Productivity and inequality effects of rapid labor reallocation

A meta-analysis

Jan Svejnar - Joanna Tyrowicz - Lucas van der Velde

MAER-Net, Prague

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Introduction

Why do we do it?

- Economic shocks $\rightarrow$ reallocation $\rightarrow$ inequalities and productivity growth.
- Transition as a quasi-natural experiment.
- Policy recommendations very much based on the optimal speed of transition (OST) - right or wrong?

What do we do?

- A quantitative overview of the results availabile in the literature

Spoilers

- Nothing is what it seems (even to the Authors)

Links in the literature

Aghion and Blanchard (1994) theory: the optimal speed of transition

1. Inefficient public sector fires.
2. Emerging private sector hires.
3. If firing desynchronized with hiring, labor tax wedge (to pay benefits) kills job creation, possibly too much despite downward pressure on expected wages $\rightarrow$ unstable equilibria.
4. Government *can* control the rate of firing, to make the two synchronized.

- Links to productivity.
- Links to inequalities.

Key concepts and data sources

Worker flows vs Job flows

- Literature
- Life in Transition Survey (LiTS)

Productivity

- Conference Board database: GDP per employee (chain index avg. 1980 =100)

Inequalities

- World Income Inequality Database compiled by United Nations

"Meta-analysis"

The process of data collection

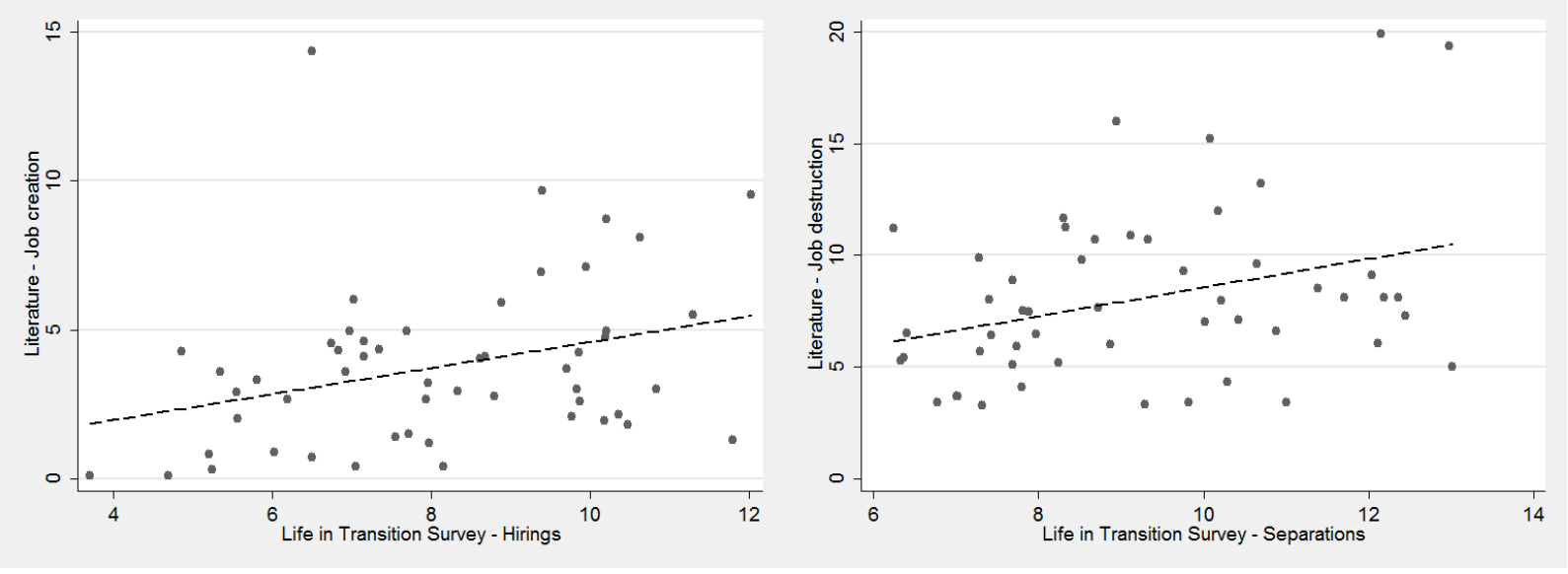
1. EconLit database: Keywords "Reallocation" and "Transition".
2. Restricted to empirical papers in English with available direct measures.
3. 131 hits, of which 13 were useful + 5 (bibliographic search).
   - 455 flow estimates.
   - 10 transition economies, 18 years.

