ONTARIO 360 – ENTREPRENEURSHIP AND BUSINESS DEVELOPMENT – TRANSITION BRIEFING

A comprehensive policy strategy to promote entrepreneurship, business development and R&D

Issue

Ontario's economy has various strengths including (but not limited to) a diversified and highly-skilled labour, high-quality research institutions, and dynamic and diversified sectors.

Yet it also faces challenges. Ontario (and Canada) is an outlier among OECD countries for its low and declining investment in business and enterprise R&D. This is important both because of the short-term effects on investment and jobs and the long-term costs in the form of less productivity and lower standards of living.

It is essential therefore that the province's next government develops a comprehensive strategy – including intellectual property and data policies, public spending reforms, tax measures, and post-secondary training – in order to enable more entrepreneurship, business development and research and development.

Overview

Twenty years ago, leading scholars on the topic of business R&D wrote the following of Ontario's regional innovation ecosystem:

> "Along most of the dimensions identified as elements of the high performance model — growing R&D intensity, increased training effort… the shift to more innovative workplace practices... — firms in Ontario

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display strong evidence of moving towards the positive end of the spectrum."[1]

Contrast this with a more recent assessment:

> "Canada is one of the few leading countries with declining R&D employment in industry.… Almost the entire decline in national R&D spending from 2006 to 2015 occurred in Ontario and Quebec…. The loss of innovative start-ups to foreign buyers, and the inability to grow a sufficient number of start-ups to scale, means that Canadians do not fully capture the social and economic benefits stemming from Canadian research advances…. While some of the commercial benefits of that R&D may remain in Canada, there is also a risk that a fair proportion of it will be developed offshore."[2]

The province is challenged further by the concentration of job creation in and around large cities, a sustained relative and absolute decline in Ontario's historically strong manufacturing and mining sectors[3], and anemic job growth outside the Toronto and Ottawa regions.[4] As the economy shifts further away from traditional drivers of growth, this process will accelerate and regional inequality will worsen. This secular, worldwide trend is a result of spillover effects from jobs in high-value-added industries (which cluster around certain

[1] Meric Gertler and David Wolfe (with assistance from D. Garkut), "The dynamics of regional innovation in Ontario," in John de la Mothe and Gilles Paquet (eds.) Local and Regional Systems of Innovation, 1998. Available at: https://munkschool.utoronto.ca/downloads/ipl/publications/pdfdoc/1998/GertlerWolfe98_dynreginov.PDF.

[2] Council of Canadian Academies, Competing in the Global Innovation Economy: The Current State of R&D in Canada, 2018. Available at: http://new-report.scienceadvice.ca/assets/report/Competing_in_a_Global_Innovation_Economy_FullReport_EN.pdf.

[3] Ross McKitrick and Elmira Aliakbari, "Ontario's manufacturing sector falling behind other provinces, US States," Fraser Institute, December 1, 2017. Available at: https://www.fraserinstitute.org/blogs/ontario-s-manufacturing-sector-falling-behind-other-provinces-us-states.

[4] Mike Moffatt, "The Two Ontarios", (tweet). Available at: https://twitter.com/MikePMoffatt/status/987749270529884160.

urban agglomerations) and the gravitation of highly skilled workers to these dense labour markets.[5]

The need for reform

Why does this matter for Ontario?

Companies that grow to scale provide the biggest economic returns for a region, generating high spillovers and capturing economic rents from abroad. Start-up companies are an important part of an ecosystem, but only a small fraction of start-ups ever grow large enough to generate profit or pay taxes. Foreign multinational firms operating in the province can meaningfully contribute to Ontario's prosperity but lag indigenous firms in R&D intensity and in the proportion of local scientific, technical, and managerial jobs they create.[6] Ontario needs an innovation policy that helps more companies to create jobs by *scaling up* in the province.

