede women from allocating more time to the labour market as there is a cost of deviating from the commonly accepted norm and thus restore the Pareto optimal equilibrium. In this way, the Pareto efficiency assumption can be respected even when power distribution is endogenous. In our model the existence of social norms may lead to a Pareto efficient equilibrium to the detriment of women as opposed to the model set forth by Iyigun and Walsh (2007) who consider that the equilibrium could be restored following intra-household Coasian transfers. With higher levels of education for women and thus higher labour income and with Coasian intra-household transfers a Pareto optimal equilibrium can be attained which makes women better-off.

Assumption 14: A disrespect of the norm induces a cost S which depends on the time shifted from the production of the domestic good towards market labour $t_j^* = \overline{h}_j - h_j^*$ and on θ, where θ is the proportion of persons in the economy who disobey the norm or the disobeyers.

Consequence: $S(t_j^*, \theta)$ is the social cost or the cost of the social stigma.

Assumption 15: The social stigma induces a decrease in the woman's Pareto weight. **Consequence** Although the rise in the woman's income increases her Pareto weight, this increase could be upset by the social stigma and women could end up worse-off. The social stigma undermines the woman's "say" in the household.

Assumption 16: In addition, a disrespect of the norm also triggers a decrease in the utility level which passes through the production of G. As mothers shift their time from domestic production towards market labour they will be substituted in domestic production by other women in the household. This cost is represented by γ the productive efficiency parameter of other women in the household which is lower than the mother's.

Consequence: The total cost has two different components: a social cost equal to the stigma cost and another cost which could also be termed as a psychological cost of being less involved in the production of children which generates a disutility according to γ.

Following assumption 4, we rewrite the woman's utility function as follows:

$$U_j = W_j\,[U_j\,(C_j),\ G,\ S], \text{ where S is the stigma cost}$$

In this case the utility maximization programme becomes:

$$\text{Max. } W_j\,[U_j\,(C_j),\ G,\ S] = U_j\,(C_j) + \mathrm{G}\,(e_j\gamma, h_j) - S(t_j^*, \theta)$$

$$\text{s.t. } c_j - \gamma\overline{G} \le w_j + \pi \text{ , where } \pi = w_j^* - w_j$$

Assumption 17: Whereas U_j (C_j) and G $(e_j\gamma, h_j)$ have the above mentioned properties, $S(t_j^*, \theta)$ is increasing in t_j^* and decreasing in θ .

Consequence $S_{\theta t_j^*} < 0$, which means that the marginal disutility from shifting time to labour market is decreasing in the total amount in the economy of women who shift time from domestic production to the labour market and do so by breaking the norm.

S(0,θ) = 0. If women respect the norm, the cost is zero indifferently on the rate of women who do not respect the norm.

$S(t_j^*, \widetilde{\theta}) = 0$, $0 < \overline{\theta} < \widetilde{\theta} \leq 1$ For high levels of θ the stigma cost falls to zero as in Akerloff's model on social custom (1980).

At equilibrium the marginal benefit of an extra unit of female labour supplied in the labour market, measured in terms of utility from extra consumption, equals the marginal cost, given by the stigma as a function of individual labour supply on the foreign labour market and the migration rate as well as of the disutility incurred by shifting child production to other less productive persons.

The decision whether to migrate or not, M will depend in this case on the difference in labour incomes, the availability and productive efficiency of other female persons in the household (according to assumption 9) and on the migration rate of women in the home community *m*.

$$\text{M } (w_j^m, w_j^{nm}, \tau, e_j, \gamma, m)$$

Hence, the agent considers the wage rates and the expected level of the migration rate in the economy, *m*, in order to optimally choose whether to migrate or not.

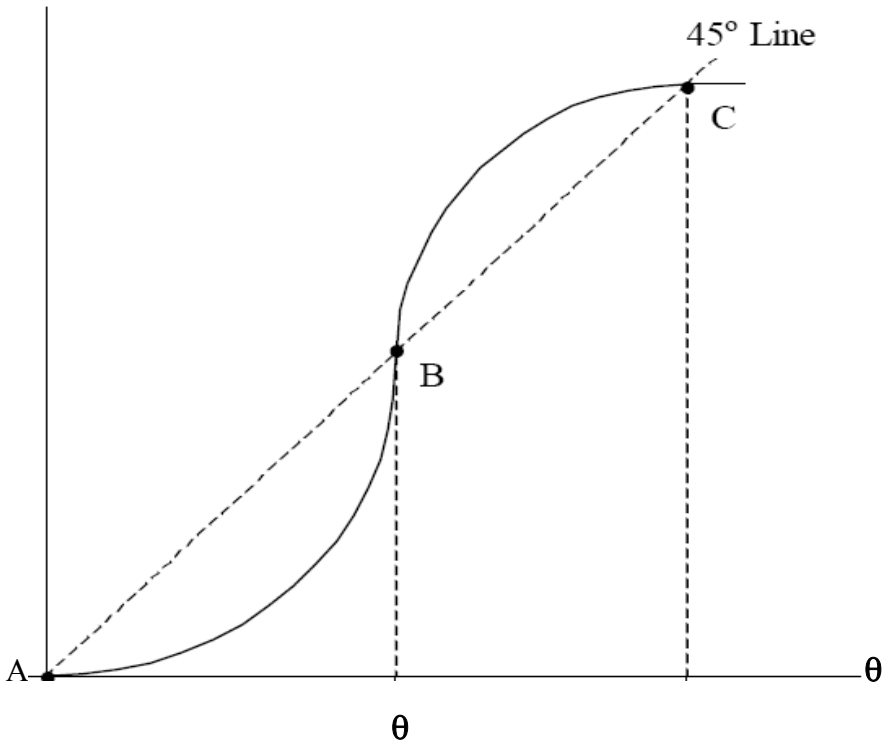
Assumption 18: Women care about children production and about the cost of stigma, consequently women's migration will occur only for very high income inequalities between the home country and the country of destination and of very low gains in the home country.

Let $\overline{c}$ be a subsistence level of consumption for which $w_j^{nm} < \overline{c}$

Consequence In particular, if in the home country the reservation income is very low so that consumption falls below subsistence level, women would have the incentive to migrate in spite of their involvement in domestic production and of the existence of the social norm. In fact, production of children also requires investment in consumption good Z as stated in assumption five. Women would not be able to provide for their children anymore and to finally produce the domestic good as h_j and Z are complements.

Assumption 19: The response of the agents to the expected migration rate generates multiple rational expectations equilibria. Expectations regarding women's migration rate in the economy affect each individual's decision and thus the outcome, giving way to multiple equilibria as the woman's expectation of *m* determines the expected stigma cost she will face. Let us assume first that the stigma cost function is such that the optimal female labour supply, as a function of the expected aggregate level of female labour shift from domestic production to the labour market, is S-shaped[3].

Figure 2 **Female labour supply with multiple equilibria**



Consequence:

There are four cases out of which two are the extreme cases:

(1) The woman supplies her entire time endowment to domestic production and does not work on the labour market so that $h_j > \overline{h}_j$ and as t_j^*=0, then $S(t_j^*, \theta) = S(0, \theta)$ so there is no stigma cost.

(2) The woman obeys the norm and supplies to the labour market $T_j - \overline{h}_j$ then as again t_j^*=0, $S(t_j^*, \theta) = S(0, \theta)$ so there is no stigma cost.

[3] Evidence on the S-shaped form of the women's labour supply is found in several articles. See for example Fogli and Veldkamp (2007).

(3) The woman disobeys the norm and her time supply on the labour market exceeds the norm by $t_j^* = \bar{h}_j - h_j^*$. In this case the stigma cost is $S(t_j^*, \theta)$, depending on t_j^*, the amount of time by which $\bar{h}_j$ falls and on the proportion of people who disobey the norm θ.

(4) The woman disobeys the norm and her entire time endowment is supplied on the labour market so that $\bar{h}_j = 0$ and t_j^* is maximum. The stigma cost will be maximum if θ=0. In this case $S(t_j^*, \theta) = S(t_j^*, 0)$.

The case when the woman migrates is the extreme case (4) in which the woman supplies her entire time on the foreign labour market. In this case the stigma cost will depend on t_j^* which is maximum and *m*, the migration rate of women in the community. Note that for high levels of *m* the cost decreases significantly.

This is equivalent to assuming that there exists an $0 \le \bar{\theta} \le 1$ such that:

$$\frac{d^2 t_j^{*'}}{d\tilde{\theta}^2} > 0 \text{ if } 0 \le \tilde{\theta} \le \bar{\theta}, \text{ and } \frac{d^2 t_j^*}{d\tilde{\theta}^2} < 0 \text{ if } \bar{\theta} < \tilde{\theta} \le 1 \ ,$$

which is equivalent to implying that $S''(\tilde{\theta}) < 0$ if $0 \le \tilde{\theta} \le \bar{\theta}$ and $S''(\tilde{\theta}) > 0$ if $\bar{\theta} < \tilde{\theta} \le 1$.

At low migration rates in the economy, a reduction in the migration rate would increase the stigma cost at an increasing rate. Also, at high levels of *m*, an increase in *m* would reduce the stigma cost at an increasing rate.

Assumption 20 There exists a threshold level $\tilde{m}$ above which the norm is not binding anymore.

Consequence: In this case we can write the utility function as follows:

$$\mathrm{W_j}\,[\mathrm{U_j}\,(\mathrm{C_j}), \mathrm{G}, \mathrm{S}] = \begin{cases} \mathrm{U_j}(\mathrm{C_j}) + \mathrm{G}(\mathrm{e_j}\gamma) - \mathrm{S}(t_j^*, m), & \textit{if } m < \tilde{m} \\ \mathrm{U_j}\,(\mathrm{C_j}) + \mathrm{G}(\mathrm{e_j}\gamma) & \textit{if } m \ge \tilde{m}, \text{ as } \mathrm{S}(t_j^*, m) = 0 \end{cases}$$

When in the home economy the proportion of migrants equals $\tilde{m}$, there is no stigma cost anymore and the only cost incurred by migrating besides the physical cost passes by γ[4].

Assumption 21 There exists a second threshold level $\tilde{\tilde{m}}$ above which migration becomes itself a social norm.

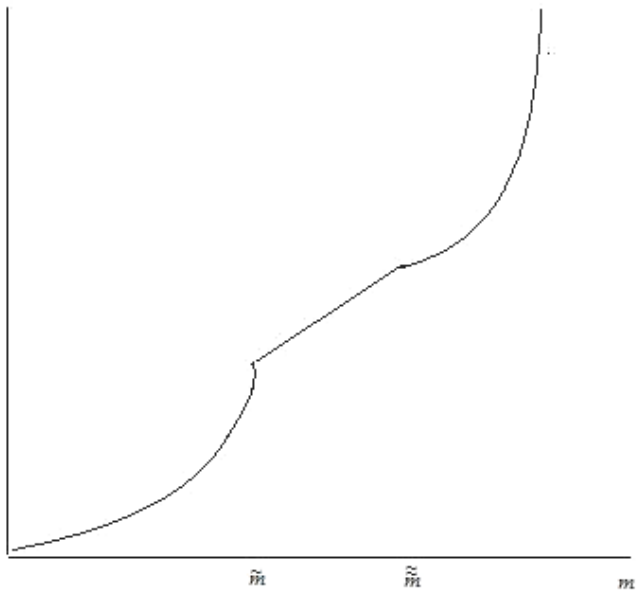
Consequence: We write the following utility function:

[4] This is in accordance to the critical mass model developed by Schelling (1978) and Granovetter (1978).

$$W_j[U_j(C_j), G, S] = \begin{cases} U_j(C_j) + G(e_j\gamma), & \text{if } \tilde{m} < m < \tilde{\tilde{m}}, \ as \quad S((1-d_j^m), m) = 0 \\ U_j(C_j) + G(e_j\gamma) - S((1-d_j^m), m), & if \ m \geq \tilde{\tilde{m}} \end{cases}$$

We have multiple steady states with multiple equilibira. Note that in this case we are at a norm stable equilibrium. The equilibrium reached is set by the norm. Income does not play any part in the migration decision except for allowing to cover for the physical migration cost, so income differentials are no more the main mechanism to trigger migration. This explains why migration occurs even with wage equalization between the sending and the receiving regions and why in reality we do not observe an evolution of migration rates as predicted by the hump migration theory (Martin 1993).

