

Universities, Agglomerations and Graduate Human Capital Mobility

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Introduction

*“There is reason to believe that spillovers exist from universities to firms...
For none of these spillover phenomena are the ‘transport’ mechanisms understood”*
(Jaffe, 1989, p. 957)

- Within the economic geography literature the role played by university spillovers in fostering local innovation and growth has become a major issue (*Anselin et al. 1997, Abramovsky et al. 2007*)
- Yet, very little research on the extent information spillover mechanisms are themselves the product of labor migration behavior: role of **graduate labor mobility.**



Graduate Labor Mobility

- The ability of a region to maintain its *competitiveness* depends crucially on its capability to **retain** its own graduates, but also **attract** graduates from other regions
- This ‘**human capital**’ effect is a *long-term* effect, far more important than the traditional income-expenditure multiplier effect
- We study the case of **British** university *graduates*



Main aim of the paper

- In this paper we focus on the **role of Higher Education Institutions (HEIs)** and the relationship between them and the local labor market.
- We do not investigate the individual migration behavior, nor we investigate the impact of graduate migration flows on the region of employment as both have been examined in detail elsewhere (*Faggian et al 2006, 2007a,b; Faggian and McCann 2006, 2009*)

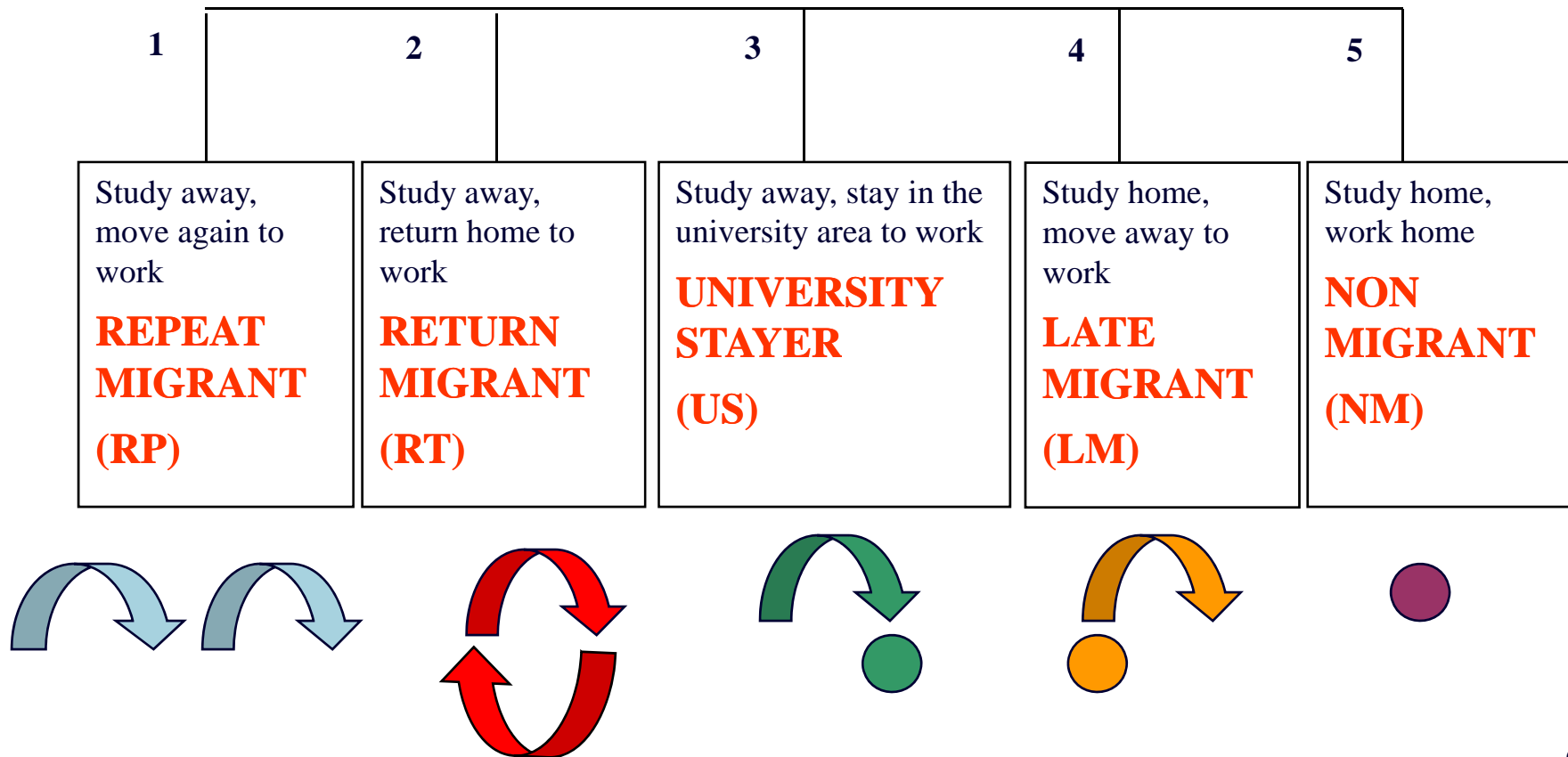


Data

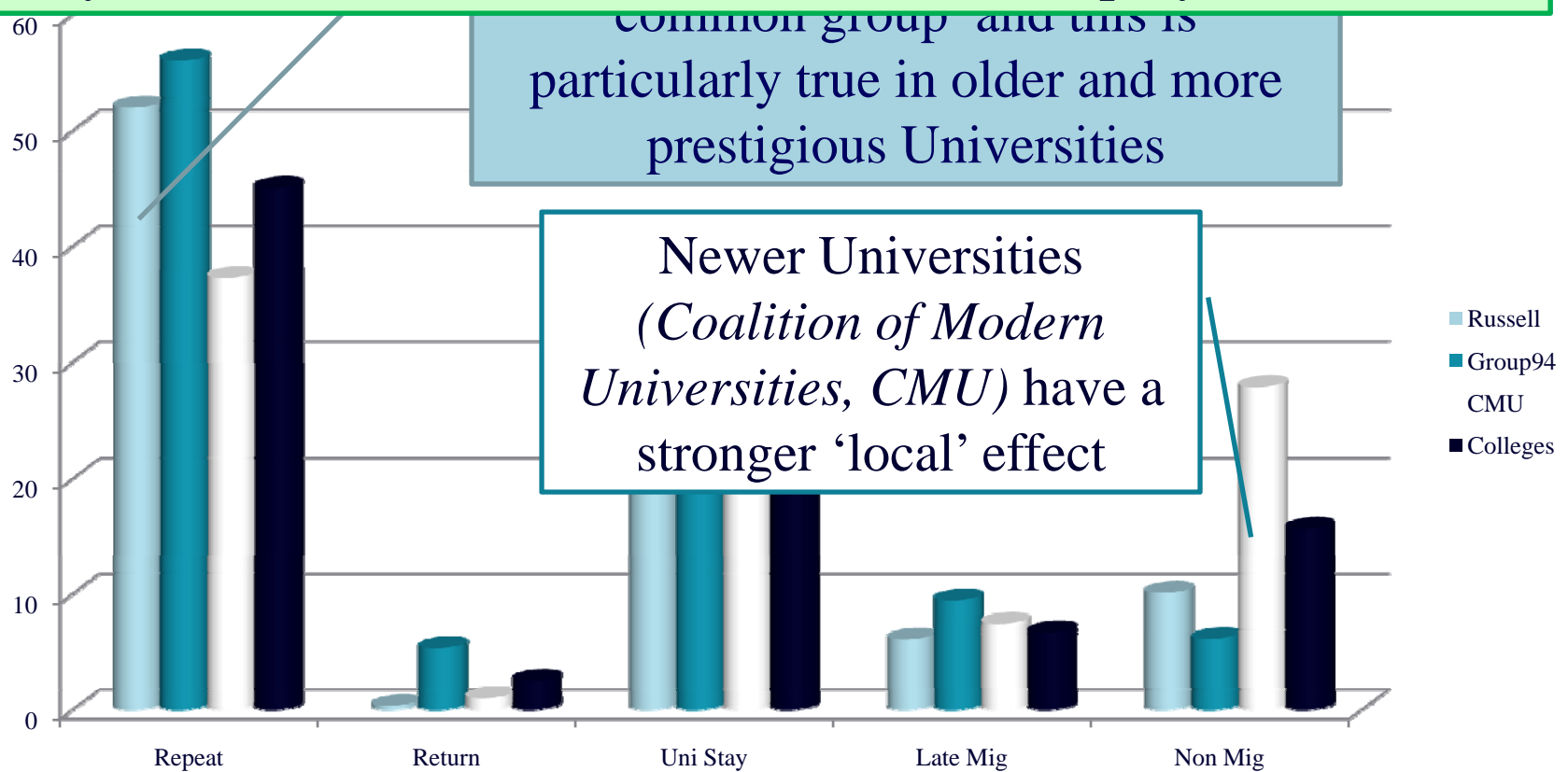
- HESA (Higher Education Statistical agency) individual student data: 231,131 records of students graduating in the year 2000
 - *Data include: postcodes of parental domicile, university attended and location of first job, personal characteristics (e.g. gender, ethnicity), final degree mark and course characteristics.*
- Data on Higher Education Institutions (HEIs) in the UK (*100 HEIs*)


Methodology


We identify five different sequential-migration paths:



OVER 80% of graduates **MOVE AWAY** from their **DOMICILE** area **TO ENTER EMPLOYMENT**, while around **60%** move away from the **UNIVERSITY** area to enter employment.



