

Supporting early career research talent

Submission to the standing committee on science and research
May 2023

The voice of Canadian universities



Canada's long-term prosperity will be shaped by an increasingly competitive global race to develop, attract and retain talent.

Early career researchers represent Canada's next generation of innovative entrepreneurs, highly skilled workers, and scientists. However, Canada is at risk of falling behind as other countries make investments in research a central pillar of their economic and workforce development strategies.

As Canada shifts toward a net-zero economy over the coming decades, we will need [around 400,000 new workers](#) with skills gained from advanced research training – engineers, doctors, scientists, and other highly skilled professionals. We must act now to ensure we have a federal research funding system that develops this talent pipeline.

Universities Canada is the voice of Canada's universities, representing public and private not-for-profit universities at home and abroad. Canada's universities – through teaching, research, and community engagement – transform lives, strengthen communities and find solutions to some of the most pressing challenges facing our country and the world.

Failing to compete

While overall post-secondary attainment is high in Canada, only 10% of 25–64-year-olds have completed a master's or doctoral degree, compared to the OECD average of 15%. In most OECD countries, master's students follow bachelor's students as the second largest cohort of post-secondary students. Canada is among the minority of countries where this is not the case. Educational attainment matters because Canada's labour productivity is strongly correlated over time with the share of the population with master's level or higher qualifications (Figure 1, Appendix). As such, finding ways to increase the enrolment of students in graduate studies will be vital for Canada to develop the talent it needs to increase productivity and thereby promote long-term economic prosperity and competitiveness.

Canada faces competition from peer countries offering more generous scholarships and research funding for graduate students. In the United States, a significant range of public and private scholarships are available to Canadian graduate students. As one example, the government-funded [Fulbright Canada Student awards](#) offer \$25,000 US per academic year to Canadian graduate students, significantly higher than the equivalent public funding through the Canada Graduate Scholarships – Master's program.

The United States invests over 3.4% of GDP in research and development every year. The recently enacted *CHIPS and Science Act* has increased the research budgets of the National Science Foundation, the Department of Energy and the National Laboratories by over 56%. Germany is on track to expand its research and development investment to 3.5% of GDP by 2025. The United Kingdom is planning to grow its R&D investments to 2.4% of GDP through its 2020 R&D Roadmap. Finland made a commitment in January 2022 to raise its R&D spending to 4% of GDP by 2030. Canada currently

invests around 1.8% of GDP in research and development, which sits below the OECD average of 2.1% and is one of the lowest among G7 countries (Figure 2, Appendix).

Indeed, Canada's investment in research and development has declined precipitously. According to Statistics Canada, the value of science and technology expenditures per graduate researcher enrolled in Canada has declined by 35% since 2007 (Figures 3 & 4, Appendix). A symptom of this systematic underfunding of R&D in Canada is the state of Canada's flagship graduate scholarship and post-doctoral fellowship programs. The values of these awards have not been adjusted for inflation since their creation in 2003, losing over 50% of their purchasing power, and the number of awards administered has fallen behind comparable international awards. As a result, graduate researchers are forced to find ways to make ends meet, which detracts from their ability to focus on the advancement of knowledge.

Recommendations

Against the backdrop of these challenges, the Government of Canada commissioned the Advisory Panel on the Federal Research Ecosystem to search for ways to enhance the governance of federal research funding programs. The resulting report of the advisory panel ("Bouchard Report") was clear: Canada must act urgently to increase funding for the core programming of the granting agencies and support early career research talent to avoid losing further ground.

In the spirit of the Bouchard Report's call to urgency, we recommend that the Government of Canada take the following steps:

1 - Increase funding for the core budgets of the Natural Sciences and Engineering Research Council, the Social Sciences and Humanities Research Council, the Canadian Institutes for Health Research, and the Canada Foundation for Innovation by 10% per year over the next five years to improve Canada's R&D competitiveness.

2 - Raise the value of the Canada Graduate Scholarship awards and the Post-doctoral Fellowship Awards by 50% and adjust these awards for inflation on a regular basis.

3 - Double the number of Canada Graduate Scholarship and Post-doctoral Fellowship awards to develop the next generation of highly qualified research talent.

