Master's Thesis

A Study on Determinants and Economic Impacts of Remittances:

The Case of Armenia

August 2015

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ABSTRACT

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For over the past few years remittances have represented the largest source of foreign income in a number of developing economies. Even though scholars agree that diaspora is an important source for the economic, social and political development, the key empirical question is whether remittances encourage long-run economic growth.

For the past several decades, remittances appear to be one of the stable and important sources of financial flow to Armenia. Armenia is a small country, having poor economic fundamentals, however, due to the country's very large diaspora, Armenia receives large remittance inflows. Despite of its limited geo-economic possibility, Armenia is among the 15 largest remittance recipient countries in the world. Thus, macroeconomic effects of remittance have become an important aspect in defining the development of the country. Even though there is a number of existing literatures on the impacts of the remittances on the household and the national

economy, more research is needed to study the reasons behind remitting decision of Armenian migrants, and the economic impacts of the remittances.

This paper intends to examine main determinants and motivations behind the Armenian migrants' decision to remit based on previous studies, as well as to estimate the impacts of remittance on the Armenian economy, by testing the hypothesis that the impact of remittances on growth is affected by the level of financial development and the quality of institutions in the home country.

The results show that macroeconomic factors, such as home and host GDP per capita, exchange rates and interest rates have significant impacts on the Armenian remittance receiving trends. Also, among the motivations behind the migrants' remitting decision, self-interest motive dominates altruistic intentions. This can be explained by the close ties of the migrants with the families in the home country, as well as the tendency of short-term migrations over long-term ones in case of Armenia.

Although the results of the estimation of impacts of remittances on the economic growth are negative, nevertheless, countries with well-established domestic institutions and financial stability are proved to be significant in enhancing remittance contribution to the economic growth.

Key words: Remittance, Macroeconomic determinants, Armenia, Economic Growth

Student Number: 2013-23981

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I. INTRODUCTION

Over the past several decades, international migration is said to have increased greatly. If in 1950-1960 the population both in developing and developed countries was mainly growing naturally, by 2000-2010, in the developed regions the primary source of population growth became net migration[1]. People have been moving from countries to countries in search of a better life. With this phenomenon, remittances, the money sent back to their home country by migrants, have grown significantly, becoming one of the vital sources of financial flow. Studies, based on domestic surveys and conducted by the World Bank in the 1990s, suggest that international remittances helped lower poverty by nearly 11 percentage points in Uganda, 6 percentage points in Bangladesh, and 5 percentage points in Ghana[2]. In 2014 officially recorded remittance flows globally were US $436 billion, which is 4.4% higher than in 2013. However, for the year 2015,

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[1] Net international migration refers to the difference between the number of immigrants and the number of emigrants. If more people immigrate to the country than emigrate from the same country, the country's population increases from positive net migrations. Conversely, when people emigrate more than immigrate, the country loses population through negative net migration. – Definitions: UN Department of Economics and Social Affairs, Population Division International Migration Report 2013, Data Considerations

[2] Global Economic Prospects 2006: Economic Implications Of Remittances And Migration, World Bank

remittances are expected to go at a slower space, reaching US $440 billion. Remittances are especially crucial for developing countries. These financial flows were three times larger than ODA in 2013, and are said to be steadier than private debt or portfolio equity flows[3].

Since this phenomenon plays an important role in the receiving country's economy, many scholars and policy makers have been paying attention to remittances and their impacts in the receiving country's households and economy; remittance is regarded as a potential tool for enhancing economic growth in the home country. Some studies based their attention on the possible determinants of remittances, which would allow the country to get more remittances. Others have been trying to project the potential impacts of the large amount of financial inflows to the country.

Armenia is a small country, having poor economic fundamentals. However, due to the country's very large diaspora, Armenia receives large remittance inflows. Armenia is among the 15 largest remittance recipient countries, which explains the fact that remittances are estimated to be twice higher than FDI[4]. In 2013 remittances comprised 21%

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[3]World Bank "Migration and Development Brief", April, 2015, http://siteresources.worldbank.org/ INTPROSPECTS/Resources/334934-1288990760745/MigrationandDevelopmentBrief24.pdf

[4] Armine Ghazaryan, and Guillermo Tolosa. "Remittances In Armenia: Dynamic Patterns And Driver." *IMF Working Papers*

of the country's GDP. Thus, it is obvious that remittances play a significant role in the country's economy[5].

Due to the growing scale of remittances to Armenia, there are a number of studies, illustrating the short and long run impacts of remittances to the country. Some scholars also sought to investigate the microeconomic determinants of remittances to Armenia; however the overall macroeconomic aspect of remittances still needs more studies.

The goal of the current paper is; first, to examine the motivations that play a significant role in the migrants' decision to remit to Armenia based on the previous studies. Since the size of remittances depends on the reasons of the migrant workers, analyzing migrants' motivation is crucial. Alongside with analysis of the decisions of the migrant workers, the trend of the Armenian remittance inflows will be presented to help better understanding the economic ties between Armenia and remittance sending countries. This will help in finding out what macroeconomic factors in home or host country influence the flow of remittances back to the country and which of the main motivations, altruism or self-interest, plays a significant role in migrants' decision. Going further, for the second part of this paper, the impact of remittances on the Armenian economy is tested. Remittances are studied alongside with a number of financial indicators to see whether the impact of remittances on growth is affected by the level of financial development or the quality of institutions in the home country.

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[5] World Bank World Development Indicators

The organization of this paper is as follows; the section following the introduction covers the trends and nature of remittance inflows to Armenia, which is followed by the third section. Here literature review on the micro and macroeconomic determinants of remittances, as well as the economic impacts of remittances are presented to make base for the empirical studies of the following section. Section 4 explains the data sources and methodology, used for the analysis. In the section 5, the empirical results are presented and variables explained. Lastly, the final section presents the conclusion of the current paper and possible extensions.

II. REMITTANCES IN ARMENIA:
NATURE AND TRENDS

2.1 **Background**

The early transition period of Armenia after the collapse of the Soviet Union in 1990 can be characterized by a deep system crisis, which was expressed in economic and energy crisis, decrease in living standards, malfunctioning of financial system, accompanied by hyperinflation, as well as the involvement in Karabach conflict, and blocking of transportation routes[6]. The country's economy was in a downward spiral, and the situation in Armenia was further exacerbated due to the Karabach conflict, leading to an increase in migration outflows.

Compared to the situation of the Armenian economy in 1990, the years of 1992 and 1993 were faced with hyperinflation of 1200% and 10.000%, respectively. There was also a downturn in the GDP by 41.8% in 1992, which was higher than the average ratio in other CIS countries by more than 6 times[7]. These factors together propelled significant migration from the country, making it a mass phenomenon.

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[6] Ministry Of Trade And Economic Development Of The Republic Of Armenia, "The Concept Paper Sustainable Economic Development Policy For Armenia", 2003

[7] Arthur Nakhshikyan, "Economic Growth And Fair Distribution In Armenia", 2001, Budapest, Hungary

During 1994-2002 - the period of continuous economic growth - which was characterized by stabilization of starting conditions[8], implementation and maintenance of macroeconomic stability[9], and the formation of the "open" economy[10], the economic conditions of the country were somehow stabilized though still greatly dependent on Russia.

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[8] This was the combined result of overcoming the energy crisis in 1995, declaration of ceasefire in Karabach conflict in 1994, and alleviation of blockade of transportation and energy routes.

[9] Through introducing control over inflation, introduction of the floating exchange rate of the national currency, elimination of most budget subsidies, etc.

[10] Compared with other post-soviet countries the most "open" model of economy was formed in Armenia, since there was no need for protectionist barriers

2.2 **Trends of Remittances 1990~2013**

Remittance inflows to Armenia have been growing significantly for the past several decades, becoming one of the most important inflows for the Armenian economy. Remittances are estimated to be twice higher than FDI, eight times higher than bank flows and official government inflows to the country[11].Armenia being among the 15 largest remittance recipient countries in the world, remittances play a significant role in the country's economy[12].

The summary of trends of remittances in Armenia is provided in this section for better understanding the contexts within which the remittances are analyzed. All the figures are presented in the last section of this study, Appendix. During the last several decades the inflow of remittances to Armenia saw a dramatic increase, mainly being explained by the increasing number of the Armenian diaspora. Thus, for the sake of the current research, bilateral migration trends will be shown first to help build basis for the analyses of bilateral remittances of Armenia. <Figure 1>, presented in the Appendix, shows the trend of Armenian migration for a 10 year span between the years 1990, 2000, 2010, and 2013. As the figure describes, the migration to the less developed regions decreased by 18 %,

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[11] Armine Ghazaryan, and Guillermo Tolosa. "Remittances in Armenia: Dynamic Patterns and Driver." *IMF Working Papers*

[12] World Bank World Development Indicators

reaching 43000 in 2013, whereas the migration towards more developed regions kept increasing over the last 20 years.

The next figure, <Figure 2>, represents the top 10 migration destinations for the Armenian migrants. As it was expected, Russia is number one destination for the Armenian migrants, ever since the country got independent in 1991. The next popular host country for the Armenians is the United States followed by other CIS countries, like Ukraine, Uzbekistan, and Kazakhstan and several European countries, mainly France, Germany, and Greece[13].

