

Research project „Economic Transformation, Household Behaviour  
and Well-Being in Central Asia: The Case of Kyrgyzstan“

## WORKSHOP “Panel Data and the Life in Kyrgyzstan Survey”

### Research paper: **Educational mobility in Kyrgyzstan**

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## Agenda

- Motivation
- Literature review
- Research questions
- Empirical strategy
- Descriptive data
- Findings
- Next steps

## Motivation

- Intergenerational mobility, a measure of the changes in socio-economic status from the parents' to the children's generation, is an important indicator of equality (of opportunities) in a society
- Transition countries, mobile societies in the previous regime, may have experienced a change in intergenerational mobility
- Little research is done on intergenerational mobility in Central Asia

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## Literature review

- Much research focuses on estimating the degree of IGM
- Recent literature turned to investigating causal mechanisms of intergenerational mobility
- Some examples of methods used are twins, adoption approach, and policy reform studies
- Most research is based on long panel and administrative data from developed countries
- IGM could be measured with
  - Income/wealth
  - Educational attainment
  - Occupation

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## Literature on IGM in transition countries

Most papers find high educational and occupational mobility in pre-transition period

- Titma and Saar (1995) conclude that a real equalization of educational opportunity has been achieved in the Soviet Union
- Titma et al. (2003) finds high occupational mobility in European part of the Soviet Union in the last years of its existence.

Some papers find decline or no change in intergenerational mobility after the transition

- Gerber (2000) finds growing educational stratification in Russia due to declining enrollment in post secondary education
- Hertz et al. (2009) finds a strong decline in educational mobility in Bulgaria
- Verashchagina (2009) finds unaffected educational persistence in pre- and post-transition

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## Research questions

- What is the magnitude of intergenerational mobility in Kyrgyzstan, measured by different indicators?
- How has the transition affected intergenerational mobility?
- What socio-demographic characteristics are associated with highest and lowest mobility in the population?
- Is there a gender bias in the inter-generational mobility in the country?

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## Empirical strategy

- We want to see how the educational and occupational mobility has changed after the transition in Kyrgyzstan
- We estimate OLS and calculate correlations based on education and occupations
- We investigate the factors of changes in intergenerational mobility

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## Major data source

### Life in Kyrgyzstan 2010 panel survey:

- Nationally representative household survey comprising 3,000 households and 8160 adult members
- Every respondent aged 18+ was asked about the parents' education, their last job position, wage status, and sector of employment
- We exploit 6,543 child-parent observations for HH members aged 20-69 (*born in years 1941-1990*).

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## Additional data sources

### Kyrgyz Poverty Monitoring Survey (KPMS) 1998:

- Nationally representative household survey comprising 2,979 households.
- Asks retrospective questions about the parental education and sector of occupation.
- We exploit 7,075 child-parent observations (respondents born in years 1929-1978)

### Kyrgyz Multipurpose Poverty Survey (KMPS) 1993:

- Nationally representative survey of 2,000 households and 10,000 members of those households.
- Contains information about the level of parents' education, but no retrospective information about the parents occupation
- We exploit only 3,924 child-parent observations (respondents born in years 1924-1973)

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## Descriptive statistics

Dataset	Year	Sample size		Number of parent-child units used (out of total)	Male/Female (%)	Urban/Rural (%)
		# of households	members aged 18+			
KMPS	1993	1,937	5,018	3,924	47.3 / 52.7	39.3 / 60.7
KPMS	1998	2,979	8,736	7,075	48.2 / 51.8	26.9 / 73.1
LiK	2010	3,000	8,160	6,543	47.6 / 52.4	37.7 / 62.3

Source: World Bank (1993, 1998) and DIW Berlin (2010)

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## Descriptive statistics

- We use years of schooling to explore educational mobility
- Years of schooling are calculated based on reported level of education, by counting number of years required to achieve this level
- To get more detailed picture, we divide our sample into 5-year long cohorts