Appendix: Figures

Figure 1: Labour Productivity & Post-Graduate Degree Attainment

Sources: *Statistics Canada. Table 37-10-0130-01.* Educational attainment of the population aged 25 to 64, by age group and sex, Organisation for Economic Co-operation and Development (OECD), Canada, provinces and territories.

Statistics Canada. Table. 36-10-0480-01 Labour productivity and related measures by business sector industry and by non-commercial activity consistent with the industry accounts.

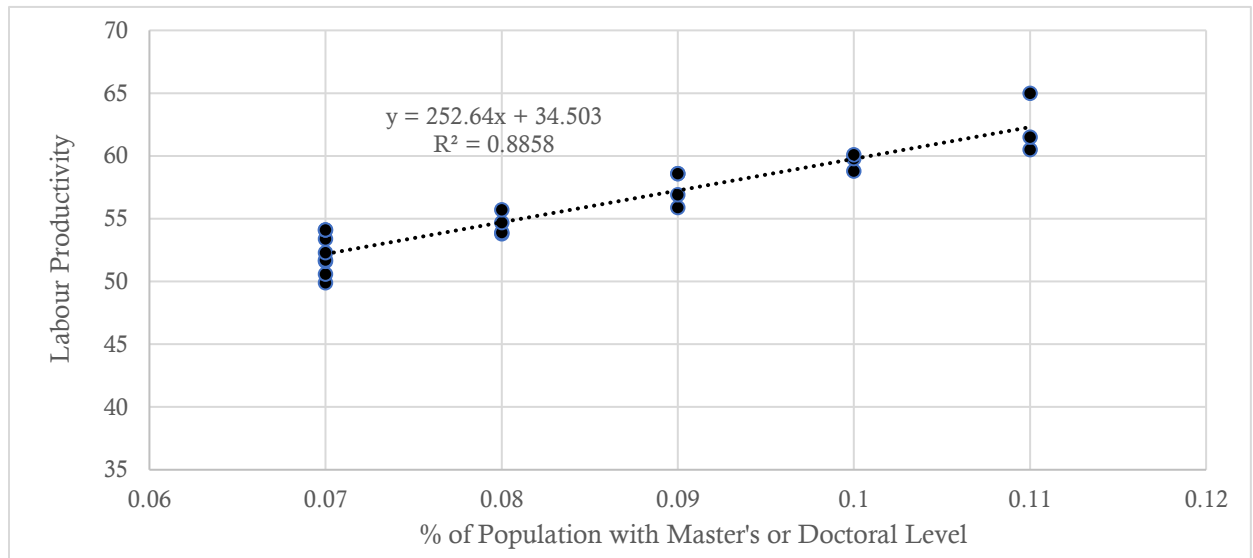


Figure 2: Gross R&D Intensity, Select G7 Countries, 1998-2020

Source: OECD [Main Science and Technology Database](#). GERD, HERD, BERD, and GOVERD as a percentage of GDP.
Extracted July 21, 2022.

