Charles University in Prague

Faculty of Social Sciences

Institute of Economic Studies

MASTER THESIS

Impact of remittances on investments, financial development and economic growth.

Case study Moldova.

Author: Natalia Cosovan

Supervisor: Prof.Doc. Ing. Tomáš Cahlík CSc.

Academic Year: 2010/2011

Declaration of Authorship

The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.

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Acknowledgments

Abstract

Economic integration starts to be achieved faster through the international labor mobility than due to international trade or capital movements. Remittances, important international capital flows, became one of the most discussed topics in world. The migrant's transfers have become the primary source of existence in Moldova. This paper using data on transfer of funds for the period 1995-2010, attempts to examine the relationship between remittances and financial development, economic growth and investment level of Republic of Moldova. The main finding of this study is that remittances influence significantly the economic growth, the investment level. Moreover, these funds substitute for a shortage of development of the financial system and therefore promote growth.

Author's e-mail: oti_marculescu@mail.ru
Supervisor's e-mail: cahlik@fsv.cuni.cz

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Acronyms

ILO – International Labour Organization

IOM – International Organization of Migration

IMF – International Monetary Fund

CBS-AXA – Centre for Sociological Investigations and Marketing

NBS – National Bureau of Statistics of Republic of Moldova

NBM – National Bank of Moldova

CIS – Commonwealth of Independent States

RSP – Remittance service provider

MTO – Money Transfer Operators

SSRC – Social Science Research Council

SCAs – Savings and Credit Associations

VAT – Value Added Tax

BoP – Balance of Payments

WDI – World Development Indicators

IFS – International Financial Statistics

UNDP – United Nations Development Programme

GDP – Gross Domestic Product

EU – European Union

Chapter 1

Introduction

Remittances, important international capital flows, became one of the most discussed topics in world. According to International Organization for Migration (IOM), *migrant remittances* are defined broadly as the monetary transfers that a migrant makes to the country of origin. In other words, remittances are personal, cash transfers from a migrant worker or immigrant to a relative in the country of origin. Migration and money that migrants send home in the form of remittances may have a positive impact on development of the migrant countries even if it is generally supposed as a negative phenomenon. According to World Bank in 2008, remittances represented 36,2% of the Moldovan Gross Domestic Product (GDP) placing the country together with Tajikistan on the first position in the world's top of remittances-recipients. In 2009 the amount of remittances has dropped to 27 % of the GDP due to the financial crises. Although, in 2010 Moldavian migrants sent officially home more than USD 1 milliard (NBM reports, 2010).

The present paper aims to increase the understanding of interaction between remittances and financial development and its impact on growth of the recipient country. It tries to identify how remittances can promote growth and its interaction with the financial development in Moldova. The current study attempts to examine this relationship for specified country which was not yet fully investigated. Moreover, it tries to explore the hypothesis that remittances can substitute for a lack of financial sector and therefore stimulate growth (Giuliano & Ruiz-Arranz, 2005).

Nowadays, living in a globalized world economy, economic integration starts to be achieved faster through the international labor mobility than due to international trade or capital movements. This is exactly the case of Moldova where large scale labor emigration and their remittance flows have been one of an important leverage in determining the economic growth in

last years. In case of this country, circumstances in the last few years described by an economic instability, high unemployment rate and political condition are the main factors that led to situation in which people start looking for better opportunities abroad.

According to the general findings of the research, labor migration and flow of remittances have played a substantial role in improving growth and reducing poverty in Moldova. On the other hand, knowing the size of the phenomenon, it involves some risks, as a large proportion of the labor force has left the country. The migration phenomenon has become a life strategy for people living in Moldova. Following the recent survey of IDIS Viitorul, every third person wishes to leave the country and this tendency is likely to continue (Marandici, 2009). A specific characteristic of the migration is seasonality of this process. Usually it is temporary or circular in nature rather than permanent. According to the Dustmann & Mestres (2008), an important role in motivations to remit is assigned to the form of migration. For example, persons who intend to return home have different incentive to remit comparatively to those who stay permanently in the host country.

As highlighted by Sintov *et al,* (2010), after two decades of migration, people are still leaving for other countries illegally. Usually these ways of migration are costly and very risky. Nobody can offer a guarantee of successful migration. The main destinations of the migrants from Moldova have stayed the same – the CIS (mainly Russia) and the EU (mainly Italy). Nevertheless, a pattern of reorientation of migration from CIS towards the EU states has occurred. A shift from short-term and seasonal migration towards long-term migration has been observed in recent years (Hristev *et al,* 2009). This change in the migration patterns from lower income countries to higher income countries generates increased opportunities for expansion effects from migration, mostly characterized by the increased and stabilized level of remittance flows.

According to Aitymbetov (2006), these phenomena have had a substantial influence on the balance of payments of the recipient country and have smoothed the economic and social impact of transition for countries like Moldova. Taking into consideration the theoretical perspective, it can be outlined that remittances can contribute positively to economic growth. This can be done

by providing a stable source of foreign exchange by supporting domestic demand for both inputs and consumption goods and domestic savings and investment in the medium term.

The empirical analysis of this study suggests that remittances influence positively and significantly the economic growth. The current research is in consistency with the findings reached by Giuliano & Ruiz-Arranz (2005); Aggarwal *et al,* (2006); Bjuggren *et al.,* (2010); Piracha & Saraogi, (2010). Moreover, the results indicate that the influence of remitted funds on economic growth is decreasing with the level of the development of financial sector of Moldova. To be more precise, remittances have compensated for the deficiency of the financial system. This means that in case that financial system of Moldova does not work, the remitted funds give to entrepreneurs form this country an instrument to start its business. These transferred money act as a substitute for financial services in stimulating growing. Remittances are used to alleviate the people's necessity in credit and insurance which the financial market is not able to provide. Also, the findings reveal that there is an investment channel through which the remitted funds can spur the economic growth when the financial sector of the country is less developed.

However, it is important to realize that the outflow of human resource and the remittances inflow have come at a high social cost to Moldova. First, being attracted by higher wages abroad, a relatively high-skilled people start to migrate from the country (so-called brain drain phenomenon). The move of this category of workers has a permanent tendency, causing a major shortage of skilled labor force in the country. Second, the inflow of remitted funds has generated a rise in the prices of goods and services in the country which has harmfully affected the non-migrant households. Third, remittances induce addiction to this money that has become a 'normal way' of life for many families in Moldova (Piracha & Saraogi, 2010). One thing that is specific about Moldova regarding the remittances is that this amount of money is not invested by people in opening their own businesses, or by depositing them in the Moldovan banks, who will further "inject" the money into the economy by loans (Scutaru, 2008). They just spend them in consumption, construction of housing, paying for school and university fees, buying clothes, etc.

The structure of the paper is as follows: Chapter 2 describes the main results from research on financial development and reviews the literature on remittances' impact. Chapter 3 offers a

general overview on migration and remittance process. In chapter 4 it is presented the macroeconomic impact of remittances. Chapter 5 outlines the hypothesis of the study. Chapter 6 and 7 presents the data and methodology models. In Chapter 8 the empirical results are reported. Conclusion and Policy Recommendations are offered in Chapter 9.

Chapter 2

Literature Review

There are a large number of papers that have reached positive conclusions and results showing that inflows of remittances lead to economic growth. Moreover, another category of work-papers prove that exist a relation between remittances and financial segment of Moldova. The research literature that is used in the context of this study case is namely based on work papers written by Fernando Rios Avila and Eva Schlarb, Robert G. King, Ross Levine, Paola Giuliano and Marta Ruiz-Arranz, Donald Cox, Zekeriya Eser, Lucas, Alexander Culiuc and reports written by different international institutions: World Bank, UNDP and IMF.

In many work-papers, migrant's remittances are studied from the point of view of motivation to remit as *altruism* versus *self-interest*. Lucas & Stark (1985) in the "Motivations to remit: Evidence from Botswana", have been investigating remittances on a household level and argued that remitting migrants are influenced by different motivations: pure altruism, pure self-interest and tempered altruism or enlightened self-interest. The altruistic motive is driven by the fact that emigrants care for their relatives left home. They care about poverty, economic shocks and as a result send money home as a desire to help them. In the case of self-interest, Lucas & Stark (1985) differentiate the following reasons which motivate the migrant to remit funds: aspiration to inherit family's fortune; the wiliness to invest in the assets in the home country and make sure their careful maintain; intention to return home which may promote remittances for investment in fixed capital such as land, livestock or a house.

Furthermore, Lucas & Stark (1985) contributed by introducing an important element in the development of the "new economics of labour migration"- which means that the decisions about remittances are interconnected with migration decisions, and that these decisions must be

understood at the household level. The authors considered the *household* as the most proper decision-making unit and not the individual himself.

Carling (2008) investigated the determinants of migrant remittances. Based on an analysis which departed from the classical studies of remittances, the author took into consideration how the context of contemporary migration in Europe is likely to affect remittance patterns. He explored possible influences on remittance-sending process and divided them into nine parts. As a result, he pointed out that the focus on altruism versus self-interest in the economic literature has partly vague attention from explaining the actual difference that is important in a policy perspective. Hagen-Zanker & Siegel (2007), based on Albania and Moldova cases, tried to identify the main reasons why people migrate and send money. They have shown that it is important to be careful in affirming migrant's motives to remit and to deduct from a few variables that can be inferred in different ways. These facts makes difficult to test these motives empirically. Hangen – Zanker & Siegel (2007) agree with other authors that it is inadequate to determine altruism only looking at the effect of provider and receiver income. Anyway, even if altruism itself appears to be insufficient explanation of the motivation to remit, it still remains the key component. Moreover, not only the meanings of the motivations to remit are linked, but also in the actual life comportment of the altruism versus self-interest is not as sharply defined as in theory.

Another feature that helps in characterization of remittances is the *motivation to migrate*. Rapoport and Docquier (2005) pointed out that the wage differentials represent the primary driving force of international migration. In the presence of liquidity limitations and the imperfection of the financial markets, people migrate in order to accumulate in short period of time the savings required to take advantage of prolific opportunities at home and/or invest into human capital. Ghencea & Gudumac (2004), in their study has shown that the labor migration represents for the citizens of the Republic of Moldovan "*a poverty escaping strategy*". Their findings outlined that Moldavian migrants which are need-driven choose to immigrate to Russia, while the families with a higher economic potential are usually migrate to the Western countries. Moreover, the fund transferred from abroad play a key role in reducing the current account gap of the country, increasing the service sector and providing a minimum maintenance level for thousands of Moldovan families. Finally, migrants' families are characterized as being too dependent on the consumption needs. However, a significant part of transferred funds is used to

be invested in the long-term fixed assets. The amount of money saved at home or with the banks is insufficient to be invested into business or productive activities.

Hristev *et al,* (2009) investigated the migration and remittances behavior of rural population in Moldova which constitutes almost 60% of total population – more than in any other European country. Analyzing the incomes in rural areas which are much lower than in urban areas of the country, it becomes unsurprising that the emigration rate from these areas is higher than the average for Moldova. More than 70% of all migrants come from the countryside of the country. Younger and more educated households obtain higher sums of money which are much more used for investment purposes such as education, farm modernization and property. Cuc, Lundback, & Ruggiero (2005) in their work-paper "Migration and remittances in Moldova" explored the microeconomic characteristics, macroeconomic consequences, and policy challenges of labor emigration and remittances in Moldova. The authors tried to explain why Moldovan workers go abroad and how their remittances are used. Their research is based on household survey data. Also, the work paper is focused on government failures as the binding constraint in the path of the productive investment of remittances. The authors insist that only improvements in the investment climate are the right way to effectively promote higher investments.

Taking into account the magnitude of the globally remittances inflows, a great importance is addressed to the remittances service providers. Zika (2007) examined worldwide remittances from the perspective of service providers. The author explained the economic implication and impact of remittances; provided comprehended characteristics of the consumers involved with remittances and described the remittance process and service providers. The author found that new technology providers might exploit inefficiencies in the existing remittance transfer services as a business opportunity, but face numerous challenges. In case of the Moldova, Sander *et al,* (2005) outlined that this country after 2000, has seen a speedy growth in existing express transfer services. The authors provided a typical profile of the remittances process where the receiver chooses a full cash withdrawal of the transferred funds rather to use of an account and/or to saving them. Still, the authors pointed out that transfers from abroad have had influenced the savings levels in Moldova. A stable annual increase of 20% on average of the deposit volumes in the Moldovan banking system has been recorded. In part this increase is attributed to remittance inflows. Sander *et al*, (2005) findings suggest that more transfer of funds would be saved and

attracted by the banks as only about 1/10 of remittance beneficiaries would use banks services. Moldovan receivers are still more confident to the old tradition to save money "*under the mattress*". The results of the study shows that further developments to the accessible money transfer services and corresponding financial services such as savings are possible. These improvements are crucial for the country. It will lead to the process of attraction of an increasing portion of transferred funds from abroad to the formal financial system for transfers, savings, and intermediation.

The concern about the increasing volume of transfer of funds from abroad to emerging countries lead to a rising number of studies which have investigated their development impact along numerous measurements such as poverty, growth, inequality, education, etc. Aggrwal *et al,* (2006) mentioned that actual researches and studies have been paid little attention to the question whether remittances stimulate financial growth in beneficiary countries.

King & Levine (1993), studied the empirical relation between financial development and economic growth. Using the financial development indicators it has been found that these indicators and growth are strongly correlated. Same results have been gained for correlation with the rate of physical capital accumulation and developments in the efficacy of capital allocation. Also, it was shown that the determined elements of these financial development indicators considerably predict following values of the growth indicators. The authors' conclusion is that this connection between growth and financial development does not represent only a contemporaneous association. They argue that "*Finance does not only follow growth; finance seems importantly to lead economic growth.*"

In an IMF Working Paper *"Remittances, Financial Development, and Growth"* written by Giuliano & Ruiz-Arranz (2005), it is described the connection between remittances and growth and its interface with the financial expansion in the addressee country. Their study covers a sample of over 100 countries for the 1975-2002 periods. The authors have been focused mainly on conditions under which the financial sector infrastructure, and in particular transaction costs, influences the tendency to remit of the migrant. They have looked at the significance of stimulating competition among money transfer companies to reduce transaction costs and promote remittances through formal channels. Giuliano & Ruiz-Arranz (2005), found out that

economic growth has stimulated by remittances in less financially developed countries. Moreover, it has been shown that these transfers of funds help to reduce credit constraints on the poor, replacing for the lack of financial progress, improving capital's allocation, and therefore hastening economic growth. Furthermore, it was recognized the cyclical properties of remittance flows and how they are linked with financial growth. The authors have been found a great difference in the cyclical behavior of remittances through countries. Some evidences suggest that transfers tend to be more procyclical where the financial system of a country is less developed. As a result, procyclical remittances are more likely to be motivated by investment opportunities rather than by altruistic motives. After Giuliano & Ruiz-Arranz (2005), their empirical analysis provided the first macroeconomic confirmation of how transfer of funds and financial growth may interact in stimulating growth.

Aggrwal *et al,* (2006) taking into account the fact that influence of remittances on financial development is still unknown, tried to fill the existence gap in the literature by the paper "Do Workers' Remittances Promote Financial Development?". The research was based on the data of balance of payments on remittance flows for 99 countries for the period 1975-2003. The authors have studied the influence of transfers on bank deposits, and on bank credit to the private sector. The results showed that migrant's money have an important and positive effect on bank deposits and credit to GDP. These conclusions can be used as a confirmation that the existence of transfers leads to raise the aggregate level of deposits and credits intermediated by banks. Aggrwal *et al,* (2006) results are seemed to be in contradiction with Guilano & Ruiz-Arranz (2005) which concluded that in countries with less developed financial system transfer of funds may improve credit constraints and act as a substitute for financial sector growth, in which case there would be no positive effect.

In the working paper written by Rios Avila & Schlarb (2008) *„Bank Accounts and Savings – The Impact of Remittances and Migration: A Case Study of Moldova"*, the microeconomic relationships between remittances and financial sector improvement is analyzed. Using household survey for Moldova, the authors have found that families receiving money from abroad are in a higher possibility to operate with a bank account or saving account than non-receiving ones. Another suggestion of the paper is that the use of the banking sector is particularly affected by demand factors in urban and by supply restraints in rural areas. To

complete correctly the positive effects of transferred money, it is important to increase the level of confidence in the banking sector and increase the financial literacy, especially in urban areas. A work paper „*Remittances and Investment*" by Bjuggren, Dzansi & Shukur (2010) has purposes to make more comprehensible the way how remittances can foster investment in the migrant's home states taking in consideration the institutional quality and financial organization. The study focuses on the impact of remittances on investment since 1995 to 2005 based on the date of 79 developing countries. The paper is focused on the effect of remittances and understands bank assets and credit provided by the banking sector as signs of financial development.

Giving the fact that the current financial decline and the remittances affect many aspects of everyday life, media services around the world reflect on a large scale the causes and the effects of this crisis. The news stories are an important source of information, as they are up to date and usually use recent data to predict the future of the processes they are describing.

Articles related to the remittances from The Economist, from The Banker magazine, Forbes, Reuters, etc., are some of the sources that are used to get the latest information on the events regarding the recovery of the world from the effects of this process. Other important sources of information for this work paper are the official sites of the ministries, central bank and institute of statistics from Moldova.

Chapter 3

Basic Framework

This chapter identifies and introduces some of the key terms associated to remittances. It provides some consistent definitions of remittances; outlines the migrant worker definition; describes the incentives to remit. Also it provides a description of the remittance process; the existent remittance channels. Finally, it further explains the actual Moldavian key facts on remittances flows.

3.1 Definitions

3.1.1 Remittances - general definition

To increase the understanding of remittances impact for the whole economy of Moldova, it is crucial to identify the accurate definition of it. Before providing the description of this term, it is good to point out the meaning of the remittances. Studying different explicative dictionaries, it can be pointed out that the verb "to remit" comes from the Latin word *„remittere"* which means *handing over* or *delivering.* While the term *remittances* represent an English word which sense is to transfer money from one place to another. According to Ghencea & Gudumac (2004), in professional literature of International Labour Organization (ILO), the term "*remittances*" is utilized with meaning of *a part of income earned and transmitted by the migrant workers to the country of their origin.* Some authors (Munzele Maimbo *et al.,* 2005) describe remittances as „a

substantial flow of financial resources directed from the developed countries to the countries in development".

