

# Labor Flows in the Russian Labor Market (2000-2012)

Vladimir Gimpelson

Anna Sharunina

The Centre for Labor Market  
Studies, HSE

# Motivation

- “The Russian model” of labor market adjustment (Layard 1995)
- Non-conventional adjustment to all shocks in 1992-2015 (G&K; OECD 2011)
- Rigid employment but flexible wages: price adjustment dominates
- High employment, low unemployment
- But surprisingly HIGH labor turnover (Lehmann and Wadsworth; G&K)
- Institutional explanations: EPL, MW, UB,...
- Most studies look at stocks and/or institutions
- What is about flows?
- The acting regime may or should assume a particular configuration (intensity and direction) of flows

- There is a fast growing interest to the labor market dynamics. Studies of the Russian LM dynamics are extremely scarce.
- In this paper we analyze flows of workers between three main labor market states: employment {E}, unemployment {U} and inactivity {IN}.
- Direction and intensity of these flows characterize labor market dynamics and affect employment and unemployment rates.
- Changes in unemployment rate are of particular interest. Change in unemployment rate depends on inflows and outflows. We look also at the flows between the inactivity state and the informal sector employment.

# Structure of the presentation

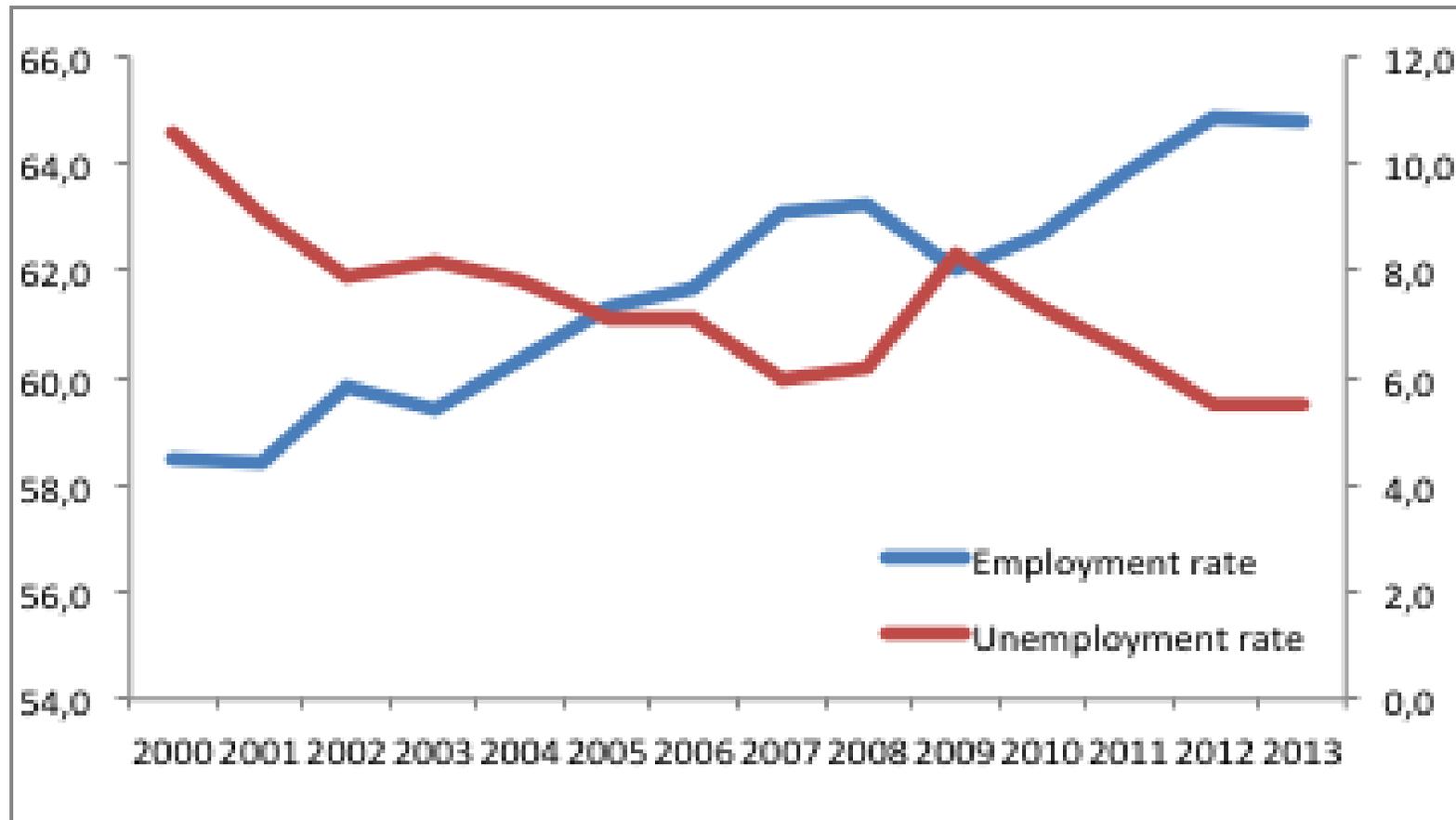
- Literature
- Some stylized facts about the Russian LM
- Data
- Transition matrixes
- Shorrocks' indexes
- D-MNL
- Decomposition of unemployment change
- Conclusions

