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CONTRIBUTIONS REGARDING THE MODERN DESIGN OF MIGRATION – REMITTANCES POLICIES

1. Introduction in the modern literature of remittances

The research on remittances represents an essential branch of the literature on migration. Remittances could be defined by migration related transactions initiated by individuals working outside. In contrast to net official flows, remittances have grown over the past decades with a higher rate and represent now the largest source of external capital in many developing countries. Remittances are perceived as a critical element for development in emerging economies, which prompted policy makers to encourage progress on understanding and facilitating remittances.

The literature on the determinants of the remittances is influenced by some critical analyses on the internal migration in developing countries. The classics are focused on aspects of inheritance, loan repayment, insurance and exchange. In Stark (1981), Lucas, Stark (1985), remittances are considered as a result of an intergenerational contract between migrants and their parents. In the neoclassical literature, the remittances are considered as individual investments capable to enhance lifetime earnings. In the new economics of labour migration decisions on remittances are closely linked with the decisions on migration at household level. In Lucas, Stark (1985) the key aspect on understanding the complexity processes of migration is based on the motivations to remit (pure altruism, various patterns of self-interest, intermediate motivations represented by different types of arrangements between migrant and the family). It is recognized that altruism towards family members at home is an important motivation for remitting (Johnson, Whitelaw 1974; Lucas, Stark, 1985) and this implies a utility function in which the migrant cares about the consumption of the other members of his family. Self-interest motivation may evolve in a model where the family is perceived as a market in which members aim at entering into mutually beneficial agreements. In contrast with the altruistic motive, remittances should increase in the family's income and wealth

if sending remittances is a pattern of migrants to compete for inheritance (Rapoport, Docquier, 2005).

Other authors (Poirine 1997; Ilahi, Jafarey 1999) have proposed the idea of remittances as repayments to the family who finances migration in the first place. The U-shaped relation between the family's pre transfer income and remittances is justified by the fact that wealthy families can invest more in education, and remittances should first increase and then decrease in the migrant's skill level.

Migration could be seen as a means of reducing risk by diversifying the sources of a family's income (Stark 1991). In this case remittances act like an insurance against income shocks that might hit the recipients in the home country (Agarwal, Horowitz, 2002; Gubert, 2002). At macro level, this implies that remittances will increase if output is more volatile in the recipient country.

In other papers remittances are represented by a payment for services provided by migrant's family (Cox, 1987; Cox, Eser, Jimenez, 1998). If the family's marginal utility decreases in income, more remittances are required to guarantee the provision of services at home and it results a higher pre-transfer income of the family and lower unemployment at home would raise the amount of remittances.

Macro flows are influenced by macro-level indicators but they are often analyzed by using the aggregate outcome of micro-level behaviour. Macro-level implications are very important especially in turbulent and crisis periods. The evidence on most macroeconomic determinants is mixed, but in the literature it is recognized that the basic macroeconomic determinants are the *level of economic activity* (host/ home countries), *wage rate*, *real exchange rate*, *inflation*, *interest rate differentials*, and the *efficiency of banking system*, the *political stability* and consistency in government policies (El-Sakka, Nabb, 1999; Russell, 1986; Wahba, 1991; Faini, 1994). Real earnings and total number of migrants have a significant positive effect on remittances (Swamy, 1981; Straubhaar, 1986; Elbadawi, Rocha, 1992; El-Sakka, McNabb, 1999; Chami, Fullenkamp, Jahjah, 2005). *Demographic factors* (female employment, high age-dependency ratio) also influence remittances (Buch, Kuckulenz 2004). Black market premium, interest rate differential, inflation rate, growth, home/ host country incomes and dictatorial periods have significantly affected Turkish remittances (Aydas, Neyapti, Metin-Ozcan, 2004). There is a significant negative relation between the income gap of the recipient country against

the developed countries and worker remittances in percent of GDP (Chami, Fullenkamp, Jahjah, 2005). There are critics regarding the influence of the interest rate differential, the black market premium, domestic income and inflation and the impact of economic growth and the level of economic development is not always clear (Buch, Kuckulenz, 2004).

The fail of empirical studies is related to *the lack of adequate data and poor data quality*. Data selection is a difficult task and they usually underestimate the true remittance flows because the statistics could not capture remittances sent outside the banking system, there is a high threshold for recording and because a significant portion of remittances are not included in statistics. In this case, some authors have attempted to test the theoretical predictions using data for one country, region, or migrant group.

In Harrison (2004) is presented an attempt to estimate bilateral remittance flows between 57 countries and 18 geographic regions based on IMF balance of payments data. In this study is assumed that the migrants coming from the home country but working in different countries have the same saving decision rule and remit the same amount. The idea of introducing of bilateral flows is welcome, but remittances are likely to be positively correlated with disposable income.

In Hagen-Zanker, Siegel (2007), Rapoport, Docquier (2006) are presented critical analyses on the literature that propose *empirical aspects on determinants* of remittances. These analyses have been focused on the degree of altruism that can be inferred from remittance flows mechanisms.

In conclusion, the literature is dominated by contributions that investigated microeconomic determinants of remittances based on survey data. Only few papers are focused on understanding the macroeconomic determinants of remittance flows because of the scarcity and inaccuracy of data. The macroeconomic literature is based on IMF balance of payments but these data have several shortcomings, in particular the high aggregation level and measurement issues.

The empirical literature has largely focussed on microeconomic data (Buch, Kuckulenz, 2004) and only few contributions (Aydas, Neyapti, Metin-Ozcan, 2004) have investigated the macroeconomic determinants of remittances. Jimenez Martin (2007) proposed a mixing of available remittance data with the statistics on migrant populations and economic variables (Figure 1) to estimate the biggest remittances flows originating in the EU in absolute terms.

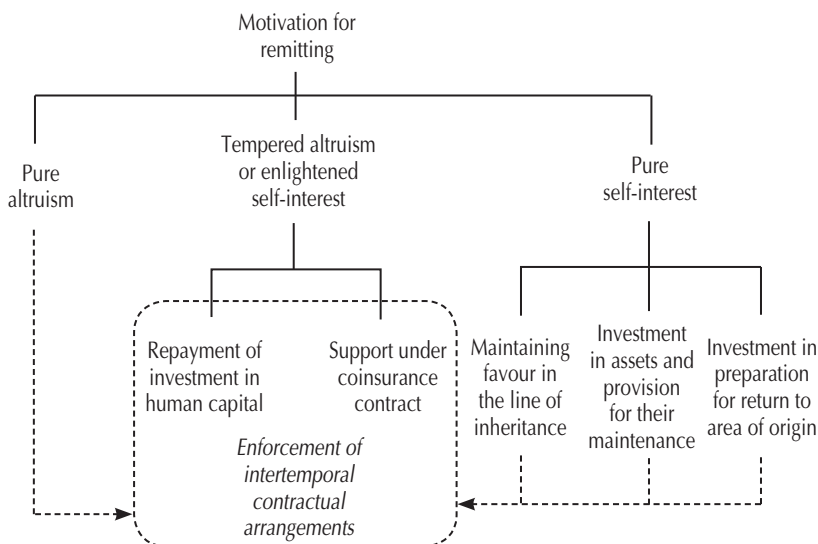


Figure 1. Remittance motivations in the new economics of labour migration

2. The impact of migration and remittances after European enlargement

The consequences of migration and remittances (growth, macroeconomic stability, inequality, the impact on the public sector) are analyzed in the context of Dutch disease and the actual crisis.