Countries and years under analysis

	EST	RUS	UKR	BGR	POL	ROM	SVN	SVK	CZE	HUN
# of papers	2	2	3	1	3	1	2	1	1	1
1989										
1990		✓								✓
1991		✓					✓			✓
1992	✓	✓	✓				✓			✓
1993	✓	✓	✓				✓			✓
1994	✓	✓	✓	✓	✓		✓	✓	✓	
1995	✓	✓	✓	✓	✓	✓	✓	✓	✓	
1996	✓	✓	✓	✓	✓	✓	✓	✓	✓	
1997	✓	✓	✓	✓	✓	✓		✓	✓	
1998	✓	✓	✓		✓				✓	
1999	✓	✓	✓		✓					
2000	✓	✓	✓		✓			✓		
2001	✓							✓		
2002								✓		
2003								✓		

Job and Worker flows

Comparison to flows from the Life in Transition Survey



Notes: Job creation and Hirings (right) and Job destruction and Separations (left)

Results

Highlights

1. Little support for simple stories of transition: a "meta-regression" of existing papers
2. Short run trade-off? Inequality increases with JD, lack of correlations to productivity growth.
3. What really matters in the long run?

Putting the evidence together: a "meta-regression"

Variable	Job creation		Job destruction
Only public firms	-3.343***	-6.676***	
	(0.867)	(2.086)	
Only in manufacturing	-7.602***	-8.051***	
	(2.156)	(2.507)	
Only large firms	-4.095***	-3.871**	
	(1.749)	(2.282)	
Only small firms	11.86***	4.761	
	(3.959)	(4.211)	
Controls for article	No	Yes	
Controls for country	No	Yes	
Controls for year	No	Yes	
# of observations	345	345	
R^2	0.174	0.253	

Notes: Results correspond to the subsample of estimates on job flows.

Putting the evidence together: a "meta-regression"

Variable	Job creation		Job destruction	
Only public firms	-3.343***	-6.676***	-0.243	-0.663
	(0.867)	(2.086)	(0.908)	(0.750)
Only in manufacturing	-7.602***	-8.051***	2.403***	-0.853
	(2.156)	(2.507)	(0.782)	(0.652)
Only large firms	-4.095***	-3.871**	0.298	-1.291
	(1.749)	(2.282)	(0.725)	(0.985)
Only small firms	11.86***	4.761	7.832***	3.800***
	(3.959)	(4.211)	(1.595)	(1.348)
Controls for article	No	Yes	No	Yes
Controls for country	No	Yes	No	Yes
Controls for year	No	Yes	No	Yes
# of observations	345	345	345	345
R^2	0.174	0.253	0.214	0.615

Notes: Results correspond to the subsample of estimates on job flows.

