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## AREA STUDIES | RESEARCH ARTICLE

# Nexus between foreign remittances and poverty alleviation: Empirical investigation of Tajikistan from Central Asia

Farrukh Nawaz<sup>1</sup>, Umar Kayani<sup>2</sup> and Ahmet Faruk Aysan<sup>3\*</sup>

**Abstract:** Remittances have become an increasingly important source of external financing for the low-income countries of Central Asia. The impact of Foreign remittances upon poverty alleviation has received substantial importance in academic writings, but very few studies have investigated the Central Asian region. Tajikistan was one of the poorest state of the former Soviet Republics, and it was further devastated by the twin shocks of the post-Soviet transition in 1991 and the civil war from to 1992–1997. The labors of Tajikistan mainly migrate to Russia and other countries of Central Asia for earning their livelihoods. The remittances from Russia to Tajikistan amounted to approximately \$ 2.5 Billion in 2019 (accounting for 33% of their GDP). In this study we explored the impact of remittances on poverty alleviation of Tajikistan by taking the data for the

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variables like remittances, poverty size, capital formation, Per Capita GDP, inflation, and unemployment. We took the data from the World Development Bank Indicators for the time period 2010–2019. Initially, we ran the diagnostic tests including the unit root test for stationarity, the Pearson correlation test for multicollinearity, the Bruesch-Pagan /Cook-Weisberg test for heteroscedasticity, and the Wooldridge test for autocorrelation. After running the diagnostic test we applied the growth-poverty model for gauging the relationship between the remittances and the poverty and we found a significant negative relationship between foreign remittances and poverty alleviation in case of Tajikistan.

**Subjects:** Central Asian, Russian & Eastern European Studies; Economics; Finance

**Keywords:** Foreign remittances; poverty reduction; Tajikistan; Russia; Central Asia

### 1. Introduction

People around the world are suffering from the distressing social evil of poverty and substandard living standards (Imran et al., 2020). Some countries have succeeded in alleviating poverty in their societies, while others are striving to contain and reduce poverty. Poverty has a very strong and positive impact on migration; in particular, people from poor countries are desperate to migrate to developing and developed countries in search of better livelihoods (Abbas, 2019). The differences in social and economic conditions across countries are the primary reasons why people migrate. The breadwinners of families move from less resourced or underprivileged countries to more resourceful and privileged countries to support their families (Qerimi & Sergi, 2017). The goal of migrants' remittances is to help their families meet the necessities of life and further improve their living standards (Yiheiyis & Woldemariam, 2016).

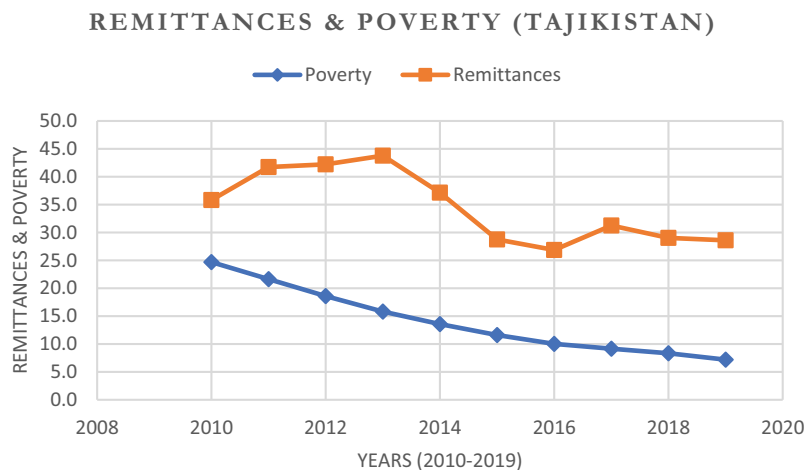
Historically, Tajikistan has been facing economic challenges over the years. The evidence suggest the country has been dependent on international remittances. The existing literature shows that the international remittance has a strong and potential role in the reduction of poverty (Bracking & Sachikonye, 2006; Javid et al., 2012). Moreover, the evidence shows that there is significant gap to understand the dynamics of Tajikistan remittances since most of research studies has been focused on the global context within other regions Such as India (Castaldo et al., 2012; Dey, 2015; Mahapatro et al., 2017), Bangladesh (Kumar, 2019; Kumar et al., 2021) and China (Démurger & Wang, 2016; Liang et al., 2013; Ping & Shaohua, 2008; Zhu, 2008). Limited studies has been conducted on the Central Asia where the international remittance play important role in the reduction of poverty. For instance, Tajikistan is the poorest state among the former Soviet Republics. The State has been facing potential challenges from post-soviet transition in 1991 and Civil War. Given such circumstances the remittances from Russia play a potential role in the Tajikistan GDP.

