

Regional transitions and Human Capital

by Augustin de Coulon, Larissa Marioni and Mary O'Mahony

de Coulon¹, Marioni², O'Mahony¹

¹King's College London

²NIESR

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(thanks: Sanjiv Mahajan, Gueorguie Vassilev and others at ONS-SRS)

- Ultimate aim is to combine human regional capital combined with a work life approach to evaluate unequal regional growth trajectories
- Project builds on work for ESCoE aiming at the link between regional human capital stocks and geographical mobility

- People migrate between regions for higher wage (Greenwood, 1985, 2015), to find employment (Pissarides and Wadsworth, 1989), to improve their well-being (Nowok et al., 2013).
- And a lot of people don't move from their birthplace (Bosquet and Overman, 2019), also recent lab evidence showing risk with jobs/unemployment matters (Batista and Mckenzie, 2021)
- The JF framework (Jorgenson and Fraumeni, 1989, 1992) allows investigation of regional mobility and its impact on regional HC
- Numerous international efforts to measuring HC accounts using this framework (ONS currently uses it, since 2016)
- It allows to account for the probabilities that individuals resident in region i at time t may move regions at a later date

What we do

- Ideally we would attempt to ascertain the full extent to which adding geographical mobility affects estimates of local HCS
- Our work, so far, first builds regional transition probabilities at ITLS1 and ITLS2 level
- We present those both in Tables and Figures
- We then correlate the transition probs with relative wages, and different groups in the regions (OLS regressions)
- We then resort to a simulation to get a handle of how transition probabilities could affect HCS

Mobility between regions, ITLS1 and ITLS2

We construct region by region shares of 'out-of-region' populations, and track where they settled

Table 1A: Average probability of moving TO - Top 10, ITLS1

Rank	Gender	Age group	Qualification	Label group	ITLS1 name	Average
1	Male	16-29	High	MYH	East of England	0.0942
2	Male	16-29	High	MYH	South West (England)	0.0913
3	Female	16-29	High	FYH	East Midlands (England)	0.0855
4	Male	16-29	High	MYH	South East (England)	0.0839
5	Female	16-29	High	FYH	East of England	0.0822
6	Male	16-29	High	MYH	Wales	0.077
7	Male	16-29	High	MYH	East Midlands (England)	0.0758
8	Female	16-29	High	FYH	West Midlands (England)	0.0757
9	Male	16-29	High	MYH	London	0.0661
10	Female	16-29	High	FYH	London	0.0604

Note: excluding Northern Ireland.

Table 1B: Average probability of moving FROM - Top 10, ITLS1

Rank	Gender	Age group	Qualification	Label group	ITLS1 name	Average
1	Male	16-29	High	MYH	Wales	0.1245
2	Male	16-29	High	MYH	East Midlands (England)	0.1041
3	Male	16-29	High	MYH	South West (England)	0.1034
4	Male	16-29	High	MYH	South East (England)	0.0839
5	Male	16-29	High	MYH	Yorkshire and The Humber	0.0824
6	Male	16-29	High	MYH	East of England	0.0788
7	Female	16-29	High	FYH	South West (England)	0.0779
8	Female	16-29	High	FYH	East of England	0.076
9	Female	16-29	High	FYH	East Midlands (England)	0.0756
10	Male	16-29	High	MYH	West Midlands (England)	0.0688

Mobility between regions, ITLS1 and ITLS2

- This grouping by gender, age and skills generates 198 groups for ITLS1 and 640 at ITLS2 level
- We then aggregate the TO and FROM, to get net transitions for each groups (ex. for high and mid skilled, young (16-29) females at ITLS1 shown below):