# Literature says that...

1. Labor markets are characterized by significant dynamism and large flows between states: every fourth individual changes status during the year (P. Gomes, 2012).
2. Various countries differ in terms of intensity and directions of mobility (M. Ward-Warmedinger, C. Macchiarelli, 2013).
3. Flows (ins and outs) affect unemployment. Change in unemployment is a function of incoming and outgoing flows (S.Fujita, G.Ramey, 2007; R.Shimer, 2007; B. Petrangolo, C. Pissarides, 2008; M.Elsby, J.Smith, J.Wadsworth, 2011).
4. Flows depend on LM institutions
5. On Russia:
  - 1) in the 90es: M.Foley, 1995; K. Sabirianova, 1998 (on flows);
  - 2) in the 00es: F.Slonimczyk, V.Gimpelson, 2015 (on mobility of informal workers);
  - 3) Russia remains underexplored though some puzzles persist.

# Some stylized facts on the RLM

- High (and growing) employment and low (and declining) unemployment rates in 2000-2013.



# LM Institutions and their impact on Flows

- Low minimum wage → larger wage inequality → more quits and more labor turnover.
- Low UB → larger wage inequality and weaker incentives to stay unemployed → push (from U) effect.
- Variable wage → larger inequality and higher turnover.
- Strict EPL → lower firing rate → lower outflow from formal employment and lower inflow into formal employment.
- Poor enforcement → larger outflows and inflows.

# Data

- Micro-data from the RLMS-HSE.
- Years 2000-12.
- Age restrictions: 20-72 (outside this interval participation rates are very low).
- N=136 268.
- All individuals are divided into three groups: employed, unemployed and inactive.
- At the next step we divide all employed into those who work in the public sector, in the private (corporate) sector and in the informal sector. The latter group includes not incorporated micro-businesses, self-employed, employed by HH.
- Drawback: yearly intervals in surveys do not allow to grasp transitions that occur in periods between surveys. This may lead to underestimation of the total mobility.

