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## Mind the Gap: Education Inequality at the Regional Level in Portugal, 1986-2005\*

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resumo

résumé / abstract

Portugal é um dos países mais desiguais em termos de rendimento entre os países desenvolvidos. De 1980 a 2005, a desigualdade de rendimento manteve valores elevados, resultado sobretudo do aumento da desigualdade dos rendimentos do trabalho. Dada a estreita ligação entre educação e rendimentos do trabalho, é fundamental analisar a distribuição de educação. O objectivo principal deste trabalho é avaliar empiricamente a desigualdade de educação em Portugal a um nível regional entre 1986 e 2005. Os resultados apontam para um aumento do nível médio de educação da força de trabalho em simultâneo com uma diminuição da desigualdade de educação, ao nível nacional. Contudo, várias regiões, as inicialmente mais pobres em educação, apresentam um aumento da desigualdade. Comprovamos também empiricamente a existência de uma curva de Kuznets de educação.

Portugal figure parmi les pays développés comme un des pays des plus inégaux en termes de revenu. Durant 1980-2005, l'inégalité du revenu maintient des valeurs élevées alimentée surtout pas une croissance de l'inégalité des gains. Du fait de l'existence d'une relation étroite entre l'éducation et les gains, l'étude de la distribution de l'éducation est importante. D'abord nous mesurons l'inégalité de l'éducation au niveau régional, au Portugal, entre 1986 et 2005. Nos résultats confirment une augmentation du niveau moyen de l'éducation de la force de travail accompagnée par une diminution de l'inégalité pour l'ensemble du pays. Nonobstant, certaines régions exhibent une augmentation de l'inégalité. Finalement, nous obtenons des résultats empiriques qui supportent l'hypothèse de la courbe de Kuznets pour l'éducation.

Portugal stands as one of the most unequal countries in terms of income among the developed countries. Over the period 1980-2005, income inequality kept high, fostered mainly by a monotonic increase in earnings inequality. Given the close link between education and earnings, it is of major importance to study the distribution of education. This paper examines the distribution of education at the regional level in Portugal between 1986 and 2005. Our results indicate that education inequality decreased for the whole country as the average education level of the workforce rose, over the sample years. This finding does not apply at the regional level however, with several districts initially poor in terms of education exhibiting an increase in education inequality. The evidence also supports the existence of a Kuznets curve of education: as the average level of education rises, education inequality first increases, and, after reaching a peak at 5.13 years of schooling, starts declining.

\* The authors would like to thank the editor of the journal for valuable comments and suggestions.

## 1. Introdução



Income inequality has been a permanent theme on economic research, whereas human capital inequality is a very recent topic of study. The importance of human capital and its distribution only emerged after the surge of endogenous growth theories during the 1980s. One can ask about the relevance of this topic *per se* for Economics, which then leads to the question, *Is inequality really a bad thing?* According to some theories, inequality can be detrimental to economic growth and reduce individual welfare. For countries such as Portugal, that presents persistently high income inequality levels, the study of inequality is thus of great importance.

The stock of human capital is a fundamental determinant of a country's growth performance as we are rapidly moving towards a knowledge-based economy. Endogenous growth theories brought to the front line the importance of this production factor not only as a major inductor of innovation but also as an essential tool for absorption and adaptation to new knowledge and technologies. Furthermore, at the individual level, the stock of human capital is a major determinant of individual employability and earnings. In turn, from an intergenerational perspective, the educational level of the parents decisively influences the educational level achieved by their offspring. The level and the distribution of human capital are thus important determinants of the growth performance and the level of social cohesion of a country and should be the focus of research.

The intergenerational transmission of inequality is a matter of much concern, since it lowers the equality of opportunity among the young and produces economic inefficiencies given the waste of skills from children with a low family background. The vicious cycle of inequality is a complex network of mechanisms. First, given the liquidity constraints, income inequality leads to human capital inequality. In other words, poor households will lack the financial resources to invest in their children's education. Additionally, parents' educational level strongly determines the educational attainment of children, which means that human capital inequality will tend to persist over generations. These mechanisms act therefore as intergenerational mechanisms of inequality reproduction. At the same time, there will be an intra-generational effect, since the distribution of human capital will determine the contemporaneous distribution of income, via wages and individual employability. And if inequality prevents poorer individuals and their children from investing in human capital, then inequality is detrimental to growth.

The main goal of our paper is to gauge education inequality at the regional level. Our analysis covers the eighteen Portuguese *distritos* and two insular regions, from 1986 to 2005. We also investigate if the evolution of education inequality at regional level fits the hypothesis of a Kuznets curve of education.

In the next section we provide a brief overview of the theoretical and empirical studies that focus on the interactions between inequality and economic growth. We also review the empirical studies that have explored the hypothesis of a Kuznets curve of education and summarize the evolution of income and earnings inequality in Portugal over the sample period. In section 3, we develop a pioneering analysis of education inequality in Portugal at the regional level. Section 4 concludes.

## 2. Literature review

### a. Inequality and economic growth

No definite sign can *a priori* be anticipated for the relationship between inequality and economic growth, given the numerous links between the two variables. The main channels through which inequality impacts economic growth can be nevertheless summarized into four groups: (i) borrowing constraints and the investment in physical and human capital; (ii) fiscal policy; (iii) socio-political instability and macroeconomic volatility; and (iv) saving rates behaviour (Perotti, 1996; Aghion *et al.*, 1999; Barro, 2000).