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Measuring ILO status transitions for the EU: first interesting results

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Introduction

LFS based flow statistics are of high interest for policy makers and the public, and several EU Member States produce such flow statistics between ILO labour statuses already. Both transition probabilities and levels are disseminated by different Member States.

Several experimental attempts of LFS based flow statistics at European level have been made and published in 2012¹, but there is no standard dissemination of such data by Eurostat yet, for several reasons:

- tracking of respondents in Eurostat datasets proved to be difficult as the identifiers HHNUM HHSEQNUM were not unique across waves for all countries
- some countries do not use repeated interviewing yet (BE, LU) or not with quarterly periodicity (DE)
- there are certain methodological issues linked to flow statistics (correct underlying population for estimates, sample attrition, response errors, consistency of flow results vs. headline indicators/stock estimates) which often require a reweighting with special longitudinal weights by countries before national publication, and this is not easily done at Eurostat

Against the background of national developments in this area, ever increasing demand for EU flow statistics, and following cleaning of identifiers for datasets from 2010 onwards in the second half of 2012, Eurostat started analysing the available data with a view towards publication of first basic flow statistics results as experimental statistics/statistics under development from mid-2013 onwards. This paper presents first interesting results of this exercise.

Approach

The sample rotation system in place in a given country determines the theoretical sample overlap across quarters. Eurostat analyses showed that there are sufficient de-facto overlaps for basically all countries and quarters for which such an overlap should exist. In consequence, calculation of flow statistics is theoretically possible for

- quarter-on-quarter transitions (Q-Q; two consecutive quarters): 30 countries (EU27 except BE, DE, LU plus 6 EEA/candidate countries)

¹ Cp. for instance the 2012 edition of the 'Employment and Social Developments in Europe Review' by the European Commission or the Structural Issues Report 'The Euro Area Labour Markets and the Crisis' by the ECB/Eurosystem.

- year-on-year transitions (Y-Y; same quarter in two consecutive years): 31 countries (EU27 except BE, LU plus 6 EEA/candidate countries)

The identifier variables used for tracking persons across waves are HHNUM HHSEQNUM YEARBIR and SEX. Transitions between the ILO labour statuses employed, unemployed, and inactive are always calculated by SEX and AGE GROUP, with standard age groups 15-24, 25-64, and 65-74 to cover the main age groups for working age population (15-64) as well as the ones used in Eurostat's unemployment press releases (15-24, 25-74)². The 'longitudinal' weights used for Eurostat's flow statistics calculations are the ones of the second of the two quarters, calibrated to match the marginal distribution by ILOSTAT, SEX and AGE GROUP in that quarter. For the flow sample, this leads e.g. to the same unemployment rate as in the second of the two quarters, but not to a similar matching with the one of the respective first quarter.

The exemplary results presented in the following are calculated for the EU and do not take the 6 EEA/candidate countries into account. It should also be noted that due to survey and methodological changes (e.g. NL 2010Q2, PT 2011Q1), there are breaks or even a complete non-availability of flow estimates for some countries and some Q-Q or Y-Y combinations.

Quarter-on-Quarter transitions (EU24, excluding BE, DE, LU)

Eurostat plans to start dissemination of flow statistics as aggregated 3x3 ILOSTAT transition rate tables for country groups like EU or EA.

Example (first and last available data for EU24):

EU24, 15-64		2010 Q2		
2010 Q1	E	U	I	
E	96.98%	1.43%	1.58%	
U	19.08%	66.29%	14.64%	
I	4.23%	4.31%	91.46%	
EU24, 15-64		2012 Q4		
2012 Q3	E	U	I	
E	95.74%	2.05%	2.21%	
U	15.22%	69.76%	15.02%	
I	3.80%	5.25%	90.94%	
Difference		E	U	I
E	-1.24%	0.61%	0.63%	
U	-3.86%	3.48%	0.38%	
I	-0.42%	0.94%	-0.52%	

But: quarterly results show a seasonal pattern - better compare identical quarters:

² Contrary to the current Eurostat approach, the ECB used the age groups 16-29, 30-44 and 45-64 for its analyses.