The selfless motive for providing sustenance to families is sufficient to explain the reasons for immigrants' remittances from abroad. According to the WorldBank (2020), there was a 6.37% increase in remittances from 2017 to 2018 globally, and the remittance inflow in low- and middle-income countries amounted to 539,526 million US dollars in the year 2020. The remittances received by family members are not merely used for consumption, but are also held as savings (Jawaid & Ali Raza, 2016). Remittances are counted as a fundamental source of foreign exchange for the recipient countries and they exceed the other sources of foreign inflows; including foreign aid and foreign investment (Azam et al., 2016; Roy & Dixon, 2016).

However, this assumption does not hold in Tajikistan. Countries such as Tajikistan experience appalling economic conditions in which a major proportion of remittances is spent on fulfilling daily life necessities (Kakhkharov & Rohde, 2020). The money earned by the immigrants is sent back to home countries in the form of remittances with the purpose to finance the consumption expenditures of the family members (Kayani, 2021). Only a few families can spend some portion of their remittances

**Figure 1. Remittances and poverty in Tajikistan.**

Source: World Development Indicators, 2021.



on other expenditures, such as buying vehicles or spending on marriage ceremonies. Remittances also act as insurance for migrant families during emergencies. If the home economy is not doing well, migrants increase the funds they remit back home to compensate for the country's poor financial and economic conditions of the country (Huay & Bani, 2018). Growth in the frequency of sending and receiving remittances can also be attributed to the advancement of technology, especially in the banking sector. Jawaid and Ali Raza (2016) find that enhanced technology substantially reduces the costs of transferring money from one country to another. When only minimal costs are incurred in making financial transactions, they are considered negligible, and individuals tend not to consider them when making decisions regarding remittances. This implies that migrants can conveniently increase their level of remittances according to the changing needs of their families and countries without incurring additional costs (Hossain & Hasanuzzaman, 2013).

Remittances have always been an important source of external finance for low-income and middle-income developing countries (Kayani, 2022). Remittances have always been the most important source of support and financing for Central Asian countries, especially after the disintegration of the former Soviet Union in 1991. Most of the workers from Central Asian countries prefer to work in Russia because of close cultural affinity and better economic opportunities (Tertychnaya et al., 2018). Most of the Tajiks migrate to Russia in search of better livelihood and because of economic differences between the two countries in terms of natural resources, infrastructure, and employment opportunities (Abdih et al., 2012). This explains the extent of reliance these economies have on the remittances, in which 26.2% of Tajikistan's GDP is made up of these remittances. This is one of the main reasons why Tajikistan is ranked among the world's top ten remittance-dependent countries (Murodova, 2018).