As the figure presents, the role of the CIS countries is crucial for the Armenian economy as migrant receiving countries. The consequence of this is the large share of remittances sent by relatively recent migrants or seasonal workers working in Russia[14]. This trend talks about the increase in the purchasing power of the seasonal workers and pull factors for the further migration.

Going back to the trends of remittances sent to and from Armenia, <Figure 3> is presented to visualize the overall flows of remittances to Armenia, as well as those outflowing from the country.

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[13] United Nations, Department Of Economic And Social Affairs, Population Division (2013)

[14] 89 % of remittances come from Russia, as 80% of Armenian migrants workers go to Russia, out of which more than 80% work in the construction sector.

According to the figure, remittance flows have experienced large swings. In the first years after the Armenian independence, remittances grew seven-fold between the years 1994 and 1998[15]. The data, reconstructed into the <Figure 3>, depicts that inward remittance flows to Armenia in 1995 were only USD 65mln; however, in just 10 years it reached USD 435mln. Later, there was a gradual increase in the net remittance flow to the country, which was followed by a large downturn of 25% when the crisis of 2009 took over.

As was already mentioned, in Armenia most remittances come from Russia, in contrast to other developing economies, the sources of remittance inflows for which are usually advanced economies[16]. The trend of the outflows of remittances, both to the world and to Armenia, varies highly between Russia and advanced economies. Between the years 2004 and 2008, the remittance outflows from Russia increased 260%, as compared to only 58% increase from the US to all countries. Similarly, the inflows to Armenia increased dramatically from Russia especially for the boom years of 2004 to 2008. However, when the crisis of 2009 hit, the fall in remittances from Russia was also larger, compared to that in the US. Thus, <Figure 4> is presented to depict the trends of remittance flows from

[15] Armine Ghazaryan, and Guillermo Tolosa. "Remittances in Armenia: Dynamic Patterns and Driver." *IMF Working Papers*

[16] Ratha, Dilip. "Workers' Remittances: An Important and Stable Source of External Development Finance." *Global Development Finance*, 2003

Russia and the US to the world and to Armenia. As the source for this figure, National authorities, Haver Analytics, and IMF staff estimations have been used.

Even though the huge amount of remittance inflow to the country already speaks for itself as a contributor to the country's economy, the importance of remittances is more obvious once they are compared to other key economic determinants. Thus, <Figure 5> illustrates the share of remittances in the Gross Domestic Product (GDP) of Armenia.

Remittances in Armenia became a crucial player in the economy in the last several years. Even though since 1995 the inflow of remittances was more than 5% of the Armenian GDP, it was after 2004 that their growth in volume and importance was noticed. In 2011, total remittances constituted almost 20% of the GDP, making Armenia one of the 15 largest remittance receiving countries. Just two years later, remittances had another drastic upward movement, increasing by 22%[17] and reaching 23% of the Armenian GDP.

To show that the remittances truly play a crucial role in the Armenian economy, <Figure 6> is presented below, which represents the comparison of FDI, ODA, and Remittance inflows to Armenia. In the first years after gaining independence, Armenia was enjoying higher inflows of ODA to the country's economy; however, starting from the year 2004, remittances keep increasing steadily and drastically, becoming the most important inflow for the country's economy. Thus, in 2013, FDI and ODA together were estimated to be less than 5% of the Armenian GDP, while remittance inflows reached 23% of the GDP.

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[17]Migrants' Remittances, Annual, 1980-2012, Knoema.Com

Such phenomenon explains the importance and resiliency of remittance flows to the country, and the country's dependency on its migrants in CIS and other countries.

III. MACROECONOMIC ASPECTS OF REMITTANCES: LITERATURE REVIEW

3.1 Determinants of Remittances

The debates about the motivations behind remitting decisions were initiated by Lucas and Stark (1985), who in their seminal paper set up several hypotheses about the major motivations for remitting. According to Lucas and Stark, there are three main motivations to remit; pure altruism, pure self-interest, and a mixture of these two extremes – tempered altruism, or enlightened self-interest.[18].

According to the pure altruism hypothesis, the probability to remit is higher if the receiving households in the home country are lower income families, since this view suggests that migrants' decision to remit is driven by the intention to improve the welfare of their households[19]. Thus, under this model, remittances are expected to increase with the migrant's income, and decrease with the recipient income[20]. Also, the possession of lands

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[18] Lucas, Robert E. B., and Oded Stark. "Motivations to Remit: Evidence from Botswana." *Journal of Political Economy J POLIT ECON*, 1985, 901

[19] Bohra-Mishra, Pratikshya. "Motivations to Remit: Evidence from Chitwan, Nepal." *Contemporary Social Science*, 2012, 322-37

[20] Hagen-Zanker, Jessica, and Melissa Siegel. "The Determinants of Remittances: A Review of the Literature." *SSRN Journal SSRN Electronic Journal*, 2007

and houses in the remittance receiving families are assumed to have a negative effect on the probability to remit, since they can be used as a source of income.

The second main reason to remit is self-interest. According to the existing theory on inheritance motive, households that have higher possibility of inheriting, prior to receiving remittances, are more likely to receive remittances once their relatives migrate, because migrants' "good behavior" of sending remittances will increase the future likelihood of inheritance. Thus, it is more likely that in this case migrants will be in closer ties with their relatives.

According to this view, remittances increase with the household income and assets, the probability to inherit, which also depends on the number of siblings and age of parents[21]. Some researchers claim[22] that the number of the siblings will be positively related to the decisions of remitting, since the migrants may view their siblings as potential competitors for the possible inheritance. However, De la Briere [23] suggests that it may as

[21] Piracha, Matloob, and Amrita Saraogi. "The Determinants of Remittances: Evidence from Moldova." *Oxford Development Studies*, 2012, 467-91

[22] Hagen-Zanker, Jessica, and Melissa Siegel. "The Determinants of Remittances: A Review of the Literature." *SSRN Journal SSRN Electronic Journal*, 2007

[23] Brière, Bénédicte De La, Elisabeth Sadoulet, Alain De Janvry, and Sylvie Lambert. "The Roles of Destination, Gender, and Household Composition in Explaining Remittances: An Analysis for the Dominican Sierra." *Journal of Development Economics*, 2002, 309-28.

well decrease the incentives to remit, since sharing the potential inheritance with other siblings decreases the share of the inheritance. Hence, a larger number of especially male siblings may as well have a negative impact on the remitting decisions of the migrants.

Remittances can also be sent with the incentives for portfolio choice in the home country. In this case, remittances may be positively correlated with economic variables, like the interest rates between the sending and receiving countries[24].

Besides the mentioned theories of remittance motives, there are other variables, like age and gender that may influence the migrants' decision to remit. Especially interesting is the significance of gender based on the cultural context. For example, according to the studies, conducted by Osaki (2003), and Blue (2004), there is a higher tendency of remitting among females in Thailand and Cuba, whereas Cai (2003), Wagle (2009), and Pratikshya (2011), find that male migrants are more likely to remit in China and Nepal[25]. In case of Armenia, due to the traditional Armenian norms of male's central role in the household, I hypothesize that male migrants are more likely to remit. Also, not less important is the migration motivations in predicting the potential flows of the

[24] Aggarwal, R., And N. Spatafora, 2005, "Remittances: Determinants And Impact," Mimeo *Washington: International Monetary Fund*.

[25] Bohra-Mishra, Pratikshya. "Motivations to Remit: Evidence from Chitwan, Nepal." *Contemporary Social Science*, 2012, 322-37

remittances, since work migrants are more likely to remit than migrants for other purposes[26].

Finally, macroeconomic studies of remittances focus more on macroeconomic factors that may have impacts on the motives to remit. From this point of view, the decisions to migrate and the decision to remit are separated, and the propensity of remitting decision depends more on factors, such as exchange rate, interest rate and inflation. Here also, remittances can be volatile, as in other cases.

In the study of "International Migration, Remittances, and Household Investment", Yang found that Filipino migrants' remittances were sensitive to the depreciation of the peso during the Asian financial crisis, as a result, they sent less money to the home country during those years[27]. This study shows that there is some targeted amount that the migrants want their relatives to receive. To continue this view, in analyzing Turkish migrants' behavior, Straubhaar (1986) depicts that the flow of remittances to Turkey is barely

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[26] Cai, Qian. "Migrant Remittances and Family Ties: A Case Study in China." *Int. J. Popul. Geogr. International Journal of Population Geography* 9 (2003): 471-83

[27] Yang, Dean. "International Migration, Remittances And Household Investment: Evidence From Philippine Migrants' Exchange Rate Shocks." *The Economic Journal* 118 (2008): 591-630.

affected by the exchange rate volatility[28]. The reason for this may be the lack of any other choice but to send money because of the severe economic hardships faced by their loved ones at home.

Apart from the willingness of the migrants to remit and help their family back in the country of origin, the means to send these remittances may have a huge impact on the actual size of remittances. High official costs or the presence of the dual exchange rate may hinder the propensity of sending remittances. Freud and Spatafora (2005) found a negative association between these two factors and the actual remittance flows in the analysis of 104 countries[29]. This also can determine whether the migrants will make use of formal or informal channels of transfers. Informal survey of Armenian migrants showed that formal financial channels are much more widely used by Armenians sending remittances from Russia than from Western Europe or the US.

