Remarks for The Standing Senate Committee on Banking, Commerce, and the Economy
By
Jim Balsillie

Madame Chair,
Deputy Chair,
Senators,

Thank you for the opportunity to present today. I am Jim Balsillie, Chair of the Council of Canadian Innovators and an investor in six Canadian tech companies. Your study on *Business Investment in Canada* is timely as the House of Commons Industry Committee is currently reviewing an updated Investment Canada Act and their proposed amendments reveal a serious lack of understanding of how the contemporary economy functions.

The transformation of the economy into knowledge-based and data-driven model has reshaped the international competitive and investment landscape. Today's economy is different from the traditional, production-based economy in nature and structure. Its most valuable assets - intellectual property (IP) and data - have reshaped markets, creating equipment-light and worker-lean companies operating at global scale and pulling in massive profits. In today's markets, investors look for companies that own valuable IP and have control over data assets which allow them to control markets and capture superior economic rents.

Policymakers in advanced countries understood that the sources of prosperity and the vectors of risks have changed. This is why the EU and our Five Eyes partners[1] have updated rules for foreign direct investment (FDI).

But not Canada.

Through various institutions such as "Invest in Canada" and countless "innovation" programs and research granting agencies, Canada's approach to investment remains stuck in a tangible, production economy model where inward business investment brings advanced production technology and skilled personnel into an underdeveloped economy (example: automotive factory, pulp and paper mill) and where foreign multinationals undertake more R&D than local firms and generate domestic supply chains and grow the tax base. In the IP and data intensive economy, FDI targets and expatriates local high-growth firms that are critical to the future dynamism of local economies or exfiltrates taxpayer-funded IP, eroding Canada's prosperity and security.

The Direction of Prosperity Flows with current FDI strategy

Canada is on the sidelines in the global ownership for IP and data, contributing to their creation but not contesting their ownership and ensuing benefits. We see the exfiltration of knowledge assets out of Canada on a regular basis:

[1] House, T. W. (2022, September 15). Fact Sheet: President Biden Signs Executive Order to Ensure Robust Reviews of Evolving National Security Risks by the Committee on Foreign Investment in the United States. The White House. https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/15/fact-sheet-president-biden-signs-executive-order-to-ensure-robust-reviews-of-evolving-national-security-risks-by-the-committee-on-foreign-investment-in-the-united-states/

• Foundational IP for AI that Canadian taxpayers funded for two decades is transferred from U of T to Google, who thank Canada for it and said: "*We now use it throughout our entire business and it's a major driver of our corporate success*."[2]

• Huawei creates 17 research partnerships with Canadian universities on equally valuable 6G infrastructure.

• Many other examples, such as Facebook's AI "partnership" with McGill University; Tesla taking foundational battery IP for electric vehicles from Dalhousie University[3], and more.

Lack of Business Investment in Research and Development

Canada has a low and declining rate of BERD, which pundits and innovation enthusiasts have labeled as the central issue explaining the country's low innovation outputs. This narrative has unfortunately resonated with policymakers.

The "low BERD = low innovation" thesis does not account for the preconditional need of ownership of IP and control of data required to give firms the necessary "freedom-to-operate" (FTO) to ensure their BERD investments turn to new revenue. I have provided an Annex to my remarks which explains in detail why FTO is a precondition to increasing BERD.

If a company lacks sufficient FTO, it cannot be assured of capturing the high returns from their individual BERD investments. By the same token, public subsidies for research or innovation bring little or no benefits to the local innovation economy, because the economic rents ultimately flow to the owners of the IP and data that are in a position to extract the economic benefit.

A recent report from IRPP shows that a majority of IP created by Canadians is owned by foreign entities and that the trend is *accelerating*[4].

By ignoring the intangible asset ownership pre-requisite to build the runway where their business investment turns to profitable returns, policymakers are asking firms to make investments that are neither logical nor prudent for their operations.

Thank you.

