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Still Worth It After All These Years

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THE ISSUE

A general debate swirls about the value of going to university. A more focused anxiety simmers as to whether it is worth studying the humanities compared to the surely much more lucrative STEM fields (science, technology, engineering and math).

On one hand, young Ontarians hear predictions that most jobs of the future will require postsecondary skills and credentials. They are counselled that a university education still offers them the very best job prospects. Those without one will be disadvantaged, and in a punishing youth job market like today's they will be disproportionately disadvantaged. Those with one – and that includes graduates from the humanities – will possess a set of transferable skills that will allow them to adapt to the unknowable future.

On the other side, young Ontarians are told about increasing tuition costs and high student debt levels; about university graduates unable to land jobs related to their field of study, especially in the humanities; about an erosion in the financial value of a degree, as the earnings advantage for those with one narrows; and about entrepreneurs and innovators who dropped out of university and made a fortune.

THE FACTS

We have reviewed the available Canadian and Ontario data, which while imperfect are substantial and clear. They support an optimistic view regarding the value of a university education. This is how the data speak.

Earnings Premium; Employment Stability

Looking back, Ontarians and Canadians with a university degree have consistently done best in our labour market. They suffer fewer periods of unemployment and they are paid more. A recent examination of earnings by Statistics Canada calculates the earnings premium for baccalaureate-educated versus high school-educated Canadians born between 1955 and 1957 over a 20-year period starting when they were aged 35. It is \$730,000 for men and \$440,000 for women.

But has this suddenly changed? Is it the case that recent graduates are not seeing the same benefits from their educational experience? That past performance is no guarantee of future results?

Over the admittedly shorter period we have to track them, even graduates emerging since the 2008-2009 economic downturn are benefiting from the university advantage. True, in absolute terms, it got harder to find a job new degree in hand. The self-reported unemployment rate two years out of Ontario mid-recession 2009 graduates was double that reported by pre-recession 2005 graduates.

But in relative terms, university graduates are better protected from the risk of unemployment, especially through rough economic waters. Statistics Canada unemployment data show that among 24 to 29 year-old Ontarians, the unemployment rate for high school graduates is always higher than the unemployment rate for degree holders. And during the downturn that spread increased dramatically. So while things got harder for everyone, the relative advantage for those with a degree actually improved as times got tougher.

Are graduates getting decent jobs though? Of those 2009 university graduates who are employed two years after graduation, not all who wanted full-time employment got it (though 90% report they did) and not all are employed in jobs they consider related to their field of study (though 80% report that they are). But it was ever thus; these ratios have remained relatively stable through the recessionary period. Furthermore, average full-

time incomes for recent graduates have not fallen off a precipice for those graduating and joining the labour market since 2007.

Yes, but what about the humanities? Consistently, over the past 30 years, university graduates from STEM disciplines have, on average, done better than those from the humanities. They earn more, right from graduation. But humanities grads earn more than those without a university education and not all STEM fields post average income levels that outperform the humanities (biology and agricultural sciences do not).

There is no evidence that recently minted humanities grads are falling off a newly emerged cliff or that we have experienced a sudden flood of humanities enrolments or graduates relative to other fields. The average reported full-time salary for 2009 (the thick of the downturn) Ontario humanities grads two years after graduation is \$38,600. By comparison, a full-time Ontario minimum wage salary is \$22,000; a full-time salary for a \$16/hour job (the Ontario average for sales and service workers of all ages) is \$32,000.

Return on Investment

It is not enough for a university education to deliver higher lifetime earnings and lower risk of unemployment. We want those higher returns to outweigh, on average, the costs (like tuition, borrowing and delayed earnings) of going to school. Historically, they do. If the costs are viewed as an investment and the higher lifetime earnings a return on that investment, the investment pays off. The payoff is least for males who graduated in the humanities, where the economic returns on the university investment have been modest at best in comparison to traditional job opportunities for male high school graduates.

And today? Will today's graduates also experience a positive return on their investment? On the return side of the equation, we have seen that the early indicators of earnings and employability continue to show a healthy advantage. But what of the investment side? Have university costs not spiked? Not as much as many think. Although Statistics Canada reports that Ontario has the highest average provincial undergraduate tuition cost in Canada, that is the sticker cost. Subtract from it Ontario's 30 percent off program, for which the majority of students are eligible; tax credits for which almost every Canadian student or supporting parent or spouse qualify; and the non-repayable components of OSAP available on an income-tested basis, and tuition drops from the reported average of \$7,300 annually to about \$4,000. Below that average, tuition is least for low-income Ontarians on OSAP, even after factoring in debt repayment, because OSAP also gives out grants, which bring the overall cost down. Coming out of the gate the math still looks optimistic for a positive return for today's graduates.