The Figure 1 explains the poverty and remittances level for Tajikistan during the period of 2010-2019. Remittances have helped Tajikistan considerably reduce poverty over the last decade. According to the a report by World Bank, Tajikistan managed to break out from a high national poverty rate of 34.3% in 2013 to 26.3% in 2019 (2020) (Azam et al., 2016). A progressive trend could be observed in the dropping rates of national poverty levels in Tajikistan until the end of 2019, after which the progression became stagnant owing to the COVID-19 pandemic, which has affected various spheres of Tajiks' life. This study empirically investigated the impact of remittances on poverty reduction in Tajikistan, as very few studies are available on Central Asian countries. The remainder of this paper is organized as follows. Section 2 presents relevant literature. Section 3 discusses the data and the methodology used. Section 4 presents the empirical results, and Section 5 concludes the article.

## 2. Literature review

The increased frequency of migrant remittances and their far-reaching effects on different economies around the world have been a subject of constant debate among economists. Poghosyan and Blancher (2020) describe remittances as a means of transferring purchasing power from oneself to their families. The goal of sending these remittances back to their families is to help them meet the expenditures in lieu of consumption, education, and other related necessities of life, which in turn increases overall consumption in the economy. Most people belonging to lower-income or lower-middle-income families migrate; therefore, an increase in consumption from remittances leads to poverty reduction (Hossain, 2015). A reduction in poverty also helps a country enhance its economic growth programs. Several studies have further examined this relationship because it greatly contributes to stabilizing the economy by reducing the volatility of a country's GDP (Cazachevici et al., 2020; Meyer & Shera, 2017)

The economic impact of remittances is huge and extremely significant for receiving economies. Several studies, such as Huay and Bani (2018), Azam et al. (2016), Khan et al. (2016), Lartey et al. (2012), Barrett (2014) and Meyer and Shera (2017) showed that the impact of remittances is far greater than any other sort of international flow, including foreign aid and foreign direct investments. It was initially claimed that migrants send remittances back home to finance their families' expenditure (including consumption). Azizi (2018) stated that individuals' decisions to migrate to richer countries are based on altruistic behavior, whereby they prefer to struggle to provide financial assistance to their families. However, many economists later argued that altruism may not be an accurate factor that leads individuals to migrate so that they can send remittances back home.

Families make an investment in the migrant's education, and the remittances they send back home are the returns that their families earn on their investment or repayment of loans lent to the migrants during their education abroad (Nnyanzi, 2016). Remittances increase people's disposable income as a result of which they are able to afford a healthier lifestyle (Kayani, 2022). Begum (2018) argues that prospect theory can better explain the decision-making behavior of migrants; that is, migrants weight the choices in their set of alternatives and select the alternative that offers them the lowest deviations from a benchmark or target set by them. In terms of the impact of migrants on their families, besides monetary support, it is an established fact that families of migrants experience different social hardships. Many surveys and studies have revealed that children suffer the most because of these labor migrations. Children do not receive substantial attention from their fathers and therefore tend to develop problematic behavioral traits. As a result, not only their education but also their personal lives suffered greatly, and they began to show signs of psychological disorders. Furthermore, Zotova and Cohen (2016) argue that it is a common practice among Tajik migrants to remarry in Russia and leave their original families unattended in their home country.

The New Economics of Labour Migration Theory plays a significant role in the understanding of remittances influence on the poverty. De Haan (2011) studied the association of Labour migration and poverty in India. The research study focused on the migration behaviors of marginalized social demographics, assessing whether migration provides an avenue to escape poverty. The finding of the study shows that there is a significant increase in remittance that migrants send to their families. Moreover, it is also revealed that more than 90% of migrant remittances are spent on the household expenses. Additionally other researchers have also confirmed that remittance from migrants have strong impact on poverty reduction (Adams & Page, 2003; Anyanwu & Erhijakpor, 2010; Bertoli & Marchetta, 2014; Bhadra, 2023; Castaldo et al., 2012; Devkota, 2014; McKenzie & Sasin, 2007; Yang & Martinez, 2006)

