

Title and Abstract

Title Matching the demand and supply of graduates' skills in the UK regions

1. Background and research questions

One of the most important mechanisms through which higher education expenditures impact on the creation of knowledge and on economic development is the production of graduates (see, among others, Salter and Martin, 2001). Indeed, as well as adding up to date knowledge in the labour market, graduates bring an "attitude of the mind" and a "tacit ability" to acquire and use knowledge in new powerful ways (e.g. Senker and Senker, 1995).

However, as academic research has long pointed out (e.g. Nelson and Phelps, 1965; Vandebussche, Aghion and Meghir, 2006), such impact depends on the demand conditions of the area/region where graduates are supplied by universities, that is on the level of local economic and technological development. In other words, an advanced region will benefit more than a backward one from a highly skilled labour force since, at the macro-level, the knowledge embedded in graduates needs to complement, or match, that of the region (von Tunzelmann, 2009). It is therefore crucial, at the micro-level, to understand how such match between supply and demand of skills occurs, especially across regions at varying stages of techno-economic development.

This paper explores this issue with respect to graduates working in the UK, focusing in particular on selected regions: (a) London, one of the largest urban agglomerations in Europe; (b) the South East, a region with a strong innovation system and a high proportion of knowledge intensive businesses and (c) the Midlands, which have suffered from the decline of the automobile industry, experiencing important restructuring in its economic and research bases.

Abstract

In so doing it will take into account the following four aspects

1. **Spatial differences:** we will explore whether different patterns emerge in the UK regions and particularly in those selected (London, the South East and the Midlands)
2. **Spatial mobility:** we will explore whether and how the migratory behavior of graduates influences her/his education-job match
3. **Study background:** we will analyse whether different outcomes are more likely for graduates from different disciplines
4. **Mechanisms for job-search:** we will study whether and how the different job-search mechanisms impact on the job-education match.

This will give us insights on what skills different regions need and what skills they manage to attract, shedding light on bottlenecks and ways to improve such matching process.

2. Dataset and methodology

To answer our questions we will use a combination of two surveys by HESA (The Higher Education Statistical Agency) of the UK:

1. *the HESA Destination of Leavers of Higher Education (DHLE)*, which looks at graduates four-to-twelve months after graduation
2. *the HESA DHLE Longitudinal Survey (DHLE Long)*, which looks at the same graduates between three years and four months to four years and four months after graduation.

Both surveys give information, at a given point in time, on the employment status of the graduate, the factors that attracted her/him towards their current job and those that attracted the employer towards the graduate.[1] With this information we can evaluate whether an education-job match (or mis-match) is actually occurring at any, either or both points in time. This means that, for each graduate, we can have 4 different patterns of education-job match:

Table 1 Potential education-job match outcomes[2]

Education-job match outcome

Job in DHLE

Mismatch

Match

Mismatch

Match

Job in DHLE Long

Mismatch

Mismatch

Match

Match

Furthermore, with the available data it is possible to construct and compare different indicators of education-job matches, allowing for different econometric models to be run. In particular, in the study we will use a combination of:

1. **Multinomial logit/probit:** as we can derive binary indicators of match and mismatch it is possible to compare the different outcomes with multinomial logit/probit models.
2. **Ordered logit/probit:** as we can derive ordered indicators of match and mismatch it is possible to compare the different outcomes with ordered logit/probit models.
3. **Nested logit/probit:** as we are looking at two subsequent points in the employment life of graduates, it is possible to study the phenomenon of education-job match with a nested logit, looking at the outcome of the second whilst job taking into account what happened in the first one.

Policy implications

The study is rich in policy implications. At the micro-level it will reveal the mechanisms that facilitate the matching of demand and supply of skills, providing insights on the behaviours of employers and graduates. This will allow us to evaluate, at the macro level, the role of Universities as suppliers of "local vs national" skills, and ultimately the role of the Government in

addressing mismatches. indeed, by looking at migratory patterns, we will be able to assess to what extent regions are importing or exporting the knowledge embodied in graduates. As graduates are a strategic element for regional development, this will, in turn, give us insights on the future of knowledge creation across the UK regions under scrutiny. Moreover, implications will be also drew from comparisons with previous research from the authors on the Italian regions (Iammarino and Marinelli, 2012), in order to obtain further feedbacks on the regional specificities of the relationship here studied, and disentangle the complexity and variety of regional development paths.

References

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- [1] The variable is based on the subjective opinion of the graduate who is asked what she/he thinks the employer valued more on her/his profile.
- [2] Both for the first and the second job it is possible to derive categorical and ordered indicators of education-job match.