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[28] Straubhaar, Thomas. "The Determinants of Workers' Remittances: The Case of Turkey." *Weltwirtschaftliches Archiv*, 1986, Vol. 122, 728-40.

[29] Freund, Caroline, and Nikola Spatafora. "Remittances : Transaction Costs, Determinants, And Informal Flows." *Policy Research Working Papers* 3704 (2005).

And the reason is the relatively low transaction costs within CIS countries, which encourages remittance transmission through formal channels[30].

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[30] Bryan W. Roberts, King Banaian, Suren Gevinyan, and Armine Mirzoyan. "Remittances In Armenia: Size, Impacts, And Measures To Enhance." 2004. http://pdf.usaid.gov/pdf_docs/PNADB948.pdf.

3.2 **Economic Impact of Remittances**

Going ahead from the discussions on the determinants of the remittances to their actual impact on the receiving country's economy, it should be noted that this is a sphere of controversies among scholars. Some scholars tend to think that there is a possible positive correlation between the flow of remittances to the country and the economic growth [31] (Dilip Ratha, 2013), while others deny the significance of the remittances in the development of the country's economy[32] (Adolfo Barajas., 2009). And yet the third group of scholars claims that even though the positive impact cannot be denied, it doesn't have any long-term influence on the economic growth [33](World Bank, 2008).

Ever since 1990, the impact of migration and remittances was a question of heated debates, making up a chain of pessimism and optimism about their role in the home country's economy. The traditional view was that remittances cannot promote growth; moreover, all they do is to exacerbate the nation, by making it dependent on the host

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[31] Ratha, Dilip. "The Impact of Remittances on Economic Growth and Poverty Reduction." 8 (2013).

[32] Gapen, Michael T., Ralph Chami, Peter Montiel, Adolfo Barajas, and Connel Fullenkamp. "Do Workers' Remittances Promote Economic Growth?" *IMF Working Papers*, 2009.

[33]World Bank, Migration and Remittances Factbook 2008

country. According to this view, the only people who can actually gain from remittances are the direct family members of the migrants while the country in general, receives little growth[34]. And even some analysts, like Cuthbertson and Cole (1995), went so far to claim that the government should do something to prevent the migrants from leaving the country, and discourage the remittances.

Nowadays, even though the traditional view has changed, a conclusive answer hasn't been provided on whether or not remittances promote economic growth. While the remittances are said to increase the level of the income of the family in the home country, thus reducing the poverty (Gupta et al., 2007), the long-term impact of remittances is not yet obvious[35].

One way that remittances may affect growth positively is through the increase in investment by the migrants' family in the home country (Funkhouser, 1992, and Woodruff and Zenteno, 2004)[36]. However, according to some scholars, the impact of

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[34] Durand, Jorge, William Kandel, Emilio A. Parrado, and Douglas S. Massey. "International Migration and Development in Mexican Communities." *Demography* 33, no. 2 (1996)

[35] Raju Jan Singh, Markus Haacher, Kyung-woo Lee, "Determinants and Macroeconomic Impact of Remittances in Sub-Saharan Africa", IMF, 2009

[36] Funkhouser, Edward. "Migration from Nicaragua: Some Recent Evidence." *World Development* 20, no. 8 (1992): 1209-218.

remittances starts to decline, once they are mainly consumed than invested. In their IMF working paper, Chami, Hakura, and Montiel (2009) suggest that the remittance flows have stabilizing impact on the output, however, the impact will not be very significant in the countries, receiving large amount of remittances.

Another positive impact remittances can have in the receiving country is the increase in the so-called human capital, by enabling and encouraging more people to pursuit higher education. However, it also may have the negative impact on the population growth, since the urge for schooling may lead to more education migrations and will not have direct impacts on the home country, at least for the short run[37].

Remittances may also influence the growth of the country by affecting the labor force. This impact tends to be negative, since with the inflow of remittance to the household, the recipients may sustain the same standard of living by working less than before. Chami and Fullenkap (2013) refer to this impact of remittances as the drag on the labor supply.

Furthermore, in the longer run, the economic growth of countries receiving remittances the long-run economic growth could be hampered, since the currencies might appreciate. Barajas et al., (2011) showed how remittances affect the exchange rate and can lead to currency appreciation in the home country, which can exacerbate the exports of the

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[37] Chami, Ralph, and Connel Fullenkamp. "Beyond the Household." *SSRN Journal SSRN Electronic Journal*, 2013.

country[38], the so-called Dutch disease effect. Also, Armuedo-Dorantes and Pozo (2004) showed that remittances caused a noticeable exchange rate appreciation in Latin American countries.

Because of these moral hazard problems of decrease in labor force, exchange rate appreciation Chami, Fullenkamp, and Jahjah (2003) propose that the role of remittances in promoting economic growth is dubious. However, Fajnzylber and Lopez (2007) suggest that the impact of remittances is highly dependent on the context. According to them, the quality of institutions stimulates the positive role of remittances in the economic growth, while financial depth may replace remittances in doing so. Giuliano and Ruiz-Arranz (2005), in their study, confirm these findings.

Since remittances have a dual impact on the country's economy, not only households but the government also benefits from remittances. Abdih, Chami, Barajas, and Ebeke (2012) in their analysis of Remittances Channel and Fiscal Impact in the Middle East, North Africa, and Central Asia, depicted that remittances can provide the needed fiscal space, which can allow some countries to increase spending, and lower taxes. Thus, in a way, the impact of remittances depends on how the government choses to use them. The country can maintain higher levels of debt when the tendency of the remittance flows

[38] Barajas, Adolfo, Ralph Chami, Dalia Hakura, and Peter Montiel. "Workers' Remittances and the Equilibrium Real Exchange Rate: Theory and Evidence." *Economía* 11 (2011): 45-94.

to the country is high[39]. Remittances allow countries to borrow more, since now they are in a "safe zone" of potentially being able to pay back with the money, received from the remittances. With the extra borrowings the government can enhance the country's economic growth through investments[40].

In summary, the literature on the impacts of remittances on the economy is vast and diverse. Scholars have come up with different answers to the same question, ranging from a vast scope of positive and significant impacts of remittances to the dark side of the moral hazards, caused by the remitting decisions, which can hamper the economy of the receiving country, leaving the country worse off than even before getting any financial flows from the migrants living abroad. Thus, even though there are a number of studies on the determinants and the impacts of remittances separately, more research is needed on these aspects together, in order to see the holistic picture.

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[39]Fullenkamp, Connel, Thomas Cosimano, Michael Gapen, Ralph Chami, Peter Montiel, and Adolfo Barajas. "Macroeconomic Consequences of Remittances." *Occasional Papers* 259 (2008).

[40]Chami, Ralph, and Connel Fullenkamp. "Beyond the Household." *SSRN Journal SSRN Electronic Journal*, 2013.

IV.   DATA AND METHODOLOGY

After reviewing the existing literature on the micro and macroeconomic determinants of remittances, this study focuses on the macroeconomic determinants for the sake of the second part of the study. Since the ultimate goal of the current study is to observe the economic impacts of remittances on the Armenian economy, defining macroeconomic determinants is of great importance. Going further, several factors determining overall development are studied alongside with the flow of remittances to the country, to project the impact of remittances on the growth of the Armenian economy, based on previous studies of Giuliano and Ruiz-Arranz (2005), and Raju Jan Singh, Markus Haacher, and Kyung-woo Lee, (2009).

The data for the first part of the study includes a twenty year quarterly observation between the years 1993 and 2014. The data used for remittance inflow to Armenia, which is the dependent variable, is derived from the Balance of Payments quarterly reports of the Republic of Armenia. From 1993 to 2011 Balance of Payments was compiled by National Statistical Service (NSS) of the Republic of Armenia, and starting from 2011 it is compiled by the Central bank of Armenia. The dependent variable, remittance inflow, is expressed as the sum of workers' remittances, compensations of employees, and migrants' transfers. In order to understand how remittances are calculated in the Armenian BOP, it is important to mention that the National Statistical Service (NSS) classifies Armenian workers abroad

into three categories: non-emigrant workers, those who have been working abroad less than a year, emigrant workers, those being abroad over one year, but less than two, and diaspora, people, living abroad for more than two years. The shortcoming of the data is the lack of the ability to reflect the inflow of remittances through informal channel.

The datasets for the independent variables for this study are derived from the World Bank, the CBA[41], NSS[42], and FSSS[43]. These independent variables were selected based on previous studies and reviewed literature. By choosing these variables, I would like to test whether these macroeconomic determinants will turn out to be significant also in predicting the remittance flow to the Republic of Armenia. The independent variables are; GDP per capita of the home and host countries[44], population density of the home country, inflation rate in the home country, exchange rates in the home and host countries, as well as the interest rate of the home country. By seeing the correlations between these macroeconomic variables and the inflow of remittances to Armenia, it will be possible to illustrate the main motivations of migrants' remitting decisions.

