INDIVIDUAL AND INSTITUTIONAL DETERMINANTS OF SKILL UNDERUTILIZATION

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Context: studying skills mismatch internationally

- long tradition of education mismatch studies; few internationally comparable
- within-education skills heterogeneity important, leading to more recent studies of skills mismatch
  - variation by individual or job characteristics has been studied
  - but variation by system (education/labour market) characteristics is highly policy-relevant

importance of international/inter-regional comparisons

Previous measures of the prevalence of skills underutilisation

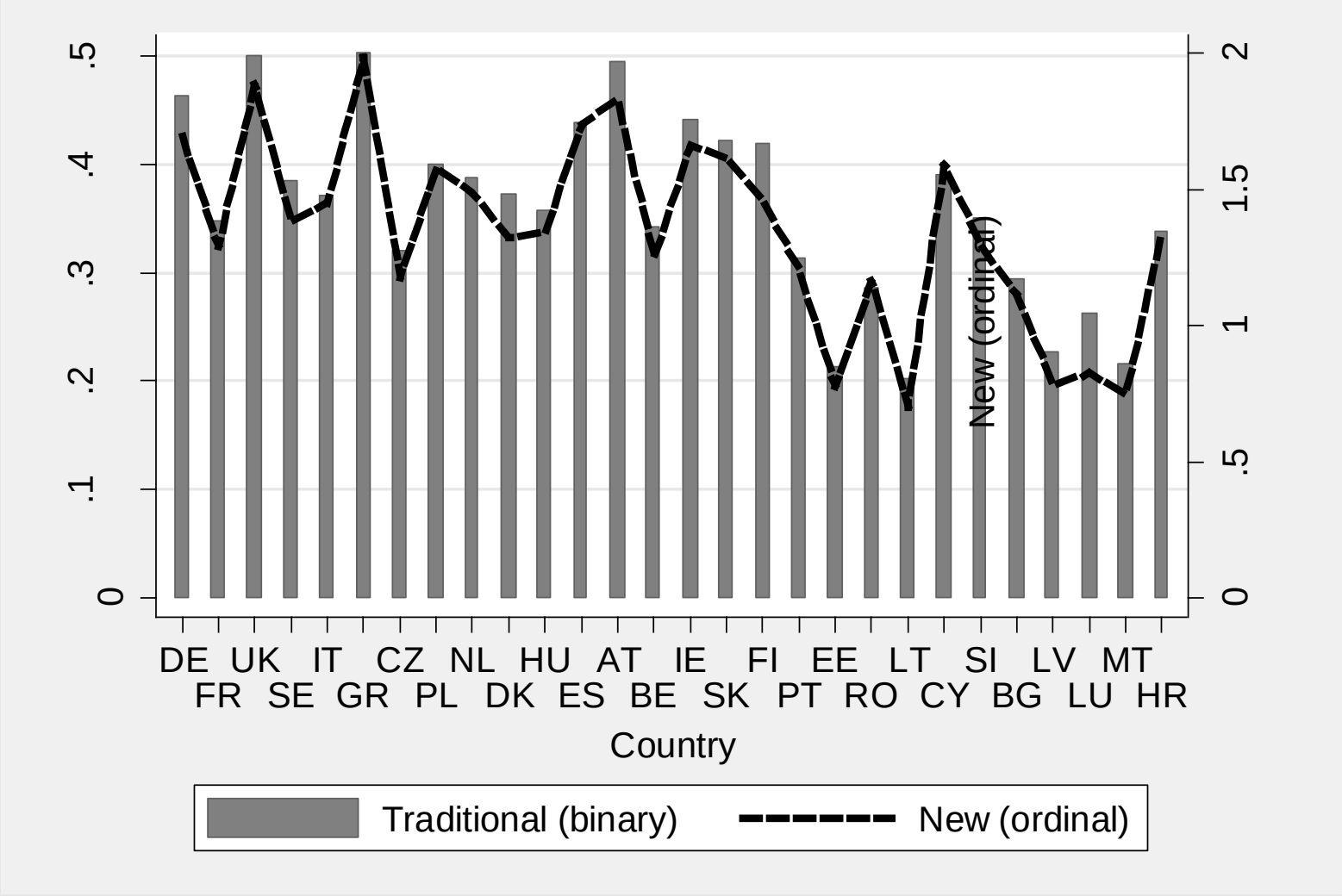
Source	Proportion underutilising their skills (%)
EWCS	32
SES (UK only)	13
SAS1	84
SAS2 (Quintini 2012)	35
SAS3 (Fichen/Pellizzari)	11
SAS4 (Allen et al (2013))	11

