

The impact of remittances on consumption and investment in Romania

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Abstract

This article proposes an econometric analysis of the effects of remittances on the Romanian economy in terms of consumption and investment. Unlike the other sociological studies regarding the Romanian migration phenomenon, the present research targets the macroeconomic level, following the extent to which remittances have supported the evolution of consumption and investment.

Contrary to our assumptions, the results showed that remittances had a more significant contribution to investment than to consumption. This may be due to the data we have used, which include only the amounts sent through formal channels which are indeed bigger and meant for investment purposes.

Key words: labour migration, remittances, household consumption, investment, Romania

JEL Classification: C51, F22, F24, E22

1. Introduction

International labour migration is a controversial phenomenon which generates complex effects on several plans. The extremely different and not completely understood opinions on the importance of international migration within the wider process of development stand as proof. Starting with the second half of the 20th century and up to the beginning of the 21st century, the vision on the support of migration to the broader process of development *varied between optimism and pessimism* (see Taylor (1999); de Haas (2007); Castles (2008); Abreu (2010); de Haas (2012)). An *optimistic* vision, according to which

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migration leads to a development path as in the case of Western, Central and North European countries that had given approximately 55 million emigrants to the New World (between 1820-1920) (Hatton and Wiliamson, 1998, p. 4), dominated the post-World War Two period, in the 50s and 60s. It was assumed that migration would cover the lack of capital in developing countries especially by means of remittances; moreover, it was expected for migration to lead to a better allocation of resources (including the capital from remittances) and, as a result, to stimulate the overall increase of productivity favouring, at the same time, the convergence of the incomes level until international migration was totally discouraged.

The deterioration of economic conditions at the beginning of the 70s in the context of the oil crisis contributed to a change in the vision on migration which started to become a *pessimistic* one; it was considered that not only had migration failed in minimizing the gaps in development, but it was a self-perpetuating process which drained the migrant sending areas of their labour and capital, crowding out local production. Even more, it contributed to the development gaps deepening both through the creation of a dependency on developed countries (for instance, having in view that the received remittances were mostly directed to *consumerism* in households; because not all these goods were manufactured in their country of origin, remittances were blamed for favouring a dependency on other countries by the increase of imports), and the departure of the most educated and dynamic persons – “*brain drain*”. Moreover, remittances were blamed for causing inflation (because of the short term increase in demand of goods and services) and the “Dutch Disease” (exchange rate appreciation determined by the large amounts of remittances).

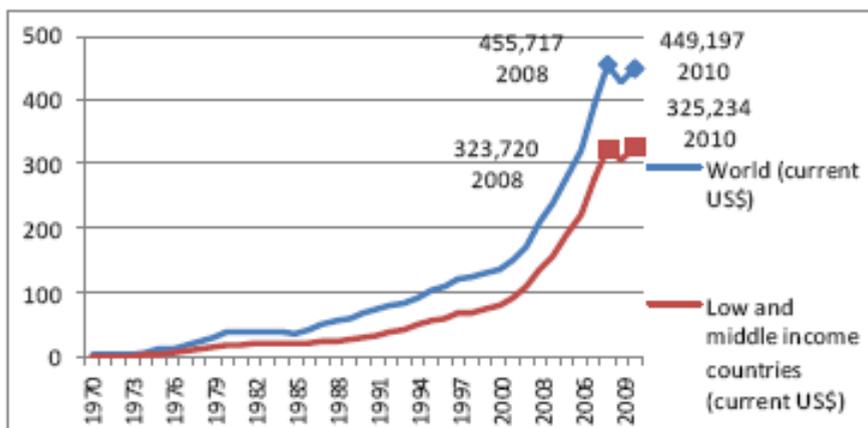
Optimists replied in the 90s and 2000 showing that, although the greatest part of the amounts coming from money transfers were heading towards consumption, this could generate an effect of demand chain multiplication, thus indirectly stimulating economic growth. To deal with the side effects of the *brain drain* phenomenon, they defined the *brain gain* phenomenon; migration may return as a benefit to the country of origin in case emigrants return and implement the experience gained abroad or economic networks (favouring the generation of commercial flows or foreign investments) which will be created between the country of destination and that of origin. Furthermore, migration may represent a “safety valve” especially in the case of poorer economies in which educated or disabled people have trouble in finding work. Thus, by means of their emigration, the country of origin may benefit more than if they remained unemployed.

However, starting from the end of the 80s, a series of “pluralist” theories took shape in their attempt to present the reciprocal relation between migration and the wider process of development (for instance, *new economics of labour*

migration (Stark and Bloom, 1985), *migration hump theory* (Martin and Taylor, 1996), *development tiers* (Skeldon, 1997)).

The most visible benefit of migration from the perspective of the country of origin, the element around which *optimism* with respect to migration gravitates, consists in the money transfers from abroad to the people that stayed at home – the remittances. These transfers managed to attract more and more researchers' attention mainly because of the high value they reached. According to de Haas (2012, p. 9), the remittance flows received by *low- and middle-income countries overtook the amount of official development assistance*. If in 1990, the amount of official development assistance received by low and middle-income countries reached 55 billion dollars and the remittances 24 billion dollars, in 2008 the situation changed and the remittances of 243 billion dollars reached a double value as compared to the financial help of 126 billion dollars. This spectacular increase of the remittances flows owes also to the improvement of the estimation methods as a considerable part of these transfers is carried out through informal channels. For example, one third of remittances from the EU to non-EU countries goes through other channels than banks and large money transmitters (ECFIN, 2004, p. 7); total remittance outflows from the UK transferred through informal mechanisms are estimated at 0.5 billion pounds (Blackwell and Seddon 2004); de Haas and Plug (2004, pp. 14-15) showed that between 1995 and 2000 cash remittances accounted for an average of 22.5% of total remittances sent to Morocco. The importance of remittances was emphasized by the context of the economic crisis from the end of 2000 when the remittances received by low and medium-income countries decreased from 324 billion dollars in 2008 to 306 billion dollars in 2009 (see graph 1).