# How do we determine the LM states?

**Employed** (at least one of the conditions):

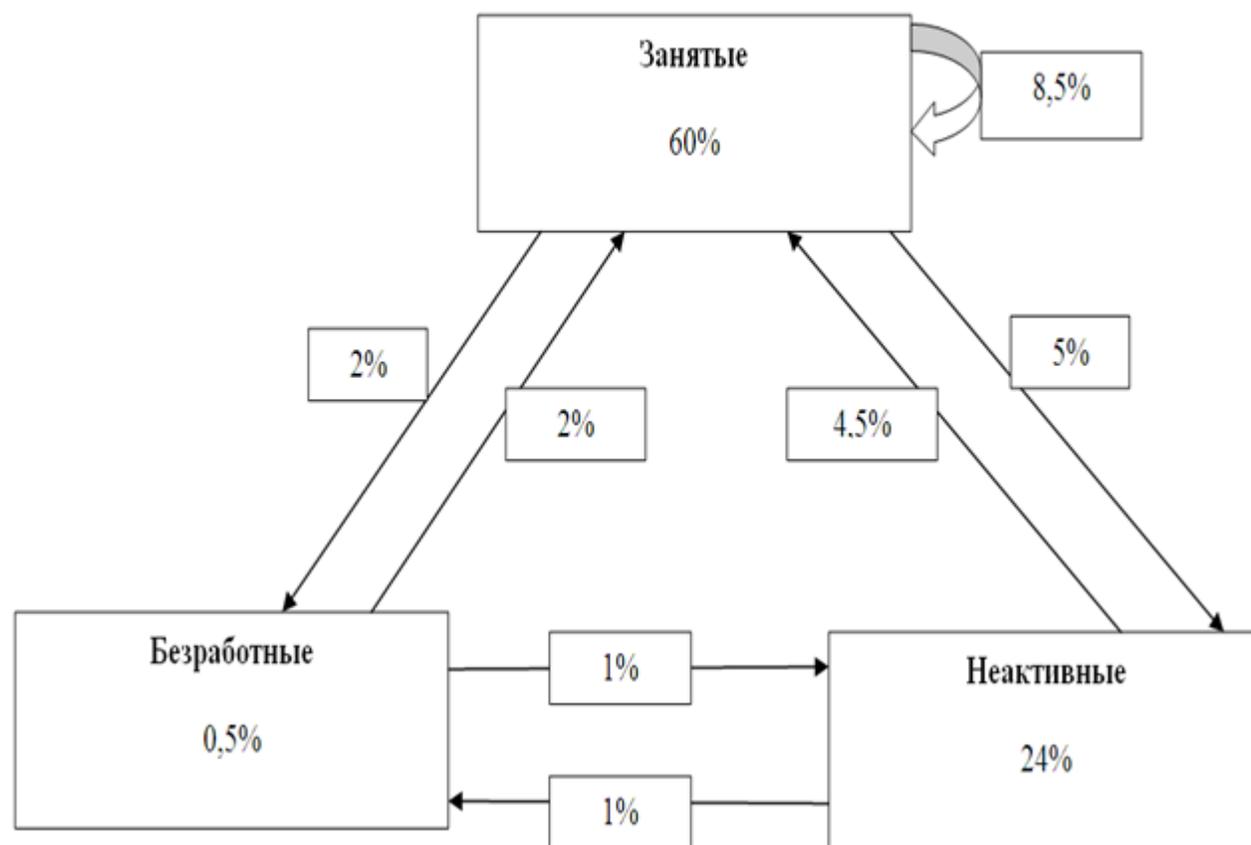
- 1) had work on the month before the survey;
- 2) was in any paid leave (except maternity);
- 3) was in non-paid leave;
- 4) was engaged in occasional paid work within 30 days.

**Unemployed** (all conditions):

- 1) was not employed;
- 2) was looking for a job;
- 3) was ready to start new job.

All the rest – **inactivity** (out of labor force).

# Transition matrix, % of population, averages for 2000-12



- 16% of population changes the states every year compared less than 7% in the UK.
- Large flows into and through the state of inactivity (E→IN 5,2% compared 1,4% in the UK; IN→E 4,5% vs 1,3%).
- Small flows between E and U

The UK Data: P. Gomes (2012). Labour market flows: Facts from the United Kingdom.

# A. Shorrocks' mobility index

- It evaluates intensity of flows and allows for cross-country comparisons

$$M = \frac{n - \text{trace}(P)}{n - 1}$$

- The estimates for Russia are systematically higher than in the European countries for which we have comparable estimates
  - Russia – 0,555
  - CEE EU – 0,295
  - Euro area– 0,272
  - Denmark– 0,449 and Sweden – 0,440

Ward-Warmedinger M., C.Macchiarelli (2013). Transitions in Labour Market Status in the EU.

