Early Labour Market Outcomes of Ontario College and University Graduates, 1982-2005

Shuping Liu, Ursula McCloy and Lindsay Declou
HEQCO
Ontario PSE attainment increased dramatically

- No PSE
- Postsecondary certificate or diploma
- Bachelor's degree
- Above bachelor's degree
Data

• Statistics Canada’s National Graduates Survey (NGS) and Follow-up of Graduates Survey (FOG)
• Focus: Ontario college and university graduates
Research questions

• What is the trend of Ontario PSE graduates’ labour market outcomes between the cohorts of 1982 and 2005?
• How do the labour market outcomes of Ontario PSE graduates compare to the rest of Canada (ROC)?
• Do Ontario PSE graduates’ labour market outcomes improve between two and five years after graduation?
• How do labour market outcomes differ among graduates with different levels of credentials?
Indices of labour market outcomes

- Unemployment rate
- Overqualification
- Proportion in a closely related job
- Annual earnings
Ontario graduates’ unemployment rate fluctuates with the economy

Two years after graduation: Ontario

- Certificate/Diploma
- Bachelor's Degree
- Advanced Degree
Unemployment rate of the labour force

Ontario

The rest of Canada
Ontario graduates’ unemployment rate surpassed the ROC

Two years after graduation: Ontario vs. the ROC

Cohort


Certificate/Diploma Bachelor's Degree Advanced Degree

Higher Education Quality Council of Ontario
Rate of overqualification remains high

Two years after graduation: Ontario

- Certificate/Diploma
- Bachelor's Degree
- Advanced Degree
Compared with the ROC, Ontario graduates with an advanced degree are less likely to be overqualified.
The proportion of Ontario graduates in a closely related job has been increasing since cohort 1990.
Compared with the ROC, Ontario graduates are less likely to be in a closely related job.

**Two years after graduation: Ontario vs. the ROC**

- **Certificate/Diploma**
- **Bachelor's Degree**
- **Advanced Degree**

<table>
<thead>
<tr>
<th>Year</th>
<th>Certificate/Diploma</th>
<th>Bachelor's Degree</th>
<th>Advanced Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>-4%</td>
<td>-6%</td>
<td>-8%</td>
</tr>
<tr>
<td>1986</td>
<td>-2%</td>
<td>-4%</td>
<td>-6%</td>
</tr>
<tr>
<td>1990</td>
<td>0%</td>
<td>-2%</td>
<td>-4%</td>
</tr>
<tr>
<td>1995</td>
<td>2%</td>
<td>0%</td>
<td>-2%</td>
</tr>
<tr>
<td>2000</td>
<td>4%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>2005</td>
<td>6%</td>
<td>4%</td>
<td>2%</td>
</tr>
</tbody>
</table>
Annual earnings of Ontario graduates with an advanced degree have increased.

![Graph showing annual earnings over time for different educational levels.](chart.png)

- **Certificate/Diploma**
- **Bachelor's Degree**
- **Advanced Degree**

**Two years after graduation: Ontario**
Ontario graduates earned more than the ROC

Two years after graduation: Ontario vs. the ROC

Cohort

- 1982
- 1986
- 1990
- 1995
- 2000
- 2005

Certificate/Diploma  Bachelor's Degree  Advanced Degree
Ontario labour market absorbed the increased supply of PSE graduates

- Trend over time: not greatly improved, but not at a disadvantage.
- Between two and five years after graduation: generally improved.
- Compared with the ROC: mixed.
- By credential: costs should be taken into consideration.
Areas for further study

• The influencers of PSE graduates’ labour market outcomes:
  – Socio-demographic characteristics
  – Program characteristics
  – Personal experience
  – Etc.
Thank you!

Shuping Liu

sliu@heqco.ca

Paper is available at

www.heqco.ca
Graduate Pathways:

Insights from Australian graduates in the first five years after completion

Dr. Daniel Edwards

HEQCO Learning to Earning:
Higher Education and the Changing Job Market
Toronto, 1-2 November, 2012
Overview

1. Graduate Pathways Survey (GPS)

2. General outcomes

3. Outcomes for specific groups:
   - Students from disadvantaged groups
   - Gender
The Graduate Pathways Survey

• Study for the Australian Government, 2008

• Survey of graduates who completed bachelor degree in 2002.