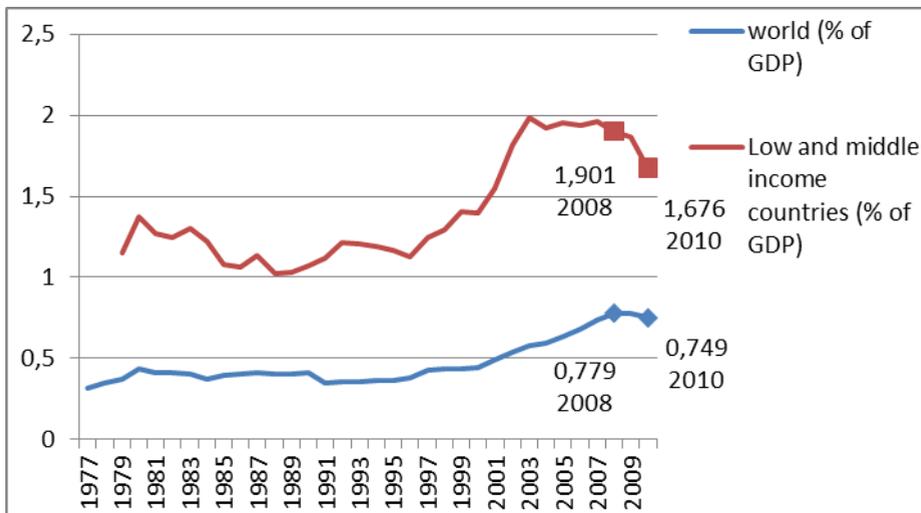
Graph 1. Remittances received 1970-2010 (billion USD)



Source: World Bank, Databank, 2012

Although they resumed their growth in 2010, even overcoming the 2008 level when remittance flows reached almost 2% of the GDP in low and medium-income countries before the beginning of the crisis (see graph 1), this decrease was strongly felt. In this sense, Chami, Fullenkamp and Jahjah (2003) drew attention to the fact that remittances afford the neglect of commercial balance disequilibrium creating a dependency towards the amounts received by emigrants; the risk of neglecting the commercial deficit, which allow the increase of imports to a greater extent than exports in hope of coverage through remittances occurs along with receiving remittances. Moreover, remittances are one of the main sources for currency reserves in many countries.

Graph 2. Remittances received 1970-2010 (as a percentage of GDP)



Source: World Bank, Databank, 2012

Furthermore, the importance of remittances cannot be neglected at the microeconomic level. The value remittance flows did not only considerably overcome international financial assistance, but also, unlike financial aids whose transfer is often undermined by various bureaucratic demands at the source level or the greed of corrupt politicians at the destination place level, remittances go directly to the people that need them (Kapur, 2003). They bring extra incomes which may come as debts reimbursement, consumption or investments.

At the macroeconomic level, the debate referring to the potential of remittances to stimulate economic growth, as a part of the wider debate between optimists and pessimists regarding the migration-development nexus, is still open. Different studies on the contribution of remittances to economic growth have shown different results. Chami, Fullenkamp and Jahjah (2003) identified a negative impact of remittances on economic growth. On the contrary, Giuliano

and Ruiz-Arranz (2005) showed that remittances can foster economic growth. Moreover, Jongwanich (2007) identified a marginal positive effect of remittances on economic growth and Mallick (2008) noticed that remittances do not have a significant influence on the growth rate. Most of this discussion is related to the way in which remittances are used. If remittances are used for productive investments, they will create new workplaces, directly stimulating the increase of local production and the drop of unemployment. Thus, remittances may lead to the increase in labour demand at the macroeconomic level even if emigration initially led to a decrease in the demand for goods and services in the country of origin. If remittances take the path of consumption, the increase in demand may stimulate production which, in its turn, will determine the increase of demand to suppliers and chain multiplication effects. According to Katseli, Lucas and Xenogiani (2006, p 53), the extent to which remittances may generate the multiplication effect by stimulating the increase of demand and production, respectively, depends on the capacity of local manufacturers to increase their production (where the offer can increase; for instance the price of land will increase due to a limited offer). On the contrary, prices and imports will increase. Secondly, this multiplier depends on the economic relations of the emigrants' area of origin with the other areas, as only certain areas or regions have high emigration rates. Thirdly, the multiplication effects depend on the emigrant family's tendency towards consumption. Even so, remittances can foster economic growth irrespective of whether these are used for investment or consumption. But identifying the way in which remittances are used in Romania, estimating their contribution to the growth of household investment and consumption represents a first step in becoming aware of their economic importance and picturing a wider image on the impact of remittances on the Romanian economy. Understanding the impact of remittances can lead us to a better management, thus amplifying their benefits or counteracting any potential negative effects.

The novelty of this study consists in the macroeconomic perspective of the analysis. Considering that migration is a process with deep social roots, and most of the studies regarding Romanian migration have used surveys analysis, this study goes further estimating the contribution of remittances to the growth of household consumption and investment. Of what we know, even if there are several complex studies using surveys which are helpful in projecting a broad image of the Romanian migration process, there is still a lack of studies trying to estimate the economic impact of migration/remittances. Our analysis tries to address this gap, offering plenty other directions in order for the research to be continued.