Debt Load

Lastly, we hear a lot about increasing debt levels and more graduates with debt. This is not all bad. Most student debt in Ontario is built up through OSAP, and OSAP is about access. More students on OSAP and, yes, more students with debt, is a sure sign that the program is effectively delivering access to those with limited means who might otherwise not be able to participate in and benefit from a university education. OSAP also integrates non-repayable assistance by way of up-front grants and back-end loan forgiveness and interest relief in order to bring the absolute costs of higher education down for lower-means students and graduates.

The best test for whether or not debt is manageable is to measure the trend in default rates on loan repayment. If we are in the middle of a debt crisis, this indicator would be spiking. The default rate trend for both federal and Ontario loans programs is downward.

Looking Ahead

There is no evidence to suggest that any of the trends described thus far are changing or are about to change for more recent graduates, but nor are there any guarantees of this. Individual outcomes vary from the average. As we have seen, some university graduates will experience periods of under- and unemployment, especially at the outset. Some will default on loan repayment. University skills and credentials do not isolate one from the challenges of a poor labour market but they significantly improve the odds of short-term and – more importantly – long-term success.

And yes, it is true, STEM graduates (on average) will likely do better (on average) than humanities graduates. It has been so for many years.

Nor will Ontario's continuing growth in university enrolment and participation alone immunize it from periods of economic upheaval. The education and skills of our labour force are but two of many variables that impact the economy's performance over time.

As more and more Ontarians earn a degree, they become a larger and larger share of the labour market and they inescapably begin to outnumber the very best-paying jobs in the economy. Their sheer number pushes them into also taking on lower-paying job layers in the bell curve of provincial income distribution. If participation expansion continues unabated, they may yet become the average Ontarian and wage earner. But we are not there yet. Today and, yes, tomorrow, there is a marked job advantage in employability and earnings for university graduates over the population as a whole.

Colleges are important too and offer similar advantages. This review is not about them; they have fared better of late in promoting their value in the popular discourse.

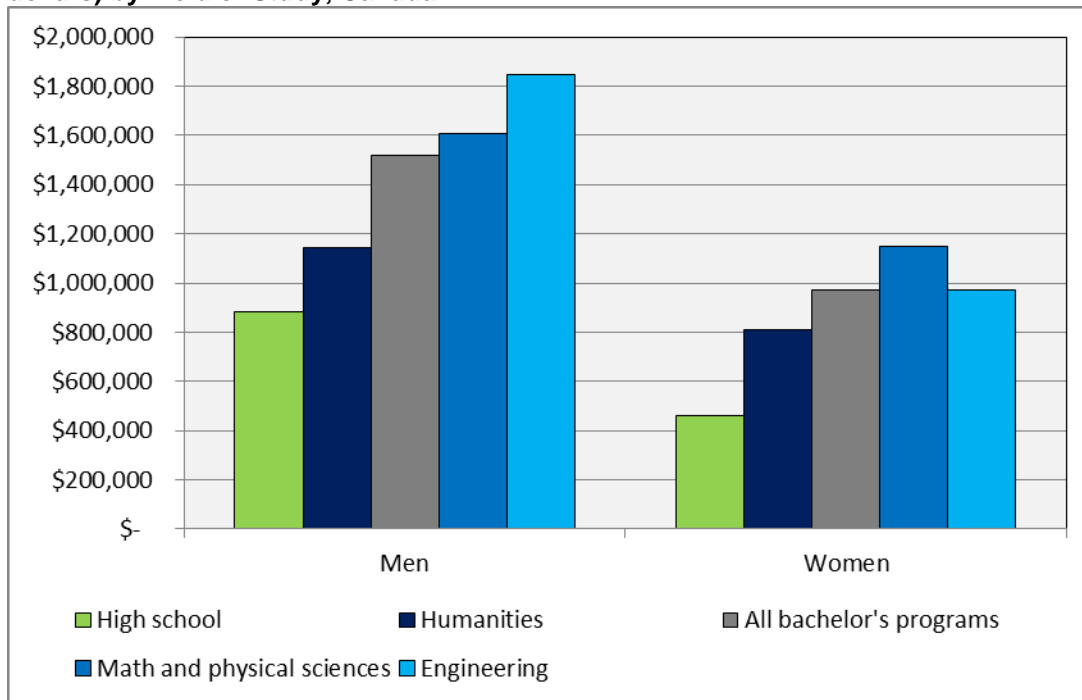
THE DATA IN DETAIL:

1. Looking Back – The Lifetime Earnings Premium of a University Education

Marc Frenette of Statistics Canada published an analysis this year (Frenette, 2014) of Canadian earnings data by level of educational attainment. He aggregated income tax data for individuals born between 1955 and 1957 to cumulate their earnings over a 20-year period starting when they were aged 35. The earnings premium for bachelor's graduates compared to high school graduates was \$728,000 for men and \$442,000 for women from 1991 to 2010.

