Return to International Migration Experience. Case of Kyrgyzstan

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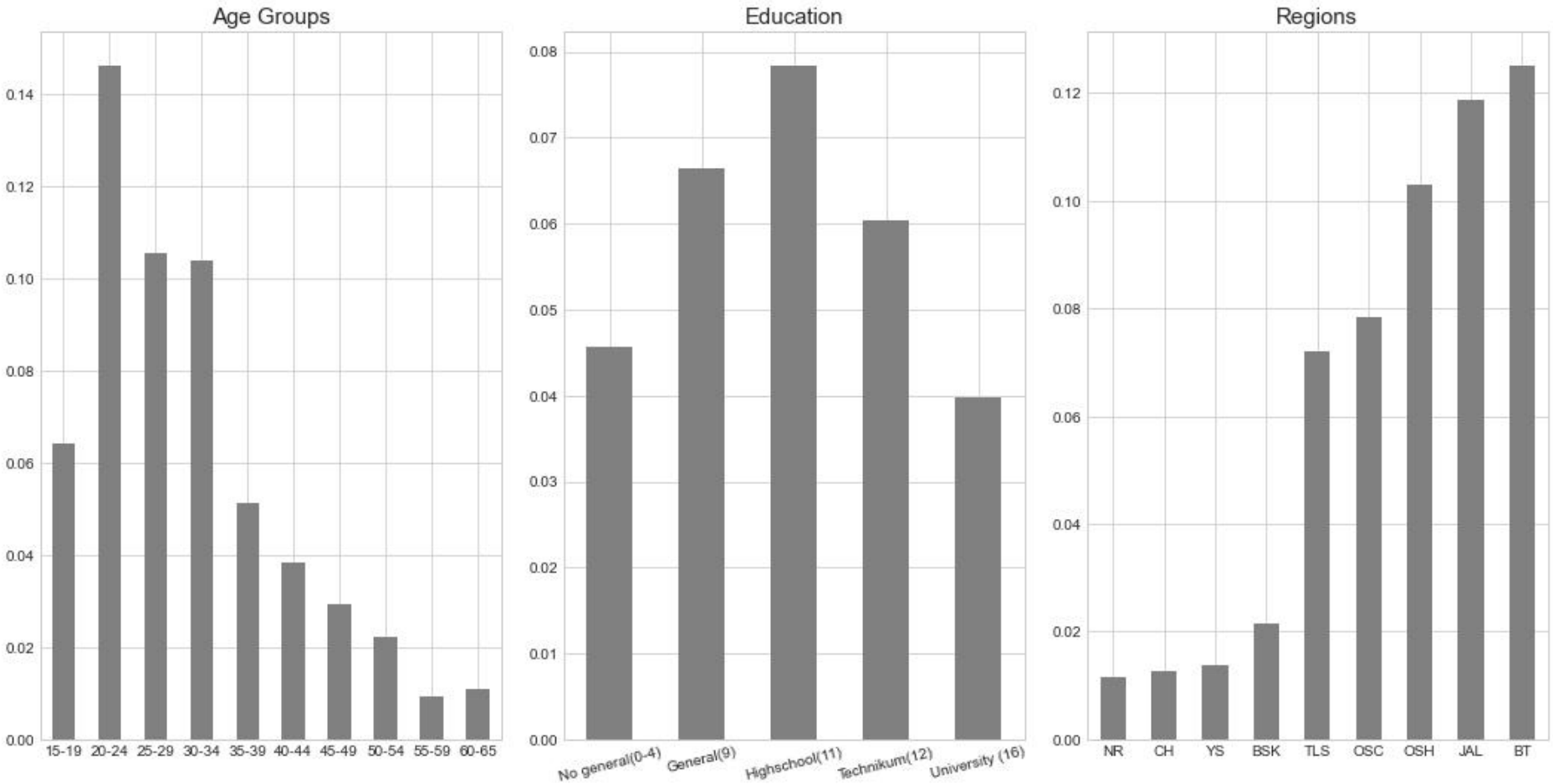
Outline:

Labor share abroad is significantly high.