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[2] Chhabra, S. (2017, October 17). Google-parent Alphabet announces partnership with Waterfront Toronto. MobileSyrup. https://mobilesyrup.com/2017/10/17/google-parent-alphabet-announces-partnership-with-waterfront-toronto/

[3] McIntyre, C. & Hemmadi, M. (2020, October 16). Canada's electric dream: Are government incentives and smart R&D enough to build a domestic EV industry?. The Logic. https://thelogic.co/news/the-big-read/canadas-electric-dream-aregovernment-incentives-and-smart-rd-enough-to-build-a-domestic-ev-industry/

[4] Gallini, N & Hollis, A. (2019, August 27). To Sell or Scale Up: Canada's Patent Strategy in a Knowledge Economy. IRPP. https://irpp.org/research-studies/to-sell-or-scale-up-canadas-patent-strategy-in-a-knowledge-economy/

APPENDIX A

Figure 1. Economic Spillovers

Effects of investment type on tangible and intangible stock assets

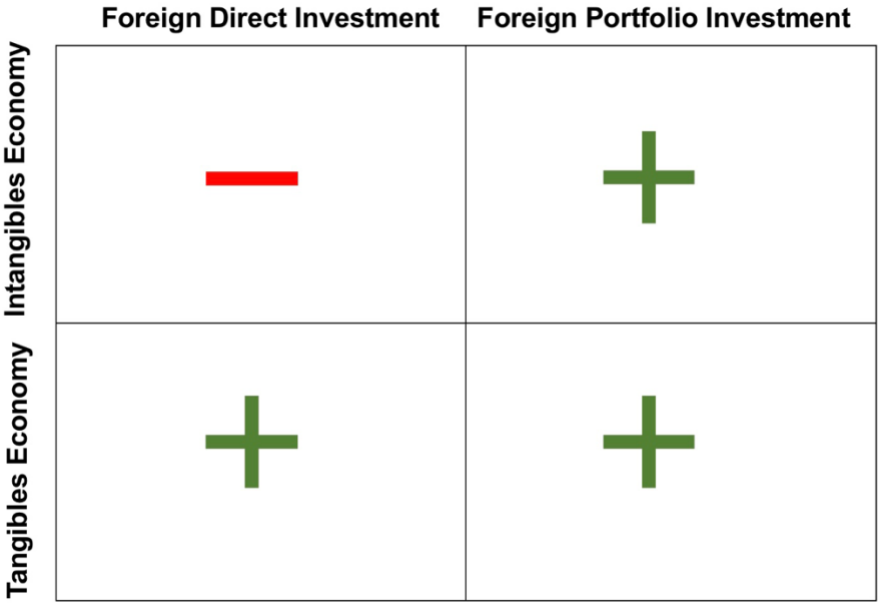


Figure 2. An Analytical Framework for Foreign Transactions Involving Canadian Intangible Stock Assets

A. ECONOMIC PROSPERITY

1. Jobs Created (key skills such as computer engineering and data science have negative unemployment)
2. Wealth Effects (future benefits go to foreign owners)
3. Management Development
    a. Remote Direction/Supervision vs. Autonomous Branch Operation
    b. Expansiveness of Employee Non-Disclosure Agreements
    c. Comprehensiveness of Non-Competition Agreements
4. Top Talent Exfiltration
5. Data Exfiltration
6. Ecosystem Dynamism Effects
7. Erosion of Tax Base
8. Value Chain effects (particularly for high potential emerging firms)

B. NATIONAL SECURITY

1. Cyber Security Impacts
2. Critical Infrastructure Impacts
3. Public Health Impacts
4. Military/Defence Impacts
5. Social Good Impacts (democracy, values, cohesion, autonomy)
6. Geopolitical Considerations

APPENDIX B

BERD in the Intangible Economy

Business expenditure on research and development (BERD) measures the dollar amount spent on research and development activities by business enterprises. Canada has a low and declining rate of BERD, which pundits and innovation enthusiasts have labeled as the central issue explaining the country's low innovation outputs. This narrative has unfortunately resonated with policy makers.

The 2022 Federal Budget proposes the creation of an "Innovation Agency" to help with the "low rate of private business investment in R&D and the uptake of new technologies" because it will "solve Canada's main innovation challenge." How this agency is going to turn around Canada's BERD performance is not stated.