Skills Underutilization in EU-Skills

- Traditional: Indicator whether respondent reports higher individual skills than required by the job (binary)

- New: Respondent grades the extent to which their skills exceed the job requirements (ordinal, 0 to 5)

Clear cross-national variation in skills underutilization



Cross-national patterns of skills underutilisation by data source and measure

Spearman Rank Correlation Coefficients

	EU_Skills	EWCS	PIAAC (OECD)	PIAAC (ROA)
EU-Skills	1			
EWCS	0.158	1		
PIAAC (OECD)	0.403	-0.027	1	
PIAAC (ROA)	-0.303	-0.065	-0.570*	1

Note: * p≤0.1

Institutional Determinants of Skills Underutilization

Labour demand and supply

- Business cycle and structural imbalances

Practices, Regulations, and Institutions

- Labour market regulations
- Education system
- Human resource practices

Multilevel Model

$$Logit\left(Overskilled_{ij}\right) = F(X_i, Z_j, \theta_j, \varepsilon_{ij})$$

X_i… Individual Determinants

Z_j… Macro-level Determinants

θ_j… Unobserved Country Effects

Institutional Determinants: Indicators and Data Sources

- Labour market related policies: Employment Protection (OECD), Global Competitive Score
- Union power: Union density, Coordination of wage settings (Visser data)
- Product market regulations: Barriers to entrepreneurship (OECD), Rule of Law, Government Size, Regulatory Efficiency, Openess Index (Heritage Foundation) , Ease of Doing Business (Doing Business)
- Education and skills: Educational Expenditure (% GDP), Proportion with high to low level of education (ESJS), Skills and training (ECS)
- Work Organisation: Skills and training, Work Organisation, Performance Pay, Participation (ECS)
- Complexity: Index of Economic Complexity (MIT)

Preview of the Findings

1. The data suggest, only a small proportion of the variation can be attributed to cross-national differences.
2. Most of the tested macro measures were not significant.
3. Of those that are, some are hard to explain.
4. Nonetheless, flexible wage setting mechanisms (less central wage setting, prevalence of performance pay) correlate negatively with the likelihood of skills underutilisation.

Results: Individual Determinants

Variables	**Coef.**
Age	0.006***
Female	-0.193***
Upper Secondary Education	0.285***
Tertiary Education	0.479***
Years in current job (Tenure)	-0.020***
Agriculture	-0.259***
Manufacturing, Utilities, Construction	-0.180***
Public Sector	0.095**
Other Industry	-0.081
10-49	0.038
50-99	0.035
100-249	0.070*
250-499	0.104*
500+	0.088*
Country	
Ln(sigma_u)	-0.939***

Results: Labour market regulations

Variable	**Coef**
EPL – individual and collective dismissals	-0.820
EPL – individual dismissals	0.370
EPL – temporary contracts	-0.070
EPL – collective dismissals	0.201
GCI Score (2014/ 2015)	0.162
Individual Covariates	X
Ln(sigma_u)	-1.145***
N	39,901

Results: Union power

Variable	**Coef**
Union density	-0.003
Coordination of wage setting	
Mostly decentral	0.191
Hybrid	0.434
Centralised	0.630**
Highly Centralised	0.643*
Individual Covariates	X
Ln(sigma_u)	-1.094***
N	44,155

Results: Product Market Regulation

Variable	**Coef**
Barriers to entrepreneurship	-0.194
Price controls	0.099
Rule of Law Index	0.002
Government Size Index	-0.014*
Regulation Index	-0.000
Index of market openness	-0.009
Ease of doing business	0.005
Individual Covariates	X
Ln(sigma_u)	-1.158***
N	45,088

Results: Education and Skills

Variable	**Coef**
Ed exp as % GDP	0.020
Ratio of high to low education in LF	-0.009
ECS: Skills & Training	0.015
Individual Covariates	X
Ln(sigma_u)	-0.995***
N	45,088

Results: Work Organisation

Variable	**Coef**
ECS: Skills & Training	0.016
ECS: Work Organisation	-0.015
ECS: Performance Pay	-0.020*
ECS: Employee Participation	0.025*
Individual Covariates	X
Ln(sigma_u)	-1.111***
N	45,088

Results: Economic Complexity

Variable	**Coef**
Economic complexity index	0.438*
Individual Covariates	X
Ln(sigma_u)	-1.060***
N	42,753

Conclusions (so far)

1. There are good *a priori* reasons why labour market institutions matter for the incidence of skills mismatch
2. But few of the tested macro measures were significant.
3. Measurement error might confound the results.
4. Measurement of skills mismatch is not a settled issue. ESJS brings new approaches to the table, but more work is needed to assess the validity of different measures.