Short run

	All flows (raw)	Article	Time, country f.e.	Worker flows
Inequalities		Job Creation		
β	0.017***	0.006	-0.001	1.099***
SE	(0.007)	(0.040)	(0.008)	(0.202)
Inequalities		Job Destruction		
β	0.144***	0.361***	0.151***	0.456***
SE	(0.021)	(0.107)	(0.030)	(0.181)
Productivity		Job Creation		
β	-0.003	-0.008	0.003	1.436***
SE	(0.006)	(0.020)	(0.006)	(0.327)
Productivity		Job Destruction		
β	-0.069***	-0.196***	-0.050**	-0.921***
SE	(0.018)	(0.057)	(0.026)	(0.202)

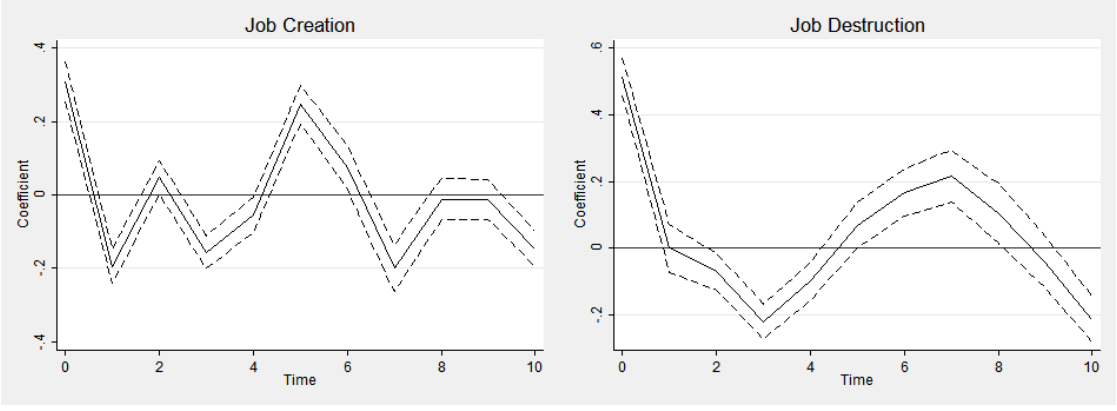
Notes: estimates for Worker flows come from the Life in Transition survey. ***,** indicates significance at the 5% and 10 % level respectively.

Robustness: links to inequality and produtivity in LiTS

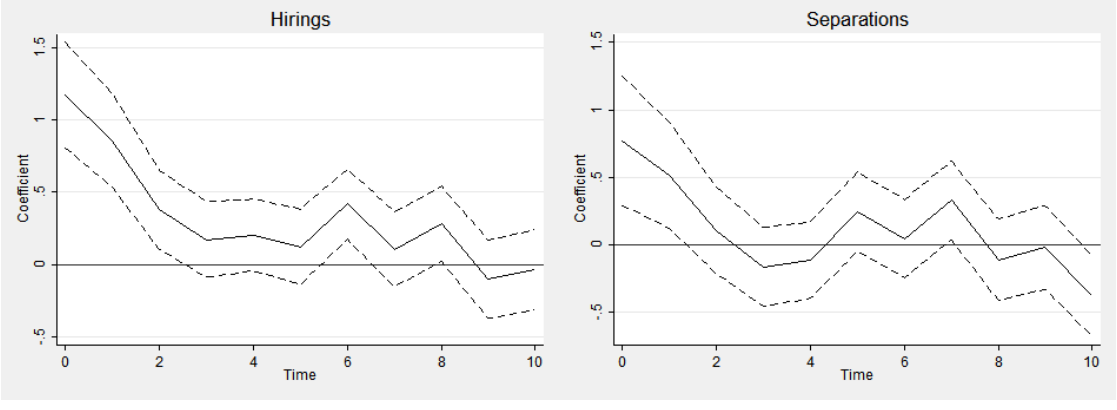
		Productivity		Inequalities	
		(1)	(2)	(1)	(2)
Job Creation	β	2.010***	1.099***	0.535	1.436***
	SE	(0.680)	-0.202	(0.696)	(0.327)
	N	18	192	19	240
	R^2	0.402	0.152	0.041	0.082
Job Destruction	β	1.464***	0.456***	-0.217	-0.921***
	SE	(0.667)	-0.181	(0.549)	(0.233)
	N	18	192	19	240
	R^2	0.271	0.037	0.011	0.068

Notes:
in (1) the sample covers the same country-year periods than in the literature;
in (2) the sample covers all years and countries with available data.