2.1. The main driving forces for remittances

The analysis of the forces behind the causes of migration and remittances permits a better understanding of the basic characteristics of migration and remittances and permits also to formulate efficient policy interventions that are consistent with the incentives of migrants and recipients of remittances. The main driving forces for remittances are:

- the international wage differentials (Rapoport, Docquier, 2005), where altruism is viewed as the main reason for remitting (Stark 1995);

- additional reasons from the spatial separation of the migrant and family:
 - remittances as payment for a wide range of services (Cox, 1987);
 - remittances as repayment for supporting migration costs (Rapoport, Docquier, 2005);
 - migration as insurance (for rural households whose agricultural income is highly volatile due to changing climatic conditions and other idiosyncratic risks) remittances are inversely correlated with the incomes of families at home and at macro level, this implies also counter-cyclical of flows (Rosenzweig, 1988);
 - temporary migration as a source of financing in the presence of liquidity constraints and imperfect financial market- people migrate in order to quickly accumulate the savings required to take advantage of productive opportunities at home and/or invest into human capital (Rapoport, Docquier, 2005).

2.2. An analysis of the individual effects and consequences of migration and remittances

The inter-connections between migration, remittances and inequality are more complex. Migration is associated with high initial costs, which in the presence of liquidity constraints and this tends to further increase inequality. Migration is often view as a first responder on widespread of unemployment and it contributes on the processes that re-equilibrate the labour market. This is important because it reduce the level of structural unemployment as a critical determinant of permanent poverty. The insurance motivation means that remittance flows can be used for consumption smoothing. Cross-country evidence supports the beneficial effect of remittances on poverty reduction (Adams, Page, 2003).

In a sociological analysis, Massey (1994) view migration as a *diffusion process with decreasing information costs* and suggests that the *dynamics* of migration and remittances may be characterized by a *trickle down effect*. In the presence of *liquidity constraints* and initially high migration costs, only high-income groups can access higher income opportunities abroad, and this pattern of remittances tend to increase inter-household inequality early (Stark, Taylor, Yitzhaki, 1986). As the number of migrant's increases, migration costs tend to decrease, thus making migration affordable to

low-income households. This *feed-back mechanism* ultimately decreases economic inequality.

The insurance motivation predicts that remittances should be countercyclical, or at least less pro-cyclical than other financial flows. The remittances into developing countries are *less volatile* than private capital and even more stable than FDIs, the more stable component of private capital flows (Ratha, 2003). Remittances are *more stable* even during large shocks, as those associated to global contagious financial crises. The increase in aggregate demand via the inflow of remittances is partially spent on non-tradable goods and services, and this creates an inflationary pressure. The supply of foreign currency tends to cause a nominal exchange rate appreciation. In conclusion, remittances lead to an appreciation of the real exchange rate, accompanied by the deterioration of the current account. The main *short-term consequences* of remittances are the following:

- the increase in imports via remittances;
- the real exchange rate appreciation facilitates the servicing of public debt and reduce the value of foreign currency-denominated debt;
- the inflow of foreign currency facilitates the accumulation of foreign reserves;
- by reducing unemployment, migration reduces the state's payments of unemployment benefits.

In long term run, outward migration deteriorates the dependency ratio (workers per non-worker) and this leads to a decreased sustainability of "pay as you go" pension systems. An indirect negative long term effect stems from certain short term benefits. Remittances effortlessly bring higher tax revenues, improved balance sheets, higher foreign currency reserves and short-term economic growth. In such a situation, governments are no longer subject to former stringent constraints, which postpone structural reforms and it results a moral hazard problem.

2.3. The analysis of the impact of remittances on economic growth

In short term, remittances produce a positive impact on incomes by increasing disposable incomes of recipient households. The benefits are then propagated through the economy through a Tobias multiplier effect and at least part of remittances is spent on purchases of domestically

provided goods and services. The analysis of the long-term effects of migration and remittances produces less unambiguously positive results. In Figure 2 are presented the channels through which migration and remittances affect economic growth.

The main factors that may negatively influence savings and investment decisions are the following:

- migrants lack entrepreneurial skills and expertise, which may lead to poor performances;
- low returns are associated with the lack of complementing factors;
- possible government failures may further depress returns, because a poor investment climate induces additional costs on firms;
- moral hazard represents a possible explanation for low savings.

The reduction of labour supply is the most direct effect of migration and leads to increased equilibrium wages in the economy and is linked to the income substitution effect (Chami, Fullenkamp, Jahjah, 2003). Remittance recipients reduce their own labour supply in response to the additional remittance income and this increases the costs of firms. The increased domestic demand raises the price of non-tradable goods and results an appreciation of the currency, which negatively affects the exports (Dutch disease). Mixed with learning by doing externalities in the export sectors, Dutch disease will permanently decrease the sophistication of a country's exports and its long-term growth.

The long-term effects constitute a mixed bag of positive (increased savings and investment into physical and human capital) and negative (loss of competitiveness due to real exchange rate appreciation/increased wages, reduction of human capital due to brain drain, postponed structural reforms, increased dependency ratio) effects.