# A. Shorrocks' mobility indexes for groups

Country Period	Russia 2000-2012	CEE EU* 2004-2008	Denmark* 2004-2008	Sweden* 2004-2008	Euro area* 2004-2008
Males	0,561	0,266	0,436	0,434	0,291
Females	0,558	0,307	0,468	0,482	0,306
Low-education	0,519	0,267	0,441	0,401	0,251
Medium- education	0,597	0,309	0,472	0,492	0,324
High-education	0,541	0,408	0,537	0,537	0,428

\* Ward-Warmedinger M., C.Macchiarelli (2013). Transitions in Labour Market Status in the EU.

# Dynamic MNL-model

**The choice of** status depends on the individual characteristics and the previous state:

$$P(Z = j|X_{it}, Z_{it-1}) = \frac{\exp(X_{it}\beta_j + Z_{it-1}\gamma_j)}{\sum_{s=1}^j (\exp(X_{it}\beta_s + Z_{it-1}\gamma_s))}$$

- **Dep var:** a) 3 main states (employment, unemployment and inactivity); b) 5 states (public, private, informal sectors, unemployment and inactivity).
- **Controlling for:**
  - personal characteristics of respondents (age, education, type of settlement, marital status, children, students, pensioners);
  - year of the survey, macro-region;
  - the labor market state in the previous year.

**Drawback:** non-random initial state in the panel, and the presence of unobservable characteristics potentially influencing the choice of status.

Based on the coefficients, we simulate probability of choosing the particular status given the independent variables are fixed at the means.

# Dynamic MNL-model: 3 states

	Men			Women		
	E	UN	IN	E	UN	IN
E	0,911	0,032	0,057	0,826	0,027	0,146
UN	0,616	0,215	0,168	0,486	0,157	0,358
IN	0,725	0,057	0,218	0,466	0,039	0,494

**Legend:**

E – employment;  
UN – unemployment;  
IN – inactivity.

All estimates are significant at the 1% level.

- De-facto conditional transition probabilities.
- Probabilities of transitioning through the state of inactivity are high and are significantly higher than those of movement through the state of unemployment.
- Probability that the unemployed find work within one year is 52% and that they leave the labor market is 30%.
- Probability for inactive individuals to move into employment is about 37% and to unemployment is 5%.
- These estimates vary across genders.

# Dynamic MNL-model: 5 states

- The public sector looks isolated:

- if men leave the public sector, they are more likely to move to the private one;
- If women leave it, then they withdraw from the labor market at all.

- Informal workers are more likely to move to the private sector or to the state of inactivity.

	Men					Women				
	PB	PR	IF	UN	IN	PB	PR	IF	UN	IN
PB	0,531	0,331	0,052	0,024	0,062	0,670	0,126	0,027	0,018	0,131
PR	0,039	0,746	0,102	0,037	0,076	0,108	0,557	0,069	0,034	0,232
IF	0,021	0,332	0,433	0,059	0,155	0,053	0,238	0,393	0,042	0,275
UN	0,027	0,401	0,169	0,222	0,181	0,088	0,278	0,105	0,162	0,368
IN	0,031	0,319	0,167	0,075	0,408	0,078	0,173	0,070	0,042	0,637

## Legend:

E – employment;  
 UN – unemployment;  
 IN – inactivity;  
 PB – public sector;  
 PR – private sector;  
 IF – informal sector.

All estimates are significant at the 1% level.

# Main findings

- We document very intensive flows between E, U and IN. The non-participation plays a non-conventional role in the labor market adjustment. The probability of transition from E to IN is 10%, and from IN to E - 57%.
- Half of the unemployed stock gets reemployment within a year, one third leaves the labor market.
- Public sectors workers are low mobile, the probability of remaining in the sector 62%.

# Changing unemployment

- Growing interest in unemployment dynamics (Shimer, 2007; Petrongolo & Pissarides, 2008; Fujita & Ramey, 2007; and others).
- Change in unemployment rate is considered a function of inflows and outflows.

