

FÉDÉRATION QUÉBÉCOISE DES PROFESSEURES ET PROFESSEURS D'UNIVERSITÉ

EDUCATION AND RESEARCH-BASED INNOVATION: PILLARS OF A PRODUCTIVE CANADIAN SOCIETY

Submission to the Standing Committee on Finance of the House of Commons of
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Social environment conducive to a rise in productivity

The 2018 pre-budget consultations of the House of Commons Standing Committee on Finance focus on two questions:

- What federal measures would help Canadians to be more productive?
- What federal measures would help Canadian businesses to be more productive and competitive?

A concept rooted in economics, productivity is defined as a measure of “the efficiency with which an economy transforms inputs into outputs.”¹ However, a rise in productivity transcends the economic sector, fitting into the socio-political realm. That is why government measures to raise productivity should focus on an overall social environment conducive to growth, by leveraging investment not just in research and innovation, but also in education and social policy.

The Fédération québécoise des professeures et professeurs d’université (FQPPU) believes that the purpose of higher education and research is the advancement and dissemination of knowledge for altruistic and humanistic purposes. The FQPPU does, however, agree that higher education and research contribute to the productivity of Canadians. The FQPPU recommends that, in its next budget, the Government of Canada continue its public sector investments in primary, secondary and, in particular, post-secondary education, because economic growth relies in part on human capital and workers’ ability to leverage knowledge and skills gained in school, college or university. It is the FQPPU’s view that the pursuit of productivity growth should not jeopardize equal opportunity for all Canadians. To that end, the FQPPU submits that generous social policies can rectify the most glaring inequalities, while ensuring the social cohesion needed for lasting economic prosperity.

It is clear that research-based innovation is one of the main drivers of productivity. The FQPPU is calling on the Government of Canada to increase its support for academic researchers and diversify granting council programs. This would better promote fundamental and multidisciplinary research, remedy the underfunding issues in certain disciplines and address the concentration of funding in the hands of a few well-known researchers.

An educated society is a more productive society

As economist Andrew Weiss points out, the intrinsic motivation of students is not to improve their productivity in the labour market:

Finally, education does not have to be justified solely on the basis of its effect on labor productivity. This was certainly not the argument given by Plato or de Tocqueville.... Students are not taught civics, or art, or music solely in order to improve their labor productivity, but rather to enrich their lives and make them better citizens.²

¹ Statistics Canada. 2014. Productivity: What Is It? How Is It Measured? What Has Canada's Performance Been over the Period 1961 to 2012? Statistics Canada. 15-206-X. 38: 1.

² Weiss, Andrew. 1995. Human Capital vs. Signalling Explanations of Wages. Journal of Economic Perspectives. 9, 4: 151.

That said, studies have shown that the return to education from a productivity standpoint is undeniable, for individuals and society alike. According to a scientific literature review by Industry Canada, “the private return to an additional year of education is in the 5 to 13 percent range, with a median estimate of 8 percent.”³ This is explained by the fact that individuals with more education have more human capital—collection of knowledge, skills and experience—and are therefore better-suited to adapt to an ever-changing labour market.

Industry Canada also submits that “the social returns to education exceed private returns, and this provides a major justification for public support of education.”⁴ Hence, productivity growth in Canada requires not just an increased investment in education, but also adequate social policies and more evenly distributed support across the main disciplines of research-based innovation. It is especially important that the increase in productivity of Canadians and Canadian businesses not jeopardize the values they hold dear, namely, environmental protection, equal rights and social justice.

Generous social policies that allow everyone to contribute to society’s development

Some economists still maintain that the hallmark of greater productivity is an unequal society where the government seldom intervenes in the economy. Despite that, the FQPPU is of the view that Canada’s social policies contribute to the overall well-being of its population and, by ensuring broader socio-economic participation, its productivity. Through investments in education, health and income replacement benefits, further to a sickness or the birth of a child, in order to prevent child poverty or help vulnerable individuals or groups integrate into society, the government also ensures that all Canadians have an equal opportunity to develop and benefit their community. The FQPPU believes that, while respecting legislative authority, the Government of Canada should continue its efforts to support the most disadvantaged members of society and give all those interested in gaining the necessary knowledge and skills the tools they need. Doing so, in the FQPPU’s view, is a matter of equality that transcends economic imperatives, even though Canada’s economy would likely benefit in the end.