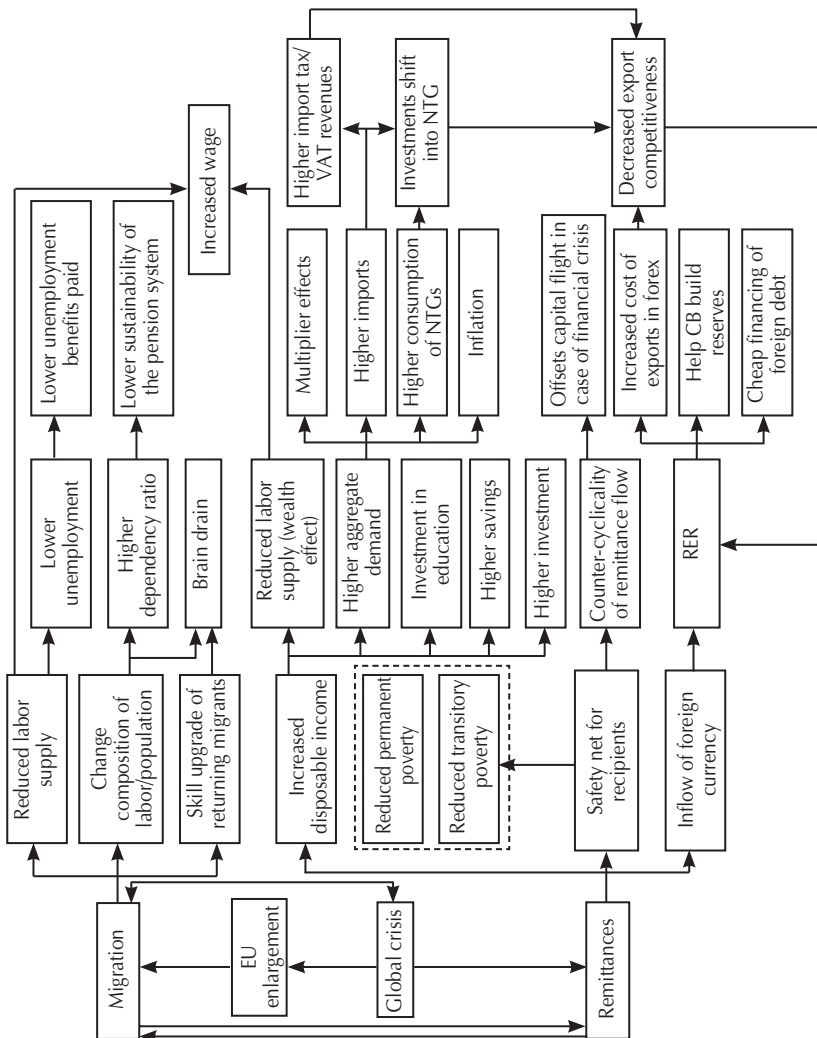


Figure 2. The economic effects of remittances on the sending country

3. The dynamics of remittances – an analysis of the stability, cyclicity and sustainability

3.1. Toward a more general framework for remittances

There are major differences on migration mechanisms and these variations limits dramatically the possibilities for generalization about remittances motivation:

- the temporarily remittances model vs. the permanent model;
- international vs. internal remittances (geographical differences);
- there is a variation in the nature of families/ households; the selective applicability of the new economics of labour migration (Sana, Massey, 2005);
- there is a variety of normative settings related to remittance sending (moral value, the pressure to remit);
- the way in which migration itself is taken into account (differences in migration patterns, demographic differential dynamics);
- there is a disaggregation of the preconditions for remittances to be sent (the non universality of potential receivers of remittances, the distinction between capacity and desire to remit should became a critical structural element of the analysis).

The main problems are related to data availability, the static cross sectional perspective, family migration histories. Stability, expressed by a low volatility or a steady reaction is less affected by the impact of favourable/ unfavourable shocks than other capital flows like foreign direct investment (FDI) and official development aid (ODA).

Regarding *the allocation of remittances* those for consumption are more stable than those for investment, because of the dependency on remittances as a source of income. Remittances are more stable than portfolio flows because of a stronger propensity to invest in home country (similar to the home bias in investment).

The dynamics of remittances (decline and volatility) is always smaller than other capital flows with a smaller sensitivity to investment climate.

Cross country comparisons of remittance flows are based on the following *key indicators*: corruption (ICRG index of the International Corruption Research Group), inequality (Gini coefficient), financial development (M2/GDP), openness (trade/GDP), domestic debt (debt/GDP) and country risk (institutional investor rating).

3.2. Stability, cyclicity and sustainability

Stability could be tested through the evidence of altruistic motives behind the decision to remit (the negative correlation of remittances with wage in the home country or the negative correlation between transfers and real GDP – countercyclicity; the positive correlation between remittances and the income- implied willingness to share).

Cyclicity is represented by the correlation between the cyclical components of net capital flows into a country and its output. The migration-remittances literature has borrowed the concept of cyclicity for depicting the relationship between the cyclical components of remittances and recipient countries' level of GDP growth. Remittances are countercyclical/ procyclical when the correlation between their cyclical components and output is negative/ positive, in other words, the economy would borrow from/ lend abroad in bad times (remittances in/ out) and would lend/ borrow in good times (remittances out/ in). They are acyclical when the above correlation is not statistically significant (the pattern of international borrowing/ lending is not systematically related to the recipient country's business cycle).

The reason for this debate related to the possibility of using future potential remittances as collateral for international loans in critical periods (economic downturn) in order to overcome liquidity constraints. It is difficult to generalize the behaviour (procyclicity/ countercyclicity) to all countries/ or in a definitive way because:

- remittances when the recipient country suffers from a macroeconomic shock;
- increase in the migration flows;
- compensatory remittances;
- the passage of time may change the cyclical properties of remittances;
- the average level of remittances on which the recipient country can count is very important.

In the analysis of cyclicity is necessary to include the decision to remit. Depending on the prevalence of consumption smoothing (countercyclicity, in the sense that remittances could compensate poor economic performance) or portfolio/investment motives the literature is divided in two branches.

If remittances move countercyclical with the output in the migrants' country the cycle in home/ host country may move in synchrony; this make difficult for migrants to help their families.

The cyclicity can be tested by using correlations between the cyclical components of remittances and GDP. The trend within each series needs to be removed to identify stylized facts of business cycles and analyze cyclical nature of remittance receipts. Detrending each series by removing the estimated trend makes it possible to separate fluctuations (cyclical components) around the trend; this permits the examination of the statistical properties of the comovements of deviations of output and real remittances from the trend. When trends are properly filtered out (from real remittances and output series), the remaining cyclical components are stationary (with zero mean for each variable). The identification of cyclical characteristics of remittances can be calculated by using the correlations between the cyclical components of respective series. Procyclicality/ countercyclicality of remittances represent a tendency of remittances to move outside its trend; in the absence of such a tendency, remittances and output are acyclical.

The modern literature should try to address if more developed financial systems are associated with more or less procyclicality. The result suggests that remittances are more procyclical in countries with less developed financial sectors and more countercyclical in countries with deeper financial systems.

Sustainability implies the relationship between abroad duration and the level of remittances that migrants sent back home. This remittances' classical feature is related to the diminuation of the remittances transferred to the home country that would manifest typically after five years.

The modern literature underlines the fact that the motives of remitting (altruistic or self- interested) are not conditional. It is also possible an investment scenario, in which the pure self interested motivations change the intention to remit (the brain circulation). If altruistic reasons are present the ties with the home country can become less stringent. In the case of the informal contract between migrant and the family left (enlightened self interested motives) the negative relationship holds.

A critical moment towards the negative relationship between the time spent abroad and the intention to remit, is the change in the legal status of the migrant or the acquisition of a robust labour contract. It is possible to perform the nexus between the number of permanent visa issued by

a country of destination and the change of amount in remittances in the respective countries of origin. There is a negative coefficient if the lack of sustainability holds.