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[41] CBA stands for the Central Bank of the Republic of Armenia www.cba.am

[42] National Statistical Service of Armenia http://www.armstat.am/am/

[43] Federal State Statistics Service, Russian Federation, http://www.gks.ru/

[44] Here host country includes only Russia, for the purpose of the study, since the large deal of remittances, 89% of the whole remittance inflow to Armenia, comes from Russian Federation

The determinants for the second part of this study are set to project the macroeconomic impacts of remittances. Here also, World Bank Indicators were used as the main source for the reconstruction of the data for variables, like government expenditure, and trade openness. United Nations Development Programme was used as the source of institutional qualities. In choosing the indicators, I followed the list of variables discussed in the literature (e.g., Giuliano and Ruiz-Arranz, 2005; Fajnzylber and Lopez, 2007, and Raju Jan Singh, Markus Haacher, and Kyung-woo Lee, (2009)), to which I added indicators of financial development.

There are 2 equations in the current study; the first equation is aimed at finding the significant determinants of the remittance flows to Armenia, while the second is set to illustrate the economic impact of remittances on the country's economy. Data regression analysis was conducted on the collected data based on the following two equations.

1) In order to project the significance of these factors as the determinants of remittance inflows to Armenia, the following equation (1) will be estimated:

(1)

$$\text{InRem } i_t = \beta 0 + \beta 1 \ln GDPp/ci_t + \beta 2 \ln GDPp/cHost_t + \beta 3 InDensti_t + \beta 4\ Infla\ i_t + \beta 5\ ExRt\ i_t + \beta 6\ ExRt\ Host_t + \beta 7 IntRti_t$$

In this equation, the dependent variable, **Rem i_t**, is the sum of the remittance inflow to the country **i**, which is the Republic of Armenia in time period **t,** expressed in USD.

As for the independent variables, **GDP p/ci_t** and **GDP p/c$Host_t$** are GDP per capita for home and host countries for time period t, respectively. Here, host country refers only to Russian Federation. Although remittances don't come from only one country, more than 85% of remittances flow from Russian Federation. Thus, in this study, all the variables referring to host country are the indicators of the Russian economy. According to the pure-altruistic motive of migrants to remit, remittances increase alongside with the migrants' income and decrease with the increase of the recipients' income. Thus, I hypothesize that the dependent variable, **Rem i_t,** will increase when **GDP p/c$Host_t$** increases, and will decrease when there is an upward movement in **GDP p/c i_t**.

Denst i_t presents the population density of the home country for the time period t, expressed in people per square kilometer. Population density will determine the potential inflow of remittances with more people leaving the country. Thus, I assume that **Densti$_t$** and **Rem i_t** will be negatively correlated; the more people leave the country, the more remittances will fly back to the country.

Infla i_t denotes to the inflation rate in the home country for the time period t, which is used to explain the macroeconomic instability of the country. Again, according to the reviewed literature, pure-altruistic motive suggests that migrants tend to help their

relatives-in-need more. Thus, as the inflation rate goes up, it is expected that the remittance inflow to the country will also increase.

ExRt i_t and **ExRt** $Host_t$ are the exchange rates of the home and host countries, respectively, expressed in USD. When the currency depreciates in home country, i.e. exchange rate goes up; I would expect migrants to send less money, since with the depreciation of the currency, the lower amount in the dollar terms might still provide greater purchasing power in the home country when converted to the local currency, allowing the recipients to maintain the same standard of living. Thus, if **ExRt** i_t goes up, I hypothesize that **Rem** i_t will decrease. Also, depreciation of the currency in the host country will lead to the similar outcome, since the purchasing power of the migrants will be relatively less than before the currency depreciation. Consequently, **Rem** i_t will decrease if **ExRt** $Host_t$ increases.

Finally, **IntRt**i_t denotes interest rate of the home country in the time period **t**, which was observed to capture the self-interest motive of migrants to remit. According to this motive, **Rem** i_t is expected to decrease when **IntRt**i_t goes up, since the increased interest rates show the economic instability in the home country.

2) The following equation (2) will be estimated to project the relationship between remittances, financial development and overall growth of the Armenian economy.

$$\ln y_t = \beta 0 + \beta_1 In \, y_{t-1} + \beta 2 In(\frac{Rem}{GDP})_t + \beta 3 In(\frac{Inv}{GDP})_t + \beta 4 In \, FinDev_t +$$

$$\beta 5 PopG_t + \beta 6 In \, InsQ_t + \beta 7 ExR_t + \beta 8 In(\frac{GovExp}{GDP})_t + B9 In \, Open_t + \beta 10 Infl_t +$$

$$\beta 11 \, In(\frac{Rem}{GDP})_t * In \, FinDev_t + \beta 12 \, In \left(\frac{Rem}{GDP}\right)_t * In \, InsQ_t + \mu,$$

In the equation 2, y_t, the dependent variable, is the real per capita GDP of Armenia for the time period t, expressed in USD.

For the dependent variables, the initial level of GDP per capita, remittance inflow, indicators of financial development and a number of control variables have been used.

$\frac{Rem}{GDP_t}$ is the ratio of remittance inflow to GDP for the period t. The variable $(\frac{Inv}{GDP})_t$ denotes to the ratio of Investment to the GDP, again for the time period t.

$FinDev_t$ stands for the index of financial development, which encompasses two indicators, domestic credit and M2[45], both expressed as the percentage of GDP for the specific t time period. According to the previous studies, these two indicators are the main

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[45]M2 refers to the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government, according to lines 34 and 35 in the International Monetary Fund's (IMF) International Financial Statistics (IFS).

determinants of the financial deepening of the economy (Singh, R. J., M. Haacker, and K.-W. Lee, 2009).

$PopG_t$ represents population growth over period of time which can be referred as the indicator of the labor force growth, which is one of the production factors.

Next, $(\frac{GovExp}{GDP})_t$ is included as the ration of government expenditure over the GDP for the time period t, to show the burden of government.

$InsQ_t$ is the index of the institutional quality, which includes legal, political and economic institutional qualities over period of time. Data for these indicators was derived from the National Statistical Service and Central Bank of Armenia.

$Open_t$ is set to indicate trade openness, expressed as the sum of exports and imports of goods and services for the time period t, as the percentage of GDP. Trade openness and the quality of institutions are included as indicators for this equation, since they have been confirmed as important channels of economic growth (Frankel and Romer, 1999, and Acemoglu, Johnson, and Robinson, 2001).

Finally, ExR_t , the real exchange rate, is included to see how currency overvaluation affects the economic growth. All these variables were derived and reconstructed from World Bank indicators and National Statistical Service of Armenia.

The equation (2) is set to test whether the marginal impact of remittances on growth is statistically significant. To see whether the impact of remittances on growth is affected by the level of financial development or the quality of institutions in the home

country, remittances were studied alongside with these indicators and the level of interaction between them was tested.

Regarding this, according to Giuliano and Arranz (2009), there are two scenarios: these variables may turn out to be either substitutes, or complements. In case these variables turn out to substitute each other, the coefficient will be negative, which shows that they work as replacements in a less developed economy. While, in case of the second scenario, there will be positive interacting coefficient between the variables, which will show that remittances in a more developed financial systems are invested directly into the development of the economy. Thus, in this part of the study I intend to check this hypothesis for the case of Armenia. Of course, Armenia being a developing country, I hypothesize that there will be a negative coefficient among the interactions between remittances and financial development indicators, as well as the remittances and the institutional quality variables.

V.   EMPIRICAL RESULTS

5.1   Determinants of Remittances

In this section the results of the estimations of the macroeconomic aspects of remittances, based on the equations and data above, will be presented. <Table 1> reports the estimation results for the first part of this paper about the determinants of remittances. The asterisks, indicated next to the coefficient, show whether the variable is significant to be considered a macroeconomic determinants of remittances.

Due to the problem of multicollinearity, regressions with several sets of variables were ran to determine whether the variables are too interdepend, thus having misleading results.

The first set of variables includes all the potential determinants of remittances; GDP/capita for home and host countries, population density, inflation rate and real exchange rate of home and host countries, and interest rate of Armenia, all expressed in natural logarithm. The result has 85 observations and its explanatory power is 88%. Almost all of the variables have strong significance in

explaining remittances inflow to Armenia, apart from exchange rates in Russia and Armenian interest rates.

The hypothesis, regarding the relationship between home and host countries' incomes and remittance inflows turned out partially true. Doubtlessly, remittance inflows to Armenia increase with the migrants' income abroad, which is expressed by the positive coefficient between host GDP/capita and remittance inflow. However, I expected GDP/capita for Armenia to be negatively correlated with the remittance inflow, trying to test pure-altruistic motive of migrants, which is not the case for Armenia. As we can see, in all the regressions GDP/capita of Armenia has positive coefficient with the remittance, even when there is a significant increase in remittance inflows. This shows that migrants don't try to "punish" their relatives in the home country by reducing their remittances when in home country there are more favourable conditions. This also can explain the self-interest motive behind migrants' remitting decision, since they send money back home for the purpose of future investment or potential inheritance. The positive relationship between the domestic GDP per capita and remittance inflow represents also the strong intentions of the migrants to return home later, and possible close ties with the family, left behind.

