Migration, Remittances and Income Inequality in Kyrgyzstan: Evidence from the Life in Kyrgyzstan survey

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Introduction

- According to IOM, there were 281 mln. international migrants as of 2020, including 169 mln. migrant workers.
- Migrants' remittances are an important source of funds for developing countries: $540 bln. in 2020 > ODA (official development assistance).
- Kyrgyzstan is not an exception: $2.4 bln. in 2020, or 29% of GDP.
- Crucial to analyze the effect of migration and remittances on the domestic economy: human capital, poverty and inequality, etc.

Introduction

- Unfortunately, the body of academic literature on the impact of remittances in Kyrgyzstan is still limited.

  »»»» The present thesis aims to fill this gap. **Objectives of the research:**

  1. To quantify the impact of migration and international remittances on income inequality in Kyrgyzstan (through the Gini index).
  2. To assess the magnitude of the impact by estimating an "elasticity" measure of inequality to a change in remittances.

Theoretical considerations

- The impact of remittances on inequality is not unambiguous:

1. If remittances flow to lower-income households, then the impact of migration and remittances might be to reduce income inequality.
2. If remittances flow to higher-income households, then the impact might be the opposite leading to a higher income inequality.

- The effects could also potentially change over time (Stark et al., 1986):
  - The initial migrants may come from higher-income households, while subsequent migrants may be of relatively poorer background due to migrant networking and the falling costs of migration.

Previous empirical findings

- No consensus on the effect of migration and remittances on inequality:

1. Some authors find evidence for a negative impact.
2. Another line of research suggests that remittances reduce inequality.
3. Still other studies show on effect or that the effect is inconclusive.

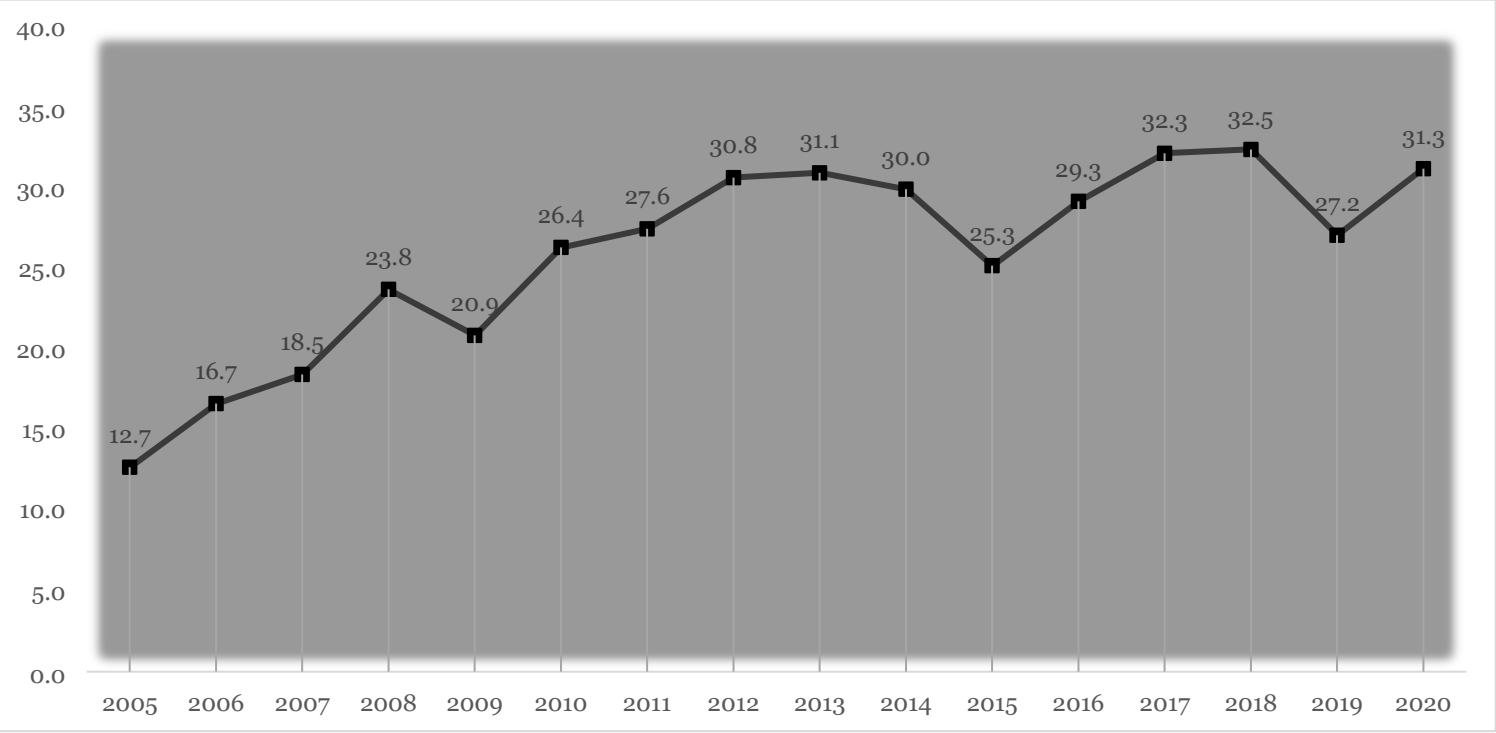
- Research on Kyrgyzstan suggests that remittances are mostly spent on human capital investment, consumption, purchase of durable goods and construction or renovation of houses (Mogilevskiy and Atamanov, 2008; Kroeger and Anderson, 2014; Aytimbetov, 2006; Ukueva, 2010).