Source: Authors own calculation using official data from World Bank and Russian Statistical Commetee

Young, less educated and from southern parts of Kyrgyzstan

Figure 2. Outmigration rate in Kyrgyzstan by age group, education and region of residence, (2010-2015 KGZ LiK Survey data)



Research question

What is the labor market outcome for return migrants? Do they earn premium?

Main issue: Selection into return migration and employment
Methodology: Maximum Likelihood Estimation [Wahba 2015, Gang et. al. 1999]
Instruments: 2008 Crises in Russia [migration], family status [employment]

Preliminary Findings

- Migrants are equally likely to be employed
- Negative wage premium for return migrants [-26%]
- Negative estimates driven by sectors requiring long term experience or higher qualification [i.e. mining, communication]
- Positive premium in agriculture

Current literature

- Research in return migration is limited [3% of search downloads among migration topics (IOM 2020)]
- Predominantly permanent migration
- High skilled migration
- Migration in the West [Europe, Latin America, US]
- Remittance effect in source country

Contribution to discussion

- Temporary migration and low skill dominated
- Human capital aspect of return migration
- Developing (source) country perspective - Central Asia

Current literature

Migration and Return

- Selection issue: Differences in endowments ← differences in realized productivity after return (Borjas Bratsberg (1996), Mayr Peri (2009))
- Motivations of migration matter (Dustmann et. al. (2011, 2016), (Piore (1979))
- Spillover effects (Ehrlich Kim (2015), Ehrlich and Pei (2020))

Positive Premium:

- Barrett Goggin (2010) - Ireland, Colon Piracha (2005) - Albania, Gang et.al (1999) - Hungary, Mayr Peri (2009) - Eastern Europe

Ambiguous:

- Zeinher Greenwood (1998), Chiquiar and Hanson's (2005), Reinhold Tom (2013) - Mexico (+)
- Lacuesta (2010), Moraga and Huertas (2011) - Mexico (0 or '-')

Econometric Model

Main specification [Mincer type equation]

$$Y_{ijt} = \alpha + \gamma D + \beta X_{ijt} + \phi_j + \delta_t + \epsilon_{ijt} \qquad (1)$$

Where,

- Y_{ijt} - Log wage of individual i, living in region j at survey period t;
- D - dummy variable indicating prior migration experience;
- X_{ijt}: demographic and other covariates: age, age sqrd., education, urbanity etc.
- ϕ_j and δ_t - region and survey period fixed effects;
- ϵ_{ijt} - unobserved factors;

Direct implementation of equation (1) suffers from endogeneity issue, namely selection into migration and labor market.

Selection into Employment and Return Migration

Employment is observed only if individual participates in labor market.

$$E_{ijt} = \theta H_{ijt} + u_{ijt} \qquad E = \begin{cases} 1 & \text{if } E^* > 0 \\ 0 & \text{otherwise} \end{cases} \qquad (2)$$

Where, H: family with children aged less than 5, family membership status, age, age squared, education and urbanity.

Migration status is observed only if return to migration is positive.

$$M_{ijt} = \delta Z_{ijt} + v_{ijt} \qquad M = \begin{cases} 1 & \text{if } M^* > 0 \\ 0 & \text{otherwise} \end{cases} \qquad (3)$$

Where, Z: weighted change in employment levels during 2008 Financial Crises in Russia, urbanity.

Both above equations include region and time fixed effects.

Identification of Return Migration Status

Shift-share instrument: change in employment levels at education-age group (skill cell) in Russia between 2007-2009.

$$B_l = \sum_k \omega_{lk} g_k \qquad (4)$$

Where,

- B_l - percentage change in employment level for skill cell l;
- ω_{lk} - initial share of skill cell l in industry k;
- g_k - growth rate in industry k.

Skill cell: age-groups (10) X education levels (5) = 50 cells

Exclusion restriction: Changes in local labor markets in Russia do not correlates with local labor market demand in Kyrgyzstan.

