The Use of EU-SILC for Labor Flows Analysis:
Methodology and Some First Results

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Introduction

- A relatively long tradition in labor market flows research
- U.S.: typically explore *monthly* data from the Current Population Survey (CPS)
- Europe: labor flows analyses are conventionally based on *quarterly* LFS
- EU-LFS longitudinal data not available
- Gomez (2009) - UK longitudinal LFS
- Cassado, Fernandez, Jimeno (2011) - EU-LFS for comparative labor flows analysis - a retrospective question on labour market status in previous year
- We use longitudinal EU-SILC 2008 for CZ, SK and PL
Methodology

- Compare labor market status in period $t$ and $t+1$

- Three possible statuses:
  - Employed - E
  - Unemployed - U
  - Inactive - I

- Nine possible situations:
  - $E_t \rightarrow E_{t+1}$
  - $E_t \rightarrow U_{t+1}$
  - $E_t \rightarrow I_{t+1}$
  - $U_t \rightarrow E_{t+1}$
  - $U_t \rightarrow U_{t+1}$
  - $U_t \rightarrow I_{t+1}$
  - $I_t \rightarrow E_{t+1}$
  - $I_t \rightarrow U_{t+1}$
  - $I_t \rightarrow I_{t+1}$

- Calculate the average (monthly) number of individuals involved in each gross labor market flow
EU-SILC - data and sample

- EU-SILC - longitudinal **ANNUAL** survey
- **MONTHLY** economic activity - self-reported, retrospectively for the whole previous calendar year
- Working-age population - 16-65 during the 4-year period
- Four-year rotational panel
- 4-year subsample - 48 months, 47 matched periods
- Longitudinal weights (RB064 - four-year duration)
  → pure panel, weights should minimize non-response / attrition bias
Data problems

- ILO definition vs. self-reported
- Time aggregation bias
  - EU-SILC - fails to capture short-term changes, such as U lasting less than two weeks
  - Quarterly data - disregards even longer-lasting status changes than the monthly data
- Multiple transitions - similar
  - e.g., E → U → E within less than one quarter of a year
  - Quarterly data - individual remains E over the whole period
  - Monthly EU-SILC - two changes in labor market status over the same period

→ higher flows at monthly data
Data problems

- EU-SILC monthly results different, almost by definition, from those of quarterly surveys
  - E.g., individual U in January who finds job in April
  - Quarterly data: $U_1 \rightarrow E_2$
    - Average quarterly labor market status change: 100%
  - Monthly EU-SILC data: $U_1 \rightarrow U_2 \rightarrow U_3 \rightarrow E_4$
    - Average monthly labor market status change for the same individual: 33%

→ **lower** flows at monthly data
Data problems

- Direct job-to-job movements
  - Cannot be analyzed by EU-SILC data
  - EU-SILC captures only change of job since the last year, not number of changes
  - EU-LFS could

- Response-error bias
  - Incorrectly reported data
  - E.g., incorrectly recording one U status within a long period of actual E would indicate two labor market status changes, instead of none at all
  - Commonly believed that labor market status changes are overestimated

  - Abowd, Zellner (1985): E↔U unaffected, flows from and to I overestimated in the U.S.
Data problems

- **EU-SILC** - no reason to believe that respondents would enter incorrect information, e.g. claiming to have been U for one month while actually they were E the whole year.

- Rather the contrary
  - Respondents might hide e.g. a period of U (to ease interview, forget).
  - Labor market status changes underestimated.

- Restrospective activity
  - Respondents might not recall exactly when they changed their labor market status during last calendar year.
  - E.g., U respondent finds a job in March but, to ease the interview or simply because s/he does not remember exactly, claims to have found it back in January.
Data problems

Figure 1: Labor market status changes (in % of total month-to-month states)

Source: EU-SILC LONGITUDINAL UDB 2008, version 3 of August 2011; own calculations.
Data problems

- Most labor market status changes occur between December and January
  - Retirements, quits and layoffs at the end of the year
  - Part due to incorrectly reported data

- Lower peaks in June-July and August-September
  - Seasonal jobs, students

- The precise month of the change does not affect the results of average monthly gross labor market flows
  (unless we analyze flows in time)
Results - CR (weighted)

**Table 1** Average monthly gross flows in CR, in thousands (2004-2007)

<table>
<thead>
<tr>
<th></th>
<th>Et+1</th>
<th>Ut+1</th>
<th>Nt+1</th>
<th>row total</th>
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**Table 2** Average monthly gross flows in CR, in % of working age population (2004-2007)

<table>
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<th>Ut+1</th>
<th>Nt+1</th>
<th>row total</th>
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</thead>
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<tr>
<td>Ut</td>
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<td>Nt</td>
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</table>
Results

Table 3 Average monthly gross flows in CE, in % of working age population (2004-2007)

<table>
<thead>
<tr>
<th></th>
<th>$E_t \rightarrow U_{t+1}$</th>
<th>$E_t \rightarrow I_{t+1}$</th>
<th>$U_t \rightarrow E_{t+1}$</th>
<th>$U_t \rightarrow I_{t+1}$</th>
<th>$I_t \rightarrow E_{t+1}$</th>
<th>$I_t \rightarrow U_{t+1}$</th>
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<td>0.23</td>
<td>0.32</td>
<td>0.09</td>
<td>0.18</td>
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<td>0.30</td>
<td>0.49</td>
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<td>0.14</td>
<td>1.75</td>
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</tbody>
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- Low mobility
- U.S. - 5-7%
- Poland - most “mobile”; CR - most “rigid”
- Flows between U and E most frequent
Results

- Transition probabilities (hazard rates)
  - Probability of an individual moving between statuses (depending only on the individual’s immediately preceding status)
  - E.g. UE = (U_t → E_{t+1}) / U_t

<table>
<thead>
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<th>Table 4</th>
<th>Transition probabilities, monthly average, in % (2004-2007)</th>
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<tbody>
<tr>
<td></td>
<td>EE</td>
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<tr>
<td>CR</td>
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<tr>
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<td>99.3</td>
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<td>Poland</td>
<td>98.9</td>
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</tbody>
</table>

- Similar in CE countries
- **UE** 4.6 to 5.0 % (more than 5x higher in the U.S./UK)
- **EU** 0.4 to 0.6 % (2-3x higher in the U.S./UK)
Conclusion...?

EU-SILC

😊 Allows international comparisons

😊 Monthly economic activity

😊 Retrospective nature, self-reported - possible biases

😢 No better alternative than EU-LFS with a retrospective question on activity in previous year
Discussion

- Are the relatively low flows caused by underestimation?
- ILO definition in LFS vs. self-reported in EU-SILC?
- How much retrospectivity biases the results?
- Do longitudinal weights help to decrease the attrition bias? (Does it use characteristics more associated with attrition?)
- Is EU-SILC suitable for flows analysis???
References