Another branch of the literature is dedicated to the implications of brain drain. Skilled migrants tend to stay longer in the host country and are likely to family reunifications. In this case where the reunification effect is stronger than the wage effect, there is an inverse relationship between the duration and the intention to remit. In this case there is a contradiction regarding the negative sustainability associated with a steady increase of the aggregate remittances.

4. The perspectives of micro approach in the analysis of remittances

The quantitative analysis should be carried out in two stages: **a)** the modelling of the likelihood of sending/receiving remittances; **b)** the analysis of the variation in amounts exchanged. The studies that have made in this approach find that each independent variable has the same effect in both situations. In this case, if the intention to return is associated with a higher likelihood of remitting, it tends also to be associated with higher amounts.

4.1. Remittances and micro level decisions

In the literature the main factors which affect migrant's decisions are:

a) the demographic group of factors - should include the following variables: age, gender, marital status, family size, location of family members;

b) the cultural group of factors - variables: level of education, language skills, degree of integration in the host country, the role of the social networks;

c) the pure economic group of factors - employment (fixed or open end contract), level of income of the household, needs transfers, host and home country income risk;

d) the pure migration group of factors components - that include duration abroad, the nature (exogenous/ endogenous) of the migration

decision, legislation (regarding family reunion, procedure for obtaining the legal status and the state of naturalization);

e) the macro components - interest rate differential, the level of inflation, the financial spread, the black market premium, exchange rates, national policies implemented as incentive schemes, political stability.

The significance of these factors and their sophisticated mixing depends on different assumptions/ strategies (pure altruism, self interested motives, loan repayment, and insurance motives). Because of the complexity of mechanisms and the complicate inter relations it is difficult to propose a general explanation for the mechanisms of micro level variation on remittances. This analysis should be based on the study of the influences on the possible remittance flows between different types of sender/ receiver relations and in this case the sensitivity analysis should consider the following elements:

a) potential sender environment - individual characteristics (Clark, 2007):

- *income*-affects the capacity to remit and a positive effect is plausible but is limited to a critical survival level and is influenced by the pressure to support family;
- *education*-does not have consistent effects;
- *the legal status of migrants*- has inconsistent effects excepting the insecure migrants or the migrants in critical temporary situations;
- *gender, marital status and age*-is always statistically significant (men are more likely to remit larger amounts); the flows tend also to increase with the age of migrants;
- ethnicity and national origin;
- household assets;
- the effect of environment- different propensities to remit;
- social interaction effects;
- self selection (unmeasured wealth differences).

b) potential receiver environment (Massey, 1992; Funkhouser, 1995; Lerch, Wanner, 2006):

- *household income* - different effects but disparities could reflect methodological differences (total household income vs. income per adult equivalent);

- *receiver perception* of their own financial situation influences the remittances (Hendrik van Dalen, 2005);
- *income fluctuations/negative income shocks* – in the case when remittances are a part of a coinsurance arrangement;
- *household assets* (Osili, 2007);
- *geographical location* of receivers; *rural vs. urban* communities.

c) Other potential receivers

- at household level *the families of the husband and wife* are also potential receivers - potential remittance exchanges are in this case more complex. Migrants to high income countries remit also to relatives that they do not have an intrinsic kinship-based obligation to support (Carling, 2008);
- complex migration trajectories- may necessitate support to relatives outside (Akuei, 2005 - in the case study of Sudanese refugee in California who supports relatives in 7 locations across Africa);
- the flows are influenced by the number and importance of other potential recipients.

d) Other potential senders

- reverse remittances - inverse relationship between remittances and the number of emigrants from the same household (Gubert, 2002; Konica, Filer, 2005);
- the inheritance competition - migrants remit more in order to maintain favours with their family (Lucas, Stark, 1995);
- *remittances from rural- urban migrants* (Hoddinott, 1994);

e) the sender- receiver relationships (including family migration history)

- *family migration history*;
- *demographic and kinship variables*- could reflect different stages in the family migration history;
- *the balance of the basic characteristics of households at origin and destination* – this reflect different stages in the long term process of family migration;
- *gender and conjugal relation status*;
- *the mechanisms of intergenerational transfers* (Cox, 1998);
- *future migration plans* – migrants that intend to return are more likely to remit with larger amounts (Merkle, Zimmermann, 1992,

Brown, 1997, Cai, 2003) and this effect is stronger for near future returns (Brown, 1997); the increase in remittances in preparation of return depend on how the flows are conceptualized/ measured;

- *investments through intra - family transfers, personal investments* (Carling, 2008);
- *migrants who visit/ or receive visitors from their community* – are more likely to remit because this reflect a sustained attachment and this mobility gives migrants a self interested incentive to invest in social relations at home (Amery, Anderson, 1995);
- *past economic exchanges* - are potentially important aspects of sender- receiver relations (loans that generate repayment in the form of remittances, informal insurance arrangements in which remittances may constitute premiums/ pay-outs) (Brown, 1997, Gubert, 2002);
- *financial services offered within migrant networks at destination* (different from remittances).

f) *Other critical elements*

- *sender's assets in the community of origin*- the importance of ownership of assets (houses, self- insurance) is given by:
- the endogenous mechanism in relation to receivers' household assets;
- assets require maintenance costs funded by remittances (the link between remittances and children is also included in maintenance of assets);
- ownership of assets – that reflect a sustained psychological attachment to the place of origin, strongly associated with remittance sending.
- *remittance corridor for specific pairs of countries* - different costs and facilities;
- the balance costs- quality of services;
- price level ratios between countries (different purchasing power of earnings).

Remittances increase with migrant's income and the degree of altruism, but it decrease with the recipient's income. The main testable implications are related to the economic and demographic components:

- remittances increase with income;
- transfers cannot increase with the recipient's income;
- the sustainability of remittances are negatively related to the presence of family;
- countercyclicality is important and should be included.

Sustainability should hold as long as the migrant stays abroad but then it should drop. The amount of transfers should increase with the level and the quality of service to be offered, the migrant's income, but should neutrally react to an exogenous increase in the recipient's income.

Pure altruism and self interest are hypothetical particular situations in describing the magnitude and volatility of remittances. In intermediate patterns (tempered altruism or enlightened interest) remittances are a part of intertemporal, mutually beneficial contractual arrangement between migrant and home and are based on a the endogenous nature of the remitting decisions; the arrangements between the migrant and the family; the relation investment- risk (loan repayment model vs. insurance contract). The testable implications in the *loan repayment model* are:

- the positive relation between remittances' sensitivity and migrant's income, education and the distance to home;
- the adverse short run shocks in recipient economy are positively related to the flows of remittances; the relation with long run income is controversial;
- higher unemployment at home, increasing the value of education, should increase the flows of remittances.

In the *implicit coinsurance model* there are introduced two assumptions: they imply either being insured from the income risk in the country of destination or household insurance in the home country. Remittances for insurance motives are more likely when income at origin is more volatile, meaning that they should be sent on a more irregular basis, with high volatility and instability.