Extending that analysis, Ostrovsky and Frenette (2014) focus on individuals aged 26 to 35 in 1991 and cumulate their earnings over the same 20-year period. While bachelor's graduates earned more than high school graduates, earnings varied substantially by field of study. Men and women with a bachelor's degree in engineering had among the highest median cumulative earnings, whereas humanities graduates were ranked near the bottom. The following figure shows the median cumulative earnings over the 20-year period for high school graduates, graduates from the humanities, math and physical sciences, engineering, and for all fields of study at the bachelor's degree level.

Figure 1: Median Cumulative Earnings over a 20-Year Period from 1991 to 2010 (in 2010 constant dollars) by Field of Study, Canada



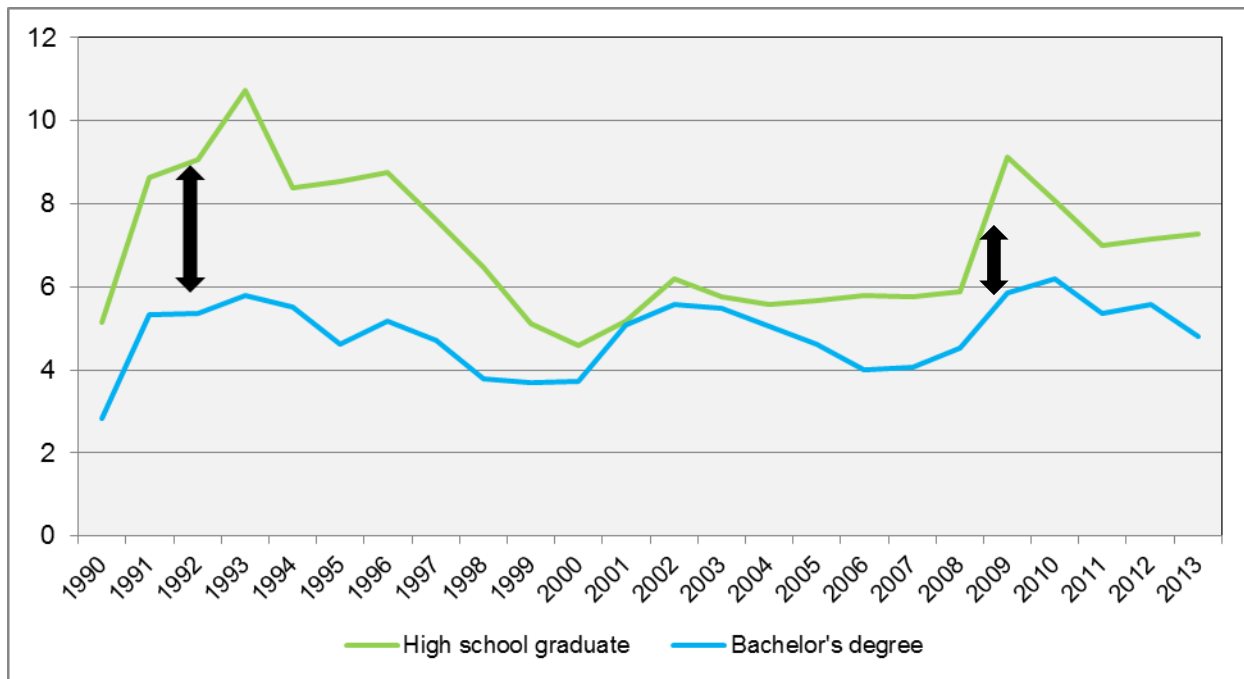
Source: Ostrovsky and Frenette (2014)

Other studies have come to similar conclusions. Using Census data from 1981 to 2006, Boudarbat, Lemieux and Riddell (2010) find that there has been an increase in the returns to a university bachelor’s degree for both males and females. The wage differential between university bachelor’s graduates and high school graduates increased by 8 percentage points from 32% to 40% for males and by 6 percentage points from 45% to 51% for females over the 25-year period. Frenette and Morissette (2014), however, find that the wage premium for bachelor’s graduates narrowed during the 2000s, especially in Alberta, Saskatchewan and Newfoundland, when using Labour Force Survey (LFS) data. Both studies indicate a significant earnings premium associated with a university education.

2. Looking Back – Lower Risk of Unemployment

Statistics Canada’s Labour Force Survey tracks unemployment rates over time by level of education. Figure 2 shows the Ontario unemployment rate for high school-educated adults and for bachelor’s degree holders. There is a clear and persistent advantage for university-educated Ontarians and that advantage is highest (see the arrows) during recessions.

