#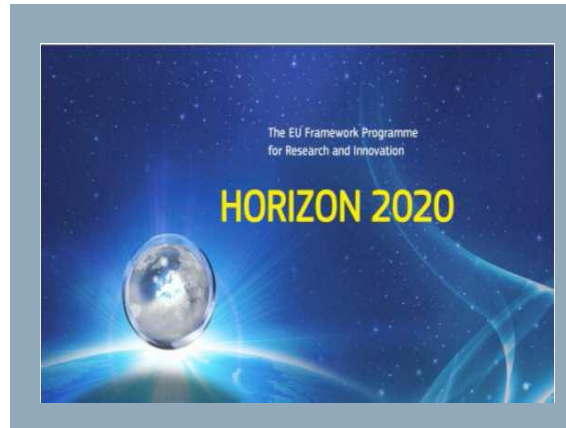 Introducing an index of early job insecurity: A comparative analysis among European countries with evidence from EU-LFS

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5th EU-User Conference, 2-3 March, Mannheim, Germany

The structure of the presentation

❏ Negotiate Project

❏ Aim of the work

❏ Early job insecurity: Definitions

❏ Data and limitations

❏ Measuring early job insecurity: Methodology & Indicators

❏ Results

NEGOTIATE:

❑ Examines the long- and short-term consequences of experiencing job insecurity or labour market exclusion in the transition to adulthood.

❑ Set out the context in which young people form their work expectations and 'negotiate' their labour market integration.

❑ Will contribute to evidence-based and effective policies preventing the adverse effects of early job insecurity and youth unemployment.

Aim of this work

❑ Propose an index for measuring the degree of early job insecurity.

❑ Compare European countries in order to consider whether there is a convergence or a divergence in early job insecurity across Europe.

❑ Cluster the countries producing different clusters of countries according to the degree of early job insecurity present in the country.

Definitions of (in)security
(Chung and van Oorschot, 2011)

Job security	Employment security
❑Security of keeping a particular job or employment contract ❑Keeping a current position with one employer	❑Security of having a secure and continuous employment in general ❑Greater mobility within the labour market

Definitions of early job insecurity

Job insecurity as a *subjective experience*	Job insecurity as a *objective experience*

❑Cognitive component:
the individual's estimate of the probability that one will lose their job in the near future

❑Affective component:
the fear, worry or anxiety of losing one's job

❑ human capital

❑ labour mobility

❑ job search

❑ job matching and turnover

❑ job competition

❑ labour market segmentation

+ DATA

☐ EU-LFS 2014

   ☐ Large sample enables multivariate analysis

   ☐ Comparability of the data

☐ Age group 15-29 and why?

☐ Variables used: *ILOSTAT, MAINSTAT, WSTAT1Y, EDUCSTAT, DURUNE, FTPT, TEMP, WORKTIME etc.*

+ Limitations

❑ Cross-national nature. Individuals can be followed for only a short period of time.

❑ Focusing on the age group does not allow analysis by gender.

❑ Differences in the national questionnaires. Even key variables are not collected from the majority of participating countries.

❑ Missing values, not reliable results for the majority of the countries.

INDICATORS CONCERNING LABOUR MARKET OUTCOMES

INDICATORS CONCERNING JOB QUALITY

INDICATORS CONCERNING RELATIVE CHANGES IN UNEMPLOYMENT RATES

INDICATORS CONCERNING EMPLOYMENT (IN)SECURITY

INDICATORS CONCERNING TRANSITIONS FROM SCHOOL

INDICATORS CONCERNING LABOUR MARKET OUTCOMES

Ind1	Youth Participation Rate	$\dfrac{\text{Number of individuals in the labour force, aged } 15-29}{\text{Total number of individuals, aged } 15-29}$	LFS
Ind2	Youth Employment Rate	$\dfrac{\text{Number of employed individuals, aged } 15-29}{\text{Total population, aged } 15-29}$	LFS
Ind3	Youth Unemployment Rate	$\dfrac{\text{Number of unemployed individuals, aged } 15-29}{\text{Number of individuals in the labour force, aged } 15-29}$	LFS
Ind4	Youth Unemployment Ratio	$\dfrac{\text{Number of unemployed individuals, aged } 15-29}{\text{Total population, aged } 15-29}$	LFS
Ind5	Incidence of long-term unemployment	Young unemployed (≥12 months) as % of all young unemployed	LFS
Ind6	NEET rate	The population not in employment, education or training as % of total population, 15-29	LFS

