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# STUDENT EXPECTATIONS OF THE FINANCIAL RETURNS TO HIGHER EDUCATION IN THE CZECH REPUBLIC AND ENGLAND

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## Abstract

The economic development of a nation or a region depends to a considerable extent on a highly educated and skilled workforce. This includes an appropriate supply of University graduates. The motivations of students to enter higher education are potentially many and various. However financial factors are known to be of considerable importance, particularly in subjects such as economics and business administration. It would be useful therefore to have an estimation of students' expectations of the financial returns to higher education. The results which are reported on in this paper provide data concerning the expectations of first year students in three Czech faculties of economics and one English Business School. First year students were surveyed because they had recently entered higher education. The findings show that students in both countries expect higher education to be a profitable investment. Expected rates of return are found to vary by gender as well as by country and place of study. In the case of England, it is concluded that the current level of tuition fees does not act as an incentive for students to enter higher education.

JEL Classification: I23, J24

# STUDENT EXPECTATIONS OF THE FINANCIAL RETURNS TO HIGHER EDUCATION IN THE CZECH REPUBLIC AND ENGLAND<sup>1</sup>

## Introduction

During the last fifteen years, there has been a growth of interest in the returns to higher education by policy makers. This has been due to increasing difficulty in funding higher education as student numbers have expanded. The fact that there are often substantial private returns to higher education has been used as a reason to shift the burden of funding higher education away from the tax payer and to the student – or sometimes to the graduate [3].

In countries where there is a consensus for a welfare state financed by high levels of general taxation (e.g. in Scandinavia), university studies have tended to remain free at the point of entry. This has also been the case in countries in which the age participation rate has remained below the OECD average (e.g. in the former COMECON countries of Central/Eastern Europe). In such countries, the costs associated with university funding have remained “affordable” for the taxpayer. In the Czech Republic for instance, public universities have remained free at the point of entry with student numbers capped and excess demand has been mopped up by encouraging the growth of a vigorous private sector. By contrast in the UK the private sector remains very small and the “marketisation” of higher education has taken place in the public universities via the introduction of tuition fees, which cover part of the costs of tuition.

This study reports on data on students’ expectations concerning financial returns to their higher education studies in three Czech faculties of economics and one English business school. The study is unusual in focusing on the question of expectations as most studies in this area have attempted to measure *actual* returns. Only a few studies have examined the comparability of earnings expectations to reality within the educational context.

## 1. Measuring returns to higher education

In this study, when estimating the private rate of return, the costs will consist of foregone earnings and tuition fees but will not include living expenses. Living expenses may be covered by parents if they can afford them or by government in terms of maintenance grants for those from disadvantaged backgrounds and will be incurred anyway if a decision is made not to enter higher education.

The following short cut formula can be used for calculating rates of return to education.

$$r = \frac{E_j - E_i}{S \cdot E_i}$$

where

- $E$  is average earnings of an individual who has a  $j$  level and  $i$  level of education respectively
- $S$  is years of schooling
- $r$  is the rate of return to education

Since the basic short-cut method formula above assumes foregone earnings as a cost of education it is designed to measure rates of return to higher education in countries where the higher education is

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<sup>1</sup> A further version of this article can be found in [1].

provided to students without charge, such as in the case of public universities in the Czech Republic. In England however tuition fees have been in place since 1998. Therefore some adjustments must be made in order to compute the rate of return in England as accurately as possible.

Tuition fees for full time undergraduate students were first introduced in England and Wales in 1998 (the so called 'old' system) and were set at £1,000 per student per annum for all Bachelor degree courses and were subject to an inflationary adjustment (by 2005/06 the fee had risen to £1,175). The tuition fee was contingent on family income, with the possibility of a full or partial waiver for students from lower socio-economic backgrounds.

Since the fees had to be paid upfront they are added to the formula in the denominator as they were a cost to students as much as their foregone earnings during their university studies. Therefore the formula used to calculate the rates of return to higher education in England between 1998/1999 and 2005/2006 is as follows:

$$r = \frac{E_u - E_s}{S \cdot (E_s + C_u)}$$

where

- $E_u$  are earnings of an individual with a university education
- $E_s$  are earnings of an individual with a secondary education
- $S$  are years of higher education
- $r$  is the private rate of return to education
- $C_u$  are the costs of university education

In January 2005 the UK parliament voted to permit universities in England and Northern Ireland to charge a fee of up to £3,000<sup>2</sup> per annum for all Bachelor programmes (the so called 'new' system). Unlike the 'old' tuition fee system, the 'new' fee regime, which came into force in England and Northern Ireland in September 2006, does not require the payment of an upfront fee – rather it asks students to take out a loan to cover the cost of the fee. The loan is then repayable after graduation and instalments are collected alongside income tax and national insurance and are automatically deducted from wages. In other words this is similar to a graduate tax, such as that which was introduced in Australia in 1989 [2].

