



Canadian Labour Market and Skills Researcher Network

Working Paper No. 47

Do Education Decisions Respond to Returns by Field of Study?

Morley Gunderson
University of Toronto

Harry Krashinsky
University of Toronto

November 2009

CLSRN is supported by Human Resources and Social Development Canada (HRSDC) and the Social Sciences and Humanities Research Council of Canada (SSHRC).

All opinions are those of the authors and do not reflect the views of HRSDC or the SSHRC.

DO EDUCATION DECISIONS RESPOND TO RETURNS BY FIELD OF STUDY?

By

Morley Gunderson and Harry Krashinsky*

[Do not cite without authors' permission]

* Morley Gunderson is the CIBC Professor of Youth Employment at the University of Toronto and a Professor in the Department of Economics, the Centre for Industrial Relations and Human Resources, and the School of Public Policy and Governance. He is also a Research Associate of the Institute for Policy Analysis, the Centre for International Studies, and the Institute for Human Development, Life Course and Ageing, and a Fellow of the Royal Society of Canada. Harry Krashinsky is an Associate Professor at the University of Toronto Division of Management at Scarborough and the Centre for Industrial Relations and Human Resources. Financial assistance from the Canadian Labour Market and Skills Researcher Network (CLSRN) is gratefully acknowledged.

[CLSRN-FieldResponse903]

Abstract

We utilize the 2000 cohort of university graduates from the National Graduate Survey (NGS) to estimate the extent to which the choice of field of study is influenced by expected returns to those fields of study. The expected returns are based on earnings equations estimated from the earlier 1990 NGS cohort for the years 1992 and 1995 -- years that are around the time when the 2000 cohort would be applying to university and forming expectations of their expected returns by field of study. We estimate those expected returns using conventional OLS earnings equations as well as IV estimates to account for the potential endogeneity of the returns by field of study since selection effects may bias the expected returns. Our IV estimates utilize measures of skill-biased technological change as instruments.

Overall, our results suggest that prospective students do choose fields of study in part at least on the basis of earnings they can expect to receive in those fields. Furthermore, earnings expectations formed around the time they are applying are more influential than earnings expectations based on years further away from that time, although both generally have an impact on the choice of field of study.

JEL Codes: J21, J24, J28

Key Words: Education decisions; field of study; returns to education; multi-nomial logits; National Graduate Survey (NGS)

Executive Summary

The purpose of this study is to determine if higher education decisions respond to differential economic returns that exist by field of study. It builds upon an earlier body of work that documented substantial differential economic returns by field of study. This study takes the previous analysis to the next logical step of seeing if these differential returns affect the decision to acquire education in particular fields. The empirical procedure is to estimate a series of logit models indicating whether an individual graduated from one of a number of mutually exclusive fields of study with the economic return to each field around the time of entry into university as the key independent variable, along with other control variables.

We utilize the 2000 cohort of university graduates from the National Graduate Survey (NGS) to estimate the extent to which the choice of field of study is influenced by expected returns to those fields of study. The expected returns are based on earnings equations estimated from the earlier 1990 NGS cohort for the years 1992 and 1995 -- years that are around the time when the 2000 cohort would be applying to university and forming expectations of their expected returns by field of study. We estimate those expected returns using conventional OLS earnings equations as well as IV estimates to account for the potential endogeneity of the returns by field of study since selection effects may bias the expected returns. Our IV estimates utilize measures of skill-biased technological change as instruments.

Overall, our results suggest that prospective students do choose fields of study in part at least on the basis of earnings they can expect to receive in those fields. Furthermore, earnings expectations formed around the time they are applying are more influential than earnings expectations based on years further away from that time, although both generally have an impact on the choice of field of study.

There were notable exceptions, such as for the Social Sciences, and the pattern did not always prevail. Nevertheless, the broad-brush picture is one where prospective students respond to earnings incentives in choosing their field of study. They may well chose fields like Fine Arts, Humanities and Interdisciplinary studies in spite of their low monetary return, but they are still less likely to choose these fields if the monetary returns become even lower.

From a policy perspective this does suggest that prospective students respond somewhat to the market signals of expected earnings in choosing fields of study. This suggests that demand shifts from such factors as skill-biased technological change will be met somewhat by prospective students responding to the market signals generated by such demand shifts or by other factors. Whether this response is sufficient is a more open question, as is the issue of whether universities respond by creating more spaces in fields where demand is growing, or whether they simply ration scarce spaces by increasing entry requirements.