Difference (Q3-Q4 in 2010 and 2012)

	E	U	I
E	-0.08%	0.29%	-0.21%
U	-1.80%	2.19%	-0.40%
I	-0.14%	0.83%	-0.69%

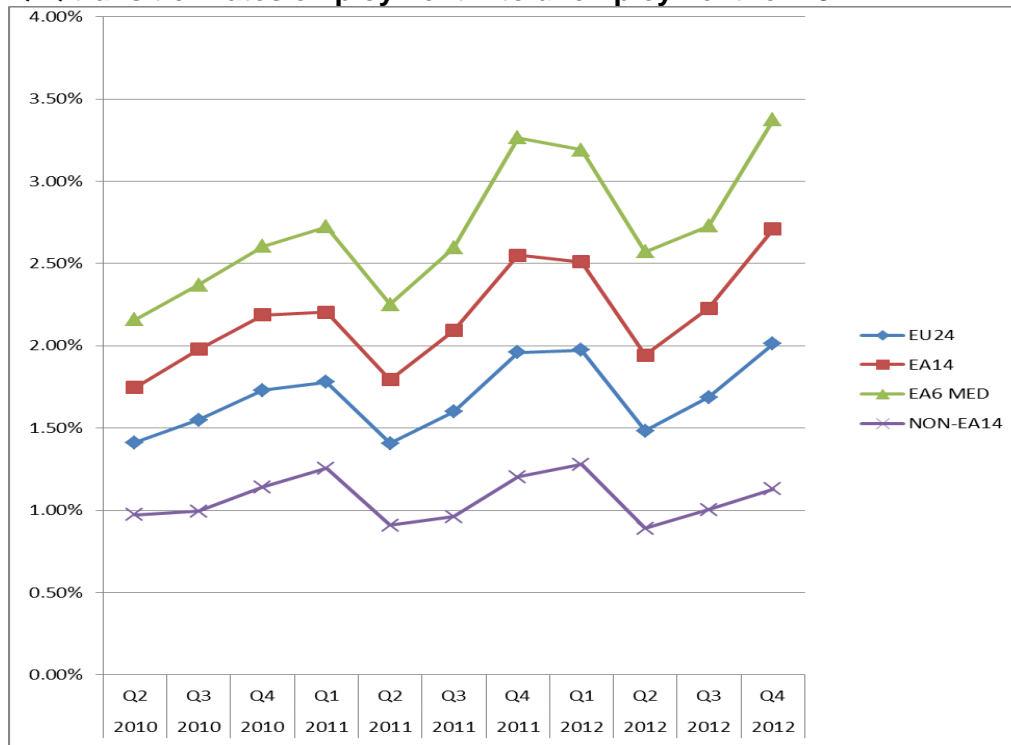
Some first general findings for EU24 results:

- there are hardly any differences in the transition rates for the age groups 15-64 and 15-74, except for the inactivity outflow which is lower if the 65-74 aged are included
- for the age group 15-64 and in nearly all quarters, the flows from employment into inactivity (E-I) are higher than the ones from employment into unemployment (E-U), whereas the unemployment outflow rates into employment (U-E) are higher than the ones into inactivity (U-I)
- the 15-24 aged, compared to the age group 25-64, show higher transition rates out of both employment and unemployment and a more visible seasonal pattern for basically all status combinations

The figures above are interesting, but much more insight can be gained by using more country groups. For exemplary comparisons across those country groups we focus on E <-> U transitions, i.e. persons who are in the labour force in both quarters.

