

Can we really explain worker flows in transition economies?

Evidence from the Life in Transition Survey

Joanna Tyrowicz
Lucas van der Velde

GRAPE
Group for Research in APplied Economics

November 2015,
Instytut Badan Strukturalnych

Table of contents

- 1** Introduction
- 2** Hypotheses
- 3** Data and methods
- 4** Results
- 5** Conclusions



Introduction

■ Motivation



Introduction

■ Motivation

- Transition theories better than universal labor market theories?
When is transition over?



Introduction

- Motivation
 - Transition theories better than universal labor market theories?
When is transition over?
 - The missing link of demographic changes



Introduction

- Motivation
 - Transition theories better than universal labor market theories?
When is transition over?
 - The missing link of demographic changes



Introduction

- Motivation
 - Transition theories better than universal labor market theories?
When is transition over?
 - The missing link of demographic changes

- Our goal: to understand better worker flows in transition economies

Introduction

- Motivation
 - Transition theories better than universal labor market theories?
When is transition over?
 - The missing link of demographic changes
- Our goal: to understand better worker flows in transition economies
 - Which types of flows prevailed during transition?

Introduction

- Motivation
 - Transition theories better than universal labor market theories?
When is transition over?
 - The missing link of demographic changes
- Our goal: to understand better worker flows in transition economies
 - Which types of flows prevailed during transition?
 - What was the role played by demographic processes?

Introduction

- Motivation
 - Transition theories better than universal labor market theories?
When is transition over?
 - The missing link of demographic changes
- Our goal: to understand better worker flows in transition economies
 - Which types of flows prevailed during transition?
 - What was the role played by demographic processes?
- Advantage: new, comprehensive retrospective data: Life in Transition Survey (EBRD)

Countries analyzed

Year	N	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Estonia	2				+	+	+	+	+	+	+	+	+	+	
Russia	2		+	+	+	+	+	+	+	+	+	+	+		
Ukraine	3				+	+	+	+	+	+	+	+	+		
Bulgaria	1						+	+	+	+					
Poland	3						+	+	+	+	+	+	+		
Romania	1							+	+	+					
Slovenia	2			+	+	+	+	+	+						
Slovakia	1						+	+	+	+			+	+	+

Countries (not) analyzed

Year	N	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04
Albania																	
Armenia																	
Azerbaijan																	
Bulgaria	1						+	+	+	+							
Belarus																	
Croatia																	
Czech Republic	2				+	+	+	+	+								
Estonia	2				+	+	+	+	+	+	+	+	+	+			
Georgia																	
Hungary	2					+	+	+									
Kazakhstan																	
Kyrgistan																	
Latvia																	
Lithuania																	
Macedonia																	
Moldova																	
Montenegro																	
Poland	3						+	+	+	+	+	+	+				
Romania	1							+	+	+							
Russia	2		+	+	+	+	+	+	+	+	+	+	+				+
Slovenia	2			+	+	+	+	+	+								
Slovakia	1						+	+	+	+			+	+	+	+	+
Serbia																	
Tajikistan																	
Ukraine	3				+	+	+	+	+	+	+	+	+				
Uzbekistan																	

Three stories of reallocation

- Aghion and Blanchard (1994) → public to private flows.
- Cabalero and Hammour (various papers) → Inter-industry reallocation.
- Demographic transition.



Three stories of reallocation

- Aghion and Blanchard (1994) → public to private flows.
- Cabalero and Hammour (various papers) → Inter-industry reallocation.
- Demographic transition.

Common challenges in applying these theories to data

- 1 Distinguish between worker flows (gross) and job flows (gross) and change in employment structure (net)
- 2 Privatization vs. *de novo* firms might have different impact

Three stories of reallocation

- Aghion and Blanchard (1994) → public to private flows.
- Cabalero and Hammour (various papers) → Inter-industry reallocation.
- Demographic transition.

Common challenges in applying these theories to data

- 1 Distinguish between worker flows (gross) and job flows (gross) and change in employment structure (net)
- 2 Privatization vs. *de novo* firms might have different impact
- 3 What if a worker holds more than one job in the period?