- The empirical evidence on the relationship between remittances and income inequality in Kyrgyzstan remains inconclusive.

Migration and remittances in Kyrgyzstan

- Migration from Kyrgyzstan has grown significantly after gaining independence in 1991 with the break-up of USSR.

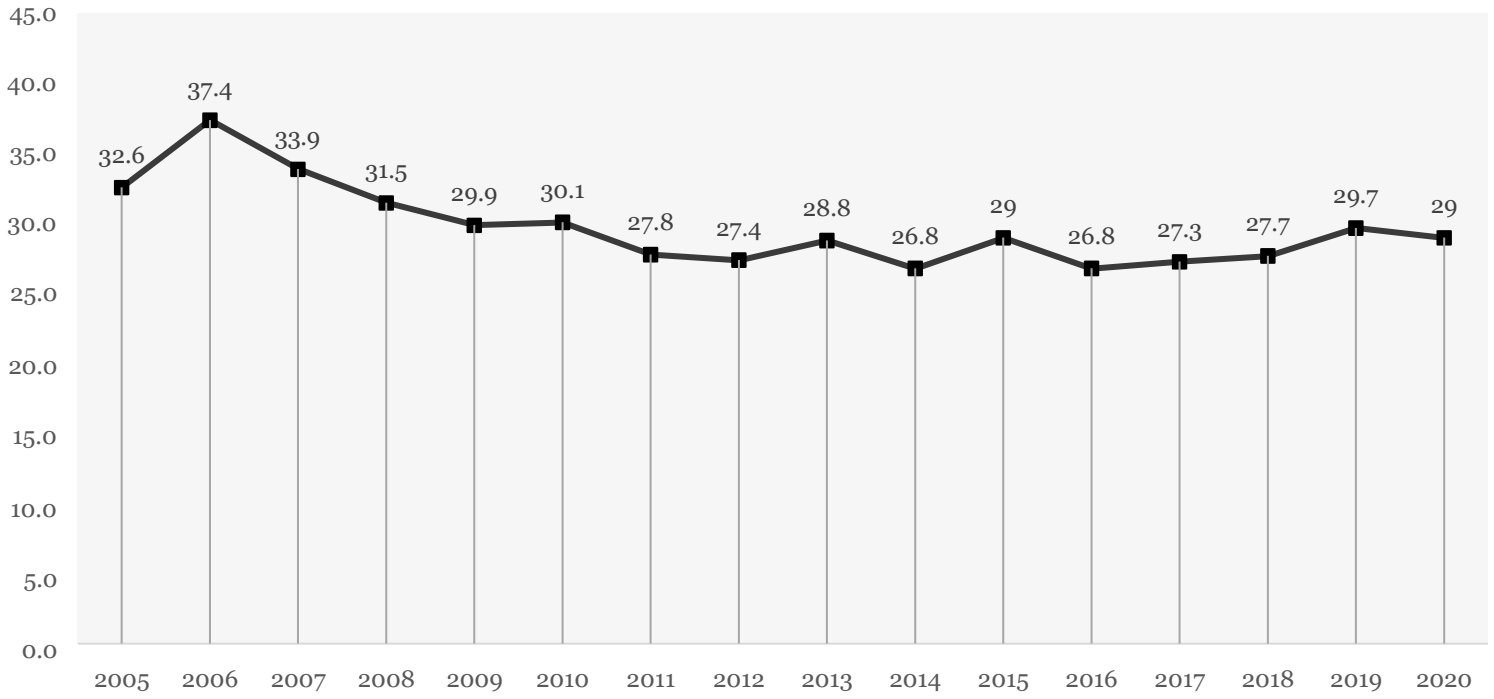
Remittances to Kyrgyzstan over 2005-2020, as % of GDP (source: World Bank)



Migration and remittances in Kyrgyzstan

- During the same time period, the Gini index has decreased only slightly.

Gini coefficient over the period 2005-2020 (source: World Bank)



Dataset and descriptive statistics

- Dataset: data from the longitudinal survey of Kyrgyz households, LiK.
- Life in Kyrgyzstan (LiK) is an open-access, nationally representative panel survey: household, individual and community questionnaires.
- A cross-sectional dataset from the latest available wave, the year 2016, due to the non-random nature of dropout households in the survey.
- **2142 households** in the dataset after merging all the necessary data.