Figure 3 The evolution of migration rates



As there is a cost of disrespect of the norm, everybody will have the incentive to migrate provided that they can cover the physical cost of migrating. Furthermore, as more and more people migrate and networks develop, migration costs fall and more people can afford to migrate reinforcing the social norm in a cumulative dynamic process.

Depending on the main determinants that trigger migration, we can actually distinguish two types of migration:

(1) The first type of migration occurs when the migration rate is below $\tilde{\tilde{m}}$. In this case, income is the main incentive to migrate. Therefore, the type of migration that takes place when the rate of migration is below $\tilde{\tilde{m}}$ is an income-seeking migration.

(2) The second type of migration occurs when the migration rate is above $\tilde{\tilde{m}}$. In this case reputation is the main incentive to migrate. Therefore, the type of migration that takes place when the rate of migration is above $\tilde{\tilde{m}}$ could be termed as a social status-seeking migration.

After this incursion into the role played by norms in women's migration decision we return to our model and integrate the findings.

Following assumption 10 the wife's migration decision is also optimal for her spouse.

At this stage we can write the migration equation as a labour supply function on the foreign labour market:

$$\mathrm{M}\ (p^{m}, p^{nm}, w_i^{m}, w_i^{nm}, \tau, \mu, G)$$

In the case of men this equation becomes:

$$\mathrm{M}\ (p^{m}, p^{nm}, w_i^{m}, w_i^{nm}, w_j^{m}, w_j^{nm}, \tau)$$

Whereas in the case of women it writes:

$$\mathrm{M}\ (p^{m}, p^{nm}, w_i^{m}, w_i^{nm}, w_j^{m}, w_j^{nm}, \tau, e_j, \gamma, t_j^{*}, m)$$

The random component in the wage equation allows us to pass to a random utility maximization model as advocated by Block and Marschak (1960) and McFadden (1973). Under the additive separability assumption, the initial model becomes:

$$V = V^{m} + V^{nm} \Rightarrow V = \tilde{V}^{m} + \mu^{m} + \tilde{V}^{nm} + \mu^{nm}$$

In our model the implementation of the RUM leads to the following relationship for indirect utility:

$$V_i(p^{m}, p^{nm}, w_i^{m}, w_i^{nm}, \tau, \lambda, G) = d_i^{m}[\tilde{V}_i^{m}(p^{m}, w_i^{m}, \tau, \lambda^{m}, d_j^{m}\bar{e}_{j,}, (1-d_j^{m})\bar{h}_j, \gamma)] + \mu^{m} +$$

$$+ (1-d_i^{m})\tilde{V}_i^{nm}(p^{nm}, w_i^{nm}, \tau, \lambda^{nm}, d_j^{m}\bar{e}_{j,}, (1-d_j^{m})\bar{h}_j, \gamma)] + \mu^{\mathrm{nm}}$$

In the case of women:

$$V_j(p^m, p^{nm}, w_j^m, w_j^{nm}, \tau, \lambda, G) = d_j^m \widetilde{V}_j^m(p^m, w_j^m, \eta, \lambda^m, e_j, \gamma) + \mu^m + (1 - d_j^m)\widetilde{V}_j^{nm}(p^{nm}, w_j^{nm}, \lambda^{nm}) + \mu^{nm}$$

We then maximize with respect to d_i^m :

Pr (d_i^m=1) = Pr ($\widetilde{V}_i^m - \widetilde{V}_i^{nm} > \mu_i^m - \mu_i^{nm}$), where $\mu_i^m - \mu_i^{nm} \sim$ N (0, σ^2)

In the case of women we maximize with respect to d_j^m :

Pr (d_j^m=1) = Pr ($\widetilde{V}_j^m - \widetilde{V}_j^{nm} > \mu_j^m - \mu_j^{nm}$), where $\mu_j^m - \mu_j^{nm} \sim$ N (0, σ^2)

5. Econometric Model

Our model is based on a simultaneous equations system in which the decisions of the two spouses are interlinked. However, as set forth by Greene (2003) we have chosen to ignore the simultaneity of the model and implement a bivariate probit technique.

The bivariate probit model allows to correct for the correlation in error terms in the two distinct regressions. By taking into account the correlation between the error terms we can determine the simultaneous effect of unobserved individual characteristics on the migration decision of men and on that of women.

The migration decisions of women and men are modelled simultaneously:

$$\mathrm{P}(d_i^m = 1) = \Psi(Z_i, H)$$
$$\mathrm{P}(d_j^m = 1) = \Psi(Z_j, H, N)$$

where d_i^m=1 and d_j^m=1 denote a positive outcome of the migration decision of each spouse

Z is a vector of personal characteristics

H is a vector of household characteristics

N is a vector of norms

We write the following system of equations:

$$\mathrm{P}(d_i^m) = \beta_1 Z_i + \beta_2 H + \varepsilon_1$$
$$\mathrm{P}(d_j^m) = \beta_1' Z_j + \beta_2' H + \beta_3' N + \varepsilon_2$$

For simplicity we pose:

$$y_{1i} = 1\{y_{1i}^* > 0\}, y_{1i}^* = x_i' b_1 + \varepsilon_{1i}$$
$$y_{2i} = 1\{y_{2i}^* > 0\}, y_{2i}^* = x_i' b_2 + \varepsilon_{2i}$$

where error terms are independently and identically distributed as bivariate normal with Var(ε_1) = Var(ε_2) = 1. The interdependence between the migration decision of the husband and that of his spouse is captured by the correlation coefficient: Corr($\varepsilon_{1i}, \varepsilon_{2i}$) = ρ.

$$\begin{pmatrix} \varepsilon_1 \\ \varepsilon_{2i} \end{pmatrix} \sim \mathrm{N}\left(\begin{pmatrix} 0 \\ 0 \end{pmatrix} \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix} \right)$$

There are four possible regimes in our model:

(1) neither of the spouses migrates:
$$P\{y_{1i} = 0, y_{2i} = 0 | x_i\} = P\{\varepsilon_{1i} \le -x_i' b_1, \varepsilon_{2i} \le -x_i' b_2 | x_i\} = \Phi(-x_i' b_1, x_i' b_2 |; \rho)$$

(2) only the wife migrates:
$$P\{y_{1i} = 0, y_{2i} = 1 | x_i\} = P\{\varepsilon_{1i} \le -x_i' b_1, -\varepsilon_{2i} \le x_i' b_2 | x_i\} = \Phi(-x_i' b_1, x_i' b_2 |; -\rho)$$

(3) only the husband migrates:
$$P\{y_{1i} = 1, y_{2i} = 0 | x_i\} = P\{-\varepsilon_{1i} < x_i' b_1, \varepsilon_{2i} \le -x_i' b_2 | x_i\} = \Phi(x_i' b_1, -x_i' b_2 |; -\rho)$$

(4) both spouses migrate:
$$P\{y_{1i} = 1, y_{2i} = 1 | x_i\} = P\{-\varepsilon_{1i} < x_i' b_1, -\varepsilon_{2i} < x_i' b_2 | x_i\} = \Phi(x_i' b_1, x_i' b_2 |; \rho)$$

6. Descriptive Statistics and Variables

We employ a dataset of 2.137.967 individuals and 732016 households which represents a 10% randomly selected sample of the Romanian 2002 census developed by the Romanian National Institute of Statistics[5]. The census was conducted in March 2002 at a time when Romanians had just obtained the right to freely circulate in the Schengen area without needing a visa. The database contains over 841,000 people working on the labour market out of which 12,000 international temporary labour migrants. We have in total 8825 migrant men and 3808 migrant women filtered by the location of the workplace and duration of absence. Unfortunately, as we do not have panel data, our study is in cross-section.

There are several limitations at the level of our database as the census is not conceived to study international migration. Our database contains household and individual level data, however we do not have indications about the migrants' destinations, nor about the initial income level of the households. The choice of our dataset was due mainly to the importance

[5] Data were provided by the Minnesota Population Center. Integrated Public Use Microdata Series - International: Version 3.0. Minneapolis: University of Minnesota, 2007.

of the sample. No other available sample on Romanian migration would have provided us with such an important number of migrants. Gender-based research on migration has been hampered by the lack of available data. Samples on international migration which are representative when used to study overall migration become too small when divided by gender. The size of our sample provides us the opportunity for an in-depth look at gender difference in migration. Our study is likely to be significant at the regional and national level.

Table I Descriptive statistics individual level variables

Variables	Men				Women			
	All		International migrants		All		International migrants	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	36.109	*21.306*	32.004	*8.961*	38.705	*22.299*	30.098	*8.760*
Education	8.891	*4.017*	10.290	*3.239*	7.802	*3.954*	9.762	*3.372*
Married	0.498	*0.500*	0.557	*0.497*	0.474	*0.499*	0.501	*0.500*
Single	0.408	*0.491*	0.389	*0.488*	0.317	*0.465*	0.378	*0.485*
Child of head	0.366	*0.482*	0.428	*0.495*	0.268	*0.443*	0.420	*0.494*
Spouse	0.008	*0.092*	0.025	*0.156*	0.402	*0.490*	0.300	*0.458*

Table I presents the descriptive statistics of individual level variables for migrant men and women as compared to the overall population of men and women. In our sample, both migrant men and women are younger than the average population with migrant women being on average younger than men. While the average gap is four years in the case of men, in the case of women it is twice as important. The average age for migrant men is thirty-two, whereas for women it is thirty. Men are on average better educated than women, but both migrant women and men are better educated than the average population. Contrary to expectations, marriage rates are higher in the ranks of migrants than of overall population. Half of the migrant women are married and 55% of their male counterparts are also married. However, almost 38% of the migrant women are single compared to almost 32% of the overall women population. Over 40% of the migrants are children of the household head and 30% of the migrant women are wives of the household head.

On the foreign labour market most of the migrant men are employed as craft workers in industry (47,3%) as menial in industry (15,6%) and as blue collars in agriculture (10%), whereas on the Romanian labour market, men work mostly as craft workers in industry

(10,1%) and as blue collars in agriculture (11%). Meanwhile, migrant women are employed as menial in private services (60%), as blue collars in agriculture (9,7%) and as craft workers in industry (7,7%) (see Appendix IV).

Professions are very sex-specific and the foreign labour market for migrants seems to be highly segmented. The demand is very gender specific driving women into some specific occupations and men into others.