Our statements to be tested

- 1 Flows during transition were generally AB, later intensifying CH
- 2 Reallocation affected labor supply



Data source: Life in Transition Survey

27 transition countries

18 years: 1989 - 2006

- Standardized survey (EBRD 2006)
- Retrospective, covers years from 1989 to 2006
- Limitations: recall and survival bias, no data on wages

LiTS in perspective

Country	Year	Services (LFS)	Industry (LFS)	Private (SES)	Services (LiTS)	Industry (LiTS)	Private (LiTS)
Bulgaria	2000	51.8	39.6		57.2	36.0	48.7
	2002	54.9	38.3	55.9	60.0	34.4	53.5
Estonia	1997	53.1	33.1		58.4	30.6	52.7
	2002	56.0	32.9	91.8	59.8	30.9	62.2
Latvia	1998	47.4	30.1		67.1	23.6	51.2
	2002	49.0	27.7	88.0	67.1	24.4	59.7
Poland	2000	46.1	40.1		59.6	34.6	50.0
	2002	51.5	37.8	47.1	59.0	34.3	53.4
Romania	1997	48.4	22.8		54.1	39.7	44.2
	2002	58.0	24.7	65.3	58.8	36.1	54.8
Slovakia	1998	50.2	29.2		62.6	30.1	39.7
	2002	52.7	27.7	63.0	65.6	28.6	45.9

Note: Own calculation on the basis of data from LiTS, the EU-Labour Force Surveys (LFS) and the Structure of Earnings Survey (SES).



LiTS in perspective

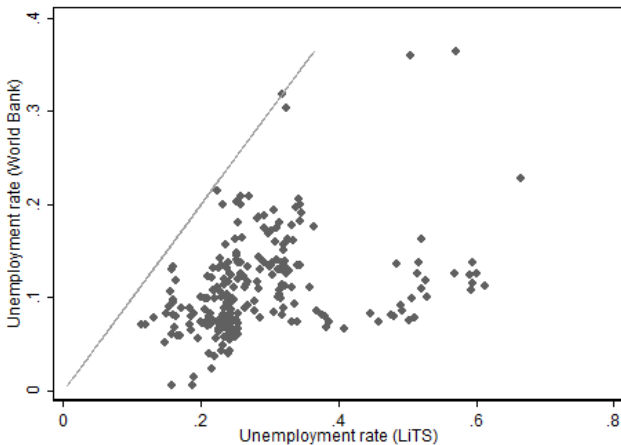


Figure: Unemployment rate comparison

Definitions

- AB: public \Rightarrow private sector (within the same industry)
- CH: manufacturing \Rightarrow services (within the same sector)
- ABCH: public manufacturing \Rightarrow private services
- OPPOSITE: private service \Rightarrow public manufacturing
- SAME: within sector and industry
- EXIT: To retirement
- ENTRY: Into employment

Our statements to be tested

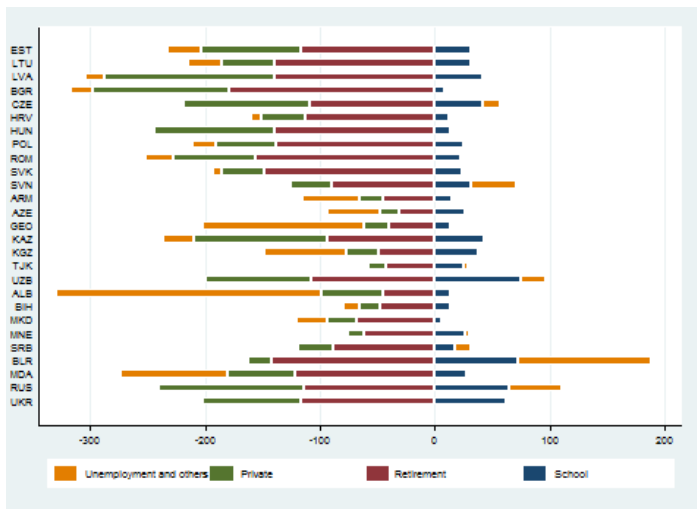
- 1** Flows during transition were generally AB or CH
- 2** Reallocation affected labor supply



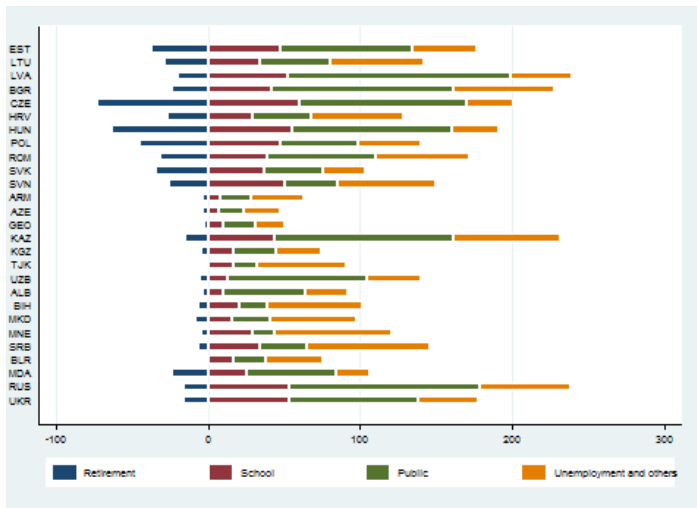
H1: which flows dominated in transition?