# Decomposition: methodology (1)

## 1<sup>th</sup> step

- Two states: employment and unemployment.
- Changes in the unemployment are those who they are **ins** and those who are **outs** of it.

$$\Delta u_t = \Delta u_s + \Delta u_f = (1 - u_t) u_{t-1} \frac{\Delta s_t}{s_{t-1}} - u_t (1 - u_{t-1}) \frac{\Delta f_t}{f_{t-1}}$$

- Following Fujita & Ramey (2007), we compare the contribution of the inflow and outflow rates by calculating the “beta values”

$$\beta_j = \frac{\text{cov}(\Delta u, \Delta u_j)}{\text{var}(\Delta u)} \quad j = s, f$$

- As  $\Delta u = \Delta u_s + \Delta u_f$ ,  $\beta_s + \beta_f = 1$ , and so in what follows we present results for  $\beta_s$  alone.

# Decomposition: results (1)

Country	Period*	$\beta_s$
Russia	2000-2012	0,955
United Kingdom**	1985-1990	0,427
	1993-2007	0,250
France**	1997-2001	0,449
Spain**	1994-2006	0,392

\*During this period the unemployment decreased

\*\*Petrongolo & Pissarides (2008)

- These  $\beta$ -coefficients measure correlations between changes in a) ins and outs (ignoring the sign) and b) the unemployment rate. They are not about the causality.
- In Russia, 95,5% of the volatility in unemployment can be attributed to changes inflow rate.

**Finding:** decrease in unemployment is due to a decrease in inflow rate.

# Decomposition: methodology (2)

2<sup>d</sup> step

- Three states: employment, unemployment and inactivity.
- **Ins**  $\frac{\Delta s_t}{s_{t-1}}$  consists of two parts: flows **from** employment and from inactivity.
- **Outs**  $\frac{\Delta f_t}{f_{t-1}}$  consists of two parts: flows **to** employment and to inactivity.

$$\Delta u_t = (1 - u_t) u_{t-1} \frac{\Delta s_t}{s_{t-1}} - u_t (1 - u_{t-1}) \frac{\Delta f_t}{f_{t-1}}$$

- We estimate 4 “beta values” whose sum is equal to 1.

# Decomposition: results (2)

Country Period	Russia 2000-2012*	United Kingdom** 1993-2003*	USA** 1967-2006	Spain** 1994-2006*
E→U	0,514	0,352	0,325	0,230
IN→U	0,378	0,133	0,053	0,092
U→E	0,052	0,364	0,588	0,337
U→IN	0,056	0,151	0,035	0,341

