Creating Digital Opportunity: MNEs, Enclaves and Innovation Agencies

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1.What was your key research question and what is your major finding from the research?

Part 1. Small and medium enterprises (SMEs) stand to benefit from sustained, innovation-producing relationships with multinational enterprises (MNEs). In fact, the informational and technical spillovers from these relationships are needed if the regions in which they are located are to sustain their economic position. Hence, attracting foreign investment has become a central piece of many countries' development models worldwide, based on the supposition that the consequent transfers of technology and ideas will increase domestic growth and productivity and improve local competitiveness. This has not only been true of developing countries, such as China and Mexico, but also more developed countries. Policymakers in Ontario are actively exploring what policies they may put in place to both attract MNEs and ensure that it results in spillovers of digital technologies. To what extent is this a viable continued policy orientation for Canadian policymakers?

Part 2: Governments can successfully promote the adoption and generation of innovations in domestic industry, and dedicated innovation agencies are a means by which both emerging and already wealthy countries have successfully intervened to spur innovation. What specific steps an innovation agency takes necessarily depends not only on the characteristics of a country but also on the nature of the technologies it seeks to promote and the global structure of related industries and their markets. IRAP is arguably Canada's best known and most respected agency for promoting innovations. How does it compare to other innovation agencies world-wide? How is it structured to advance innovations and to what extent is it able to meet its goals, and in what ways does it improve innovation (including digital) across the country?

2. What do your research findings mean for our understanding of Canada's digital opportunity?

Part 1. Our tentative findings suggest that the *natural* outcome of FDI-based development policies is the growth of foreign enclaves that are isolated from the local economy and provide little positive spillover either actively or passively into the local economy. Enclave formation can

be traced back to common risk-mitigating behavior of multinational subsidiaries in their host countries, rather than simply to the characteristics of local firms, workers, and institutions. We observe this in a low-capacity setting (Costa Rica), a medium-capacity setting (Mexico), and a high-capacity setting (GTA, Ontario), and settings that are more focused on manufacture (CR and Mexico (partial)) and more focused on technology services (Mexico (partial) and GTA). This pattern in borne out in the networks they maintain, which harden over time, even as a subsidiary establishes itself in a foreign economy.

Part 2: Based on the work on IRAP alone and on broader comparative work (Breznitz and Samford 2016, 2017; Breznitz, Ornston, Samford 2018), we find IRAP to be an effective agency, but that the type of innovations it helps promote are unlikely to ever be radical or disruptive innovations. With a typology based on a swatch of innovation agencies, we characterize IRAP as a "productivity facilitator," and innovation agency that is deeply embedded in the private sector, and recognizes the private sector as the primary locus of research and development activity. Agencies of this type have great potential to be highly responsive to the needs of the private sector and the specific technology gaps that they experience; however, because they are so tightly integrated into the value networks of existing industries and currently emerging needs, they are unlikely to ever contribute to technologies that are radically new. IRAP is very popular among its clients, and the Industrial Technology Advisors are highly-trained, expert, and highly rated by clients. Moreover, the return on investment for the agency is remarkably high. However, because of the manner in which it operates and the niche that it fills, the agency does not necessarily have the potential to be a source or an aid for the generation of more radical innovations, digital or otherwise.

3. What are the key policy implications that flow from your findings?

Part 1. In the starkest terms, Canadian policymakers should approach the attraction of foreign investment cautiously, and, as they seek to promote digital industries in the country, refrain from thinking of the presence of foreign subsidiaries as an unalloyed benefit to the local economy and indigenous technology development. The GTA has long been a hub for foreign subsidiaries, particularly in the area of ICT. Large investments like Google's interest in Toronto's waterfront illustrate that this pattern continues and is unlikely to change in the short term. Rather than

assuming that benefits beyond job creation (spillovers of technology through capital investments and human resources) will occur naturally and seamlessly, policymakers should more active measure to ensure that the investments are structured in ways that facilitate or force multinationals to develop working relationships (whether those be supply chain relations, subcontracting arrangements, or collaborative ventures). Our research shows that multinationals tend – reasonably – to replicate their foreign networks in new locations, resulting in far less direct interaction between with them and the local companies than is anticipated. In exchange for the tax benefits or other favorable treatment they might offer to foreign companies to facilitate their relocation to the GTA (or to Canada more broadly), policymakers should take steps to prevent the tendency toward replication of foreign networks by building instruments promoting local business networks into investment agreements.

Part 2. The bulk of Canadian funding to R&D is distributed through SRED credits. Critiques of this system are well-established, and calls for funding more active public sector work in promoting the generation of new technologies are well-founded. Agencies like IRAP look like a comparatively wise expenditure of funds and have measurable effects, and somewhat similar efforts have been supported in other settings (such as using polytechnics to help fill technology gaps for small businesses (Samford, Warrian, and Goracinova 2017)). But policymakers should carefully consider the constitution and structure of such agencies, which shape the kind of innovation they best promote and, ultimately, their effect on the industry in question. IRAP is by all accounts a good support for small firms in digital industries, but efforts to spur more radical innovations in these industries should not be modeled on IRAP. Instead, our research suggests that agencies that are more autonomous from (and less responsive to the immediate needs of) established industries and firms are likely to help propagate more radical innovations. A more competitive digital industrial policy for Ontario (and Canada) would include agencies like IRAP, assisting with more concrete technology gaps, and more autonomous agencies working on more prospective technologies of potential use in the Canadian digital economy.