Intelligence MEMOS

From: John Lester

To: Canadians Concerned About Innovation

Date: September 16, 2021

Re: **Canada's Support for R&D is Unbalanced. A Patent Box Would Help.**

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Election platforms for both major parties contain pledges to reform Canada's support system for research and development.

That is good news, because there is much to improve. Canada provides too much R&D support to small firms, not enough for large firms and could do better on commercialization.

Governments subsidize R&D because its benefits are not confined to the firm performing it. Some of the knowledge created inevitably leaks out or spills over to other firms. These knowledge spillovers allow firms to improve their products and services without performing the R&D themselves.

But because companies do not consider these spillover benefits when deciding how much to invest in R&D, a subsidy to encourage more R&D is the right policy response. The optimal amount of subsidy depends on, among other things, the size of these spillover effects. In Canada, there is a huge disconnect between the size of spillovers and subsidy rates.

All small firms performing R&D are eligible for federal and provincial scientific research and experimental development (SR&ED) tax credits that reduce their costs by 39 percent. In addition, 1,500 to 2,000 of these firms receive additional funding from the federal Industrial Research Assistance Program (IRAP) that raises their overall subsidy rate to almost 60 percent. As I have documented elsewhere, these lavish subsidies exceed by a wide margin the spillover benefits arising from the performance of R&D. In addition, since subsidies lower the hurdle rate for private investment, they allow R&D projects with less commercial potential to go ahead. Excessive subsidies therefore reduce the share of R&D-intensive products that are brought to market.

In contrast, the average combined federal-provincial effective tax credit for R&D performed by large firms is 19 percent, which is substantially lower than the spillover benefit generated by these firms. Rebalancing the SR&ED tax credit by reducing the rate for small firms and increasing it for large firms would therefore raise the net benefit. In a recent paper, I made the case for reducing the combined federal-provincial R&D subsidy rate to 20 percent for small firms and increasing it to 28 percent for large firms.

This rebalancing could be helped by shifting some of the support from the expenditure side – R&D subsidies – to the income side, by taxing income from the commercialization of R&D at a favourable rate through a patent or innovation box, a concept supported by other research, including work at the C.D. Howe Institute.

As discussed in a 2018 paper with Jacek Warda, a properly designed income based incentive will stimulate additional R&D, encourage its commercialization in Canada, and provide an incentive to book more of the commercialization income where it is earned. The key downside to income-based incentives is high administration and compliance costs.

There are three essential design elements for a successful innovation box:

- The income taxed at a favourable rate must be generated from R&D performed in Canada. In the absence of this linkage, patent boxes disproportionately affect the location of taxable income over the location of real activity.
- All income generated from R&D, not just patent income, must be taxed at the favourable rate. A broad definition of eligible income avoids tax-induced increases in patenting and patentable activity.
- R&D expenses incurred must be deductible at the regular tax rate. Requiring that all expenses be deducted at the incentive rate will eliminate the implicit subsidy for performing R&D.

If the federal government were to tax income from commercialization of R&D at 7.5 percent instead of the regular 15 percent rate , the combined federal-provincial tax rate would be about 19 percent. That is substantially lower than the comparable US rate, which is 23.8 percent when the special rate on foreign-derived intangible income is factored in.

Implementing an innovation box providing a tax preference of 7.5 percentage points would be equivalent to a 4-percentage point increase in the R&D investment tax credit rate for large firms. Since many small firms would value a subsidy available when R&D is being performed more than a subsidy payable when the R&D is commercialized, the implicit benefit for small firms would be less than 4 percentage points. An innovation box should be implemented without raising the overall subsidy rates above the recommended levels.

Rebalancing subsidy rates in this way would align them more closely with spillovers, raising the net benefit from government support for R&D. Part of the improvement would occur because the hurdle rate for investment by small firms would increase substantially, raising the quality of R&D performed. That would improve the prospects for commercialization, which would get a further boost for both small and large firms from the innovation box.

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