• Questions focused on work and study in 1st, 3rd and 5th years following graduation.

• Nationally representative sample of 9,238 graduates collected.
General Outcomes

Value of degree at 5th year after graduation:

• 79.6% experience during degree was ‘good’ or ‘excellent’.

• 70.1% would ‘probably’ or ‘definitely’ choose same degree again, 85.1% would choose same university.

• ‘Was your bachelor degree worth the cost, time and effort?’ 87.5% ‘probably’ or ‘definitely’ (48% ‘definitely’)
General Outcomes

Pathways to study and work:

• By fifth year after graduation 25% had gained a postgrad coursework qualification, 6% a research qual.

• By fifth year, 74.6% working full-time, 16.2% part-time 9.2% not working (of which 40% in study).
General Outcomes

Employment outcomes at 1, 3 and 5 years
General Outcomes

Rewards from degree:

• Satisfaction (‘very’ satisfied) with work increased from 22.3% (1st yr), to 26.3% (3rd yr) to 36.7% (5th yr).

• 72.7% saw degree as ‘very’ or ‘quite’ beneficial to long-term career prospects.

• Median salary at 5th year AU$60,000. Middle 50% of graduates salary ranged from $47,800 to $78,000.

• Average Australian worker at the time earned $46,300.
General Outcomes

Median salary of graduates, 1, 3 and 5 years after graduation (AU$)

- Year 1: $38,000
- Year 3: $48,000
- Year 5: $60,000
Outcomes for disadvantaged students

• Equity agenda – importance of education for social mobility.

• Disadvantaged group =
  ▪ neither parent employed in professional occupation;
  ▪ neither parent attended university; and
  ▪ grew up in a low socioeconomic status area.

• This group comprised 12% of GPS sample.
• By the definition used, this disadvantaged group was more likely than other students to:

  ▪ Attend institutions less than 50 yrs old
  ▪ Have studied part-time or externally or by distance
  ▪ Be slightly older
  ▪ Have a non-English speaking background
  ▪ Be of Indigenous origin
  ▪ Identify as having a disability
  ▪ Come from a provincial or remote area
Disadvantaged students

- Outcomes suggest that those who entered university from disadvantaged backgrounds reported educational and occupational outcomes equal to other students...

- Compared to all graduates, these grads were:
  - equally satisfied with degree, overall experience and the value and time they had invested in study.
  - bachelor degree was of equal relevance to their work and or further study.
  - Just as likely to be in further education.
  - Earning the same median salary.
Disadvantaged students

Employment outcomes

<table>
<thead>
<tr>
<th>Year</th>
<th>Working Full-Time</th>
<th>Working Part-Time</th>
<th>Not Working</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disadvantaged</td>
<td>Not disadvantaged</td>
<td></td>
</tr>
<tr>
<td>Year 1</td>
<td>58</td>
<td>23</td>
<td>12</td>
</tr>
<tr>
<td>Year 3</td>
<td>60</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>Year 5</td>
<td>65</td>
<td>23</td>
<td>11</td>
</tr>
</tbody>
</table>

Year 1, Year 3, Year 5
• Disadvantaged student slightly less likely to be in a professional or managerial occupation after the fifth year (59% compared with 64%).
Gender differences

• Field of study choice: women highly represented in Education and Health fields, under-represented in IT and Engineering.

• Notable differences in labour force participation, hours worked and salary...
Gender differences

Labour force Participation

![Graph showing the labour force participation rate for males and females over years 1 to 5. The graph indicates an upward trend for both males and females, with males starting at 87% in Year 1 and reaching 96% in Year 5, and females starting at 89% in Year 1 and reaching 91% in Year 5.]
Gender differences

Employed full-time

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 3</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>62</td>
<td>74</td>
</tr>
<tr>
<td>Females</td>
<td>58</td>
<td>67</td>
</tr>
</tbody>
</table>

Per cent of employed graduates
Gender differences

Annual Salary

• Raw median five years out = Females AU$57,000
  Males AU$70,000

• However, this could be influenced by hours worked, field of study/industry of employment etc.

