TD Bank Financial Group

TD Economics

Topic Paper

January 22, 2004

INVESTING IN A POST SECONDARY EDUCATION DELIVERS A STELLAR RATE OF RETURN

The cost of obtaining a post secondary education has risen rapidly over the last decade, and the price tag is likely to continue to rise faster than the pace of inflation in the coming years. Indeed, based on relatively conservative assumptions about future price trends, the total tuition and academic fees for a four-year university degree started at the end of this decade could amount to almost $30,000. While the sheer size of this investment is daunting, parents and students should take heart that the rate of return is also remarkably good. Numerous academic studies show that the higher future income stream resulting from the investment in a post-secondary education (i.e. college or university) is equivalent to an average annual return of more than 12 per cent after inflation and taxes. And, there are other significant benefits as well, often including better health and a higher standard of living. Given these advantages, households should formulate a savings strategy to accommodate future education expenses – including making use of RRSP and RESP tax shelters.

Estimates of the rate of return

As a starting point, consider the advantages and disadvantages of a post secondary education. The two major negatives are the cost of the program and the earnings that are forgone while in school. But the higher earnings stemming from the achievement of a degree or diploma overwhelm these drawbacks.

RATE OF RETURN DEFINITION

The rate of return is the average annual percentage gain on the investment in a post secondary education, which is calculated from the present value difference between the lifetime earnings of a post-secondary graduate and those of a high school graduate, and factors in the cost of tuition, academic fees and foregone earnings.

RETURN TO A POST-SECONDARY EDUCATION IN THE 1990s

University	**12-20%**
Men	12-17%
Women	16-20%
College	**15-28%**
Men	15-28%
Women	18-26%

Source: Boothby & Rowe (2002)[1], Vaillancourt et al (1997, 2002)[2, 3], TD Economics

Researchers estimate that the after-tax and after-inflation rate of return to a university degree is roughly 12 to 20 per cent. The return to a college diploma is similar, with some studies reporting an even higher percentage gain than university degrees, due to the lower cost and shorter length of college educational programs. The return on education for women is often greater than it is for men. This is because women with greater education are more likely to work and be employed in full-time positions than women with less education, and these differences in labour market behaviour are greater than for men.

The rates of return have edged slightly lower in recent years, reflecting rising costs and a reduced earnings premium on the education – with the latter reflecting the fact that an increasing share of the population has obtained a post secondary degree or diploma. Nevertheless, the outlay still delivers a stellar annual return that far exceeds virtually any financial investment.

When one focuses exclusively upon wages, the benefit becomes even more evident. The weekly earnings of a university and college educated worker are on average a whopping 61 per cent and 21 per cent, respectively, higher than their high school-educated counterparts.

And, education makes finding gainful employment much easier. For example, more than 70 per cent of all new jobs require some form of post-secondary education, while 25 per cent require a university degree. This can also be illustrated by the fact that in 1997, the unemployment rate for university-educated Canadians was 4.4 per cent versus 8.8 per cent for those with just high school.

This higher income flow and availability of employment allows for a greater accumulation of wealth. A 1999 Statistics Canada survey showed that, on average, someone with a bachelor's degree had a net worth 70 per cent higher than someone with only a high school diploma. And, an individual with a master's degree had a net worth 2.7 times higher, while holders of a doctorate were 3.5 times higher.

Not all fields of study are the same where future earnings are concerned. On balance, it appears that mathematics and sciences provide the best returns. More specifically, engineering, natural science, health science, and commerce degrees provide above average returns, while social science, education, and humanities degrees return less. Of course, even among the latter, the returns remain attractive. Moreover, a recent study of satisfaction by field shows emphatically that even those in less profitable career paths have a high rate of satisfaction regarding their choice of degree – in other words, they would pick the same discipline if given a second chance. Clearly there is more to happiness than money, but higher education can help on this front too.

1996

	Average Weekly Wage Dollars	Years of Schooling
No degree	582.4	10.1
High school graduate	584.4	12.6
All college/trade school	706.6	13.9
University degree	941.7	17.5

Source: W. Craig Riddell, University of British Columbia[4]

RETURN TO UNIVERSITY BY FIELD IN 1995

Above Average	Below Average
Engineering Commerce Natural Sciences Health Sciences	Social Sciences Education Humanities

Source: Vaillancourt (2002)[3], TD Economics

Non-monetary benefits

There are a variety of non-monetary benefits that are closely associated with increased levels of schooling. Sociology studies show that education attainment is inversely related to participation in crime. And, other research has shown that higher education is often associated with better health and longer life. Higher education also engenders better communication skills and frequently greater self-confidence.