The *insurance* and the *altruistic models* share similar predictions with the respect to the sign of the effects of income levels on the amount remitted, but the difference is at the level of predicted timing of remittances.

There is a mixture of factors over time and space that contribute to remittances. There is heterogeneity of individuals in their motivation but there is a constant presence of altruistic components behind the migrant's decision to send money back home.

4.2. Time patterns and time related variables in the dynamics of remittances

The dynamics is very different because there are different demographic processes, different types of transfers and there is a specificity of target levels (repayment of migration costs - viewed as a loan, repayment of education costs). The patterns of individual remittances depend on the changes and family movements, capacity and willingness to remit, the long term sustainability and the time frame related to the intention to stay abroad.

In the remittance decay hypothesis the results of empirical studies are disparate. The dynamics depends on the specific migratory and social context and there is no reason to expect a quasi-uniform mechanism. With remittance decay, the results reflect different theoretical and methodological approaches.

The dynamics of remittances is not a linear one. In the literature (Lucas, Stark, 1985; Amery, Anderson, 1995; Cai, 2003; Craciun, 2006) the authors proposed an inverted U-curve argued by the fact that the social interactions with the community of origin are compensated by an increase in available resources. In this case, the remitter's profile is linked to the long term, well established, with stable income characteristics. The dynamics depends on the process through which migration separates/reunites the family and the initial trans-national structure. Other authors found that the separation/ co-residence of close family members do not affect remittances (Brown, 1998; Grieco, 2003). The significance and the differences between the effects of period of entry and length of residence is found by Amuendo - Dorantes, Pozo (2006). In this study, the declining path of Mexican remittances can be explained by the progressively lower levels of risk that migrants experience as they become established on the US labour market.

The *static control for family structure* offers a more detailed picture of remittances dynamics in the family migration process. The household remittances primarily depend on *the length of the interval between the arrival of the first and last migrant* (Grieco, 2003). In this study, the optimal remittances correspond for an interval about 10-15 years and this indicates a typical robust established household in reunification.

In multivariate studies with adequate control variables, was demonstrating that *selection effects* play important roles. When data base is done among remittance receivers, there is a majority of households-

receivers based on migrants who left 10-20 years ago, based on those who emigrated around the same time. Even when transnational kinship ties persist, respondents at home may be more likely to report information about long term remitters.

Selection mechanism (Menjivar, 1998) suggests that less successful migrants intend to return at home, because they fail to remit. Other authors (King, 2002; Carling, 2004) consider that the effects of failure and motivations for return make very difficult a generalization about selection mechanisms.

Return migration has independent effects in the sense that migrants who intend to return are more likely to remit (with larger amounts) than permanent migrants.

In conclusion time patterns are influenced by the following factors: the movements at family level architecture, the capacity and willingness to remit (the inverted U shape), the persistence of transnational family ties (that sustain the long term sending), and the migrant's strategy in the sense of the intention to return.

5. A framework for the analysis of altruistic versus investment motives for remitting

5.1. The analysis of variables used in the model

The rate of return differential is represented by the real short-term deposit rate differential between countries and reflects both risk perceptions and expected exchange rate movements taking into account inflation. A larger real interest rate differential should attract more remittance inflows. If market expectations of exchange rate appreciation dominates the effect of the risk profile, the effect of the interest rate differential on remittance flows could be negative (Romania, 2008-2009). *GDP per capita in Euro at purchasing power parities* (PPP) or *GDP at nominal exchange rates* could be used as a proxy for the income differential between countries. It accounts for non-tradable, thereby avoiding inflating the income gap and it captures the fact that the migrant's decision is based on the goods and services that the transferred amount of money can buy for his family at home. The income differential may also account for investment motives, assuming that emerging countries should grow faster and therefore offer higher returns. This effect could be fully captured by the interest rate

differential. Data on bilateral migrant stocks for each country pair are available on OECD database. Variations over time should not be a reason for concern, as the pattern of these data suggests that the migrant stock does not change dramatically over time of normality. OECD database also contains information about the *skill levels of migrants*. Since income is strongly correlated with human capital, this fact suggests a *negative relationship between remittances and the fraction of unskilled people* in the total stock of migrants. An alternative measure is represented by the fraction of medium skilled migrants.

The effect of *income inequality* on average remittances depends on the shares of skilled and unskilled migrants and the strength of the selection bias.

Remittance cost varies widely between countries/institutions involved in the transfer, reflecting the level of involvement of the banking industry Orozco (2002). Neither costs of sending money through different institutions nor the precise channels of transfers are known. Wahba (2005) uses *bank deposits per GDP* in the receiving countries as a *proxy for financial development*. Other authors use a measure of *financial linkage between the pair of countries*.

A natural proxy for the *return differential on non-financial assets* (real estate) would be the *difference in house prices*, as real estate investment is an important reason for remitting in Romania (2004-2007). Existing data on residential property prices do not allow price level comparison between countries and the prices are not adjusted for quality indicators.

5.2. The presentation of the model of the bilateral remittance flows

In the first period, the migrant born in the home country i , and working in the host country j maximizes the utility function by allocating the income between costly transfers, own consumption and savings (financial/non-financial assets).

The problem could be decomposed in two steps. In the first step, earnings are allocated to consumption, savings and transfers to family.

$$\text{Max}_{C_1^i, C_2^i, X^j, S \geq 0} \dots U_{ij} = \{u(C_1^i) + \beta u(C_2^i) + \gamma u(C_1^j)\}^\gamma \quad (1)$$

where $\beta \in (0,1]$ is the migrant's time discount rate, $\gamma \in (0,1]$ the degree of altruism towards her family; C^i migrant's consumption in country i at

time $t (t=1, 2)$; C_1^j denotes the migrant's family's consumption in country j and is defined as:

$$C_1^j = I^j + X^{ij},$$

where I^j is the family income in country j and X^{ij} the amount that the migrant working in country i sends to his family.

The migrant solves problem (1) subject to the following resource constraints:

$$C_1^i + \tau X^{ij} + S = I^i, \quad (2)$$

$$C_2^i = S \times R \quad (3)$$

where s is the amount saved out of the current income I^i that the migrant earns in country i and R is the overall portfolio return. The constant $\tau > 1$ can be thought of as a transfer cost. The sender pays T dollars for each dollar received by the beneficiary.

Assuming logarithmic utility and denoting $I'_d = I' - S$ as the income available for own consumption and family transfers, the optimization problem is:

$$L = \ln(C_1^i) + \beta \ln(C_2^i) + \gamma \ln(I^j + X^{ij}) + \lambda (I'_d - C_1^i - \tau X^{ij}) + \mu (S \times R - C_2^i)$$

$$(C_1^i) \frac{1}{I'_d - \tau X^{ij}} - \lambda \leq 0, \dots, C_1^i \geq 0, \text{ with complementary slackness,}$$

$$(X^{ij}) \frac{\gamma}{I^j + X^{ij}} - \tau \lambda \leq 0, X^{ij} \geq 0, \text{ with complementary slackness.}$$

Logarithmic utility assures an interior solution for C_1^i , so $\lambda = \frac{1}{I'_d - \tau X^{ij}}$.