We should not hold our breath that a new organization aiming to encourage private sector investment will fix Canada's BERD performance. The Canadian discussion of BERD to date is exclusively based on the traditional, production-based economy framework in which business investments – e.g., in advanced equipment – enable a firm to lower costs and/or produce higher quality products for a ready market. If business investment is lagging, the solution is to increase incentives (lower interest rates or provide tax incentives). Correspondingly, if BERD is too small, the problem must be one of inadequate incentives, so government policies seek to increase the incentive to invest – e.g., through richer tax credits and similar policies. If businesses on balance are still not cost competitive, then lowering the exchange rate for the Canada dollar helps address this, though it is in effect a pay cut for all Canadians.

This approach however does not account for the different *nature* of business expenditures in the knowledge-based economy. Specifically, in the production economy, the production inputs – capital equipment, material inputs and labour – are available in competitive markets. The development of sophisticated supply chains through globalization facilitated entry into even sophisticated manufacturing. Any company – or country – can get in the game by throwing money at the activity through industrial policies – and reap the benefits such as high-paying middle-class manufacturing jobs, co-location of suppliers, and the spillover benefits of local branch plants. The payoff for the government comes in terms of an enhanced tax base.

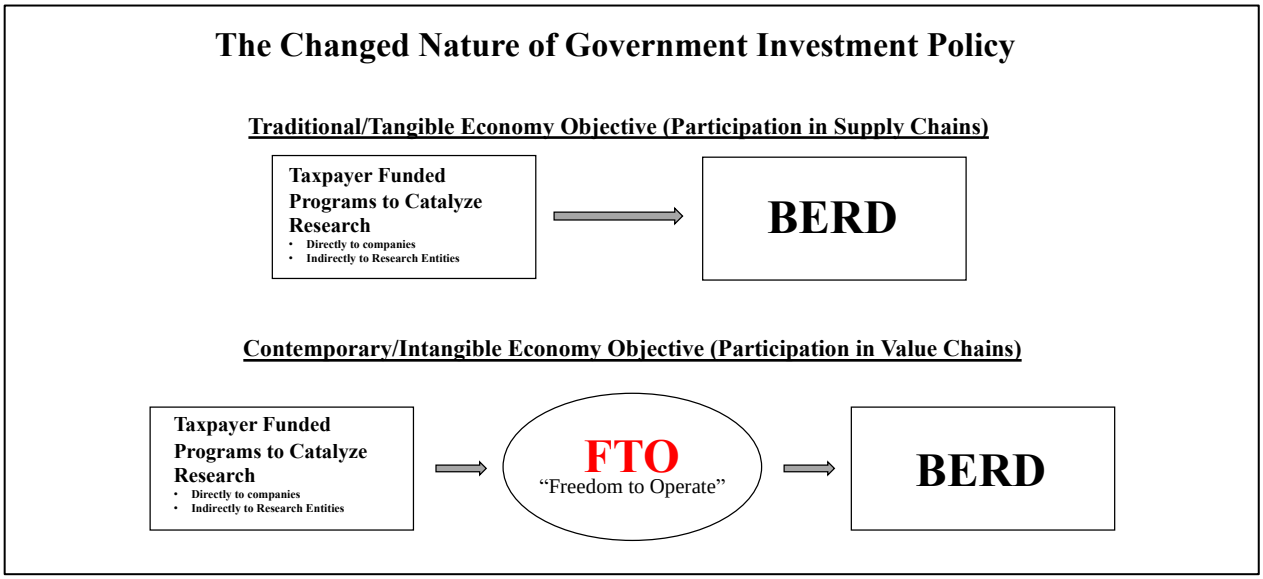
Why is this ineffective in the innovation-intensive knowledge-based economy? The "low BERD = low innovation" thesis does not account for the *ownership* of IP and control of data required to give the firms the necessary freedom to operate (FTO) to ensure their BERD investments turn to new revenue.