Figure 2: Ontario Unemployment Rates for 25 to 65 Year-Olds

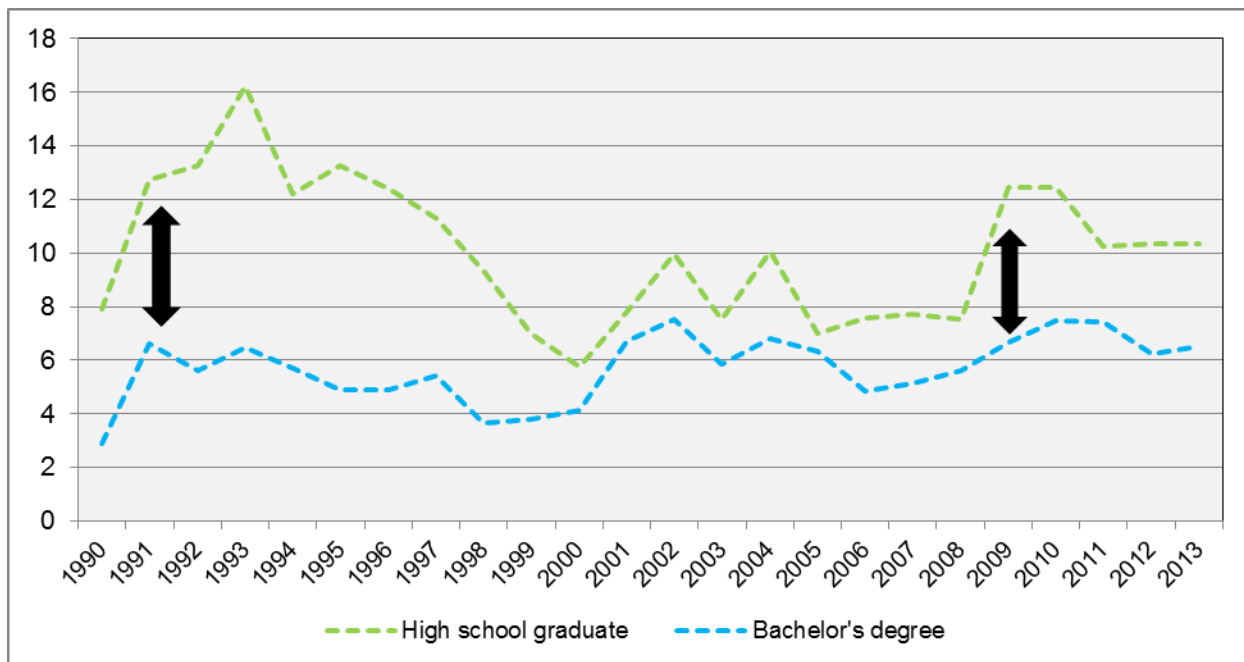


Source: Statistics Canada, Labour Force Survey, custom tabulation

3. Recent Graduates – Lower Risk of Unemployment

Do today's university graduates still benefit from a lower risk of unemployment than those with just a high school education? Or has the advantage evaporated for young Ontarians trying to break into or stay in the job market? Figure 3 shows the Ontario unemployment rate a second time, but this time only for Ontarians between the ages of 25 and 29 with either a high school or bachelor's-level education. The same patterns of advantage are evident. Yes, the absolute unemployment rate for young Ontarians is higher than that of the adult population a whole (compare Figure 2 and Figure 3), but young Ontarians with a degree are heads up advantaged over their friends who stopped after high school, especially during the downturn of 2008 and 2009.