The solution for X^{ij} is interior if the degree of altruism is sufficiently strong: $\gamma > \frac{\tau I^j}{I'_d}$.

Assuming family transfers different from zero, we can express C_1^i and X as functions of I'_d .

$$X^{ij} = \frac{\gamma I'_d - \tau I^j}{\tau(1+\gamma)} = \frac{\gamma(I^i - S) - \tau I^j}{\tau(1+\gamma)}, \quad (4)$$

$$C_1^i = I'_d \left(1 - \frac{\gamma}{\tau(1+\gamma)} \right) + \frac{\tau I^j}{\tau(1+\gamma)} = (I^i - S) \left(1 - \frac{\gamma}{\tau(1+\gamma)} \right) + \frac{\tau I^j}{\tau(1+\gamma)}. \quad (5)$$

Using (4) and (5) in (1) we get the indirect utility as a function of S :

$$\text{Max}_{S \geq 0} U_{ij} = \ln \left\{ (I^i - S) [\tau(1 + \gamma) - \gamma] + \tau I^j \right\} + \beta \ln(S) + \gamma \ln [I^j \tau \gamma + \gamma (I^i - S)].$$

The optimal savings S^* is the solution of the following first-order condition:

$$\frac{\tau(1 + \gamma) - \gamma}{(I^i - S)(\tau(1 + \gamma) - \gamma) + \tau I^j} + \frac{\gamma}{I^j \tau \gamma + \gamma (I^i - S)} = \frac{\beta}{S}. \quad (6)$$

The left hand side of (6) is an increasing function of S and the right-hand side is decreasing in S . Therefore, equation (6) has a unique solution $S^* \in (0, I^i)$.

The second step of the optimization problem involves the decision regarding the portfolio allocation by choosing the shares invested in the home and the host country.

That is, given the optimal savings amount S^* and the exogenous rates of return on assets in both countries R^i and R^j , the agent chooses the asset mix A^i and A^j that maximizes the return of her portfolio. Formally,

$$\text{Max}_{A^i, A^j \geq 0} [A^i R^i + A^j R^j], \quad (7)$$

$$\text{subject to } A^i + A^j [1 + f(A^j)] = S^*, \quad (8)$$

where $f(x) = x^\alpha$, $\alpha \in (0, 1)$ represents the cost of investing in home country assets. This cost is intended to capture not only the monetary costs (fees and charges of the financial institutions in the case of investment in financial assets) but also risks associated with imperfect monitoring or generally idiosyncratic risks not included in the return. For simplicity, the budget constraints above are expressed in terms of consumption goods in the sending country i .

The first-order conditions with respect to A^i and A^j are:

$$\begin{aligned} (A^i) R^i - \lambda &\leq 0, A^i \geq 0 \text{ with complementary slackness;} \\ (A^j) R^j - \lambda (1 - (1 + \alpha)(A^j)^\alpha) &\leq 0, A^j \geq 0 \text{ with complementary slackness.} \end{aligned}$$

It can be seen that $A^j = 0$ when $R^i = \lambda > R^j$ and $A^i = 0$ when

$$R^i < \frac{R^j}{1 + (1 + \alpha)(S^*)^\alpha}.$$

The interior solutions for A^i and A^j are:

$$A^i = \left(\frac{R^i}{R^i(1+\alpha)} \right)^{1/\alpha} \quad \text{and} \quad A^j = S^* - \left(\frac{R^j}{R^j(1+\alpha)} \right)^{\frac{1+\alpha}{\alpha}}. \quad (9)$$

Consequently, the total amount of remittances the representative migrant sends from country i to country j is:

$$REM_{ij} = X^{ij} + A^j = X^{ij} \left(I^+, \bar{I}^+, \tau^- \right) + A^j \left(R^j, \bar{R}^j \right). \quad (10)$$

Based on the above equilibrium relationship, we estimate the following remittance function:

$$REM_{ijt} = f \left(I_t^i - I_t^j, R_t^i - R_t^j, \tau \right), \quad (11)$$

where REM are remittances per migrant, subscripts i and j indicate the receiving and sending country respectively and t is a time subscript. The first argument denotes the difference between real incomes of the migrant and her family back home, according to (4). The second terms denote the rate of return differential for financial and possibly non-financial assets (real-estate) as given by the linear version of (9). The effect of the income differential on the remittance flow will capture the altruistic motive to remit, while the effect of the two rates of return reflects the importance of self-interest behind the decision to remit. The final term is the cost of sending remittances between two countries.

5.3. Conclusions regarding the remittance motivation

The model based on bilateral remittance flows, incorporates additional information about migrants' skill level, income inequality and the share of the informal economy in the sending country and allows us to consider various aspects of remittances such the GDP differences between two countries, the difference in returns to financial, and costs of remittances, proxies by the size of the financial network between two countries.

The GDP differential increases remittances, and this an indication that *altruism is important for remitting*. By contrast, *the interest rate differential* is significant only in special situations, and the investment motivation is not strong. The conclusion is that migrants remit for altruistic reasons, not for investment purposes.

Average remittances per migrant increase with the migrants' skill level and earning inequality in the host country is more likely to lower average remittances (but this effect may also be the opposite if a narrower measure of low-skilled workers is used). The share of the informal economy tends to lower the average remittances per migrant. Finally, it is clear that lower remittance costs tend to raise remittance flows.

6. A framework for the design of policy interventions

Because of the complexity of migration and remittances, is very difficult to select the relevant policy options. This options range from border controls and taxes on remittances to active support of migrants abroad and the creation of incentives for direct investments. While many of policy options attempt to achieve diametrically opposite results, other options appear to work synergic. This observation regarding this complexity means that the design of a policy package dealing with migration and remittances should be based on a clear framework. First candidate for such a framework is for simplicity the decision tree presented in the Figure 3.

The next step-by-step analysis based on this decision tree aims to identify a set of policy measures that are compatible with the motives that create remittance flows in the first place, addresses the deep issues related to migration and remittances and can be easy implemented (with low resources and within a reasonable time frame).

