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## Workers' Remittances and Economic Growth: Evidence from Azerbaijan and Armenia

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WORKERS REMITTANCES AND ECONOMIC GROWTH: EVIDENCE FROM AZERBAIJAN AND ARMENIA

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# Workers' Remittances and Economic Growth: Evidence from Azerbaijan and Armenia

Muhammad Azam<sup>a</sup>, Asmatullah Khan<sup>Q</sup>

**Abstract** - The basic objective of every state is to uplift social welfare of the society. There are different ways to boost the process of socio-economic growth, welfare and development but the role of workers' remittances is not the sole but very decisive and eminent in its nature. Therefore, this aims to explore theoretically and empirically the impacts of workers' remittances on economic growth of Azerbaijan and Armenia's economies. The statistical analysis has been made through simple log linear regression model and the method of least square has been used. The finding of the study indicates that worker remittances are significant and have positive impacts on economic growth and development for the study area. Thus, findings suggest that the relevant authorities of both the countries need to formulate appropriate conducive policies in order to encourage worker remittances. In addition, it is further, suggests that workers' remittances received from other countries must also be utilized more efficiently to have similar impacts.

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## I. INTRODUCTION

History reveals that process of population migration from one place to another place in order to improve living standards or living conditions are continued from centuries. International migrations have many advantages, because not only a simple physical change occurred in places but it certainly improves the living condition of the families in their home country as well. Therefore, workers remittances have become the most influential source to enhance the socioeconomic condition of the people living in the country of migrated people and bolster economic development (Khan 2005). The literature survey revealed that there are a number of channels to spur the process of economic growth and development like increasing physical capital, investment in human capital, expanding volume of exports, adopting appropriate technology, development assistance, politically stability and many others. However, one can't ignore importance of workers' remittances in the process of economic growth and development. Adams and Page (2005) described that remittances help in poverty alleviation because the poor portion of the society which are economically isolated class of the population receives it directly.

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Money received through remittances is generally spent on children education, health care and to run micro business as well (John, 2004). Obviously, finance is the much needed investment in most of the under-developed host countries to contribute to increase productivity and bolstering economic development. Substantially on account of the increase in remittances, poverty can be alleviated because it has been statistically observed that migrants sending money to their home countries for their families, remittances increase income of the households increase consumption. Furthermore, migration of the unskilled workers on return to their home countries acquires practical and useful skills in abroad. Puri and Ritzema, (1999) and Martin, (2001) stated that at the macroeconomic level, remittances are a considerable source of foreign exchange as they enhance the level of national income. However, remittances can also have negative macroeconomic effects as it is generating dependence among the recipients; encouraging continued migration of the available labour force; reducing the likelihood of national or foreign investment due to an unstable or untrustworthy workforce; and motivating greater inequity among rural communities (i.e., those families who are receiving foreign remittances is comparatively better off than those non-recipient families). Ratha and Mohapatra (2007) have rightly stated that international migration can make significant welfare gains for migrants, as well as countries of origin and destination, and diminish poverty. Explicitly, remittances are sound source of external finance for less developed countries.

However, there are countable disadvantages of remittances as some emigrants may be educated or highly skilled causing what commonly known as "brain drain" and this is not a good sign in the context of economic development for developing countries because home country invested time, effort and money on their education. Leon-Ledesma and Piracha (2004) suggests that international migration/remittances paralyze countries making them dependent on remittances. Reliance on remittances distorts development and creates inequalities and disparities among the people within the country.