International Organization of Migration (IOM) defined broadly *remittances* as the monetary transfers that a migrant makes to the country of origin. Nyberg Sorensen (2004) defines remittances as "… portion of a migrant's earnings sent from the migration destination to the place of origin". Slightly different interpretation offers International Monetary Fund (IMF), which supports that these inflows are some personal transfers made by non-resident workers. In this context, a non- resident person is being specified as one who stays abroad for more than a year.

Moraru (2009), after a deep research on dictionaries in Economic field, on the Moldovan and European legislation, provided the most suitable definition of remittances for Moldova. According to the author the remittances represent a *"financial and/or real transfers sent from abroad and received by individuals in the country, in the process of export of working force and economic migration, including unilateral transfers received from affiliated individuals"*.

3.1.2 Migrant

3.1.2.1 Migrant- general definition

With respect to this definition, there are numerals of theoretical thoughts that supposed to give information on the monetary flows it comprises:

• *First it is important to know who the migrants are.* Nowadays, there is no an international consensus on the definition of migrants. Attempts have been made to explain the definition from legal instruments such as international conventions (Yoda, 2004). Since the consensus has not been found yet, the definition of a migrant is often drawn not by the legal instruments, but by existing data collection systems. This approach does not bring the desired result due to the fact that different countries accumulate data that are directly linked to their national needs which

reflect realities. Each countries data collection system allocate different types of data and this leads to diversity in the definitions used in getting the data collected by each country.

According to IMF, migrant is a person, who comes to a foreign country with the intention to stay over one year. In the Resolution 45/158 from 1990 implemented by the United Nations General Assembly, the term *migrant worker* refers to a person who does not have the citizenship of the state he /she will be employed or is/ was employed for a paid activity (United Nations, 1997). *Labour migration* is a temporary emigration in another country with a goal to earn additional money and expecting the return to the country of origin (Ghencea & Gudumac, 2004).

More comprehensive identification of migrant of Moldova is provided by Moraru (2009). The author interpret the concept of migrants as *residents and non-residents who have household in the country or are affiliated to some households and persons who identify themselves as Moldavians: seasonal migrants, temporary migrants, established migrants' abroad, permanent immigrants, commuters' migrants and Moldovan communities from abroad.*

It is appropriate to give a more focused interpretation of some terms of the above definition:

1. *Seasonal migrant worker* – according to ILO, represent a person working in other country than its origin one, for a distinct period of the year due to the fact that the work performed by the person is directly linked to the seasonal conditions (Billsborrow *et al*., 1997).

2. *Temporary migrant worker* is accepted in other country that its origin one to execute certain work or activities within a well determined period of time. According to the ILO such workers are permitted to change their employers and expand period of the employment agreement without the condition to leave the country. Ghencea & Gudumac (2004) defined these countries as target-countries or hosting countries.

3. *Established migrant workers* are those who have obtained the permission to stay and work in the target-country without any limits. In case of losing their work, established migrants are not forced to leave the country. Indeed, they are allowed for family reunification in case their members have an ensured place of work and residence. (Billsborrow *et al*., 1997).

• *Second is necessary to understand how these remittances are used?* These money can be considered and sum up as a remittances in case when the receiving part has major right to decide

on how the funds are used. This holds only in this case when the sender of money is directly linked with the receiving household. Decision how to use money is taken by both parts.

Underling the above definitions and explanations, it can be concluded that remittances of Moldova should include funds send from temporarily working abroad persons. It can be also the case of fund remitted by persons who emigrated and became legal residents of a country different from their original one. The final conclusion is that these money flows become remittances when there are senders and receivers and decision of their spending is taking by common agreement.

3.1.2.2   Migrants characteristics

Ramirez *et al.* (2005) say that "remittances represent long-distance social links of solidarity, reciprocity, and obligation that connect women and men migrants with their relatives and friends across national borders controlled by States". According to The Labour Force Migration report (2008) elaborated by National Bureau of Statistics of Republic of Moldova (NBS), the greatest share of Moldavian migrants is represented by men. Important destinations include Ukraine, Romania, Portugal, France, Spain, Greece and Czech Republic.

There is also significant migration to Israel, Turkey, and USA. Anyway, most of Moldavian migrants decide to leave country and go to **Russia and Italy** as destination countries (see Table 1). Moldavians from rural area which are considered poorer than urban area of the country, choose Russia for migration. The reason for this is the fact that it is cheaper to migrate taking in consideration the distance (approx. 1144.10 km) and the variety of transportation mean (regular bus routes; trains, air flights); there is no visa regime which make migration easier and does not require any additional documents (only passport) and the nature of the job offered (mainly seasonal jobs in construction and agriculture).

Also this country is preferred due to the fact that all Moldavians speak Russian language which makes the communication simpler between the migrant and employer. Therefore it leads to a

higher probability to find a job in a shorter period of time. According to the Center for Social and Economic Research (CASE) survey in 2008, Russia is preferred most by males which represented 71% in 2008. While females working in Russia constituted 43,5% for the same period. The total number of migrants registered in Russia for year 2008 constituted 195,5 thousands (see table 1).

Table 1. Distribution of migrants by socio-demographic characteristics and by destination countries for 2008

| | EU 27 States | | Russia | Rest of the world |
	Total	Including Italy		
Number of migrants, thousand persons	91.5	58.1	195.5	31.2
Average age, years	37	38	34	36
Share of young migrants (15-24 years), %	16.6	16.4	23.1	22.5
Situation before leaving, % **Economically active persons,** out of which	100	100	100	100
Employed	40.7	40.2	33.7	32.4
Unemployed	39.2	35.7	55.8	42.2
Economically inactive persons, out of which				
Student	6.3	6.5	3.2	6.0
Housewife	12.5	16.2	5.9	16.1
Retired	0.3	0.4	0.2	0.6
Other	0.9	1.0	1.3	2.6
Share of persons with secondary specialized or high education, %	37.1	37.2	15.6	23.1

Source: Labour Force Migration Report 2008, NBS.

Italy is the second destination country preferred by Moldavians. According to the data of the survey conducted by CASE, in 2008, there were 58, 1 thousand people working in Italy. The EU

countries are preferred most by migrants that are considered to be better educated and not just need-driven persons who come from rural areas (Marandici, 2009). They are motivated to migrate because they are looking for new opportunities rather than by looking to earn more money and satisfy their financial needs.

There are some factors that make emigration to Italy difficult. First the Moldavian migrants do not know Italian language. This makes the integration of them in the Italian society more complicated. Another difficulty is the fact of obtaining legal residence. The main problem is that it is not so easy and cheap to immigrate to Italy. Searching through different sources of mass media, it is impossible to find some conditions regarding the immigration to Italy. Due to this lack of information, an interview with an emigrant was conducted by the author of the present paper (see the appendix). It seems to be the most reliable source of information because it comes from somebody who passed through it. This is more the non-spoken rule about the way how people immigrate to Italy.

The interviewed person (preferred to be anonym) is a 52 years old woman who has left Moldova and immigrates to Italy since 2004. She has home 2 kids (a girl and a boy), she is divorced and now she takes care of an old lady in small town Pesaro, Italy. According to her words, the cost of migration to Italy in 2004 constituted EUR 2500. This amount of money has been paid to a group of Moldavians, who are already established in Italy and help in finding a job for payer.

Emigrant pointed out that in nowadays, the migration becomes much easier due to the simplified procedure of obtaining the Romanian citizenship. Having Romanian passport, the way to the all Europe is free. Anyway, some people in Moldova think that this offering of the Romanian citizenship is just an attempt of the country to undermine the Moldova by encouraging emigration. People still prefer to pay higher fee for migration (approx. EUR 3500), even having the citizenship of Romania. They want to be sure that when they arrive in Italy, the ''ground'' is prepared for them. Nevertheless, according to the interviewee, remittance becomes probably the only one lifeline.

Asked what the motive for emigration was, the interviewee mentioned the difficulty to live in Moldova due to absence of job. Also, the driven force was the attractiveness of the much higher

salaries offered in Italy. Moreover, spending 6 years abroad, the emigrant said that as long as she has a stable job, she would not return home.

As a comparison to Russia, migrations that choose Italy or any EU country, they do not want to return home. According to NBS in 2008, about 24,1% of migrants have not decided yet when they will return to Moldova; 22,5% intend to return but after 3-5 years; 18,3% - after 1-2 years and 17,3% - in less than 1 year (NBS Report 2008). Most common jobs are baby care, care of old people, social care or catering. These jobs are mostly chosen by women who are considered to be as pioneer immigrants (Delsere, 2009). They work most a as carers, baby sitters. In 2008, 23, 9% of females worked in Italy and only 7,3% of males.

The Commonwealth of Independent States (CIS) emigrants, those who prefer to go to EU, as a rule, send smaller fractions of their incomes home. One simple explanation is that persons migrating to Russia are most needs-driven (Marandici, 2009). The labour migrated to Russia send more money homes to their families. The migrants from EU start to live in the host country, they try to bring their families and begin new live. So they actually spend more in host country and send smaller amount of money homes.

The migrant's education is mainly secondary education which constituted 27, 3 % in 2008. Vocational education is represented by 29, 7%, and only 8, 9% have high education. Based on these figures provided by NBS, it can be concluded that the majority of migrated population is unqualified. Anyway, migrants who have high education are working in low unfavorable jobs.

In the distribution by residence area the greatest share is represented by people coming from the rural area of the country. More than 3/4 of migrants are persons of 25-54 years of age. The average age of migrants is 35 years (see figure 1). About 64% of rural residence of Moldova chose Russia for migration, while Italy is preferred equal by rural and urban residence.

Figure 1. Destination countries for Moldovan migrants, by area
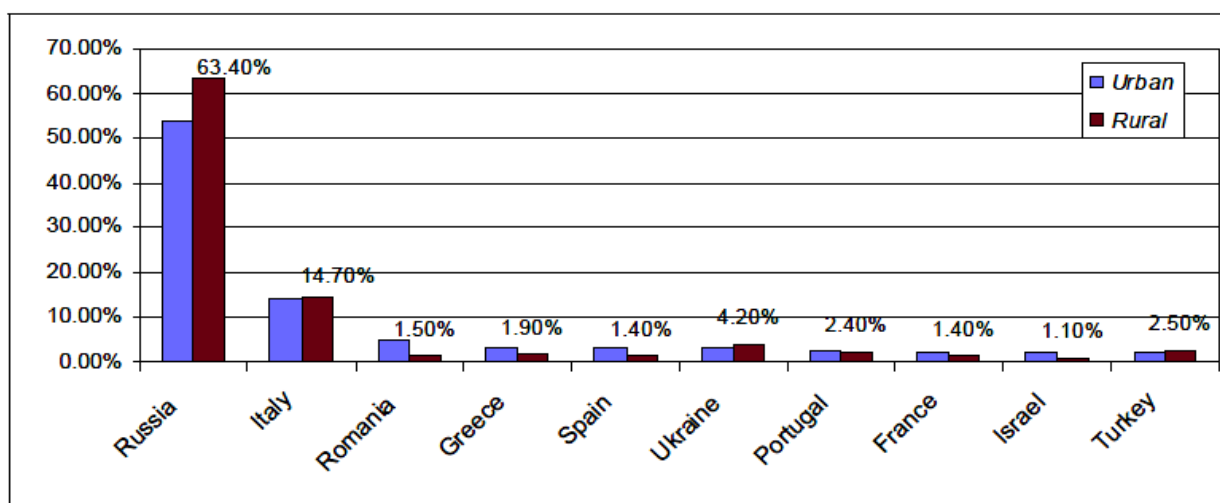
Source: Hristev *et al.,* (2009).

For 2008, about 63,40% from rural area immigrated in Russia. While in Italy migrants constituted around 14,70% from both rural and urban area (see Figure 1.1). Analyzing the National Bank of Moldova (NBM) reported data, in 2008 through banking system was transferred by migrants an amount of USD 1,66 billion from Italy and Russia.

According to NBM, in 2010 on the Czech Republic territory, there are approximate 10049 Moldavian migrants that have the legal residence. It is obviously that the real number is much higher taking into consideration the illegal migrants which are represented by around 5000 people more. Moreover, about 4475 migrants have work permission. Due to the financial crisis from 2007, Czech Republic tightened procedures for issuing and renewing work permissions for foreign citizens because of rising of unemployment in the country.

Today, Czech Republic represents a country with great opportunities for high skilled migrants such as: engineers, accouters, IT workers and so on. The good part of being a migrant in this country is right to request the family reunification (ProDiaspora, 2010). Nowadays, for Moldavian migrants this country does not represent the favorite destination which ranks it on the 7th place by the number of Moldavian migrants.

3.1.2.3 Costs and Benefits of Migration

In current economic literature an increasing importance is given to assess the economic impact of migration on labour importing countries. According to Moraru (2009), the most important *benefit* of labour migration is the fact that migration "corrects" the demographic picture of the host country. Usually most part of emigrants is represented by young and single people. It is considered that these emigrants are unlikely to have strong family relations with the home country (Papademetriou *et al,* 2009). That is why most of them are searching for different ways to stay in host country. Generally, they find technique to prolong visa or find a stable job. Sometimes they even are getting married with local citizens.

Another benefit of migrated labour is the fact that they are considered as an effective damper in the event of crises and mitigate the labour rigidity (Carling, 2008). Moreover, the import of labour force permits its use up to the period of technological substitution, thus allowing the expenditures saving related to the professional training process (Moraru, 2009). Same author stated that the immigration increases the productivity of the national economy, thus contribute to a higher level of competitiveness of produced goods and services. This increase in productivity is due to the diminished cost of production. On the other hand, the immigration moderates the level of inflation through reducing prices and remitted money outside the host country.

In terms of *costs* of migration, the import of labour force is viewed as a threat. These inflows of migrants from point of view of employment have the effect of raising the rate of unemployment and reducing the remuneration of the local workers. A survey conducted in US showed that 51% of surveyed people consider that immigrants take jobs away from local workers (West, 2010). However, the results of the same survey showed that 86% consider that immigrant people as hard workers and 61% think that they create new jobs and start new businesses. Moraru (2009) argues that from the money earned by migrants in host countries and remitted to their home countries – salaries could have been paid to native population and unemployment benefits could have been used in other purposes. The main important cost of migration is considered to be the fact that young and high-skilled labour force are emigrating (Chami, 2008) As a consequence, this will have a negative impact on future development of the countries. The labour shortages hinder the new investments and the development of the existing businesses. The migration of

educated labour force leads to so-called "brain drain" phenomena as well as to aging population. Creating an unfavorable investment environment, these factors influence the decision of investment of both foreign and domestic entrepreneurs as well as the overall economic development.

3.2 Motivation of migration and remittances

3.2.1 Motivation to migrate

Nowadays, living in a globalized world economy, economic integration starts to be achieved faster through the international labour mobility than due to international trade or capital movements. These labour movements affect the economies of the countries involved. For those who decide to leave the country, the main economic transformations are observed in the nation's labor force decreasing and consumer spending. Moreover, there is opposite effect for the countries receiving the emigrants. As a result these economies benefit from more available working forces, who contribute to the economy by spending money.

This is the similar case for Moldova, where large scale labor emigration and their remittance flows have been one of an important leverage in shaping the economic growth in the last years. There are some strong motivations behind this mobility of labour. Most usual factors such as economic, political and social pressures become sufficient impulse that lead to the situation when individuals start to migrate. Tsuda, (1999) introduced a term of "pushes and pulls" factors. Due to them, migrants are pushed out of the sending country and pull them to the receiving country. The author defined these factors as initial underlying force that fundamentally drives labour migration. Most common motives to migrate are such as wage differentials and rational choices; structural economic factors (eg. economic crisis).

According to Rapaport & Docquier (2005), wage differentials represent the primary driving force of international migration. In the case of Moldova, migration is caused due to instable economic situation in the country, due to poverty. People migrate in order to find a better life.

The migration process started when Moldova replaced central planning economy by free markets at the beginning of the 1990s. The fact that the country was a part of Soviet Union, led to the situation that Moldova was strongly dependent on Russia. As Russian economy broke down in the early 1990s, Moldova found itself into an extreme collapse that was worse than in other countries from Soviet Republics. The country's output from industry and agriculture has plummeted dramatically by 25% and 20% respectively and its exports were reduced by almost half by 1998-1999 (NBS reports). Furthermore, the unemployment rate has increased significantly due to major expenditure cuts in 1998 and 1999, the unsustainable government deficit and privatization of the agricultural sector. This led to the situation which moved the more population below the poverty line – according to statistics a total of 80% by 1999 (Piracha & Saraogi, 2011). These factors represented the initial driving force of significant migration from the country, making it a mass phenomenon. Therefore, people started to leave because of poverty, corruption and underdevelopment, which distinguished most of the new independent republics. According to (Marandici, 2009), it was this afterward wave of migration that is allied with remittances.