Governments expend increasingly significant resources and policy effort to encourage *private sector innovation*; that is, activities leading to the creation of new products, services, and processes, or the iteration and improvement of existing ones. While many industries owe large parts of their success to initial investment risks borne by states[7], innovation policies around the world have produced mixed results.[8] Nonetheless, governments' policy motivation is justified: high growth enterprises contribute vastly disproportionately to job creation and economic expansion. Jobs in competitive industries with high ongoing R&D investments have a large multiplier effect on employment,

[5] Enrico Moretti, The New Geography of Jobs, (New York: Mariner Books, 2013).
[6] Meric S. Gertler, David A. Wolfe & David Garkut, "No place like home? The embeddedness of innovation in a regional economy," Review of International Political Economy, 2000. Available at: https://www.tandfonline.com/doi/abs/10.1080/096922900750034581.
[7] M. Mazzucato, The Entrepreneurial State: Debunking Public vs. Private Sector Myths (Vol. 1), Anthem Press, 2015; and S. Blank, A Secret History of Silicon Valley. Computer History Museum, 2008.
[8] M.Z. Taylor, The Politics of Innovation: Why Some Countries are Better than Others at Science and Technology. Oxford University Press, 2016.

generating five service industry positions for every job in innovation, which is even more than jobs in manufacturing. [9]

How to move forward

If Ontario is to host high-growth industries and companies, bold action is required to reverse a decline in private sector R&D. This is far from straightforward: policies that generate economic growth, jobs, and social progress by encouraging innovation are very hard to get right, and expert prescriptions differ within Canada's innovation policy community.

Where possible, the Ontario government should coordinate innovation support with its federal and provincial counterparts, but it must prioritise Ontario's unique economic needs and not wait on federal or interprovincial coordination. Here are some key areas for Ontario policy reform.

Intellectual property & data

Jobs and profits flow to the jurisdictions in which companies control valuable patents, intellectual property, and data flows. Against comparable jurisdictions, Ontario's record on capturing long term value from R&D is poor. The province bleeds patents, loses promising start-ups, commercializes too little university-generated research, and pays more than twice as much to license IP as it receives.[10]

Ontario should enact policies designed to generate more patents and to capture value from patents generated here. Strategies might include sovereign patent funds (as in South Korea or France), increased focus on awareness and training for IP in universities and the public sector, or offsets for costs

[9] Enrico Moretti, The New Geography of Jobs, (New York: Mariner Books, 2013).
[10] Jim Balsillie, "Canadians can innovate, but we're not equipped to win," Globe and Mail, May 8, 2015. Available at: https://www.theglobeandmail.com/report-on-business/rob-commentary/balsillie-learns-canadian-innovators-not-equipped-for-global-competition/article24346408/; and Jamison Steeve and Jacob Greenspon. "Innovation and Commercialization," Ontario 360 (University of Toronto's School of Public Policy & Governance), April 19, 2018 Available at: http://on360.ca/30-30/innovation-and-commercialization-transition-briefing/.

associated with patent filing. Direct grants for innovation might be made repayable at a multiple of original value upon expatriation of IP or jobs, to at least recover some of the public investment in innovation when expatriation cannot be prevented. Notably, Israel, a small country considered highly successful at commercializing innovation, takes substantive policy measures to prevent foreign takeovers of Israeli firms from expatriating IP assets.

The foreseeable future of economic growth depends on data flows, even where data is not its principal driver. In the absence of a national strategy on data (or eventually in concert with one) the Ontario government is faced with an opportunity: by developing a strategy to encompass personal data, data generated by and for government, and data in areas under provincial jurisdiction (healthcare, and the financial, industrial, educational, environmental and resource sectors, among others), the next government can create provincial data capital assets that enable the growth of indigenous firms and further protect Ontarians' privacy.[11]

Structure, accountability, and measurement

Currently, Ontario's provincially supported 'innovation ecosystem' is administered by a byzantine network of funds, programs, institutes, incubators, accelerators, innovation parks and regional centres.