Table II Descriptive statistics household level variables

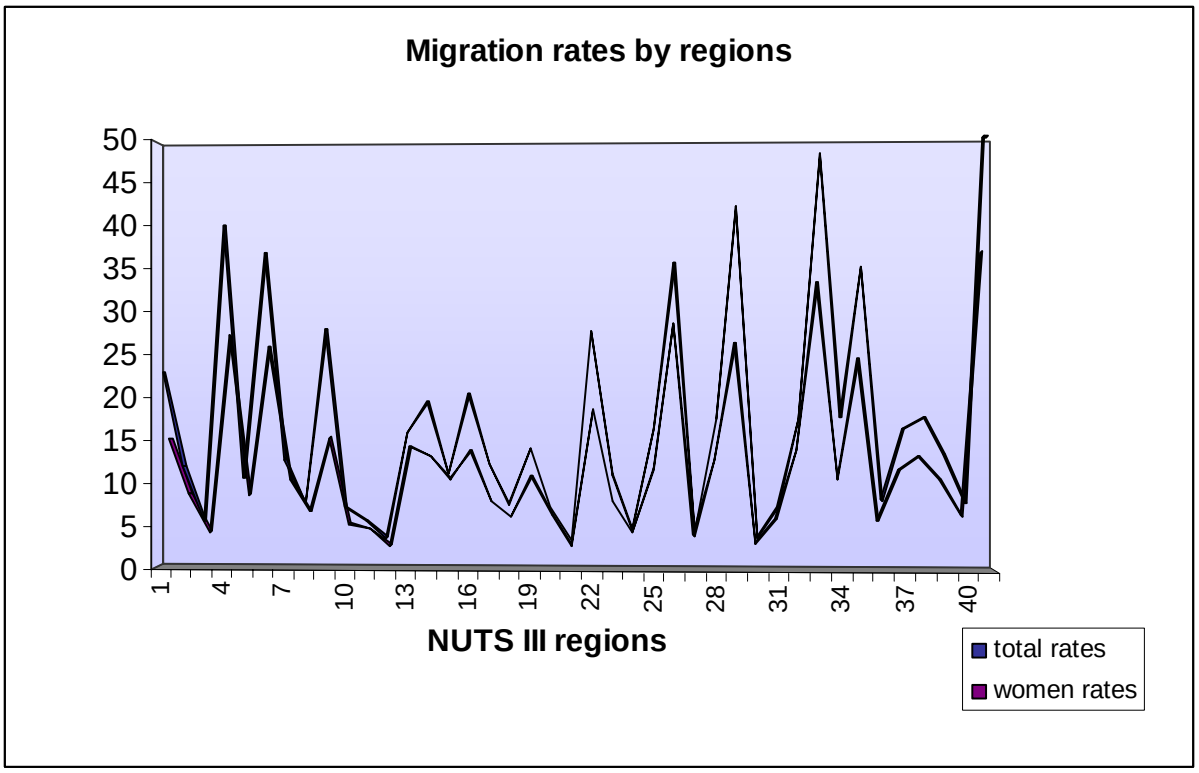
Variables	Men				Women			
	All		International migrants		All		International migrants	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Household size	3.849	*1.790*	4.113	*1.768*	3.695	*1.832*	4.002	*1.807*
Children < 5 years	0.249	*0.559*	0.227	*0.505*	0.246	*0.555*	0.168	*0.432*
Children 5-10 years	0.257	*0.557*	0.249	*0.538*	0.253	*0.553*	0.229	*0.530*
Children 10-15 years	0.349	*0.649*	0.323	*0.627*	0.338	*0.640*	0.294	*0.593*
Other dependants	0.674	*0.877*	0.593	*0.785*	0.655	*0.874*	0.419	*0.701*
Gender ratio	0.424	*0.175*	0.434	*0.179*	0.600	*0.203*	0.597	*0.197*
Education of head	9.462	*4.069*	10.435	*3.224*	7.177	*4.130*	9.718	*3.376*
Wealth index	5.460	*3.514*	5.501	*3.508*	5.593	*3.515*	5.864	*3.504*
Rural	0.488	*0.500*	0.512	*0.500*	0.469	*0.499*	0.458	*0.498*

Migrants also come from larger and wealthier households than the overall population. Migrant men come from slightly larger households than migrant women, whereas migrant women come from slightly wealthier households than migrant men. Also, the percentage of migrant men coming from rural regions is more important than that of migrant women. Only 45,8% of migrant women come from rural areas compared to more than half of migrant men. Both in the case of men and in that of women, migrants come from households that have on average less dependants, being they young or old than in the case of the overall male and female population. The difference is particularly important in the case of migrant women with small dependant children under the age of five.

Migrant men come from households with a larger share of women than the average and both migrant men and women come from households with better educated heads than the average level of education of household heads. In the case of migrant women the household head has on average two additional years of education compared to the average level of education of households heads, whereas in the case of men household heads have on average one additional year of education than the average education of household heads.

At the regional level, the main sending regions seem to be the same for migrant women as for migrant men. The most important sending regions are: Vrancea (SE), Suceava, Bacau (NE), Satu Mare and Maramures (NV) as in the case of the overall population (Sandu et al. 2004).

Figure 4



Source : own computations based on the 2002 Census and on data provided by Sandu et. al. (2004)

We analyze the impact on the propensity to migrate of women on three levels: individual, familial, and societal as advocated by the 1995 UN Report on Women and Migration.

Individual level variables

We will first take into account individual level variables. We consider for the start the standard Mincerian variables: age, age squared, age3, education, status in the household and marital status.

In human capital studies, as wages are endogenous the proxies for expected economic gains from migration are typically measured as an individual's total years of schooling and work experience. Work experience which is usually either proxied by **age** or computed as the difference between age and years spent in education is a key determinant of earnings in human capital models (Sjaastad, 1962, Mincer, 1974, Vijverberg 1993). Age captures the biological age and at the same time experience. Younger people are more prone to migrate as they would have a longer period over which to recover the migration cost (Harris and Todaro 1970). Younger people are also less risk-averse and therefore are more inclined to take the risk of migrating. Furthermore, they are less rooted in the society of origin and the psychological cost of migration is reduced. But, as age might have a more complex effect, we also control for age squared and age3. Kanaiaupuni (2000) found that rural Mexican men are more likely to migrate than women except after fifty. She explains this finding by arguing that women often migrate to reunite with family members or to join their husbands abroad once their children are older.

Most studies of migration determinants have found that the level of **education** achieved by migrants is higher than the level achieved by nonmigrants and that additional years of schooling favour migration (Winters et al. 2001, Mora and Taylor 2006). However, the influence of education on migration depends on the economic returns of schooling in both the sending and the receiving areas (Markle and Zimmermann 1992). Several studies show that the influence of education on the decision to migrate differs with respect to gender. For example, Mora and Taylor (2006) found no effect of education on international migration from Mexico, whereas Kanaiaupuni (2000) found a positive effect in the case of women. According to Pfeiffer et al. (2007) gender could be the key variable to explain this contradiction.

The **civil status** variable should capture differences in migration behaviour according to the civil status. Mincer (1978) considers that family ties deter migration and married persons are less likely to migrate. This was confirmed in the case of women by Cackley (1993) and Kanaiaupuni (2000) who found that single women are more likely to migrate than married women. We also take into account a detailed version of the civil status variable.

We then consider the **relationship to the household head**. More specifically, we test if the migrants are sons and daughters of the household head. As pointed out by Hoddinott (1994) and by Goerlich and Trebsch (2005) those more prone to migrate are direct relatives of the household head.

Last, we control for the **mother tongue**. In this case, our assumption is that Romanian citizens that have a mother tongue other than Romanian are at least bilingual which could be an advantage for them on the labour market both of the home and of the foreign country. It is the case of the Hungarian and German minorities in Transylvania which represented a large part of Romanian migration at the beginning of the 1990s.

Labour market variables

Furthermore, we consider occupations and employment sectors as the migration decision is likely to be influenced by labour market opportunities. Migrants might be selected according to occupations (Mora and Taylor 2006). At the same time, the types of jobs typically obtained at destination also influence migration patterns between genders as employers match women and men with specific jobs and occupations. As King and Zontini (2000) show the increase in women migration to Southern Europe can be linked to an increase in jobs in the service and informal sectors.

Following, Constant and Zimmermann (2003) we have proceeded at an aggregation of ISCO occupations that we have crossed with the main sectors of employment (see Appendix VI). This procedure allows us to isolate the influence of professions by sector of activity. On the one hand, these variables capture individual skills and on the other hand they give a precise picture of the labour market activities and of how migrants may be matched with specific jobs in specific sectors.

Household level variables

A third group of variables captures household characteristics. We consider a very detailed structure of the household as women's migration is more linked to the structure of the family (UN 1995). We analyze the following variables: the household size, the number of children by age groups, the number of other elderly dependants, the gender ratio in the household, the average education of other women in the household and the average age of other women in the household. Moreover, we equally control for the level of wealth, house ownership and if the household is in a rural region or not.

The **size of the household** may have either a positive or a negative effect. On the one hand, if potential migrants are important sources of labour, large household size may deter them from leaving. On the other hand, if migration is in part a strategy to place surplus labour from the

household on the external labour market, larger households are likely to have higher rates of migration (Lewis 1954).

Considering gender roles, **the number of children** in the household is expected to have a negative effect on women's migration and a positive effect for male migration (Kanaiaupuni 2000). We take into account also the age of children as studies have found that while early marriage and child bearing discourage women's migration, elder children and extended family members encourage women's mobility (Kanaiaupuni 2000).

Gender ratio should encourage women's migration as in this case there are relatively more people of their own gender who could substitute them in child rearing when they leave (Katz 1999).

We consider the **mean age of other women** in the household to be a proxy for their productivity (γ) in child rearing as if they are too young they may not be skilled enough to take care of the children and if they are too old they may not be efficient enough due to the age gap which impedes them, for example, to help children with school.

We also consider the **mean education of other women** in the household as their level of education is also likely to influence their productivity in child rearing and at the same time more educated women are less likely to be influenced by traditional norms and could actually encourage the migration of another female person in the household.

Since we do not have any indication on the income of the households, we built a **Wealth Index** as proposed by Katz (1999) and Mora and Taylor (2006) in which we include: the building material of the dwelling, the existence of sewage, water supply, kitchen, toilet and bathroom, central heating, hot water, air conditioning, gas and electricity (see Appendix VII).

In addition we also consider if **the migrant owns his dwelling** or not. Donato (1993) and Cerruti and Massey (2001) found that land, home and business ownership decreased the probability of migration by women.

In case of rich households, with high labour productivity of family members, other things being equal, these households are less likely to send members with similar human capital abroad than are asset poor households. If migration occurs in order to overcome risk and liquidity constraints, then wealthy households will have a lower propensity to send out migrants. On the other hand, if migration itself implies costs and risks for the household, a certain level of wealth may be required in order for the individual to be able to afford the costs of migrating.

Last, we check whether the household is in a **rural** area or not, as studies show that migration patterns are likely to differ between urban and rural households. Most of the migration studies

done so far in Romania have focused only on the rural dimension, considering rural regions as the most important sending areas (IOM 2002).

Norms

First of all, by employing the National Gender Barometer run by the Gallup Foundation in 2000, we built a **gender norm index** referring to the status of women in the household for each NUTS II region (see Appendices V and VIII). We consider this to be a proxy for the norm regarding child production in our model.

One of the main factors likely to determine the degree to which this social norm is binding is the level of education. As shown by Hondagneu-Sotelo (1994) the better educated a woman is, the more likely she is to feel constrained by social norms. We consider that in the case of better educated women the norms are less binding. In other words, the belief in the norm erodes with the level of education. In order to test this hypothesis we build an interactive variable between **norms and the women's education level**.

Regional level variables

We control for **the migration rate of women** at the NUTS III level. In the case of our model the migration rate is a proxy for the number of people who disobey the norm. It can also be conceived as a variable capturing the importance of networks.

Finally, in order to check the robustness of our results we consider dummy variables for each of the NUTS II regions in Romania. These variables should also capture unobserved regional characteristics.

7. Estimation Results

The results of the seemingly unrelated bivariate probit regression[6] clustered at the household level reveal the existing differences in the decision to migrate of men and women. We ran four regression models. In the first model we considered variables on civil status and number of children aggregated. This is our standard model. We ran than a second model with these variables disaggregated. In the third model we introduced the labour market variables. In order to test the robustness of the results we equally ran a fourth model with regional fixed effects. All the results are presented in Appendix I. Maximum likelihood coefficient estimates as well as marginal effects are reported.

[6] All refresions were run on a 50% reduced sample by frequency-weighting technique.

The Wald test on the rho coefficient confirms that migration is a joint decision as the error terms of the two equations are correlated, however the most unlikely outcome out of the four possible strategies that we have taken into account is that of joint migration. This suggests that households in Romania recur mostly to split migration when it comes to temporary labour migration with only one of their members who migrates, either the husband or the wife. As the cost of migration is greater for an entire household this can provide an incentive to split the family, increasing the psychological cost of separation. On the other hand, this decision may also be part of a sequential strategy, with one of the spouses migrating first and the other following at a later stage.

Comments on the regression results refer to results from model one in case of all variables except for extended definitions of civil status and of children where commented results come from model two, labour market variables where results refer to model three and regional level variables, case in which considered results come from model four.

Individual level variables

Age has a positive quadratic effect on the probability to migrate both in the case of men and women, increasing and then decreasing migration probability. We equally run a regression including the **age3** term. For men the result was insignificant, however for women the effect was positive and significant at the level of 10%, meaning that the age effect in the case of women is increasing and then decreasing and then increasing again.

Education has also a positive effect in the case of men's migration with each supplementary year of education increasing the probability to migrate by 2,3 percentage points. When we check for a quadratic effect, the term is insignificant in the case of men. However, in the case of women education has a negative quadratic effect which means that better educated women have a lower probability to migrate, but still a basic level of education might be required in order to migrate[7]. Women who have completed lower secondary education are the most likely to migrate. A possible interpretation of this result is that formal human capital is more important for men to successfully enter destination labour markets.