Table 2. Reasons to migrate – CASE survey results

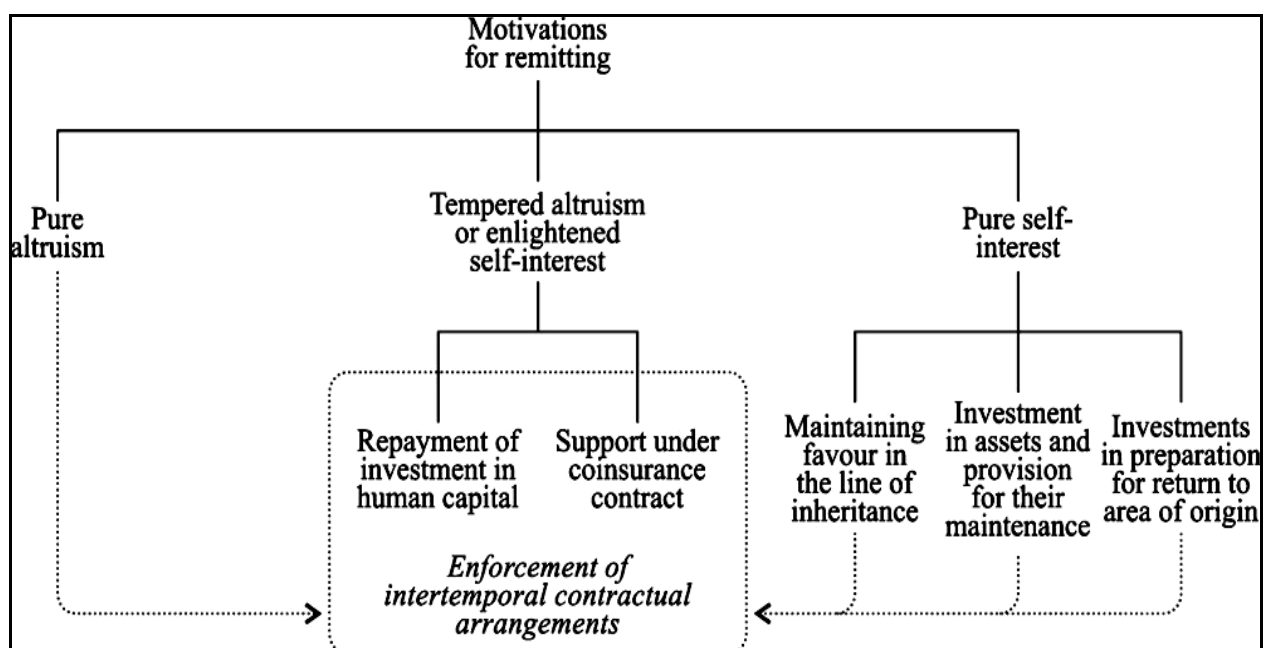| Reasons	1st motivation	2nd motivation
Did not have a job in Moldova	49.9%	1.1%
To earn money for daily consumption (food, cloths, etc.)	27.6%	23.6%
To earn money for own special consumption (health, education,etc.)	5,9%	14.4%
To earn money for the special consumption of the family	6.9%	13.0%
To earn money for investments in the household	4.5%	23.2%
To earn money for investments in business	1.2%	7.4%
Better life conditions aboard	0.8%	9.9%
To accompany his/her partner/husband (wife) or the family	0.4%	2.8
Because many relatives and friends have left	0.2%	1.1
To study abroad	0.2%	0.4%
Other reason /or non reply	5.3%	

Source: Hristev *et al.,* (2009)

Based on the results of a survey performed in the frames of the Center for Social and Economic Research (CASE) project and conducted by the Centre for Sociological Investigations and Marketing (CBS-AXA) in rural parts of Moldova in October 2008, Hristev *et al.,* (2009), pointed out 2 main motivations of Moldavians to leave the country. The most important one is the lack of job (49,9%) at home due to insufficiency of economic opportunities and poor governance. Second motivation is considered to be lack of funds for elementary needs (see Table 2).

3.2.2 Motivation to remit

The theoretical literature seems to be unable explicitly to distinguish the different motives of remitting. The Lucas & Stark's (1985) article represent the first and main mentioned work which had strong influence the economic literature regarding the remittances. The authors contributed by introducing an important element in the development of the so-called "new economics of labour migration"- which means that the decisions about remittances are interconnected with migration decisions, and that these decisions must be understood at the household level (Carling, 2008). In their analysis, Lucas and Stark (1985) focus on *motivations to remit* and outline the classification of motives such as pure altruism, pure self-interest, and intermediate motivations like contractual agreements between the migrant and the family at the origin (see figure 2).

It was argued that motive to remit is driven first of all by *pure altruism.* Migrants remit due to the fact that they care for their families left home, about poverty, shocks and as a result send money home. Moreover, it is expected a positive relationship between poor conditions of the receiving families and remittances sent. Funkhouse (1995) suggests that these transfers are supposed to rise with migrant's earnings because they have more to share. Also it is expected the strength of altruism and decrease with recipient income. The problem that accurse with the altruism is how to measure it? Hangen – Zanker & Siegel (2007) agrees with other authors that it is inadequate to determine altruism only looking at the effect of provider and receiver income. Anyway, even if altruism itself appears to be insufficient explanation of the motivation to remit, it still remains the key component.

Figure 2: Remittance motivations in the new economics of labour migration

Source: Carling, (2008).

Second motive to remit distinguish by Lucas & Stark (1985), is *pure self-interest* which implies 3 reasons to remit for migrant person:

a) Aspiration to inherit- a so called "money-oriented" migrant is motivated to support his/her family (especially his/her parents) which may include the concern to maintain favor in the line of inheritance. As a result, the larger sum of remittances send home, the larger is the potential inheritance.

b) The wiliness to invest in the assets in the home country and make sure their careful maintain. Furthermore, if migrant desires to invest at home, the family can be a trustworthy and well-informed agent (Hangen – Zanker & Siegel, 2007).

c) Intention to return home which may promote remittances for investment in fixed capital such as land, livestock or a house.

Hangen-Zanker & Siegel (2007) pointed out in their work paper that the main motive to remit for Moldavian migrants is to repay loans. This debt is viewed as a contractual agreement between the household and family for repaying investment in human capital. More often remittances are used to repay the cost of migration. The main conclusion derived by the Hangen-Zanker & Siegel (2007) is that decision to remit is always linked to the decision to migrate. As a result it

becomes very difficult to find real variables that would help to measure the different motives. Moreover, the behavior of the altruism versus self-interest in reality is not as piercingly defined as in theory. Besides, a migrant might have not just one motive in mind.

3.3 Remittance process

Andreassen (2006) defines remittance process as a cross-border retail payment which is characterized by special admittance requirements on the sending and receiving side. The remittance process involves two key players – sender and receiver. According to Zika (2007), sender (also called as remitter) is the person who provides the sum of money to the remittance service provider (RSP). The second player in remittance process is receiver (also called as beneficiary or recipient) is the person who receives the remitted money by the sender. To be more precise, the RSP is defined as any person or organization which delivers transfers of remittances as a business (CPSS, 2006). The process of remittance transfer is very complex. The ways and channels which are utilized for remitting funds home can be grouped into *formal* and *informal* channels.

3.3.1 Formal transfer channel

 The transfer of money can be fulfilled using two channels: banking institutions and nonbanking structures (money transfer systems such as Money Gram, Western Union, etc.). Describing the formal channel of remitting, CPSS (2006) takes into consideration five key elements of this process: capturing, disbursement, messaging, settlement and liquidity provision. The figure below shows the elements of a remittance operation.

Figure 3. Elements of a remittance operation
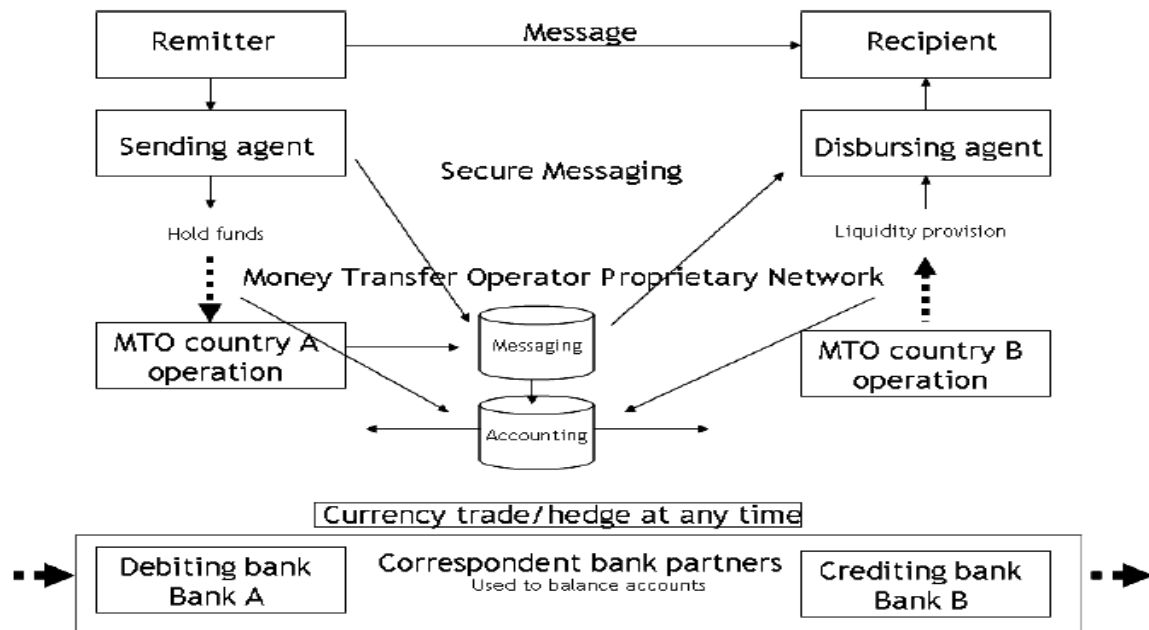
Source: Andreassen , (2006)

Capturing is represented by a sender's payment done to the capturing RSP. There is possibility to use various payment means and instruments which must to be acceptable for both parts. Most used instrument is cash. Also it can be used checks, money orders or credit cards. The required information is minimum one and it consists of the receiver identification. Moreover, RSP asks about a security password that the remitter must to inform the receiver in order that the beneficiary could be identified during disbursement (Zika, 2007).

The disbursement procedure may start when the transaction is confirmed by RSP. Now, the recipient can be identified by presenting an ID, the password or a combination of those. The main function of the RSP now is to make the transferred funds available to the receiver. In many cases, the time from capturing funds until to its disbursement is almost instant. Anyway, in some cases the transfer may take several days. This time most depend on type of instruments used for capture and types of messaging (Andreassen, 2006).

Another element of remittance process is settlement which mostly consists of credit transfers between bank accounts, where one of the transfers is cross-border (Zika, 2007). This procedure

involves a number of separate payments within the transfer of money from the capturing RSP to the disbursing RSP. The cross-border transfer can be partly internalized (Andreassen, 2006). It may happen when the capturing and disbursing RSPs belong to a particular institution and this organization has bank accounts in the sending and the receiving country in the same time.

Ghencea & Gudumac (2004), suggest that such factors as trust, awareness, and comprehensibility of services, accessibility, and mutually beneficial client-bank relations are very important in formal channel of remitting. Anyway the presence of such factors as the high costs of transferring funds through banks lead to the decision of the migrants to remit through informal channels.

The main advantage of the formal transfer channels is the *insurance* that the funds will arrive safely and on time to its recipient. Moreover, due to the *quickness* of transfer and receiving procedures, transmissions via banking system become very attractive and facilitate the development of it. Furthermore, some empirical evidences (Bjuggren *et al,* (2010), Guliano & Ruiz-Arranz (2005), Rios Avila & Schlarb (2008), etc.) support the idea that funds sent through official banking channels can promote the development of the financial sector, especially in developing countries. As bank deposits increase from transferred remittances, banks become able to provide loans.

Also, remittance receivers who use the banking channel can improve the access to other financial products and services, and banks that provide remittance transfer services are able to "reach out" to unbanked recipients (Aggarwal *et al,* 2006). These are individuals without a traditional savings or checking account and with limited financial intermediation. Nevertheless, in order to benefit from these advantages, the sender and the receiver should be correctly and appropriate *informed* about such services and ensured to an adequate *access* to the financial and banking facilities (Ghencea & Gudumac, 2004). The absence of these two factors leads to fact that the informal ways of transfer become more desirable.

The bellow table shows how much it costs, on average, to send money from Italy to Moldova. Data provided by World Bank Group (2010) are indicating the first quarter of 2010 comparing with the third quarter of the same year.

Table 3. Cost of remitting from Italy to Moldova (EUR)

Firm Name	Firm Type	Fee	Exchange Rate Margin (%)	Total Cost Percent (%)	Total Cost(EUR)	Transfer Speed	Network Coverage	Date
Moneybookers	MTO	0.50	0.00	0.31	0.50	3-5 days	Nationwide	Sep 03, 2010
Banca Intesa SanPaolo *	Bank	5.60	0.00	3.50	5.60	3-5 days	Nationwide	Sep 03, 2010
Banca Intesa SanPaolo *	Bank	7.10	0.00	4.44	7.10	3-5 days	Nationwide	Sep 03, 2010
Banca di Credito Cooperativo *	Bank	10.00	0.00	6.25	10.00	3-5 days	Nationwide	Sep 03, 2010
iKobo	MTO	8.85	4.19	9.72	15.55	6 days or more	Nationwide	Sep 03, 2010
MoneyGram	MTO	18.00	0.00	11.25	18.00	Less than one hour	Nationwide	Sep 03, 2010
MoneyGram via Poste Italiane	MTO/Post office	18.00	0.00	11.25	18.00	Less than one hour	Nationwide	Sep 03, 2010
MoneyGram	MTO	18.00	0.78	12.03	19.25	Less than one hour	Nationwide	Sep 03, 2010
Western Union	MTO	19.00	4.69	16.56	26.50	Less than one hour	Nationwide	Sep 03, 2010
Western Union	MTO	19.00	4.69	16.56	26.50	Less than one hour	Nationwide	Sep 03, 2010
Bank Average		**7.57**	**0.00**	**4.73**	**7.57**	**Total Average Third quarter 2010**		
MTO Average		**13.89**	**2.39**	**11.07**	**17.72**	**9.19**		
MTO/Post office Average		**18.00**	**0.00**	**11.25**	**18.00**	**Total Average First quarter 2010**		
Total Average		**12.40**	**1.43**	**9.19**	**14.70**	**8.47**		
Total Average in First quarter 2010		**11.10**	**0.55**	**8.47**	**11.86**			

Source: World Bank Group, (2010)

The total cost contains transaction fees plus the exchange rate margin or "spread". On average a Moldavian migrant pays EUR 8, 47 for sending home the amount of EUR 160. Also, according to the data, Moldavians migrants use various RSP to send money such as banks, MTO and Post Office.

A great advantage of sending money through these channels is the transfer speed. For example, such RSP as MoneyGram, Western Union or MoneyGram via Poste Italiane offers a transfer of money within an hour. Nevertheless, it is worth to mention that the total cost of transferring

funds through Western Union for EUR 169 constitutes EUR 26, 50. Also, World Bank Group indicates that these RSP send and pay out in EUR in this corridor. At the point of collection, the money may be converted to the local currency. Usually, the recipients incur an additional cost (which is not shown here) when converting the EUR to the local currency. It can be pointed out that RSP are very confortable way to send money home taking into consideration the speed and the safeness of the process. Still, particular for Moldavian migrants this way remains the expensive one. It was estimated that on average the cost of one transfer of money constitutes 13% of the remitted amount of funds (Ghencea & Gudumac, 2004). That is way they prefer the informal channels which may cost from 3% to 10% (Moraru, 2009) from transfer funds. Also, these informal transfers may be free of charge (send money home through friends, relatives).

3.3.2   Informal transfer channel

Social Science Research Council (SSRC), (2009), defines the informal remittances as that sum of money transfers which arise through private, unrecorded channels. Such transfers include remittances brought home by friends, relatives and by the migrant himself/herself. Despite the fact of a rapid development of formal money transfer industry, considerable sums of remittances continue to follow the „underground" path (Ghencea & Gudumac, 2004). Informal money transfer systems are mostly used in the state controlled economies, political instability and low economic and financial development level. Sander *et al,* (2005) pointed out that the migrants' option for the simplest ways of transfer is often driven by the trust in informal transfer agents and little costs. Moreover, informal transfer channels are common in countries where migrants have lack sufficient legal status to use formal services. It is also most used by seasonal migrant worker who prefer to come back home caring the money. Before the development of the rapid transfer agencies, the migrants used to carry the earned money with them.

3.3.3 Costs and Benefits of remittances

The impact of remittances on origin countries of migrants should be evaluated in terms of costs and benefits. First, will be examined the benefits of the remittances process.

Benefits:

- In the case when other foreign financial flows diminish, the remitted money and send home may be used for replacing this gap, thus contributing to domestic macroeconomic stability.
- The remittance receiving households improve their living conditions. These inflows allow receivers to save money as well as to invest them in some projects and business (De Haas, 2007).
- The economic agents from home countries benefit from the experience of those who have worked abroad and have returned home (ex: new business organization skills, new technologies).
- In case of unqualified people emigration, the origin country gains due to reducing of unemployment rate and increasing the real salaries for those remained home (Moraru, 2009).
- The use of remittances for consumption of local products lead to raise the level of national production, creation of new jobs and thus, to development and economic growth (Marandici, 2009).
- The inflow of remittances increase the budget revenues, thus have a positive effect on the ability of country to deal with the fiscal deficit without reaching the crisis situations (Moraru, 2009).
- From the household point of view, the most important effect of remittances is the poverty alleviation (Solomone, 2006; Moraru, 2009; Marandici, 2008; Hristev *et al,* 2009).

As it is described above, the impact of remittances have a lot of positive effect which are very plausible in the real life of origin countries of migrants. However, the *costs* of migration and remittances are as well not negligible.

Costs:

- It is generally accepted the fact that remittances do not solve the problem of reducing poverty. These money inflows have a short term influence (Chami *et al,* 2008). The finding of

Adams (2007) explains that in the less developed country, the level of poverty has no precise influence on the sum of per capita global remitted funds received by a country.

- The large inflows of remittances lead to appearance of so-called Dutch disease (Marandici, 2009). The receiving country of money inflows faces such problems as: the appreciation of the exchange rate, inflation, considerable growth of imports and other macroeconomic imbalances.

- Remittances increase the income inequality.

- According to Carrasco & Ro (2007), remitted funds generate an "easy money" cycle. Is the situation when the remittances are considered as allowances, thus the recipients have no motivation to work. The money inflows diminish the desire of people to participate in economic activities, to invest in business or either to work. It becomes a tradition for receiving households to live from remitted money.

- Remittances aggravate the moral hazard problem of the government. Marandici (2008) mentioned that the accumulation in the public budget through indirect financing by remittances, allow the authorities to avoid the implementation of structural reforms.