Links to inequalities: Long run

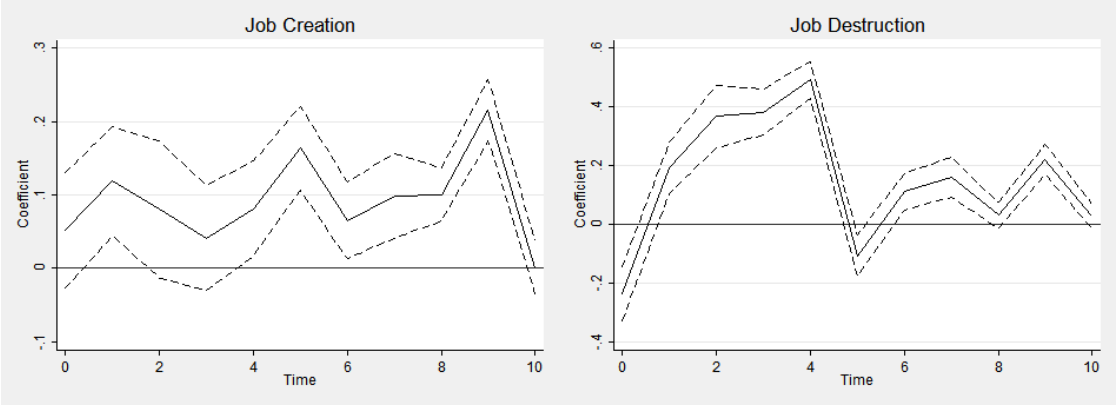


Job creation (left) and job destruction (right)

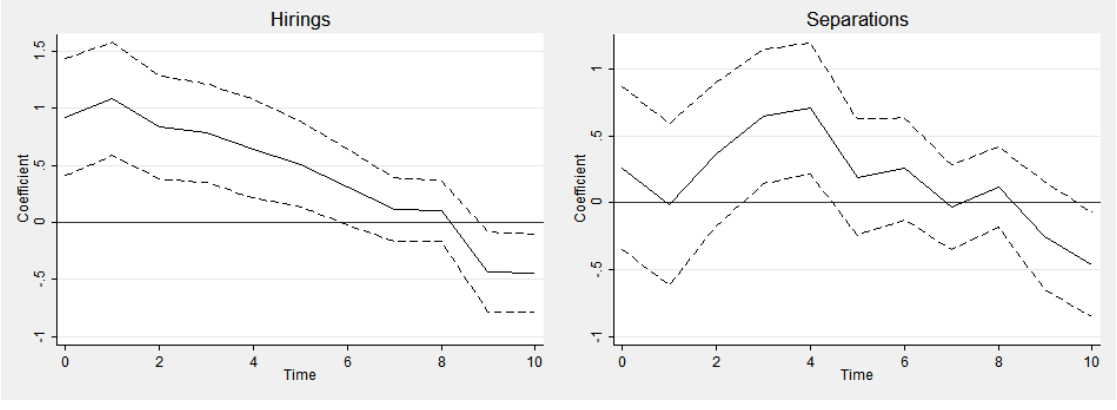


Hirings (left) and separation (right)

Links to productivity: Long run



Job creation (left) and job destruction (right)



Hirings (left) and separation (right)

Conclusions

1. With respect to the literature
   - Estimates from the literature do not support simple stories of transition
   - We cannot say we reject OST with this data – just that together this evidence shows other than each separately

2. With regards to productivity
   - We find no evidence of creative destruction in the short run
   - Lack of clear long term effects on productivity

3. With regards to inequalities
   - Reallocation (JC & JD) positively connected to inequalities.
   - Long lasting effects mainly through JC

Comments or suggestions?