Marriage increases men's probability to migrate by 15,4 percentage points and reduces that of women by 9,3 percentage points. Married women are less likely to migrate then married men.

[7] Significant at the 10% level

Our second regression model in which we included an extended definition of the civil status variable shows that with respect to singles, married men are by 12,6 percentage points more likely to migrate and those living in a consensual union are also by 6,0 percentage points[8] more likely to migrate. Men in all the other categories are less likely to migrate than singles. For women, the only group with a higher propensity to migrate than singles are those who are divorced, who are by 8,3 percentage points more likely to migrate than single women. Married women, those living in consensual unions and widows have a lower migration probability than singles.

This is in accordance with the gender roles played by men and women in the Romanian society. Once they get married or live in couples, women become involved in domestic production and consequently are less likely to migrate, whereas men have to provide for the household and need to look for sources of income. Divorced women may migrate more because they need to provide for their family.

The relationship to the household head and the mother tongue are not significant in any of the regressions we ran.

Labour market variables

The fact of being employed as **craft worker in industry** increases men's likelihood to migrate by 36,1 percentage points compared to those working as **menials in industry**. Those working as **menial in agriculture** are also by 24,0 percentage points more likely to migrate and those working as **craft workers in private services** are by 16,6 percentage points[9] more likely to migrate than menials employed in industry.

In the ranks of women, those working as **menial in private services** are 47,1 percentage points more likely to migrate than women employed as menials in industry. Also women employed as **blue collars in agriculture** and those employed as menial in agriculture are by 15,1 percentage points and respectively 17,0 percentage points[10] more likely to migrate than women who work as menials in industry.

Our findings confirm the myth of the Romanian household maids in the Italian labour market and also explain why education has a quadratic effect on women's likelihood to migrate as their position in the labour market does not require a high level of education. They equally explain the age3 effect we found as many elderly women come to work in the caring sector

[8] significant at the 15% level
[9] Significant at the 1% level
[10] Significant at the level of 5% and respectively of 10%

once their children are already grown up. In this case their cost of migrating is reduced because they are not involved in child rearing at home anymore.

Household level variables

The size of the household has a negative effect in the case of men, decreasing their probability to migrate by 8,2 percentage points for each additional household member, whereas in the case of women household size has a quadratic effect first increasing their likelihood to migrate and then decreasing it. It seems that for large households, migrants are important sources of labour. In the case of women, a large household may provide substitutes in terms of household chores. At the same time, after a threshold is reached household size discourages women's migration as the number of dependent persons grows the woman might have to look after the dependents.

The number of children increases men's probability to migrate with every additional child increasing their probability by 12,9 percentage points and contrary to our expectations also increasing that of women by 7,9 percentage points. We include in a second regression the number of children disaggregated by age groups. Our results prove that the only group that reduces the women's likelihood to migrate is that of children under the age of five. Both groups of children aged between five and ten and respectively between ten and fifteen increase women's migration probability. This is in accordance with the findings of Kanaiaupuni (2000). On one hand, this may suggest either that in terms of household chores substitution could begin at a very early age. In this case, even though children do not work on the labour market, they begin to work at very early ages in household domestic production. On the other hand, if households are poor and women need to provide for the household, they may choose to migrate as soon as children leave infanthood and are less dependent on their mother.

The existence of **other elderly dependants** also increases the probability to migrate of both women and men, with each additional dependant increasing the likelihood of men by 12,6 percentage points and that of women by 6,3 percentage points[11]. This result suggests that one of the reasons for which men and women migrate is to provide for the dependants. Migration is a strategy to alleviate the budget constraint. At the same time, elderly dependants could equally substitute men and women in terms of domestic production.

[11] Significant at the 15% level

The **gender ratio** has a significant positive effect in the case of women's migration with each additional woman increasing its likelihood by 21,9 percentage points, as women who stay behind can substitute in terms of tasks those who leave. In the case of men the effect is negative, decreasing their likelihood to migrate by 10,2 percentage points which may imply that there is no substitution between genders in terms of tasks. This is consistent with the hypothesis that, given the gender division of labour, replacement workers of the migrant's own sex must be available in order to free an individual up for migration (Katz 1998).

The probability to migrate increases with the **number of other migrants** in the household. Each additional migrant increases the likelihood to migrate of men by 29,4 percentage points and that of women by 9,8 percentage points. Several members who migrate together could build a migration network which might reduce the cost of migration. Also, in this case the psychological cost of separation from family members is reduced.

The **average level of education of other women** in the household is not significant. At the same time, the **average age o**f **other women** in the household has a negative effect, each supplementary year of education reducing migration probability by 0,5 percentage points[12]. It seems that the quantity of women in the household who could substitute the one who migrates is more important than their quality.

The **wealth index** has a positive significant effect for men and a negative effect for women. While in the case of men it seems that richer households are the ones who can afford to send migrant men and to be deprived by a labour source, in the case of women only poor households send migrant women. This seems to confirm our hypothesis that women migrate only at a very low level of wealth in the home economy. Women's migration is in this case a strategy undertaken only by the very poor. At the same time, this result may imply that migration costs are larger in the case of men than in that of women.

The **rural origin** has a positive effect on labour migration for both men and women, increasing men's likelihood to migrate by 7,2 percentage points and that of women by 6,3 percentage points[13]. Our result is in accordance with previous sociological studies on Romanian migration that find particularly high rates of temporary labour migration in the rural areas and in small towns and less in large urban areas (IOM (2002), Sandu (2005)) .

House ownership equally increases the migration of men by 3,1 percentage points and that of women by 5,0 percentage points[14]. Our results are not consistent with the findings of Massey

[12] Signicant at the 10% level.
[13] In the case of women significant only at the 10% level.
[14] Significant at the level of 10%.

and Cerutti (2001) according to which house ownership reduces women's migration. This finding however does not come as a surprise. As proven by sociologists, Romanians may migrate in part precisely in order to gather money that they could later invest in their houses. Their home is their pride and also a mark of their social status in their community of origin (Lagrave and Diminescu 1999).

Regional level variables

The existence of **norms** regarding gender roles in a region has a negative effect on women's propensity to migrate. Norms decrease women's likelihood to migrate by 6,2 percentage points. The stronger the norm, the less likely are women to migrate. Women who come from regions where norms and traditions are powerful are less likely to migrate than women who come from more tolerant regions with respect to their role in society.

The interactive variable between **norms and the level of education** is positive and significant at the 5% level suggesting that the better educated a woman is the more likely she is to migrate despite the existence of deterring social norms. This confirms our intuition that better educated women are less constrained by social norms in their decisions.

The **migration rate of women** in the region has a positive influence on women's likelihood to migrate, increasing their migration likelihood by 2,5 percentage points. This result suggests that there is a cumulative causation effect though it appears not to be very strong.

The results for variables regarding NUTS II regions show that migrants coming from the South-East regions are by 14,3 percentage points in the case of men and by 18,0 percentage points in that of women more likely to migrate than those coming from the South region. As well, both men and women who come from the regions of North-East and of North-West have more chances to migrate than those from the South[15]. We find the expected geographical patterns with people from South-East and North-East which are the two NUTS II main sending regions having a higher propensity to migrate than people coming from the rest of the country.

Conclusions

Our study proves the existence of important differences between the decision to migrate of men and that of women. Whereas both men and women migrate when they are young, women also migrate at a later stage of their life cycle. Men have more chances to migrate when they

[15] In the case of women all signicant at the 10% level.

are better educated, instead migrant women do not seem to be able to take advantage of higher levels of education. In their case, there are no returns to upper education when migrating. Men migrate more if they are married, whereas married women migrate less. At the same time, both migrate when there are a lot of dependants to provide for, though women with small dependant children under the age of five migrate less. Men who come from large households migrate less because they are needed as labour force at home. On the contrary, women who come from large households are more likely to migrate as there are other persons in the household who can substitute them in terms of chores. The gender ratio shows that the chances to migrate increase with the existence in the household of other persons of the same gender to take up the chores as women and men are not substitutes in terms of domestic activities. Also, migrate men come from households that have already reached a certain level of wealth, instead migrant women come from poor household and their migration seems to be the 'last best-option' of these households. These differences are in part shaped by the culture of the sending society, by traditions and customs in the home community and in part by market forces as the labour demand in the home and the host country.

Norms that clearly define gender roles in the household are an impediment to female migration. The more traditional a society is, the less likely are women to migrate as the deviation from the norm induces a cost of lost reputation undermining their status and their "say" in the home community and even in their households. The lives and prospects of men and women are to a great extent shaped by these gender stereotypes. The existence of cultural norms can explain why women do not migrate even when interesting economic opportunities present. They are not acting irrationally, they are just being norm-obeyers, in Akerloff's terms (1980), knowing that breaking the norm would trigger a cost and that sooner or later they would come back to the home community and have to bear this cost. At the same time, low gains in the home country which shrink consumption to the subsistence level and even endanger child rearing may drive women to break the norm.

Finally, migration prospects are equally given by the structure of the demand on the foreign labour market that matches men and women to precise sectors and occupations. Most of the migrant men work in the building industry and most of the migrant women in the caring services which do not require a high level of education and also provide employment opportunities for elder women.

Is the gender norm inherently bad? Is women migration always positive? Who gains and who loses out of women's migration? Like any other process women's migration triggers winners and losers. The gains out of women's migration are not evenly distributed at the level of the

household. Women have a major role in child rearing and in the formation of human capital. Women are mothers and this status makes their contribution to the future of society beyond any doubt. Although, remittances sent by women are likely to be spent on children, children could still be the main losers as it takes more than money to produce them. Children are also produced with parental care. At the same time, the lack of opportunities in the home economy and the low income level leaves women with no other alternative than migration as children cannot be produced without money.

Is there really women empowerment as a consequence of women migration? Do local norms in the home community change in favour of women? Do they gain a better social status? These are still open questions that need to be addressed.

Although, our model is restrictive in many senses: by considering only two individuals and to some extent the home community and its empirical specification must still be developed, our main aim was to shed some light on the gender differences in the decision to migrate. We conclude that studies on the determinants of migration should be more sensitive to gender differences and take into account that "birds of passage are also women" (Morokvasic 1984).

References

Agesa, R. U. and S .Kim (2001) "Rural to Urban Migration as a Household Strategy. Evidence from Kenya", *Review of Development Economics*, 5 (1), 60-75

Akerloff, G. (1980) "A Theory of Social Custom, of Which Unemployment May be One Consequence", *The Quarterly Journal of Economics*, Vol. 94, No. 4, (Jun., 1980), 749-775

Apps, P. and R. Rees (2002) Household production, full consumption and the costs of children, *Labour Economics* 8, 621– 648

Apps, P. and R. Rees (1997) Collective Labour Supply and Household Production, *Journal of Political Economy*, 105(1), 178-190

Badie, B. and C. de Wenden (2001) *Le défi migratoire: questions de relations internationales*, Presses de Sciences Politiques, Paris

Baker, M. and D. Benjamin (1997) "The Role of the Family in Immigrants' Labour-Market Activity: An Evaluation of Alternative Explanations." *The American Economic Review* 87(4), 705-727

Bargain, O. and O. Donni, (2007) "A Theory of Child Targeting," IZA Discussion Papers 2669, Institute for the Study of Labor (IZA)

Basu, K. (2006) "Gender and Say: a Model of Household Behaviour with Endogenously Determined Balance of Power," *Economic Journal*, Royal Economic Society, vol. 116(511), 558-580

Basu K. and P.H. Van (1998) "The Economics of Child Labour", *The American Economic Review*, Vol. 88, No. 3, 412-427

Behrman, J. R. and B. Wolfe. (1984) "Micro Determinants of Female Migration in a Developing Country: Labour Market, Demographic Marriage Market and Economic Marriage Market Incentives." *Research in Population Economics* 5,137-166

Becker, G. S. (1991). *A Treatise on the Family*, (MA: Harvard University Press)

Becker, G. S. (1965) "A Theory of the Allocation of Time." *Economic Journal* 75, 493-576

Bird, G. and G.W. Bird (1985) "Determinants of mobility in two-earner families: Does the wife's income count?", *Journal of Marriage and the Family* 47: 753–758

Block H.D. and J. Marschak (1960), "Random Ordering and Stochastic Theories of Response" in I. Olkin (ed.), *Contributions to Probability and Statistics*, Stanford University Press, 97-132

Blume, L. (2002) "Stigma and Social Control," *Economics Series* 119, Institute for Advanced Studies

Blundell R., P.-A. Chiappori, C. Meghir, (2005) "Collective Labor Supply with Children," *Journal of Political Economy*, University of Chicago Press, vol. 113(6), pages 1277-1306, December

Boserup, E. (1970) *Woman's Role in Economic Development*, (New York: St. Martin's Press)

Bourguignon F. (1999) "The Cost of Children: May the Collective Approach to Household Behaviour Help?" *Journal of Population Economics,* 12(4), 503-21.