Figure 3: Ontario Unemployment Rates for 25 to 29 Year-Olds



Source: Statistics Canada, Labour Force Survey, custom tabulation

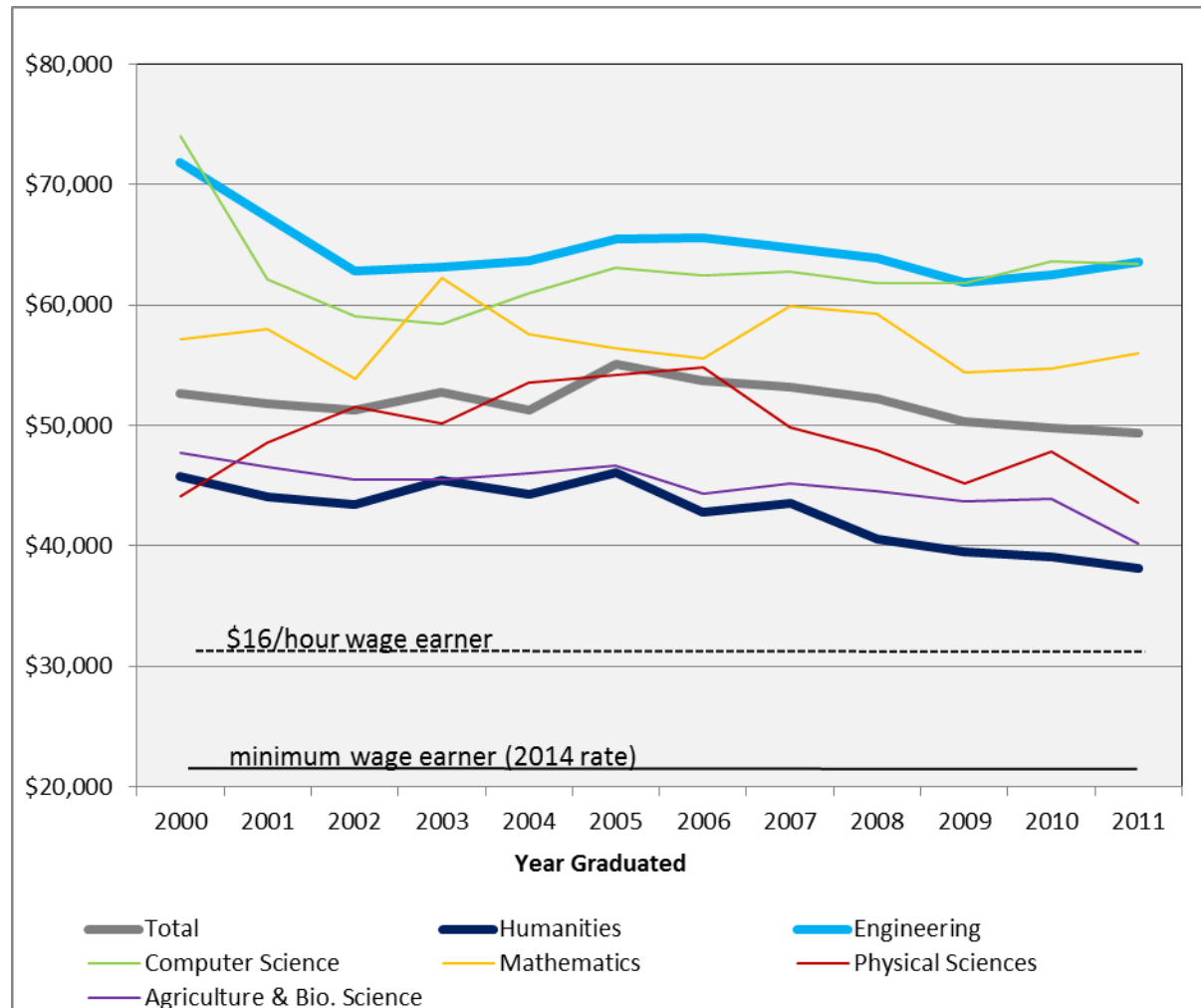
4. Recent Graduates – Self-Reported Jobs and Earnings

But are the graduates emerging through and since the recessionary years getting decent jobs? Are they earning as much as their older siblings who graduated in the more job-friendly mid-2000s? We obviously cannot track them over the long term – they just graduated. But in terms of their fortunes out of the gate, Ontario conducts an annual survey of university graduates two years after graduation that provides a starting picture. Figures 4a through 4d illustrate the following trends reported by graduates two years after the year in which they graduated.

Figure 4a shows, in constant 2012 dollars, the average earnings two years after graduation of those graduates who indicated that they were employed full-time. Along with the average for all graduates, we use thick lines to show the trends for engineering students (top of the heap, on average, for first-degree holders) and humanities students (worst performing). We use thinner lines to reveal the balance of STEM disciplines as reported by this survey instrument. Computer science graduates report earnings two years out similar to engineering. Mathematics and physical sciences graduates report earnings between the engineering high water mark and humanities graduates. Agricultural and biological sciences graduates report earnings close to those for humanities graduates. This range of results for earnings by field of study is consistent with earlier findings using the National Graduate Study: graduates from STEM disciplines typically have higher earnings compared to humanities graduates, with the exception of graduates from agricultural and biological sciences (Finnie, 2002; Walters, 2004).

For reference, we also show the annualized earnings of today's (2014) Ontario minimum (\$11/hour) wage earner and a \$16/hour wage earner. The survey does reveal a decline in real starting salaries for all graduates but one that predates the recession. Focusing on the grey all-in total for all graduates, there is no indication that starting salaries have dropped precipitously for those graduating in 2008 and 2009.