Rural women in Tajikistan lack the required awareness to demand their rights, as well as the rights of their children, from the property of their husbands for economic and financial security. This lack of awareness is exploited by migrant husbands, who blatantly turn their back towards

their families and stop sending them the remittance on a permanent basis. According to a report compiled by Lipková et al. (2020), Russian Federation is the main country where Tajiks emigrate the most: 96% of the migrants from Tajikistan move to Russia to make better use of the resources and opportunities available in Russia. The remaining 3% migrate to Kazakhstan, and only 1% of the Tajik migrants move out to countries other than Russia and Kazakhstan. Besides other factors, such as better healthcare and improved educational services, Russia attracts most laborers from Central Asia (Malyuchenko, 2015). Migration to the Russian Federation, so promising for Tajiks, is the availability of a dual citizenship agreement between the two countries, which allows them to identify themselves as Russian citizens without giving up citizenship to their home country (Borisova, 2020). This dual citizenship agreement helps Tajiks hunt high-profile jobs with good salaries.

Remittances have also played a major role in developing the financial sector of Central Asia, where owning a bank account or even making a transaction through a financial institution was not considered a practice or a norm. An increase in the inflow of remittances subsequently raised the need for such transactions to take place, which ultimately enhanced the financial system of a country (Kakhkharov & Rohde, 2020). The strong positive correlation between the flow of remittances and the strength of financial institutions is confirmed by several economists who stress that the increased demand for such cash proceedings enhances the development of a country's financial institutions. Fromell et al. (2020) also asserted that the more frequently remittances flow into the country, the more frequent visits to the bank improve the creditworthiness of such households and eventually improve their accessibility to borrow from banks at lower costs.

The high dependency of the Tajik economy on the money received from migrants abroad has led researchers to study the relationship between remittances and poverty reduction. Betti and Lundgren (2012) conducted a survey on the remittance and poverty levels of the state of Tajikistan to prove that, without any stimulation caused by remittances, the poverty incidence in the Tajik economy may reach double that of the current state. Many economists believe that more than half of the reduction in poverty rates in Tajikistan can be attributed to rising levels of remittances received by recipient households (Prokhorova, 2017).

**Table 1. Description of variables**

Variable	Abbreviation	Description
Remittances	RMT	Contributions by foreign workers into the home country economy through noncommercial transfer of money.
Poverty	PV	Lack of financial and resources which results in poor social, economic conditions of individual.
Capital Formation	CF	The total accumulation over the specified accounting period of any country. It includes the contribution from capital goods such as transportation, assets, equipment's, tools etc.
LNGDP	GDP	The overall monetary benefits gained by any country during a period of one year. These are based on goods and services.
Inflation	INF	Rise in prices
Unemployment	Unemp	Those who are part of labor force and are actively seeking for the job but still unable to secure the job.

### 3. Data & methodology

This study investigated the impact of foreign remittances on poverty reduction in Tajikistan. A set of independent and dependent variables were considered while investigating this relationship. Foreign remittance is a dependent variable, whereas the independent variable (poverty reduction) is measured using the following indicators: poverty size of the country, capital formation, gross domestic product per capita, inflation, and unemployment. The selection of these variables is in line with previous studies (Abdih et al., 2012; Acosta et al., 2008; Adams, 2009; Adams & Page, ; Khan et al., 2016; Prokhorova, 2017; Zotova & Cohen, 2016). The annual time series data were obtained from the World Bank Development Indicators for the period 2010–2019. Table 1 provides the variables description is given below in Table 1.

Various diagnostic tests have been applied for data consistency, reliability, and normality (Hasan et al., 2022; Iqbal et al., 2022). Diagnostic tests are crucial for determining the main regression relationship. These diagnostic tests include the unit root test for stationarity, the Pearson correlation test for multicollinearity, the Bruesch-Pagan/Cook-Weisberg test for heteroscedasticity, and the Wooldridge test for autocorrelation. These results were in accordance with those of prior studies. After running the basic regression tests, this study adopts the growth-poverty model (Nahar & Arshad, 2017) while investigating the impact of foreign remittances on poverty in Tajikistan. The primary growth-poverty model is as follows:

$$\text{Log PV}_t = a_0 + a_1 \text{Log RMT}_t + a_2 \text{Log GDP}_t + a_3 \text{CF}_t + a_4 \text{INF}_t + a_5 \text{Unemp}_t + \varepsilon_t \quad (1)$$

Where “RMT” is the remittance, “PV” is the poverty size of the country, “GDP” is gross domestic product per capita, “CF” is capital formation, “INF” is inflation and “Unemp” is unemployment.