- Remittances are causing so-called the "ghost-town" phenomenon. Carrasco & Ro (2007) explain that this effect of remittances is related to situation when small communities in rural regions have their own farms which are dependent on the remitted funds. The negative effect appears when remittances decline considerably or unexpectedly stops. As a result, these local farms collapse and the cause the "ghost-town" phenomenon.

One thing that is specific about Moldova regarding the remittances is that this amount of money is not invested by people in opening their own businesses, or by depositing them in the Moldovan banks, who will further "inject" the money into the economy by loans. They just spend them on consumption, housing building, paying for school and university fees, buying clothes and so on.

3.4 Moldavian key facts on remittances flow

According to Sintov *et al,* (2010), the majority of migrants (84%) from Moldova are transferring remittances home. The estimates show that usually, every migrant transfer's money 6,4 to 6,8

times per year using both formal and informal channels. Also, same authors state that one quarter of migrants transfer remittances on a monthly basis. NBM data indicates that in 2009, the average sum transferred by migrant to Moldova constituted EUR 4,403. Remarkable is the fact that uses of informal channels for transferring funds are no longer the chosen method by Moldovan migrants. Although, the research showed that about 40% of migrants still continue to use it (Sintov *et al,* 2010).

From the time when Moldova gained its independence in 1991, the country has made significant progress in founding a well-functioning financial system. According to NBM, in 2010 there are 15 commercial banks which are currently authorized to conduct foreign currency transfers through their correspondent banks and through money transfer systems such as Western Union or MoneyGram. Moreover, there are also over 500 village-based Savings and Credit Associations (SCAs).

Due to remittances inflows, Moldova has seen a prompt growth in accessible express transfer services which have become part of a network linked with key originating markets. Today, Moldova counts 15 express transfer systems, of which three – Western Union, MoneyGram and Anelik Money Transfers – represented for approximately 80% of the markets share (Sander *et al,* 2005).

⇒ *Western Union-* the oldest and most used transfer service. The first local commercial bank, Banca de Economii, started to work with Western Union when it became an agent in 1992. Currently, all Moldovan commercial banks offer Western Union transfer services.

⇒ *MoneyGram-* the second largest provider to develop its network in Moldova. It has not managed to gain much popularity; high tariffs are mentioned as the main reason for the lack of success in reaching more market share (Sander *et al,* 2005). It works with Banca Sociala, Comert Bank, Posta Moldovei, Gasprom Bank, Universal Bank, Victoria Bank.

⇒ *Anelik Money Transfers-* a Russian express transfer company which gained a solid share of the international transfer market. The service entered the Moldovan market in 2002 but has grown rapidly and it can be founded in 10 commercial banks of the country. The key competitive

advantages are its large geographic coverage of over 80 countries and the low fees (Sander *et al,* 2005).

Figure 4. Express Transfer Services and Number of Bank Partners in Moldova
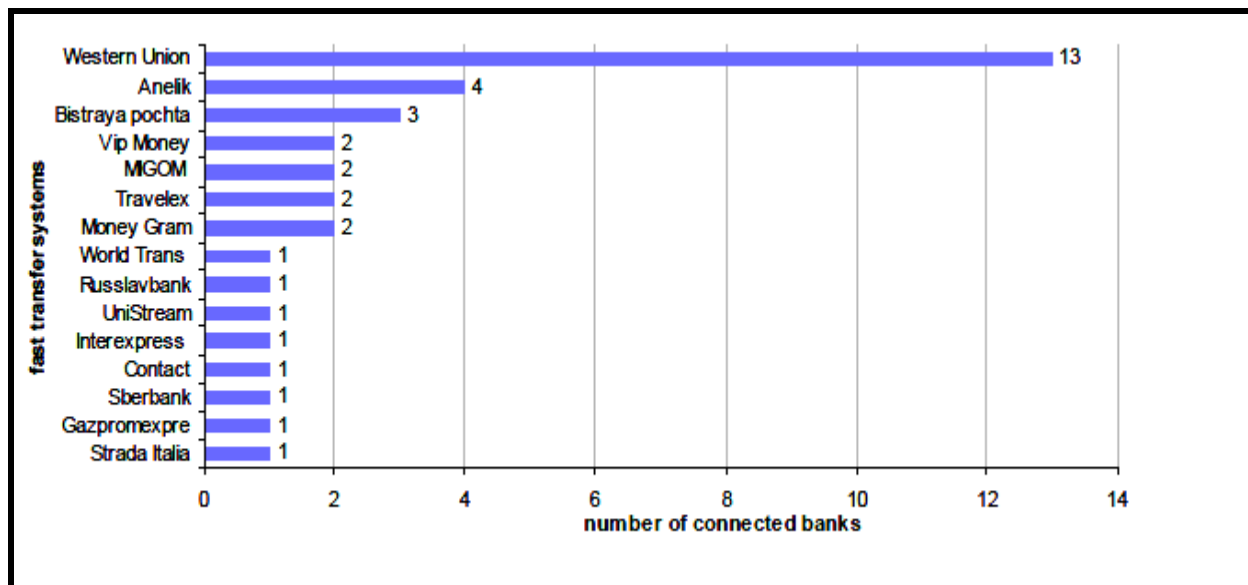
Source: Sander *et al,* (2005)

According to NBM, non-banking institutions are not allowed to provide foreign currency transfers services. Poșta Moldovei (Moldova's state post system), represents the only exception from the rule. In 2002, it was accepted as an express transfer provider for Western Union. Later, in 2003, it was accepted as a provider for Anelik Money Transfers (Sander *et al,* 2005). The main disadvantages for clients of Poșta Moldovei are that money is paid out in Moldovan lei, local currency of the country. In July 2010 it was announced that Poșta Moldovei provides the MoneyGram Transfer services.

The bellow table provides data regarding the cost of remitting funds from Russia to Moldova. Also, there are indicated the most used RSPs for this purpose.

The average cost of transferring USD 200 constitutes USD 2, 45 in the third quarter of 2010 which is less than in the first quarter of the same year by USD 0, 15. The most expensive RSP is Western Union which charges for sending USD 200 a fee in an amount of USD 9, 52. For this cost of transfer, the receiver will collect the money within an hour. World Bank Group (2010)

explains that in this corridor RSPs send and pay out money in RUB (is a code of Russian currency, the **ruble** or **rouble**).

Table 4. Cost of remitting from Russian Federation to Moldova (USD)

Firm Name	Firm Type	Fee	Exchange Rate Margin (%)	Total Cost Percent (%)	Total Cost(USD)	Transfer Speed	Network Coverage	Date
Anelik	MTO	3.00	0.00	1.50	3.00	Next day	Urban only	Sep 07, 2010
Leader	MTO	3.00	0.00	1.50	3.00	Less than one hour	Nationwide	Sep 07, 2010
Leader	MTO	4.00	0.00	2.00	4.00	Less than one hour	Nationwide	Sep 07, 2010
Contact	MTO	4.00	0.00	2.00	4.00	Less than one hour	Nationwide	Sep 07, 2010
Unistream	MTO	5.00	0.00	2.50	5.00	Less than one hour	Nationwide	Sep 07, 2010
Migom	MTO	5.08	0.00	2.54	5.08	Less than one hour	Nationwide	Sep 07, 2010
Interexpress	MTO	5.60	0.00	2.80	5.60	Less than one hour	Nationwide	Sep 07, 2010
Western Union	MTO	9.52	0.00	4.76	9.52	Less than one hour	Nationwide	Sep 07, 2010
MTO Average		**4.90**	**0.00**	**2.45**	**4.90**	**Total Average Third quarter 2010**		
Total Average		**4.90**	**0.00**	**2.45**	**4.90**	**2.45**		
Total Average in First quarter 2010		**5.44**	**0.00**	**2.60**	**5.20**	**Total Average First quarter 2010**		
						2.60		

Source: World Bank Group, (2010)

As in the case of Italian corridor, at the point of collection, the money might be converted to the local currency. The fund receiver again incurs an additional cost (not presented here) when will convert the RUB to the local currency. Also, the 0% in the exchange rate margin does not imply that there is no exchange rate cost. It may be a situation when the sender does not know about the existence of these costs at the time of sending.

The last survey conducted by Hristev *et al.,* (2009), shows that and the majority of migrants send funds by money transfer operators (MTO) or banks, and by the post office. MTO represents the most popular method to transfer money home which is used by 39,4% of rural migrants and

45,8% by urban ones in 2008. Bank transfers are the second method most used by 24,1% of migrants from rural area of the country and 22,8% by urban migrants (see table 5).

Table 5. Methods to Transfer Remittances

Category	%, 2006	%, 2008	
		Urban	Rural
Bank transfer	30	22.8%	24.1%
Money transfer offices	25	45.8%	39.4%
Post offices	5	2.4%	3.8%
Train conductor	2	3.6%	0.7%
Maxi-taxi/bus conductor	19	5.1%	6.8%
Migrant brings it on a visit	28	14.1%	18.1%
Someone else brings it on a visit home	9	1.8%	3.6%
By mail	2	1.5%	0.8%
By packages sent home		3.0%	2.2%

Source: Hristev *et al.,* (2009)

According to the International Organization for Migration in Moldova (IOM) Survey 2008, the use of unofficial transfer of money in Moldova is high, especially in rural areas. This represents 32 %, while in urban area 29 %. Also, many migrants use mix methods of transfer money home: trough the bank and informal way. The same source argues that the preferred transferred method is informal being the cheapest one. This is because of the level of trust in financial institutions, (Banks, Credit and Saving Associations, Microfinance institution, post offices).

Since the most recipients of remittances of Moldova are from rural areas, according to the same survey, this indicator is lower than in urban ones. About 27% of rural respondents (as compared to 18% of those from urban areas) do not trust financial institutions. The problem in this case appears because of relatively low level of understanding of financial issues.

The frequently used informal way to transfer money is simply to carry cash when migrant is travelling back home (18,1% in rural area and 14,1% in urban area of the country). Other migrants pass the money through drivers of buses and micro-buses (6,8%) and through friends or

relatives and packages sent home (5,8%). Nevertheless, it can be pointed out that the popularity of formal methods increases over time.

Table 6. Money Transfers from Abroad by Natural Persons (residents and nonresidents) via Banks of the Republic of Moldova, (US$ million) for period 2009-2010

	Total inflows		Including via IMTS	
	2009	**2010**	**2009**	**2010**
January	64,30	63,22	51,13	50,81
February	70,41	72,47	56,82	60,30
March	90,98	97,67	73.52	82,52
Quarter I	**225,69**	**233,36**	**181,47**	**193,63**
April	89,76	95,23	74,90	81,57
May	89,79	96,42	73,21	81,99
June	109,48	110,26	90,31	94,83
Quarter II	**289,03**	**301,91**	**238,42**	**258,39**
July	113,40	119,83	94,61	104,62
August	103,51	107,63	88,16	94,89
September	114,62	132,40	95,91	116,79
Quarter III	**331,53**	**359,86**	**278,68**	**316,30**
October	111,45	118,42	94,73	102,41
November	102,18	111,53	87,58	97,69
December	122,14	117,99	101,35	103,82
Quarter IV	**335,77**	**347,94**	**283,66**	**303,92**
Total	**1182,02**	**1244,14**	**982,23**	**1072,24**

Source: Own computation based on NBM data

Summarizing the above, it can be outlined that the main determinants of choosing the transfer channels by migrants are speed, safety, fee cost, the type of migration (seasonal or long-term), and the status of the migrant (legality in host country). As the NBM reported, in January-September 2010 about USD 768,32 million, or 85,8% of the total remittances for this period were transferred via the fast money transfer systems (see table 6). Total remittances in September 2010 summed up to USD 132,4 million, exceeding the index of September 2009 by 15,5% and has become the largest one in 2010. The transferred funds to Moldova in January 2010 amount to USD 63,22 million, in February – USD 72,47 million, in March – USD 97,67 million, in April – USD 95,23 million, in May – USD 96,42 million, in June – USD 110,26 million, in July – USD 119,83 million, in August – USD 107,63 million.

In the structure of foreign currency remittances in September 2010 - 53% accounted for USD, 36,3% - for EUR and 10,7% - for RUB. As it was reported before, the volume of remittances to Moldova from individuals from abroad through the commercial banks in 2009 amounted to USD 1182,02 million, down compared with 2008 by USD 478,07 million, or by 28,8%. At the same time, USD 982,23 million or 83,1% of total amount has come via the fast money transfer system. The largest amounts were sent from Russia and Italy. According to the World Bank, the Moldavian guest workers' remittances make up about one third of Moldova's GDP.

The study of the World Bank "Migration and remittances: factbook 2010", announced top Remittance-Receiving Countries for 2009 as a percentage of GDP. According to the World Bank, Tajikistan took the first place in 2009 on remittances volume. The resources, coming to the country from its working migrants amounted to 35% of GDP. The African countries – Tonga and Lesotho took the 2nd and the 3rd places with 28% and 25%, respectively. Moldova and Nepal share the 4th and the 5th places, possessing 23% of GDP.

Figure 5. Top Remittance-Receiving Countries, 2009, *percentage of GDP*
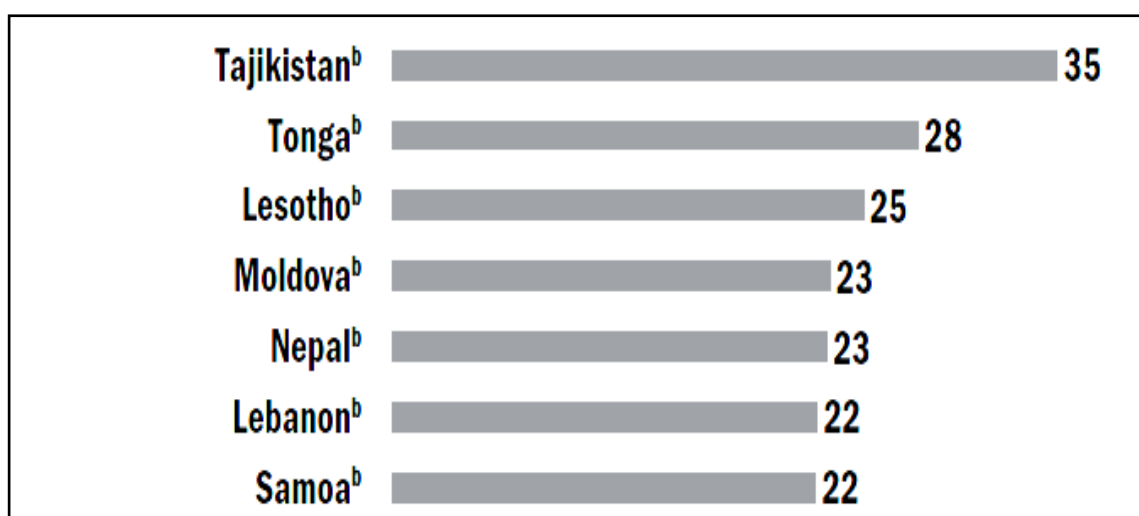
Source: Migration and Remittances Factbook 2011 based on Development Prospects Group, World Bank.

Chapter 4

4.1 The Macroeconomic Impact of Remittances

At a microeconomic level, remittances are evaluated as a household problem. According to the current economic literature review, microeconomics of inflows from abroad is based on the explanation of the motivation to migrate and to remit, the patterns of transfers and their effect on the household consumption. Most studies, based on population surveys, have reached the result that remittances help families to have its own property , to have access to a better education and healthcare and start small business activities (Rapoport & Docquier, 2005; Kireyev, 2006; Hristev *et al,* 2009).

Due to the fact that family's consumption and investment aggregates to the national level, it is assumed from microeconomic view that remittances may have a positive influence on the growth level of the recipient country. According to Kireyev (2006), the macroeconomic impact of remittances remains largely fragmented in actual literature. The well-known is the fact that the long-run effect of money inflows on the home country economies depends on whether they are spent on consumption or investment. Nevertheless, there is little recognizable theoretical or empirical research that shows the effect of remittances on main macroeconomic segments.

Moraru (2009) and Kireyev (2006) proposed a possible theoretical background for evaluating the macroeconomic effect of remittances by using the Keynesian model, the Mundell-Fleming model and a national accounts approach.

4.1.1 Theoretical Treatment of Remittances

4.1.1.1 The Keynesian model

According to Kireyev (2006), remittances increase the income (**Y**) and therefore the demand (**D**) which has an extended effect on real GDP growth. This increase depends on the multiplier and the magnitude of inflows. The multiplier itself depends on marginal tendencies to import and to save (Murshid *et al,* 2002). In the Keynesian model the used variables are demand for goods (**D**), final global consumption (**C**), savings (**S**), investments (**I**), income (**Y**), imports (**M**) and exports (**X**). The equilibrium condition is **Y=D** (1), **D=C+I** (2), **Y=C+S** (3) and **S=I** (4). Moraru (2009) states that in case of an open economy the equilibrium condition is completed by the influence of the foreign transactions such that **Y+M=D+X** (5) and **S+M= I+X** (6).