Given that the vast majority of students choose not to pay the tuition fees upfront and that the loan debt will be collected from graduates in instalments, at 9% of the threshold above earnings of £15,000 in the UK, for up to 25 years, the tuition fees should not count as costs. Rather they should be seen as a reduction of the benefits from an investment in higher education. Therefore the formula which will be used to calculate rates of return in England after 2006/2007 inclusive, is as follows:

$$r = \frac{E_u - [0.09(E_u - 15,000)] - E_s}{S \cdot E_s}$$

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<sup>2</sup> The fees increase yearly by no more than the rate of inflation and were set at a maximum of £3,290 per annum in 2010/2011. Almost all universities have chosen to charge the maximum fee for all Bachelor study programmes.

where

- $E_u$  are earnings of an individual with a university education
- $E_s$  are earnings of an individual with a secondary education
- $S$  are years of higher education
- $r$  is the private rate of return to education
- 15,000 is the threshold of £15,000
- 0.09 is the instalment of 9%

## 2. Survey of Expected Earnings at Czech and English Universities

### 2.1 Background

The institutions surveyed in this study, in the Czech Republic and England, are equivalent in status and form, although they are not identical in terms of curriculum. Czech students have a greater amount of economics, accounting, mathematics and information systems in their curriculum than their British counterparts while the latter tend to study a larger amount of the newer and “softer” management subjects.

In the Czech Republic, faculties of economics correspond to UK business schools. Despite the Bologna process, which introduced the system of three years’ study towards a Bachelor’s degree and two years’ study towards a Master’s degree in the Czech Republic, most Czech students “graduate” with a Master award after five years’ study. This is because of the fact that the Bachelor’s degree is not perceived to be a full-value university education. In England, most students who enter higher education aged 18/19 “graduate” with a Bachelor award after three years’ study, at least initially. Many English students return to higher education at a later date to pursue a Master’s degree by part time study.

### 2.2 Methodology

Between the academic years 2004/2005 and 2008/2009 a survey of earnings expectations was undertaken of first year students at three Czech faculties of economics: at the Technical University of Liberec, the University of Economics, Prague and the University of Pardubice; and at the University of Huddersfield Business School (UK)<sup>3</sup>. Students completed the questionnaire in Czech (Prague, Pardubice and Liberec) or English (Huddersfield) and altogether there were 3,139 respondents.

A large lecture for first year students, with a high attendance rate, was identified and all those who were present were asked to complete the questionnaire. Those who were from foreign countries were excluded from the sample since their perceptions of earnings in the country of study are likely to be different. First year students were surveyed, during their first term, because their decision to enter higher education had been a recent one.

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<sup>3</sup> The survey was undertaken with the financial support of GA ČR 402/04/0039 from the Grants Agency of the Ministry of Education of the Czech Republic and of the University of Huddersfield. Preliminary findings were reported in [7].

The questionnaire began with general questions relating to gender and age. In the second part the students were asked about their expectations of income (in current prices i.e. without taking into account price inflation) in their first job immediately after graduation and then after 10 years of work experience. They were also asked about the level of earnings they would have expected if they had not entered higher education, both immediately after leaving school and after 10 years of employment. In all four cases, the expectations were obtained at three levels: minimum, most likely and maximum. For simplicity only the most likely earnings estimates are used for calculations in this paper.

### 3. Sample

The location and gender structure of the sample is presented in Table 1. Since the gender distribution of the sample is not even, gender differences in expectations could bias the results. Given that existing literature has shown that females tend to expect lower wages but higher returns to university education than males, the perceived private rates of return in this paper are calculated for men and women separately.

(Tab. 1) Sample structure

Year	Gender	Huddersfield	%	Liberec	%	Pardubice	%	Prague	%
2004/2005	Male	103	60	41	35	36	17	84	41
	Female	68	40	75	65	175	83	121	59
	Total	171	100	116	100	211	100	208	100
2005/2006	Male	46	69	29	27	21	18	160	39
	Female	21	31	80	73	94	82	252	61
	Total	67	100	109	100	115	100	412	100
2006/2007	Male	33	46	59	29	41	29	125	37
	Female	38	54	144	71	99	71	213	63
	Total	71	100	203	100	140	100	338	100
2007/2008	Male	105	60	20	32	13	14	34	29
	Female	69	40	43	68	82	86	85	71
	Total	174	100	63	100	95	100	119	100
2008/2009	Male	124	57	52	29	16	13	98	43
	Female	94	43	127	71	110	87	128	57
	Total	218	100	179	100	126	100	226	100

The location and gender structure of the sample is presented in the table.