The expected result of population density holds true in this regression; the variable is negatively correlated with the flow of remittances, meaning that the more people leave the country, the more remittances will be sent back. Thus, according to the regression results, 1% decrease in population density makes around 10% increase in remittance flow.

Interestingly enough, the results of inflation rate didn't turn out as was expected. According to the pure-altruistic motive, migrants tend to send more money to their families, when the later ones are in need. However, the results here can be interpreted as the propensity of self-interest motives of migrants. According to the table 1, even if there is a decrease in inflation rate, which means that the economy is more or less stable, migrants keep sending more and more money. This may show migrants' intention for further possible investment or inheritance. Thus, here self-interest motive overweighs pure-altruistic one.

Finally, in regards to the exchange rate in the home country, the results contradict the initial hypothesis of being negatively correlated with the inflow of remittances as well. These results coincide with the findings of Straubhaar (1986), who analyzed Turkish migrants' behavior, and depicts that the flow of remittances to

Turkey is barely affected by the exchange rate volatility[46]. And the reason for this may be the lack of any other choice but to send money because of the severe economic hardships faced by their loved ones at home.

In the next several columns results of regressions with some of the variables are presented to check the validity of their coefficient, and avoid the problem of multicollinearity. This issue mainly concerns home and host GDP/capita. Since Armenian economy is highly dependent on Russian economy, GDP/capita trends are almost identical. Thus, to avoid this problem, these variables were included in different sets of regressors. As a result, the significance of Russian GDP/capita increases in the 4th, 5th, and 7th columns of Table 1.Thus, according the results, 1 percentage point increase in host country's income results in similar increase in remittance inflow to the country.

The results of the interest rates of Armenia turn out to be significant only in one observation among the multiple cases. And even though they are significant, the number of coefficient is too small, which means that even if they have positive impact on remittances, it is still unnoticeable. Overall, in regards to Armenia, the

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[46] Straubhaar, Thomas. "The Determinants of Workers' Remittances: The Case of Turkey." *Weltwirtschaftliches Archiv*, 1986, Vol. 122, 728-40.

indicators of interest rates and host country's exchange rate are not significant enough to be considered as determinants of remittances, according to the empirical results of this study.

Thus, based on the results of the regression, in Armenia self-interest motive behind migration prevails over the altruistic motive. This can also be the result of the fact that in smaller and economically less stable countries, temporary migration is prevalent than permanent ones. This explains the close ties of migrants with the family members back in the home country, and the strong intention to return home. This is crucial for countries that heavily depend on remittances, since, as was previously mentioned, according to remittances decay theory, temporary migration is more likely to lead to higher remittances than permanent migrations.

<Table 1: Determinants of Remittances>

Dependent Variable: ln (Remittance)							
Ind. Variables (In)	OLS (Multiple Regression)						
	{1}	{2}	{3}	{4}	{5}	{6}	{7}
(Constant)	58.26** (2.03)	6.48*** (6.41)	81.11*** (3.09)	9.33*** (6.05)	72.22** (2.34)	81.50*** (3.09)	69.94** (2.27)
GDP/c Home	0.67*** (3.77)	0.87*** (4.96)	0.91*** (7.04)			0.91*** (7.02)	
GDP/c Host	0.40* (1.89)	0.34* (1.86)		1.16*** (9.59)	0.93*** (5.75)		0.97*** (5.87)
AMD/USD ex Rate	0.24* (1.86)	0.45*** (4.05)	0.17 (1.41)	0.39*** (3.18)	0.25* (1.82)	0.16 (1.34)	0.24* (1.77)
RUB/USD ex Rate	0.20 (0.83)	0.48*** (3.76)				0.11 (0.47)	0.29 (1.12)
Inflation Rate Arm	0.13*** (-3.05)		-0.11*** (-2.73)	- 0.17*** (-3.98)	- 0.19*** (-4.33)	-0.10** (-2.53)	- 0.18*** (-4.04)
Population Density Arm	-10.59* (-1.76)		- 14.88*** (-2.68)		-13.20* (-2.04)	- 15.11*** (-2.70)	-13.14* (-2.03)
Interest Rate Arm	0.23 (0.58)		0.10 (0.36)	- 0.63*** (-2.98)	-0.18 (-0.58)	0.23 (0.59)	0.16 (0.38)
Observations	85	85	85	85	85	85	85
Adjusted R^2	0.8787	0.8657	0.8759	0.8520	0.8577	0.8747	0.8581

Note: 1) This table represents the results of the following regression; $\ln\text{Rem}\, i_t = \beta 0 + \beta 1 \ln GDPp/ci_t + \beta 2 \ln GDPp/cHost_t + \beta 3 lnDensti_t + \beta 4\, Infla\, i_t + \beta 5\, ExRt\, i_t + \beta 6 ExRt\, Host_t + \beta 7 IntRti_t$

2) t-values are in parentheses

3) ***sig<0.01 (1%), **sig<0.05 (5%), *sig<0.1 (10%)

5.2   Impact of Remittances on Growth

We will now illustrate the results of the second part of this paper about the impact of remittances on economic growth. The results, presented in <Table 2> are quite significant; however the coefficients are not as big as expected.

As we can see, the overall impact of remittances on growth is negative and significant (column 4 to 8). However, when the interaction terms with financial deepening and institutional quality are included, the coefficient is positive. Regressions without the interaction terms show that a 1% rise in the remittance/GDP ratio might reduce the home country growth rate by about 0.5 %. These results are similar to the findings of Chami, Fullenkamp, and Jahjah (2003), who, after seeing the negative impact of remittances on per capita growth, started questioning the growth-enhancing role of remittances. As expected, indicators of financial deepening, M2 and domestic credits are positively correlated with the increase in GDP/capita.

Interestingly enough the expectations about the indicator of the trade openness and institutional quality were not met. Both the indicator of trade openness and institutional quality are highly significant, but have a negative coefficient with the per capita GDP growth rate. Population growth, which can be considered as the growth in labour force, one of the factors in production, is positive and significant in the relationship with per capita GDP. According to the results, 1 % increase in labour force will increase per capita growth by around 1 percentage point. High inflation rate, which may represent the lack of

economic stability, is negatively correlated to the growth in GDP/capita. 1 % increase in inflation rate will result in 0.04 percentage point decrease of the per capita income. Since, the indicator of the investment appears to be in conflict with remittances, because of the problem of multicollinearity, also discussed in previous studies; it is eliminated for the later observations of the impacts of remittances on the per capita income.

Turning to financial development, the coefficients of financial indicators, M2 and domestic credits, are somehow unstable during the tests. In some cases the coefficient of M2 is negative. However, together with the indicator of Remittances to GDP ratio, both these financial indicators, also the institutional quality have positive coefficient. The positive interaction with the indicators of financial deepening and development suggests that remittances in Armenia are complements to financial development; they are directed into productive investment, thus contributing to the development of the country.

The positive interaction between remittances and the quality of institutions suggests that remittances might have less negative impact where the institutional environment is, more or less, favourable for growth. This stresses the importance of well-developed and functioning for home countries domestic institutions, which enhances remittances to have its marginal impact on the overall economy.

<Table 2: Impacts of Remittances on Economic Growth>

Dependent Variable: In (per capita real GDP)								
Ind. Variables (In)	OLS (Multiple Regression)							
	{1}	{2}	{3}	{4}	{5}	{6}	{7}	{8}
(Constant)	16.37***	15.71***	20.28***	18.57***	16.32***	15.84***	24.54***	22.92***
	(11.88)	(11.24)	(6.75)	(11.55)	(12.25)	(11.66)	(7.84)	(8.91)
Rem/GDP	0.09	0.07	-0.30	-0.15	0.19**	0.17***	-0.53**	-0.44**
	(1.57)	(1.16)	(-1.40)	(-0.91)	(2.27)	(2.96)	(-2.05)	(-2.19)
Inv/GDP	0.43**	0.46**	0.36					
	(2.23)	(2.41)	(1.65)					
Dom. Credit as % of GDP	0.30***					0.27***	-1.56	
	(4.94)					(4.10)	(-0.80)	
M2 as % of GDP		0.78***	-2.80					-2.71
		(5.35)	(-1.47)					(-1.40)
Pop. Growth	0.82*	0.17	-0.06	1.13***	1.09**	0.81***	0.96**	0.35
	(1.85)	(0.34)	(-0.12)	(2.83)	(2.61)	(3.60)	(2.43)	(0.82)
Gov. Exp/GDP	-1.29***	-1.31***	-1.19***	-0.84***	-1.03***	-1.02***	-0.87***	-0.86***
	(-6.80)	(-7.03)	(-5.67)	(-12.54)	(-14.97)	(-15.23)	(-12.97)	(-13.24)
Trade Openness	-0.04*	-0.05**	-0.39	-0.08***			-0.06***	-0.06***
	(2.04)	(-2.53)	(-1.59)	(-4.54)			(-3.54)	(-3.27)
Inst'al Quality	-1.30	-2.61***	-1.59	-6.67			-14.35**	-6.81
	(-1.53)	(-3.21)	(-0.21)	(-1.60)			(-2.56)	(-1.00)
Inflation	0.01	0.02	0.10	-0.04**	0.01	0.02	0.01	0.02
	(0.48)	(0.88)	(0.49)	(2.16)	(0.38)	(1.03)	(0.38)	(0.84)
Real Exchange Rate	-0.13*	-0.02	-0.24*		-0.07	-0.04	-0.26**	-0.23*
	(-1.72)	(-0.27)	(-1.88)		(-0.97)	(-0.60)	(-2.36)	(-1.80)
(Rem/GDP)*(DC)				0.03***	0.02***		0.16	
				(5.38)	(3.94)		(0.95)	
(Rem/GDP)*(M2)			0.31*					0.30*
			(1.87)					(1.77)
(Rem/GDP)*(Inst.Qual)			0.03	0.57	-0.07		1.26**	0.51
			(0.04)	(1.37)	(-0.73)		(2.43)	(0.85)
Observations	82	82	82	82	82	82	82	82
Adjusted R^2	0.9398	0.9423	0.9446	0.9376	0.9206	0.9201	0.9411	0.9433