INDICATORS CONCERNING JOB QUALITY

Ind7	Incidence of temporary employment	As % of all employees	LFS
Ind8	Incidence of part-time employment	As % of all employed	LFS
Ind9	Underemployed part-time workers	As % of total part-time workers	LFS
Ind10	Working time	Distribution of employees according to usual weekly hours worked (hour bands)	LFS

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INDICATORS FOR EMPLOYMENT (IN)SECURITY

Ind14	Job finding rate	Percent of unemployed at time t-1, who are employed at time t	LFS
Ind15	Job separation rate	Percent of employed in time t-1, who are not employed at time t	LFS

INDICATORS CONCERNING RELATIVE CHANGES IN UNEMPLOYMENT RATES

Ind16	Youth to Total Unemployment Ratio	$\dfrac{Youth\ unemployment\ rate\ (age: 15-29)}{Tota\ unemployment\ rate\ (age > 15)}$	LFS
Ind17	Relative UR low skills/high skills	$\dfrac{UR\ of\ those\ ISCED < 3\ (HATLEV = 1)}{UR\ of\ those\ ISCED \geq 3\ (HATLEV = 2\ or\ 3)}$	LFS

INDICATORS FOR TRANSITION FROM SCHOOL TO WORK

Ind11	Probability of entry to employment from Education and Training	Markov system	LFS
Ind12	Probability of entry to unemployment from Education and Training	Markov system	LFS
Ind13	Probability of entry to inactivity from Education and Training	Markov system	LFS

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Value Labels: WSTAT1Y and MAINSTAT