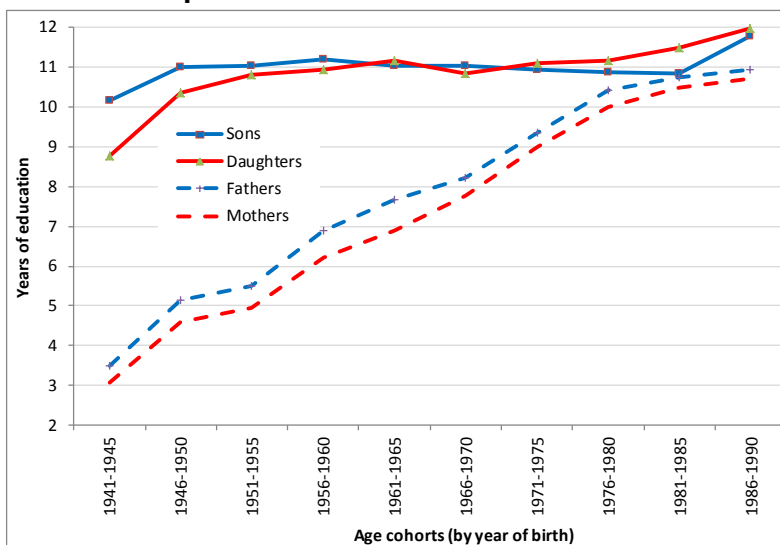
Dataset	Range years of education		Average years of education			
	Parents	Children	Parents		Children	
			Cohort 1	Cohort 10	Cohort 1	Cohort 10
KMPS 1993	0 / 18	0 / 18	1.6	8.5	7.5	11.4
KPMS 1998	0 / 20	0 / 22	1.7	10.1	7.2	10.7
LiK 2010	0 / 19	0 / 21	3.3	10.8	9.4	11.9

Source: World Bank (1993, 1998) and DIW Berlin (2010)

Note: Cohorts are related to cohorts of children

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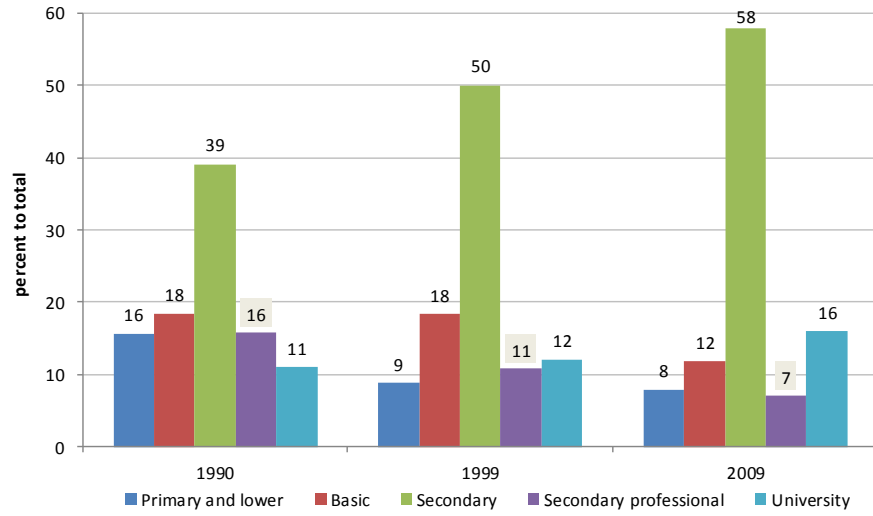
## Descriptive statistics: Years of schooling



Source: Life in Kyrgyzstan (LiK) panel survey, 2010

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### Educational attainment of population aged 15+



Source: Kyrgyz National Census for 1990, 1999, and 2009

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### Preliminary findings

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## What is the magnitude of intergenerational mobility in Kyrgyzstan, measured by education?