Figure 6: The Keynesian Model
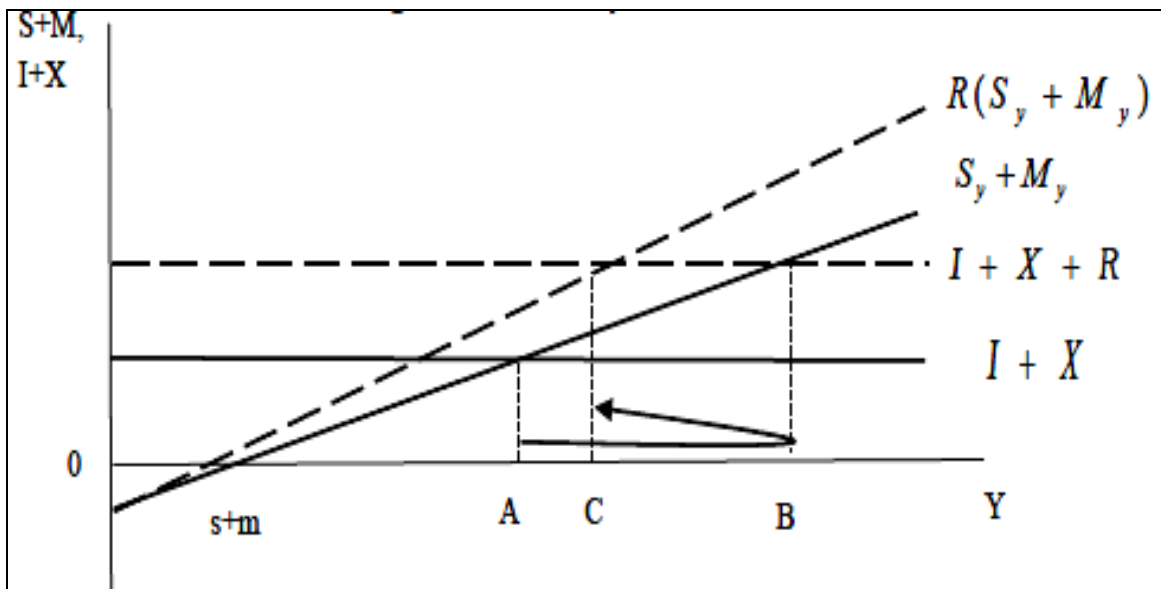
Source: Kireyev, (2006)

A growth in **Y** (overall income of the recipient country) due to remittances (**R**) can be characterized either as an independent increase in export revenues or as supplementary

investment. According to Kireyev (2006), savings (**S**) and imports (**M**) consist of an autonomous component independent of Y, and an income induced component. In a spending-output space, where **S** and **M** are seen as outflows while **I** and **X** are seen as injections, an further influx of remittances (**R**) initially will increase the steady income (or equilibrium output) from point A to point B as it is shown in the Figure 6.

Still, the final equilibrium will decisively depend on the influence of remittances (**R**) on the marginal inclinations to import (**m**) and to save (**s**). It is assumed that both will also increase, and the related leakage will drive the final equilibrium back from B to C. Kireyev (2006) states that if $m+n=1$, the Keynesian multiplier will be equal to 1. This will lead to the fact that the whole sum of remittances (**R**) will be leaked with the output (**Y**) unaffected. Also, it is recognized the fact that the more open is the economy, the lesser is the multiplier, thus less important the influence of remittances on output.

4.1.1.2 The Mundell-Fleming model

The nominal shock' impact on real growth depends on the exchange rate regime and the grade of capital mobility. Kireyev (2006) describes the model based on the assumption that capital flows do not react to deviations in the interest rate and are general insignificant. From this point of view, remittances can be seen as component part of the money supply.

According to macroeconomic theory, monetary policy is an effective instrument for stimulating real growth under a flexible exchange rate arrangement. The opposite effect is in case with a fixed exchange rate regime. In the space between real income (**Y**) and real interest rate (**i**), the real (**IS**), monetary (**LM**) and external (**BP**) sectors are in instantaneous equilibrium, when output is at Y_1 and the interest rate is at i_1 as it is shown in the Figure 7. As it can be seen, due to the fact that capital flows do not react to changes in the interest rate, the **BP** curve is perfectly inelastic. The increase of money supply to LM_R caused by the inflow of remittances (**R**), must instantaneously produce a substantial growth in output to Y_2, which will lead to more domestic credit available.

Figure 7: The Mundell-Fleming Model
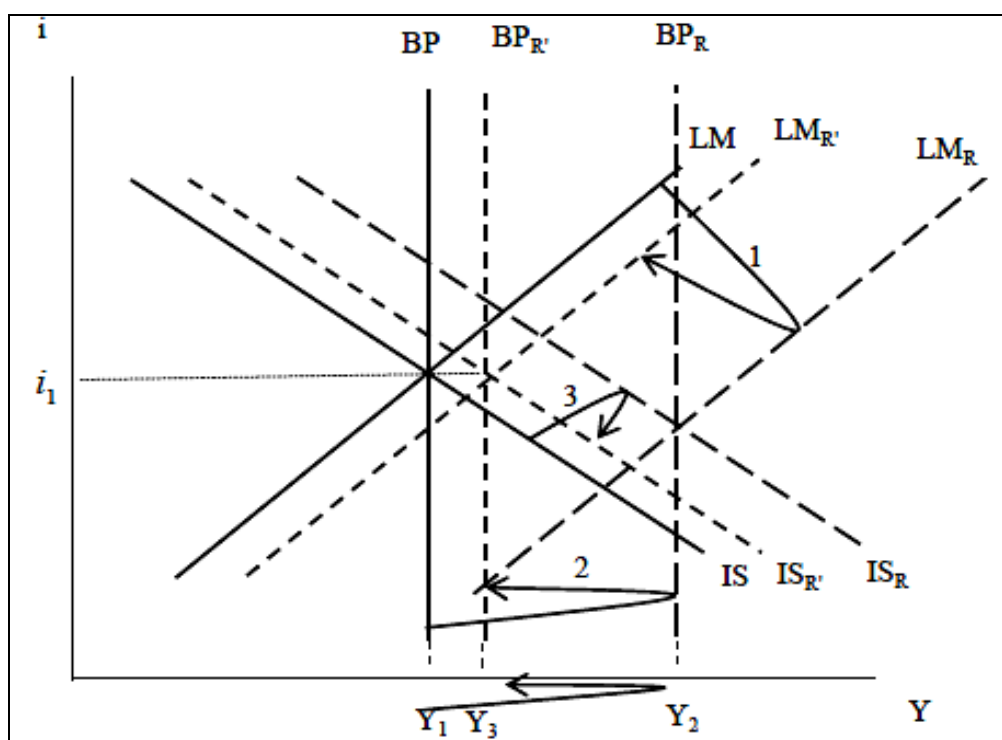
Source: Kireyev, (2006)

The increase of money supply to LM_R caused by the inflow of remittances (**R**), must instantaneously produce a substantial growth in output to Y_2, which will lead to more domestic credit available. Though, the inflow of foreign exchange and the parallel increase in demand for local currency will generate pressure on the exchange rate toward its appreciation. The causing decline in export demand and the initial balance of payments deficit will hamper all. It may be a situation that this decline will affect at least a significant part, of the initial effect of the monetary expansion on growth, thus can reduce output from Y_2 to Y_3 , where $Y_3 > Y_1$ or—at the extreme and depending on elasticities—it can even be that $Y_3 \leq Y_1$ (Kireyev, 2006). As a result, money demand changes to the lower output level. On the other hand as the interest rate declines, real sector activity may increase by higher level of investment supported by remittances. The author stated that with increased investment facilitating growth, and appreciation hampering it, the outcome is ambiguous. Also, Kireyev, (2006) affirms that in the best-case situation, the whole economy moves to a new equilibrium with just a slightly higher output level at Y_3, and an interest rate equal, higher, or lower when compared to its pre-remittances level.

4.1.1.3 A national accounts approach.

An increase in aggregate demand by the direct effect of remittances is distinct in this case as gross national disposable income

$$Y = (C+I)\,g + (C+I)\,p + (X\text{-}M + NCT + NY)$$

where the **(C+I) g** and **(C+I) p** are net factor income (**NY**) and net current transfers (**NCT**) – which capture the remittances. The **(X-M+NCT+NY)** is defined as current account balance (**CAB**). Remittances, as private flows, firstly affect only private consumption and investment, i.e. **(C + I) p**. Kireyev, (2006) describes that as long as the economy is operating below potential, a rise in consumption should be sustained either by higher domestic output or higher imports. Consequently, one direct result of remittances is a higher private component of the aggregate demand. Assume there are 3 possibilities of using remittances. The remitted money to the migrant's home country can be consumed, saved or invested.

Case 1: Assume that all remitted funds are used for consumption. As **C = Y- I - CAB** at a given level of income, private consumption can rise only if investment declines with an unchanged current account or the current account deteriorates with unchanged investment. Any increase in investment in parallel with growing consumption leads to a significant current account deterioration.

Case 2: Assume that all remitted funds are used for savings. As **S = I – C = I +CAB** and if remittances are saved by the private sector at a given level of income, private sector consumption should decline. The impact on investment is ambiguous, however, as it depends on the response of the current account. If remittances are saved in dollars outside the banking system, their inflow has no monetary implications. If they are deposited, the foreign currency component of broad money supply will increase. If remittances are converted into local currency but saved outside the banking system, they will create upward pressure on the exchange rate, but without impact on recorded money supply. If they are converted into local currency and deposited in banks, they contribute to both exchange rate appreciation and an increase in money supply (Kireyev, 2006)

Case 3: Assume that all remitted funds are used for investment. As **I =Y−CCAB**, an rise in private investment at the given level of general income can be the result of either a drop in consumption with unchanged current account or a deterioration in the current account with unchanged consumption. Any immediate increase in investment and consumption needs significant current account deterioration.

In case of Moldova, from the *Keynesian model* perspective, it can be concluded that growing volume of imports, particularly in recent years (from 2005 to 2009), in corresponding with increasing inflows of remittances, suggest that a considerable part of money inflows are spent on imported consumption (see figure 8).

Kireyev, (2006) explains the same effect in the evaluation of remittances of Tajikistan. Also, he suggests that the effect on growth depends on the interaction between the scale of net remittances and the unknown marginal inclination to save. Under the Keynesian model approach, growth is likely to be small. Despite the fact that Moldova largely follows a floating exchange rate regime, it remains apart from international capital markets, thus the *Mundell-Fleming* framework is applicable. The NBM experiences difficulties in controlling reserve money and in maintain the exchange rate, because to meet the demand for domestic currency it need to purchase increasing sums of foreign exchange, much of which stems from remittances (Marandici, 2009). The influence of money inflows through the monetary channel has been so far transformed essentially into additional inflationary pressures rather than into real growth.

Figure 8. The evolution of imports and remittances of Moldova (USD)
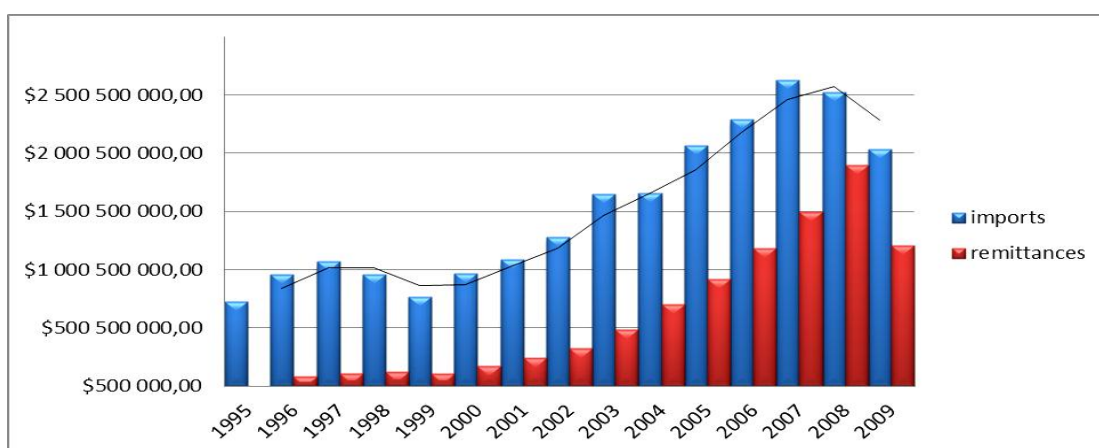
Source: Own computation based on NBS data of Moldova.

The macroeconomic influence of remittances under a *national accounts approach* depends mostly on the performance of the current account. Aitymbetov (2006) and Kireyev, (2006) defined three ways of impact of remittances: a direct one when remittances represent an important share of the current account and two indirect channels of influence, mainly via the relative prices and exchange rate.

• Most of authors (Aitymbetov, 2006; Kireyev, 2006; Jamaluddin, 2006) argue that the *direct* effect of remitted funds on the current account is unclear: from one point of view, this inflows support the improvement of the current account. On the contrary, due to the fact that a significant share of transfers is consumed on imports, there is an opposite effect which is manifested by broadening the trade deficit. The effect of transferred funds will be determined by remittances' marginal propensity to import. This means that the current account under no circumstances can be poorer with more transfer of funds. However, Aitymbetov (2006) mentioned that in the extreme situation when the remittances' marginal inclination to import takes value 1, then the current account would be unaffected, if not it would even increase.

• The *indirect* effect on the current account via the exchange rate is expected to be negative. The large sums of foreign inflows usually conduct to real appreciation of national currency. This is achieved by a nominal appreciation because the demand for domestic currency rises or through inflation as supplementary demand drives consumer prices up. Real appreciation must aggravate the current account due to the fact that domestic exports become less competitive worldwide.

• Another *indirect* impact on the current account is via relative prices. This influence is considered to be ambiguous (Kireyev, 2006). Also, the author stated that this impact depends on whether transfers are spent on tradable or non-tradable goods. For example, spending mostly on tradable goods (whether consumer or investment goods) can rise their production or costs, or both. The expansion in the relative prices of tradable goods must encourage the production of exportable goods and lead to import growth, thus raise the current account. In case when remittances are spent mainly on non-tradable goods, an opposite effect is expected: an increase in the relative price of these goods would be similar to the situation of a nominal appreciation. As a result, this would lead to a growing current account deficit.

The macroeconomic effect of remittances can be examined by using some alternative models. Jamaluddin, (2006) has applied the classical comparative advantage model. According to the author, labor force export can be viewed as a normal export of an article of trade in which the country experience a comparative advantage. Also, it can be seen as export of a factor of production. Consequently, migrant's transfer of funds can be viewed as export earnings or as factor income.

Looking at the case of Moldova, it can be pointed out that cheap labour is a factor of country's comparative advantage. That is why its exports can be interpreted as a market-driven procedure of achieving this comparative advantage by the private sector. Finally, labour export and following money inflows are expected to have generally the same macroeconomic effects: the inflow of export income, domestic consumption greater than before, rising pressure on the exchange rate, some inflationary pressures via wages and trade prices. However, if labour force is simply considered as an article of trade of a comparative advantage, then the country may result in a long-term regular migration of people, marginal foreign investment and passive growth (Kireyev, 2006). On the other hand, there is a serious restraint of all these models and mainly is that they are static. As Kireyev (2006) mentioned, these models can be employed only for a valuation of the probable influence of remittances at one point in time. In the case of remitted funds it is probable to be mainly essential to focus at their effect over time. As a conclusion, it can be assumed that dynamic models might help to detect the influence of modifications on flows of migrants and on the inflows of remitted funds. Also, it will help in determining the impact of convergence or divergence of revenues and salaries on the remitted flows over time (Jamaluddin, 2006).

4.2 The impact of remittances on macroeconomic indicators of Moldova

The influence of the remitted funds on macroeconomic sector of the country is appreciated by:

1. *Economic growth is stimulated by demand.* The population's disposal income has increased due to remittances and as a result leads to increase in consumption. According to NBM

data, starting from year 2000 and until 2008, the country's economy has shown significant improvement. The cumulative growth in real GDP was more than 66%, but in the recent three years the remittances to GDP ratios decreased from 35% in 2006 to 31% in 2008. Also, the average revenue per capita has increased from USD 33 in 1998 to USD 529 in 2008 (World Bank, 2010).

Figure 9: Remittances as Share of GDP
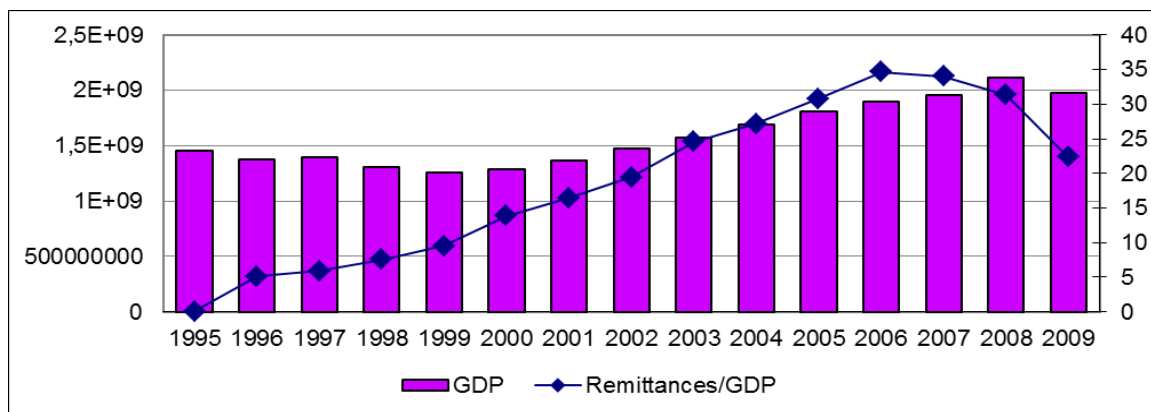
Source: Own computation based on NBM data and World Bank, 2010

2. *Balance of payments of the state: foreign trade, foreign direct investment, loans.* The increase in domestic demand in condition of undeveloped real sector was satisfied by imports. The major impact of remittances on balance of payment of the country is connected to financing the imports of goods and services. In 2008, about 59% of the foreign trade deficit was covered by remittances. As it is shown in the bellow figure, the volume of remittances prevails essentially in comparison with FDI or Government transfers.

Figure 10. Remittances comparing with the total value of other external financial flows
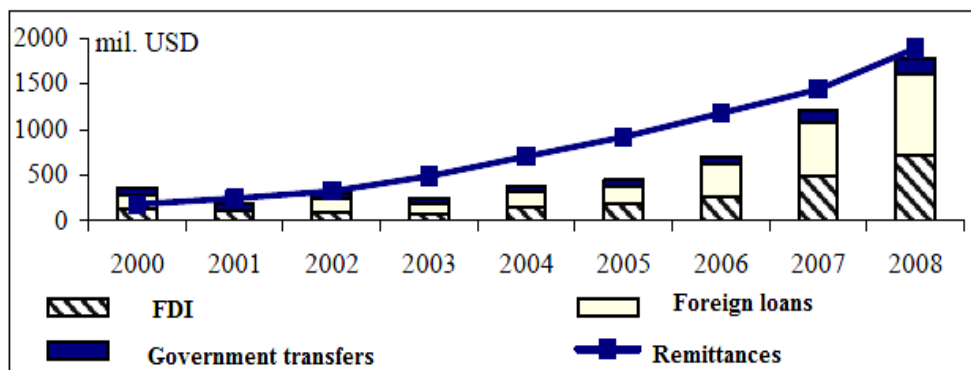
Source: Moraru, (2009)

3. *Unemployment. Wages. Labour productivity.* At the beginning of the transition, the industrial sector of Moldova dismissed a massive part of employees (Moraru 2009). Most of working population starts to migrate. In recent years, in some areas of national economy there is a serious insufficiency of labour force. This led to the situation of increase of wages. Real wage growth exceeded productivity gains. The possibility of generating further increase in productivity by making available additional work place is already exhausted. That is why for increase in the productivity, it is necessary tehnology investments and upgrading production proccesses.