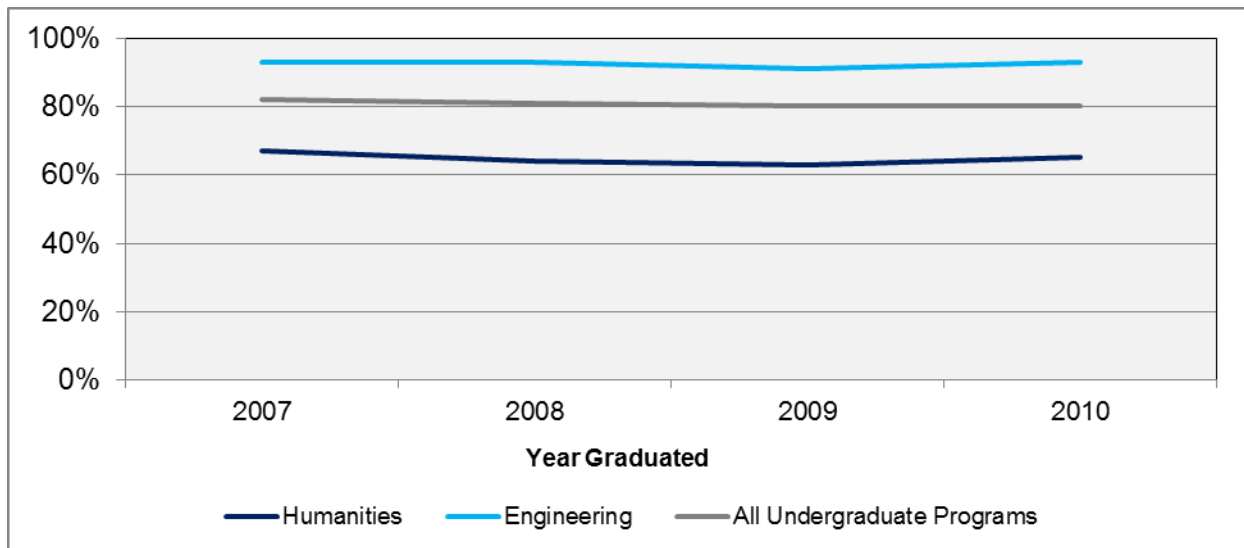
Figure 4a: Average Annual Salaries of Graduates Employed Full-Time in Ontario (in 2013 constant dollars) – Two Years after Graduation



Source: Ontario University Graduate Employment Survey, averages calculated by the Council of Ontario Universities

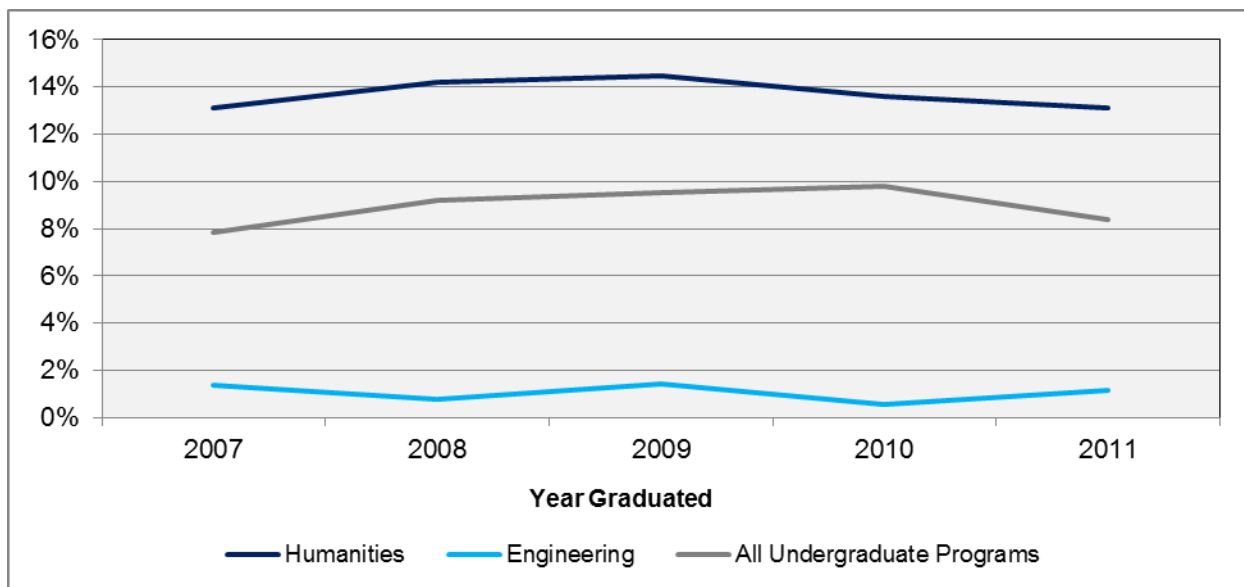
Figure 4b shows the percentage of graduates who reported that they are working in a job at least partially related to their studies, and Figure 4c shows the percentage of graduates who reported that they are working part-time when they wanted to be working full-time. Both of these measures are proxies for the quality of work available through the recent recessionary period. In both cases, the trends are flat.