First of all, one might want to compare EA and non-EA, and inside EA one might also be interested in the situation in Mediterranean³ countries which receives a lot of attention in the media at the moment. A graph showing the risk of losing a job and becoming unemployed from one quarter to the next one could then look like (E-U, age group 15-74)

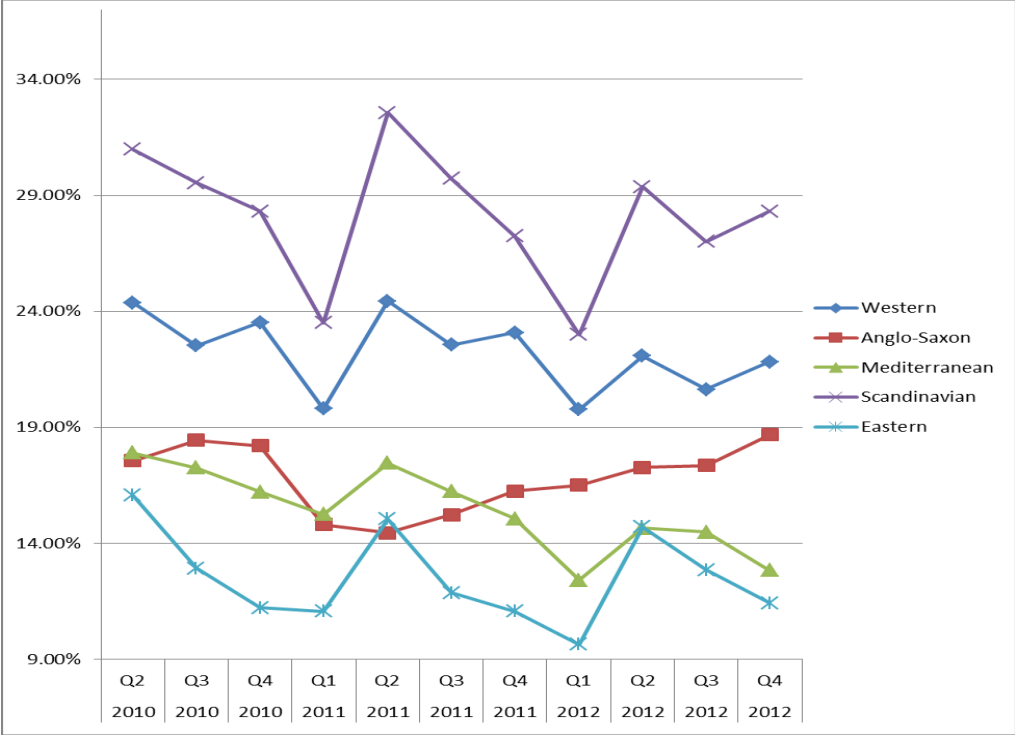
Q-Q transition rates employment into unemployment for 15-74