Bourguignon, F., M. Browning, P.-A. Chiappori and V. Lechene (1993), "Intra-household allocation of consumption: a model and some evidence from French data", *Annales d'Economie et de Statistique*, 29, 137-156.

Boyd, M. (2003) "Women and Migration: Incorporating Gender into International Migration Theory", in *Migration Fundamentals*, Migration Policy Institute, Washington D.C.

Browning M. and M. Gørtz (2006) "Spending Time and Money within the Household", Oxford Economic Papers, no. 288

Browning, M. and P. A. Chiappori (1998) "Efficient Intra-Household Allocations: A General Characterization and Empirical Tests", *Econometrica*, Vol. 66, No. 6, 1241-1278

Browning, M., F. Bourguignon, P.-A Chiappori, V. Lechene (1994) "Income and Outcomes: A Structural Model of Intrahousehold Allocation," *Journal of Political Economy*, University of Chicago Press, vol. 102(6), pages 1067-96, December

Burda, M., D. Hamermesh, P. Weil (2007) "Total Work, Gender and Social Norms", IZA discussion paper no. 2705

Cackley, A. P (1993) "The Role of Wage Differentials in Determining Migration Selectivity by Sex: The Case of Brazil. Internal Migration of Women in Developing Countries." United Nations Department for Economic and Social Information and Policy Analysis, New York.

Cerrutti, M. and D. S. Massey (2001) "On the Auspices of Female Migration from Mexico to the United States." *Demography* 38(2), 187-200

Chattopadhyay, A. (1998) "Gender, Migration, and Career Trajectories in Malaysia," *Demography*. 35(3), 335-344

Chen, N., P. Conconi and C. Perroni (2007) "Women's Earning Power and the 'Double Burden' of Market and Household Work," CEPR Discussion Papers 6269

Chen, N., P. Conconi and C. Perroni (2006) "Does Migration Empower Married Women?," CEPR Discussion Papers 5559

Chiappori P. A. (1997) “Introducing Household Production in Collective Models of Labor Supply” Journal of Political Economy, 105 (1), p. 191-209

Chiappori, P.-A. (1992), “Collective Labor Supply and Welfare”, Journal of Political Economy, 100, 437-67.

Chiappori P. A. (1988) "Rational Household Labor Supply", Econometrica, 56 (1): 63-89.

Compton, J. and R. Pollack. (2004) “Why Are Power Couples Increasingly Located in Large Cities?” NBER Working Paper 10918, November

Comisia Naţională pentru Populaţie şi Dezvoltare (2007), *Cartea Verde a Populaţiei*

Constant, A. and K. Zimmermann (2003) Occupational Choice Across Generations, IZA Discussion Paper No. 975

Cooke, T.J. (2003) “Family Migration and the Relative Earnings of Husbands and Wives”. *Annals of the Association of American Geography* 93(2): 338-349.

Cooke T.J. and A.J. Bailey (1996) “Family migration and the employment of married women and men”, *Economic Geography*, 72(1), 38-48

Couprie, H. (2004) *L’influence du contexte institutionnel et familial sur l’offre de travail des femmes : approches microéconométriques*, PhD. Dissertation, Université de la Méditerannée

De la Brière, B., A. De Janvry, E. Sadoulet and S. Lambert (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

Donato, K. M. (1993) "Current Trends and Patterns of Female Migration: Evidence from Mexico." *International Migration Review* 27(4): 748-771

Duflo, E. and C. Udry (2004) "Intrahousehold Resource Allocation in Cote d'Ivoire: Social Norms, Separate Accounts and Consumption Choices," NBER Working Papers 10498, National Bureau of Economic Research

Findley, S. and A. Diallo (1993) “Social Appearances and Economics Realities of Female Migration in Rural Mali.” In *Internal Migration of Women in Developing Countries*. United Nations, Department for Economic and Social Information and Policy Analysis. New York, United Nations

Frank, R. (1978) “Why women earn less: the theory and estimation of differential overqualification” *American Economic Review* 68, 360–373

Fogli, A. and L. Veldkamp (2007) Nature or Nurture? Learning and Female Labour Force Dynamics, NYU

Gemici, A. (2007) Family Migration and Labor Market Outcomes, mimeo University of Pennsylvania

Gorlich, D. and C. Trebesch (2006) Mass Migration and Seasonality: Evidence on Moldova’s Labour Exodous, working paper 435, Kiel Institute for World Economy

Government of Romania (2002) *National Report on Equal Chances between men and women*

Granovetter, M. (1978) “Thresholds Models of Collective Behaviour”, *American Journal of Scociology* 83, 1420-1443

Granovetter, M. and R. Soong (1983) “Thresholds Models of Diffusion and Collective Behaviour, *Journal of Mathematical Sociology* 9, 165-179

Greene, W. H. (2003), *Econometric Analysis*, fifth edition, NJ, Prentice-Hall

Harris, J. R. and M. P. Todaro. (1970) “Migration, Unemployment and Development: A Two-Sector Analysis.” *American Economic Review* 60(1), 126-142.

Hoddinott, J. (1994) "A Model of Migration and Remittances Applied to Western Kenya." *Oxford Economic Papers* 46: 459-476.

Hondagneu-Sotelo, P. (1994) *Gendered Transitions: Mexican Experiences of Immigration*. Berkeley, CA, University of California Press.

IOM (2002) “On the Mobility of Romanian Migrants from rural areas: migratory patterns, institutional framing and migratory policies addressing their mobilities”, Bucharest

Iyigun, M. and R. Walsh (2007) Endogenous Gender Power, Household Labor Supply, and the Quantity-Quality Tradeoff, *Journal of Development Economics,* 82:1, 138-55

Jacobsen, J. P. and L.M. Levin (1997) “Marriage and migration: comparing gains and losses from migration for couples and singles.” *Social Science Quarterly* 78: 688-709

Jacoby, H. (1988) “Productivity of Men and Women and the Sexual Division of Labor in Peasant Agriculture of the Peruvian Sierra” *Journal of Development Economics* 37:265-87

Kanaiaupuni, S. M. (2000) "Reframing the Migration Question: An Analysis of Men, Women, and Gender in Mexico." *Social Forces* 78(4): 1311-1347.

Katz, E. (1998) Gender and Demographic Determinants of Migration in Ecuador, IFPRI Workshop on Gender and Intrahousehold Supplemental Country Studies, Washington, D.C., September 17-18

King, R. and E. Zontini. (2000) "The role of gender in the South European immigration model." *Revista de sociologia*, Universitat Autonoma de Barcelona 60(1): 35-52.

Lagrave, R-M, D. Diminescu (1998) *Faire une saison. Pour une anthropologie des migrations roumaines en France. Le cas du Pays d’Oaş*. MIRE, DPM, rapport de recherche, Paris

Lee, Y.J., W. L. Parish and R.J. Willis (1994) “Sons, Daughters and Intergenerational Support in Taiwan”, *American Journal of Sociology* 99, 1010-1041

Levhari, D. and O. Stark (1982) “On Migration and Risk” *Economic Development and Cultural Change* 31(1), 191-198

Le Vine, S. (1993) *Dolor y Alegria: Women and Social Change in Urban Mexico*, University of Wisconsin Press

Lewis, W. A. (1954) “Economic Development with Unlimited Supplies of Labor” The Manchester School. 22, 139-191

Link, B. G., and J. C. Phelan (2001) Conceptualizing Stigma," *Annual Review of Sociology*, 27, 363-385

Lucas, R. E. and O. Stark. (1985) "Motivations to Remit: Evidence from Botswana." *Journal of Political Economy* 93(5), 901-918

Lundberg, S. and R. A. Pollak (2003) “Efficiency in Marriage”, *Review of Economics of the Household,* Vol. 1, (3)

Lundberg, S.J, R. Pollak and T. Wales (1997), “Do husbands and wives pool their resources ? Evidence from the United Kingdom child benefit.”, *Journal of Human Resources*, 32(3), 463-480

Markle, L. and K. Zimmermann (1992) “Savings and Remittances: Guest Workers in West Germany”, in K. Zimmerman (ed.), *Migration and Economic Development*. Berlin: Spring-Verlag, p. 55-75

Martin, Philip L. (1993) *Trade and Migration: NAFTA and Agriculture*. Washington D.C.: Institute for International Economics

Martin, Philip L. and J. Edward Taylor (1996) The Anatomy of a Migration Hump. J. Edward Taylor ed., *Development Strategy, Employment, and Migration: Insights from Models*. Paris, OECD, 43-62

Massey, D. and K. Espinosa (1997) "What’s Driving Mexico-U.S. Migration? A Theoretical, Empirical, and Policy Analysis." *American Journal of Sociology* 102(4), 939-999.

Massey, D. L. Goldring, and J. Durand (1994) Continuities in transnational migration: an analysis of nineteen Mexican communities, *American Journal of Sociology*, 1994, vol. 99, n°6, 1433-1492

McFadden D. (2001), “Economic choices”, *American Economic Review*, 91, 351-378.

McFadden D. (1981), “Econometric models of probabilistic choice”, in Manski C. and McFadden D. (eds), *Structural analysis of discrete data with econometric applications*, 198-272, Cambridge (Mass.), MIT Press.

McFadden D. (1973) “Conditional Choice Analysis of Qualitative Choice Behaviour” in *Frontiers in Econometrics*, ed. P. Zarembka, New York Academic Press, 105-142

Mencher, J. (1988) “Women’s work and poverty: Women’s contribution to household maintenance in South India”, in: D. Dwyer & J. Bruce (eds.), *A Home Divided. Women and Income in the Third World*, 99–119. Stanford, CA: Stanford University Press.

Mincer, J. (1978) “Family Migration Decisions”. *Journal of Political Economy* 86(5): 749-73.

Mincer, J. (1974) *Schooling, Experience, and Earnings*. Columbia University Press: New York.

Mora, J. and J.E. Taylor (2006) “Determinants of Migration, Destination, and Sector Choice: Disentangling Individual, Household, and Community Effects.” In *International Migration, Remittances, and The Brain Drain*, Özden, Ç. and M. Schiff, eds. New York: Palgrave Macmillan.

Morokvasic, M. (1984) “Birds of passage are also women”, *International Migration Review*, "Women in Migration", 18 (68), 886-907

Morrison, D.R. and D.T. Lichter (1988) “Family migration and female employment: the problem of underemployment among migrant married women”, *Journal of Marriage and the Family* 50, 161–172

Open Society Foundation (2006) “Temporary Living Abroad. The Economic Migration of Romanians 1990-2006”

Pfeiffer L., S. Richter, P. Fletcher and J. E. Taylor (2007) “Gender in Economic Research on International Migration and Its Impacts: A Critical Review” in *The International Migration of Women,* World Bank, 11-51

Philips, S. and P. Burton (1998), “What’s mine is yours ? The influence of male and female incomes on patterns of household expenditures”, *Economica*, 65, 599-613

Pollak, R.A. and M.L. Wachter (1975) “The relevance of the household production function and its implications for the allocation of time”, *Journal of Political Economy*, 83(2), 255-277

Richter, S. and J. E. Taylor (2007) “Gender and the Determinants of International Migration from Rural Mexico Over Time”, *The International Migration of Women,* World Bank, 51-99

Riley, N. (1998) “Research on gender in demography: Limitations and constraints”, *Population Research and Policy Review* 17: 521–538

Sandu, D. (2005) “Emerging Transnational Migration from Romanian Villages”, *Current Sociology* 53; 555-582

Sandu, D. et al. (2004) A Country Report on Romanian migration abroad, migrationonline.cz, Multicultural Centre, Prague

Schelling, T. (1978) *Micromotives and Macrobehaviour*, New York, W.W. Norton

Schultz, T.P. (1990) "Testing the Neoclassical Model of Family Labour Supply and Fertility." *Journal of Human Resources* 25(4):599-634

Shihadeh, E. (1991). The prevalence of husband-centered migration: employment consequences for married mothers, *Journal of Marriage and the Family* 53: 432–444

Sjaastad, L.A. (1962) “The Costs and Returns of Human Migration”. *Journal of Political Economy* 70(5), 80-93

Sofer, C. (1999) “Modélisations économiques de la prise de décision dans la famille” in B. d’Intignano *L’égalité économique entre hommes et femmes*, La Documentation Française

Spitze, G. (1984) “The effect of family migration on wives’ employment: How long does it last?”, *Social Science Quarterly* 65, 21–36

Stark, O. (1978) *Economic-Demographic Interactions in Agricultural Development: The Case of Rural-to-Urban Migration*. U.N. Food and Agricultural Organization: Rome.