1
Employment

2
Unemployment

3
Inactivity
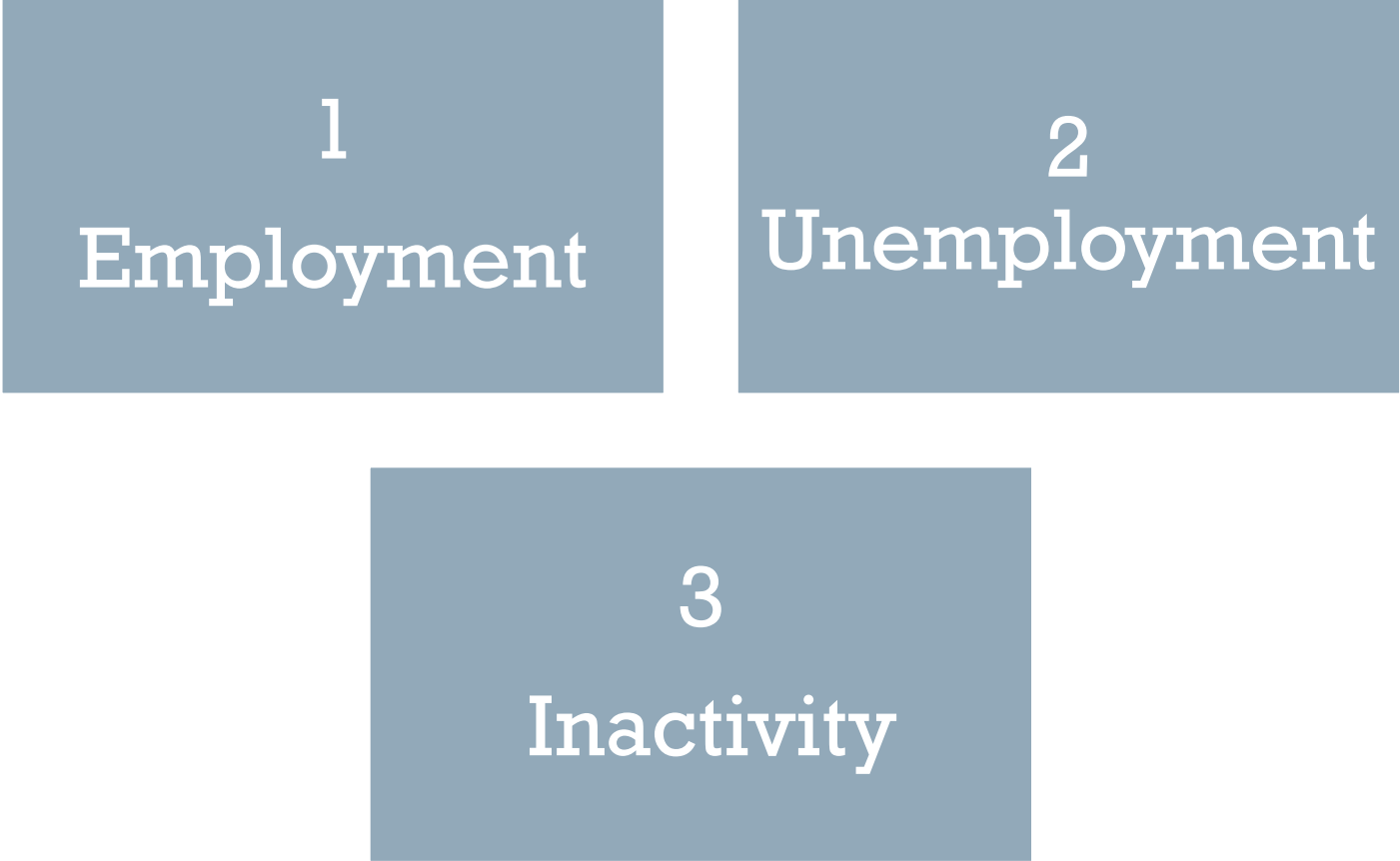
The transitions between the different states are reflected via the transition diagram of the system
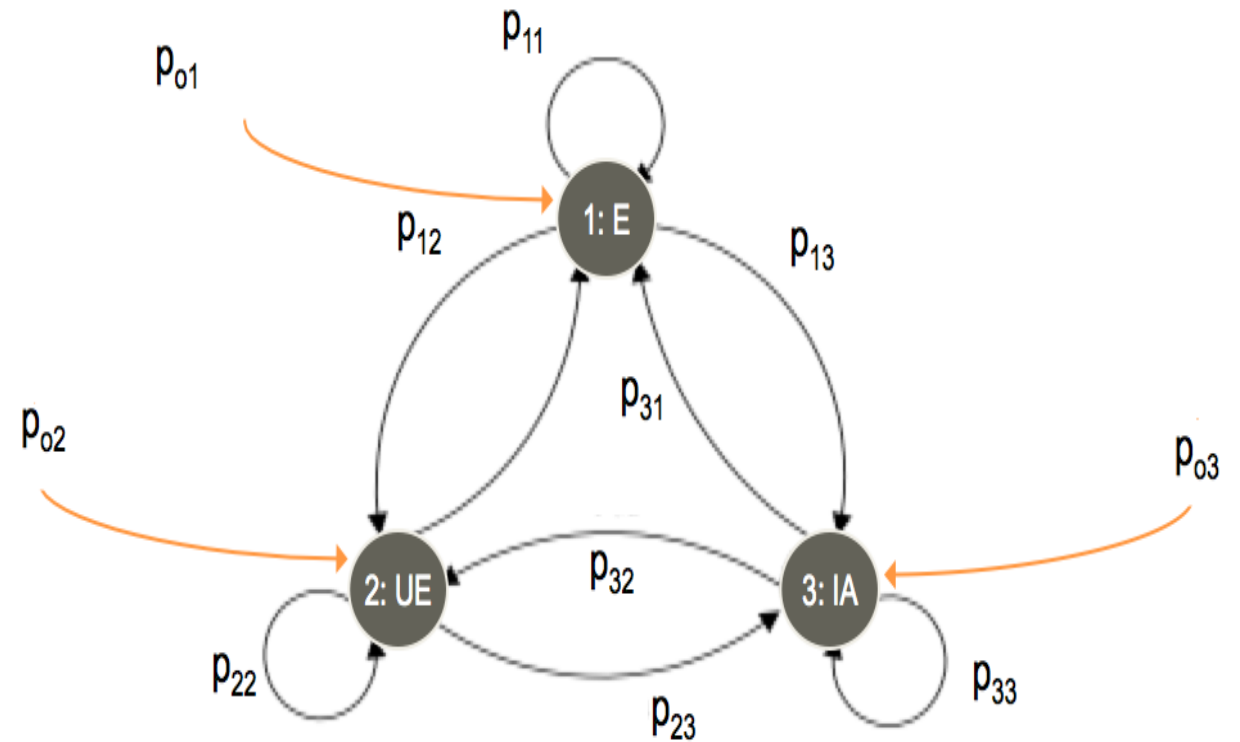
The input probabilities:

❑ P_{01}: $prob\{$an individual is employed at time t | he or she was a pupil, a student, in further training or unpaid work experience at time t-$1\}$

❑ P_{02}: $prob\{$an individual is unemployed at time t | he or she was a pupil, a student, in further training or unpaid work experience at time t-$1\}$

❑ P_{03}: $prob\{$an individual is inactive at time t | he or she was a pupil, a student, in further training or unpaid work experience at time t-$1\}$.