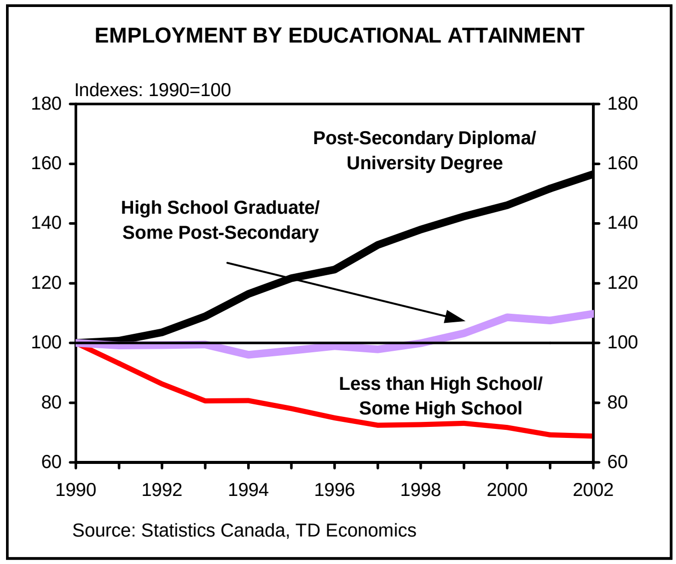
Financing the investment is a challenge

So, post-secondary schooling is an excellent investment. But, it takes considerable saving on the part of households to fund. Indeed, if students go away to school, the total cost of a four-year university degree (including tuition, academic fees and expenses and living costs) could reach as much as $85,000 in 2020. The main issue is that the costs are up front, whereas the benefits only accrue later. However, the financial challenge can be overcome. There are a number of government initiatives that make the tuition more affordable and there are two key government programs that can help facilitate the necessary saving.

It is important to note that even with the recent increases in tuition costs, governments still subsidize three-quarters of the true cost of a university education. But even the one-quarter left for students to finance can be a significant obstacle. Fortunately, a variety of government tax credits, bursaries, loans, and debt-remission programs exist that chip away at tuition costs. Of the tax credits, the education tax credit and the tuition tax credit are the most prominent, and are available to each and every student. Universities, non-profit institutions, corporations and governments also offer scholarships that are readily available for academic achievers and students in financial need.

Even with external help, the outlay will still require considerable savings on the part of households. If you are saving for your own or your spouse's education, a Registered Retirement Savings Plan (RRSP) program called the Lifelong Learning Plan permits up to $20,000 of tax-free money to be withdrawn from your RRSP to cover post-secondary schooling costs. The beneficial tax implications of this can leverage your money by up to 50 per cent.

If you are saving for your child's education, a Registered Education Savings Plan (RESP) allows you to defer tax on savings income, and to minimize the tax burden when the money is eventually needed. As a further bonus, the government matches, to a limit, your RESP savings at a rate of twenty cents on the dollar, guaranteeing you an additional 20 per cent return on your investment. Furthermore, if your child decides not to pursue a post-secondary education, you can transfer your share of the contributions into an RRSP.



Conclusions

The fantastic value of a post secondary education, with a real after-tax annual return of more than 12 per cent, is simply too good to pass up. The main challenge in reaping this gain is finding the necessary up-front financing, since the benefits are primarily back-loaded. A variety of government programs aid in this process. The most prominent are the Lifelong Learning Plan, which allows students to tap their RRSP accounts, and the Registered Education Savings Plan. With some diligent studying, careful planning, and the effective use of government incentives, a post secondary education can be an attainable goal for most Canadians and their children.

Craig Alexander, Senior Economist
416-982-8064

Eric Lascelles, Economist
416-982-6420

ENDNOTES

1. Boothby, Daniel, & Geoff Rowe. "Rate of Return to Education: A Distributional Analysis Using the LifePaths Model." Human Resources Development Canada: Applied Research Branch, Strategic Policy, June 26, 2002.

2. Vaillancourt, Francois. "The Private and Total Returns to Education in Canada, 1986." *Canadian Journal of Economics*, 28(3): p.532-554, 1997.

3. Vaillancourt, Francois, & Sandrine Bourdeau-Primeau. "The Returns to University Education in Canada, 1990 and 1995." *Renovating the Ivory Tower*, David Laidler, editor: p.215-240, 2002.

4. Riddell, Craig W. "Education and Skills: An Assessment of Recent Canadian Experience." *State of Economics in Canada: Festschrift in Honour of David Slater*, August, 2001.