H1: Flows from (and into) the state sector



H1: Flows from (and into) the private sector



On the timing of transition

Flow/year	AB	CH	SAME	ENTRY	EXIT
1990	base level				
1991	1.000*	0.111	0.667	0.556	1.296
1992	1.593***	0.333	2.037***	0.370	0.111
1993	1.926***	0.407*	2.074***	-0.074	-0.148
1994	1.556**	0.185	2.148***	-0.000	-1.630*
1995	1.444**	0.296	3.148***	0.148	-1.148
1996	1.778***	0.778***	3.852***	0.444	-1.259
1997	1.074*	0.185	3.074***	-0.037	-2.407**
1998	1.778***	0.333	2.667***	0.037	-2.111**
1999	0.593	0.407*	3.148***	-0.481	-2.111**
2000	1.222**	0.407*	4.370***	0.185	-1.519
2001	1.630***	0.741***	4.333***	0.185	-2.296**
2002	0.593	0.481**	2.889***	0.556	-2.963***
2003	0.148	0.667***	4.333***	0.667	-2.519***
2004	0.889	0.889***	5.296***	1.000*	-1.889*
2005	0.852	1.000***	4.630***	2.185***	-2.000**
2006	0.741	1.296***	6.148***	-0.370	-4.370***
# of obs.	459	459	459	459	459
R^2	0.640	0.538	0.887	0.774	0.827

Our statements to be tested

- ~~1 Flows during transition were generally AB or CH~~



Our statements to be tested

1 ~~Flows during transition were generally AB or CH~~

2 **Reallocation affected labor supply**



Sample characteristics

	All		Under 45		Over 45	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Time to event	10.698	6.759	7.639	4.417	16.632	6.565
Individual characteristics						
Female	0.563	0.496	0.572	0.495	0.546	0.498
Secondary education	0.577	0.494	0.615	0.487	0.505	0.5
Tertiary education	0.251	0.434	0.269	0.444	0.216	0.412
Married	0.63	0.483	0.68	0.467	0.532	0.499
Urban	0.676	0.468	0.662	0.473	0.704	0.457
Last employment						
Manufacturing	0.283	0.451	0.271	0.444	0.307	0.461
Public	0.749	0.434	0.698	0.459	0.848	0.359
Employment structure (at retirement)						
Share private firms	0.233	0.081	0.243	0.078	0.212	0.082
Share new private firms	0.239	0.109	0.275	0.085	0.169	0.117
Share manufacturing	0.207	0.062	0.195	0.055	0.229	0.07

H2: When do we leave?

	All	44 or younger 1989	45 or older 1989
Female	-0.212*** (0.015)	-0.121*** (0.028)	-0.160*** (0.015)
Secondary Education	-0.072*** (0.017)	0.045 (0.033)	-0.037** (0.017)
Tertiary education	0.053** (0.023)	0.161*** (0.044)	0.049** (0.021)

H2: When do we leave?

	All	44 or younger 1989	45 or older 1989
Female	-0.212*** (0.015)	-0.121*** (0.028)	-0.160*** (0.015)
Secondary Education	-0.072*** (0.017)	0.045 (0.033)	-0.037** (0.017)
Tertiary education	0.053** (0.023)	0.161*** (0.044)	0.049** (0.021)
Manufacturing	-0.069*** (0.015)	-0.060** (0.027)	-0.041*** (0.015)
Public	-0.039* (0.021)	-0.059* (0.034)	-0.030 (0.021)

H2: When do we leave?

	All	44 or younger 1989	45 or older 1989
Female	-0.212*** (0.015)	-0.121*** (0.028)	-0.160*** (0.015)
Secondary Education	-0.072*** (0.017)	0.045 (0.033)	-0.037** (0.017)
Tertiary education	0.053** (0.023)	0.161*** (0.044)	0.049** (0.021)
Manufacturing	-0.069*** (0.015)	-0.060** (0.027)	-0.041*** (0.015)
Public	-0.039* (0.021)	-0.059* (0.034)	-0.030 (0.021)
Share of privatized firms	-1.259*** (0.205)	-0.052 (0.306)	-0.325 (0.216)
Share of <i>de novo</i> private firms	3.131*** (0.101)	4.684*** (0.217)	2.768*** (0.095)
Share manufacturing	-2.551*** (0.245)	-6.444*** (0.460)	-3.061*** (0.267)

H2: When do we leave?