Methodology

❑ Standardization of values to Z-scores.

$$Z = \frac{X - \mu}{\sigma}$$

❑ Sign conversion for positive indicators.

  ❑e.g. Higher Employment Rate ➡ lower rates of job insecurity

+ Methodology

Early Job Insecurity Index:

$$Index_{ji} = \frac{\sum_{i=1}^{d} w_{d_i} * \dfrac{\sum_{j=1}^{d_i} Z_{ind_{ij}} * w_{ij}}{\sum_{j=1}^{d_i} w_{ij}}}{\sum_{i=1}^{d} w_{d_i}}$$

Categories and Indicators	Weight of the category (w_{d_i})	Weight of the indicator (w_{i_i})
LM Outcomes	20%	
Youth Participation Rate		3.3%
Youth Employment Rate		3.3%
Youth Unemployment Rate		3.3%
Youth Unemployment Ratio		3.3%
NEET rate		3.3%
Incidence of long-term UN		3.3%
Job Quality	20%	
Incidence of temporary employment		5%
Incidence of part-time employment		5%
Underemployed part-time workers		5%
Working time		5%
Relative Changes in employment rates	20%	
Youth to total UR		10%
Relative UR low/high skills		10%
School to work transitions	20%	
School-to-Employment Probability		6.6%
School-to-Inactivity Probability		6.6%
School-to-Unemployment Probability		6.6%
Employment security	20%	
Job Finding Rate		10%
Job Separation Rate		10%

+ Results, 2014

Country	INDEX
Switzerland	-0.84
Denmark	-0.79
Austria	-0.68
Estonia	-0.45
Czech Republic	-0.41
Lithuania	-0.38
Finland	-0.29
Sweden	-0.24
Belgium	-0.14
France	-0.07
Hungary	-0.01
Poland	0.01
Romania	0.16
Portugal	0.25
Croatia	0.60
Italy	0.61
Spain	0.84
Greece	1.01
Bulgaria	-
Cyprus	-
Germany	-
Ireland	-
Latvia	-
Luxemburg	-
Malta	-
Netherlands	-
Norway	-
Slovakia	-
Slovenia	-
UK	-

Cluster analysis

Cluster 1	Cluster 2	Cluster 3	Cluster 4
Austria	Estonia	Belgium	Croatia
Denmark	Czech Republic	France	Italy
Switzerland	Lithuania	Poland	Spain
	Finland	Hungary	Greece
	Sweden	Romania	
		Portugal	

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Early Job Insecurity Map, 2014