Note: 1) This table represents the results of the following regression; $\ln y_t = \beta 0 + \beta_1 \ln y_{t-1} + \beta 2 In(\frac{Rem}{GDP})_t + \beta 3 In(\frac{Inv}{GDP})_t + \beta 4 In\ FinDev_t + \beta 5 PopG_t + \beta 6 In\ InsQ_t + \beta 7 ExR_t + \beta 8 In(\frac{GovExp}{GDP})_t + B9 In\ Open_t + \beta 10 Infl_t + \beta 11\ In(\frac{Rem}{GDP})_t * In\ FinDev_t + \beta 12\ In\left(\frac{Rem}{GDP}\right)_t * In\ InsQ_t + \mu$

2) t-values are in parentheses

3) ***sig<0.01 (1%), **sig<0.05 (5%), *sig<0.1 (10%)

VI.   CONCLUSION

This paper intended to analyze the determinants and the role of remittances in the economic growth of Armenia. For this study, I have collected and reconstructed datasets from sources, like World Bank, IMF, National Statistical Service of Armenia, Armenian Central Bank, and State Statistics Service of Russian Federation. The collected data includes indicators of Armenian diaspora, the trends of migration and remittances, the macroeconomic determinants of remittances, as well as the variables for estimating the growth of the country. Since both the existing theoretical and empirical literature provide colliding views and different findings, carrying out this study aimed at finding clearer answers to the question of whether the impact of remittance inflow to Armenia go beyond the role of raising the receiving household's standard of living, by providing any marginal influence on the country's growth rate.

According to the empirical findings of this study, host country's GDP is one of the most significant determinants of the remittance inflows to Armenia, alongside with the decrease in the Armenian population density. I found that the GDP per capita of the host country, here only Russia, is positively correlated with the remittance inflows to Armenia, while population density of Armenia is negatively correlated, meaning that the more people leave the country, the more remittances fly back home.

Furthermore, I found that remittance inflows don't decrease with the increase in the Armenian GDP per capita, which was my initial hypothesis, testing the altruistic motive of migrants' decision to remit. This result proves that in case of Armenia, self-interest motive of the migrants prevail over the altruistic motive. According to the self-interest motive, migrants send money back home with the intentions of possible inheritance in the future. However, this can also be a proof to the fact that Armenian migrants are in close ties with their families back at home, and they are mainly short-term migrants with strong intentions to return home.

The results of Armenian exchange rate show that despite of currency depreciation in Armenia, remittance inflow doesn't decrease. The cause for this can be migrants' decision to help their loved ones at home to overcome economic hardships, because of which the formers don't have any other choice than to send money. And finally, the variables, like host country's exchange rate and interest rate of Armenia were not significant enough to be considered determinants of remittances.

The findings of this thesis on the impact of remittances on economic growth are somehow vague. The main reason for this is the negative coefficient of remittances in growth regression for the Armenian economy. According to these results, one may claim that remittances in Armenia might also have the adverse of the expected impacts, by hindering the economic growth, as well as posing questions of moral hazard, like brain drain, the Dutch disease, and discouraging the labour force participation. With this being

said, it is also worth mentioning that after interacting remittance with the indicators of financial deepening and the quality of institutions, the coefficient was positive. This means that remittances would likely have a marginal impact the better the conditions are in Armenia.

In summary, deeper financial sector or a more stable political environment could contain the adverse effects of remittance flows on growth and enhance their positive contributions. Identifying these key institutional reforms and documenting success cases are left to future research.

VII. BIBLIOGRAPHY

Abdih, Yasser, Ralph Chami, Christian Ebeke, and Adolfo Barajas. "Remittances Channel and Fiscal Impact in the Middle East, North Africa, and Central Asia." *IMF Working Papers*, 2012.

Amuedo-Dorantes, Catalina, and Susan Pozo. "Workers' Remittances and the Real Exchange Rate: A Paradox of Gifts." *World Development* 32, no. 8 (2004): 1407-417.

Armine Ghazaryan, and Guillermo Tolosa. "Remittances In Armenia: Dynamic Patterns And Driver." *IMF Working Papers*.

Barajas, Adolfo, Ralph Chami, Dalia Hakura, and Peter Montiel. "Workers' Remittances and the Equilibrium Real Exchange Rate: Theory and Evidence." *Economía* 11 (2011): 45-94.

Blue, Sarah A. "State Policy, Economic Crisis, Gender, and Family Ties: Determinants of Family Remittances to Cuba." *Economic Geography*, no. 80(1) (1997): 63-82.

Bohra-Mishra, Pratikshya. "Motivations to Remit: Evidence from Chitwan, Nepal." *Contemporary Social Science*, 2012, 322-37.

Bongaarts, John. "United Nations, Department of Economic and Social Affairs, Population Division, Sex Differentials in Childhood Mortality." *Population and Development Review*, 2013, 380.

Brière, Bénédicte De La, Elisabeth Sadoulet, Alain De Janvry, and Sylvie Lambert. "The Roles of Destination, Gender, and Household Composition in Explaining Remittances: An Analysis for the Dominican Sierra." *Journal of Development Economics*, 2002, 309-28.

Bryan W. Roberts, King Banaian, Suren Gevinyan, and Armine Mirzoyan. "Remittances In Armenia: Size, Impacts, And Measures To Enhance." 2004. http://pdf.usaid.gov/pdf_docs/PNADB948.pdf.

Cai, Qian. "Migrant Remittances and Family Ties: A Case Study in China." *Int. J. Popul. Geogr. International Journal of Population Geography* 9 (2003): 471-83.

Central Bank of Armenia http://www.cba.am/am/

Chami, Ralph, and Connel Fullenkamp. "Beyond the Household." *SSRN Journal SSRN Electronic Journal*, 2013.

Durand, Jorge, William Kandel, Emilio A. Parrado, and Douglas S. Massey. "International Migration and Development in Mexican Communities." *Demography* 33, no. 2 (1996): 249-64. Accessed June 24, 2015. http://www.jstor.org/stable/2061875.

Fajnzylber, Pablo, and J. Humberto López. "The Development Impact Of Remittances In Latin America." *Remittances and Development*, 2008, 1-20.

Freund, Caroline, and Nikola Spatafora. "Remittances : Transaction Costs, Determinants, And Informal Flows." *Policy Research Working Papers* 3704 (2005).

Fullenkamp, Connel, Thomas Cosimano, Michael Gapen, Ralph Chami, Peter Montiel, and Adolfo Barajas. "Macroeconomic Consequences of Remittances." *Occasional Papers* 259 (2008).

Funkhouser, Edward. "Migration from Nicaragua: Some Recent Evidence." *World Development* 20, no. 8 (1992): 1209-218.

Gapen, Michael T., Ralph Chami, Peter Montiel, Adolfo Barajas, and Connel Fullenkamp. "Do Workers' Remittances Promote Economic Growth?" *IMF Working Papers*, 2009.

Gupta, Sanjeev, Catherine A. Pattillo, and Smita Wagh. "Impact of Remittanceson Poverty and Financial Development in Sub-Saharan Africa." *IMF Working Papers* 07/38 (2007).

Hagen-Zanker, Jessica, and Melissa Siegel. "The Determinants of Remittances: A Review of the Literature." *SSRN Journal SSRN Electronic Journal*, 2007.

Hakura, Dalia, Ralph Chami, and Peter Montiel. "Remittances: An Automatic Output Stabilizer?" *IMF Working Papers*, no. 09/91 (2009).

Jahjah, Samir, Ralph Chami, and Connel Fullenkamp. "Are Immigrant Remittance Flows a Source of Capital for Development." *IMF Working Papers*, no. 03/189 (2003).

Lucas, Robert E. B., and Oded Stark. "Motivations to Remit: Evidence from Botswana." *Journal of Political Economy J POLIT ECON*, 1985, 901.

Nakhshikyan, Arthur. "Economic Growth And Fair Distribution In Armenia." 2001, Budapest, Hungary

Osaki, Keiko. "Migrant Remittances in Thailand: Economic Necessity or Social Norm?" *Journal of Population Research*, 2003, 203-22.