To have a better explanation of the real impact of remittances and the migration process, Culiuc (2006), mapped the main consequences of these phenomena which are presented in the following figure.

Figure 11. The economic effects of migration and remittances on the sending country
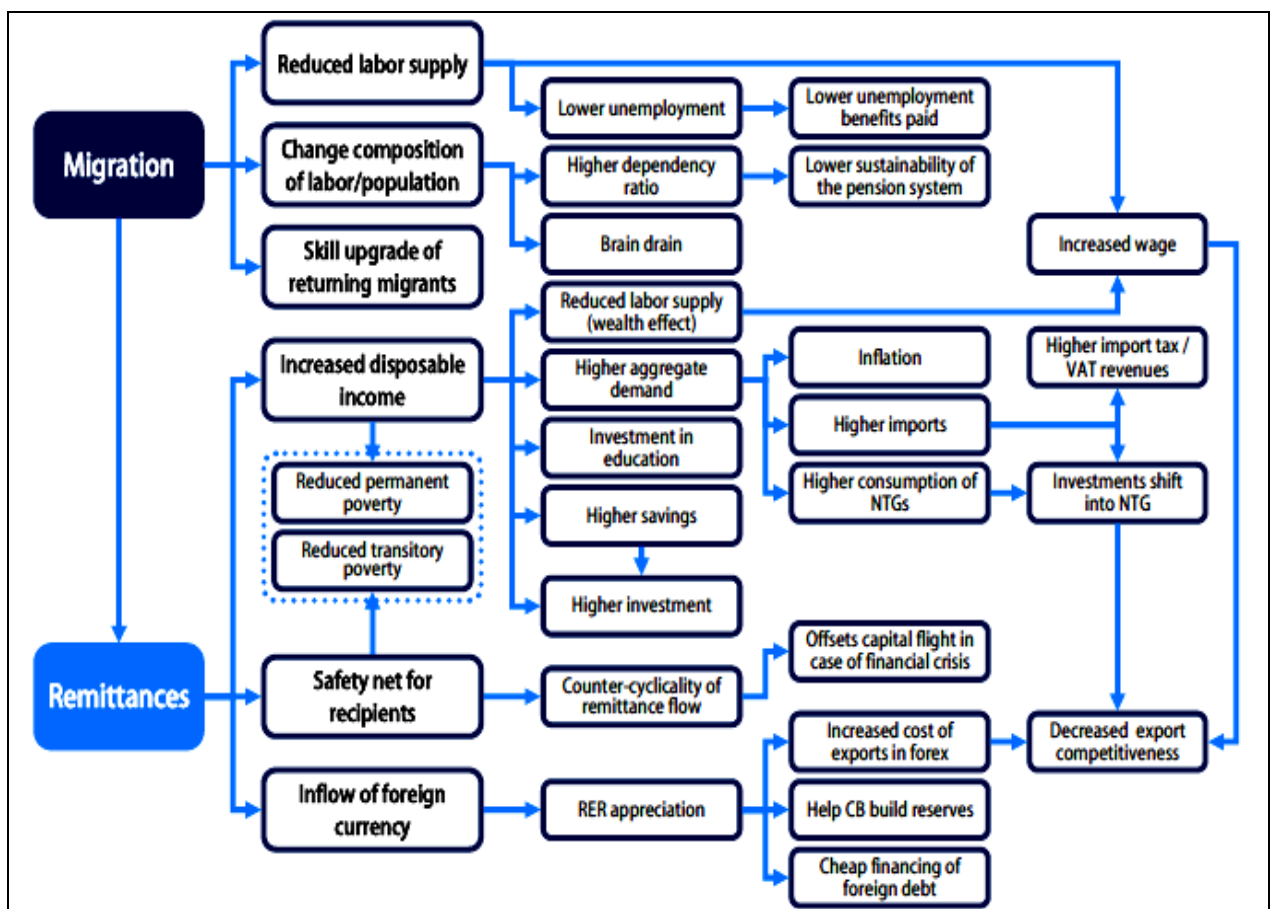
Source: Culiuc, (2006)

4. *Source of foreign currency.* Remittances represent an important point of suply of foreign currency. The appreaciation of the national currency of Moldova – LEU has been stopped by the intervention of the Central Bank of Moldova on the currency market. This intervention was reflected in significant increasing of the official assets reserves.

5. *Inflation. Exchange rate.* Remittances stimulate the increase of domestic prices and as a consequence lead to currency appreciation. Using the exchange rate policies to maintain the competitiveness involves a number of risks. For example, an attempt to keep the nominal exchange rate can lead to rapid monetarization and excess demand for money supply. In this way it would amplified the private costs and inflation.

6. *Contribution to the state budget.* According to Moraru (2009), remittances has an indirect positive impact on state budget. The fact that remittances stimulate the consumption this led to the increase of consumer tax or the value added tax (VAT). Also, the influence of remittances can be interpreted as the increase of taxes collected from imports.

Chapter 5

Hypotheses

In this chapter it is described the main hypotheses of the present paper. It is known the fact that a numerous number of hypotheses related to the relationship between remittances, investment and economic growth can be formulated.   The three hypotheses will be proved through the results of the empirical work.

Hypothesis 1 *Remittances have impact on economic growth of Moldova*

In the current economic literature there is little evidence regarding the impact of remittances on economic growth. Moreover, there are a lot of disputes concerning the effect of these impacts of remittances: most of authors argue that is a positive relationship between money inflows and growth, others stay the opposite.

Jongwanic (2007) pointed out that economic growth is positively affected by remittances through a various ways. One of these channels of influence – these money inflows could reduce credit constraint of the recipient country. As a result, this would lead to increase in private investment and business activity and hence promote growth (Ratha & Mohapatra, 2007). Also, it has been demonstrated that remittances could help to finance education and health, which are also key variables in supporting a long-term economic growth (Catrinescu *et al.,* 2006). Same results have been reached by Giuliano & Ruiz-Arranz (2005). The authors found out that remittances stimulate economic growth in less financially developed countries. Moreover, it has been shown that these transfers by reducing credit constraints replace for the lack of financial progress, improve capital's allocation, and therefore hastening economic growth.

World Bank (2006) states that another effect of migrant's transfers are improvement in the creditworthiness of a home country. According to the same source, credit ratings computation for each country depends on amount of the money inflows. It is accepted the idea that the higher magnitude of remittances lead to higher credit rating rank of the country (Catrinescu *et al.,* 2006). Reaching creditwhiness, the migrant country's increases its physical and human capital investment which definitely leads to increasing economic growth.

In the economic literature, some economists argue that international remittances may harm economic growth and have negative impact on it by causing the appearance of the "Dutch disease" problem (Marandici, 2009). Generally, "Dutch disease", also called the resource curse or the "curse of oil", according to the definition provided by Investopedia, is the damaging effect on an economy as a result of the exploitation and export of natural resources. Nowadays, the term is mostly used to state the effects of other inflows such as an increase in remittances to their home country made by migrants working abroad. The source of the problem is these money inflows which lead to currency appreciation. As a result, this increases the cost (in foreign currency) of exports of the products of other industries, making them less competitive. In case of Moldova, the LEU (the Moldovan national currency), because of the remittances has constantly increased its importance against the US dollar and Euro currencies (Marandici, 2009). According to the same author, the first step implemented by the NBM was maintaining the exchange rate and not to allow the appreciation of the national currency. These measures are possible by buying huge amounts of US dollars from the market and increasing reserves of its foreign currency. Marandici, (2009) called this measures as a process which does not convert fund in investment, but just conserves them (sterilization process). Remittances affects real exchange rate and as a consequence exports become more expensive.

Chami *et al*, (2003) in their research found out that remittance have a negative influence on the economic growth or GDP growth of migrant's home country. In their work, it had been used a variety of fixed effects models which helped to find a negative and significant link between remittances and economic growth for different groups of countries over various sets of years. The main conclusion of the authors is that remittances serve more as a type of compensation for poor economic countries or less developed, rather than a source of capital for economic growth.

Definitely, remittances play a "vital" role in making better the lives of millions of people, especially in the developing world (De Haas, 2007). Still, the author is sure that it would be naive to suppose that only remittances could resolve important problem such as poverty, an unstable political environment, misguided macroeconomic policies, lack of security, bureaucracy, corruption and so on. Moreover, insecurity of property leads to unwillingness and ability of the people to invest their money.

Hypothesis 2 *The Moldova's financial depth influences the impact of remittances on growth.*

According to the Financial Times Lexicon definition, *financial depth* – represents the amount of money or its asset equivalent to which a company, organization or an individual person has access. King & Levine (1993) studied the relation between financial development (financial depth) and economic growth. They measured financial sector development or "financial depth" by using the ratio of liquid liabilities of the financial system to GDP. According to World Development Indicators definition, *liquid liabilities* consist of currency held outside the banking system plus demand and interest-bearing liabilities of banks and nonbank financial intermediaries. As a result of their research, it has been found that financial depth's indicators and growth are strongly correlated. Finally, they pointed out that relation between growth and financial development does not represent only a contemporaneous connection.

Bjuggren *et al,* (2010), Guliano & Ruiz-Arranz (2005), Rios Avila & Schlarb (2008) support the idea that funds sent through official banking channels can promote the development of the financial sector, especially in developing countries. The most frequently used indicators for measuring the financial sector development is the level of *aggregate deposits* (Aggarwal *et al.,* 2006). The authors' results showed that migrant's money have an important and positive effect on deposits in bank and credit. They reached the conclusion that banks come to be more disposed to offer credit to remittance receivers since these transfers of funds from abroad are seen as significant and constant inflows as well as increasing one, especially during of periods of economic declines and natural disasters. These findings can be used as a confirmation that the remittances leads to raise the aggregate level of deposits and credits offered by banks, thus promoting the development of the financial sector and as a consequence the economic growth.

Guliano & Ruiz-Arranz (2005) tested whether the financial depth of the migrant's country may impact the effect of remittances on growth. The authors describe the connection between remittances and growth and its interface with the financial expansion in the addressee country. They have found that economic growth has been stimulated by remittances namely in less financially developed countries. Moreover, it has been shown that these transfers of funds help to reduce credit constraints on the poor, replacing for the lack of financial progress, improving capital's allocation, and therefore hastening economic growth.

In case of Moldova's remittances, Rios Avila & Schlarb (2008), made a first attempt in studying the relations between money inflows and development of the financial sector at a microeconomic level. The author's research was based on a detailed household survey for year 2006. The results show there is a higher probability of using bank services (bank account, deposits, and savings) for Moldavian receivers of remittances comparing with the ones that do not receive money. The authors reached a result that the enormous remittance inflows may have a positive influence on the development of the financial sector of Moldova. The final conclusion is following: the financial sector development potentially improves use of remittances, thus increasing growth.

Hypothesis 3 *An inflow of remittances increases investment.*

The impact of remittances on the level of investment is ambiguous. Different authors found different consequences of money inflows from abroad regarding the investment. Nevertheless, most of them are sustaining that the impact induced by remittances is one positive, thus increasing the investment level of the migrant country.

Chami *et al,* (2003) described three stylized facts. The first fact relates that a significant share, and frequently the majority of remitted funds are spent on consumption. The second is related to the fact that only small parts of transferred funds are used for saving or investment. The last fact denotes the behavior of remittances recipients to save or invest money either into a purchase of housing, land, car or jewelry. According to the author, for the whole economy, such type of investment is not "*necessarily productive*".

Bjuggren *et al.* (2010) examined the impact of migrants' transfer of funds on investment. The authors claim that remittances influence directly the investment level as well as indirectly via improved institutional frame or more developed financial sector. For example, they argue that a country with a high qualified institutional structure stimulates the use of remitted funds towards investment. Their research concludes that there is a direct and positive link between remittances and investment. Moreover, the quality of institutional frame and degree of financial development are inversely associated with remittances. This can be explained by the fact that transfer of funds rise investment more in countries with less developed financial sector and poorer institutional quality.

Same conclusion has been reached by Adams, (2007). The author found that in a country which is more financially developed, the migrants' transfers are directed into investment activities. Also, he disagreed with the results of previous research which suggested that remittances are used for consumption instead of investing them. Based on his results, the author found that families which receive remittances are in fact spend less on consumption (like food or purchase of TV, cars) and more on investment (education or purchase of a house) than non-receiving households. Also, the research states that remittances have multiplier effects and the biggest mistake of the current literature regarding the transfers from abroad is the focus mainly on the first-round effect of remitted funds and ignored the second- and third-round effects of these migrants money on development of the home country. For example, increase in house prices can be influenced by a significant remittances inflow into a local economy. As a result, this will lead to creation of new employment opportunities (creation of new jobs in construction) for non-migrant families. This increased demand for accommodation will produce new occupation opportunities in construction for the poor and unskilled people. Moreover, it is expected a creation of the new business possibilities for traders selling bricks, wood and other materials which is again will lead to promote the economic growth.

Salomone (2006) describes that remittances could indirectly and positive influence investment. For example, even if remittances are used for consumption instead of investment, then these money transfers could indirectly increase growth by smoothing consumption, thus lead to a stable macroeconomic situation. Furthermore, this will induce to promote investment. Lartey (2010) analyzing the remittances, investment and growth in Sub-Saharan Africa, pointed out that

only a "well-functioning financial system" organize the migrants savings and direct them into high-return projects. Guliano & Ruiz-Arranz (2005) have found that transfer of funds is channeled to investment in countries with less developed financial sector, thus stimulating growth. Gudumac & Ghencea (2004) explain that in Moldova, migrants' transfers are mostly used for *passive investments.* These are usually represented by investing money in the house or apartment purchase/construction or purchase of transportation means. Hristev *et al,* (2009), obtained the same results in 2009 that most of remitted funds are invested into the real estate. The trend of using earned money by migrants has not been changed for this period.

On the other hand, migrants start to buy apartments in the capital of the country or in big cities and then rent them. In this way they live from the paid money for rent. Also, they buy land and start some agricultural activity. Sintov *et al,* (2010), after the survey of 54 economic agents from Moldova, revealed that 44 of them were migrants that came back and started their own businesses. Also, the survey showed that largest sum invested in the economic activity constituted EUR 60,000. Most business activities are open in such areas as agriculture, construction and retail trade. As it can be concluded, the migrants returned home make some investments. The problem is that the sufficient sum of money for opening a business is earned in 10-15 years of migration. Usually, investments in business are done by the persons who emigrate with the whole family and they all work and save. That is why, only 6,5% of migrants would like to invest in Moldova (Ghencea & Gudumac, 2004). Also, the unstable economic and political situation in the country plays an important role in the unwillingness of migrants to invest home.

Most of migrants prefer to invest in education – they transfer money to pay for their children's education, the finance the education of their brothers/sisters, or to save for their own education. This happens because in Moldova, the cost of tuition in universities is increasing each year. Many families are not able to afford these expenses without some financial provision from outside the country. Although, a good amount of the remittances are used for consumption, the main aim of migration is savings (Sintov *et al,* 2010). Migrants usually keep their saved money home. The main reason is the mistrust in the financial and banking system of the country (Sander *et al,* 2005). This is the result of economic and political uncertainty in the country as well as bankruptcy of the banks (case of InvestprivatBanc, Moldavian bank which went bankrupt in 2009).

Chapter 6

Data

This chapter describes the data on remittances, financial development, economic growth and investment used in the research of the current paper. This study is focused on the impact of remittances on economic growth, financial development and investment level of Moldova for period of 1995-2010. The sample includes quarterly data of variables available for 16 consecutive years which have been collected from National Bureau of Statistics of Republic of Moldova, National Bank of Moldova, World Bank's World Development Indicators (WDI) dataset, EconStats and Annual Statistical Reports from the library of the National Bureau of Statistics of Moldova. Also, these sources have been improved by the (IMF) and Balance of Payments (BoP) Yearbooks data. In order to present data in US dollars, the nominal values of macroeconomic indicators which are in national currency have been divided on an average exchange rate corresponding to each quarter of the 1995–2010 timeframe. The medium exchange rate for each quarter has been collected from the BoP published by National Bank of Moldova. Only data on remittances, export and import have been reported in USD in official statistics.

1. Data on Remittances

The data on remittances for Moldova was accumulated from the National Bank of Moldova. The name of variable is **Remittances** – total amount of remittances of Moldova in U.S. dollars. The most complete time series data on remittances are obtained from the BoP compiled by each country's Central Bank. According to the World Bank Indicator definition (2009), the remittances represent the sum of three items in the BoP: (i) compensation of employees received from abroad in the income account of the balance of payments, (ii) workers' remittances in the transfer account and (iii) migrant transfers. More detailed definitions of the items are included in

the Appendix B. Lücke *et al,* (2007) pointed out that the difference between these items reflects assumptions about how many migrants stay abroad for more than one year. Therefore they are no longer considered Moldovan residents for BoP purposes. In this circumstance, the migrant remittances are examined as transfers from non-residents to Moldovan residents, rather than labour incomes from abroad earned by residents.

In the current economic literature it is specified the well-known argument that the quality of remittances data are considered to be poor. The reason of such consensus is the fact that the large amount of migrant's remitted funds are transferred home by using informal channels such as "hawala" service providers, by drivers of regular international routes, or by friends and relatives. These transferred funds are not recorded in the BoP of many countries. Therefore the precise calculation of the remittances is affected by the fact that official estimates underestimate the real flows and does not include them in the final result.