HIGH — CONSIDERABLE — MODERATE — LOW
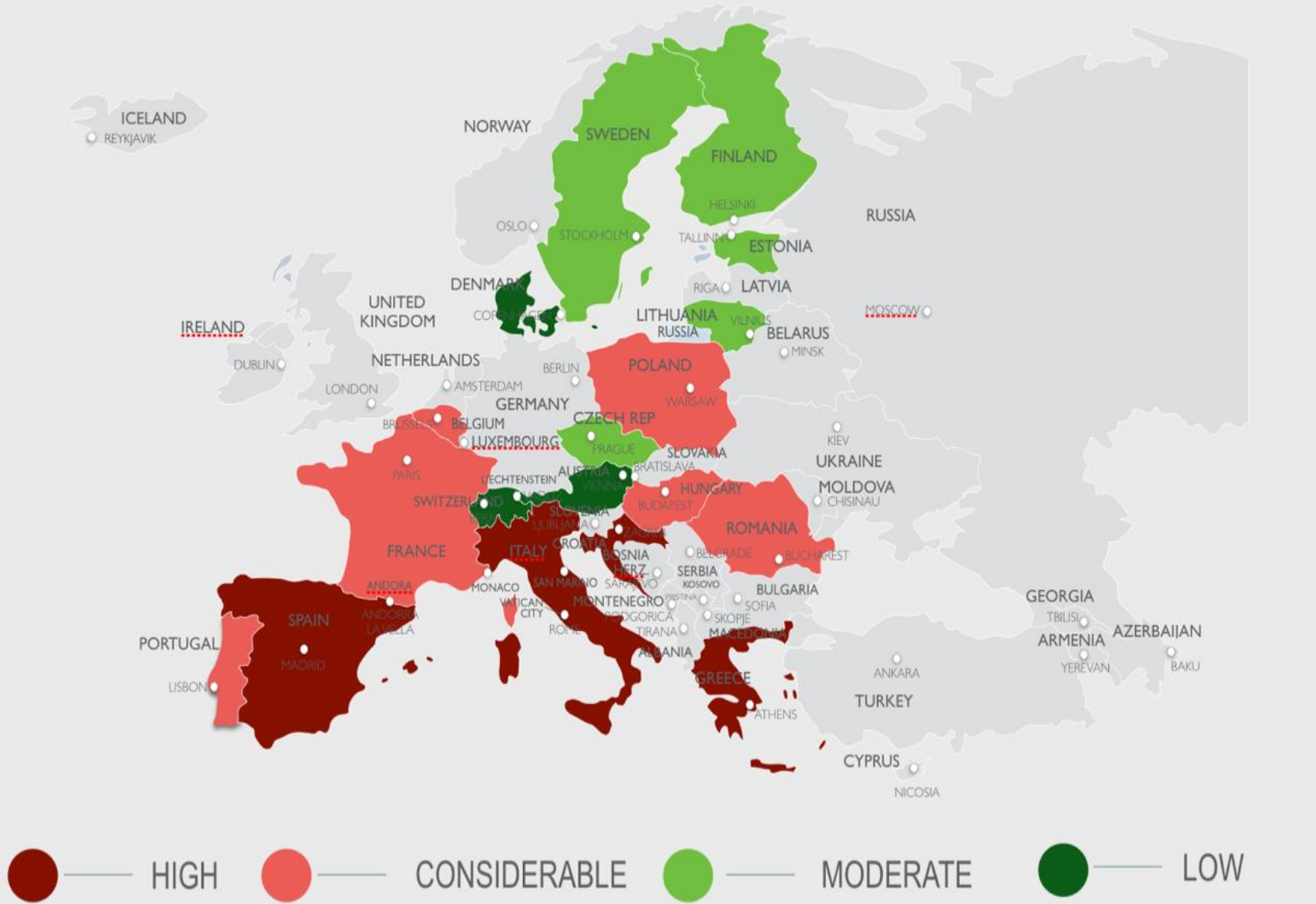
+ Conclusions

❑ We have proposed a new index for measuring early job insecurity and we use it for comparison among European countries.

❑ The results uncover that there are significant differences between countries, with the south European ones scoring worse.

❑ A cluster analysis is also applied and 4 clusters are defined.

❑ FUTURE ANALYSIS: usage of more sensible weights for the indicators based on the theory or empirical studies.

Thank you

UPSPS

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Country	Youth Participation Rate	Youth Employment Rate	Youth Unemployment Rate	Youth Unemployment Ratio (OECD)	Incidence of long-term unemployment	NEET
Austria	67.1	61.1	8.9	5.9	16.4	10.8
Belgium	49.6	41.5	16.4	8.1	40.1	14.9
Bulgaria	45.6	37.4	18.0	8.2	57.1	24.6
Croatia	51.4	34.8	32.3	16.6	51.6	22.3
Cyprus	57.5	42.5	26.2	15.1	37.2	19.7
Czech Republic	51.3	45.8	10.6	5.4	28.0	12.2
Denmark	67.4	59.7	11.4	7.7	11.8	10.3
Estonia	56.6	50.0	11.5	6.5	35.7	14.3
Finland	61.0	51.4	15.7	9.6	7.6	12.5
France	53.5	43.3	19.1	10.2	31.0	17.2
Germany	61.8	57.6	6.8	4.2	26.9	8.9
Greece	49.3	27.1	45.0	22.1	65.3	27.3
Hungary	47.3	40.8	13.9	6.6	35.9	17.2
Iceland	-	-	-	-	-	-
Ireland	53.2	43.0	19.1	10.1	46.0	18.4
Italy	41.5	28.3	31.6	13.1	59.5	27.3
Latvia	58.7	50.3	14.4	8.4	27.7	15.8
Lithuania	51.8	44.2	14.7	7.6	28.2	13.2
Luxemburg	49.5	43.0	13.0	6.4	-	6.9
Malta	-	-	-	-	-	-
Netherlands	74.0	66.0	10.8	8.0	19.6	8.9
Norway	63.7	59.3	6.8	4.3	15.8	8.6
Poland	53.2	44.4	16.5	8.8	35.1	15.8
Portugal	52.3	39.0	25.4	13.3	41.8	16.6
Romania	48.6	41.0	15.6	7.6	38.7	20.0
Slovakia	50.1	39.4	21.3	10.7	60.0	18.3
Slovenia	52.9	42.9	18.9	10.0	-	14.0
Spain	54.6	33.0	39.6	21.7	40.3	22.7
Sweden	65.9	55.0	16.7	11.0	8.4	10.4
Switzerland	75.8	70.1	7.6	5.7	21.9	8.8
UK	66.7	58.4	12.5	8.4	27.5	14.3