As per the report of World Factbook and other sources like CIA (2011) Azerbaijan economic performance during 2006-08 was remained sound and it was all due to large and expanding oil exports along with some non-export sectors including growth in the

construction, real estate and banking sectors. Economic growth during 2009 was estimated above 9%, while the economic growth during 2010 remained sluggish and estimated almost 3.7% accordingly. Though, currently for the economy of the Azerbaijan there are certain challenges in respect of oil export which currently have been seen on declining, however efforts are needed to diversify its economy appropriately, because dependency only on one sector have always negative impacts. Less increase has been estimated in the gross domestic product (GDP) of Armenia in 2009, because of some imbalances in macroeconomic indicators includes decline in the construction industries. The inflow of foreign remittances in 2009 was US\$ 11 million as it was in 2008, so no change has been recorded. However, Armenia's economy started to recover during 2010 and economic growth recorded 4.7% on account of economic diversification. The report further reveals that Armenia is mostly dependent on Russian commercial and official support and most of the key Armenian infrastructure is Russian-owned and managed, especially in the energy sector. To boost the process of economic development, Armenia needs to follow more additional economic reforms (World Factbook and CIA, 2011).

Objective of the present study is to test quantitatively the impact of worker remittances on economic growth of Azerbaijan and Armenia economies during the study period from 1995 to 2010. Moreover, empirical findings of the study will indicate the impact of remittances in the form of socioeconomic development and also as a guiding instrument to assist policy makers.

## II. LITERATURE REVIEW

The literature review revealed that sources of economic growth are technological change and physical capital investment (Solow, 1956), surplus labour (Fields, 1980), foreign aid (Levy, 1987; Burnside and Dollar 2000), foreign direct investment Andreas (2006), Ndikumana and Verick (2008) openness of the economy and investment in human capital (Lucas, 1988), increasing returns from investment in new ideas and research and development (Romer, 1986; Barro, 1991). Azam and Gubert, (2005) and Adam, (2006) reported that a negligible amount of empirical studies have been carried out on the role of remittances in alleviating poverty based on household survey data from various countries. Giuliano and Ruiz-Arranz (2006) and Acosta (2007) found positive effects of remittances on economic growth. Mihalis and Ekanayake (2008) explored that foreign remittances and FDI both have positive and important effects on economic growth of the developing countries during 1980 to 2006. Empirical studies like Korobkov and Lev (2007); Ivakhnyuk (2006); Jones, Black and Skeldon (2007) shows that worker's remittances and remittances in general can be very beneficial for less developed countries because

remittance have a positive impact on socio-economic development. Ivakhnyuk (2006) reported that workers' remittances which are closely related to migration obviously have an impact on the stable economic development, particularly for smaller countries such as Kyrgyzstan or Tajikistan. While Jones, Black and Ronald Skeldon (2007) analyzed the impact of remittances on Tajikistan development and found that migration and remittances in Tajikistan have been taking a role of a "shock absorber" that has been reducing socio-economic difficulties in this specific developing economy. Cohen (2005) evaluated the impact of remittances on socio-economic development and found a negative impact of remittances on less developed countries. Fayissa and Nsiah (2010) investigated the aggregate impact of remittances on the economic growth of 18 Latin American Countries for the period from 1980 to 2005 and found a positive and significant effect of remittances on the growth of Latin American Countries.

The study of the literature further reveals that theoretical and empirical evidences on the impact of workers remittances on economic development and growth have made the issue debatable, because some researchers are in favour of remittances positive impacts, while some negate its outcomes but a few are of the view that there are no relations between the two. However, comparatively the major portion of literature found is in favour of positive impact of workers' remittances on economic growth and development of developing countries.

## III. TREND OF WORKERS' REMITTANCES

Data regarding resources inflows into World, developing countries and Europe and Central Asia are summarized in Tables 1, 2, 3 and 4 respectively. Table 1 shows increasing trend in workers' remittances from 1995 to 2010 to developing countries as remittances were only US\$ 55 billion in 1995 and increased to US\$ 325 billion in 2010. US\$ 270 billion remittances increase to developing countries in 2010 if compared with remittance flows in 1995. Table 2 shows a comparison of remittances into World, developing countries and Europe and Central Asia. The data demonstrates that in 1995 total inward remittances flows to Europe and Central Asia were 6.67% of the World and 11.78% of all developing countries but in 2009, it is estimated 15.49% of the World and 14.10% of all developing countries. So the data indicates that inward remittances have been increased from 1995 to 2009 at the rate of 8.82% of the World and 2.33% of the all developing countries into Europe and Central Asia. Table 3 shows that inward remittances flows into Azerbaijan in 2003 was US\$ 171 million, where worker remittances are US\$ 154 million and outward remittances flows was US\$ 169 million where workers remittances are US\$ 169 million. The data further shows that a visible change occurred in the worker remittances into Azerbaijan that is of US\$ 1182

