

Job-matching patterns in Europe: Qualifications' transparency in secondary and tertiary education systems and the implication for social classes

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Introduction

The literature has extensively shown how the school-to-work transition as well as subsequent career opportunities is largely dependent upon the way the education and training system is organized and structured (see among others Scherer 2005, Wolbers 2007). Scholars generally agree that educational systems with a clear orientation towards vocational skills are better-off in allocating school leavers into employment (i.e. Wolbers 2007). In countries with a well-developed dual system, the labour market is built on the idea that qualifications and skills are to a large extent acquired through formal education and not through in-firm training. Industry unions, in these countries, press for standardized rules of personnel recruitment, job allocation, and salary (Muller and Steinmann 1995).

These mechanisms, however, concern mainly medium-skilled workers, thus workers that enter the labour force after an apprenticeship. Little is still known about differentiation in higher education and its implication in the school-to-work transition. From a historical point of view, in coordinated market economies, higher education has been strictly separated from vocational training (Graf 2013). Furthermore, participation in vocational programmes was dominant, while higher education played a minor role. In the past decades this situation has changed. Participation in higher education increased, while the supply for apprenticeship places in many industrial sectors shrunk.

European countries have coped with the increasing heterogeneity in higher education, in terms of motivation, competences, and career prospects of students in different ways. The way students are sorted into different tracks and prepared for a profession in higher education differs across European countries. Some countries offer higher non-university education. These are short-cycle programmes with a clear professional specialization meant for labour market entrance (Kirsch and Beernaert 2011). Besides short-cycle programmes, tertiary education in many European countries is organized through a binary system (Shavit et al 2007): in addition to traditional, research oriented universities, students can opt for universities of applied sciences. Although the vocational component in universities of

applied sciences tends to be less specific than in short-cycle programmes, they are still oriented towards a practical application of knowledge and they are designed to train students for more or less specific professions.

To have a better and more comprehensive understating of different models of skill formation one should then consider the overall organization and distribution of qualifications in the education and training system. Different structures of upper-secondary and tertiary education systems may influence returns to qualifications, as they are likely to affect the transparency of the signals provided by educational qualifications.

A way to investigate whether formal qualifications pay off in the labour market is looking at whether individuals end up in a job that matches the skills presumably acquired in formal education (Wolbers 2003, Levels *et al* 2014). This labour market outcome is of particular interest as it shows, more than other outcomes, how qualifications are linked to the complex distribution of tasks within the society. When this link fails because individuals are sorted into occupations not depending on what they are prepared for, but depending on other reasons, it means that the overall organization of specializations and occupations within a society is not optimized and there is a waste of personal and societal resources. In short, it can be seen as an indirect measure of how employers use educational credentials within a given society or how the linkage between qualifications and occupations is organized and regulated.

The present paper contributes to the existing literature in several ways: first, it enriches the debate on the association between different modes of vocational training supply at different levels of education and youth allocation into a matched job. Providing students with a large variety of qualifications may affect the transparency of qualifications and, in turn, it may improve school leavers' allocation into jobs that are coherent with the skills presumably acquired in formal education.

Second, it investigates the extent to which external differentiation operates as a social equalizer, facilitating the allocation process of school leavers from less privileged parental background. Institutional factors may play an important role in weakening the association between parental background and young adults' transition into employment (Ianello 2002). The transparency of qualifications could be one. If employers can rely on qualifications as transparent signal of one's productive skills, they will be more prone to use formal education during the recruitment process instead of other signals. This would favour the job match of individuals with fewer parental resources.

Third, the paper investigates whether the effect of external differentiation lasts over time, or, conversely, whether the association between features of the education system and the probability of having a matched job decreases as individuals integrate into the labour market. As school leavers gain work experience and integrate into the labour market they lose the disadvantage of being 'outsiders' (de Vreyer *et al* 2000). They can compete, therefore, for better labour market positions

improving the probability of entering a matched job. The effect of features of the training system should then decrease over time. Yet, the first access to the labour market can also have a significant effect on subsequent employment opportunities (Kropi *et al* 2003, Luijckx and Wolbers 2009, Barone and Schizzerotto 2011)

Research design: data, method, and key variables

I use data derived from the 2009 *ad hoc* module of the European Labour for Survey (EU-LFS) on school-to-work transition. This module combines information from the original labour for survey with more detailed information on transition from school to first employment. Data are restricted to individuals aged 15-35 years old in twenty-two European countries. I have further limited the analysis to individuals that have left formal education between 1995 and 2006. The reasons behind this selection are twofold: first, it allows comparing the first and current job of individuals that have left formal education for at least three years. Second, contextual data for years prior 1995 were often not available.

Multilevel linear probability models are used. Models are specified as follow: individuals nested within country-year and the latter nested within country. This specification should account for the right structure of the data, reducing the risk of downwards-biased standard errors for fixed effects, as highlighted by Schmidt-Catran and Fairbrother (2015). The only year-level is not included as variation over time irrespective to the country is close to zero.

The literature recognizes two main types of job match: vertical and horizontal. The former refers to the discrepancies between the level of education and the level of skills required by the job (for more details see Levels *et al* 2014). A measure of horizontal mismatch was developed by Wolbers (2003) and refers to the discrepancies between the field of education and the field of occupation. This variable is operationalized using ISCED fields of study (nine categories) and the three-digit ISCO. Unfortunately, the EU-LFS does not provide more detailed information; therefore, a more precise measure of horizontal match was not possible.

Social classes are determined using parents' highest level of education (three categories: ISCED 2 or below, ISCED 3-4, and ISCED 5-6). This is the only information I have on parental background. Unfortunately, information on parents' occupation is not provided.