Maximum Likelihood Method

Earnings equation (1) is estimated simultaneously with employment (2) and return migration (3) equation.
MLE method is asymptotically efficient and normally distributed (Gang et. al. (1999), Roodman (2011)).

Likelihood Function:

$$\begin{aligned}\mathcal{L} = &\prod_{E=1,M=1} Pr(u > -\theta H, v > -\delta Z, \epsilon = Y - \beta\tilde{X} - \gamma D) \\ &\prod_{E=1,M=0} Pr(u > -\theta H, v \leq -\delta Z, \epsilon = Y - \beta\tilde{X}) \\ &\prod_{E=0,M=1} Pr(u \leq -\theta H, v > -\delta Z) \\ &\prod_{E=0,M=0} Pr(u \leq -\theta H, v \leq -\delta Z)\end{aligned} \tag{5}$$

Where, $\beta\tilde{X} = \alpha + \beta X + \phi + \delta$

- Main Data: The 'Life in Kyrgyzstan' Study (2010-2013).
  - used to obtain local labor market outcomes, demographic and social characteristics.

- Additional Data: Russian Longitudinal Monitoring Survey of HSE (2005-2009).
  - used to calculate shift share instrument.

For both data sample consist of individuals who:

1. male
2. age $\in [16, 65]$
3. able to work (not student, not retired, not disabled)