Further on, we will focus on the manner in which remittances are used and the factors that influence the allocation of these transfers. In the analysis of

the economic effects of migration exerted by means of remittances in the country of origin, the manner in which remittances are used is very important.

2. The uses of remittances

As mentioned above, money transfers reach directly the households that need it. As a result, before presenting the results of the studies on their use, we have to mention that whatever needs are addressing, be it consumption, investments, debt reimbursement or covering survival expenditure in general, remittances represent an incontestable benefit at the microeconomic level, being able to satisfy directly household needs. Moreover, by means of remittances, migration is an attractive solution for achieving a certain level of savings in order to invest especially in countries in which access to loans or other social facilities is difficult for poor families (Taylor, 2006, p. 7; Woodruff and Zenteno, 2001).

The main limit of the studies on the use of amounts received from abroad is the difficulty of distinguishing between the ways in which remittances have been used as reported to the other household incomes, precisely due to the identical form they take (Taylor, 1999). Secondly, as we are aware of the direct contribution to economic growth, in case remittances aim at achieving investment, we have to be aware of the fact that the orientation of remittances towards investments depends on the national economic policies and the assurance of a stable political and economic environment, favourable to doing business in the emigrants' country of origin.

As far as the use of remittances is actually concerned, it has been shown that it depends on *the stage within the migration cycle* (Haas, 2003, self-quoted in de Haas, 2007, pp. 14-15). We may notice that initially, when the immigrant is adapting to the country of destination, money transfers cover urgent expenditure which may have been the reason for the departure. Then, as the emigrant finds a stable job, the transnational household allows him to aim at bigger expenditure related to the assurance of a decent life. In the following stage, based on the level of incomes and the local or macroeconomic context, household members may make investments in commercial activities. These investments may continue at the emigrants' return if the savings, pensions or the success of entrepreneurial activities afford them.

Conway and Cohen (1998, p. 36) show that *the way in which remittances are used changes along with context, priorities and persons that decide their destination*. Young people save money to organize their wedding, for other departures abroad or leisure. If they are married, they focus on lands on sale, housing or other expenses related to children and their education, in particular. As adults, they aim at improving their skills, focusing on their own business.

Certainly, the allocation of remittances also depends on *the emigrant's job, respectively the amount of transfers*. A study carried out by the National

Bank of Tajikistan (according to Kireyev, 2006, p. 15-16) highlighted that the higher the sums received, the higher the possibility of their investment. As a result, once a job providing stable and high incomes in the country of destination occurs, the emigrant's attention may focus on investments. The financial and human capital acquired further to the experience abroad increase the migrant's availability for investment, as compared to the families with no experience in migration (see Woodruff and Zenteno, 2001; Acosta, 2007, p. 155; McCormick and Wahba, 2003, p. 525). Other studies have identified a significant impact of remittances at the macroeconomic level. For instance, Stahl and Habib (1991, quoted in Taylor *et al.*, 1996, p. 202) estimated that each emigrant created approximately three jobs through the investment achieved from remittances. Researching the macroeconomic impact of remittances in 13 Caribbean countries, Mishra (IMF, 2005, p. 74) reached the conclusion that an increase by 1% of the GDP remittances boosts private investments by 0.06% (also calculated as a GDP percentage).

Remittances have a particularly important contribution to the increase of investment in countries with undeveloped financial systems which harden access to capital. As the financial system develops, more and more investments are made through access to the domestic financial market, and remittances are headed towards other non-productive channels (Giuliano and Ruiz-Arranz, 2005). Thus, remittance flows are not a sufficient condition for the accomplishment of investments. Directing remittances to investments requires an appropriate environment for investments in the country of origin. Furthermore, transfers need to be high enough (which requires a longer period of stay in the country of destination for the emigrant's adaptation and orientation towards a better paid job, respectively) so as to cover the necessary costs to survive and save money. In this sense, Smart, Teodosio and Jimenez (1986, quoted in Taylor *et al.*, 1996, p.197), focusing on The Philippines emigrants, showed that despite the higher salaries abroad, as compared to the country of origin, they were not enough for a higher standard of life and for the start up of enterprises, hence the return abroad. Many other studies showed that the main uses of remittances are consumption, debt payment and financing of future departures, not investment (Paine, 1974, p. 147, quoted in Taylor *et al.*, 1996, p.194; Stark and Levhari, 1982; Ahlburg, 1991, quoted in Jongwanich, 2007, p. 6; European Investment Bank/Facility for Euro-Mediterranean Investment and Partnership, 2006, p. 136; Mallick, 2008, pp. 26-31).

3. Remittance flows received by Romanian households

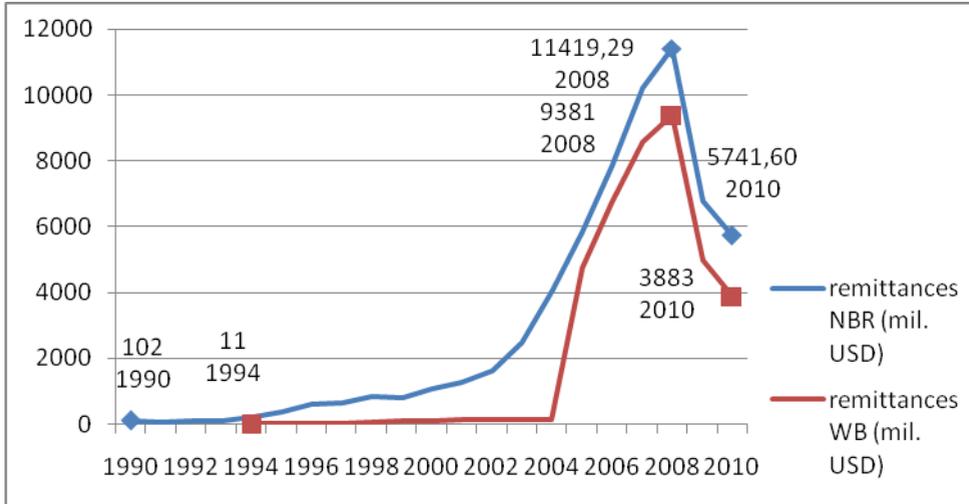
During the communist regime, international migration was a process strictly controlled by authorities. Later on, starting with 1990, when the political regime changed, international migration started to take the shape of a true strategy for survival. In the context of the two reform waves of the 90s, the

economic situation became severely deteriorated, leaving only two solutions to the unemployed: the return to the rural areas where living costs were lower or international migration.