Articles used in the meta-analysis I

- Acquisti, A., Lehmann, H., 2000. Job creation and job destruction in the Russian Federation. Trinity Economic Paper Series 1/00, Trinity College Dublin.
- Bilsen, V., Konings, J., 1998. Job Creation, Job Destruction, and Growth of Newly Established, Privatized, and State-Owned Enterprises in Transition Economies: Survey Evidence from Bulgaria, Hungary, and Romania . Journal of Comparative Economics 26 (3), 429 – 445.
- Bojnec, S., Konings, J., 1998. Job Creation, Job Destruction and Labour Demand in Slovenia (7498).
- Brown, D. J., Earle, J. S., 2003. The reallocation of workers and jobs in Russian industry. Economics of Transition 11 (2), 221–252.
- Brown, J. D., Earle, J. S., 2002. Gross job flows in Russian industry before and after reforms: Has destruction become more creative? Journal of Comparative Economics 30 (1), 96–133.
- Brown, J. D., Earle, J. S., 2006. Job reallocation and productivity growth in the Ukrainian transition. Comparative Economic Studies 48 (2), 229–251.

Articles used in the meta-analysis II

Christev, A., Kupets, O., Lehmann, H., 2008. Trade liberalization and employment effects in Ukraine. Comparative Economic Studies 50 (2), 318–340.

De Loecker, J., Konings, J., 2006. Job reallocation and productivity growth in a post-socialist economy: Evidence from Slovenian manufacturing. European Journal of Political Economy 22 (2), 388–408.

Faggio, G., Konings, J., 2003. Job creation, job destruction and employment growth in transition countries in the 90s. Economic Systems 27 (2), 129–154.

Gimpelson, V., Kapeliushnikov, R., Lukiyanova, A., 2010. Stuck between surplus and shortage: demand for skills in Russian industry. Labour 24 (3), 311–332.

Haltiwanger, J. C., Vodopivec, M., 2002. Gross worker and job flows in a transition economy: an analysis of Estonia. Labour Economics 9 (5), 601–630.

Konings, J., Kupets, O., Lehmann, H., 2003. Gross job flows in Ukraine. Economics of Transition 11 (2), 321–356.

Konings, J., Lehmann, H., Schaffer, M. E., 1996. Job creation and job destruction in a transition economy: Ownership, firm size, and gross job flows in Polish manufacturing 1988-91 3 (3), 299–317.

Articles used in the meta-analysis III

- Masso, J., Heshmati, A., 2004. The optimality and overuse of labour in Estonian manufacturing enterprises. Economics of Transition 12 (4), 683–720.
- Siebertova, Z., Senaj, M., 2007. Job creation and job destruction: Evidence from the Slovak Republic 2000-2004. Ekonomicka T'asopis (Journal of Economics) 55 (2), 107–124.
- Sorm, V., Terrell, K., 2000. Sectoral restructuring and labor mobility: A comparative look at the Czech Republic . Journal of Comparative Economics 28 (3), 431 – 455.
- Walsh, P. P., 2003. The cyclical pattern of regional unemployment flows in Poland. Economic Systems 27 (2), 155–169.
- Warzynski, F., 2003. The causes and consequences of sector-level job flows in Poland. Economics of Transition 11 (2), 357–381.

Estimates of mean flows

Country	Job Flows				Worker flows			
	Job creation		Job destruction		Hirings		Separations	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Bulgaria	4.62	9.54	6.90	3.54				
Czech Republic					4.30	0.29	3.72	0.44
Estonia	12.95	22.76	8.87	5.10	26.95	26.43	22.70	10.27
Hungary	3.20	5.44	7.61	1.43				
Poland	4.38	3.44	14.35	9.48	17.29	3.29	17.94	3.57
Romania	11.28	24.37	7.80	3.57				
Russia	9.15	18.25	10.97	6.34	20.70	3.25	28.07	1.75
Slovenia	7.33	2.62	12.67	3.90				
Slovakia	5.28	4.15	7.12	5.92				
Ukraine	3.73	4.00	9.64	1.65				
Overall	7.99	15.92	9.86	6.18	22.98	21.95	21.08	9.79

Notes: Mean and standard deviations values of job creation and job destruction for each country, bootstraped with 1000 repetitions.