	All	44 or younger 1989	45 or older 1989
Female	-0.212*** (0.015)	-0.121*** (0.028)	-0.160*** (0.015)
Secondary Education	-0.072*** (0.017)	0.045 (0.033)	-0.037** (0.017)
Tertiary education	0.053** (0.023)	0.161*** (0.044)	0.049** (0.021)
Manufacturing	-0.069*** (0.015)	-0.060** (0.027)	-0.041*** (0.015)
Public	-0.039* (0.021)	-0.059* (0.034)	-0.030 (0.021)
Share of privatized firms	-1.259*** (0.205)	-0.052 (0.306)	-0.325 (0.216)
Share of <i>de novo</i> private firms	3.131*** (0.101)	4.684*** (0.217)	2.768*** (0.095)
Share manufacturing	-2.551*** (0.245)	-6.444*** (0.460)	-3.061*** (0.267)
Share private sector	0.558*** (0.216)	-0.935*** (0.342)	-0.239 (0.225)
Share manufacturing	1.673*** (0.225)	3.199*** (0.337)	2.226*** (0.251)



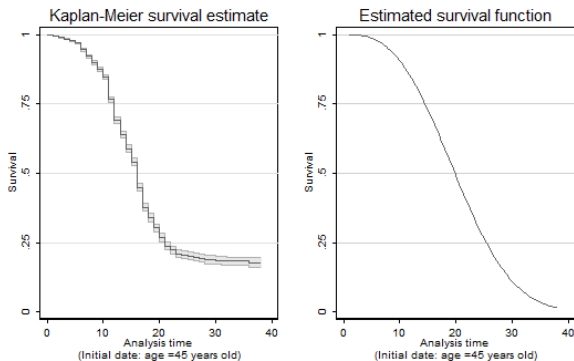
H2: When do we leave?

Table: Which characteristics contribute more to explanatory power

Controls	Model 1	Model 2	Model 2	Model 4
Demographics, education, residence	Yes	Yes	Yes	Yes
Employment structure:				
- prior to retirement		Yes		
- in the period of retirement			Yes	Yes
- in 1989				Yes
Log likelihood	-3 868	-3 801	-2 646	-2 646
LL ratio to Model 1		23.00*	2 332.79*	0.00

How good are survival models – Fit to the data

Comparison of survival curves



The shaded area in the left graph indicate 95% confidence intervals

Summarizing

- 1** AB and CH movements are the smallest part of transition.
- 2** School-to-work transition very important for transformation.
- 3** Retirement decisions are affected by both personal characteristics and the pace of restructuring.
 - Female workers and medium education workers appear to have a larger share of the burden. Role for SBTC?
 - Positive relation between new firms and retirement time close to AB prediction.

Questions or suggestions?



Questions or suggestions?

Thank you for your attention!



Tell me more, tell me more

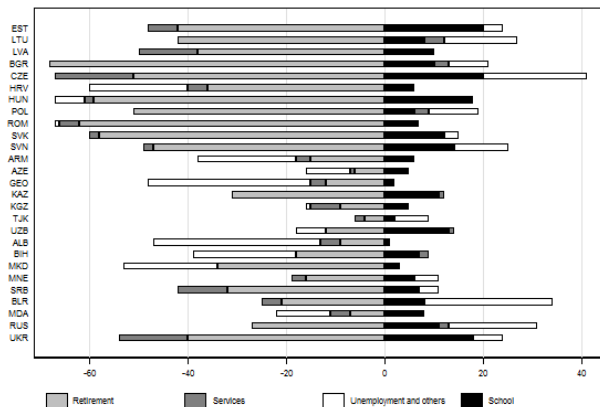
H1: Beyond the graphs

Table: The adjusted size of each type of flows

		OPPOSITE	EXIT	ENTRY	SAME
	Means	1.18	7.69	3.53	5.88
AB	2.30	-17.76***	40.16***	18.89***	22.67***
CH	0.66	17.97***	45.61***	44.62***	27.84***
ABCH	0.60	16.88***	46.80***	43.94***	27.33***

