

# THE PRIVATE AND SOCIAL RETURN TO UNIVERSITY EDUCATION IN QUEBEC

**CIRANO note written by Stéphanie Boulenger, based on a report by Pouya Ebrahimi  
and François Vaillancourt, December 2010**

Education is an investment. The government invests by means of subsidies to universities and the individual invests by paying tuition, buying books and materials, and mostly by forgoing an income during the years of study. But what is the return on these investments? This is the question the authors strive to answer by measuring the public (social) and private (student) rate of return to university degrees (bachelor's, master's, and Ph.D.).

What does this rate of return tell us? The rate of return measures the profitability of investments in education, thus shedding light on the relationship between funds the government and the student devote to education and the resulting increments to production, as reflected in income.

## Return and university diploma

In 2005, the return to an individual's investment in a bachelor's degree relative to a secondary school diploma was 15.7% for men and 20.1% for women (Table 1). With regard to higher levels, private returns to a Ph.D. (calculated relative to a Master's degree) exceeded those to a Master's degree (relative to a bachelor's degree), in particular for men (Table 1). Private returns were calculated net of the personal income taxes and payroll taxes paid by the individual.

**TABLE 1: PRIVATE AND PUBLIC RATE OF RETURN, 2005 (%)**

	Private rate		Public rate	
	Men	Women	Men	Women
<b>Bachelor's</b>	15,7	20,1	11,8	12,9
<b>Master's</b>	5,9	7,4	2,4	2,9
<b>Ph.D.</b>	11,1	10,3	2,6	1,2

The public rate of return is lower than the private rate of return (Table 1). This is as expected, because social costs need to be factored into computations of the public return, in particular subsidies to universities from the government of Quebec.

## University disciplines yielding the highest returns

The disciplines that yield the highest private return are engineering (25.1%) and commerce (18.4%) in the case of men. For women, they are education, commerce, and science (20.6%). With regard to the social return, commerce, education, and pure sciences are the leaders, while engineering and the social sciences are socially very profitable for men, much more so than for women.

## The impact of higher tuition on the return

If tuitions in Quebec were set at the Canadian average, the rate of private return to a bachelor's degree would be 14% for men and 17% for women. Investment in university education in Quebec would remain highly profitable, even if tuitions were increased.

## Conclusion

Individuals' future incomes allow them to recover considerably more than the costs they incur during their university studies. The same is true for society. Rates of return based on pecuniary yields are probably underestimated because they do not account for non-monetary benefits such as personal satisfaction, better health, etc.

We also observe that the return to university education far outstrips that of other investments, such as the mean yield of 4.21% to 10-year Government of Canada Bonds.

The report titled "Le rendement privé et social de l'éducation universitaire au Québec : Estimations reposant sur le Recensement de 2006," by Pouya Ebrahimi and François Vaillancourt, is available at

<http://www.cirano.qc.ca/pdf/publication/2010RP-16.pdf>