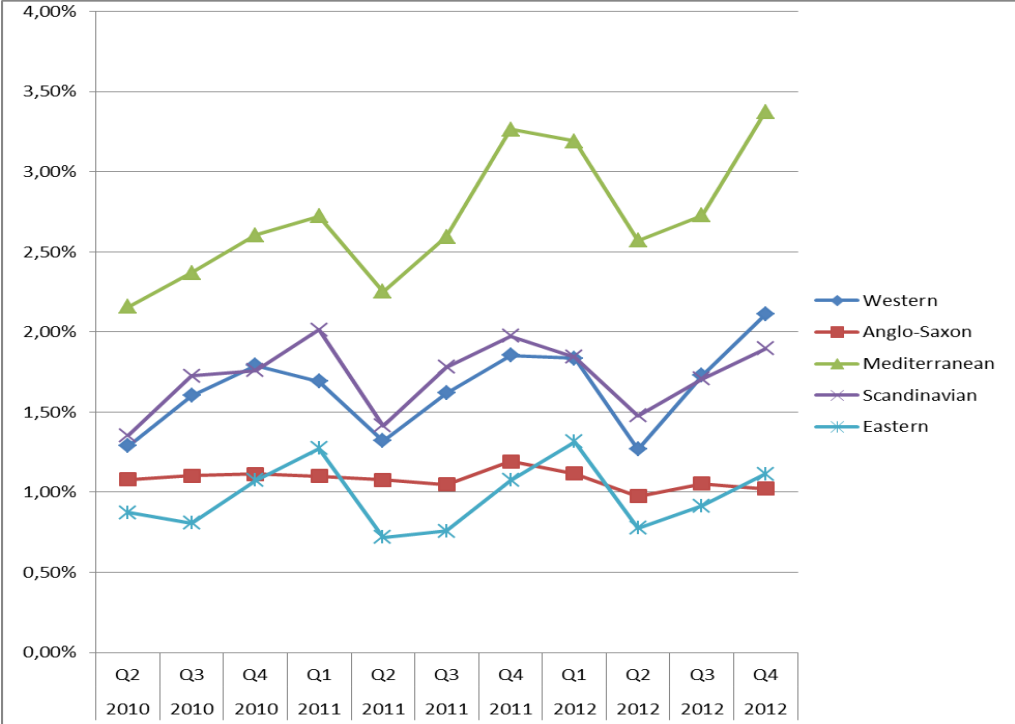
³ For this analysis, EA6 Mediterranean is composed of Cyprus, Greece, Italy, Malta, Portugal and Spain. The group of 'Mediterranean' countries as defined here is constructed with a view to comparison of distinct geographical groups below.

A disadvantage of the groups used is that they are not distinct, meaning that the results for EA14 and EU24 both contain EA6 MED as well – this can be avoided by assigning all countries to geographical country groups. With the groups Mediterranean (EA6 as above), Anglo-Saxon, Scandinavian, Western (excluding BE, DE, LU) and Eastern (Member States having acceded the EU in 2004 and 2007 except Cyprus and Malta) one gets

Q-Q transition rates unemployment into employment for 15-74



Q-Q transition rates employment into unemployment for 15-74



Looking at subgroups of the population, it can be stated that the differences across the five country groups for the young (15-24) are much more visible especially for E-U transition rates. For long-term unemployed, the transition rates U-E are lower for all country groups. While the absolute number of long-term unemployed is rather stable for four of the five groups, it has permanently been increasing for EA6 Mediterranean, from 3.1 million persons in 2010Q1 to 5.8 million persons in 2012Q4 (stock estimates).

Transition rates provide some information, but in order to assess the magnitude of population groups undergoing labour status changes it is also interesting to have an exemplary look at absolute numbers (levels). Taking again the group EA6 Mediterranean (for the working age population 15-64), one gets

EA6 Mediterranean, unemployment inflows and outflows, 15-64 (in 1,000)

	Inflow	Outflow	Outflow - Inflow	U total	Development U total
2010 Q2	2.701	2.952	251	7.948	
2010 Q3	2.757	3.050	294	7.697	251
2010 Q4	3.134	2.643	-491	8.231	-534
2011 Q1	2.828	2.611	-217 b	8.578	-347
2011 Q2	2.849	3.061	212	8.299	278
2011 Q3	3.136	3.005	-131	8.481	-182
2011 Q4	3.692	2.831	-860	9.534	-1.053
2012 Q1	3.603	2.835	-767	10.420	-886
2012 Q2	3.253	3.369	116	10.431	-11
2012 Q3	3.370	3.509	139	10.406	24
2012 Q4	3.852	3.161	-690	11.216	-809

Inflows and outflows are calculated using ‘longitudinal’ weights, U total using standard quarterly weights. Due to a survey break in PT in 2011Q1 the flows in that quarter are underestimated (no PT data at all). It can be seen that the flows describe the developments on the labour market quite well, at least for stronger movements in one or the other direction. Comparing the unemployment outflows with job starts during the last 3 months shows that the latter figures are around 1.5 times higher – this is reasonable, given that it includes cases E-E and that quarter-on-quarter transitions are not comparisons over exactly 3 months.

But: is the group EA6 homogeneous? No, as will be shown with more detailed results in the presentation.