Stark, O. (1991) *The Migration of Labour*. Cambridge: Basil Blackwell.

Stark, O. and E. Katz. (1986) “Labour Migration and Risk Aversion in Less Developed Countries,” *Journal of Labour Economics*, 4(1): 134-49.

Stark, O. and D. Levhari. (1982) “On Migration and Risk in LDCs.” *Economic Development and Cultural Change* 31(1): 191-196.

Stark, O. and J. E. Taylor. (1991) “Migration Incentives, Migration Types: The Role of Relative Deprivation”. *The Economic Journal* 101:1163-78. (Reprinted in Stark, 1991.)

Stark, O. and Y. Wang (2002) “Inducing Human Capital Formation: Migration as a Substitute for Subsidies.” *Journal of Public Economics* 86: 29-46.

Thadani, V. and M. P. Todaro (1984) *Female Migration: A Conceptual Framework. Women in the Cities of Asia: Migration and Urban Adaptation*. Boulder: Westview.

Todaro, M. P. (1969) "A Model of Labor Migration and Urban Unemployment in Less Developed Countries." *The American Economic Review* 59(1): 138-148

Udry C. (1996) “Gender, Agricultural Production, and the Theory of the Household” Journal of Political Economy, 104 (5):1010-1046

United Nations (2006) *State of the World Population*, New York: United Nations.

United Nations (1995) *International Migration Policies and the Status of Female Migrants*. New York: United Nations.

Vanwey, L.K. (2004) Altruistic and Contractual Remittances between Male and Female Migrants and Households in Thailand, *Demography* 41(4), 739-756

Vijverberg, W.P. (1993) "Labour Market Performance as a Determinant of Migration", *Economica*, 60, 143-160

Winters, A., De Janvry, A., Sadoulet. E. (2001) "Family and community networks in Mexico-U.S. migration", *Journal of human resources*, 159-184

World Bank (2007) *The International Migration of Women,* Washington D.C.

Appendix I

Variables	(1)				(2)			
	Men		**Women**		**Men**		**Women**	
	Coefficient	**Marginal effects**	**Coefficient**	**Marginal effects**	**Coefficient**	**Marginal effects**	**Coefficient**	**Marginal effects**
Individual characteristics								
Age	0.232	0.042	0.069	0.021	0.311	0.057	0.056	0.019
	(0.021)	(0.005)	(0.035)	(0.009)	(0.027)	(0.003)	(0.040)	(0.004)
Age2	-0.003	-0.002	-0.012**	-0.005	-0.004	-0.001	-0.001**	-0.000*
	(0.028)	(0.001)	(0.004)	(0.001)	(0.003)	(0.002)	(0.000)	(0.000)
Education	0.267	0.023	-0.098*	-0.006*	0.299	0.027	-0.118*	-0.007+
	(0.005)	(0.000)	(0.063)	(0.012)	(0.053)	(0.001)	(0.135)	(0.017)
Civil status*	1.445	0.154	-0.956	-0.093				
	(0.110)	(0.003)	(0.130)	(0.126)				
Married					0.552	0.126	-0.800	-0.142
					(0.115)	(0.012)	(0.168)	(0.127)
Divorced					-1.503	-0.168	-0.209	0.083
					(0.305)	(0.009)	(0.014)	(0.058)
Widow					-2.270	-0.214	-0.002 n.s.	-0.010 n.s.
					(0.407)	(0.023)	(0.171)	(0.008)
Consensual union					0.177 *	0.060+	-0.774	-0.130
					(0.012)	(0.015)	(0.237)	(0.065)
Household level variables								
Household size	-0.647	-0.135	0.134	0.073	-0.816	-0.143	0.272	0.046
	(0.077)	(0.004)	(0.151)	(0.008)	(0.085)	(0.009)	(0.017)	(0.077)
Household size2	-0.396	-0.026**	-0.513**	-0.025*	-0.013*	0.003+	-0.059**	0.033+
	(0.086)	(0.007)	(0.016)	(0.010)	(0.009)	(0.001)	(0.018)	(0.002)
Number of children	1.151	0.129	0.298	0.079				
	(0.037)	(0.034)	(0.065)	(0.034)				

*=1 if married

Standard errors in brackets; standard errors adjusted for clustering at the household level and robust to heteroscedasticity. Significance at: + 15%; * 10%; ** 5%; *** 1%; n.s. not significant. In reference for model (2): single. Other control variables not reported: son/daughter of household head, age3, education2 and native language.

Children<5 years					0.940	0.215	-0.134**	-0.072*
					(0.046)	(0.075)	(0.012)	(0.023)
Children 5-10 years					0.847	0.190	0.267	0.083
					(0.044)	(0.005)	(0.011)	(0.056)
Children 10-15years					0.904	0.202	0.249	0.074
					(0.043)	(0.017)	(0.096)	(0.067)
Other dependants	0.681	0.126	0.246***	0.063^{+}	0.660	0.118	0.056^{+}	0.030$^{n.s.}$
	(0.026)	(0.078)	(0.062)	(0.012)	(0.027)	(0.012)	(0.067)	(0.052)
Gender ratio	-0.390	-0.102	1.701	0.219	-0.293	-0.086	1.681	0.190
	(0.092)	(0.016)	(0.202)	(0.023)	(0.084)	(0.007)	(0.210)	(0.023)
Number of other migrants	2.359	0.294	0.790	0.098	2.782	0.323	0.982	0.112
	(0.047)	(0.056)	(0.059)	(0.015)	(0.055)	(0.025)	(0.060)	(0.089)
Education of other women			0.049$^{n.s.}$	0.002$^{n.s.}$			0.007$^{n.s.}$	0.009$^{n.s.}$
			(0.013)	(0.001)			(0.014)	(0.027)
Age of other women			-0.013**	-0.005*			-0.018***	-0.006**
			(0.006)	(0.075)			(0.007)	(0.031)
Wealth index	0.474	0.040	-0.074**	-0.016*	0.048	0.011	-0.042	-0.010
	(0.081)	(0.015)	(0.058)	(0.005)	(0.007)	(0.003)	(0.002)	(0.009)
Wealth index2	0.021$^{n.s.}$	0.035$^{n.s.}$	0.030$^{n.s.}$	0.009$^{n.s.}$				
	(0.132)	(0.081)	(0.049)	(0.021)				
House ownership	0.140	0.031	0.211**	0.050*	0.106*	0.019^{+}	0.266	0.067
	(0.039)	(0.003)	(0.118)	(0.001)	(0.354)	(0.002)	(0.011)	(0.048)
Rural	0.260	0.072	0.170*	0.063*	0.241	0.069*	0.203*	0.074^{+}
	(0.056)	(0.011)	(0.146)	(0.017)	(0.052)	(0.014)	(0.013)	(0.007)
Informal institutions								
Norm			-0.251	-0.062			-0.139	-0.049
			(0.019)	(0.013)			(0.023)	(0.001)
Norm*education			0.121**	0.022**			0.073	0.016**
			(0.056)	(0.014)			(0.002)	(0.001)
Regional level variables								
Women migration rate			0.144	0.025			0.086	0.017
			(0.003)	(0.021)			(0.004)	(0.011)
ρ (std. dev.)	-0.664 (0.047)				-0.423 (0.046)			
Wald test	88.825				63.524			
Prob>chi2	0.000				0.000			

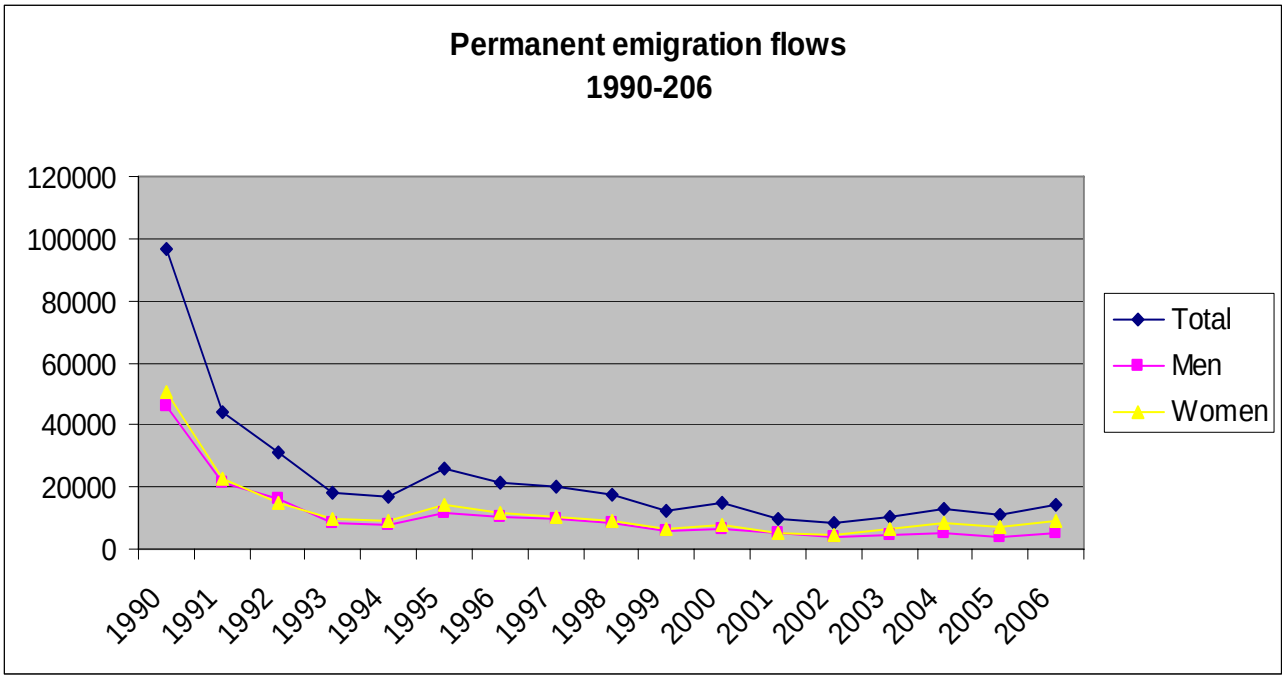
Variables	(3)				(4)			
	Men		**Women**		**Men**		**Women**	
	Coefficient	**Marginal effect**	**Coefficient**	**Marginal effect**	**Coefficient**	**Marginal effect**	**Coefficient**	**Marginal effect**
Individual characteristics								
Age	0.160	0.051	0.059	0.019	0.236	0.078	0.072	0.025
	(0.020)	(0.017)	(0.035)	(0.000)	(0.021)	(0.019)	(0.035)	(0.008)
Age2	-0.020	-0.004	- 0.003*	-0.000^{+}	-0.031	-0.006	-0.021	-0.004
	(0.000)	(0.009)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Education	0.051	0.008	-0.004*	-0.000*	0.036	0.007	-0.005*	-0.002*
	(0.007)	(0.078)	(0.017)	(0.000)	(0.006)	(0.000)	(0.014)	(0.001)
Civil status*	1.240	0.128	-1.019	-0.114	1.440	0.170	-0.961	-0.097
	(0.104)	(0.120)	(0.135)	(0.003)	(0.110)	(0.073)	(0.132)	(0.014)
Labour market variables								
Blue collars (agri)	0.096^{+}	0.268^{+}	1.192	0.151**				
	(0.076)	(0.092)	(0.219)	(0.017)				
Menial (agri)	0.865	0.240	1.220	0.170*				
	(0.125)	(0.107)	(0.339)	(0.001)				
White collars (ind)	0.089^{+}	0.022$^{n.s.}$	0.714	0.073*				
	0.128	(0.046)	(0.320)	(0.024)				
Professionals (ind)	0.245	0.049*	0.685 **	0.064 $^{n.s.}$				
	(0.102)	(0.015)	(0.327)	(0.033)				
Craft (ind)	1.052	0.361	0.561	0.026*				
	(0.049)	(0.123)	(0.219)	(0.019)				
Blue collars (ind)	0.256	0.063*	0.079 $^{n.s.}$	0.001 $^{n.s.}$				
	(0.093)	(0.095)	(0.403)	(0.000)				
Blue colars (priv ser)	0.689	0.120**	0.272^{+}	0.007 $^{n.s.}$				
	(0.079)	(0.005)	(0.412)	(0.009)				
Menial (priv ser)	-0.145^{+}	-0.017$^{n.s.}$	2.130	0.471**				
	(0.113)	(0.001)	(0.194)	(0.105)				