Relation to the LiTS

Specification	Job creation		Job destruction	
	Coefficient	test statistic	Coefficient	test statistic
Pairwise correlation	0.449***	3.808	0.328***	2.554
OLS - no controls	0.524***	3.359	0.641***	2.085
OLS - country f.e.	0.345***	3.317	0.580	1.440
OLS - time f.e.	0.443***	2.095	0.765***	2.204
OLS - c. and t. f.e.	0.226	1.382	1.057 *	1.867

Changes in productivity and inequalities

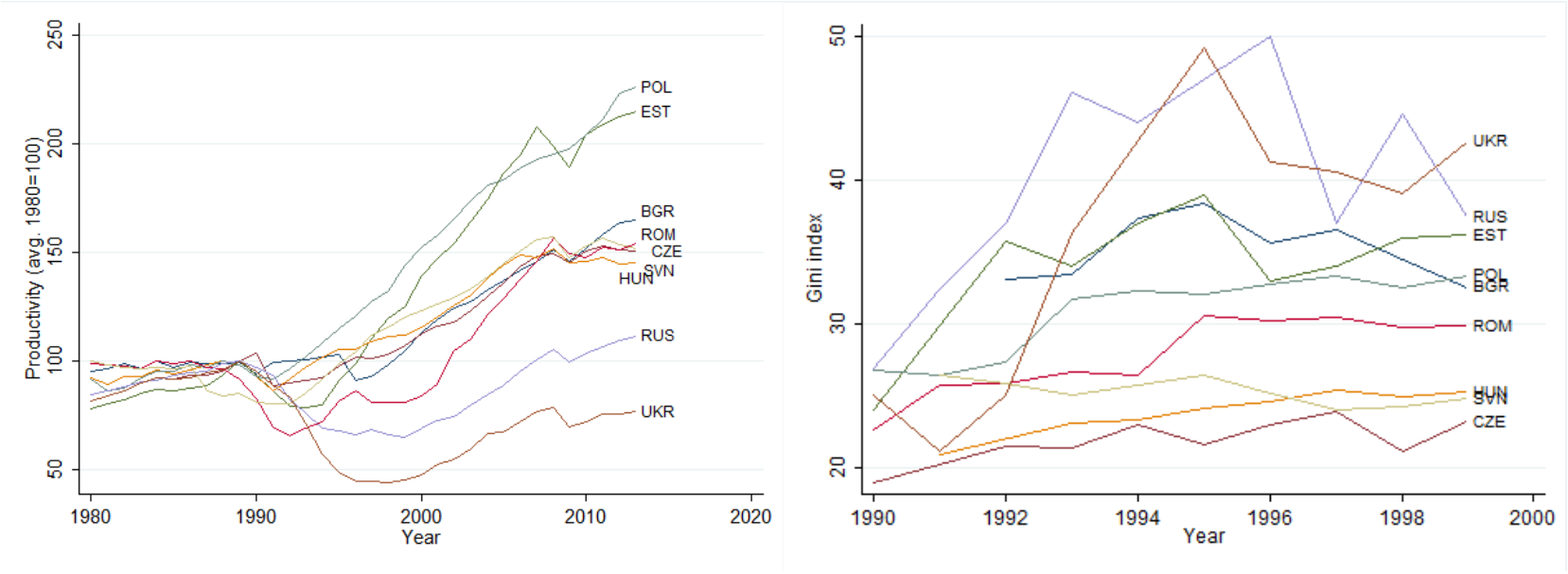


Figure: Productivity chain index (left) and Gini inequality index (right)