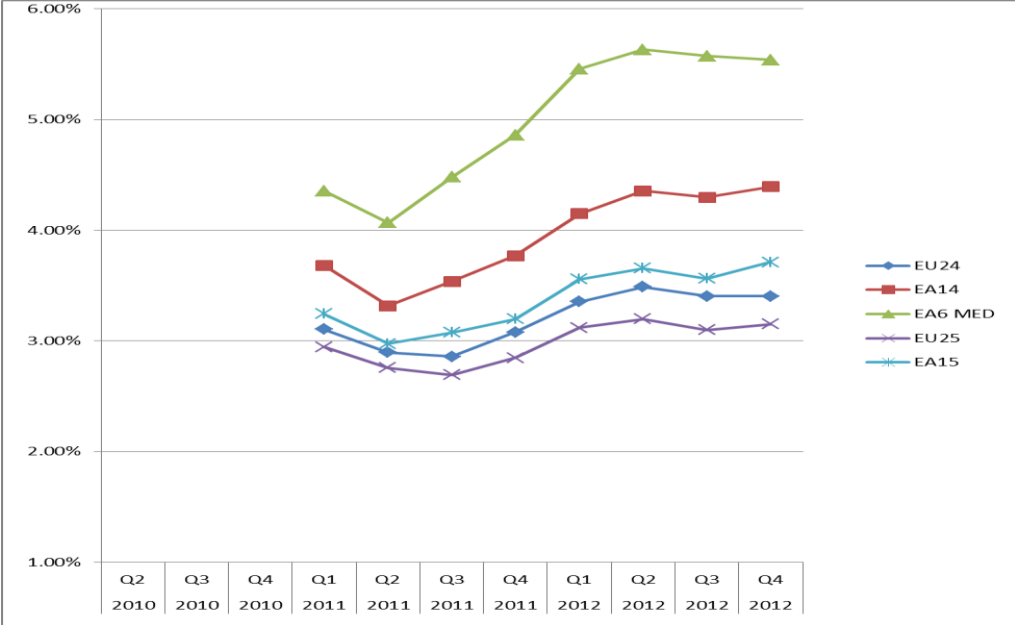
For many countries tracking of respondents is also possible for further reference years than only 2010 to 2012. Longer time series do of course provide further analytical potential, as they also cover the beginning of the current economic crisis and its impact on the European labour market. Exemplary flow statistics calculations at Eurostat show some clearly visible deterioration in those indicators over the last 6-7 years.

Year-on-Year transitions (EU25, excluding BE, LU)

Year-on-year transition rates, i.e. for the same quarter in two consecutive years, can in principle be calculated in the same way as quarter-on-quarter transition rates. While the sample overlap is smaller than for Q-Q transition rates, it allows inclusion of German data, thereby covering nearly the whole EU. It should however be noted that, as we again compare only individual quarters and not complete years, the results do also show a seasonal pattern.

Having a look at the outcomes, the inclusion of Germany does indeed have a significant effect, as its labour market showed a robust development in times of crisis and has an important impact on EA and EU figures due to its size.

Y-Y transition rates employment into unemployment for 15-74



Conclusion and outlook

Eurostat’s test calculations of flow statistics show interesting results both for quarter-on-quarter and year-on-year transitions. The weighting issue is still open and the results must hence, for the time being, be considered experimental statistics/statistics under development only, but even at this stage it is obvious already that any further progress on flow statistics would significantly increase use and importance of the LFS. This is especially valid if not only EU and EA results are looked at, but also country groups or, at a later stage, even comparable data for individual countries.

Eurostat intends starting regular dissemination of first flow statistics results mid-2013, beginning with ILOSTAT transition rates for EU, EA and maybe some country groups, but no data for individual countries. For this some decisions have still to be taken, for instance on the relevant age groups (e.g. for the young: 15-24 or 15-29). The LAMAS WG will be informed about the plans in its June 2013 meeting.