\* During this period unemployment decreased

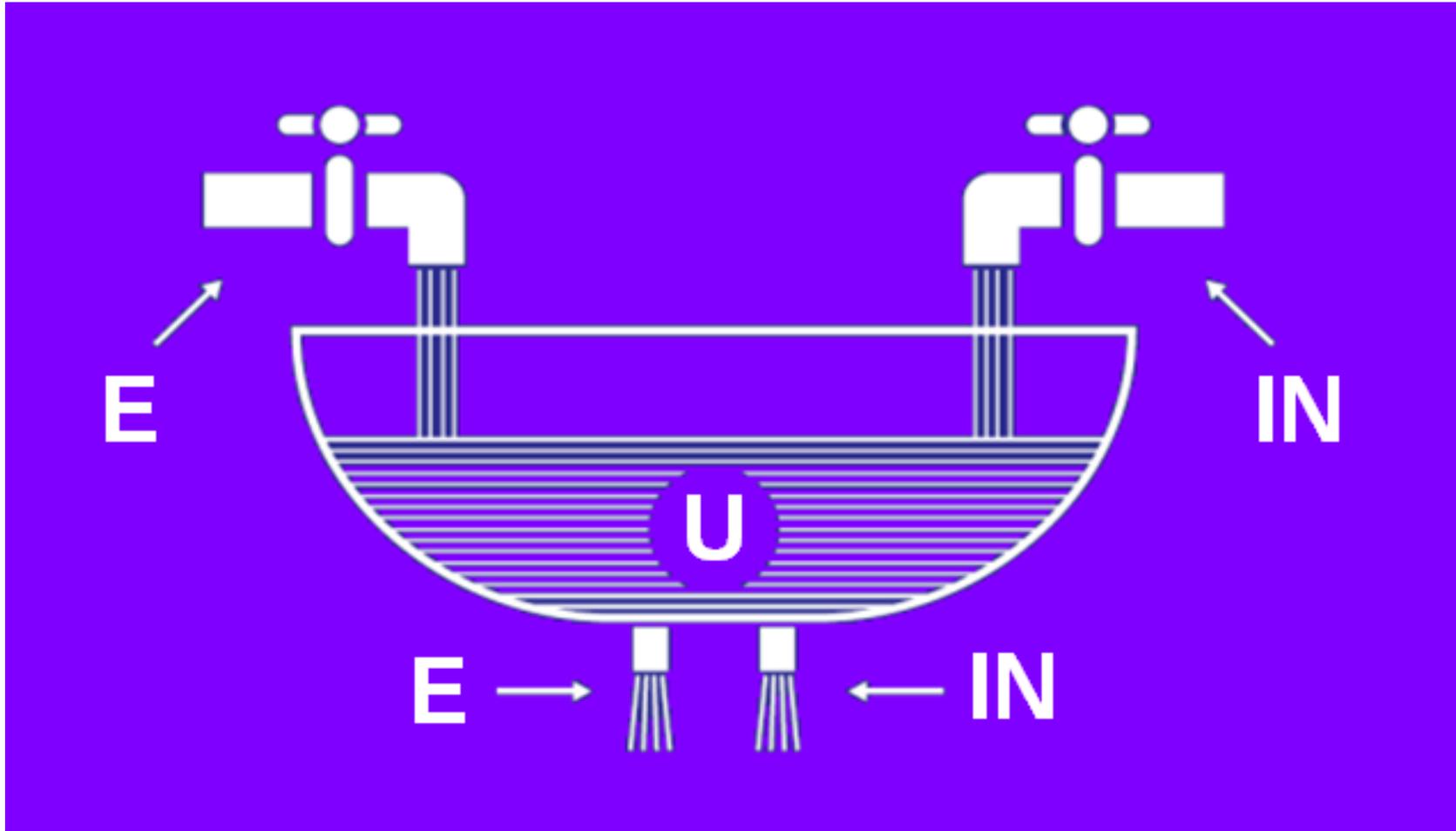
\*\*Petrongolo & Pissarides (2008)

**Main finding:** half of change in unemployment is due to decrease in the employment inflow rate, and another third – to decrease in the inactivity inflow rate.

- The decrease in  $U$  is explained largely by reduction in the inflow rate:
  - a) one half of decrease is due to decrease in the inflow from  $E$ ;
  - b) one third of decrease is due to decrease in the inflow from  $IN$ .
- Over time, fewer people lose their jobs;
- Many of those who lose, get new ones without transitioning to other states;
- Those who exit employment, leave the labor market avoiding unemployment;
- Return flows from inactivity to employment are also likely to circumvent unemployment.

- 1) E, U, and IN are linked by intensive flows. The rate of mobility is high compared to other countries for which comparable data is available.
- 2) The Russian unemployment pool is not stagnant and has sufficiently high outflow.
- 3) Economic inactivity plays a non-conventional role in the labor market adjustment. It works not only as a final absorption state but as an important mechanism for rechanneling of non-employed back into employment without transiting unemployment. We can speculate that this is driven by low replacement (UB to wage ratio) rate.
- 4) About 90% of all employed remain in E within a year. This stability does not exclude intensive turnover within the pool of employed. Those employed in the public, private and informal sectors have different mobility paths.
- 5) Unemployment in Russia in 2000-2012 decreased due to decrease in the inflow rate. Moreover, reducing the flow of employment change gives half, flow of inactivity - even third.

# Implications for LM Policy



**That's all! Thanks!**