Figure 4b: Percentage of Graduates Reporting that They Work in a Job at least partially related to their Studies – Two Years after Graduation



Source: Ontario University Graduate Employment Survey

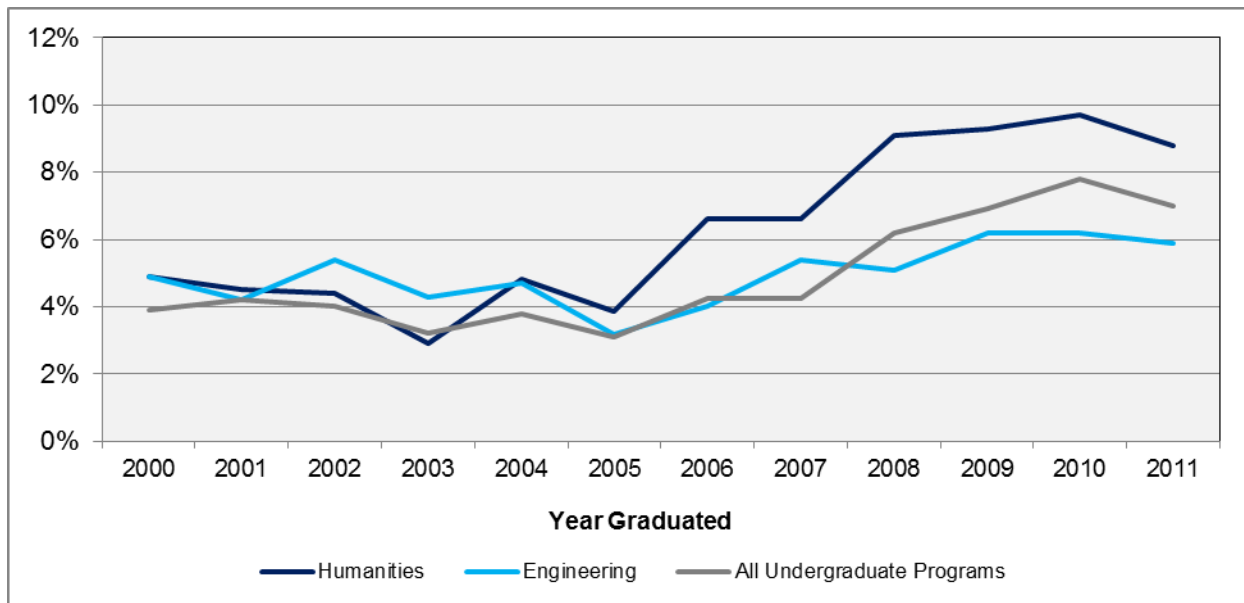
Figure 4c: Percentage of Graduates Reporting that They Work Part-Time when They Want to be Working Full-Time – Two Years after Graduation



Source: Ontario University Graduate Employment Survey

Lastly, Figure 4d shows the self-reported unemployment rate for Ontario graduates two years out. The recession has had an impact and the trend echoes that shown in Figure 3.

Figure 4d: Percentage of Graduates Reporting that They Were Unemployed – Two Years after Graduation



Source: Ontario University Graduate Employment Survey

5. Looking Back – Return on Investment

Return on investment is a simple concept: take all of the costs of going to university (tuition, books, fees, foregone income and/or living costs) as the investment. Then calculate the lifetime proceeds on that investment, which is the earnings premium for university-educated adults, as was shown, for example, in Figure 1. If the smoothed, annualized difference between the costs and the proceeds is a positive number, then the investment has earned a positive return; money was made over the long-term from the decision to get a degree. The difference between return on investment calculations and the earnings premium shown in Figure 1 is simply the taking into account of the costs of getting that premium.

There are a number of Canadian studies on return on investment. They differ in the details and the methodologies applied but they show similar trends: the rate of return for bachelor's graduates is positive (Boothby & Drewes, 2010; Moussaly-Sergieh & Vaillancourt, 2009; Stark, 2007). Table 1 shows the results for one of these studies by field of study. Moussaly-Sergieh and Vaillancourt (2009) use the 2001 Census and additional data from Statistics Canada on taxes, tuition fees and teaching costs to estimate rates of return on investment by level of education. While rates of return vary by field of study, all fields of study have a positive rate, with the exception of humanities graduates for males.

Table 1: Private Rates of Return for University Graduates, Canada, 2000

Field of Study	Men	Women
Education	9.0%	14.0%
Humanities	<0%	9.5%
Social sciences (includes law)	10.8%	14.0%
Commerce	9.0%	19.3%
Biological sciences	9.0%	7.6%
Engineering	9.0%	14.2%
Health sciences	18.1%	17.7%
Pure sciences	9.0%	14.0%
All programs	11.5%	14.1%