Chêne (2008) defines the "hawala" remittance systems as an informal banking activities that permit the transfer of remittances without employing formal channels. It is considered as a cheap, fast, and trustworthy MTO for migrants who send money home to their families. Even though, it is quite problematic to measure correctly the size of transferred funds every year to migrant home countries using such channel.

The main problem faced by the NBM in calculating remittances is that a large share of migrants (40% according to Sintov *et al,* 2010) transfers home money as foreign exchange cash via informal channels. Main example of such informal money couriers are migrants who return home and carry their savings with them, or bus drivers who operate on international routes. NBM applies some methods for better estimation of cash remittances (Lücke *et al,* 2007). For instance, a large part of remitted funds is used for current expenses and consequently are converted into local currency cash. NBM obtains the information about these transactions from commercial banks and foreign exchange bureaus (Sander *et al,* 2005). Also, NBM utilizes data on electronic money transfers to Moldova via commercial banks or express MTO such as Western Union, MoneyGram, Poşta Moldovei (Lücke *et al,* 2007). Moreover, in elaborating its BoP estimates, the NBM takes into consideration the estimated value of transactions made in

cash foreign exchange (purchases of certain consumer goods, imported cars, or apartments in major cities).

In spite of all the problems stated above, remittance flows seem to be the best estimatimation of the migration practice (Catrinescu *et al,* 2006). For Moldova, remittances have shown an important concern only in last several years (starting with 1995). This can be explained by the fact that in the countries from former Soviet Union, the procces of migration and remitted funds by migrants represent a comparatively new experience. That is why the record of data started after the intensification of the above mentioned processes.

2. *Data on Financial Development*

The current literature offers various indicators of financial development (***FinDev***). Giuliano & Ruiz-Arranz (2005) explain that proxies for financial development can be grouped into two sets: the one that are related to the banking sector and the second that are linked to the stock market. Same classification it is offered by King & Levine (1993). The paper's estimation will be based on three most important variables from banking sector following the Giuliano & Ruiz-Arranz (2005):

- ***M2*** which represent the liquid liabilities of the financial system. This indicator equals currency plus demand and interest bearing liabilities of banks and nonfinancial intermediaries (World Bank Indicator definition). According Giuliano & Ruiz-Arranz (2005), this variable it is recognized as being the comprehensive measure of financial intermediation. Also, the indicator consists of three types of financial organizations: central bank, deposit money banks and other financial institutions.

- ***Credit*** describes credit provided by the banking sector. This indicator of the financial development measures how much intermediation is implemented by the banking system, including credit to the public and private sectors (King & Levine, 1993).

3. *Data on Investment*

Following the Bjuggren *et al.* (2010), the current paper try to examine whether there is positive link between remitted funds and investment. The aim is to show how the inflow of remittances

can stimulate investment. From this point of view, the ***Investment*** variable is included. According to the World Bank Indicator definition, ***Investment*** is defined as gross capital formation (formerly gross domestic investment) and consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, etc.); plant, machinery, and equipment purchases; and the construction of roads, railways, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Bjuggren *et al.* (2010) claim that the financial resources needed to undertake the basic investment is limited and costly. That is why the optimum investment level will be constrained. In order to control for this effect, the ***Lending rate*** variable is used. The ***Lending rate*** represents the rate charged by banks on loans to prime customers (World Bank Indicator definition).

4. *Data on Growth*

This variable ***Growth*** is measured as the real GDP of the country in current USD. Data are collected from the NBS of Moldova. Jongwanich (2007), Aggarwal *et al.,* (2006), Aitymbetov (2006) &. Giuliano & Ruiz-Arranz (2005) used in their research a set of choice and environmental variables that have impact on economic growth of a country. One of these variables is ***Inflation*** – measured as the annual percentage change in the consumption price index. ***Imports*** of goods and services, according to the World Bank definition, represent the value of all goods and other market services received from the rest of the world. This indicator also include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. ***Exports*** of goods and services represent the value of all goods and other market services provided to the rest of the world. ***Govern*** represents the Government consumption of Moldova. It is measured as the log level of government consumption in current dollars (Jongwanich, 2007). Finally, ***Population*** counts all residents regardless of legal status or citizenship – except for refugees not permanently settled in the country of asylum, which is generally considered part of the population of the country of origin. All control variables are interpreted in natural logs. The only variable which is not in natural logs is inflation. Adams (2007), pointed out that a full and comprehensive accounting of the influence of international remittances on growth, investment and development requests more precise data.

The author is referring to the data on the large and presently unknown level of informal remittance transfers in the developing world. As a result, it is may be expected an ambiguous outcome of the research due to inexact data on remittances.

Chapter 7

Methodology

The first task of the paper it to evaluate the impact of remittances on economic growth of Republic of Moldova. For this purpose, the Ordinary Least Squares (OLS) method will be applied by using econometric software Gretl. Additionally, the financial development variables will be not included in this regression (following Giuliano & Ruiz-Arranz, 2005).

The following equation is going to be estimated:

$$GDP = \beta_0 + \beta_1 GDP_{t-1} + \beta_2\,Rem_t + \beta_3 Infl_t + \beta_4 Gov_t + \beta_5 Import_t + \beta_6 Export_t + \beta_7 Inves_t + \beta_8 Pop_t + \varepsilon_t \quad \textbf{(1)}$$

where the GDP_{t-1} represents the (logarithm of) the initial level of GDP, the ε denotes the error term. The key task of this regression is to check whether the marginal influence of the migrant's money transferred home on the GDP is statistically significant. Moreover, this regression will help to find the answer to the question "Can remittances spur the GDP growth?" It is expected a positive and substantial impact of remittances on economic growth.

The second regression is studying the role of migrant's transfer of funds on growth via financial markets. Following the Giuliano & Ruiz-Arranz (2005), the paper would like to check if the Moldova's financial depth can influence the effect of remitted funds on growth. The authors interact the remittance variable with the indicators of financial development. In this why they tested for the implication of the interacted variables. Same method is applied by Aggarwal *et al,* (2006). Notable is the fact that the financial development variables are also included in the regression separately. This procedure is done in order to make sure that the interaction term does not proxy for remittances or the level of development of financial markets. Moreover, if it is

obtained a negative interacted coefficient, this would point out that transfers of funds are more effective in country characterized by being less financially developed.

Giuliano & Ruiz-Arranz (2005) suggest that this is the confirmation of substitutability between remittances and financial indicators. In contrast, positive coefficient would imply that the increase of remittances consolidates development of financial system, by supporting it with additional financial flows. For that reason, it is observed a complementary effect between remittances and financial indicators (Giuliano & Ruiz-Arranz, 2005).

Taking into account financial variables, the following equation is obtained:

$$GDP_t = \beta_0 + \beta_1 GDP_{t-1} + \beta_2 Rem_t + \beta_3 FinDev_t + \beta_4 (Rem_t * FinDev_t) + \varepsilon_t \qquad (2)$$

where **FinDev** is a proxy for financial development and ε represent the error term. The interacted variables are **Rem*FinDev.**

The last regression will examine the empirical relation between remittances and investment. The regression equation takes the following form:

$$Invest_t = \beta_0 + \beta_1 Invest_{t-1} + \beta_2 Rem_t + \beta_3 FinDev_t + \beta_4 (Rem_t \cdot FinDev_t) + \varepsilon_t \qquad (3)$$

where **Invest** represents the total level of investment, the remaining variables are defined as above. In the last regression it is included the **Lending rate** variable.

As it was mentioned above, investment is limited and costly (Bjuggren *et al.,* 2010). That is why the optimum investment level will be constrained. In order to control for this effect, this variable is included. One expects that growth exerts a positive effect on investment and those higher lending rates hamper the rate of capital accumulation. It is expected that the remittances will positively influence the level of investment. The more developed the financial sector of a country, the more advanced its economy is. That is why a more developed financial sector – leads to a larger amount of new investment projects.

Chapter 8

Estimation Results

This chapter presents the OLS estimates of the parameters in all three equations described above. From the beginning, the equation (1) is estimated as it was described in previous chapter. The dependent variable **GDP** is specified in natural log in order to control for nonlinearities of variables. Moreover, this will allow to a better fit of the model and the results will be interpreted as percentages. **Imports, Exports, Remittances** and **Investment** are interpreted as a ratio – the values of the variables have been divided to the GDP in current USD. This transformation of data is done in order to remove the biasness from the estimates due to differences in value of the variables. Using the Gretl software, the following results have been obtained:

Table 7: Model 1

OLS, using observations 1995:2-2010:4 (T = 63)
Dependent variable: l_GDP
HAC standard errors, bandwidth 2 (Bartlett kernel)

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	13,598	7,0615	1,9257	0,05923	*
l_pop	-0,831664	0,486256	-1,7103	0,09274	*
l_Gov_expend	0,173155	0,0753813	2,2971	0,02538	**
rem_gdp	0,352837	0,194992	1,8095	0,07574	*
Inflation	0,00420976	0,00211029	1,9949	0,05093	*
exp_gdp	-0,938582	0,29324	-3,2007	0,00226	***
l_GDP___1	0,597529	0,119047	5,0192	<0,00001	***

R-squared	0,960870		**Adjusted R-squared**	0,956677
F(6, 56)	314,5932		**P-value(F)**	3,04e-41

Source: Author's estimations

Note: ***** significant at 10 percent; ****** significant at 5 percent; ******* significant at 1 percent.

Analyzing the above results, it can be concluded that using all the variables in this regression, the model could explain 96 % of all variations in the GDP level of the country (R^2= 0, 96). Another 4% of the variation is still unexplained. All estimated coefficients in the GDP equation are significant on very high significance level of 99%, 95% and 90%. The main results are easily summarized: ***Remittances,*** the variable of interest of the current research, has a positive and significant effect of the GDP level of Moldova. This result is consistent with the hypothesis 1 of the current paper. The assumption that remittances can spur the economic growth of the recipient country stands also for Moldova. The current research is in consistency with the findings reached by Giuliano & Ruiz-Arranz (2005) and Aggarwal *et al,* (2006). According to the first model, an increase in the remittances by 1 % would enhance growth of GDP by 0, 35 %, other things being equal.

It is of special interest to point out that the initial impact of remittances on GDP is practically null when this variable is included as a simple explanatory variable in the regression equation. The significance of this variable is increases when the ***Investment*** variable is deleted from the regression of interest (Giuliano & Ruiz-Arranz, 2005). For this purpose, this variable is dropped from the original regression equation. The omission is done in order to interpret better the effect of migrant's transfers by excluding one of the most important channel through which remittances are seem to influence the GDP. Moreover, due to the fact that ***Imports*** appear to be insignificant, by applying the sequential elimination of variables using two-sided p-value 0, 10, this variable is eliminated from the original equation.

Regarding the variable ***Population***, it can be seen that the coefficient is negatively associated with the dependent variable. The coefficient is significant at a 90 % confidence level. In general, it is expected a positive relationship between these two variables – the population growth lead to increase in GDP of the country which is very plausible from economic point of view. However, the higher population growth rate a country has, the slower its economy will increase. A lot of developed countries nowadays have smaller or negative population evolutions. In the case of Moldova, since 1995 the number of population starts to decrease considerably (the migration effect). That is why the impact of population growth is negative with respect to GDP. As a result, an increase in population by 1 % will result in a decrease in GDP by 0, 83 %, other things being equal. The positive impact of ***Government expenditures*** on GDP is also plausible from

economic point of view. An increase in *Government expenditures* by 1 % will enhance growth by 0, 17 %, other things being equal. This variable is significant at a 90% confidence level.

Exports variable shows negative relationship with GDP. In the same time this indicator is significant at a 99 % confidence level. The negative impact can be explained by the fact that Moldova's economy is mostly based on the consumption of the imported goods and services. Significant gap in the evolution of exports and imports in 2010 resulted in the accumulation of the deficit in the balance of trade which amounted to U.S. $ 2273, 2 mill. Comparing with the 2009, the deficit in 2010 is higher by 14, 2 % or by U.S. $ 282, 4 million (NBS reports). The degree of coverage of imports by exports for 2010 has constituted 41, 0% which is higher than in 2009 by 0, 7 %. Analyzing the results of the model, it can be pointed out that an increase in *Exports* by 1 % will lead to a decrease in GDP level by 0, 93 %, other things being equal. Moreover, the estimated coefficient of the lagged GDP variable is large and positive, it significant at a 99% confidence level.

The most unexpected result is presented by the inflation. It is presumed that the impact of this variable should be negative. In the case of Moldova, the *Inflation* appears to have a positive and significant impact. From this point of view, the obtained result regarding this variable remains inconclusive.

It is well known the fact that in regression and time-series modeling, basic forms of models make use of the assumption that the errors or disturbances u_i have the same variance across all observation points (Wooldridge, 2002). When this is not the case, the errors are said to be heteroscedastic, or to have *heteroscedasticy*, and this behavior will be reflected in the residuals $\widehat{u_i}$ estimated from a fitted model. To overcome this problem, Heteroscedasticity-Consistent standard errors are used to allow the fitting of a model that does contain heteroscedastic residuals. For this purpose, for the first model it is applied the *Robust standard errors* procedure. The most used robust standard errors in econometrics are the White or Eicker-White standard errors which prevent against heteroskedasticity (Croux *et al,* 2004). Also, according to the same author, the Newey-West standard errors is popular and often used which are heteroskedasticity and autocorrelation consistent (HAC) estimates of the standard error. The main property of robust standard errors is the fact that the heteroskedasticity and/or autocorrelation does not require to be specified (Croux *et al,* 2004).

Also, for the first model, the normality of residuals and the collinearity tests are performed to assess the validity of the obtained results. For this model, the collinearity problem is not present. Performing the test for normality of residuals, the following results are obtained:

Test for normality of residual

Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 5,10883   with p-value = 0,0777377

Analyzing the results, the p-value it can be concluded that we failed to reject the null hypothesis that errors are normally distributed.

The bellow figure represents the goodness of fit of the economic growth model. It can be summarized that model could explain 96 % the variation in GDP. The main finding of this analysis is that remittances contribute to the growth of GDP of the recipient country.

Figure 12: Plot of actual against fitted values for Model 1
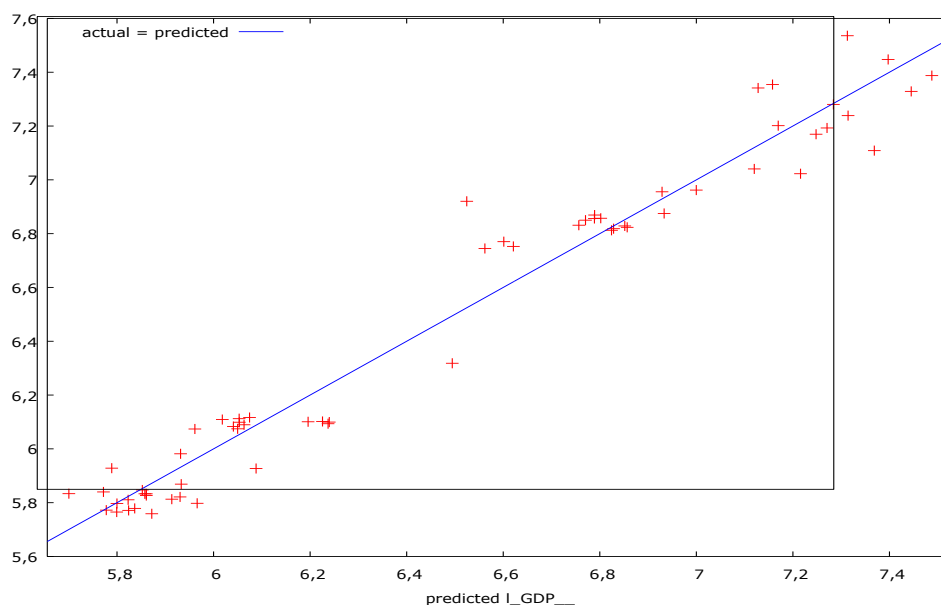
Source: Author's estimations

The current research continues with the estimation of the second equation. In this case, the main task of the research is to identify whether the financial development of Moldova impacts the particular uses of remittances and to determine the ability of these inflows to affect growth (Giuliano & Ruiz-Arranz, 2005). To this end, following the King & Levine (1993), Aggarwal *et al,* (2006) and Bjuggren *et al.,* (2010), financial development variables are interacted with the

remittances variable and test for significance of the interacted coefficient. The dependent variable is **GDP** is specified in natural log in order to control for nonlinearities of variables. For the second equation, following King & Levine (1993), will be used two indicators that characterized the financial development of a country: **M2 -** liquid liabilities of the financial system; and **Credit**- which represent the volume of credits provided by the banking sector. Initially, the **Deposit** indicator of financial depth has been introduced, but due to perfect collinearity with **M2**, this variable was omitted from the original equation. Variables are specified in natural log. These indicators of financial depth are interacted with **Remittances.** As a result, new variables are added: **RemCred** and **RemM2**. The sign of the interacted coefficients offer evidence about the role of remitted funds. More explicitly, a positive sign of the interacted coefficient implies the fact that the variables interacted are complementary and that a well-developed financial system improves the impact of remittances on growth. A negative sign indicates the substitutability effect between remittances and financial development indicator. This reveals the fact that remittances and financial development indicators are used as substitutes to stimulate growth (Giuliano & Ruiz-Arranz, 2005).

After running several models, the variable **RemM2** and **l_Credit** appears insignificant, that is why they have been dropped from the model. Initially, the variable **Remittances** was included in the original equation, but because of perfect multicollinearity with variable of financial development, it was omitted from the model. After performing all these transformations, the following results have been obtained:

Table 8: Model 2

OLS, using observations 1995:2-2010:4 (T = 63)
Dependent variable: l_GDP
HAC standard errors, bandwidth 2 (Bartlett kernel)

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	0,454995	0,218765	2,0798	0,04189	**
RemCred	-0,0132506	0,00402261	-3,2940	0,00167	***
l_M2	0,195868	0,0407248	4,8096	0,00001	***
l_GDP_1	0,717367	0,0660872	10,8549	<0,00001	***

| **R-squared**	0,948327	**Adjusted R-squared**	0,945699
F(3, 59)	360,9296	**P-value(F)**	6,65e-38

Source: Author's estimations

Note: ***** significant at 10 percent; ****** significant at 5 percent; ******* significant at 1 percent.