Country	Incidence of temporary employment	Incidence of part-time employment	Underemployed part-time workers
Austria	23.7	23.8	29.6
Belgium	22.1	20.2	39.4
Bulgaria	9.3	3.4	-
Croatia	40.1	7.1	62.9
Cyprus	27.1	18.3	75.7
Czech Republic	20.3	7.2	15.5
Denmark	19.3	51.4	17.1
Estonia	7.2	13.0	11.2
Finland	34.9	29.7	28.7
France	39.6	19.0	56.3
Germany	38.4	21.8	21.6
Greece	23.3	16.6	83.4
Hungary	17.9	5.6	46.0
Iceland	-	-	-
Ireland	21.1	30.7	34.9
Italy	40.6	25.7	23.0
Latvia	5.1	7.1	-
Lithuania	4.9	9.6	27.4
Luxemburg	-	-	-
Malta	-	-	-
Netherlands	47.3	64.2	25.2
Norway	22.8	42.3	25.4
Poland	53.6	9.7	49.7
Portugal	49.1	14.7	65.0
Romania	3.8	10.5	57.3
Slovakia	17.6	6.3	-
Slovenia	49.7	22.7	-
Spain	54.2	28.3	67.0
Sweden	42.1	36.8	35.7
Switzerland	36.3	27.0	34.7
UK	10.6	27.5	34.5

Country	Working time				
	1-19	20-29	30-34	35-39	40+
Austria	10.7	7.3	4.6	30.8	46.6
Belgium	7.2	10.2	6.7	49.7	26.1
Bulgaria	0.2	2.5	0.7	0.2	96.4
Croatia	0.9	3.0	1.2	0.5	94.5
Cyprus	3.6	7.5	5.1	20.1	63.6
Czech Republic	2.0	4.0	1.7	15.1	77.2
Denmark	41.4	6.9	6.1	41.5	4.0
Estonia	3.5	5.8	2.8	2.3	85.6
Finland	17.1	8.7	7.1	38.0	29.1
France	5.4	8.9	4.2	59.8	21.7
Germany	13.4	5.1	3.6	24.1	53.9
Greece	5.9	11.4	5.5	1.7	75.5
Hungary	0.7	3.4	1.7	0.5	93.8
Ireland	13.3	14.8	5.3	33.0	33.6
Italy	6.7	15.4	6.2	10.1	61.4
Latvia	0.9	4.1	2.1	0.7	92.2
Lithuania	1.3	7.7	1.4	2.2	87.5
Luxemburg	-	-	-	-	-
Malta	-	-	-	-	-
Netherlands	41.5	12.7	10.8	13.3	21.7
Norway	28.0	8.0	6.1	51.3	6.6
Poland	2.0	4.9	2.2	1.6	89.3
Portugal	4.5	6.8	2.4	5.6	80.8
Romania	-	0.6	0.3	0.2	98.9
Slovakia	2.1	4.5	0.7	11.4	81.3
Slovenia	6.5	8.5	3.1	1.1	80.7
Spain	11.8	15.0	6.4	9.7	57.1
Sweden	16.1	9.8	10.0	12.7	51.4
Switzerland	12.1	6.3	5.3	4.1	72.2
UK	15.4	9.7	5.4	26.4	43.1