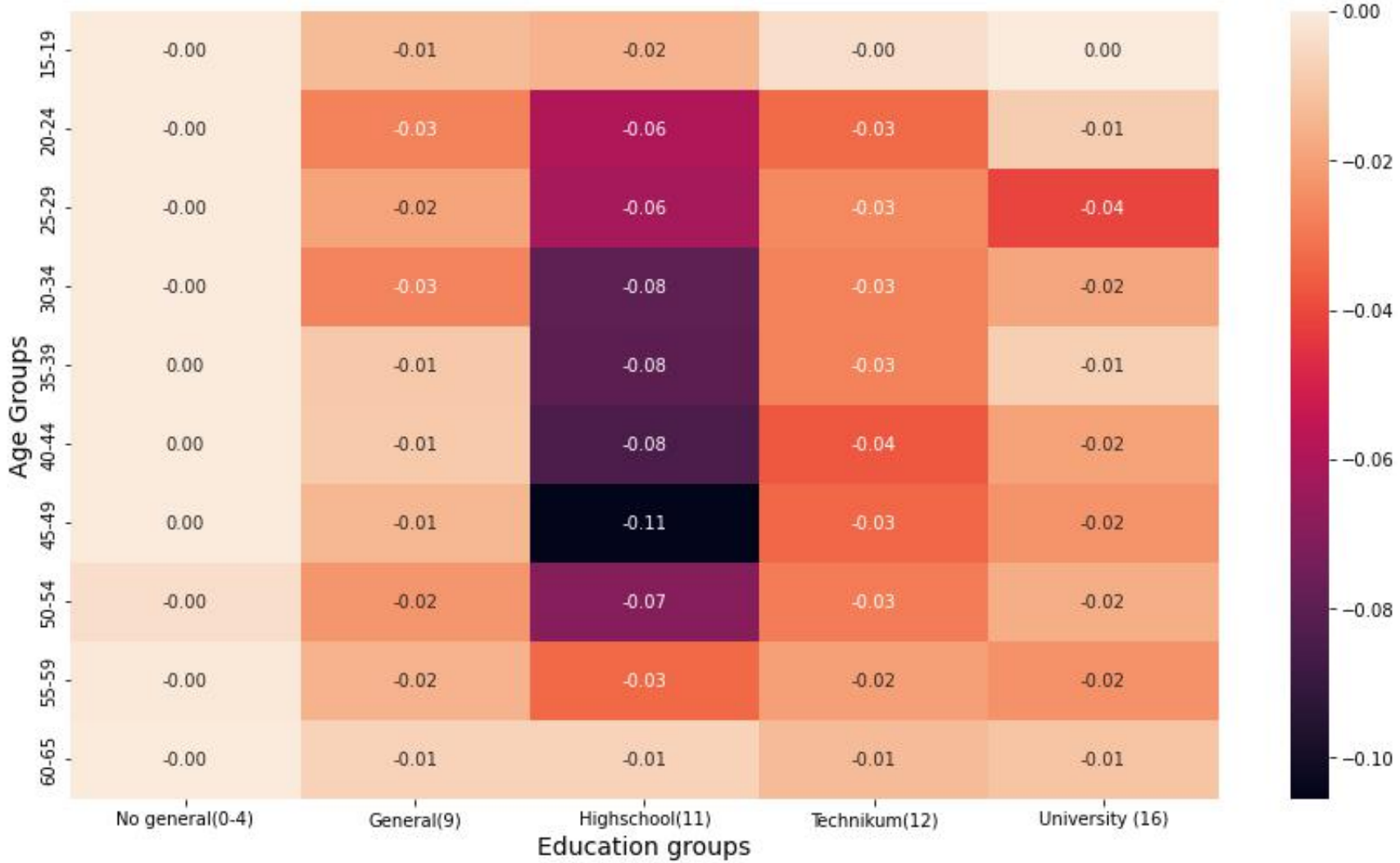
Table 1. Descriptive statistics

	Stayer	Migrant	P-value
Total observations (13560)	**9873**	**3687**	
Age, mean (SD)	36.72 (13.36)	31.82 (11.45)	***
Household head	0.51 (0.50)	0.31 (0.46)	***
Child < 5	0.47 (0.50)	0.53 (0.50)	***
Married	0.72 (0.45)	0.61 (0.49)	***
Location			
Urban	0.36 (0.48)	0.23 (0.42)	***
South (BT, JAL, OSH, OSC)	0.44 (0.50)	0.76 (0.43)	***
Education			***
No general(0-4)	96 (0.97%)	21 (0.57%)	
General(9)	871 (8.82%)	427 (11.58%)	
Highschool(11)	5536 (56.07%)	2474 (67.10%)	
Vocational schooling (12)	1723 (17.45%)	356 (9.66%)	
University (16)	1647 (16.68%)	409 (11.09%)	
Employment			
Employed	0.64	0.51	***
Self-Employed (Own account worker)	0.39	0.36	0.22
Employee (Conditional on being employed)	0.40	0.27	***
High skilled occupation	0.12	0.07	***
Medium skilled occupation	0.13	0.09	***
Low skilled occupation	0.5	0.49	0.38
Log wage, Winsorized fraction .01, mean (SD)	8.69 (0.48)	8.62 (0.48)	***
Log wage - imputed, Winsorized fraction .01, mean (SD)	8.63 (0.49)	8.54 (0.46)	***
Sectors			
Agriculture	0.30	0.35	***
Health, education and social	0.09	0.05	***
Construction	0.11	0.15	***
Transportation	0.10	0.08	***
Sample period: 2010-2013			

Mean (SD) or percentage shares in respective samples.

* p < 0.05, ** p < 0.01, *** p < 0.001

Figure 4: Percentage change in employment level per skill cell in Russia from 2007 to 2009



Source: Russian Longitudinal Monitoring Survey of HSE (2005-2009).Industry employment shares applied from 2005-2007.

Table 2. Estimates for employment equation.

Dependent variable: Being employed (1 or 0)				
		2SLS	**Maximum Likelihood Estimation**	
	OLS	**Second Stage**	**Employment Probability**	**Marginal effects**
	(1)	**(2)**	**(3)**	**(4)**
Migrant	-0.0486***	-0.0509	0.2427	0.2426*
	(0.0094)	(0.0716)	(0.3458)	
		First Stage	**Migration Probability**	
Bartik (Instrument)		1.6889***	1.6122***	
		(0.0987)	(0.4275)	
N	13560	13560	13560	13560
Adj. R sqrd.	0.18	-	-	-
ρ	-	-	-0.2302	-
			(0.2160)	
F-stat	-	292.96	-	-

Standard errors in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

Note: Standard errors are heteroscedasticity robust. All regressions include fixed effects controlling region and year of the survey. Regressions also include covariates (X). Full version of this table is present in Appendix (See Table 2A). Instrument (Z) is used along with other covariates (X) in the first stage regression. In MLE estimation instrument is used in migration selection equations along with urbanity, region and year fixed effects.