Analyzing the above results, it can be pointed out that the model could explain 94 % of the variation in the GDP level. All estimated coefficients in the GDP equation are significant on very high significance level of 99%. This means that we strongly reject the null hypothesis that β is equal to zero (H$_0$: β=0). The main result obtained from this model is that there is a strongly and negative interaction between remittances and financial depth expressed by indicator *Credit*. This result indicates that the influence of remitted funds on economic growth is decreasing with the level of the development of financial sector. Same result has reached by Giuliano & Ruiz-Arranz, (2005). To be more specific, remittances have compensated for the deficiency of the financial system. Moreover, these transferred money act as a substitute for financial services in stimulating growing. Remittances are used to alleviate the people's necessity in credit and insurance which the financial market is not able to provide. The estimated coefficient of the lagged GDP variable is large and positive, it significant at a 99% confidence level. *M2* is significant at a 99 % confidence level. Moreover, according to obtained results, an increase in the level of the liquid liabilities of the financial system will enhance the growth of GDP by 0, 19 %.

Same tests have been applied for this model: normality of residuals, collinearity, the heteroskedasticity and autocorrelation. Robust standard errors procedure has been used in order to prevent against heteroskedasticity. After performing the tests, it can be concluded that the model does not suffer from heteroskedastisity, collinearity, autocorrelation. The bellow figure shows the goodness of fit of the model.

Figure 13: Plot of actual against fitted values for Model 2
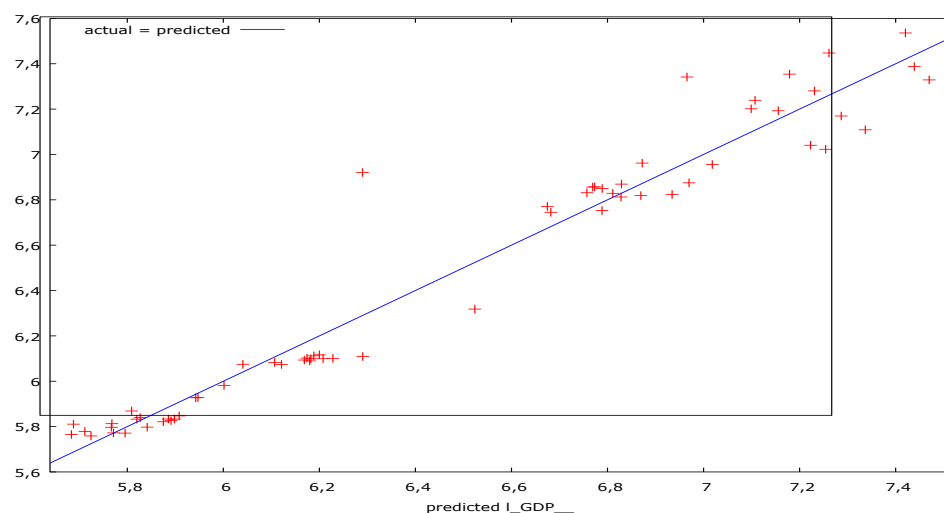
Source: Author's estimations

Summarizing the obtained results, it can be pointed out that the overall result of the estimation is in consistency with the initial expectations of the paper. Moreover, the second hypothesis of the research is proven.

In order to explore the empirical relationship between remittances and investment, the equation (3) is estimated. The dependent variable **Investment** is specified in natural logs, same as in previous cases in order to control for nonlinearities of variables. All independent variables are specified in logs. It was expected that **GDP** growth influence positively the level of investment, while the **Lending rate** restrain the rate of capital accumulation. In fact, variables **Lending rate, Imports, M2** and **Credit** have been dropped from the model. **Lending rate** and **Credit** was omitted from the regression because they are not statistically significant and do not have impact on the level of investment. Taking into consideration that the cost of credits in Moldova is sufficiently high and the volume of credits offered for investment purpose is considerably low, this result it seems to be reliable. Variable **Imports** was dropped from the model due to perfect collinearity with variable **Exports**. Variables **M2** also appears to be insignificant for this model. The final results are presented below:

Table 9: Model 3

OLS, using observations 1995:2-2010:4 (T = 63)
Dependent variable: l_inv_gdp
HAC standard errors, bandwidth 2 (Bartlett kernel)

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	-4,76276	1,00996	-4,7158	0,00002	***
l_exp_gdp	1,32062	0,285718	4,6221	0,00002	***
l_rem_gdp	0,216082	0,0534952	4,0393	0,00016	***
l_GDP__	0,636286	0,162259	3,9214	0,00024	***
l_inv_gdp_1	-0,208195	0,0968559	-2,1495	0,03578	**

R-squared	0,802649		**Adjusted R-squared**		0,789039
F(4, 58)	86,05328		**P-value(F)**		1,05e-23

Source: Author's estimations

Note: ***** significant at 10 percent; ****** significant at 5 percent; ******* significant at 1 percent.

The model could explain 80 % of the variation in the dependent variable **Investment.** While the rest 20% are still remains unexplained (they are contained in the error term). All coefficients are

significant at a 99 %. The estimated coefficient of the lagged **Investment** variable is significant at 95 % confidence level and it shows a negative influence on the dependent variable. **Exports** represent a significant and positive impact on the level of investment. Using this variable it is possible to control for the access to the international trade (Bjuggren *et al.,* (2010). It is well know the fact that the access to international market is considered to be one of the most important factors in the decision about where and how much to invest. Moreover, an increase in the level of exports by 1% will enhance the growth in the investment by 1, 32 %, other things being equal. **GDP** variable is positive and significant at a 99 % confidence level. The result suggests that an increase in GDP by 1 % will lead to a growth in investment level by 0, 63 %, other things being equal. So, it can be concluded that **Exports** and **GDP** positively induce **Investment**.

Analyzing the obtained results, it is remarkable the fact that **Remittances** is positive and significant at a 99 % confidence level. An increase in **Remittances** by 1 % enhances the growth in the **Investment** level by 0, 21 %, other things being equal.

Bjuggren *et al.,* (2010) reached the result that a small part of remittances is invested. Moreover, these inflows are not destined for accumulation of the capital, but only for consumption. Also, the same authors pointed out that the use of remittances for investment depends primarily on the development of the financial sector. They reveal that the growth in investment is reached in presence of the developed financial sector, the institutional quality, remittances and a healthy credit market. In the present model, unlikely in the model of Bjuggren *et al.,* (2010), the financial variables have been omitted due to their insignificance. Same result was obtained by Giuliano & Ruiz-Arranz, (2005). In the present case it cannot be affirmed that remittances increases investment only when the financial sector is less developed and vice versa. However, remittances play an important role in enhancing the liquidity constraints especially when there is a limited access to credits.

All tests are performed for the last model like in previous models. The heteroskedasticity problem is overcome by using **Robust standard errors** procedure. There is no presence of collinearity in the model, no autocorrelation. The main assumptions of the OLS are not violated. The following figure presents the goodness of fit of the third model.

Figure 14: Plot of actual against fitted values for Model 3
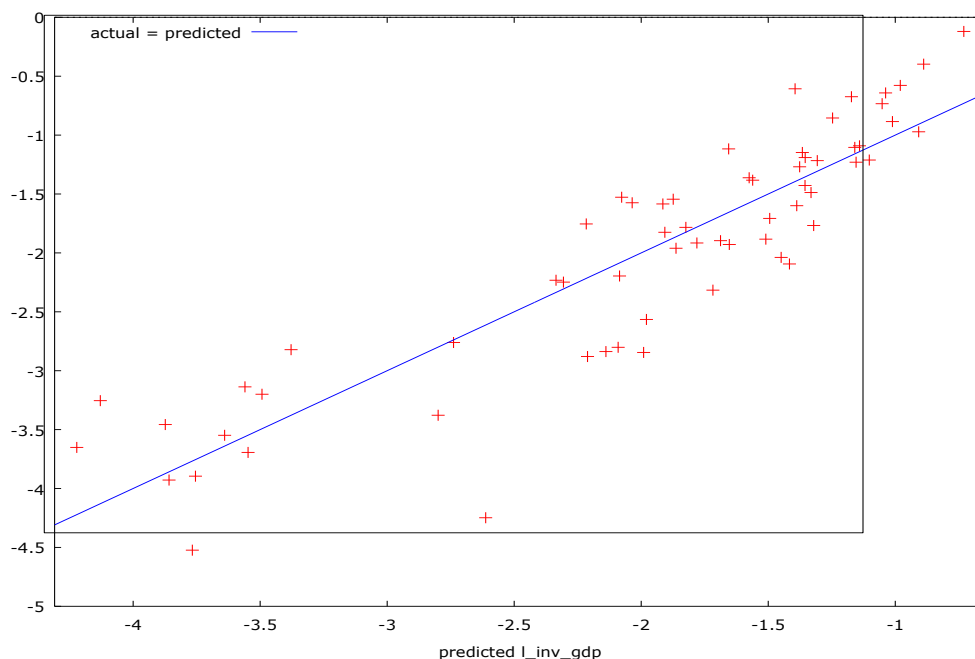
Source: Author's estimations

Regarding the case of Moldova, it is important to mention that the sum of remittances taken as an annual amount of inflows represent a significant volume of funds. In 2010 the migrant transfers constituted 1, 2 milliard U.S dollars. Moreover, according to the BNM, during the 15 years (since data started to be collected for remittances), in country has been sent an amount of 7, 6 milliard U.S. dollars which represent an amount of 2,8 times higher than the total FDI. These are only official statistics. Only 60-70 % of total remittances are sent home via banking sector. Rest of money is sent via informal channel. Moreover, according to expert group IDIS Viitorul, about 1, 5 million of populations from Moldova are direct beneficiary of the remitted funds. Most of them are from rural part of the country.

Usually migrant transfer money monthly and an average amount sent home is 100-200 U.S. dollars. These funds are enough for consumption per month and for paying utilities. It seems that monthly amount of money send home is too small to be enough to invest them. In the same time it should be taking into account the inflow of money through informal channel. Moreover, according to Sintov *et al,* (2010), Moldova suffers from restricted opportunities for investment activity. Still, many migrants who own some capital or savings for investment and are willing to assume some risks, usually choose Moldova for this purpose. Most frequent type of investment

is classified to be "non-productive" investment, in particular, in housing. Sintov *et al,* (2010), in their study result to the conclusion that this type of investment can generate employment and revenue for many non-migrants or ex-migrants. Usually, migrants invest its capital in rural areas, in agricultural activities, while in urban areas investments are mostly made in retail, trade and construction. Another important investment for Moldovans is education.

Summarizing the obtained results and the actual facts about the impact of remittances on investment, in can be concluded that there is an influence on investment from the migrant's money send home. Most of investments are done using only earned money from abroad. Migrants are not used credits from banks for this purpose (Sintov *et al,* (2010). This is the exactly the substitutability effect between remittances and the financial sector. Still the real impact of remittances cannot be precisely estimated due to informal transfers of money.

Chapter 9

Conclusion and Policy Recommendations

The Republic of Moldova is characterized by a large scale labor emigration and their remittance flows have been one of an important leverage in shaping the economic growth in last years. The aim of present paper was to increase the understanding of interaction between remittances and financial development and its impact on economic growth of Moldova. Also, this research tried to estimate the impact of remittances on the investment level of the recipient country. The model uses a time series quarterly data for a period of sixteen years (1995-2010).

The main insight from this study is that remittances influence positively and significantly the economic growth. The current research is in consistency with the findings reached by Giuliano & Ruiz-Arranz (2005) and Aggarwal *et al*, (2006). Moreover, the results indicate that the influence of remitted funds on economic growth is decreasing with the level of the development of financial sector of Moldova. To be more precise, remittances have compensated for the deficiency of the financial system. These transferred money act as a substitute for financial services in stimulating growing. Remittances are used to alleviate the people's necessity in credit and insurance which the financial market is not able to provide. Also, the findings reveal that there is an investment channel through with the remitted funds can spur the economic growth when the financial sector of the country is less developed. Thus, it can be inferred that remittances do improve living conditions, but also increase the economic growth and the investment level of the country. This conclusion is in line with the findings of Bjuggren *et al.,* (2010).

In order to attract these significant inflows of funds, the government should invest more in the financial structure of the country such that people's confidence in the country's financial system increases. This would leads to a subsequent increase in the flow of remittances. Nevertheless, one of the problems is the fact that people from Moldova reveal a lack of trust in the financial

and banking systems of the country, as well as disappointment with bank operations and services. That is why the huge financial resources originating from migration are largely kept at home representing one of oldest tradition to save money "*under the mattress*" (Sander *et al,* 2005). As a result, having no access to these financial funds, banks are limited in their capability to contribute to the development of the country through provision of credits. Catrinescu *et al,* (2009), denote that the key factor for increasing the longer-term growth influence of remittances consist in implementation of economic and governance policies that provide a comprehensive business economic environment.

Another recommendation for the governmental structure would be the formation of the special structures and institutions which would be responsible for keeping records about external migration. Also, an established cooperation between Moldova and the destination countries of migrants would easier the processes of dealing with migration problems. Sintov *et al,* (2010), suggest strengthening the relations with the Moldovan diaspora using embassies, migrant organizations, informal communities, etc. In this way it will be possible to inform migrants on investment opportunities in the country of origin in order to attract remittances inflows. It will be in a great advantage to inform the migrants about loan provision opportunities, offers for grants or other programs supporting entrepreneurial activities.

For the banking sector of Moldova, one of the right steps to get access to remittances would be the increase in level of financial literacy provided to migrants. Particularly this information should be offered to migrant families from the rural area of the country because they represent the main remittances beneficiaries. However, the crucial approach for the banking sector in getting access to remitted funds consists in optimizing the bank services. To be more precise, first of all, banks should reduce money transfer costs. Analyzing today's costs, it can be concluded that they are exaggerated high and consecutively migrants are not interested to use formal channel of transfer. Moreover, banks should develop the e-banking system so that migrants can personally manage their funds and attract savings towards banks. Also, such actions like increase in interest rate for deposits, longer term loans will lead to an increase of people's level of confidence in the banking system of Moldova.

Finally, it can be concluded that even though migration and remittances had improved welfare of the families left home, it is important to realize these funds cannot be viewed as a universal solution to all development problems (Piracha & Saraogi, 2010). Government must use reliable policies that view migration as an integral part of the expansion plan. In this way, it will help the country to maximize benefits from labour mobility and from inflow of remittances. One thing should be bear in mind that these transferred funds arise first of all due to the failure of development across less-developed countries. Ratha (2003), gave the most suitable specification of migrants money saying that "*although remittances can be leverages for the development of poor countries they should not be considered as a substitute for development at home*".

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Appendix A

The interview with the Emigrant from Moldova.

1. *Why do you decide to immigrate to Italy?*

Emigrant: I decided to leave Moldova because it became very difficult to live and to support my family. In 2004, my cousin emigrate and she told me that is very good life in Italy and salaries are much higher than in Moldova. My daughter was in her last year of high school and planned to purse a Bachelor degree. I had to think in advance of the way to pay the fees for her studies, which are very high, in comparison to our annual income.

2. *How did you immigrate?*

Emigrant: My cousin told me about a group of Moldavians who in exchange for 2500 euros open a touristic visa for a person willing to immigrate and provide transportation to the place of destination. Moreover, they look for a job and when the person arrives at the destination place-has a place to live in and a job. I was very lucky to have everything prepared but there are cases when the emigrants are hiding in forests or sleep under bridges, so as not to be caught by the Italian police and sent home. This is the worst that may happen to you because each of emigrants borrowed money to get to Italy. Imagine to be here and to be caught. You are forced to go back with no money, but debt is still remains…So, as to arrive here I paid 2500 euros and I have spent 8 months to repay my debt. Since I immigrate illegally – with touristic visa, during 4 years I had no document certifying (Residence Permits in Italy – Permesso di Soggiorno)*, that I have the right to work and live in Italy. Being afraid to lose my job, I could not visit Moldova during 4 years. Now I got all documents and I am allow to go home any time.

3. *Do you plan to return home?*

Emigrant: As long as I have a job here in Italy, I do not plan to come back. I am even trying to bring my kids to Italy. I have spent 6 years taking care of old ladies in this country and the money earned here – cost me my family life as I forced to be far away from my family. It is very hard to keep family when the couple is separated for a too long period of time.

Appendix B

Definitions and Source of variables

Number	Variable	Description
1	*Growth*	The real GDP of the country in current US dollars. *Source:* NBS of Moldova
2	*Investment/GDP*	Gross Fixed Capital Formation: It includes land improvements such as fences, ditches, and drains; plant, machinery and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings *Source:* NBS
3	*Remittances/GDP*	Remittances – sum of worker's remittances, compensation of Employees, migrant transfer. *Source:* NBM
4	*Population*	All residents regardless of legal status or citizenship – except for refugees not permanently settled in the country of asylum, which is generally considered part of the population of the country of origin. *Source:* NBS
5	*Imports/GDP*	The value of all goods and other market services received from the rest of the world. This indicator also include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. *Source:* NBS
6	*Exports/GDP*	The value of all goods and other market services provided to the rest of the world. This indicator also include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. *Source:* NBS
7	*Lending rate*	The rate charged by banks on loans to prime customers *Source:* World Bank
8	*Government/GDP*	Represents the Government consumption *Source:* World Bank
9	*Credit/GDP*	Claims on the private sector by the deposit money banks and other financial institutions as a share of gross domestic product. Unlike *assets*, it does not include credits to government and public enterprises *Source:* Financial Indicators, IMF
10	*M2/GDP*	The liquid liabilities of the financial system. This indicator equals currency plus demand and interest bearing liabilities of banks and nonfinancial intermediaries. *Source:* NBM
11	*Inflation*	The annual percentage change in the consumption price index *Source:* NBM

Content of Enclosed DVD

There is a DVD enclosed to this thesis which contains data and empirical results obtained in Gretl software.