Country	Youth to Total UR	Relative UR, low skills/high skills
Austria	1.58	2.12
Belgium	1.92	2.49
Bulgaria	1.58	2.46
Croatia	1.87	2.01
Cyprus	1.63	1.25
Czech Republic	1.73	3.61
Denmark	1.73	1.55
Estonia	1.57	1.87
Finland	1.82	2.34
France	1.85	2.11
Germany	1.38	2.68
Greece	1.70	1.03
Hungary	1.80	2.59
Ireland	1.69	2.41
Italy	2.49	1.29
Latvia	1.32	2.26
Lithuania	1.37	2.74
Luxemburg	2.15	-
Malta	-	-
Netherlands	1.45	2.12
Norway	1.95	2.46
Poland	1.84	1.89
Portugal	1.82	1.27
Romania	2.29	1.00
Slovakia	1.61	2.78
Slovenia	1.95	1.47
Spain	1.62	1.54
Sweden	2.09	3.06
Switzerland	1.66	1.41
UK	2.04	2.43

Country	Job Finding Rate	Job Separation Rate
Austria	44.45	12.5
Belgium	32.05	9.35
Bulgaria	18.20	7.75
Croatia	25.35	12.85
Cyprus	41.80	12.3
Czech Republic	59.65	4.65
Denmark	48.10	13.40
Estonia	46.70	12.15
Finland	32.00	19.50
France	33.6	15.50
Germany	-	-
Greece	14.75	13.50
Hungary	44.10	9.05
Ireland	-	-
Island	-	-
Italy	19.60	11.85
Latvia	51.90	14.90
Lithuania	47.35	7.80
Luxemburg	-	-
Malta	43.75	14.25
Norway	-	-
Poland	32.65	9.15
Portugal	34.85	15.60
Romania	13.80	6.05
Slovakia	32.80	9.25
Slovenia	27.85	29.00
Spain	27.05	14.10
Sweden	42.80	19.10
Switzerland	53.55	14.6
the Netherlands	-	-
UK	-	-

Country	School-to-Work Transitrion Probability	School-to-Unemployment Transition Probability	School-to-Inactivity Transition Probability
Austria	0.684	0.157	0.159
Belgium	0.566	0.257	0.177
Bulgaria	0.369	0.358	0.273
Croatia	0.297	0.695	0.008
Cyprus	-	-	-
Czech Republic	0.657	0.324	0.019
Denmark	0.663	0.228	0.109
Estonia	0.600	0.185	0.215
Germany	-	-	-
Greece	0.194	0.513	0.293
Spain	0.224	0.377	0.399
Finland	0.582	0.239	0.179
France	0.583	0.310	0.107
Hungary	0.500	0.343	0.157
Ireland	-	-	-
Iceland	-	-	-
Italy	0.274	0.637	0.089
Lithuania	0.643	0.217	0.140
Luxembourg	-	-	-
Latvia	0.608	0.248	0.144
Malta	-	-	-
Netherlands	-	-	-
Norway	-	-	-
Poland	0.535	0.340	0.125
Portugal	0.443	0.500	0.057
Romania	0.358	0.528	0.114
Slovakia	-	-	-
Slovenia	-	-	-
Sweden	0.619	0.306	0.075
Switzerland	0.784	0.079	0.137
UK	-	-	-

+ Results, 2013

Country	INDEX
Switzerland	-0.89
Denmark	-0.80
Austria	-0.79
Netherlands	-0.62
Estonia	-0.37
Latvia	-0.34
Lithuania	-0.33
Finland	-0.31
Czech Republic	-0.26
Sweden	-0.15
Slovenia	-0.14
France	0.00
Poland	0.13
Romania	0.13
Belgium	0.15
Slovakia	0.26
Bulgaria	0.32
Hungary	0.35
Portugal	0.52
Italy	0.65
Croatia	0.72
Spain	0.79
Greece	0.99
Cyprus	-
Germany	-
Ireland	-
Luxemburg	-
Malta	-
Norway	-
UK	-