Gradually, as more people decided to migrate, migration networks developed thus allowing the reduction of migration selectivity. Once the barriers against the circulation of people were eliminated, after the simplification of the procedures to access the Schengen Area at the beginning of 2000, Romanian migration boosted. The rise of Romanian economy was no longer able to attract the population back to the cities as people had already chosen international migration to the internal one (Sandu et al. 2004). Thus, we cannot argue that the main reason for which Romanians migrate is related to the low level of life ensured by Romanian incomes (see Bleahu, 2004, p. 23-24; Noica, Stoiciu, 2006, p.16; Lăzăroiu, Alexandru, 2008, p. 232; Cucuruzan, 2009, pp. 216-217; Sandu, 2006b, p. 60; Stoiciu et al., 2011, p. 72; Soros Foundation Romania, IASCI, 2011; *The Network, Intelligent Society Group*, 2011, p. 9; Holland et al., 2011, p. 47): either they are unemployed and their incomes do not provide them with a minimum standard of living or they simply want to live a better life.

Romanian migration was/ is mainly temporary. The short period of time spent in the country of destination shows the *low “maturity” of the emigrational cycle* in Romania which did not allow a deeper integration in the society of the country of destination and access to better paid jobs (Soros Foundation Romania, IASCI, 2011, p. 6). Thus, having in view the dominance of medium, low qualified and unqualified jobs people had before emigration (in case they gained experience on the Romanian labour market) and in countries of destination, it would be more appropriate to speak about an “arm drain”, than a “brain drain” (Stoiciu et al., 2011, pp. 77-78).

Despite all these, the financial transfers made by Romanian emigrants to the ones at home increased considerably along with the acceleration of the phenomenon of Romanian migration after 2002, when going abroad was easier as a result of the simplification of procedures to access the Schengen Area. Along with the increase in the level of emigrants, the value of money transfers received by the household members at home also increased (11.4 billion USD according to NBR estimation and 9.4 billion USD according to the World Bank) before the economic crisis whose effects show worldwide. To have an image on the flow dimensions for these transfers, we mention that during 2006-2007, they were 5% higher than the Romanian GDP.

Graph 3. Remittances received by Romanian households 1990-2010

Source: personal processing according to the data collected by the National Bank of Romania and World Bank

Overall, remittances are the main reason for Romanian migration. A study conducted by Soros Foundation Romania and IASCM (2011) showed that migration was a strategy to attain a certain level of savings which could not be attained in Romania in view of meeting a certain objective. Despite all these, as the migration cycle is still a “young” one as compared to other Eastern European countries, the amounts sent are smaller and aim at covering survival costs. Most often, the money is used to cover *survival costs* (buying food, paying bills and debts), *consumption costs* (expenses for cloths and shoes, consumer goods and cars), *human capital investment* (especially expenditure incurred by the education of children and medicine) and *investment in housing* (a great part of the emigrants extended/ modernized their houses; a smaller part bought land to build a new house or even bought a new place to live in) and less for *business investment*¹ (see Noica, Stoiciu, 2006, p.17; Grigoraş, 2006, pp. 43-46; Lăzăroiu, Alexandru, 2008, pp. 237-238; Stoiciu et al., 2011, p. 127).

However, migration may favour the accomplishment of investment both through the acquired capital and experience gained during the stay abroad. To be more precise, we cannot tell if people experienced in migration truly planned to make an investment before their departure calling on the strategy of migration to save the necessary capital (the favourable argument supporting this hypothesis is

¹ This classification of the way in which remittances are used was proposed by Toth (2009), p. 137.

the selectivity of migration); perhaps the experience abroad induced them a lower risk aversion or a certain entrepreneurial spirit and determined them to invest. It is a fact that the ratio of people aware of the importance of risk to succeed in life and, at the same time, of the people that have their own business is higher among the people experienced in migration as compared to the rest of the population (Toth A. and Toth G, 2006, pp. 49-50).

Different results have also been obtained. Litan (2009) coined two models (the data only refer to the case of Romania and they are expressed by semester for 2000-2008) to assess the contribution of remittance flows to private consumption and investments. The results showed that although remittances affected consumption in a negative manner, they contributed significantly to the increase of investment.

Further on, we will focus on the case of Romania to make our own assessments on the way in which remittances can foster consumption or/and investment in Romania.

4. Methodology and data used

Studies on remittances showed that there were many factors which influence the way in which remittances were used. However, as they often take the path of consumption or investment, we decided to carry out an analysis at the macroeconomic level in order to assess the contribution of remittances to the increase of household consumption and investments. Even though we are aware of the fact that migration is a process with deep social roots, having in view that econometric analyses are mainly used for studies carried out at the macroeconomic level, we have opted for this type of analysis. Moreover, this study aims to enrich the framework of Romanian migration, projected by accomplishing several wide national representative studies using surveys, by adding some results reflecting migration effects on the economy at the macroeconomic level.