The independent variable of this study is foreign remittances, while the dependent variables are poverty, capital formation, gross domestic product, inflation, and unemployment. The estimation of the long-run relationship among the variables, and the time series residences of the character variables, are tested in order to check the use of a desk bound check; via way of means of conducting an Augmented Dickey-Fuller (ADF) test (Gujarati et al., 2012; Kayani & Kayani, 2017). To ensure the adequacy of the model, a diagnostic check may be performed by analyzing classical assumption tests, including autocorrelation, multicollinearity, normality, and heteroskedasticity. Then, ordinary least squares (OLS) analysis can continue (Hasan et al., 2023). Before the OLS continues with a dialogue of the result, its miles cited that Autoregressive Distributed Lag (ARDL) evaluation has been taken into consideration (Choudhury et al., 2023; Kayani et al., 2023; Saleem et al., 2023) for this look at (see Tables 3 and 4). From the result, it can be visible that there’s hassle via way of means of doing an ARDL regression. These results are difficult to assist with the goal of this research. One of the issues is that the results do not fulfill the classical assumption check.

**Table 2. Summary statistics**

Variables	Mean	Median	Std. Dev.	skewness	kurtosis	p25	p75
Poverty	14.060	12.600	5.9660	1.5630	2.0140	9.2000	18.600
Remittances	34.517	33.533	6.4390	2.2620	1.4650	28.756	41.738
Capital Formation	26.864	26.851	2.7700	0.1170	1.7710	24.376	29.038
LNGDP	6.8240	6.8240	0.1330	1.0320	1.8580	6.7180	6.9320
Inflation	6.7920	6.0050	2.5260	1.9080	4.8950	5.7150	6.4450
Unemployment	8.2160	7.8500	1.5500	1.4880	1.7820	6.8100	9.5000

Note: Descriptive statistics of the independent and dependent variables are based on the mean, median, standard deviation, skewness, kurtosis, and median values at the 25<sup>th</sup> and 75<sup>th</sup> percentiles.



**Table 3. Pairwise correlation**

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) Poverty	1.000					
(2) Remittances	0.727*	1.000				
(3) Capital Formation	-0.591	-0.676*	1.000			
(4) LNGDP	-0.557	-0.641*	0.489*	1.000		
(5) Inflation	0.436	0.295	0.296	0.284	1.000	
(6) Unemployment	0.770*	0.581*	-0.629	-0.602	0.431	1.000

\* $p < 0.05$ .

**Table 4. Variance inflation factor**

	VIF	1/VIF
Remittances	2.984	0.335
Poverty	5.671	0.176
Capital Formation	2.112	0.473
LNGDP	1.446	0.691
Inflation	2.531	0.395
Unemployment	1.619	0.617
Mean VIF	2.721	.

#### 4. Results and discussion

As a preliminary analysis, Table 2 presents the descriptive statistics of the dependent and independent variables. The table reports the mean, median, standard deviation, skewness, kurtosis, and p25 and p75 values.

**Table 5. Ordinary Least Square regression (OLS) dependent variable: poverty**

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Remittances	-0.674*** (0.163)					-0.130* (0.053)
Capital Formation		-1.368** (0.575)				1.298 (0.595)
GDP			-34.492* (15.367)			-37.304 (20.186)
Inflation				1.229*** (0.257)		0.143 (0.242)
Unemployment					3.834*** (0.134)	3.303*** (0.428)
Constant	-9.200 (5.245)	51.360*** (15.257)	127.822** (50.336)	5.991* (3.088)	-17.435*** (1.189)	76.656 (54.176)
R-squared	0.528	0.349	0.311	0.190	0.990	0.996
Firm & Year Effect	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors are indicated in parentheses. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .



The results in Table 2 for the descriptive statistics appear to be normally distributed, indicating that there is no issue in terms of data normality (Habib & Kayani, 2023; Hassan et al., 2023; Kayani et al., 2021; Shaik et al., 2023; Xie et al., 2023). The skewness and kurtosis values were within the acceptable ranges. The skewness values show that the distribution was right-skewed. In the case of kurtosis, the distribution is leptokurtic when the values are greater than +1. Furthermore, p25 and p75 reflect the median values of the 25<sup>th</sup> and 75<sup>th</sup> percentiles, respectively. Tables 3 and 4 present the results of the Pearson pairwise correlation and variance inflation factor (VIF) tests. Both tests were performed to examine multicollinearity among the variables. The results indicate no multicollinearity among the variables (Gujarati et al., 2012; Kennedy, 2008).

The normality check observed that the mistake time is now no longer commonly distributed because the opportunity is much less than the 5% degree of importance ( $0.02 < 0.05$ ) (probability ought to be more than the 5% degree of importance). Hence, ordinary least squares (OLS) is utilized in this study instead of autoregressive distributed lag (ARDL) due to the issue of stationarity in the data.

The results in Table 5 show that foreign remittances have a significant negative relationship with poverty in column 1. We rerun the regression and regress poverty on all control variables for the robustness of dependent variable (poverty in our case), and findings show that capital formation in column 2, GDP in column 3, inflation in column 4, and unemployment in column 5, all variables have significant relationship with poverty, accordingly. Finally, we select all key variables in our model and regress poverty on all explanatory factors and find that foreign remittances have a significant and negative relationship with poverty, suggesting that foreign reserves in the form of remittances are the backbone of a developing country (Hatemi, 2014; Inoue, 2018). These remittances are usually in foreign currencies, especially in the US dollar, and provide support to the country's foreign reserves, which ultimately helps to maintain other macroeconomic factors in the country, especially to eliminate poverty (Arapı-Gjini, 2020; Tsaurai, 2022).

## 5. Conclusion

Labor migration is an important aspect of the Tajikistan economy, and most Tajik laborers migrate to Russia because of their common language and cultural similarities. In this study we empirically examined the impact of remittances on poverty in case of Tajikistan. Our results show that remittances have a significant negative relationship with poverty in Tajikistan. These results align with the findings of Kumo (2012), who stated that migrant workers and recipients of foreign remittances directly and indirectly contribute to Tajikistan's economy. Nevertheless, the importance of remittances in economic growth and poverty reduction of any country cannot be denied. The immigration of labor to advanced countries also helps poor and developing countries build their human capacity in terms of technical and behavioral skills (Kireyev, 2006). Jones et al. (2007) stated that to utilize this potential of labor, incentives need to be offered to migrant laborers to come back and participate in national development. Finally, this study has only focused on analyzing the impact of foreign remittances on poverty, but future studies can also investigate labor migration trends, such as what kinds of people become migrants and particularly which households are supplying them.

### 5.1. Limitations & recommendations

Our research study has provided significant insights regarding the foreign remittances. However, our research study has potential limitation which can be cover in future research studies. For instance, our research study major focus on the ordinary least squares regression to investigate the impact of international remittances and its association with the poverty in the Tajikistan. Our research methodology has provided a significant level of insights to the existing literature unfortunately it may fail to capture the overall dynamics of international remittances, for example, remittance can be influence by several factors such as Migration decisions, social, and cultural variables. Therefore the future study will be more beneficial to choose alternative approach and examine the impact of all factors that affect the international remittances by incorporating the advance qualitative and econometric approaches.

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### Disclosure statement

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