6.1. An introduction in migration management policies

The first task is to determine the overall stance and attitude towards migration. The basic options, encouragement vs. discouragement of migration, are incompatible but a mixed option can potentially be feasible. The decision in favour of encouraging or discouraging migration is based on the answers to the question regarding the net impact on the welfare (expressed by GNP per capita) of the sending nation. The welfare impact of migration and remittances (ΔW) could be decomposed in short-term level effects (ΔW_0) and a discounted cumulated effect on future welfare (ΔW_t).

$$\Delta W = \Delta W_0 + \sum_{t=1}^T \delta^t \Delta W_t$$

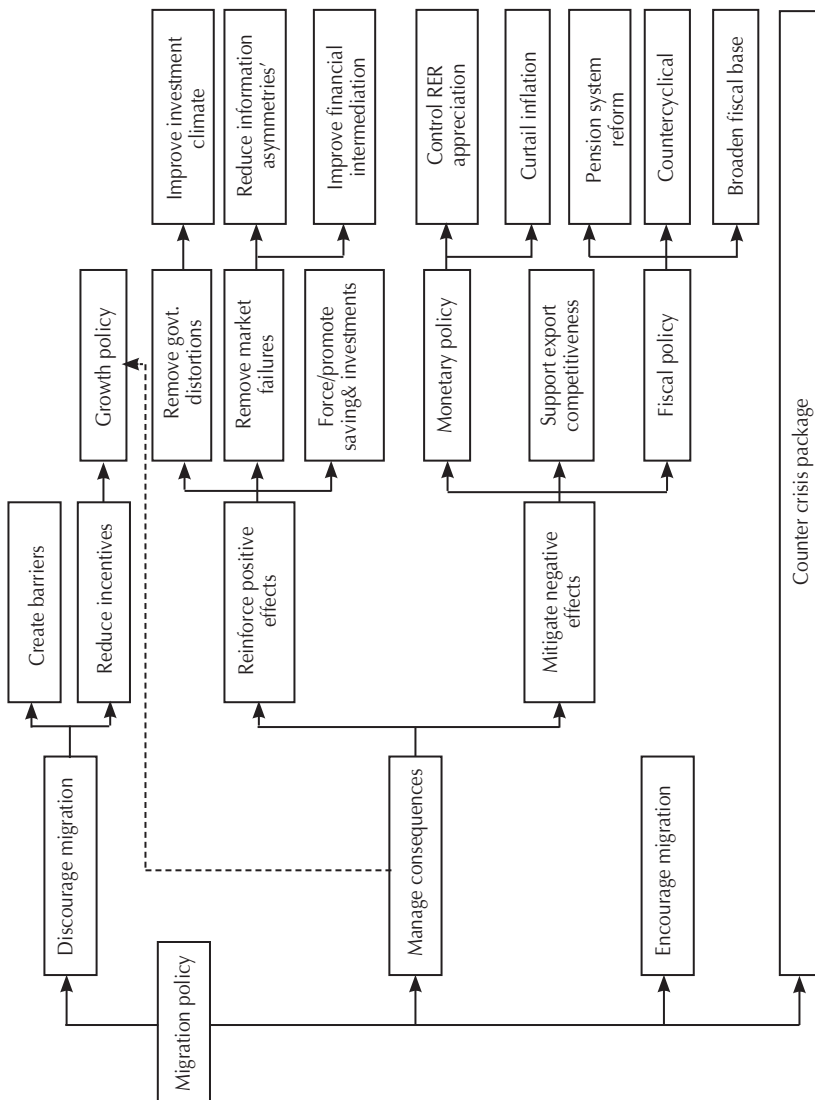


Figure 3. A possible policy decision tree for addressing migration and remittances

At reference time we only observe the short-run effects. The magnitude of the growth effect critically depends on the discount factor $\delta < 1$ and the duration T of these growth effects. Migration and remittances have a positive welfare impact on the current generation (reduced poverty and unemployment, increased disposable incomes, multiplier effects of increased aggregate demand on short-term growth). The cross-country studies on the role of remittances on economic growth do not allow us to unambiguously sign ΔW_t , which opens space for debate regarding the overall welfare impact. Even if we were to find that the growth impact of migration and remittances is negative, signing the overall impact on welfare critically depends on two factors. If migration/remittances are expected to taper off soon (low T) or if long-term negative effects are sufficiently discounted (low δ), the short-term positive level effects may overcome the negative consequences on growth. It is clear that a high discount factor is not necessarily the result of self-interested politicians and could constitute the optimal response given the uncertain political and economic environment that the country faces. Given that we cannot determine the sign of the overall impact of migration and remittances, the encouragement/ discouragement of migration cannot be argued on welfare-improvement grounds. There are also feasibility considerations that speak against active attempts to manipulate migration flows.

Remittances are welfare improving for those staying at home, but an active encouragement of migration is not a sustainable, or a politically feasible strategy. There are also important economies of scale associated with public goods, which provide additional rationale against outright promotion of migration.

An active discouragement policy by imposition of barriers will not remove the incentives that motivate migration and intermediaries will likely become increasingly criminalized, while repatriation of remittances will shift completely into the underground economy.

The policies for reducing incentives to migrate are achieved by taxing remittances but these can easily shift into informal channels and the efficiency is very low while the positive effects of remittances are severely decreased. In this case the only effective way for decreasing incentives to migrate is by lowering incentives to migrate by removing financial markets imperfections (this would lower the incentive to migrate in order to accumulate the capital required to finance investments into physical and human capital), by increasing the efficiency of insurance markets and of the social security system (lowering the use of migration

as a direct solution for risk diversification) and by increasing economic growth and reduce poverty (this reduce the wage differentials as a main incentive to migrate).

In conclusion the strategies to optimize the short-term welfare effects and tip the balance of welfare consequences towards the positive end represent the only option and can be achieved either by mixing the reinforcing positive effects with the mitigation of the negatives.

6.2. Emerging solutions to reinforce the positive effects of remittances

The positive impact on investment and savings is the main channel through which remittances affect growth. From the perspective of development agencies, the largest appeal of remittances is provided by the fact that only a relatively small fraction of remittances is saved or invested directly. The channels through which this positive effect can be reinforced are mobilization of remittances, removal of government distortions, and removal of market failures.

In their review, Johnson, Sedaca (2004) present the various types of remittance and diaspora - focused programs through various detailed case studies. These programs are initiated by private banks, non-banking financial institutions (microfinance projects and credit unions) and international organizations. The literature was not focused also on government programs. For government authorities, collective remittances represent a vital supplement to their budgets and a simple way to support public services. Governments should be interested in productive activities that can raise income and lower unemployment. In a desire to increase the use and impact of collective remittances some government authorities have implemented different measures: incentives to attract greater flows of collective remittances, strategies to match collective remittance inflows with government funds.

Cuc, Lundback, Ruggiero (2005) present the mechanisms of government failures as the binding constraint in the path of the productive investment of remittances and they conclude that improvements in the investment climate is the only way to effectively promote higher investments. However, even if the constraint lies in the realm of investment climate declaring that the poor investment climate is the binding constraint is equivalent to saying that everything binds, since the investment climate includes a variety of

different topics: taxation, labour regulation, infrastructure, corruption, property rights, contract enforcement, etc. These are completely different issues, requiring different policy recommendations. In addition, it is hard to argue that these policy recommendations address problems that are specific to remittances.