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- British students are **highly mobile**. Moving away from home to study is the rule rather than the exception (very different in other European countries, e.g. Italy)
 - Not only they are likely to move, they also move relatively long distances. On average a student moves around **100Km** from the original **domicile** to enter **university**.

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- This initial high propensity to move away to study is mirrored by a high mobility post-graduation (hence *repeat migrants* are by far the *most frequent!*)
 - British graduates move, on average, between 50Km and 110Km to enter employment depending on what kind of HEI they attended, this corresponds to 3-6 travel-to-work areas (TTWAs)

Methodology

Characteristics of the HEI: research quality index (RAE), size, 'modern' University

$$\ln Y_i = \alpha + \beta_1 \ln WHITE_i + \beta_2 \ln FEM_i + \beta_3 \ln GOODDEG_i + \beta_4 \ln UNIQUAL_i + \beta_5 \ln UNISIZE_i + \beta_6 CMU_i + \beta_7 \ln CENT_i + \beta_8 \ln LQMA_i + \beta_9 \ln LQPB_i + \beta_{10} \ln WAGE_i + \beta_{11} \ln POPDENS_i + \beta_{12} URB_i + \varepsilon_i$$

with $i=1, 2, \dots, 100$

Characteristics of the region: distance from London, location quotients, wage, pop density, urban area

Percentage
over p

(RP + RT + LM)

Results

**Model 1:
GB**

**Model 2:
GB without
Greater**

Model 3: and

Individual Characteristics

<i>WHITE</i> ⁺⁺	-2.9429*** (0.96) ⁺	-3.6060*** (1.0151)	-2.8877*** (0.9842)
<i>FEM</i>	0.1554 (0.2103)	0.1492 (0.2420)	0.2271 (0.2354)
<i>GOODDEG</i>	0.4550* (0.2328)	0.4069 (0.4343)	0.4939* (0.2574)

HEIs Characteristics

<i>RAE</i>	-0.3949 (0.3476)	-0.5035 (0.4787)	-0.3486 (0.3673)
<i>SIZE</i>	0.0037 (0.1059)	0.0293 (0.1284)	-0.0206 (0.1021)
<i>CMU</i>	0.4205* (0.2319)	0.3017 (0.2640)	0.4562* (0.2453)
<i>CENT</i>	0.9936 (0.0846)	0.3020** (0.1359)	0.0079 (0.1065)

Results

Regional Characteristics

<i>LQMA</i>	0.0653 (0.2100)	0.1069 (0.2410)	0.4242 (0.2722)
<i>LQPB</i>	1.6031*** (0.5411)	1.3446** (0.5586)	1.9768*** (0.4850)
<i>WAGE</i>	1.0247*** (0.4587)	0.6985 (0.5673)	0.6431 (0.4601)
<i>POPDENS</i>	0.1410** (0.0729)	0.1195 (0.0738)	0.1710** (0.0680)
<i>URB</i>	-0.3518 (0.2573)	-0.3600 (0.2818)	-0.3876 (0.2523)
<i>Constant</i>	9.6947** (4.1669)	12.6437*** (4.3117)	10.8609** (4.2155)
R-squared	0.3989	0.3517	0.4455
Number of Observations	100	86	90
Prob > F	0.0000	0.0000	0.0000



Some Conclusions...

1. Graduate human capital mobility cannot be disregarded when dealing with the issue of ‘local economic impact’ of HEIs
2. Different HEIs seem to perform different roles on the local economy: CMUs, though less research intensive (less spillovers) do produce graduates who stay in the local area (higher retention rates)
3. The type of jobs available in the local economy is also significant in fostering retention rates. Many graduates find employment in the public sector.
4. The ‘wage effect’ is significant only when the London HEIs are included in the sample



Some Conclusions...

5. Agglomeration economies (measured by population density) are also important.
6. The overall effect of having a ‘good degree’ depends crucially on whether the HEI is located in Greater London. Better students are generally more migratory *à la* Sjaastad (1964) when the HEI is located outside London (*see also Faggian et al 2007a, JRS - Faggian et al 2007b, Urban Studies*), while they tend to stay locally *à la* Bartel (1979) if the HEI is within Greater London.