IP and data are *not* provided in competitive markets. They are protected assets. This protection is used to exclude competitors entirely (negative rights) – or to capture all the benefits of innovation that come in the form of IP or data rents through licensing or litigation strategies. In a world of massively proliferating IP, there are "patent thickets" around virtually every conceivable activity that extend and entrench the monopoly. Patent enforcement entities and the legal departments of competitors hover over would-be entrants to extract the benefits of any successful innovation.

You cannot commercialize what you don't own. If a company lacks sufficient FTO, it cannot be assured of capturing the high returns. By the same token, public subsidies for innovation bring no benefits to the local innovation economy, because the economic rents ultimately flow to the owners of the IP and data that are in a position to extract the benefit.

Companies will not spend $1 to get $0.10 in return. By ignoring the ownership pre-requisite to build the runway where their BERD turns to profitable returns, policymakers and pundits alike are asking firms to do what is neither logical nor prudent in their operations. Worse still, public subsidies for

BERD investments by Canadian firms without necessary FTO will most often increase the value flowing to IP held by a 3rd party organization, creating a negative feedback loop for Canada[5].



The knowledge-based economy has transformed both the *nature and structure* of companies. This cannot be emphasised enough because forty years after the advent of the knowledge-based economy, Canada's policymakers are still applying traditional policy levers to an economy that is foundationally different than the traditional, production-based one, including in the Spring 2022 budget.

The knowledge-based economy has transformed a world of open science and research into a relentless enclosure of the knowledge commons – the monopolization of knowledge and information – which, as innovation economists have shown, "*has restricted investment opportunities for many firms in different countries.[6]"* In this type of economy, FTO soars in its strategic relevance (both economically and non-economically) and explains why we are seeing a global race in patents filed across all industries and sectors. This IP race has a direct impact on BERD investment opportunities. "*The new gold rush to acquired IPR and the absence of public investment in knowledge have started to exert negative effects on investment opportunities, and the blocking effects of intellectual monopoly have become stronger than incentive effects,"*[7] says leading innovation economist Ugo Pagano.

Innovation economists have also shown that countries with low IP ownership, such as Canada[8], exhibit higher costs of investment which systemically reduce the BERD return on investment (ROI)[9], both in unit economics and addressable market size. Countries that create sophisticated FTO strategies

[5] Md Razib Alama, Margaret Dalziel and Brian P.Cozzarinc. "Invented here but owned elsewhere: The widening gap between domestic and foreign patent ownership in Canada." (February, 2022). Technological Forecasting and Social Change V. 125. https://www.sciencedirect.com/science/article/abs/pii/S0040162521007988
[6] Pagano, Ugo. "The Crisis of Intellectual Monopoly Capitalism." (November 13, 2014). Cambridge Journal of Economics V. 38 pp.1409-143. https://ssrn.com/abstract=2537972
[7] Pagano, Ugo. "The Crisis of Intellectual Monopoly Capitalism." (November 13, 2014). Cambridge Journal of Economics V. 38 pp. 1409-143. https://ssrn.com/abstract=2537972
[8] Nancy Gallini and Aidan Hollis. "To Sell or Scale Up: Canada's Patent Strategy in a Knowledge Economy." (August 27, 2019). IRPP Study No. 72. https://irpp.org/research-studies/to-sell-or-scale-up-canadas-patent-strategy-in-a-knowledge-economy/
[9] Pagano, Ugo, and Maria Alessandra Rossi. "The Crash of the Knowledge Economy." (March 31, 2022). Cambridge Journal of Economics, V. 33 pp. 2009, pp. 665–83. http://www.jstor.org/stable/23601993

manifest upward trajectory in BERD because it's profitable. This creates a virtuous cycle of innovation success, while countries with low IP ownership manifest a constrained and expensive business investment environment. The public policy imperative in Canada has to start with sophisticated and complete FTO strategies.

In the knowledge-based economy, economic prosperity returns have shifted to value chains, particularly those upstream (i.e. core technology) where a company makes money from the IP embedded in the advanced equipment *supplied* or from the IP embedded in ensuing products (including traditional commodities in agriculture, energy and mining sectors), rather than from the labour embedded in their production. IP ownership allows the company to commercialize the idea but also to defend its position in the ecosystem, invest in new opportunities and shape its future.