* =1 if married; Standard errors in brackets; standard errors adjusted for clustering at the household level and robust to heteroscedasticity. Significance at: $^{+}$ 15%;* 10%; ** 5%; *** 1%; $^{n.s.}$ not significant. In reference for model (3): menial in industry and for model (4): South

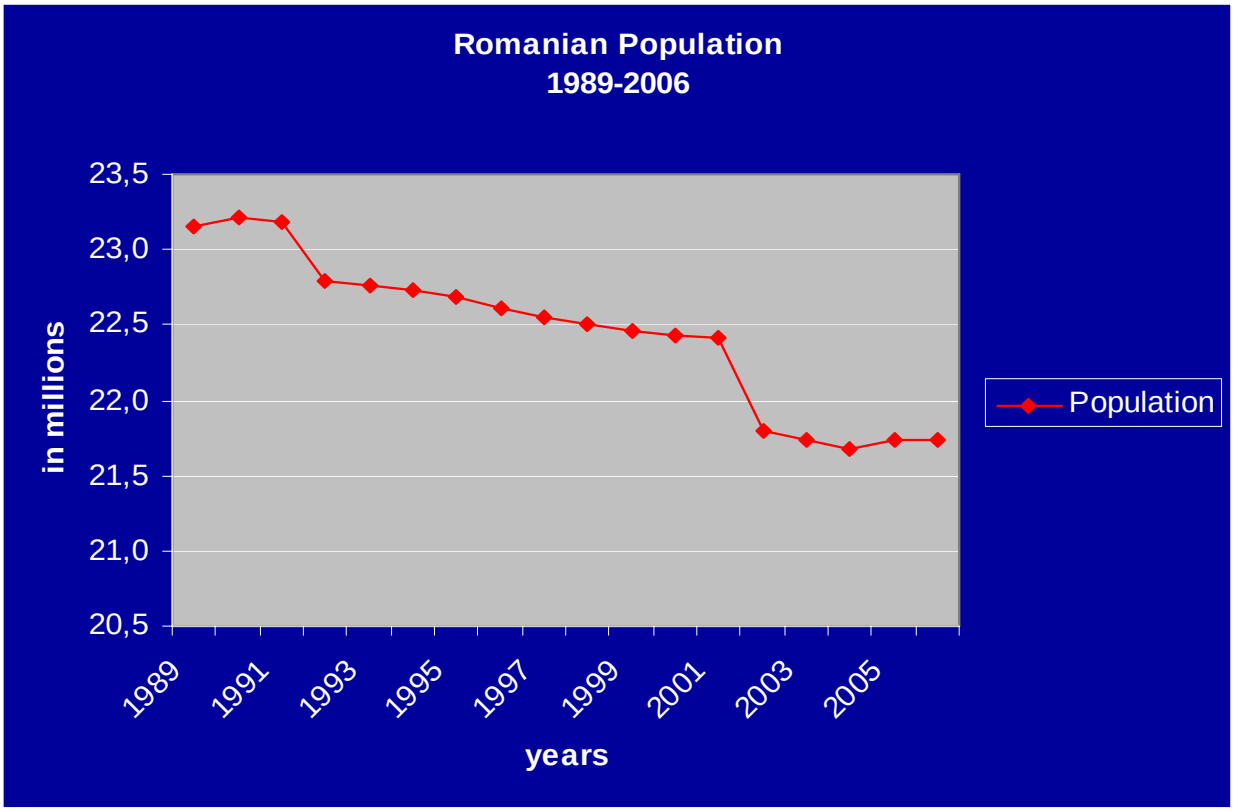
Craft (priv ser)	0.758	0.166***	-5.020	-0.004				
	(0.083)	(0.081)	(0.312)	(0.003)				
Professionals (pri ser)	0.342	0.093**	0.676**	0.060$^{n.s.}$				
	(0.079)	(0.018)	(0.403)	(0.015)				
White collars (priv s)	-0.026$^{n.s.}$	-0.005$^{n.s.}$	0.851	0.136$^{n.s.}$				
	(0.124)	(0.001)	(0.343)	(0.052)				
White collars (pub s)	-0.122^{+}	--0.007$^{n.s.}$	0.854	0.141$^{n.s.}$				
	(0.169)	(0.003)	(0.356)	(0.093)				
Professionals (pub s)	-0.608	-0.013***	0.544*	0.032$^{n.s.}$				
	(0.252)	(0.006)	(0.418)	(0.008)				
Menial (public serv)	-0.850	-0.014	1.079	0.112**				
	(0.336)	(0.001)	(0.288)	(0.122)				
Craft (public serv)	0.332*	0.042^{+}	-3.667	-0.003				
	(0.245)	(0.015)	(0.256)	(0.001)				
Blue collars (public serv)	-0.174$^{n.s.}$	0.008$^{n.s.}$	-3.612	-0.431*				
	(0.344)	(0.000)	(0.257)	(0.000)				
Household level variables								
Household size	-0.709	-0.082	0.142	0.036**	-0.644	-0.71	0.122*	0.043^{+}
	(0.078)	(0.012)	(0.157)	(0.005)	(0.077)	(0.126)	(0.154)	(0.017)
Household size2	-0.027	-0.002**	-0.059**	-0.007^{+}	-0.030	-0.017	-0.051***	-0.021*
	(0.009)	(0.005)	(0.015)	(0.004)	(0.009)	(0.013)	(0.017)	(0.005)
Number of children	1.227	0.164	0.330	0.113	1.144	0.187	0.500	0.126
	(0.039)	(0.029)	(0.079)	(0.016)	(0.037)	(0.116)	(0.065)	(0.052)
Other dependants	0.726	0.102	0.427	0.075	0.678	0.091	0.138	0.054
	(0.028)	(0.016)	(0.085)	(0.031)	(0.026)	(0.097)	(0.062)	(0.033)
Gender ratio	-0.422	-0.045	1.894	0.245	-0.383	-0.029	1.722	0.231
	(0.105)	(0.010)	(0.238)	(0.079)	(0.092)	(0.028)	(0.207)	(0.048)
Number of other migrants	2.149	0.329	0.860	0.111	2.335	0.348	0.832	0.103
	(0.048)	(0.036)	(0.072)	(0.021)	(0.047)	(0.034)	(0.057)	(0.088)
Education of other women			0.014*	0.008^{+}			0.018$^{n.s}$	0.006$^{n.s}$
			(0.016)	(0.003)			(0.013)	(0.002)
Age of other women			-0.008	-0.002			-0.013**	-0.005*
			(0.006)	(0.000)			(0.006)	(0.001)
Wealth index	0.045	0.013	-0.038	-0.015	0.027*	0.008*	-0.066*	-0.023*
	(0.009)	(0.008)	(0.022)	(0.006)	(0.008)	(0.006)	(0.059)	(0.010)

Wealth index2					0.039^{+}	0.004^{+}	0.010*	0.004*
					(0.001)	(0.000)	(0.005)	(0.002)
House ownership	0.172	0.027	0.201	0.027**	0.134	0.056	0.219**	0.051*
	(0.047)	(0.026)	(0.140)	(0.008)	(0.039)	(0.045)	(0.118)	(0.027)
Rural	0.273	0.028	0.084	0.021*	0.277	0.037	0.163*	0.060*
	(0.060)	(0.003)	(0.146)	(0.003)	(0.056)	(0.026)	(0.145)	(0.043)
Informal institutions								
Norm			-0.162	-0.052				
			(0.149)	(0.007)				
Norm*education			0.103	0.038				
			(0.003)	(0.005)				
Regional level variables								
Women migration rate			0.112	0.013				
			(0.005)	(0.071)				
North-East					0.084	0.073	0.319	0.202*
					(0.055)	(0.005)	(0.141)	(0.063)
South-East					0.270	0.143	0.288	0.180*
					(0.053)	(0.011)	(0.146)	(0.075)
Bucharest					-0.191	-0.105	-0.333**	-0.068*
					(0.070)	(0.056)	(0.213)	(0.003)
South-West					-0.083	-0.054	-0.114$^{n.s}$	-0.033$^{n.s}$
					(0.065)	(0.022)	(0.216)	(0.011)
Centre					-0.026$^{n.s.}$	-0.021$^{n.s.}$	0.112$^{n.s}$	0.049$^{n.s}$
					(0.062)	(0.017)	(0.156)	(0.022)
West					-0.035$^{n.s.}$	-0.024$^{n.s.}$	0.017$^{n.s}$	0.005$^{n.s.}$
					(0.069)	(0.008)	(0.180)	(0.001)
North-West					0.042*	0.034*	0.180**	0.089*
					(0.058)	(0.019)	(0.146)	(0.017)
ρ (std. dev.)	-0.837 (0.045)				-0.668 (0.048)			
Wald test	65.228				84.516			
Prob> chi2	0.000				0.000			

Appendix II



Source: NIS 2008



Source: EBRD 2007

Appendix III

Once the amount of remittances is observed, the sharing rule can be empirically retrieved and the effect of migration on the distribution of wealth and power inside the household can be estimated. Following the method set forth by Hélène Couprie (2004), we write the maximization program as follows:

Before any of the member migrates:

$$\text{Max } [\,\mu U_i + (1-\mu)U_j\,]$$

$$\text{s.t. } u_j \geq \bar{u}_j$$

$$p^{nm}C_i^{nm} + w_i^{nm}l_i^{nm} + p^{nm}C_j^{nm} + w_j^{nm}l_j^{nm} \leq \Phi_i^{nm} + \Phi_j^{nm}$$

$$\text{G= G } (d_j^m e_j\gamma + (1-d_j^m)h_j)$$

$$e_j \leq \bar{e}_j$$

$$h_j \leq \bar{h}_j$$

$$0 < \gamma < 1$$

The program yields the following Marshallian demand functions:

Husband: $C_i = C_i(w_i^{nm}, p^{nm}, \Phi_i^{nm}, G)$, $l_i = l_i(w_i^{nm}, p^{nm}, \Phi_i^{nm}, G)$

Wife : $C_j = C_j(w_j^{nm}, p^{nm}, \Phi_j^{nm}, G)$, $l_j = l_j(w_j^{nm}, p^{nm}, \Phi_j^{nm}, G)$, $h_j = h_j(w_j^{nm}, p^{nm}, \Phi_j^{nm}, G)$

After i migrates the program becomes:

$$\text{Max } [\,\mu U_i^m + (1-\mu)U_j^{nm}\,]$$

$$\text{s.t. } u_j \geq \bar{u}_j$$

$$p^m C_i^m + w_i^m l_i^m + \eta + p^{nm}C_j^{nm} + w_j^{nm}l_j^{nm}\,] \leq \Phi_i^m + \Phi_j^{nm}$$

G= G $(d_j^m e_j\gamma + (1-d_j^m)h_j)$, where γ is a productive efficiency parameter

$$e_j \leq \bar{e}_j$$

$$h_j \leq \bar{h}_j$$

$$0 < \gamma < 1$$

We write the following Marshallian demand functions:

Husband: $C_i = C_i(w_i^m, p^m, \Phi_i^m, G)$
$l_i = l_i(w_i^m, p^m, \Phi_i^m, G)$

Wife : $C_j = C_j(w_j^{nm}, p^{nm}, \Phi^{*nm}_j, G)$
$l_j = l_j(w_j^{nm}, p^{nm}, \Phi^{*nm}_j, G)$
$h_j = h_j(w_j^{nm}, p^{nm}, \Phi^{*nm}_j, G)$

We can write a similar maximization program in the case that the wife migrates.
If the wife stays behind, we have:

$C_j^* - C_j = \beta \cdot (\Phi^{*nm}_j - \Phi_j^{nm})$, where β is the marginal effect of income on consumption identified if the spouse migrates.