There are different potential market failures that policy can address, including imperfections in the financial market (Giuliano, Ruiz-Arranz, 2005) and information asymmetries between the migrant and recipients (Chami, 2003). Inefficiencies in the financial system can reduce the positive impact of remittances and poor competition in the financial sector can result in high costs for transferring remittances (this reduces the disposable income from remittances: both the short run multiplier effects of remittances and also the funds available for productive activities) and large spreads (which preclude the channelling of remittances deposited with banks into the real sector). The development of the financial system becomes a critical component of an economic strategy that aims at integrating remittances into the development mix.

6.3. Solutions to reduce the negative effects of remittances

Because labour outflows and a remittances-caused Dutch disease dramatically reduce export competitiveness, this aspect should be of particular concern to the government of emerging economies. There are different solutions in which a country can mitigate the negative effects on competitiveness:

c1) sterilize the inflow of foreign currency to prevent appreciation of the currency. This will eliminate the remittance-caused Dutch disease, but will not be able to compensate for wage increases due to the outflow of labour. On the negative side, monetary policy is an economy-wide lever, which does not only affect the exports. The interest is to design a policy located as close as possible to the cause.

c2) implement an industrial policy, capable to compensate exporters for competitiveness losses due to increased wages and real exchange appreciation. Industrial policy has proven to be an effective tool in the case of South-East Asian economies (Rodrik, 1994). However, it has proven quite disastrous in many other parts of the world. In the case of commodity-based Dutch diseases, many countries implement stabilization funds. Oil exporters are a prime example in this respect. Norway was

one of the first countries to introduce these funds, and more recently stabilization funds have been created in Russia and Kazakhstan. These funds are earmarked to be spent in the event that the export price of a commodity drops or the natural resource is exhausted. It is not immediately clear how such a scheme could be applied to remittances-as it was argued earlier, taxing remittances is not feasible.

7. Conclusions and proposals

It is a special interest in the study of remittances in a new framework of EU labour markets after post-enlargement migration. The literature includes analyses different types of situations through country studies and they conclude that free migration is a solution rather than a foe for labour market woes and cash strapped social security systems in the EU.

The definitions of migration and remittances differ and cross country comparisons are difficult. The distinctions between foreign born and foreign citizens and between temporary and permanent migrants are often ignored in statistics; illegal migration is also difficult to estimate. In fact, much of the observed migration flows after EU enlargement may have been the legalization of people originating from the new EU-10/2004 and EU2/2007 states who already lived in the old EU-15 member states.

The analysis of the remittances in the new picture of post enlargement migration effects is a very difficult task and the simple use of macroeconomic determinants is replaced by the use of aggregate flows as a sum of individual transfers. A review of the literature (Hagen-Zanker, Siegel, 2007) based on 17 empirical studies found that the most commonly variables related to the macroeconomic performances at either end of remittance flow should include exchange rate and interest rate differential in their dynamics. Although the number of potential remitters is crucial for aggregate flows, only few studies include demographic variables.

The macroeconomic environment in country of residence and the general wage level have a strong positive impact on remittances. Indeed, if migrants household situation improve, they can remit more, but the models that analyze the role of macroeconomic performances in the home country are not conclusive because of the opposing effects: a strong economy can encourage remittances for investment purposes or with the view to return but altruistic remitters may respond to recessions by increasing the transfers to their relatives

The policy relevance in the context of post-enlargement migration effects is analyzed in several overlapping areas:

- the tradition and the geopolitics of migration (there are countries heavily dependent on remittances - Moldova, Bosnia, Kosovo, EU countries where remittance inflows are large in absolute value- Portugal, Spain, Greece with mixed effects on intra European remittances;
- remittances could be relevant for *overall migration policies management* (a new approach to migration related policy based on the fact that previously separate policy realms should be seen in conjunction- these include the drain brain competition, the prevention of unwanted migration and developments in migrant's countries of origin);
- there are new political steps: bilaterally mechanisms, mobility partnerships;
- remittances should be analyzed in correlation with regulatory and law enforcement tasks:
 - the persistent problems: national regulatory regimes, imperfections in international banking networks, exclusivity agreements, oligopoly conditions (Carling, 2007);
 - the importance of reducing transfer costs and the integration of transfer mechanisms together with other financial service packages;
 - concerns about money laundering and financing of terrorism;
 - European Services Directive (2007) facilities;
- remittances play a central role in relation to immigrant integration:
 - the scepticism of majority societies about migrants' loyalty;
 - contrary to popular belief, some authors demonstrate an inverse relationship between commitment to the country of settlement and sustained involvement in the home country.

A renewed research agenda on the determinants of remittances in the post enlargement era should offer better explanations for differences in remittance levels, the dynamics and the volatility by taking into account the following aspects:

- the specific mechanisms of remittances: transfer costs, implications for poverty alleviation, other development impact;
- studies of determinants: the issue of altruism versus self - interest;

- for a policy perspective is necessary a critical analysis of the actual variation.

For this type of analysis, the specific determinants are more important in their own right and not just as indicators of the motivation to remit. The indicators should be better equipped to influence and to predict the magnitude and the dynamics of remittances. In this case, for a better prediction there is a critical need to adopt new but unified concepts and methodologies.

Sustainability and cyclicity are still controversial issues. Sustainability is fundamental from an endogenous point of view. In terms of dynamic convergence if sustainability holds, emerging countries could redeem fostering riskier and the more productive investments, relaxing the liquidity constraints with procyclical remittances. Cyclicity is even more complicated to deal with, because it is strongly related to the motives why people remit. Countercyclicity, acyclicity or procyclicity should have distinct but synergic results in terms of development. Procyclicity can boost investments overcoming liquidity constraints. Acyclicity can prevent current account crises and countercyclicity work as a macro stabilizer.

The main conclusions are:

- the analysis of the determinants of remittances should develop new ways of accommodating variation in a post enlargement migration framework, with a better integration of micro level information (migration projects, potential remitters) and a careful integration of demographic and other non- economic determinants;
- the GDP differential (host/ home) increases average flows of remittances;
- the indication that altruism is important for remitting, while the investment motive to remit is present only in short time periods;
- the average remittances per migrant (ARPM) increases with the migrants' skill level;
- the share of the informal economy tends to lower the average remittances per migrant;
- lower remittance costs tend to raise remittance flows if countries are sufficiently far apart and this aspect is important in the analysis of the efforts to lower remittance costs;
- there is not a clear evidence of the earning inequality in the host country on raising average remittances.

Future work and specific remittances policies need reliable data to deal with. The future work should be more focused on country analyses because the change in the cyclical components of GDP, the amount of remittances and other macro variables like financial depth, level of corruption, openness are country specific. Cyclical properties may change in time and the migrant's remitting mechanisms can be also influenced by national migration policies.

The focus will be on the following goals: improving the definition of migrant' remittances so that national central banks and statistical offices should not have any objections; providing banking systems and specific services (fees, minimum balances, exchange rate spreads) on a micro level scale, better adapted to the new capabilities of transfers; estimations for the irregular flows.

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