FTO is thus at the core of understanding low BERD. The FTO framework is how a company understands its competitors, upstream and downstream partners, and potential acquisition/acquirer targets. It facilitates rent appropriation in global value chains. Research from innovation economists Buckley, Strange, Timmer and de Vries shows that returns to intangible assets in the global value chains have risen substantially over the last 20 years because the structure of the contemporary economy facilitates increasing IP ownership and data control, enabling increasing marginal returns because of increasing rents with virtually zero marginal costs. "*A further finding is that within global value chains, the rent share of upstream stages has been increasing at the expense of rents shares of both the production and downstream stages. These findings suggest that the effective deployment, management and protection of intangible assets is of critical importance to the ability of firms to create and maintain sustainable competitive advantage in global markets. In GVCs intangibles matter, big time*!" [10]

The April 2022 federal budget is completely silent on IP ownership. Particularly glaring by its absence is lack of mention of the successful pilot program designed to increase IP ownership and FTO inside Canadian firms, the Innovation Asset Collective. It's also silent on creating an IP framework for FDI agencies, the myriad of granting councils, and programs such as the Strategic Innovation Fund. Finally, the budget makes no mention of the data-driven economy and data strategies required for Canada to compete in a world where IP is used to block access to data, even when that data is shared.

Canada needs a systemic approach that will move it from low IP ownership into a position where our firms own valuable IP that allows them to secure the FTO runway that makes investment in BERD worthwhile.

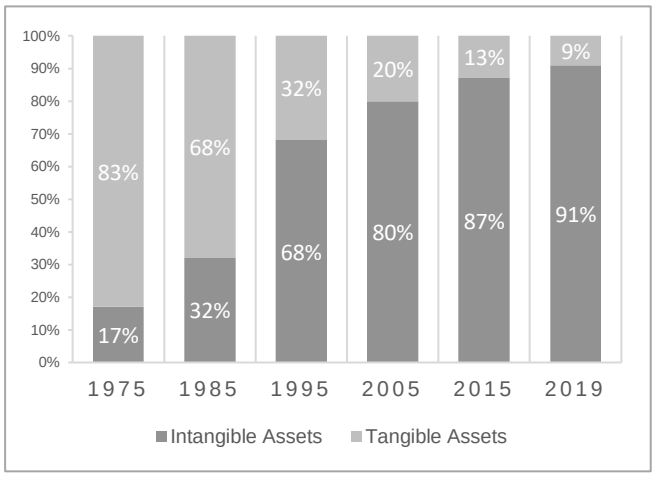
By failing to understand the changed nature and the structure of the intangible, knowledge-based economy, ownership issues that companies in this economy must contend with, and the low IP ownership across Canadian industry, our policymakers' current strategy is reduced to lecturing industry to do what it cannot and should not do – make investments and get poor returns on them.

[10] Peter J. Buckley, Roger Strange, Marcel P. Timmer and Gaaitzen J. de Vries. "Rent Appropriation in Global Value Chains: The Past, Present, and Future of Intangible Assets." (2009). Global Strategy Journal. https://onlinelibrary.wiley.com/doi/full/10.1002/gsj.1438

APPENDIX C

Figure 1. Shift from Tangibles to Intangibles

Components of S&P Market Value



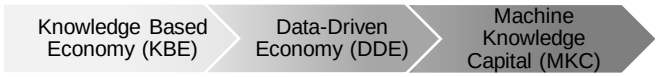
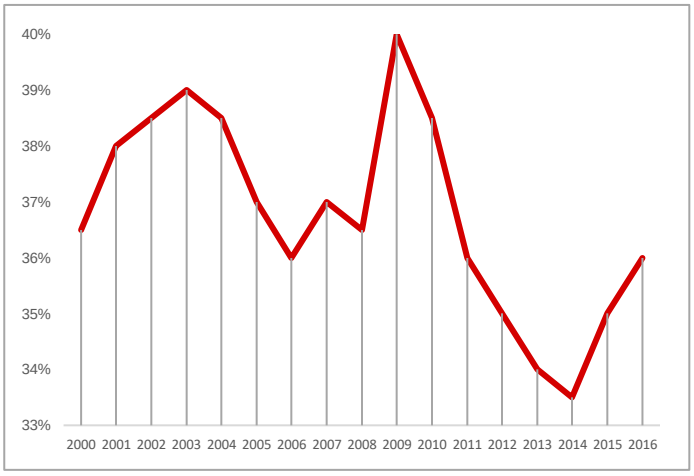


