



# Education policy and inequality: A political economy approach

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## ARTICLE INFO

### Article history:

Received 10 July 2008

Received in revised form 8 June 2009

Accepted 9 June 2009

Available online 17 June 2009

### JEL classification:

D78

H63

H42

I28

### Keywords:

Political economy

Representative democracies

Education

Inequality

Redistribution

## ABSTRACT

Regression results show that more unequal societies tend to spend comparatively more on higher levels of education. In a two-period model with heterogeneous agents, this paper investigates the political determinants of this bias. In the first period, public education is financed by the incumbent government by issuing bonds. Investments in basic and higher education have conflicting effects on future labour income distribution and net returns to these investments depend on the tax and transfers system being selected in the following period through the democratic process. Our idea is that public investment in basic education, by decreasing future labour income inequality, may induce future policy-makers to redistribute resources through financial rents taxation, thus making unfeasible the issuing of debt to finance basic education. This will be the more probable the greater wealth inequality is.

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## 1. Introduction

Public provision of education is usually justified as a (politically acceptable) means of redistributing income.<sup>1</sup> However, access to education is not homogeneously distributed across social groups. World Bank reports that children from poor households have much lower enrolment rates, at increasingly higher levels of education, than children from richer families.<sup>2</sup> Thus, the redistributive effects of education expenditure strongly depend on which level of education is funded.

The following table documents how total public expenditure on education, as percentage of GDP, as well as the share of spending at tertiary level in total public education spending vary considerably, even among developed countries (Table 1).

Recent empirical works, by disaggregating spending over educational levels, provide evidence that the composition of public education spending depends on the distribution of income. More specifically, regression results show that more unequal societies tend to spend comparatively more on higher levels of education and thus have a less redistributive way of spending on education (Zhang, 2008; Fink, 2005). Analogous results are found for developing countries (Birdsall, 1996; Gradstein, 2003).

This paper aims at developing a political economy framework capable of accounting for the stylized facts above described. We want to explain why more unequal societies tend to spend proportionately more on high levels of education than on basic education.

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<sup>1</sup> Cross-country analyses show that public spending on education accounts, on average, for more than 4.5% of GNP and more than 14% of total government expenditure (data source: various issues of UNESCO Statistical Yearbook).

<sup>2</sup> World Development Report, 2003. See also De Fraja (2004) for a discussion of this point.

**Table 1**

Total public expenditure on education as % of GDP and share of tertiary education expenditure (year 2000).

Country	Total public expenditure on education as % of GDP	Tertiary education expenditure as a share of total expenditure on education
Australia	4.7	0.229
Austria	5.5	0.249
Belgium	6.1	0.246
Denmark	8.5	0.300
Finland	6.5	0.340
France	5.9	0.176
Germany	4.6	0.242
Greece	4.3	0.240
Ireland	4.8	0.303
Italy	4.7	0.178
Japan	3.6	0.152
Korea, South	4.6	0.154
Netherlands	5.4	0.270
New Zealand	6.5	0.247
Norway	7.7	0.254
Portugal	5.7	0.181
Spain	4.3	0.218
Sweden	7.4	0.272
Switzerland	6	0.223
United Kingdom	5.4	0.175
USA	5.6	0.225
Czech Republic	4.4	0.190
Hungary	5.5	0.210
Mexico	5.4	0.180
Poland	5.4	0.146
Slovakia	4.3	0.184
Turkey	3.7	0.309

Data source: OECD, Education and Training Database.

The topic is relevant since the allocation of public education spending might be responsible for persistent inequality. With regard to this point [Bowels \(1978\)](#), for example, argues that public education might contribute to economic inequality if resources are allocated disproportionately to the rich. Along the same lines, [Walde \(2000\)](#) shows that the degree of elitism (measured by public spending per student in tertiary education compared to primary and secondary ones) provides an incentive to develop technologies that allow skilled labour to replace unskilled labour and, hence, generate higher income inequality. More recently, without appealing to elitism, [Glomm and Ravikumar \(2003\)](#) illustrate the possibility of adverse distributional consequences of public education due to a sufficiently high elasticity of parental human capital in the learning technology. On the empirical side, cross-country evidence, collected by [Zhang \(2008\)](#), reveals that countries spending more on higher education today tend to experience more unequal income distribution in the future. Thus, the allocation of public spending on education might be responsible for persistent inequality.

The main idea of this paper is to regard public spending on different levels of education as alternative public investments, which have conflicting effects on future labour income distribution. Net returns to these investments depend on the tax and transfers system being selected in the following period through the democratic process. In our framework, education policy, by changing future income distribution, might trigger a political equilibrium in which compensation for past public investments cannot be paid. This will deter first period incumbent governments from undertaking such investments. Specifically, our idea is that an investment in basic education might not be politically viable since a more egalitarian future income distribution would trigger a political equilibrium in which compensation wouldn't be paid.

To formalise these ideas we develop a model with two time periods, with an election occurring between the two. In the first period, agents differ in their initial wealth and abilities; in the second period, differences in wealth are combined with differences in labour income determined by abilities.

In the first period, the incumbent government decides on education policy. Namely, it has to decide to what level of education a fixed amount of financial resources should be allocated. Such resources are collected through the issue of government bonds.<sup>3</sup>

First period education policy affects second period labour income distribution: agents with higher ability derive greater benefit from higher education, whereas individuals with lower ability benefit more from investment in basic education. Therefore, if education policy is biased in favour of higher (basic) education, future labour income distribution will be more (less) unequal.

At the beginning of the second period, a two-party electoral competition is held and probabilistic voting decides the winner. The elected policymaker sets taxes on labour and capital income to finance a lump-sum transfer and repay public debt. Labour income taxation redistributes resources between the low and high-income individuals; capital income taxation redistributes resources from wealthier bond-holders to the remaining part of the population.

<sup>3</sup> Note that qualitative results would not change by adopting a different and more complex structure where public expenditure in education is financed by taxes in the first period, and the second period labour productivities are determined not only by public investment in education, but also by private investment in physical capital (see Section 6 below).

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