Research-based innovation as a key driver of Canadian productivity

In recent years, innovation has been a topic of constant discussion. Concerned about diversifying the economy and reducing significant economic dependence on natural resources and oil, governments have come to understand the added value of research-based innovation in stimulating production. This has led to a shift towards purpose-driven research funding, often in fields with strong commercial potential, further to OECD recommendations.⁵

In order to obtain funding, many Canadian researchers have had to model their research projects on government priorities or establish partnerships with industry. It was hoped that such public investments in innovation would, in turn, encourage businesses to invest in research and development; it is quite

³ Harris, Richard G. 2002. Social Policy and Productivity Growth: What Are the Linkages? Discussion Paper No. 11. Industry Canada. 15.

⁴ Ibid., 17.

⁵ OECD. 2016. OECD Economic Surveys: Canada. June 2016. OECD. p. 66.

clear, however, that the measures have instead led to a funding withdrawal by businesses, which no longer have to expend financial energy to benefit from research.

It is time to rethink that strategy. The FQPPU agrees with Industry Canada that research-based innovation is a pillar of the country's productivity growth,⁶ and therefore believes that a review of the terms and conditions governing the funding of academic research is urgently needed. Such a review would address the effects of the concentration of research funding in certain disciplines and in the hands of certain individuals, which undermines the advancement of scientific knowledge in a multitude of fields. The myth that research funding should be concentrated in the hands of a minority of so-called elite researchers was recently debunked by a Quebec study. It revealed that the most well-funded researchers did not publish more articles and that their articles did not have a greater impact than those of other researchers.⁷

Implementation of Naylor report recommendations

When the Trudeau government took office, it asserted the importance of scientific research in informing public policy and advancing the knowledge on which our future prosperity relies. Further to that commitment, the government created the position of Chief Science Advisor and put an end to the muzzling of government researchers. In addition, Minister of Science Kirsty Duncan launched consultations aimed at bolstering federal support for fundamental science research, and the resulting Naylor report⁸ was released in April 2017.

Since being elected, the government has sent clear signals regarding its intentions to reform research funding, and it is now time for action; the government should move quickly to implement the recommendations of the panel on Canada's Fundamental Science Review.

It is the view of the FQPPU that the Naylor report recommendations most likely to have a positive impact on the productivity of Canada's researchers are as follows:

- Make a major reinvestment in university-based research in order to raise the success rates of grant applications for granting council competitions. In particular, the SSHRC is in dire need given that 30 years of chronic underfunding have weakened the council's capacity.
- Rebalance funding so as not to unduly favour priority- and partnership-driven research.
- Re-fund fundamental research, which has been underfunded for at least a decade.
- Create a national advisory council on research and innovation to provide broad oversight of the research and innovation ecosystems.

⁶ Harris, Richard G. 2002. *Social Policy and Productivity Growth: What Are the Linkages?* Discussion Paper No. 11. Industry Canada. 1.

⁷ Mongeon, Philippe, Christine Brodeur, Catherine Beaudry and Vincent Larivière. Concentration of Research Funding Leads to Decreasing Marginal Returns. *Research Evaluation* 25, 4 (2016): 396-404.

⁸ Advisory Panel for the Review of Federal Support for Fundamental Science. 2017. *Investing in Canada's Future: Strengthening the Foundations of Canadian Research*. Canada's Federal Science Review 2017.

- Harmonize the funding strategies of the granting councils, as well as their governing legislation.
- Consider funding research according to a lifecycle approach that takes into account support for researchers at different stages of their careers (e.g. early years, birth of a child, retooling, sickness).
- Ensure optimal evaluation of multidisciplinary research by recruiting reviewers experienced in this type of evaluation.
- Review the delays in awarding research chairs, as well as their funding, which has not taken inflation into account for 17 years.
- Fund indirect research costs (infrastructure) so that the federal government pays its fair share.

Conclusion

The FQPPU submits that two key pillars of productivity in Canada are (1) education, which gives individuals the opportunity to improve their human capital and contribute fully to society, and (2) innovation supported by university-based research.

Through major investments in education, the government gives citizens access to the training they need to understand the world they live in and ensures the development of a skilled workforce. The federal government should complement those efforts with continued support for all Canadians. Generous social policies bring about the balanced environment that all individuals need to contribute to society, as best they can, in spite of any challenges or difficult times they face.

Similarly, innovation requires significant and predictable financial support. The Government of Canada should implement the main recommendations of the Naylor report as soon as possible, in particular, to promote the value of fundamental science and curb the dominance of programs driven by commercialization and partnerships. It is also necessary to correct a number of structural funding biases, including the concentration of research funding in certain disciplines and in the hands of certain institutions, to fully develop and strengthen the capacity for innovation in every discipline.