million in 2009. Data presented in Table 4 depicts that inwards remittances flows into Armenia in 2003 estimated US\$ 168 million where worker's remittances are US\$ 9 million. In 2009 inward remittances into

Armenia were estimated US\$ 769 million where workers remittances are US\$ 86 million. Thus the data demonstrate upward trend in workers' remittances into Armenia and enhanced amounting US\$ 77 million.

*Table 1* : Resource Flows to Developing Countries US\$ billion

Years	1995	2000	2004	2005	2006	2007	2008	2009	2010e
FDI	95	149	208	276	346	514	593	359	.....
Remittances	55	81	159	192	227	278	325	307	325
ODA	57	49	79	108	106	107	128	120	.....
Private debt and portfolio equity	83	27	93	165	211	434	157	85	.....

Sources : *World Factbook (2011), Second Edition, Migration and Remittances The World Bank, 2011 page 17 & 21*

**Note:** Private debt includes only medium- and long-term debt. FDI = foreign direct investment; ODA = official development assistance ..... means data not available.

*Table 2* : Comparison of remittances in to Europe and Central Asia (E&CA), developing countries and World US\$ billions

Years	1995	2000	2004	2005	2006	2007	2008	2009	2010e
Inward remittance flows to E&CA	6.5	10.4	16.0	23.3	28.4	39.3	45.8	35.4a	36.7
All developing countries	55.2	81.3	159.3	192.1	226.7	278.5	324.8	307.1	325.5
World	101.3	131.5	237.0	274.9	317.9	385.0	443.2	416.0	440.1
Outward remittance flows E&CA	4.5	1.9	7.4	10.2	16.5	24.7	33.0	24.5b	.....
All developing countries	10.4	9.5	28.5	33.0	41.0	52.7	67.3	58.7	....
World	97.5	108.5	168.0	185.3	213.7	255.2	295.7	282.5	...

Source: *Migration and Remittances, Factbook (2001), Second Edition, Page No. 21, 25 & 26*

a. 1.3% of GDP in 2009

b. 1.2% of GDP in 2009

....means data not available

*Table 3* : Workers Remittances into Azerbaijan US\$ million

Years	2003	2004	2005	2006	2007	2008	2009	2010e
Inward remittance flows	171	228	693	813	1,287	1,554	1,274	1,472
Workers' remittances	154	191	490	662	1,192	1,416	1,182	.....
Compensation of employees	2	12	133	128	76	102	73	.....
Migrants' transfers	15	24	70	22	20	36	19	.....
Outward remittance flows	169	200	269	301	435	593	652	.....
Workers' remittances	78	65	127	149	273	399	522	.....
Compensation of employees	54	108	112	125	131	168	116	.....
Migrants' transfers	38	28	29	26	31	25	14	.....

Source: *World bank Factbook, 2011, The Migration and Remittances*



Table 4: Workers Remittances into Armenia

US\$ million

Years	2003	2004	2005	2006	2007	2008	2009	2010e
Inward remittance flows	168	435	498	658	846	1,062	769	824
Workers' remittances	9	43	58	74	94	124	86	.....
Compensation of employees	153	382	429	576	743	929	677	...
Migrants' transfers	6	10	11	8	9	9	7	.....
Outward remittance flows	27	138	152	154	176	185	145	.....
Workers' remittances	6	10	16	19	5	11	11	.....
Compensation of employees	19	122	133	130	166	169	130	.....
Migrants' transfers	2	6	3	6	5	5	....	....