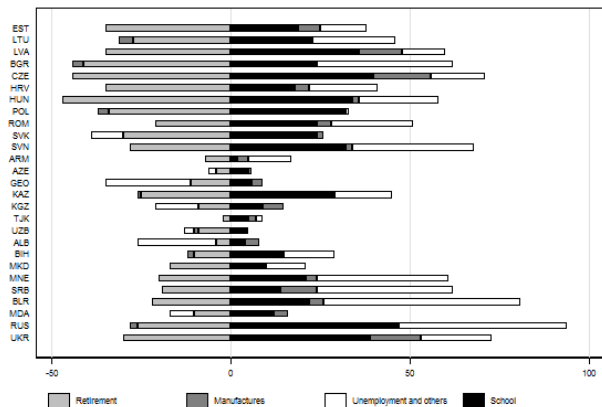
Tell me more, tell me more

Did demographics promote industry reallocation



Tell me more, tell me more

Did demographics promote industry reallocation



Tell me more, tell me more

How good are survival models 3: Robustness check

	All	Over 45 in 1989	Under 45 in 1989	55 at risk
Female	-0.230*** (0.015)	-0.073*** (0.021)	-0.152*** (0.015)	-0.535*** (0.038)
Secondary Education	-0.094*** (0.017)	-0.003 (0.023)	-0.057*** (0.016)	-0.130*** (0.043)
Tertiary Education	0.000 (0.022)	0.034 (0.031)	-0.001 (0.020)	0.128** (0.053)
Married	-0.132*** (0.015)	0.007 (0.020)	-0.100*** (0.014)	-0.257*** (0.037)
Urban	0.046*** (0.015)	0.006 (0.019)	0.026* (0.015)	0.019 (0.039)
Last employment				
Manufacturing	-0.067*** (0.015)	-0.020 (0.020)	-0.039*** (0.014)	-0.109*** (0.038)
Public	-0.029 (0.020)	-0.033 (0.024)	-0.018 (0.020)	-0.103** (0.049)
Employment structure at retirement				
Share of privatized firms	-2.597*** (0.295)	-0.557 (0.575)	-1.150*** (0.288) (0.449)	-1.464***
Share of <i>de novo</i> private firms	4.113*** (0.146)	7.541*** (0.298)	3.657*** (0.132)	5.641*** (0.214)
Share manufacturing	-0.918** (0.359)	-1.145* (0.674)	-1.622*** (0.359)	-6.041*** (0.579)
Employment structure in 1989				
Share private			0.860* (0.467)	
Share manufacturing			3.820*** (0.521)	



How good are the survival 4: further robustness check - only retirees

	All	Under 45	Over 45
Female	-0.210*** (0.013)	-0.092*** (0.025)	-0.182*** (0.013)
Secondary Education	-0.046*** (0.015)	0.048** (0.024)	-0.021 (0.014)
Tertiary education	0.014 (0.019)	0.078** (0.032)	0.024 (0.019)
Married	-0.080*** (0.013)	0.005 (0.021)	-0.065*** (0.013)
Urban	0.027* (0.014)	0.008 (0.020)	0.011 (0.014)
Last employment			
Manufacturing	-0.057*** (0.013)	-0.006 (0.020)	-0.044*** (0.013)
Public	-0.025 (0.018)	0.038 (0.027)	-0.023 (0.019)
Employment share at retirement			
Share privatized	-0.181 (0.173)	-0.095 (0.222)	0.298 (0.195)
Share new firms	0.791*** (0.089)	1.628*** (0.174)	1.072*** (0.096)
Share manufacturing	-0.608*** (0.233)	-1.218*** (0.394)	-1.720*** (0.255)
Employment share in 1989			
Share private	0.008 (0.183)	-0.442 (0.271)	-0.503** (0.204)
Share manufacturing	0.502** (0.211)	0.557** (0.265)	1.470*** (0.238)
Observations	2,810	853	1,957

How good are the survival 5: further robustness check - changes

	All	Under 45	Over 45
Female	-0.228*** (0.014)	-0.128*** (0.022)	-0.208*** (0.015)
Secondary education	-0.035** (0.016)	0.029 (0.022)	0.008 (0.016)
Tertiary education	0.038* (0.021)	0.109*** (0.030)	0.073*** (0.020)
Marital status	-0.065*** (0.014)	0.011 (0.020)	-0.052*** (0.014)
Urban	0.024 (0.015)	0.044** (0.018)	-0.003 (0.015)
Changes w.r.t. previous year			
Change Manufacture	-0.601 (0.787)	1.788 (1.254)	-0.297 (0.775)
Change Privatized	-1.680** (0.692)	-1.710 (1.068)	-3.429*** (0.702)
Change new firms	1.049* (0.600)	0.938 (0.949)	2.770*** (0.634)
Last employment			
Manufacturing	-0.060*** (0.014)	-0.012 (0.017)	-0.045*** (0.014)
Public	-0.063*** (0.019)	0.001 (0.025)	-0.088*** (0.020)
Observations	2,637	848	1,789