Figure 2. The Decline of Canada's Intangible Capital

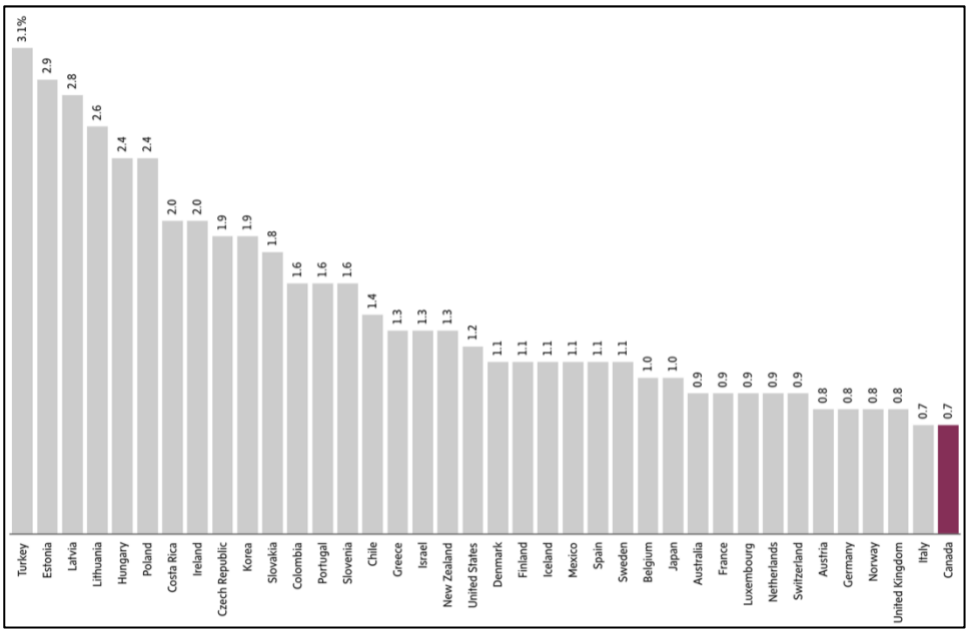
Intangible Capital Share of Total Capital Stock



Source: Statistics Canada

Apple, Amazon, Alphabet, Facebook, Microsoft total value is ~$6.6 trillion, with total tangible book value ~ 4%, Alibaba and Tencent in China are valued at ~$1.3 trillion, with total tangible book value ~3%.

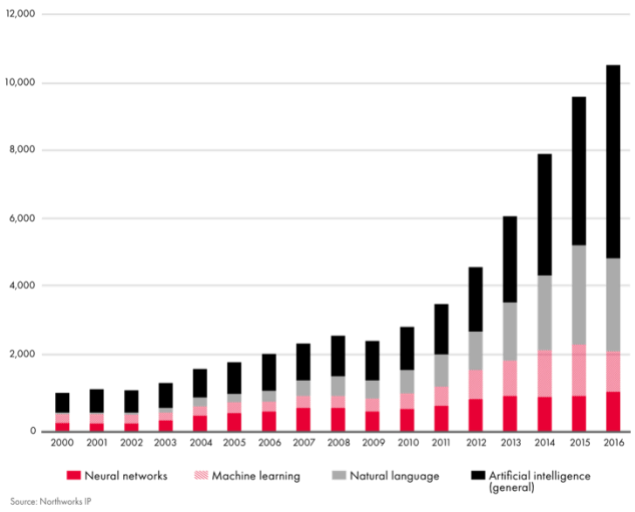
Figure 3. Canada to trail OECD in per-capita real GDP growth



Source: https://www.oecd.org/economy/growth/scenarios-for-the-world-economy-to-2060.htm