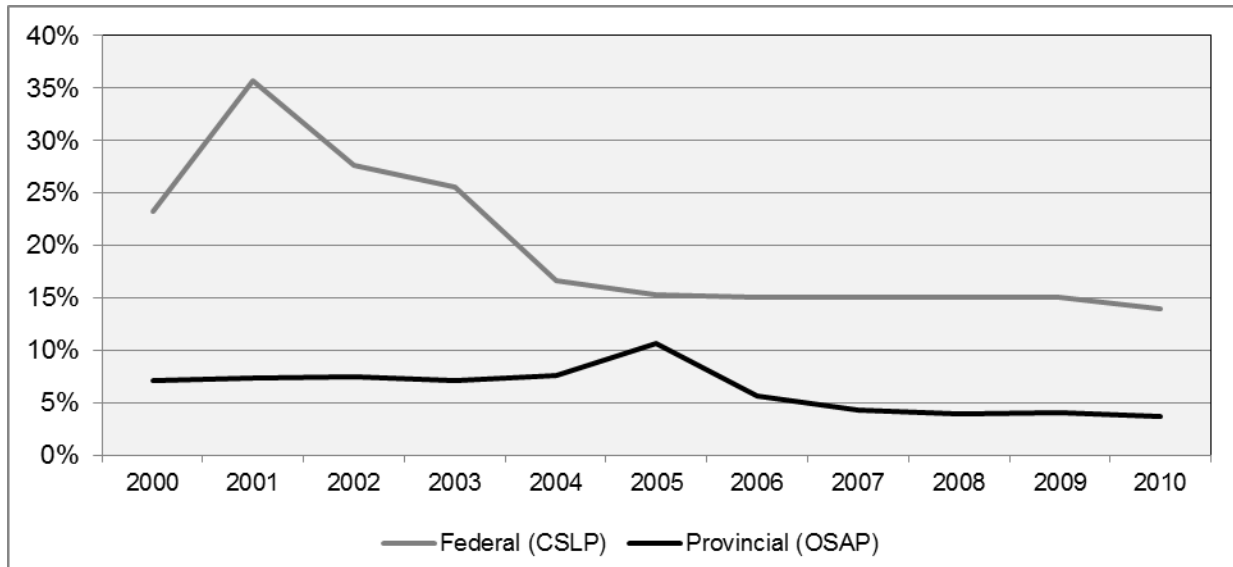
Source: Moussaly-Sergieh & Vaillancourt (2009)

Can we calculate the return on investment for today's graduates? Not yet. Who knows what the long-term future will bring. But the initial conditions as summarized in the front section of this report are favourable.

6. Recent Graduates – Loan Default Rates

Loan default rate is a simple indicator to sort through all of the competing claims about debt levels. At the end of the day, if defaults are going down, then debt, at whatever level and interest rate and with whatever repayment forgiveness or conversion to grant exists, is becoming more manageable. If debt defaults are going up, the inverse is true. The bulk of borrowing for undergraduate students is made through government's OSAP, which has both a provincial and federal component. Figure 5 shows the Ontario graduate default trend in both of these loan portfolios.

Figure 5: Ontario Students – Loan Default Rates



Sources: Provincial: MTCU, university only. Federal: Employment and Social Development Canada *Statistical Review: Canada Student Loans Program*, all types of postsecondary education combined

7. Social Returns from a University Education

Our report focuses on the private return (the return to the individual, not to society) in purely economic terms: does a university graduate make more? There are many other measurable benefits to a university education. Based on a synthesis of new and existing analyses, a recent HEQCO report explored the benefits of education at the individual level, focusing on civic engagement; health/happiness; crime; and welfare/unemployment.

Overall, our research suggests that university graduates are more likely to volunteer, donate money and vote, have lower unemployment rates and are less likely to require social assistance. University graduates tend to rate their physical and mental health and life satisfaction higher than those with fewer years of education.

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Appendix 1 – Explanatory Notes for Figures and Tables

Figure 4b: Percentage of Graduates Reporting that They Work in a Job at least partially related to their Studies – Two Years after Graduation

- The percentage of graduates reporting that they work in a job at least partially related to their studies includes graduates who at the time of the survey were employed in a paid part-time or full-time job, self-employed, or offered employment to start at a later date.
- The MTCU University Graduate Employment Survey altered the question that asks about the relation of work to field of study for students who graduated in 2011. The question was divided into two separate questions that ask about the relation of work to the skills developed at university and to the subject matter of the program of study. The data for 2011 are not presented in this figure since the questions on work relatedness are not comparable to the question from the previous surveys.

Figure 4c: Percentage of Graduates Reporting that They Work Part-Time when They Want to be Working Full-Time – Two Years after Graduation

- The percentage of graduates reported to work part-time when they wanted to be working full-time is calculated by taking the number of graduates who reported they were working part-time because they were “unable to find full-time work/only job found” divided by that same number plus the number of graduates working full-time.

Figure 5: Ontario Student Loan Default Rates

- The provincial student loan default rates are for universities only. Default rates are calculated using the number of loans in default as a percentage of the number of loans issued.
- The federal student loan default rates are for universities, colleges and private institutions collectively and are based on a three-year cohort of default rates. The Canada Student Loans Program (CSLP) default rate compares the value of the loans that enter repayment in a given loan year (cohort) and default within three years to the value of all the loans that entered repayment in that cohort. Default rates for 2010-2011 are preliminary.



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