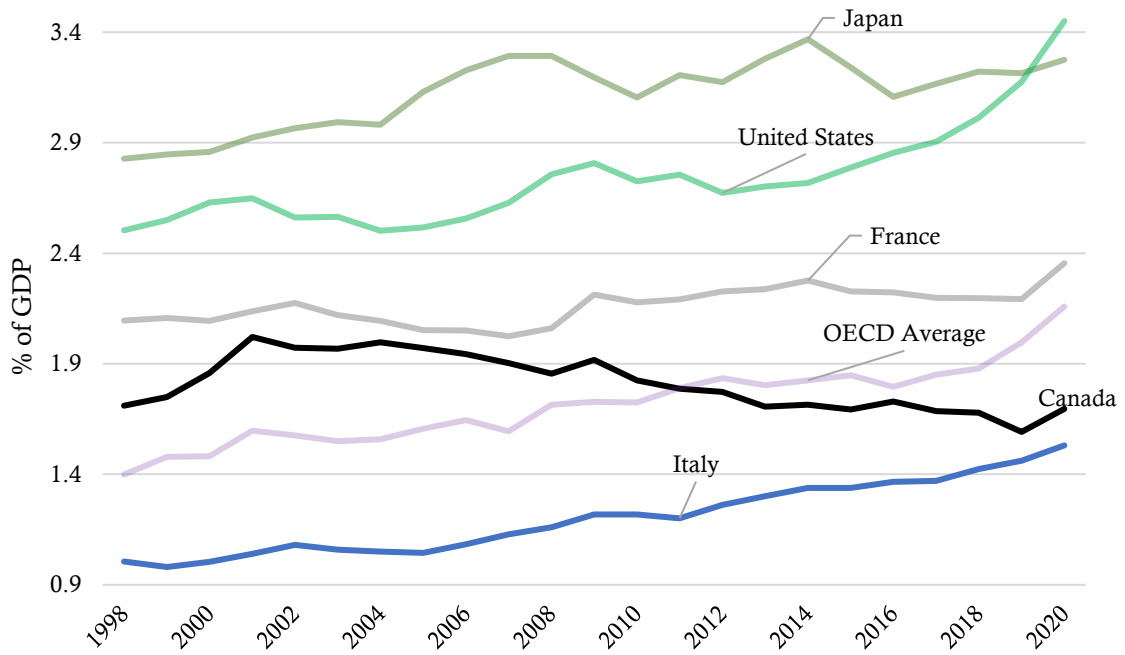


Figure 3: TC+ Expenditures per Student. Values for TC+ expenditures per student are displayed in 2022 (June) Constant Dollars. The figure illustrates that overall expenditures on a per-student basis peaked in 2006 and have been declining since then, except for the unique circumstances due to the COVID-19 pandemic in 2020.

Sources: Statistics Canada. [Table 37-10-0011-01 Postsecondary enrolments, by field of study, registration status, program type, credential type and gender](#); Statistics Canada. [Table 27-10-0027-01 Federal extramural expenditures on science and technology, by performing sector and major departments and agencies - Intentions](#)

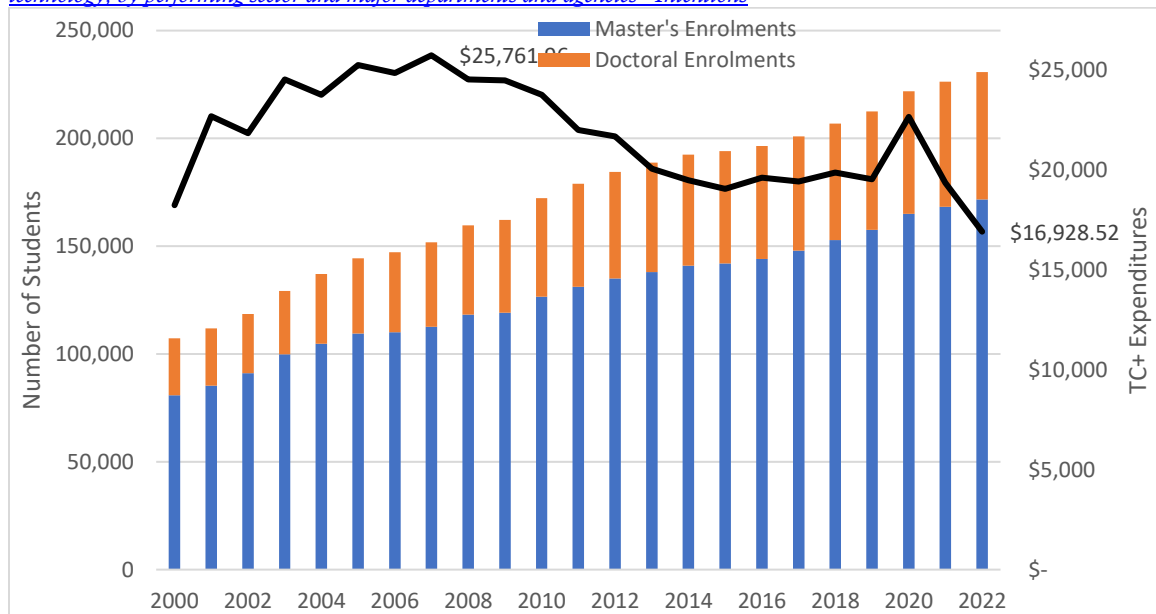


Figure 4: TC+ Expenditures/Grad Student Enrolment, 2001-2022.

Sources: See Figure 3