Then: $\Phi_j^{nm} = \Phi^{*nm}_j$ - $[(C_j^* - C_j) / \beta]$

The sharing rule before migration can be retrieved and welfare implications of migration can be drawn when one of the spouses stays behind. However, this method requires detailed data on consumption patterns.

Appendix IV

Descriptive statistics

Individual level variables

Variables	Men				Women			
	All		International migrants		All		International migrants	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	36.109	*21.306*	32.004	*8.961*	38.705	*22.299*	30.098	*8.760*
Education	8.891	*4.017*	10.290	*3.239*	7.802	*3.954*	9.762	*3.372*
Married	0.498	*0.500*	0.557	*0.497*	0.474	*0.499*	0.501	*0.500*
Divorced	0.023	*0.150*	0.026	*0.160*	0.038	*0.190*	0.084	*0.278*
Widowed	0.032	*0.177*	0.003	*0.054*	0.135	*0.342*	0.018	*0.134*
Single	0.408	*0.491*	0.389	*0.488*	0.317	*0.465*	0.378	*0.485*
Consensual union	0.040	*0.195*	0.025	*0.156*	0.037	*0.189*	0.018	*0.134*
Child of head	0.366	*0.482*	0.428	*0.495*	0.268	*0.443*	0.420	*0.494*
Spouse	0.008	*0.092*	0.025	*0.156*	0.402	*0.490*	0.300	*0.458*
Native language	0.090	*0.286*	0.131	*0.338*	0.091	*0.288*	0.121	*0.326*

Labour Market Variables

Variables	Men				Women			
	All		International migrants		All		International migrants	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Craft (agriculture)	0.006	*0.076*	0.007	*0.084*	0.000	*0.016*	0.002	*0.049*
Blue collars (agri)	0.111	*0.315*	0.100	*0.300*	0.078	*0.269*	0.097	*0.296*
Menial (agriculture)	0.008	*0.091*	0.029	*0.169*	0.003	*0.057*	0.029	*0.169*
White collars (ind)	0.013	*0.112*	0.007	*0.086*	0.018	*0.131*	0.008	*0.090*
Professionals (ind)	0.016	*0.124*	0.013	*0.115*	0.008	*0.091*	0.005	*0.069*
Craft (ind)	0.101	*0.301*	0.473	*0.499*	0.041	*0.199*	0.077	*0.266*
Menial (ind)	0.017	*0.130*	0.156	*0.363*	0.009	*0.092*	0.029	*0.168*
Blue collars (ind)	0.030	*0.171*	0.022	*0.147*	0.023	*0.150*	0.014	*0.119*
Blue colars (priv ser)	0.020	*0.139*	0.037	*0.188*	0.001	*0.027*	0.002	*0.049*
Menial (priv ser)	0.022	*0.148*	0.044	*0.206*	0.038	*0.192*	0.599	*0.490*
Craft (priv ser)	0.016	*0.127*	0.035	*0.184*	0.002	*0.041*	0.003	*0.051*
Professionals (pri ser)	0.019	*0.138*	0.025	*0.156*	0.013	*0.111*	0.012	*0.107*
White collars (priv s)	0.013	*0.115*	0.009	*0.095*	0.024	*0.152*	0.021	*0.143*
White collars (pub s)	0.006	*0.079*	0.007	*0.082*	0.025	*0.156*	0.030	*0.170*
Professionals (pub s)	0.012	*0.108*	0.007	*0.084*	0.017	*0.131*	0.020	*0.139*
Menial (public serv)	0.005	*0.073*	0.004	*0.060*	0.017	*0.128*	0.028	*0.166*

Household level variables

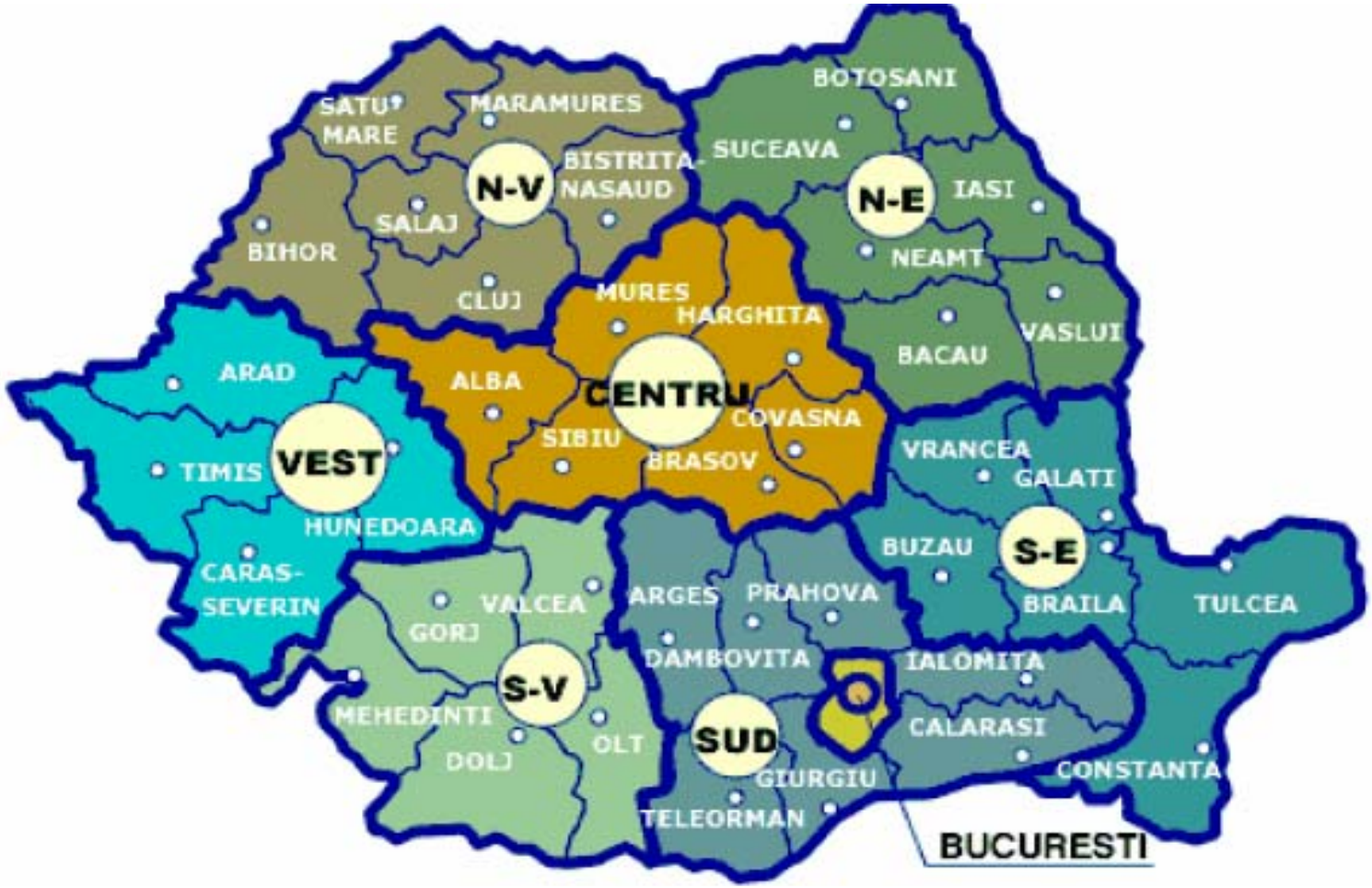
Variables	Men				Women			
	All		International migrants		All		International migrants	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Size of the household	3.849	*1.790*	4.113	*1.768*	3.695	*1.832*	4.002	*1.807*
Children < 5 years	0.249	*0.559*	0.227	*0.505*	0.246	*0.555*	0.168	*0.432*
Children 5-10 years	0.257	*0.557*	0.249	*0.538*	0.253	*0.553*	0.229	*0.530*
Children 10-15 years	0.349	*0.649*	0.323	*0.627*	0.338	*0.640*	0.294	*0.593*
Other dependants	0.674	*0.877*	0.593	*0.785*	0.655	*0.874*	0.419	*0.701*
Gender ratio	0.424	*0.175*	0.434	*0.179*	0.600	*0.203*	0.597	*0.197*
Education of head	9.462	*4.069*	10.435	*3.224*	7.177	*4.130*	9.718	*3.376*
Wealth index	5.460	*3.514*	5.501	*3.508*	5.593	*3.515*	5.864	*3.504*
Rural	0.488	*0.500*	0.512	*0.500*	0.469	*0.499*	0.458	*0.498*

Regional level variables

Variables	Men				Women			
	All		International migrants		All		International migrants	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
NE	0.172	*0.377*	0.272	*0.445*	0.167	*0.373*	0.278	*0.448*
Bucharest	0.097	*0.296*	0.029	*0.168*	0.105	*0.306*	0.030	*0.172*
SE	0.133	*0.339*	0.205	*0.403*	0.131	*0.338*	0.186	*0.389*
South	0.157	*0.364*	0.073	*0.260*	0.156	*0.363*	0.066	*0.249*
SV	0.109	*0.311*	0.036	*0.186*	0.107	*0.309*	0.025	*0.158*
V	0.089	*0.285*	0.035	*0.183*	0.091	*0.288*	0.031	*0.173*
NV	0.126	*0.332*	0.242	*0.429*	0.126	*0.332*	0.239	*0.427*
Centre	0.117	*0.321*	0.109	*0.311*	0.116	*0.320*	0.144	*0.351*

Appendix V

Romania: NUTS II and NUTS III level regions



Appendix VI

Labour market variables

The occupational categories on the Romanian and foreign labour market were aggregated following Constant and Zimmermann (2003). We have in all five occupational categories thatwe obtained as follows:

OCCUPATIONAL CATEGORY	DATA FROM 2002 CENSUS
Menial	Unskilled Blue Collar Workers, Unskilled White Collar Workers
Blue Collar	Trained Blue Collar Workers, Semi-Skilled and Skilled Blue Collar Workers
Craft	Industry and Other Foremen, Independent Farmers, and Master Craftsmen
White Collar	Semi-skilled White Collar Workers, Low and Middle Level Civil Servants
Professional	Professional, Semi-professional, Managerial, Upper and Executive Level Civil Servants

These categories were then crossed with the four sectors: agriculture, industry, private services and public services. In the end we had twenty variables describing the status on the labour market.

Appendix VII

Computation of the wealth index

All the goods and services included in the index have been given the same weight. Thus the maximum value taken by the wealth index is eleven.

(1) Building material quality (= 1 if concrete; = 0 otherwise);
(2) Water supply (=1 if public; = 0 otherwise)
(3) Central heating (= 1 if heating is central; = 0 otherwise);
(4) Sewage system (= 1 if house has sewage system; = 0 otherwise);
(5) Electricity (= 1 if house has electricity; = 0 otherwise);
(6) Kitchen (= 1 if house has kitchen; = 0 otherwise);
(7) Toilet (= 1 if house toilet; = 0 otherwise);
(8) Bathroom (= 1 if house has bathroom; = 0 otherwise);
(9) Hot water (= 1 if house has hot water; = 0 otherwise);
(10) Gas (= 1 if house is recorded to the gas pipe; = 0 otherwise);
(11) Air conditioning (= 1 if house has air conditioning; = 0 otherwise).

Appendix VIII

Gender Norm at the Household level

The gender norm regarding women's position in the family was computed on the basis of the following questions from the 2000 Romanian Gender Barometer.

Question	Answer considered
Is it women's duty more than men's to undertake the housework?	Yes
Is it men's duty more than women's to be the main breadwinners in the household?	Yes
In your opinion does a woman have to follow her man?	Yes
Do you agree that domestic work should be paid as any other type of labour?	No
Are women more able to take care of children than men?	Yes
Who should raise the children in a family?	Women
In a family like yours who should lead?	Men