At the macro level, I developed an index indicating the structure of the training offer at different levels of education. I tried to be as more comprehensive as possible in order to account for the major characteristics of upper-secondary and tertiary education systems that could affect the transparency of qualifications. At the upper-secondary level, I do not include the solo proportion of students in

apprenticeship programmes, as one can find in the literature so far, but I account for the distribution of students in different vocational programmes with different school/workplace ratios.

At the tertiary level two items are used: the proportion of students in short-cycle programmes and the proportion of students in university of applied sciences among students with an ISCED 5A.

Preliminary results

As shown in figure 1, there is a positive association between the vocational orientation of secondary and tertiary education systems in Europe and the probability of having the first and current job coherent with the level and type of qualification attained. These results hold also in the multivariate analysis when relevant controls are included in the models. This association seems to strengthen among less privileged individuals, as shown in the last two figures.

Figure 1 Association between having the 1st and current job matched and vocational orientation indexes at the secondary and tertiary level. Source: EU-LFS 2009

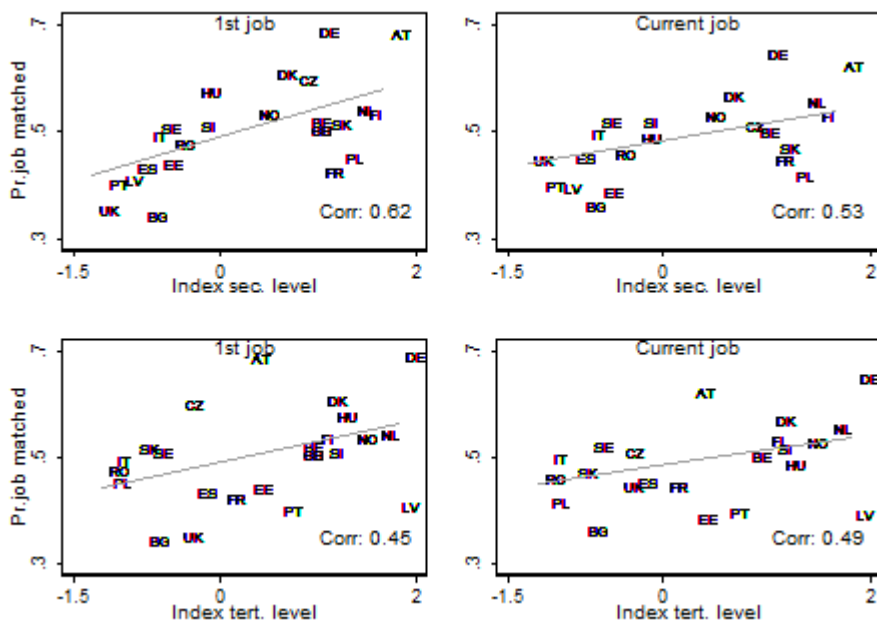


Figure 2 Cross-level interactions between parents' education and qualifications' transparency at the secondary and tertiary level on having the 1st job matched.

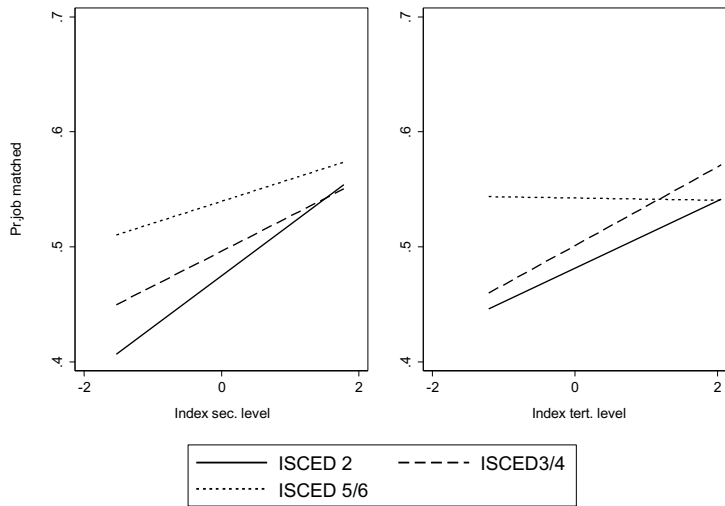
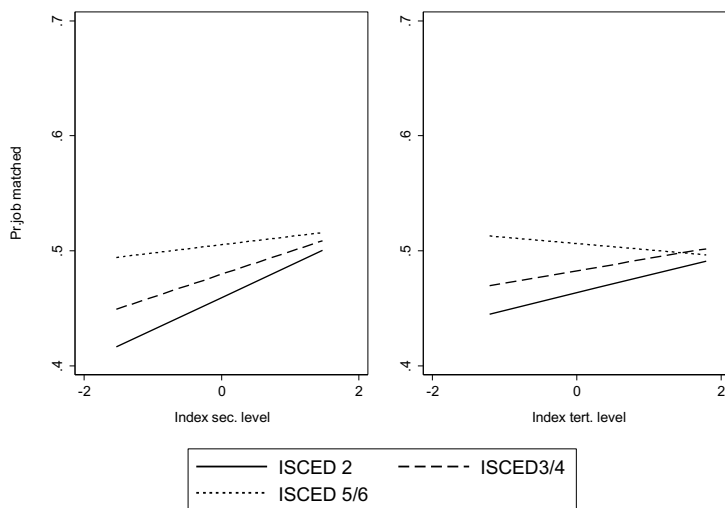


Figure 3 Cross-level interactions between parents' education and qualifications' transparency at the secondary and tertiary level on having the current job matched.



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