

Standing Committee on Finance (FINA)

Pre-budget consultations 2012

Mitacs

Responses

1. Economic Recovery and Growth

Given the current climate of federal and global fiscal restraint, what specific federal measures do you feel are needed for a sustained economic recovery and enhanced economic growth in Canada?

Mitacs recommends: • Continued implementation of recommendations of the Jenkins panel; • Focus support on demand-driven innovation; • Professional skills training for highly-educated students; • Robust and transparent program evaluation to guide investment and re-investment. The blueprint for preserving and expanding our economic strength through Canadian industrial innovation and productivity can be found in the recommendations of the Jenkins report. Budget 2012 made an excellent start to implementing those recommendations; we strongly encourage the implementation of the remaining recommendations. A particular focus of the panel was utilizing Canada's considerable academic research strengths to support innovation in the private sector, particularly through support for demand-driven innovation. The government has supported basic research at universities and in-house research in industry through continued support through the tricouncil and the SR&ED program, respectively. Demand-driven innovation programs support research that employs the intellectual infrastructure of Canada's post-secondary institutions to address private sector needs. This approach yields a high likelihood of commercially useful innovation by leveraging pre-existing university research. It also supports more relevant training opportunities, especially for those traditionally removed from industry such as graduate students and post-doctoral fellows. Finally, industrial matching requirements mean government investments in research go further, and ensures the quality and value of relevant programs. Human capital is the driver of innovation; effective skills training is therefore essential. In particular, students should be provided world-class training and education at Canadian universities and colleges complemented by programs to provide business, professional, and entrepreneurship skills. Indeed, training and research should be interwoven at all levels, with internship and work-study programs made available to students in undergraduate and polytechnical programs to graduate students and postdocs. The recent OECD report underlines the necessity of integrating skills training into graduate study. We agree: this supplementary training provides highly-trained young people the opportunity to transition from study to work more effectively, and increases the chances that they will remain in Canada. Finally, a climate of fiscal responsibility necessitates an increased focus on accountability. The federal government should implement a transparent impact-based program evaluation framework to help with consolidate programs, identify program gaps, and determine future program funding.

2. Job Creation

As Canadian companies face pressures resulting from such factors as uncertainty about the U.S. economic recovery, a sovereign debt crisis in Europe, and competition from a number of developed and developing countries, what specific federal actions do you believe should be taken to promote job creation in Canada, including that which occurs as a result of enhanced internal and international trade?

Mitacs recommends: • Increased support for demand-driven innovation programs; • Expansion of R&D management training; • Support for entrepreneurship training and international recruitment. For Canada to successfully meet the job training and labour force needs of the future, it will need to:

support innovative, internationally competitive companies, produce highly-trained graduates with relevant professional and management skills, and attract and retain the world's best and brightest to Canada. Demand-driven innovation programs support the creation and growth of innovative, competitive companies by providing access to cutting-edge R&D at Canadian universities and colleges and by connecting them with our brightest and most highly trained graduates. Furthermore, by integrating experiential learning of business and professional skills into the training paradigm, these graduates earn the requisite skills to contribute immediately to the Canadian economy. Demand-driven innovation programs act as a powerful bridge between our post-secondary institutions and industry, ensuring an easy flow of knowledge and talent between the two sectors. A particular worry, as noted by the OECD, is the need for increased R&D management talent in lock-step with increased graduate level skills attainment. Unfortunately, the Canadian economy lacks the large research firms where future R&D leaders gain management skills and experience. Programs are therefore needed to support management skills training for highly-skilled researchers. For instance, Mitacs Elevate provides individualized skills training and research management experience for post-doctoral fellows. They gain the experience and skills to manage industrial research groups, providing Canadian industry a pool of talented and skilled research management pool, and providing these skilled researchers an effective transition from the diminishing academic career prospects to industrial opportunities. Job creation is kickstarted by entrepreneurs who found innovative high-growth companies. Increasingly, entrepreneurship is a global market; Canada should pursue strategies to recruit the global class of entrepreneurs. Mitacs Globalink recruits roughly 300 elite students annually from India, China, Brazil and Mexico to spend their summers at Canadian universities. These students are from universities such as the India Institutes of Technology, where 10% of graduates become entrepreneurs. By recruiting these students to Canada, we encourage these young entrepreneurs to launch their businesses in Canada.

3. Demographic Change

What specific federal measures do you think should be implemented to help the country address the consequences of, and challenges associated with, the aging of the Canadian population and of skills shortages?