### 4. Results

The findings indicate that there is a significant expected pay off to higher education. During all surveyed years, the vast majority of students expected higher returns with 10 years of work experience than as fresh graduates. This suggests that returns to higher education are expected to grow faster with experience and thus that graduates expect to benefit from their higher education studies more in the medium term than immediately after graduation. Table 2 provides the average expected rates of return (from all surveyed years) at all surveyed institutions and for both scenarios i.e. as graduates and with 10 years of labour market experience. The results show that the expected returns differ by gender and by country.

Males from the surveyed Czech universities expect very similar rates of return as graduates<sup>4</sup> but rates of return differ later in their working lives. Males from Prague, Liberec and Pardubice expect as graduates rates of return of 11.80%, 12.33% and 11.50%, respectively. However, 10 years after graduation the returns are expected to double in Prague, grow by 50% in Liberec and decline slightly

<sup>4</sup> No statistical difference at 5% level of significance

in Pardubice. Rates of return for Czech females differ by approximately 1 percentage point, with females from Prague expecting the highest and females from Pardubice expecting the lowest returns to their higher education<sup>5</sup>. 10 years after graduation the returns of Czech females are expected to increase but not as significantly as those of Czech males; the increase is around 3 percentage points.

**(Tab. 2) Average expected rates of return (%)**

	Prague		Liberec		Pardubice		Huddersfield	
	Male	Female	Male	Female	Male	Female	Male	Female
UNI	11.80	12.35	12.33	11.32	11.50	9.91	14.27	16.30
UNI 10	23.91	16.07	18.04	14.80	11.38	12.68	21.99	21.53

Table provides the average rates of return (from all surveyed years) at all surveyed institutions and for both scenarios ie. as graduates and with 10 years of labour market experience.

Both genders in Huddersfield expect on average higher returns than their counterparts in the Czech Republic. However, males from Prague tend to expect higher returns than males from Huddersfield in the medium term. The immediate expected returns for males in Prague, Liberec and Pardubice are lower than those for males in Huddersfield. Within the Czech sample, males in Prague expect the greatest increase (almost double) in returns in the medium term when compared to returns immediately after graduation. In addition, males in Liberec expect a greater increase (ca 50%) than their peers in Pardubice, whose expected returns tend to actually decrease with experience.

Females from Huddersfield – like their male counterparts - expect the highest returns immediately and in the medium term when compared to females from Prague, Liberec and Pardubice. Within the Czech sample, females from Prague expect the highest and females from Pardubice expect the lowest returns at both points in time. The increase in returns is also greatest for females in Prague and lowest for females in Pardubice. These differences between universities may be caused by the labour market conditions of the regions in which the universities are located. For example Prague, as the capital city of the Czech Republic, generally offers more job opportunities and opportunities for professional growth than any other region in the country.

It is noteworthy that on average in the Czech Republic the immediate expected returns to higher education tend to be similar for men and women and tend to differ in the medium term, with men expecting a greater increase in returns. However, in Huddersfield a gender gap seems to appear<sup>6</sup> at the point of graduation, with women expecting greater returns, but diminishes in the medium term.

One might expect a priori the expected returns to higher education in England to be much larger (for both genders) than those in the Czech Republic given the differences in time spent in higher education i.e. in England university studies typically last three years whereas in the Czech Republic they last five years. However, this advantage in time investment and thus lower foregone earnings is reduced by the direct costs of the investment - the tuition fees - in higher education in England. Nevertheless, the results from Huddersfield show clearly that the perceived returns to higher education are much larger than those expected by Czech students, in spite of Czech public university education being free of charge.

In addition, the age participation rate in the UK is almost double that of the Czech Republic [9]. This would suggest that the demand for university graduates will stagnate in the UK when compared to the Czech Republic and consequently the wage premium of graduates will stagnate too; thereby leading to lower returns to higher education. It seems likely that students see the main benefit of higher education to be an increased chance of being employed as a means of being able to compete for any job [4], [6], [7].

<sup>5</sup> Statistically significant difference at 5% level of significance

<sup>6</sup> Although not statistically significant at 5% level of significance

Since the demand for higher education in England has not declined since 2006/2007 [5], the current level of tuition fees can be considered as not high enough to act as a disincentive for potential students to enter higher education. However, our results suggest that students expect a higher wage premium to compensate for the perceived costs. Thus, there will be a level of tuition fees (even deferred fees), which will eventually act as a disincentive to enter higher education since students will not expect indefinitely that their future employers will be able to offer them a wage premium high enough to compensate for the perceived costs of higher education. Once the perceived costs outweigh the perceived benefits, regardless of whether or not there are actual returns to higher education, the demand for higher education might decline.

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