The models we have built have the purpose of estimating the contribution of remittances to the consumption of Romanian households and to investment, respectively. To clarify the contribution of remittances, several studies have been conducted: see, for instance, Mallick (2008) and Litan (2009) for the analysis of the relation between remittances and consumption; and Giuliano and Ruiz-Arranz (2005), Jongwanich (2007), Mallick (2008) and Litan (2009) for the analysis of the relation between remittances and investments, respectively.

Unlike previous research, addressing only the Romanian case allowed us to use more relevant indicators, like *household consumption*, *net investments*, *net wages received by households*, *non/governmental credit* or *remittances* (we assume that the data we have used – from NBR - are more precise than the WB estimates). The study performed by Litan (2009) is the only one referring

exclusively to the case of Romania. Unlike Litan (2009) the present study covers the period before 2000 as well and the data are expressed by year and not by semester.

The first model represents the evolution of household consumption as a function of remittances, wages, credit and production.

Model 1 – Testing the impact of remittances on household consumption

$$\text{Household consumption} = f(\text{Remittances, Wages, Credit, GDP})$$

The second model, which tests the contribution of remittances to investment, comprises two other exogenous variables: credit and GDP/FDI.

Model 2 – Testing the impact of remittances on investment

$$\text{Investment} = f(\text{remittances, credit, GDP/FDI})$$

Regarding remittances, studies on Romanian emigrants signalled the low “maturity” of the Romanian emigrationist cycle. In other words, the emigration period is lower as compared to that of emigrants belonging to other nationalities not allowing them to gain higher incomes (they do not have access to better paid jobs or start-up businesses in the countries of destination). As a result, money transfers from abroad are most often used for *survival expenditure*, that is they supplement household incomes in the country for daily consumption (including debt payment), few of them making investments in housing conditions or business. This is why we expect to find a strong connection between remittances and household consumption: **hypothesis 1.1** – *remittances contributed to the increase of household consumption*. But, even though remittances are rarely used for productive investments by the Romanian households, this represents a direct channel through which remittances can promote investment growth. The indirect channel is given by the increase in aggregate demand due to the transfers received from abroad. The increase in demand can determine the growth of investment in order to increase production. So we expect that: **hypothesis 2.1** – *remittances contributed to the increase of investment as well*.

The transition period in Romania was very hard to endure. The absolute poverty rate rose 6.3 times between 1990 and 2000 (Zamfir, Stănescu, Ilie, 2010) and decreased to the 1990 level after 9 years, in 2009. Although the unemployment rate was not extremely high, it stayed at a high level on the long term. During this period, migration truly represented a survival strategy. This is why we assume that the positive relation between remittances and household consumption is stronger than the one between remittances and investment.

Compared with the model used by Litan (2009) we have added the *wage* variable which we expect to have a significant contribution to consumption as we consider wage to be the primary source of consumption for population (the dependent variable is exactly the final consumption of households): **hypothesis 1.2** – *wages contributed to the increase in consumption*. In addition, we have introduced another variable representing the non-governmental credit. Due to lack of data, instead of the *credit to population* we have used the *non-governmental domestic credit* series (which include both credit to population and economic operators). As far as credit is concerned, its relatively late development and low accessibility, the high financial instability before 2000 brings us to the conclusion that its contribution to the increase of consumption was rather low: **hypothesis 1.3** – *credit led to a low increase in household consumption*. Along with the households, the factors presented above affected the other sectors as well. The difference is that the firms and/ or other institutions have a wider access to the financial market as compared to households. Therefore we consider **hypothesis 2.2** – *credit led to the increase of investments as well*. Hence, we presume that the contribution to investment is stronger than the contribution to consumption.

Therefore, differing from the model used by Litan (2009), the second model we have proposed uses the *non-governmental domestic credit* instead of *real interest on loans* as an exogenous variable. We consider that it expresses more precisely the accessibility of credits. If the real interest rate on loans is lower, we know that credits can get higher, but we are unaware of the extent.

GDP is another variable we have enclosed in both our models. The growth of GDP, as an indicator for national production, represents, along with the growth of imports, the only possibilities in order for consumption to increase. So we expect to identify *a very strong positive relation between consumption and GDP* - **hypothesis 1.4**. Another difference from Litan's model (2009) resides in the enclosure of GDP in the investment equation as well. In line with the acceleration principle, an increase in output/income stimulates an increase in investment. Firms will respond to growing demand by expanding production. If firms feel that the higher level of demand will be sustained, they will respond to the growing demand by expanding production. Although it may take longer, one of the ways to expand production is by making investments in their production capacity. Thus we consider that - **hypothesis 2.3** – *the level of GDP/income determines the level of investment*.

FDI represents another important support for investment. But, considering the macroeconomic instability which characterised the Romanian economy during the transition period, the flows of FDI were rather reduced. So we expect: **hypothesis 2.4** – *the FDI had a reduced positive impact on investment*.