Dataset and descriptive statistics

- Migrant and non-migrant households, 2010-2013 and 2016

Year	**2010**	**2011**	**2012**	**2013**	**2016**
With at least one migrant	363	388	414	411	265
With no migrant members	2637	2475	2402	2173	1877
Migrant households, %	12.1%	13.6%	14.7%	15.9%	12.4%
Total number of of households	**3000**	**2863**	**2816**	**2584**	**2142**

Dataset and descriptive statistics

- International remittances-receiving households, 2010-2013 and 2016

Year	2010	2011	2012	2013	2016
Recipient	299	347	363	356	239
Non-recipient	2701	2516	2453	2228	1903
Recipient households, %	10.0%	12.1%	12.9%	13.8%	11.2%
Recipient households as % of migrant households	82.4%	89.4%	87.7%	86.6%	90.2%
Total number of of households	**3000**	**2863**	**2816**	**2584**	**2142**

Household characteristics by migration status

Characteristics of households	**Overall sample**	**Non-migrant households**	**Migrant households**	**Difference**	**t-statistic**
Household head age	54.53	54.23	56.65	-2.42***	[-2.92]
Household head male	0.717	0.706	0.792	-0.086***	[-2.91]
Household head married	0.701	0.691	0.774	-0.083***	[-2.75]
Head with higher education	0.171	0.178	0.121	0.058**	[2.34]
Head with secondary education	0.793	0.787	0.834	-0.047*	[-1.75]
Head with primary education or illiterate	0.035	0.034	0.045	-0.011	[-0.92]
Annual income, excl. remittances, in KGS	321,746	326,300	289,487	36,813	[0.78]
Household size	5.458	5.210	7.219	-2.010***	[-12.62]
Number of children	1.850	1.815	2.098	-0.284***	[-2.73]
Land ownership	0.743	0.728	0.845	-0.117***	[-4.09]
Main dwelling	0.984	0.982	0.996	-0.014*	[-1.68]
Another housing	0.045	0.047	0.034	0.013	[0.95]
Urban	0.369	0.394	0.196	0.197***	[6.29]
Natural disaster	0.297	0.302	0.264	0.037	[1.247]
Job loss of h-hold member	0.057	0.053	0.083	-0.030**	[-1.957]
Death of a breadwinner	0.015	0.017	0.004	0.013	[1.601]
Number of observations	**2,142**	**1,877**	**265**	-	-

Model specification and identification

- A naïve approach: to set remittances equal to zero (not counterfactual).
- Equally naïve: to impute the counterfactual income of migrant households based the observed incomes of non-migrant households (selection issue).
- Solution?
  »»»»» Propensity score matching (PSM) is used to match migrant and non-migrant households and predict household incomes excluding remittances for migrant households.
- Estimation of the counterfactual income in turn allows the computation of the Gini coefficient in a hypothetical case to be compared with the actual Gini coefficient.

Model specification and identification

- The estimation is done in three steps.

1. Probability of selecting into migration using probit regression:

Prob(migr) = f (hhmale, hhage, hhage^2, hhmarried, hheduc, hsize, numchildren, land, main_dwelling, natdisaster, jobloss, death_mb, urban, regional dummies);

2. Applying PSM to match households based on the propensity score.

   Matching without replacement using NN matching with k=1.

3. Income inequality is then estimated using the Gini decomposition by income source (remittances in our case) using *descogini* module in Stata.

Model specification and identification

- In the third step, we decompose the Gini index by the source of income:

$$\sum_{k=1}^{K} R_k G_k S_k$$

where S_k – the share of component k in total income

G_k - the Gini index of income distribution from source k

R_k – the Gini correlation between income from k and total income distribution

- We can also estimate the impact of the change in remittances on income inequality.

Empirical results

Empirical results

Table: Estimated treatment effects on recipient households, overall sample

Variable		Treated	Controls	Difference	Std. error	t-stat
Equivalized income, incl. remittances	Unmatched	124,054	121,064	2,990	14,655	0.20
	ATT	124,054	99,037	**25,018**	16,583	1.51

Empirical results

Table: Income distribution and remittances, overall sample

	All households
Gini coefficient	
- equivalized per capita income	0.526
- counterfactual income	0.525
Decomposed Gini coefficient	
- on the basis of remittances	0.9473 (-0.011)

Empirical results

Table: Estimated treatment effects on rural households

Variable		Treated	Controls	Difference	Std. error	t-stat
Rural sample						
Equivalized income,	Unmatched	132,056	121,989	10,067	19,678	0.51
incl. remittances	**ATT**	132,056	89,298	**42,758**	19,858	2.15

Empirical results

Table: Income distribution and remittances, rural sub-sample

	Rural households
Gini coefficient	
- equivalized per capita income	0.590
- counterfactual income	0.585
Decomposed Gini coefficient	
- on the basis of remittances	0.9338 (-0.0102)

Conclusion

- Using probit and PMS methodology, the study finds:

  1. Remittances tend to decrease the degree of income inequality
  2. The elasticity of the Gini coefficient with respect to 1% percentage change in the flow of remittances is about 1%.

- There are several dimensions along which the study could be improved:

  i.Estimating the impact on two sub-samples of urban and rural population

  ii.Extending the scope of the topic to the impact on poverty level in Kyrgyzstan.

Thanks for Attention!!!