Table 3. Estimates for wage equation.

Dependent variable: Log of monthly wage, Winsorized fraction .01				
	OLS	**MLE-1**	**MLE-2**	**MLE-3**
	(1)	**(2)**	**(3)**	**(4)**
Wage equation				
Migrant	0.0031	0.0039	-0.2689***	-0.2599***
	(0.0116)	(0.0116)	(0.0738)	(0.0764)
Selection into employment				
Children < 5		0.0642*		0.0620*
		(0.0252)		(0.0253)
Head of household		0.1287***		0.1130***
		(0.0338)		(0.0340)
Selection into migration				
Bartik instrument			1.3046**	1.3284**
			(0.4232)	(0.4259)
$\rho 12$		-0.1695	0.3816***	-0.1409
		(0.1315)	(0.1059)	(0.1180)
$\rho 13$				0.3715***
				(0.1079)
$\rho 23$				-0.0833***
				(0.0164)
N	8200	13560	13560	13560
adj. R2	0.23	-	-	-

Standard errors in parentheses

** p < 0.05, ** p < 0.01, *** p < 0.001*

Table 4. Estimates for wage equation. Sector variable and its interaction effects with return migrant status.

Variables		MLE
	Migrant	-0.2594**
Interacted with Return Migrant Status	**Mining**	-0.2237*
	MFR	0.0828
	Energy&water	0.0138
	Construction	0.0169
	Trade&Repair	-0.0025
	Hotels&Restaurants	-0.085
	Transport&Communication	-0.1014**
	Finance	0.1275
	Realestate, Business&Renting	-0.1142
	PublicAdmin	0.0417
	Education	0.0308
	Health&Social	0.1354
	Utilities, Social&PersonalServices	0.1104
	PrivateHouseholds	-0.1522
	Extra-TerritrorialOrganizations	0.0198
Selection into Migration		
	Bartik Instrument	1.2982**
		(0.4327)
	ρ	0.3758**
		(0.1312)
	N	13560

Table 5. Estimates for wage equation per selected sector worker samples

	Agriculture	Construction	Manufacturing	Trade & Repair	Social	Finance
	(1)	(2)	(3)	(4)	(5)	(6)
Wage Equation						
Migrant	0.3473***	-0.0285	0.056	0.217	-0.3917**	-0.0087
	-0.0527	-0.0886	-0.1519	-0.1108	-0.1345	-0.3922
Selection into Migration						
Bartik Instrument	3.6948***	0.8443	0.8651	4.2109**	-0.4458	1.8883
	-0.7001	-1.2022	-3.0145	-1.4241	-1.8392	-5.8826
$\rho 12$	-0.6949***	-0.2957	-0.1619	-0.0882	0.1425	-0.4589
	-0.0916	-0.1646	-0.1114	-0.1626	-0.3839	-0.4894
$\rho 13$	-0.5588***	0.0797	0.0352	-0.3557*	0.5603**	0.1692
	-0.085	-0.0934	-0.1664	-0.1802	-0.1791	-0.5211
$\rho 23$	-0.053	-0.1934***	-0.1115	-0.0879	-0.2106**	-0.7831**
	-0.0282	-0.0487	-0.1187	-0.0556	-0.0793	-0.2586
N	4310	1604	505	1354	1093	224

Standard errors in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

Conclusion

1. Addressing selection reveals migrants labor outcomes
2. Return migrants are equally likely to be employed if selection is addressed.
3. Return migrants have negative premiums up to 26% relative to non-migrants
   - This negative premium can not be attributed to sector selection.
   - Nevertheless, in sectors such as Mining and Transportation / Communication migrants earn significantly less than non-migrants. It is possible that this spheres require longer on the job experience.
   - At some sectors migrants earn significant premium (agriculture), possibly due to acquiring better equipment using their remittances.