The series of data employed for variables generally cover the period between 1990 and 2009 according to their availability. The following variables were employed:

- **Credit:** the value of non-governmental credit (the credit of economic operators and credits of population), deflated using Consumer price index, 1990=100; source: Romanian Statistical Yearbook, 2010;
- **FDI:** the value of net inflows of investment, deflated using Consumer price index, 1990=100; source: World Bank Databank;
- **GDP:** the value of GDP, deflated using Consumer price index, 1990=100; source: Romanian Statistical Yearbook, 2010;
- **Household consumption:** the final consumption of households (deflated using consumer price index, 1990=100); source: Romanian Statistical Yearbook, 2010; The expense for final consumption of household population, according to the National Institute of Statistics *covers the expenditure for the purchase of goods and services used to satisfy directly the individual needs of their members*. Starting with 1999, a change of methodology takes places and the final consumption of private administrations adds to the series values;
- **Investment:** the value of net investments; the data have been taken from Romanian Statistical Yearbook, 2010 and deflated using Consumer price index, 1990=100;
- **Remittances:** the value of remittances. The data on remittances between 1990-1999 have been taken from Dăianu et al. (2001, p.16) and comprise the same two flows available since 2000 in the *Balance of Payments and Romania's Investment Position*: private transfers (the transfer account balance in *Balance of Payments and Romania's Investment Position* as *labour incomes* until 2002, when they occur as "compensation of employees"). These values only take into consideration the amounts in the account credit, namely the ones received by Romania. Until 2002, they have been expressed in US dollars and Euros since 2003. If there had been differences from a year to the other, the most recent values were taken into account (for instance, in *Balance of Payments and Romania's Investment Position* as *labour incomes* (BP) in 2004, the figures for 2003 are also mentioned; there are some changes as compared to the 2003 BP; we took into consideration the figures for 2003 from the 2004 BP). The values have been turned from USD/EUR in Lei using the average annual reference rate of the National Bank of Romania and expressed in constant prices since 1990 with the help of Consumer price index. To create the model, we have decided to use the data provided by NBR and World Bank for three reasons: the data provided by World Bank suffer changes in their record in 2004 which affects the uniformity of the series; the series provided by NBR covers a longer period of time; values of both series are comparable;
- **Wages:** the value of net wages received by households, deflated using Consumer price index, 1990=100; source: Romanian Statistical Yearbook, 2010.

The main limit of this research is related to the series of data used. As mentioned above, a considerable part of these transfers is carried out through informal channels due to lower costs. Romanian emigrants are no exception to this as they preferred to send money through public transport or friends and not financial agencies, for the same reason (More, 2009). The data used in models only include the amounts that may be quantified, namely the ones sent through formal channels. Even so, the assessments vary a lot (see the distinction between the assessments of the World Bank and those of the National Bank of Romania in graph 3).

Next, we are going to present some other methodological details:

- the software used for estimation is *EViews 7*; the estimation method used is OLS (*Ordinary Least Squares*); all equations include a constant term; there were no significant correlations between the residuals of the equations and the exogenous variables so there was no need to use instruments (Agung, 2009, pp. 381-392).

- all variables are expressed in logarithmic forms, because of an easier stationarisation and a higher robustness to autocorrelation. Because of the higher heteroskedasticity and autocorrelation consistency we have also used the Newey-West estimator of the disturbance covariance matrix.

- all equations have been tested for normality (Jarque-Bera Test) of residuals, Serial Correlation (LM Test and Ljung-Box Q-Test) and Heteroskedasticity (Breusch-Pagan-Godfrey Test).

- before using variables in models, for testing the hypotheses, we rendered the series stationarity by using the *ADF* test (*Augmented Dickey-Fuller*); the number of lags used are defined by the Schwarz Info Criterion:

Table 1. Testing for stationarity of the series used

Variables	ADF level, including trend and constant (t-Statistic) (number of lags)	ADF first difference (including only constant) (t-Statistic) (number of lags)	ADF the second difference (including constant) (t-Statistic) (number of lags)
Household consumption	-3.140897 (0)	-3.075643 (0)**	
Investment	-2.568257 (1)	-3.995008 (1)*	
Remittances	-0.190623 (1)	-5.086631 (1)*	
Credit	-1.630976(0)	-2.502800 (0)	-6.401531 (0)*
GDP	-2.488644 (1)	-2.136433 (0)	-2.808500 (0)***
FDI	-13.96752 (0)*		
Wages	-1.809150 (0)	-2.739697 (0)***	

Source: personal assessments using *EViews 7*; *, **, *** are significant at 1%, 5% and 10%, respectively.

As can be seen from **table 1**, all series became stationary further to logarithmation and application of the first difference (except for the series of *non-governmental credit per capita* which became stationary only after the second difference had been applied; also *FDI* series was used in its original form because it was already stationary).

5. Findings and discussion

The following two tables (Table 2 and Table 3) show the results of applying the two models regarding the remittances impact on household consumption and investment, respectively.

Table 2. Assessment results of the contribution of remittances to household consumption (dependant variable: Household consumption)

Variables	OLS (standard errors)	OLS (standard errors)
Household consumption (-1)	0.049262 (0.171575)	0.081662 (0.174307)
Remittances		0.044013 (0.037352)
Remittances (-1)		0.076077 (0.045632)
Wages	0.194889** (0.078524)	0.188442** (0.069693)
Wages (-1)	0.211504** (0.088819)	0.171855 *** (0.091915)
Credit	-0.080074** (0.034944)	-0.100598** (0.036507)
GDP	0.694407* (0.180829)	0.854078* (0.194501)
Observations included	17	17
Testing of co-integration by testing residuals or a unit root	-3.687471 (0)**	-3.568995 (0)**
R² adjusted	0.731763	0.751604
F-Statistical	9.729767	7.916167
Prob. (F-Statistical)	0.000935	0.003050

Source: personal assessments using EViews 7; *, **, *** are significant at 1%, 5% and 10%, respectively.