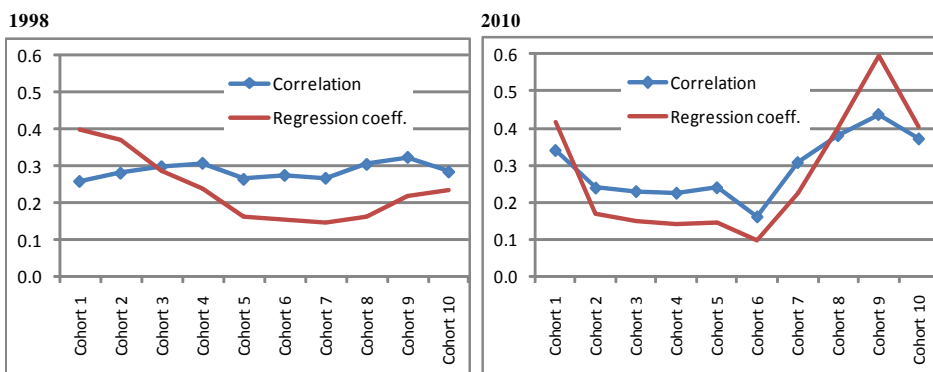
	Regression coefficient			Correlation		
	1993	1998	2010	1993	1998	2010
<u>Aged 20-69</u>	0.30	0.23	0.20	0.41	0.36	0.29
R-squared	0.16	0.13	0.09			
# of obs.	3,924	7,075	6,543			

Source: KMPS 1993, KPMS 1998, LiK 2010

- Results indicate increased educational mobility over time
- Both regression coefficient and correlation demonstrate it

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## Educational mobility by age cohorts



- All respondents are
- The results for the last three cohorts by using the 2010 data clearly indicate declined mobility

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## How has the transition affected intergenerational mobility?

	Regression coefficient			Correlation		
	1993	1998	2010	1993	1998	2010
<u>Aged 20-69</u>	0.30	0.23	0.20	0.41	0.36	0.29
R-squared	<i>0.16</i>	<i>0.13</i>	<i>0.09</i>			
# of obs.	3,924	7,075	6,543			
<u>Aged 25-35</u>	0.14	0.18	0.49	0.27	0.30	0.41
R-squared	<i>0.07</i>	<i>0.09</i>	<i>0.16</i>			
# of obs.	1,159	2,009	1,649			

Source: KPMS 1993, KPMS 1998, LiK 2010

- Results are based on a cohort of respondents aged 25-35
- Data from 2010 should show effect of transition to educational mobility
- Results indicate a sharp decline in educational persistence

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## Is there a gender bias in intergenerational mobility?

- We find gender effect only for 1993, but no effect for 1998 and 2010

	1993	1998	1998
Parental years of education	0.168 * <i>14.3</i>	0.182 * <i>21.1</i>	0.186 * <i>19.3</i>
Female dummy	-0.425 * <i>-5.2</i>	-0.069 <i>-1.2</i>	-0.029 <i>-0.5</i>
Age	0.346 * <i>17.5</i>	0.303 * <i>22.1</i>	-0.018 <i>-1.2</i>
Age squared	-0.005 * <i>-21.3</i>	-0.004 * <i>-23.8</i>	0.000 <i>1.4</i>
HH size	-0.090 * <i>-6.1</i>	-0.071 * <i>-6.3</i>	-0.086 * <i>-6.3</i>
Urban dummy	0.780 * <i>8.7</i>	0.683 * <i>10.0</i>	0.891 * <i>14.0</i>
N	3,924	7,075	6,543
Adj.R <sup>2</sup>	0.32	0.21	0.13

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## Spearman rank correlation for employment sectors

1. In general, we find the same sectoral mobility in younger cohorts

2. Women are more likely to work in sectors where the parents are/were employed

### Spearman rank correlation for employment sectors

Respondent ->	Sons	Daughters	Both male and female
<i>Total sample of aged 20-69 (N=3679)</i>			
Father	0.23	0.27	0.26
Mother	0.19	0.31	0.26
<i>Cohorts 8 and 9, aged 25-35 (N=643)</i>			
Father	0.14	0.35	0.27
Mother	0.07	0.38	0.26

Source: Life in Kyrgyzstan panel survey, 2010

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## Conclusion

- Kyrgyzstan remains mobile society in terms of education
- The transition effect seems to be making an adverse impact to educational mobility (*subject to further scrutiny*)
- There are no gender differences in educational mobility; but there is some evidence of much lower sectoral mobility for women

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## Next steps

- Exploit in further occupational and sectoral mobility
- Analyze what socio-demographic characteristics are associated with highest and lowest mobility in the population

Thank you

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