Middle-income trap in EU regions

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Introduction

The aim of this research is to investigate the link between education quality, human capital quality and economic growth. We conduct a regional spatial econometric panel analysis for the 28 member states of the European Union on NUTS2 level to account for regional differences and spillover effects. We use a specifically assembled regional panel dataset for the period 1990-2015 that merges different sources - such as Cambridge Econometrics, Eurostat and geospatial data - to investigate the middle-income trap in EU regions. The main contribution of this paper is that it incorporates the notion of middle-income trap in regional development framework, furthermore, the findings could be utilized in cohesion policy. (JEL R12, O47, I25)

Research questions

- How can we define middle-income trap, and which regions in EU28 are considered trapped?
- What are the reasons for being trappedand what factors could enhance catching up?
- How important is the role of education and its spillover effects in this aspect?

Background

Middle-income trap and convergence

There is no consensus in the literature regarding the definition of middle-income trap. It can be relative or absolute terms, or convergence clubs can be identified by clustering methods (see Phillis and Sul 2007), authors argue that it shows that the problem of slow and fast transition is simply the question of growth, thus standard growth theory could be applied.

Regional development and human capital

Gennaioli et al (2014) to investigate worldwide regional income convergence, and they find, that geography and human capital shape both national and regional growth.

Valero and Van Reenen (2019) have also put the emphasis on human capital effects: they have assembled a unique regional university dataset using WHED and other economic measures and have found that increase in the number of universities is positively associated with higher subsequent GDP growth.

Methods

- 1. Identify income groups and regions within the middle-income group that are unlikely to catch up using Marov chain models.
- 2. Descriptive statistics
- 3. Use panel spatial econometric models to discover the factors that determine their convergence and identify the barriers and enhancers of catching up

Further plans

- 4. Append with WHED and InCites data
- 5. Simulation: what are the expectable mobility changes?
- 6. Robustness checks: mobility definition, methodology, timeframe

Results

The correlation is 0.54 between income category and the tertiary education attainment and 0.61 between income category and SRJ citations per document throughout the years 1990-2015, similarly around 0.6 for measures of "skillful occupations": share of employment in knowledge-intensive services and share of R&D personnel and researchers, which shows the strong positive relationship between income category and these variables (not causality).



Through 2000-2014 higher education attainment is significant and yields similar coefficients throughout both OLS and FE model which shows the importance and robustness of this factor. One percentage point difference in initial higher education attainment results in an average 0,05 percentage points higher average growth rate for the following 5-year period (OLS estimate). If we further investigate the effect by income categories, we experience an interesting pattern: the higher the income category the greater the coefficient of higher education on growth. The effect is -0,03 for low, 0,06 for middle, 0,08 for high and 0,09 for the very high income category.

	OLS	FE
5-year average GDP per capita growth	conditional	conditional
Log of GDP per capita	-0,0210 **	-0,1139 **
Investment rate	0,00004 **	0,0001 **
Standard deviation of GVA per worker	0,0001	-0,0003
Fertility	-0,0107 **	-0,0205 **
Population density	0,0048 *	0,0060
TFP	0,0013	-0,0015
Higher education attainment	0,0502 **	0,0702 *
Number of observations	566	566
**: p < 0,05, *: p < 0,01. Data source: CE and QoG		



Conclusions

Moran's test for the unconditional β convergence regression showed spatial dependence. To address this issue, spatial Durbin model was calculated to test the spillover effect of higher education. Dependent variable is average growth rate for the period 2000-2014, whereas logarithm of initial GDP per capita and initial higher education attainment are the explanatory variables. The speed of convergence is 1,8% in this specification, and the coefficient of higher education is 0,06 similarly to the previous calculations. In addition to the direct effect, higher education has a significant 0,02 indirect effect on growth, so the total effect is higher: 0,08. It shows that higher education has a spillover effect on growth, meaning that educated workforce affects positively the economy of the neighbouring regions as well.

The review of the literature about convergence clubs, middle-income trap and regional development shows that human capital has a crucial role in both fields. Preliminary calculations have been conducted that show strong correlations between income category and numerous education and skillful occupations measures, and higher education is proven to affect regional growth, where spatial dependence and spillover effect of higher education is also present.

References

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