Table 3. Assessment results of the contribution of remittances to investment (dependant variable: Investment)

Variables	OLS (standard errors)	OLS (standard errors)	OLS (standard errors)
Investment (-1)	0.436814** (0.147752)	0.507081* (0.066645)	0.337470 (0.229819)
Remittances		0.229758* (0.046733)	0.391178* (0.105047)
Remittances (-1)		-0.010796* (0.025435)	0.045334 (0.135055)
Credit	-0.067415 (0.088717)	0.018605** (0.034592)	0.196165** (0.073704)
GDP	1.640451* (0.698940)	1.192467* (0.171045)	
FDI			0.034403 (0.032056)
Included observations	18	18	18
Testing co-integration by testing residuals for a unit root	-3.918748 (0)**	-3.517877 (0)**	-3.082682(0)***
R² adjusted	0.633514	0.778764	0.538457
F-Statistical	5.206138	12.96823	4.966598
Prob. (F-Statistical)	0.009994	0.000171	0.010742

Source: personal assessments using EViews 7; *, **, *** are significant at 1%, 5% and 10%, respectively.

It seems that, contrary to our assumptions, the impact of remittances on household consumption was reduced and even statistically insignificant. So we can consider that **hypothesis 1.1** was infirmed. Unlike consumption, investments were significantly supported by transfers from abroad, thus confirming **hypothesis 2.1**. Surprisingly, the relation between remittances and investments is stronger than the one between remittances and consumption. More explanations lie at the basis of these results. First, migration is more and more often seen as a strategy that allows Romanians to make certain savings in view of meeting several objectives (see Soros Foundation Romania and IASCM, 2011). So, being aware that they would receive money from abroad, people were motivated to save other amounts of money in the country, in their turn, in order to make some important investments such as buying consumer durables, cars, renovating houses (investments quite common with Romanian emigrants; see, for instance, Grigoraș, 2006) and even open a business. This explains a strong relation between investments and remittances.

The second explanation is related to the way in which remittance flows are recorded in our analysis. To be more precise, as already mentioned in the description of variables used, remittance flows have been taken from the transfer accounts balance of the National Bank of Romania and include only money transfers coming from formal channels such as banks or other companies which provide financial services. Smaller amounts are sent more often and use informal transfer channels (although the risks of informal channels are higher, emigrants would rather assume the risks for small amounts instead of paying a commission each time). Larger amounts are sent more rarely through formal channels (because emigrants would not assume the same risks for bigger as for smaller transfers) and are indeed used for specific objectives. For instance, Romanians living in Spain prefer to send money by buses and not financial agencies that require higher fees (More, 2009). This may explain the weak connection between remittances and consumption and the more considerable contribution of remittances to investment.

There is no surprise regarding the positive relation between household consumption and wages, as we know that wages are population's primary source of income for consumption (approving **hypothesis 1.2**). Lagged wages have an important contribution as well. Wages' support to consumption was attested before introducing the remittances variable as well, as you may see in the first column of table 2 which contains estimations.

If wages seem to be the main income source for household consumption, credit does not seem a truly complementary source of income as the contribution to consumption although reduced is negative, which refutes **hypothesis 1.3**. This is not entirely surprising considering that for the period discussed, this indicator recorded radical fluctuations especially before 2000 when it dropped from 79% of GDP in 1990 to 9% in 2000. This decrease is motivated by the high general discouragement generated by high inflation rates. Even more, wages considerably decreased during the '90s making access to credits even harder for population. After 2000, it boosted in an increasing GDP (in the middle of 2000s) reaching 40% of the GDP value in 2009 (we refer to the period when conditions for granting loans were very relaxed, that is before the economic crisis which was called the "ID-based credit" period (see, for instance, Ghișeu Bancar/ Bank Counter)). The credit support for investment growth becomes more significant when removing the output/income variable and introducing FDI, suggesting that its impact on investment is related to the same acceleration principle. A growing demand may foster credit lending for making investments, in order to expand production. But the growing demand may be related to increased accessibility to the financial market. Therefore, the results may encounter some endogeneity problems between credit and GDP variables. Anyway, until the end of the '90s when a truly wider privatization process began, the inefficient companies owned by the Romanian state had received large subsidies and there had been no need

for credits. Nevertheless we can consider **hypothesis 2.2** and **2.3** to be confirmed. Even more, as results demonstrate, credit had a more important role in sustaining investment than consumption. That was due to the fact that firms have an increased access to the capital market as compared to the population.

As expected, because GDP is an indicator for the output level, the evolution of consumption was strongly related to the evolution of GDP (**hypothesis 1.4**). Even if we did not consider it in this analysis, there is a reciprocity relationship between the output and consumption. The increase in demand stimulates production. So it may be interesting to analyse as well the potential of consumption (in terms of remittances) in stimulating economic growth.

Although not consistent, like we assumed in **hypothesis 2.4**, the FDI inflows had a reduced stimulative impact on domestic investment. This is due to the economic instability during the transition period which pushed back any foreign investor. The lack of political support considerably delayed privatization. Moreover, nationalist slogans were promoted - "We are not selling our country" (see Baconschi in Necula, 2012) which made foreign investors unpopular.

The results confirmed the importance that remittances had in the development of Romanian economy. At the microeconomic level the advantages of migration are incontestable, directly aiming at the households' needs. Even more, it seems that remittances had a substantial contribution to investment as well. Consequently, the importance of this analysis consists in the confirmation of the valuable potential of remittances in stimulating economic growth. One of the further directions to continue this study is to estimate the overall contribution of remittances/migration to economic growth. But we have to keep in mind that migration is not a sufficient condition in this sense as it does not contribute to the development of Romania by itself. The immense potential of migration may be highlighted to the extent to which Romania succeeds in placing itself on the road of development; that is if it manages to ensure a few indispensable conditions for a decent living: a stable economic and political climate to attract investments; an equitable uncorrupted social system; a fair judicial system. These are the most important policy directions in order to embrace development. And we are afraid that it has nothing to do with specific remittances or migration policies. We cannot expect migration (through remittances or otherwise) to do this all by itself. Migration can foster but cannot trigger development. De Haas (2012) draws attention to the risk that an optimistic vision on migration may represent a distraction from solving more difficult problems, to the attempt to attract higher flows of remittances and orient them towards investments; in other words, there is a risk of neglecting truly important issues considering that migration unavoidably leads to development. The positive effects of migration depend on the capacity of the country of origin to benefit from the development potential of migration. For example, the programmes meant to encourage the