Early Job Insecurity Map, 2013

HIGH — CONSIDERABLE — MODERATE — LOW
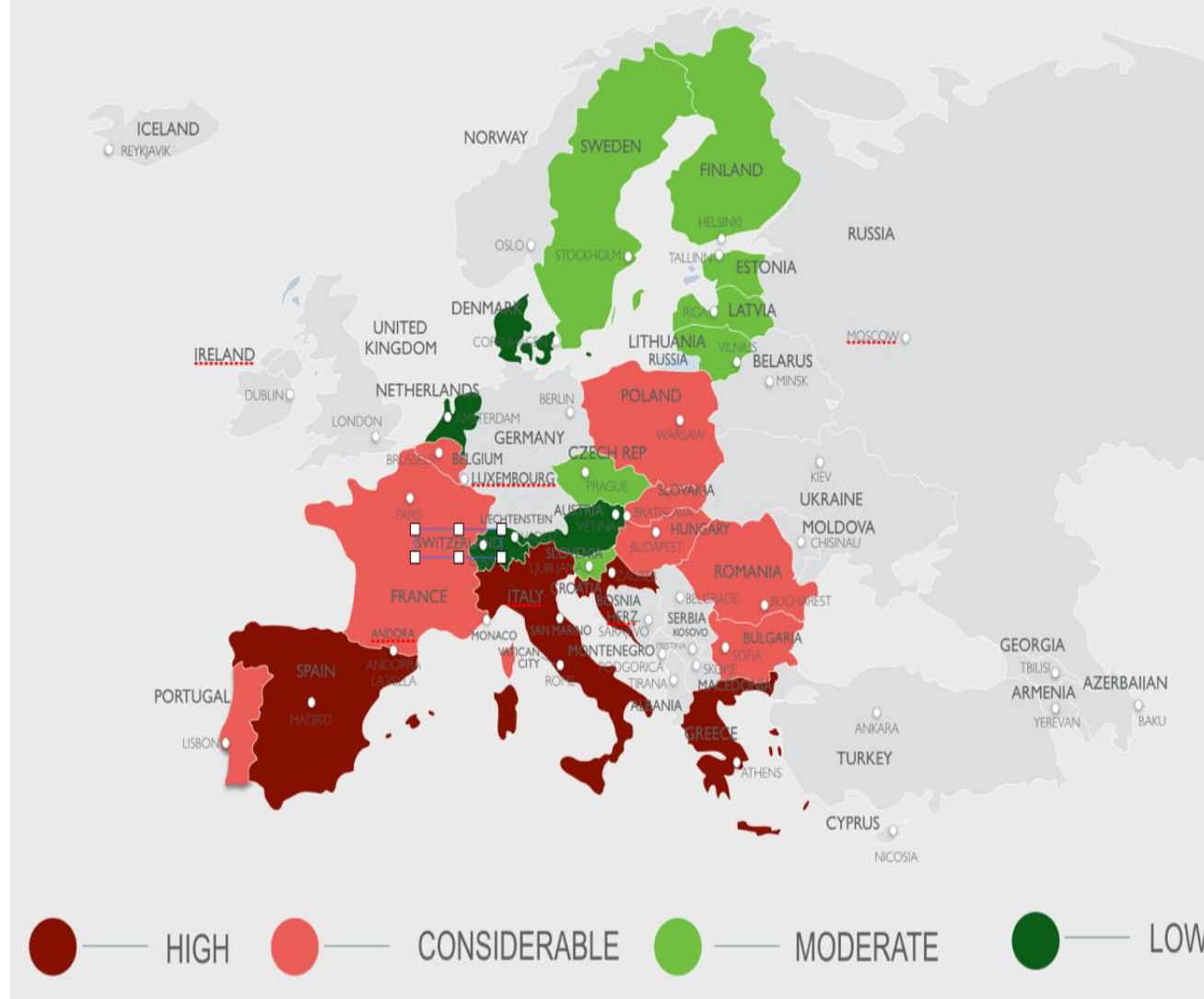
Value Labels: WSTAT1Y and MAINSTAT, AGE: 15 – 29

1. Carries out a job or profession, including unpaid work for a family business or holding, including an apprenticeship or paid traineeship, etc

2. Unemployed

3. Pupil, student, further training, unpaid work experience

4. In retirement or early retirement or has given up business

5. Permanently disabled

6. In compulsory military service

7. Fulfilling domestic tasks

8. Other inactive person

Transition probabilities

1: E	$1 \to 1$ $1 \to 2$ $1 \to 3$	2: UE	$2 \to 1$ $2 \to 2$ $2 \to 3$	3: IA	$3 \to 1$ $3 \to 2$ $3 \to 3$