• So…regression model controlling for part-time work, industry, occupational classification, field of education, age, participation in further study…
Gender differences

Annual Salary

• Conclusion – gender still has notable influence on graduate salaries.

• At five years after graduation, model predicts that net of other influences, male graduates predicted to earn on average AU$7,800 per annum more than female graduates (95% confidence $7,400-$8,200).

• Modelling for Years 1 and 3 shows an increasing gap.
Gender differences

Annual Salary - difference males vs females (AU$)

In proportion to overall mean salary for graduates...

Year 1: $2,050 (5%)
Year 3: $3,312 (7%)
Year 5: $7,787 (12%)
More…

- Field of education
- Grads from regional areas
- Grads who worked (in paid employment) during their degree
- etc…
Further information:

Dr. Daniel Edwards
edwardsd@acer.edu.au
+61 (0)3 9277 5475

www.acer.edu.au/highereducation
Earnings of Postsecondary Graduates in Canada

Presented by:

Patrick Bussière
Skills Development Research Division, Policy Research Directorate
Human Resources and Skills Development Canada

At HEQCO’s conference:
Learning to Earning | Higher Education and the Changing Job Market
Sheraton Centre, Toronto, November 1-2
Presentation Outline

- Introduction

- The gender wage gap among recent postsecondary graduates

- Earnings premium of science and technology graduates compared to humanities graduates (i.e. science premium)
  - how the science premium persists between two and five years after graduation for the same individuals?
  - how the science premium change over time across the different cohorts of different graduates?

- Conclusion
Gender wage inequality has long been a characteristic of the Canadian labour market. This matters for equity, but also from the perspective of skills and competitiveness if on average women are not being utilized to their full potential in the labour market.

While there is an increased demand for skilled labour to fill jobs in the science and technology sectors, the availability of skilled labour may create its own demand. Increases in skills foster innovation, research and development, and technological change, allowing Canada to remain competitive in a global market where high value-added productivity can sustain high wages. As a result, the human resources and skills development of a country becomes crucial source of competitive advantage, with education and training in science and technology being a key component of that skill development.
The gender wage gap in the short term is comparable among the three cohorts.

There is a marked decrease in the widening of the gap from two to five years after graduation between the cohort of 1995 and the cohort of 2000.

Source: National Graduate Survey
In general, gender wage gap is smallest among university graduates.

- In the short term (i.e. two years after graduation), the gender hourly wage gap is **greatest** among trades school graduates (gaps between 17% and 23%), followed by college graduates (gaps between 8% and 13%), then holders of post-graduate degrees (gaps between 7% and 10%) and **narrowest** among graduates with a bachelor’s degree (gaps between 4.5% and 6%).

Source: National Graduate Survey
Gender Wage Gap

Women obtain a greater return on their education than men

Gender differences for returns on education

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trades</td>
<td>-6.5%***</td>
<td>---</td>
<td>-1.4%</td>
<td>---</td>
<td>-7.0%***</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>10.8%***</td>
<td>4.6%**</td>
<td>6.1%***</td>
<td>6.9%***</td>
<td>3.6%**</td>
</tr>
<tr>
<td>Post-graduate degree</td>
<td>5.0%*</td>
<td>7.9%***</td>
<td>3.5%</td>
<td>5.0%*</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

Note: reference group=college diploma

• Women’s advantage over men for returns on education seems to have declined over time. This may be linked to women’s increasingly greater presence in universities.

Source: National Graduate Survey
Female postsecondary graduates have made great progress in narrowing the gender wage gap at the bottom of distribution.

