

Education, Labour Market Opportunities and Mismatch in the European Union Before and After the 2008-2009 Crisis

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(Extended abstract)

Introduction. The construction of effective education systems, especially those promoting higher education, is at the heart of the European Union (EU) initiatives addressing young citizens and their access to the labour market. High tertiary attainment levels remain one of the EU's priorities despite the technological changes, and polarization of job opportunities, along with the various forms of mismatch. The latter could hinder access to the labour market for young people, bringing into question education investments over the life-cycle.

This paper questions whether general formal education still helps youth avoid situations of unemployment and inactivity in favour of other labour force statuses (employment, education) across EU countries over the period 2006-2010. Second, we analyse whether the relationship between education and labour status is affected by different degrees of country-level education mismatch, which is often identified as being responsible for the severe youth unemployment across Europe (European Commission, 2013; European Central Bank, 2012). Whether the 2008-2009 crisis has had a direct or indirect impact (via the education mismatch) on the relationship between education and labour status is the third important issue investigated in this study.

In doing so we test the following **hypotheses**.

WH1: *the greater the length of individual education, the lower the risk of being unemployed or inactive and the higher the probability of being employed, self-employed or still in education.*

Our second and third working hypotheses connect the macro- and micro-dimensions.

WH2: *the higher the country-level education mismatch, the stronger the positive effect of the number of years of education on reducing unemployment / inactivity risk and on attenuating the choice to continue studies at the individual level.*

Because the crisis increased the education mismatch in Europe, it might also have favoured more-educated youngsters in the labour market. Different results could emerge for the different number of years of education accumulated. Therefore:

***WH3:** the higher the country level education mismatch at the moment of the crisis, the stronger the positive effect of education in reducing unemployment risk or inactivity /education choice at the individual level.*

Econometric strategy. We assume that human capital stock approximated by years of education determines probabilities for young people (15-34) to fall within five mutually exclusive unordered labour market statuses: 1) Employee; 2) Self-employed; 3) Unemployed; 4) In Education; and 5) Inactive.

We use multinomial logit model (MNL) as the main estimation method. To correct for endogeneity of education with respect to labour status, we apply a 2-stage residual inclusion regression (2RSI) approach. At the first stage of the 2RSI method, we estimate an OLS regression in which we regress our continuous endogenous variable years of education on instrumental variables. In the second-stage regression, the first-stage residuals are included in the second-stage regression alongside the actual value of years of education.

In order to disclose the statistical significance of the country-level variable of interest (education mismatch), we follow Bryan and Jenkins (2015). Hence, we take the baseline specification with correction for endogeneity as the first step. Then we estimate separately three regressions each year in consideration (2006, 2008, 2010). As the second-step estimation, we regress the country intercepts from three regressions of the first step on the country-level variable EMI using OLS. We repeat step two for each labor market outcome.

Data.

We selected the individual-level variables from the European Social Survey (ESS) for 2006, 2008, and 2010. Our sample includes 21 European Union member states, with the exclusion of Italy, Austria, Malta, Luxembourg, Latvia, Lithuania and Romania.

Concerning EMI, we followed the approaches of ILO (2013), the European Commission (2013) and the European Central Bank (2012) and constructed country-level education mismatch as a dissimilarity index. This index compares the differences in educational attainment (coded as three levels of education completed) between two groups, employed and unemployed (or labour force).

Other country-level controls, as GDP-shock, are calculated from Eurostat data. Measures of labour market institutions come from the Fraser Institute database.

Results. In the first working hypothesis (WH1), we contrasted the predictions of the human capital theories (including new developments on the cumulative and self-reinforcing effects of education) with the new theories and evidence reported by the job polarization studies. By focusing on the individual level, we have found strong support for the human capital theory propositions for unemployment and continuing education statuses. Although job polarization studies report inversed U-shaped relationships between occupational skills and probability of being unemployed, a decreasing monotonic relationship between additional years of formal education and unemployment risk is confirmed in our case. Moreover, youngsters with higher levels of human capital early in life are likely to continue education later in life; hence, the cumulative effect of education was not altered at the turn of the 2008-2009 crisis.

Secondly, we investigated whether education mismatch, measured at the country level, weakens or reinforces the results we found above. More precisely, we hypothesized that severe education mismatch and, hence, a lack of educated workers should favour better-educated youngsters (WH2). We rejected this hypothesis; regardless of the severity of the education mismatch, the impact of additional time in education is similar across countries.

Finally, we considered the effect of the crisis on the two relationships studied above. Apparently, the crisis per se did not directly modify the pattern in which education influences labour status. Instead, the crisis acted through education mismatch, as we assumed in WH3. In other words, an extra year of education is particularly effective in reducing the probability of being unemployed in countries that experienced a severe education mismatch after 2008.