Mandates of the Ministry of Research, Innovation and Science overlap with those of the Ministry of Economic Development and Growth, and include (but are not limited to) the Jobs and Prosperity Fund, the Ontario Scale-Up Voucher Program, the Ontario Research Fund, various programs of the Ontario Centres of Excellence, the Office of the Chief Health Innovation Strategist, a network of 17 regional innovation centres, at least one dedicated centre for commercialization at each of Ontario's 20 public universities and at

[11] Dan Ciuriak, Rethinking Canada's Innovation/Industrial Policy, Centre for International Governance Innovation. November 19, 2017; and Dan Breznitz, Data and the Future of Growth: The Need for Strategic Data Policy, Centre for International Governance Innovation, April 19, 2018. Available at: https://www.cigionline.org/articles/data-and-future-growth-need-strategic-data-policy.

most colleges, and the commercialization mandates of provincially supported basic research organizations including the Ontario Institute for Cancer Research and the Ontario Brain Institute. Each has an administrative structure and overhead costs. This situation is untenable and efficiencies can surely be found.

Successful innovation policy operates at a longer timescale than electoral politics, which may explain why some of the world's most successful state programs that support innovation (DARPA, the Israel Innovation Authority, and InnoSuisse, for example) operate at arm's length from political authorities; given Canada's alarming long term decline in private sector R&D, innovation policy should aim to balance of flexibility with the sort of long-term continuity that might be provided by firewalls against politically expedient changes of priority.

Ontario's provincial government should conduct a comprehensive review of innovation and economic development program spending, emphasizing a long-term view of measurable outcomes relative to inputs: jobs created, IP generated, revenue growth in supported companies, as well as domiciled revenue and taxes paid by foreign companies benefiting from public support for innovation activities. In its review, it should consider new governance structures that draw on evidence-based best practices, simplify administration, increase accountability, and shelter key programs from shifting bureaucratic fads and political priorities. Cultural and economic context must be considered when considering innovation policy models that succeeded (or failed) in other jurisdictions.

Tax policy

Consider that today, seven of the world's ten largest companies by market capitalisation deliver the bulk of their products and services online and hold a majority of their value in intangible assets, like IP, data, brand value, copyright, and (most importantly) highly skilled workforces. Intangible assets help companies scale quickly. Companies with primarily intangible assets rely

heavily on equity investment, but most tax policy still favours debt financing.[12] Tax policies that favour equity investment, or that at least do not disadvantage it relative to debt financing, will help companies to scale in Ontario.

Recent US tax reforms may further disadvantage tax incentives for research activities conducted in Ontario.[13] Canada remains an outlier in prioritizing tax-based incentives for R&D, especially compared to jurisdictions with higher private sector research intensity. Strong international policy evidence favours demand-pull innovation (procurement) and direct grants over tax-based incentives as a mechanism for encouraging R&D investments.

Training, talent and universities

Calls for more graduates of STEM (Science, Technology, Engineering, Math) programs resonate continuously, yet Ontario already has among the highest postsecondary completion rates in the world. Talent shortages in R&D intensive industries seem to show no general shortage of STEM workers, but rather insufficient training and a lack of business and management knowledge in the STEM community.[14]

By reviewing and improving private sector skills training incentives, this gap could be partially closed. Critical gaps might also be filled by allocating a proportion of the provincial immigration nominee program toward identified skills deficits, or by creative polices offering tuition reimbursement to recent top graduates working in high-growth Ontario companies.

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[12] J. Haskel and S. Westlake, Capitalism Without Capital: The Rise of the Intangible Economy, Princeton University Press, 2017.

[13] Jack M. Mintz, "Tax policy," Ontario 360 (University of Toronto's School of Public Policy and Governance), April 23,2018. Available at: http://on360.ca/30-30/tax-policy-transition-briefing/.

[14] Jacob Greenspoon, "Ontario needs talent with diverse skills for innovation, Institute for Competitiveness and Prosperity, August 23 2017. Available at: https://www.competeprosper.ca/blog/ontario-needs-talent-with-diverse-skills-for-innovation.