Source: National Graduate Survey
Both university and college graduates experienced substantial earnings growth over-time

### University Science and Humanities graduates combined

<table>
<thead>
<tr>
<th></th>
<th>1990 graduate cohort</th>
<th>1995 graduate cohort</th>
<th>2000 graduate cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1992</td>
<td>1995</td>
<td>Δ 92 to 95</td>
</tr>
<tr>
<td>Both sexes</td>
<td>$37,212</td>
<td>$44,854</td>
<td>$7,642</td>
</tr>
<tr>
<td>Males</td>
<td>$39,233</td>
<td>$47,806</td>
<td>$8,573</td>
</tr>
<tr>
<td>Females</td>
<td>$34,049</td>
<td>$40,233</td>
<td>$6,182</td>
</tr>
</tbody>
</table>

### College Science and Humanities graduates combined

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<tbody>
<tr>
<td></td>
<td>1992</td>
<td>1995</td>
<td>Δ 92 to 95</td>
</tr>
<tr>
<td>Both sexes</td>
<td>$32,775</td>
<td>$38,885</td>
<td>$6,110</td>
</tr>
<tr>
<td>Males</td>
<td>$33,636</td>
<td>$40,200</td>
<td>$6,564</td>
</tr>
<tr>
<td>Females</td>
<td>$29,465</td>
<td>$33,835</td>
<td>$4,370</td>
</tr>
</tbody>
</table>

- For university and college graduates in both Science and Technology and Humanities, earnings for the **same individuals** increased substantially between 2 and 5 years after graduation for all the cohorts.
- The three year earnings growth between 2 and 5 years out for both university and college graduates was consistently slower for females. This may be due to discrimination (e.g. fewer promotions over time) or different household obligations.

Source: National Graduate Survey
## Science Premium

Earnings premium for university grads in the sciences over the humanities prevailed for both 2 and 5 years after graduation for all of the cohorts

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</tr>
<tr>
<td>Both sexes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both sexes</td>
<td>28.7%***</td>
<td>20.9%***</td>
<td>-8.6%**</td>
</tr>
<tr>
<td>Males</td>
<td>32.5%***</td>
<td>22.3%***</td>
<td>-10.4%**</td>
</tr>
<tr>
<td>Females</td>
<td>26.3%***</td>
<td>17.8%***</td>
<td>-9.8%**</td>
</tr>
</tbody>
</table>

- **Within Cohorts:** The science premium generally dissipated slightly for the same individuals between 2 and 5 years after graduation suggesting that graduates with a humanities degree may take a bit more time to have their more general skills matched with market needs. The exception was for females in the 2000 cohort whose science premium not only persisted but increased over the three years between 2002 and 2005.

- **Across Cohorts:** With the exception of the increase in the science premium for five-year-out graduates between 1995 and 2000, the earnings premium in science and technologies compared to the humanities generally **declined** over the period when comparisons are made across groups that have the same years of experience since graduating.

Source: National Graduate Survey
Conclusion

- Women in the most recent cohorts (2000 and 2005) do relatively better in terms of gender wage gaps than those in the previous cohorts, with a marked decline in gaps at the bottom of distribution. However, significant gaps persist at the top of distribution, reflecting the ongoing difficulties women have in accessing the best paying jobs. Women are increasingly managing to get off the “floor”, but are still not succeeding in breaking through the glass ceiling.

- For university grads, a substantial *science premium* prevailed for the same individuals within the same cohort, for both 2 and 5 years after graduation and for all three cohorts. This *science premium* generally dissipated slightly for the same individuals between 2 and 5 years after graduation. There generally was a downward trend in the *science premium* for university grads over the three cohorts. However it is not possible to determine if this was real or due to a change in the nature of the earnings question after 1992. Also, since the comparisons across the cohorts involve different individuals, there may be compositional changes in the samples.

- For college grads, a substantial *science premium* also prevailed for the same individuals within the same cohort, for both 2 and 5 years after graduation and for all three cohorts. Unlike university grads where this *science premium* generally dissipated slightly for the same individuals between 2 and 5 years after graduation, for college grads the premium did not generally dissipate.