Source : Worldbank Factbook, 2011, *The Migration and Remittances*

....means data not available

#### IV. METHODOLOGY AND DATA

The following simple linear regression model uses exploring the impact of remittances on economic growth.

$$gdp = \alpha_0 + \beta_1 wr + \mu \quad (1)$$

>0

Where

$gdp$  = gross domestic product,  $wr$  = workers' remittances, and  $\mu$  = error term and show effects of the other factors. Lower case letters denote the natural logarithm of variables. Equation (1) expects that remittance has positive impact on economic growth.

It is clear from the nature of the study that this study is based on secondary data. It was thought in the beginning to analyze a long period data but unluckily data were not available on required variables for the study area and therefore, only data for the period from 1995 to 2010 was analyzed. For analysis data have been obtained from World Development Indicator (various issues) and World Bank Factbook (2011) respectively. The data uses for regression analysis are in current US\$. Simple log linear regression model and the method of least square as an analytical technique has been used. Eviews statistical software has been utilized for computation analysis.

#### V. OLS RESULTS AND DISCUSSION

Results obtained are acceptable and statistically significant on the basis of R-squared (R2) and adjusted R-squared values, though Durbin Watson statistics values are less desirable but however, acceptable. A summary of the ordinary least squares results are reported in tables 5 for Azerbaijan and Armenia. The non-availability of data for a long period of time has restrained the study for further time series analysis. However, least square results found are virulently support the study hypotheses and are encourageable.

In case of Azerbaijan results presented in Table 5 found are satisfactory with 90 % R2 value and it shows total 90% variation of this explanatory variable worker remittance in the economic growth of the economy. The impact of worker remittances on economic growth found

statistically positively significant at 1% level of significance. The coefficient size found is 0.40 which shows that one unit change in worker remittances will bring 0.40 unit change in the economic growth. Certainly, coefficients of the parameters show elasticity as well. Likewise, empirical result on Armenia presented in Table 5 found with R2 value 60 % and shows that overall model is significant and shows 60% variation by the explanatory variable in economic growth of the economy. The impact of worker remittances found positively significant at 1% level of significance. The coefficient size found is 0.46 and it shows that one unit change will bring 0.46 unit change in the economic growth. Studies like Giuliano and Ruiz-Arranz (2006; Acosta 2007; Korobkov and Lev 2007; Jones et al., 2007; Fayissa and Nsiah 2010) also found positive effects of remittances on economic growth.

Table 5: OLS Estimates

	Azerbaijan	Armenia
Explanatory variables	Coefficients	Coefficients
wr	0.41 [0.03] (11.75) <sup>a</sup>	0.46 [0.10] (4.63) <sup>a</sup>
C	15.70 [0.63] (25.01)	13.12 [1.94] (6.76)
R <sup>2</sup>	0.91	0.60
Adj. R <sup>2</sup>	0.90	0.57
S.E. of regression	0.32	0.54
D.W.	1.33	1.55
Akaike info criterion	0.66	1.72
F-statistic	138.19	21.17
N	16	16

*Note:* t-statistics are in parentheses ( ) and standard errors are in brackets [ ].

-Asterisk a show statistically significant at 1 percent level of significance

-N=Number of Observations

## VI. CONCLUSIONS

Results of the present study are meaningful and will helps policy makers of each country in respect of improving socio-economic development. The basic objective of every state is to increase social welfare of the community. As discussed in the beginning of this study a number of ways lead to boost the process of economic growth and development but the role of workers' remittances should not be ignored rather needs to be considered equally. This study proved empirically through regression analysis that worker remittances are significant for the acceleration of economic growth for the study area. It is concluded that the management authorities of both countries i.e. Azerbaijan and Armenia needs to formulate appropriate conducive policies for the encouragement of worker remittances. It further suggests that the worker remittances received from the other countries must be utilized more efficiently in order to improve society living conditions.

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