Mitacs recommends: • Increase production of PhD graduates and link education and training more closely with industrial opportunity; • Support smart immigration policies to attract high-quality international students. Canada has a recognized skills shortage in skilled trades and labour due to demographic change. But there is another, unrecognized skills shortage that poses a much greater threat to Canada's long-term economic strength. This shortage describes the lack of highly-educated and highly-trained people employed in Canadian industry. This shortage remains unacknowledged because the problems it creates are not immediate or direct. However, the lack of advanced education for industry leaders – education in business and economics as well as science, engineering, and social sciences – means Canadian businesses are less innovative, less productive, and less likely to compete on the world stage. Canada produces fewer PhDs than its OECD peers, slipping from 20th to 23rd since 2008. Those we do produce are overwhelmingly employed in the academic and government sectors. The government should support programs and initiatives to increase the number of Canadian PhDs and support programs that provide business and professional skills training so that these PhDs are better able to apply their skills and knowledge in an industrial context. Mitacs Accelerate, the primary delivery vehicle for the government's industrial R&D internship program, is an excellent illustration of how academic study can be successfully integrated with industrial experience and training. Increased collaboration between academia and industry should be supported through programs to support industrial PhDs, internships, and other engagement strategies. Canada must also rely on immigration to support continued growth and prosperity. Younger immigrants outperform their older counterparts

economically, in part due to increased language skills, cultural acclimatization, and the acquisition of Canadian credentials. The Canadian government should work to attract international students to Canada where they can gain Canadian training, build Canadian networks, and establish Canadian roots. While the enormous short-term benefits, at nearly \$8-billion annually, of international students are significant, the long-term benefits to Canadian society are potentially much higher. It is important that the government support policies that focus on attracting high-quality students rather than large quantities of students.

4. Productivity

With labour market challenges arising in part as a result of the aging of Canada's population and an ongoing focus on the actions needed for competitiveness, what specific federal initiatives are needed in order to increase productivity in Canada?

Mitacs recommends: • Continued implementation of Jenkins panel recommendations; • Increased support for demand-driven innovation programs; • Increased support for internships and other programs to increase receptor capacity for highly-trained graduates. A recent OECD country report noted the long-term economic threat posed by Canada's poor productivity. Canada ranks 20th in the OECD in business expenditures on R&D (BERD) at 1% of GDP vs the OECD average of 1.6%. More worryingly, this number has been declining for at least five years. Increasing BERD should be a major priority for the federal government. We therefore encourage the continued implementation of the Jenkins panel recommendations, which are clearly targeted to addressing this challenge. Canada boasts one of the most productive university research systems in the world. This productivity should be leveraged by Canadian industry through demand-driven innovation programs linking business challenges to academic knowledge and skills. Forging stronger links between these sectors provides firms with the tools to be internationally competitive, supports applied research at universities, and generates significant economic and social spillovers. Demand-driven innovation requires government support due to these spillovers and due to the extended period of time required to realize a firm's return on investment. The government must ensure its programs are relevant and provide value by requiring substantial industrial investment as a condition of participation. Furthermore, robust and transparent program evaluation must ensure that government support is productive. We also wish to highlight the need for increased knowledge and technology transfer between universities and industry through increased internship opportunities and professional skills training for Canadian graduate students. Unlike most OECD countries, Canada does not have a strong tradition of hiring Master's and PhD graduates for senior roles in industry. Compared with the United States, Canadian graduates of these programs earn significantly less and experience higher levels of unemployment, illustrating lower levels of demand. Programs and initiatives to encourage higher uptake of these highly-skilled and highly-trained individuals should be pursued. They carry cutting-edge knowledge and technologies from the lab into industrial practice, and ensure Canadian companies are working at the world's leading edge.

5. Other Challenges

With some Canadian individuals, businesses and communities facing particular challenges at this time, in your view, who is facing the most challenges, what are the challenges that are being faced and what specific federal actions are needed to address these challenges?

Canadian industry faces an enormous challenge. The advantages of abundant natural resources, a weak dollar and a focus on domestic trade are rapidly diminishing in the face of an increasingly open, competitive world economy. Old sectors are being transformed by the tools and techniques of the knowledge economy, and international markets are opening like never before. Innovation, productivity, and international competitiveness are the hallmarks of the new economy. To maintain Canada's economic strength and enviable standard of living, Canadian firms must adapt to this new reality and

compete with the world's best. Unfortunately, Canadian industry has a poor history of productivity and innovation. Canadian firms invest significantly less on R&D than nearly all of our OECD peers, spending less than half as much (as portion of GDP) as world leaders. This means less intellectual property (as measured by patent applications), slower adoption of innovation, and falling levels of productivity that are a fraction of our American counterparts. The federal government should pursue policies and programs to encourage increased industrial investment in R&D. In particular, we wish to highlight the opportunity to leverage the exceptional strength of Canada's research universities. A recent OECD country report highlighted this academic strength as a valuable tool to improve economic productivity and competitiveness. Our research universities represent research-ready infrastructure, untapped human capital, and cutting-edge ideas that can find application with Canadian industry through demand-driven innovation, providing the opportunity for Canadian companies to compete at the leading edge of the world economy. While there are enormous opportunities for collaboration between industry and academia, there are also significant challenges. These include identifying and promoting R&D opportunities, matching industrial needs with specific academic expertise, and communicating the needs of each sector. Passive policies and programs have not historically succeeded in achieving greater cross-sector collaboration. Successful collaboration requires programs that actively identify problems, recruit academic expertise, connect partners, and promote industry-academic collaboration through demand-driven innovation. This connector role is essential for identifying, establishing, and maintaining the collaborative ties that will make Canadian businesses more innovative, more productive, and more competitive in the increasingly global economic market.