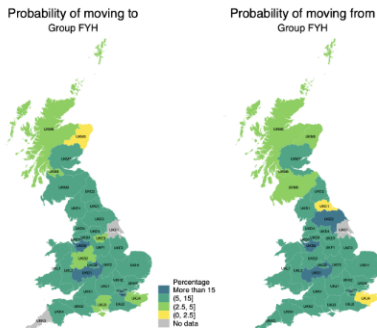
Table A1.1: Females aged 16-29

Gender	Age group	Qual	Label group	Region name	TO	Rank	FROM	Rank	TO - FROM
Female	16-29	High	FYH	London	0.0604	10	0.0328	23	0.0276
Female	16-29	High	FYH	South East	0.0452	17	0.0619	11	-0.0166
Female	16-29	High	FYH	South West	0.0541	12	0.0779	7	-0.0238
Female	16-29	High	FYH	Wales	0.046	16	0.0452	16	0.0008
Female	16-29	High	FYH	Scotland	0.011	64	0.0216	37	-0.0106
Female	16-29	Medium	FYM	North East	0.0285	23	0.0239	31	0.0046
Female	16-29	Medium	FYM	North West	0.0222	35	0.0146	57	0.0075
Female	16-29	Medium	FYM	Yorkshire/Humber	0.0253	29	0.0192	44	0.0061
Female	16-29	Medium	FYM	East Midlands	0.0256	28	0.0169	51	0.0087
Female	16-29	Medium	FYM	West Midlands	0.0142	52	0.0234	33	-0.0092
Female	16-29	Medium	FYM	East of England	0.0186	45	0.0346	21	-0.0161
Female	16-29	Medium	FYM	London	0.022	36	0.0205	41	0.0015

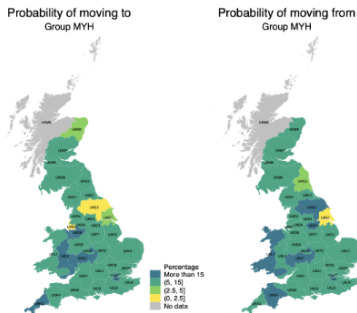
Figures on mobility between regions, ITLS1 and ITLS2

- To get a clearer pictures we also draw pictures of those mobility between regions (ex. for FYH, ITLS2, and MYH, ITLS2)

(C) Female-Young-High education, ITLS2



(D) Male-Young-High education, ITLS2



Transitions probabilities, wages and groups

We estimate the following OLS regressions

$$prob_{grt} = \alpha + \beta_1 \log w_{grt} + \beta_2 (\log w_{grt} \times T_t) + \beta_3 T_t + \beta_4 Group_g + \beta_5 Region_r + \varepsilon_{grt}$$

with $prob_{grt}$: prob. of moving to region r , $\log w_{grt}$ ln hourly wage of group g in region r at time t . And dummy variables for period, T_t , capture national trends, 10 years for NUTS1 and 2 periods for NUTS2

And dummy variables for region, $Region_r$, control for regional differences and dummies for each gender-age-education group,

$Group_g$, account for groups' unobserved heterogeneity. Lastly, ε_{grt} is the idiosyncratic error term.

- Wages never significant with ITLS1 but some positives with ITLS2 (due to migrations being short distance?)
- Some significant effects for both males and females who are young and highly qualified (+)
- And opposite negative effect for females (old and high qualified) males (old and low qualified)
- This suggest a focus on younger aged population (using LEO)

- We use the net transitions (TO-FROM) probabilities in JF model
- 2 regions only ('East', mostly TO, and 'York and Humber', mostly FROM)
- Comparison of regional HCS with and without the regional transition adjustments
- 1.5% higher in R1 and 5.9% lower in R2, then adjusting for wages, and skills increase R1 HCS but dampen R2

Table 6: Simulations of changes to regional capital stocks

	Region 1	Region 2
Transition probabilities only	1.46	-5.92
plus wage adjustment	1.75	-5.22
plus wages and skills adjustments	2.17	-4.37
Population plus wages and skills adjustments	1.82	-5.71

- UKHLS sample size too small to provide robust estimates annually and by finer age group and regional (NUTS2) divisions
- Mobility is substantial among younger age groups, LEO useful data to account for this - LEO has recently been made available in the SRS

Conclusions, future works and use

- Develop more refined estimates of regional HCS
- Better modelling of skills supplies
- This would improve assessment of regional educ/skills imbalances
- and help assess/address regional growth imbalances

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Regressions

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