Piracha, Matloob, and Amrita Saraogi. "The Determinants of Remittances: Evidence from Moldova." *Oxford Development Studies*, 2012, 467-91.

Ratha, Dilip. "The Impact of Remittances on Economic Growth and Poverty Reduction." 8 (2013).

Ratha, Dilip. "Workers' Remittances: An Important And Stable Source Of External Development Finance." *Global Development Finance*, 2003.

Ruiz-Arranz, Marta, and Paola Giuliano. "Remittances, Financial Development, and Growth." *IMF Working Papers* 05/234 (2005).

Singh, R. J., M. Haacker, and K.-W. Lee. "Determinants and Macroeconomic Impact of Remittances in Sub-Saharan Africa." *IMF Working Paper* 09216 (2009): 312-40.

Singh, R. J., M. Haacker, K.-W. Lee, and M. Le Goff. "Determinants and Macroeconomic Impact of Remittances in Sub-Saharan Africa." *Journal of African Economies*, 2010, 312-40.

Straubhaar, Thomas. "The Determinants of Workers' Remittances: The Case of Turkey." *Weltwirtschaftliches Archiv*, 1986, Vol. 122, 728-40.

Wagle, Udaya R. "Experience of Nepali Families with Foreign Remittance: Evidence from the Nepal Living Standard Survey." *University of New Mexico Himalayan Research,* 2009

Yang, Dean. "International Migration, Remittances And Household Investment: Evidence From Philippine Migrants' Exchange Rate Shocks." *The Economic Journal* 118 (2008): 591-630.

"Data | The World Bank." Data | World Development Indicators. Accessed June 27, 2015.

"Economic and Financial Data for the Republic of Armenia." Economic and Financial Data for the Republic of Armenia. Accessed June 27, 2015. http://www.armstat.am/am/

"Economic Implications Of Remittances And Migration." *Global Economic Prospects*, 2005.

"IMF Data:." IMF ELibrary. Accessed June 27, 2015.

"Remittances to Developing Countries to Stay Robust This Year, despite Increased Deportations of Migrant Workers, Says Wb." *States News Service*, April 11, 2014. Accessed May 4, 2015. http://www.highbeam.com/doc/1G1-364656710.html?
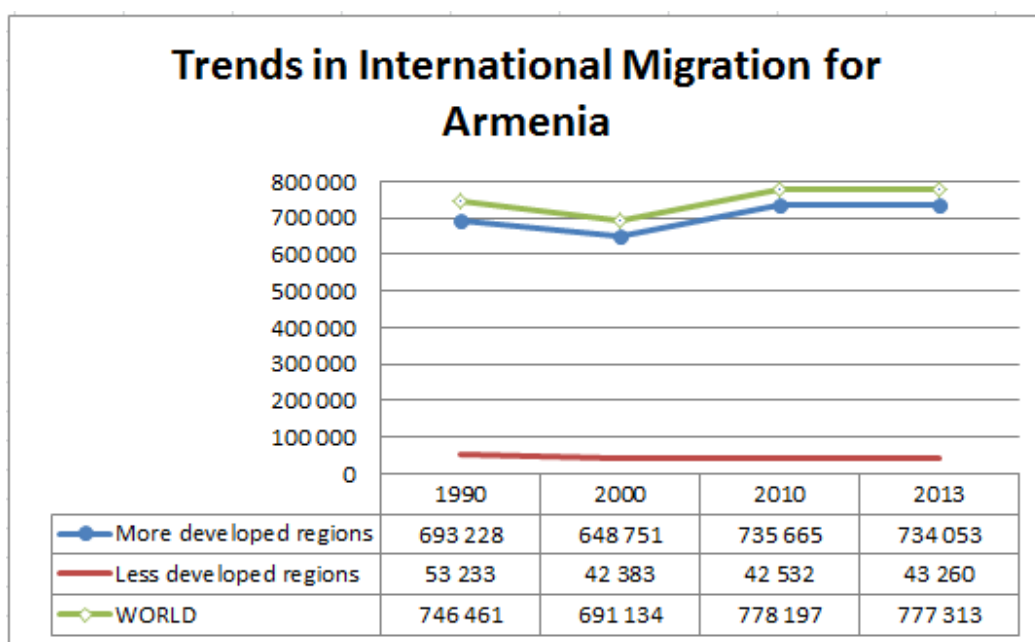
"Russia in Figures." FSSS, Accessed June 27, 2015. http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/en/main/.

"The Concept Paper Sustainable Economic Development Policy For Armenia." *The Concept Paper*, 2003.

APPENDIX

Tables and Figures

<Figure 1> International Migration of Armenians to Developing and Developed regions,

1990, 2000, 2010, 2013

Trends in International Migration for Armenia

	1990	2000	2010	2013
More developed regions	693 228	648 751	735 665	734 053
Less developed regions	53 233	42 383	42 532	43 260
WORLD	746 461	691 134	778 197	777 313

Source: reconstruction of the data provided by United Nations, Department of Economic and Social Affairs, Population Division (2013)

<Figure 2> Top 10 destinations of the Armenian Migrants, 1990, 2000, 2010, 2013

Top 10 destinations of Armenian migrants1990, 2000, 210, 2013

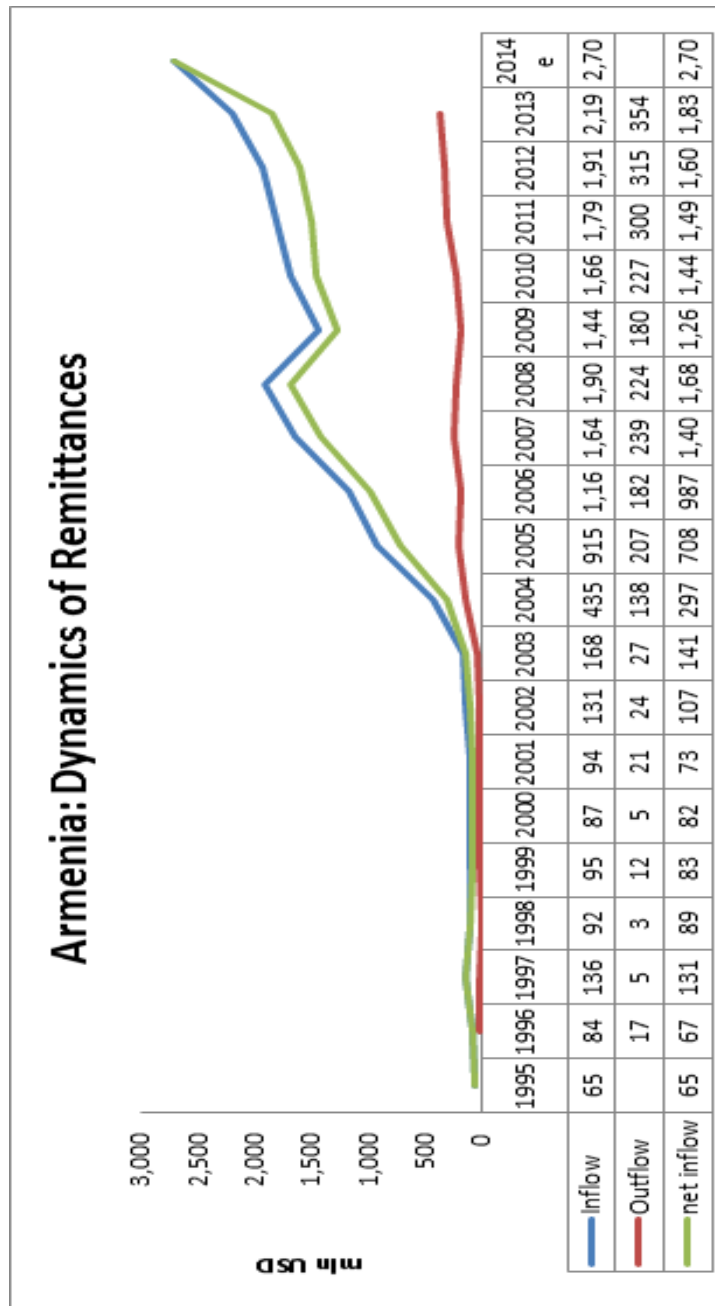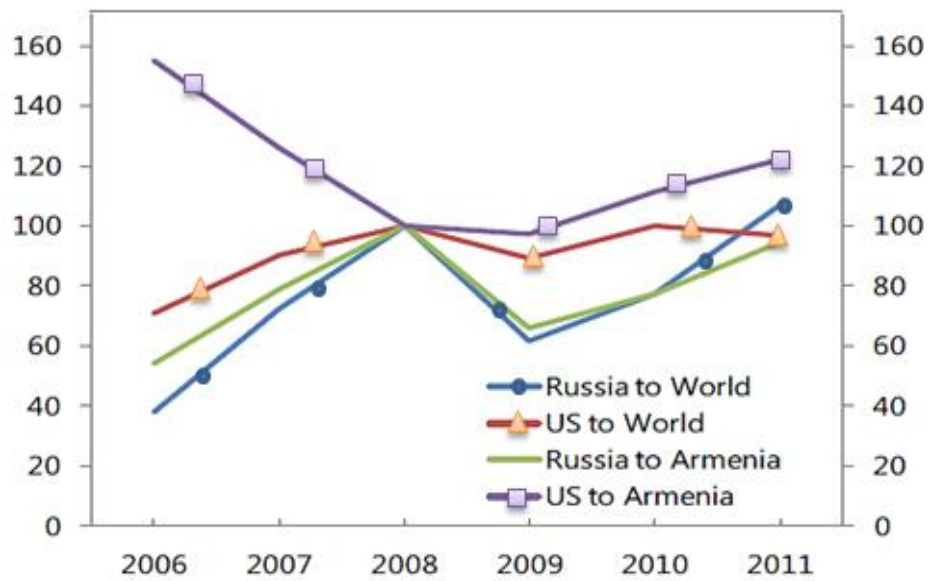|	Kazakhstan	Kyrgyzstan	Uzbekistan	Belarus	Russian Federation	Ukraine	Greece	France	Germany	United States of America
1990	7 596	7 381	22 435	6 651	535 266	35 141	8 079	6 547	5 581	80 178
2000	6 716	4 323	18 181	5 964	478 516	53 498	7 175	6 970	10 202	70 350
2010	8 073	2 829	16 949	5 788	517 418	50 237	7 516	18 154	10 547	89 430
2013	8 416	2 644	16 867	5 762	510 640	49 862	7 779	18 766	10 667	92 671

