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# Skill premia and intergenerational education mobility: The French case



B. Ben-Halima a. N. Chusseau a. I. Hellier a,b,\*

- <sup>a</sup> EQUIPPE, University of Lille 1, Cité Scientifique, 59655 Villeneuve d'Ascq Cedex, France
- <sup>b</sup> LEMNA, IEMN-IAE, Chemin de la Censive du Tertre, B.P. 52231, 44322 Nantes Cedex 3, France

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#### ABSTRACT

In the case of France, we analyse the changes in the wage value of each education level and the impact of parents' education and income upon the education attainment of children, sons and daughters. We find a critical decline in the skill premium of the Baccalauréat ('bac') in relation to the lowest educational level, and an increase in the skill premia of higher education degrees in relation to the bac, which is however not large enough to erase the decrease in all the skill premia relative to the lowest education. We also find a significant rise in the impact of family backgrounds upon education from 1993 to 2003, i.e., a decrease in intergenerational education mobility, which primarily derives from higher impact of parental incomes. Finally, the gender wage gap is particularly large for the lowest and the highest education degrees, and intergenerational persistence is greater for sons than for daughters.

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#### 1. Introduction

The aim of this article is twofold. We firstly determine the values of, and changes in the skill premia related to each level of education in France over the period 1977–2003. From this first result, we subsequently analyse the changes in intergenerational education mobility.

The French education system exhibits several specificities. The complexity and the elitist orientation of its higher education are two of its most prominent characteristics. The *baccalauréat* ('bac') is the access road to tertiary education. The bac is the examination taken at the conclusion of secondary school. There are now three types of bac ('general', 'technical' and 'professional'). In its present form of a general examination constituting a prerequisite to tertiary education, the bac was introduced

E-mail address: joel.hellier@wanadoo.fr (J. Hellier).

by Napoleon. The technical bac was created in 1968 and the professional bac in 1985. The purpose of the last two was to set special accesses to tertiary vocational studies. Since World War II, the proportion of a generation obtaining the bac has critically increased, passing from about 10% in the early 1950s up to 20% in 1970 and more than 70% now.

Having obtained the bac, a student can select several lines. Broadly speaking, three roads are open. The first is short tertiary education (two years) which is essentially technical and vocational. However, until the introduction of the European system LMD in 2003 there was a two-year tertiary degree in general education (the 'DEUG') issued by the university system.

The second road is the university which is open to all candidates having succeeded the bac, whatever the type of bac they obtained. The organisation of university studies has significantly changed since World War II, with a succession of reforms. Despite the multiplication of vocational subjects, the university can be seen as providing 'general' tertiary education. As in other countries, this

<sup>\*</sup> Corresponding author at: 28 rue de Sévigné, 75004 Paris, France. Tel.: +33 06 75 49 32 97.

comprises a large range of subjects: pure and applied sciences, business, humanities, laws, arts, etc. One short-coming of the lack of selection (apart the bac) to enter French universities, whereas there is indeed a selection to enter the short vocational tertiary courses, is that students who have failed coming in other studies enter the university, which typically leads to very high rates of failure at the end of the first year.

A key specificity of French tertiary education is the existence of 'Grandes Ecoles'. These are highly selective tertiary establishments (they recruit less than 4% of a generation) that aim at training the French 'elite'. There are two main types of Grandes Ecoles, i.e., business schools and engineering schools, both leading to top executive positions. In addition, 'Science Po' and the ENA (Ecole Nationale d'Administration) aim at training high level civil servants and the political elite, and the ENS (Ecole Normale Supérieure) top researchers. If the first Grandes Ecoles were created at the beginning of the XIXth century, a number of new and less prestigious Grandes écoles have been subsequently opened, particularly since World War II.

An implication of this complex and elitist system is that individuals with the same number of schooling years can possess very different skills even in the same field, and thereby very uneven incomes. For instance, both University Master levels and *Grandes Ecoles* are typically characterised by 5-year training programmes after the bac, but they lead to very uneven professional positions with very uneven pays (Jarousse & Mingat, 1986).

Disentangling the different types of studies and establishments can thus be seen as essential when assessing the wage value of schooling attainment in France because the differentiation in terms of schooling years or education cycle can lead to misinterpretations. This inadequacy of years to measure schooling in the case of France was already underlined by Card (1999, p. 1806). This militates in favour of the selection of an 'extended (dummy) earnings function method' based on different types of curriculum within a given educational level (Psacharopoulos, 1994), which is what we do here.

Another issue is linked to the substantial increase in the proportion of a generation that succeeds the bac and enters tertiary education. Has this induced a decrease in the 'value' of the bac, which can be seen as the common belief, or has this value remained broadly unchanged? And has the premium linked to tertiary education compared to the bac increased?

In addition, the determination of the wage value of each education level provides bases to calculate intergenerational elasticities in terms of education attainment. This allows measuring intergenerational education mobility by taking into account the fact that, in the French system, the number of schooling years is not a sound indicator of educational attainment.

In this article, we firstly use Mincerian equations to determine the wage value of the different stages that compose the French education system. We subsequently utilise the wage value of each education degree to assess the levels and changes in intergenerational education mobility. The calculations are brought about from different

waves of the French survey Formation Qualification Professionnelle (FOP).

This study is original in several respects. In its first stage, it provides a clear picture of the wage value of the different education degrees in France from 1977 to 2003, which reveals significant modifications. It secondly allows assessing the changes in intergenerational human capital mobility between 1993 and 2003. The originality of this second stage is that each type of study is measured by its wage value on the labour market. This allows accounting for the above-mentioned fact that, in the French education system, the same number of schooling years can correspond to large differences in skill and earnings. An additional specificity consists in dividing the parental influence between the intra-family human capital transfers and the impact of parents' income. Finally, the estimations are carried out both for all working individuals and by gender.

Our calculations firstly show that the skill premium linked to the bac¹ has critically decreased from 1977 to 2003. This decrease has been only partially offset by the increase in the skill premia of the different degrees of tertiary education in relation to the bac. Consequently, all the skill premia have decreased in relation to the lowest skill, which is in line with the decrease in earnings inequality observed in France in this period.

As regards intergenerational mobility, our calculations reveal an increase in the impact of the family backgrounds upon the educational achievement from 1993 to 2003. This rising influence of family backgrounds (i.e., a decrease in intergenerational mobility) primarily derives from the impact of parents' income, even if the impact of intrafamily human capital transfers has also risen. Finally, our calculations reveal non-negligible differences between genders. In particular, the gender wage gap displays a clear V-shape in terms of education level, men being significantly better paid than women at each extremity of the education spectrum (primary education and *Grandes écoles*), but not in the intermediate levels. Secondly, the influence of family backgrounds seems to be larger for male than for female.

Section 2 presents a survey of the literature on the subject. Section 3 exposes the empirical model and Section 4 the data and the decomposition of the French education system. Section 5 presents and justifies the econometric strategy and the chosen variables. We present and discuss the results in Section 6. We conclude in Section 7.

#### 2. Literature

Our work rests upon two foundations, namely, the human capital earnings functions and the intergenerational mobility approaches. Both are based on the fact that individuals decide for their education from the earnings return to human capital. In addition, the intergenerational approach assumes that an individual's human capital depends on her/his parents' human capital, the latter being a key element of the education function.

<sup>&</sup>lt;sup>1</sup> i.e., the ratio of the earnings of individuals with the bac on the earnings of the least skilled individuals.

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