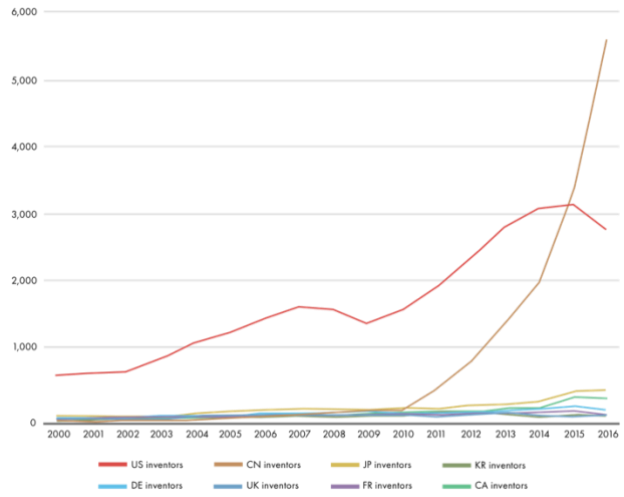
The OECD recently projected that Canada's economy will be "the worst performing advanced economy over 2020-2030 and the three decades after." Moreover, since 1976, Canada's productivity performance has been the worst of all OECD countries, resulting in real wages remaining stagnant ever since.

Figure 4. Patent Filing by Taxonomy



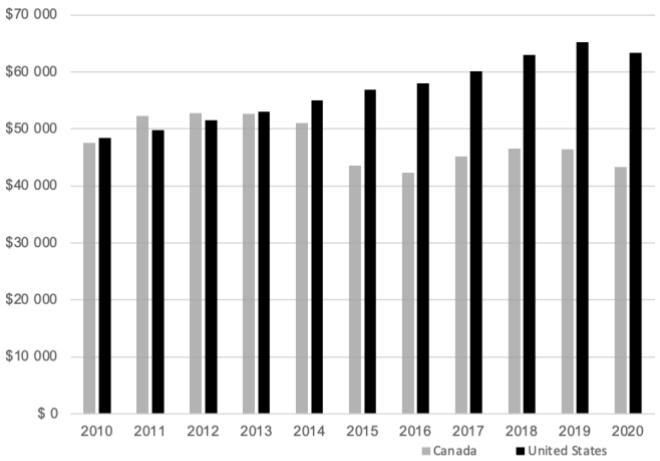
According to a recent WIPO report, Canada was the only jurisdiction 'to see a decrease' in the number of AI patents applied for between 2016-2018.

Figure 5. AI Related Patent Volume by Inventor Nationality



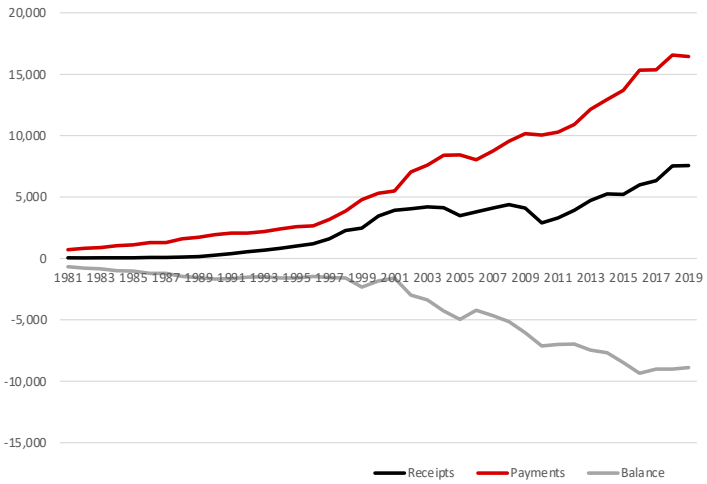
According to the China AI Development Report for 2018, China filed more than 30,000 public AI patents, an impressive tenfold jump in five years and about 2.5 times more than the United States, which it surpassed for the lead.

Figure 6. Canada's Declining GDP Per Capita
Compared to the US, 2010-2020 (USD)



Source: IMF

Figure 7. Canada's International IP Payments & Receipts
1981-2019, millions (CAD)



Source: Statistics Canada