Source: reconstruction of the data provided by United Nations, Department of Economic and Social Affairs, Population Division (2013)

50

<Figure 3> Armenia: Dynamics of Remittances, 1995 to 2014(in millions of U.S. dollars)

Armenia: Dynamics of Remittances

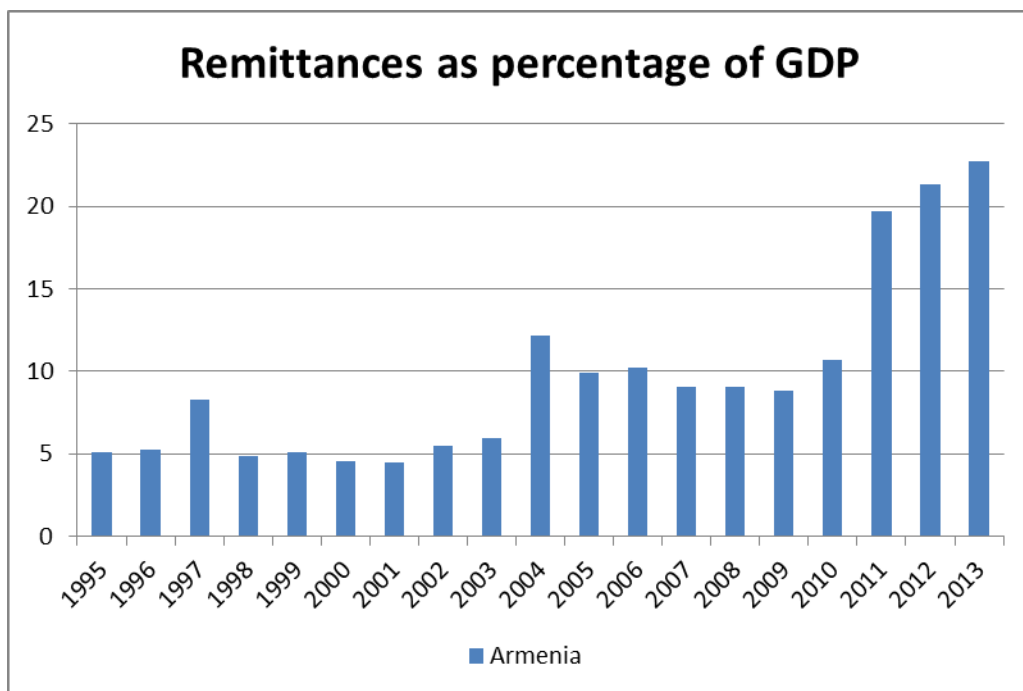|	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 e
Inflow	65	84	136	92	95	87	94	131	168	435	915	1,16	1,64	1,90	1,44	1,66	1,79	1,91	2,19	2,70
Outflow		17	5	3	12	5	21	24	27	138	207	182	239	224	180	227	300	315	354	
net inflow	65	67	131	89	83	82	73	107	141	297	708	987	1,40	1,68	1,26	1,44	1,49	1,60	1,83	2,70

Source: reconstructed based on the data from IMF Balance of Payments Statistics database and data releases from central banks, national statistical agencies, and World Bank country desks.

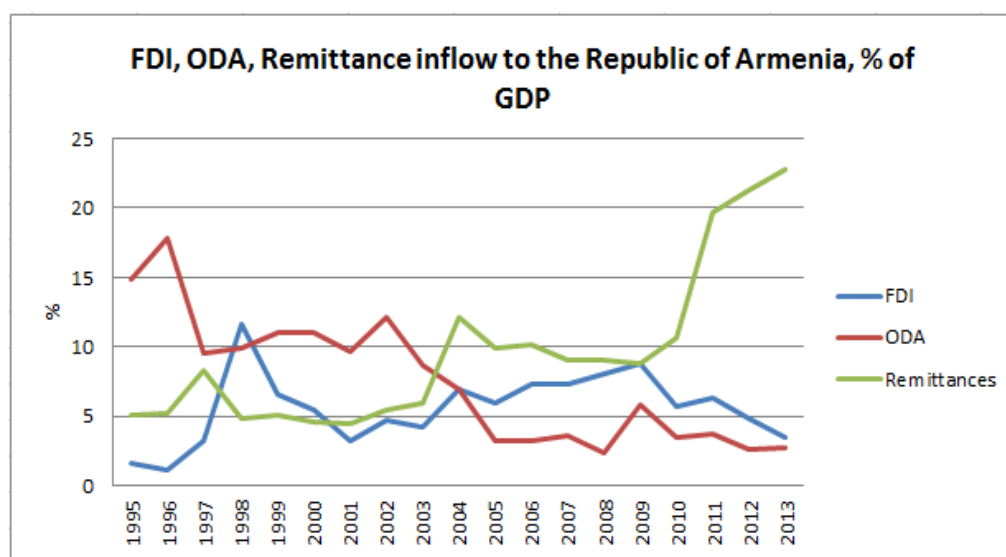<Figure 4> Armenia: Remittance Sources

Source: National authorities, Haver Analytics and IMF staff estimates

<Figure 5> Remittances as Percentage of GDP

Source: Migrants' Remittances, Annual, 1980-2012, knoema.com

<Figure6> FDI, ODA, Remittance inflows to the Republic of Armenia as a

Percentage of GDP

Source: reconstruction of the Data presented by the World Bank Indicators

국문초록

본 논문은 아르메니아 이주자의 송금 결정에 있어 거시경제적 요인과 경제적 영향에 대한 연구다. 송금 결정 요인을 알아낸 후 송금액이 아르메니아에 어떤 영향을 끼치는지 규명하고자 한다. 아르메니아는 취약한 기초에 기반한 소국이다. 그럼에도 불구하고 아르메니아는 세계에서 가장 많은 해외발송금액을 기록한 15 개국 가운데 하나이다. 송금액의 절대적인 양뿐만 아니라 전체 GDP 에서 송금액이 차지하는 비중이 크기 때문에 그 의미가 더 크다고 할 수 있다. 그러나 송금에 관한 이전연구들은 주로 미시경제적 결정요인에만 초점을 맞춰왔지만, 송금액의 거시경제적 면에 관한 연구는 상대적으로 적게 이루어지고 있다. 그래서 본 연구는 거시경제적 결정요인과 함께 본국의 경제에 미치는 영향까지 초점을 맞추는 면에서 중요하다고 할 수 있다.

따라서 본 논문은 기존 선행연구에 근거하여, 1993-2014 년간, 1 년에 4 분기씩 단위로 수집된 자료를 통해 실증적 연구를 실시함으로써 송금의 거시경제적 결정요인과 경제적 영향을 알아보았다. 회귀분석 결과에 따라 이주국의 경제상황은 송금액에 긍정적 영향을 끼치고 본국 경제상황과는 무관한 것으로 나타났다. 또한 본국과 이주국의 환율과 이자율은 송금 결정의

거시경제적 요인으로 작용할 정도로 중요성을 지니고 있다. 그리고 아르메니아 이주자들의 이기적 동기로 송금이 이루어지는 사실이 파악됐다.

다음장에서는 송금액의 경제적 효과를 알아보기 위한 목적으로 회귀분석을 실시했다. 분석결과에 따르면 이주자 송금액은 본국의 경제상황과는 무관한 것으로 나타났다. 그러나 송금액 지수와 관련기관 품질 간의 상호 작용 및, 또는 송금액 지수와 금융 안정성 간의 상호 작용은 본국의 경제 상황에 긍정적 영향을 끼치는 것으로 나타났다. 결론적으로 기반이 강한 관련기관 및 금융 안정성은 송금액을 증대시켜 국가 경제성장에 기여하는데 중요하게 작용하는 것으로 판명된다.

주요어: 송금, 거시경제적 결정요인, 아르메니아, 경제적 성장

학번: 2013-23981