investment remittances have low effects as the risks run by investments are perceived as too high due to an instable economic and/ or political climate; they will not be achieved despite the existence of investment encouragement policies (such as a percentage surplus to the invested sum); but on the other hand, the improvement of the economic environment will contribute to the investment of remittances by itself, even if such policies are absent. The policies for encouraging migrants to return home are another example. These programmes cannot be efficient. If the social, economic or political climate is unfavourable, the emigrant will not come back to the country of origin, irrespective of the measures to stimulate return; the emigrant may return at first, but he will go back abroad later on. The improvement of the standard of living will contribute to the emigrants' return and the discouragement of emigration, without implementing any measures for this purpose.

6. Concluding remarks

The overall vision on the phenomenon of international migration and on the impact on the emigrants' country of origin through remittances was different, varying from *optimism to pessimism*. The most recent theoretical approaches are the "pluralist" ones combining the negative and positive effects within the same vision and transposing the evolution of the migration process into development. The optimism on migration is centred on the positive effects of the emigrants' transfers. The accumulation of capital is the main reason for migration worldwide and in Romania, as well. First, at least at the macroeconomic level, the benefits of migration cannot be contested. That is, the potential emigrant makes his own cost-benefit analysis before emigration; if decided to leave, it means that he considers migration would bring more benefits than the incurred costs. The main benefit mainly consists in the amounts acquired to satisfy their needs.

The results of the econometric analysis in the case of Romania confirm the contribution of remittances to the increase in household consumption and investments. Moreover, contrary to expectations, the relation between remittances and investments is even stronger than the one between remittances and consumption of households. The main explanation consists in including only the quantifiable data to the econometric approach, namely the remittances sent by formal channels. These formal channels are preferred for safety reasons when higher amounts are involved and they can be easily used to purchase durable goods or improve housing conditions, etc. (expenditure included in the gross formation of fixed capital in households). Another explanation consists in households' behaviour which considers migration a strategy for accumulating capital in order to achieve an important pre-established objective. The results are in accordance with those recorded in the research conducted by Soros Foundation Romania and IASCM (2011) - which showed that migration was a

strategy to achieve a certain goal, to save money - revealing a higher contribution of remittances to the achievement of investments as compared to the contribution to household consumption.

The importance of the analysis consists in pointing out the considerable contribution of remittances to investment as well and not only to consumption; therefore we can say that remittances have a valuable potential to stimulate economic growth. But we do not expect migration to trigger development by itself. Migration is a safety valve which allows reactions to the slow adaptability of Romanian society, the resistance of the old economic, social or political structures; but, even though it has its own mechanism to trigger changes, this process has to start inversely, from Romania. The positive effects of migration depend on the support of Romanian society in general and of the authorities in particular, so as to bring the changes needed by Romania to follow the path of development (which will gradually discourage migration). Otherwise, migration has its own mechanisms to support itself and even grow thus endangering the development of Romania.

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Appendix 1:
Time series used for models

Year	Remittances (real value, bil. lei, 1990=100)	Household consumption (real value, bil. lei, 1990=100)	Investment (real value, bil. lei, 1990=100)	Credit (real value, bil. lei, 1990=100)	Wages (real value, bil. lei, 1990=100)	GDP (real value, bil. lei, 1990=100)	FDI (real value, bil. lei, 1990=100)
1990	2,199	557,7	168,4	683,955	362,5	857,9	0,000216
1991	1,9527	489,8931	116,2102	508,9404	266,3952	815,6551	1,13205
1992	4,479006	447,16233	105,9371	228,0360	211,5999	718,7887	2,826913
1993	2,95165	424,1813	94,46937	164,1108	175,7884	670,7633	2,391855
1994	5,476478	444,60031	113,1888	134,1157	171,4772	703,8165	7,98068
1995	8,521455	519,01095	138,9388	175,7158	209,5067	771,2222	9,108392
1996	14,55423	579,8884	161,3237	206,7362	244,6431	838,9143	6,24431
1997	14,34589	563,04138	133,4306	108,5360	182,6954	764,6596	26,3297
1998	14,47095	529,46409	114,995	112,2804	177,3233	710,3162	34,25466
1999	16,32651	586,32154	109,41	75,22612	147,0910	711,253	20,80281
2000	20,84513	558,32032	111,8281	67,11008	169,3163	719,1499	20,12701
2001	24,69262	613,3262	135,8667	78,68417	203,9613	776,9523	22,37225
2002	29,42851	634,74221	147,5521	97,04928	202,1767	825,4521	20,53378
2003	38,76057	703,73992	167,9355	142,6716	216,6512	929,9857	28,83821
2004	56,07816	806,29018	177,3074	175,8383	239,0030	1041,53	88,53618
2005	65,73316	876,4742	184,8176	230,9907	290,5750	1116,034	72,94668
2006	79,7259	972,96249	249,4651	334,8255	301,1366	1249,185	115,9989
2007	85,86543	1082,8921	289,2374	512,3008	347,2801	1438,248	83,6664
2008	91,65744	1221,6533	319,0441	634,8918	451,8640	1649,947	112,1012
2009	62,41703	1101,3149	227,5161	606,8546		1511,921	44,86276