

The cost of performing R&D in Canada and the United States – Information Document

SPONSORING ORGANIZATION

The project is sponsored by Economic Research and Policy Analysis Branch of Industry Canada. Industry Canada is a department of the federal government that oversees a number of micro-economic policies affecting Canadian firms and consumers. In support of the department, the branch is engaged in economic research and providing expert advice on a wide range of micro-economic policy issues.

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DESCRIPTION OF THE PROJECT AND POLICY CONTEXT

A number of recent reports¹ have emphasized the importance of the low level of business innovation to explain the low productivity growth in Canada compared to other countries. Consequently, understanding the drivers of innovation is critical to design better policy to foster entrepreneurship and business innovation.

The goal of this project is to gather information on the cost of performing research and development (R&D) in Canada and the United States. Information on three measures will be collected: statutory R&D tax credit rates, B-index and marginal effective tax rates (METR).

Since R&D is an important input to the innovation process, the work performed under this project would allow the conduct of several research projects on R&D. For example, B-index and METR time series could be used to assess the effectiveness of R&D tax credits in increasing business R&D expenditures by estimating the price-tax elasticity of R&D.

BENEFITS FOR THE STUDENT

This project will be a very good introduction to the issue of estimating the impacts of R&D tax credit in Canada as measuring the cost of R&D is an important component of the empirical literature on R&D. The student will also benefit from the expertise developed at Industry Canada on analyzing innovation and business R&D in Canada through his/her work and discussion with his supervisor. There are few academic papers published on this topic in Canada and several have been published by ERPA economists. Finally, although the work will be directed by the supervisor, the student will be given as much freedom as

¹ See for example Competition Policy Review Panel, *Compete to Win – Final Report*, 2008 and the Expert Panel on Business Innovation, *Innovation and Business Strategy: Why Canada Falls Short*, Council of Canadian Academies (CCA), 2009.

possible to organize him/herself his/her work schedule. This is an important skill to develop to pursue graduate studies or work in any organization.

DELIVERABLES

As mentioned in the project proposal (in the annex) the work will be divided into three parts. Here is a list of the expected deliverables for each part. Details will be discussed with the student.

Part I

- An exhaustive table containing the information on statutory tax credit rates by jurisdiction and years considered, for example tax credit rates, corporate tax rate, etc.
- An electronic folder containing all the sources used to create the table.

Part II

- A 2 to 4 pages document detailing the B-index in Canada and the United States, for example assumptions and variables needed to build the index.
- A table with the B-index time series for the jurisdiction and years considered.
- If some B-index cannot be computed, a 2 pages document listing the missing information to complete the work on B-index.
- An electronic folder of all the sources used to create the table along with a copy of any other documents used.

Part III

- A 2 to 4 pages document detailing the METR in Canada.
- A table with the information collected to compute the METR for the jurisdictions and years considered and, if sufficient information is gathered, a table with the METR.
- If some METR cannot be computed, a 2 pages document listing the missing information to complete the work on METR.
- An electronic folder of all the sources used to create the table along with a copy of any other documents used.

REQUIREMENTS

Although the proposal is in English, the work and interaction with the supervising officer can be in either official language. However, ability to read English documents is required. Knowledge of econometric techniques is not required for this project. Computation can be performed using Microsoft Excel.

ANNEX: The cost of performing R&D in Canada and the United States – Proposal

GENERAL DESCRIPTION

The goal of this project is to gather information on the cost of performing research and development (R&D) in Canada and the United States. Three measures of the cost of R&D are considered: the statutory R&D tax credit rates, the B-index and the marginal effective tax rate (METR). Since each of this measure is based on fiscal parameters, it varies across jurisdictions (federal and province/state level) and time.

The output of this project will consists of three sets of information, one for each measure. More precisely, for each jurisdiction considered, a time series containing the annual cost of performing R&D should be produced. This will also be complemented by a review of what is known for Canada about these measures. Definition (formula) for the different measures and a list of the jurisdictions and years for which the information has to be sought will be provided to the student, as well as some useful material.

DETAILS

This section gives further details on the kind of work the student is expected to complete.

PART I – THE STATUTORY R&D TAX CREDIT RATE (15 hours)

This part of the work will consist in updating a paper² produced by the Economic Research and Policy Analysis branch (ERPA) in 2010 with the statutory R&D tax credit rates for various jurisdictions and up to 2011. All the information used to produce the ERPA paper will be shared with the student.

PART II –THE B-INDEX (40 hours)

The second part should consist in the bulk of the work. We expect the student to produce a short review detailing the B-index in Canada and the United States. Some papers will be provided to guide the student in the right direction. Then, the student will have to compute the B-index for a range of jurisdictions and years.

PART III –THE METR (20 hours)

For the last part, it is expected that the student first conduct a review of what is known about METR in Canada similar to what would be done for the B-index. As this measure is harder to compute than the B-index, the work will mainly consist in gathering the information required to compute METR and identify the missing information. If available information and time is sufficient, the student should begin to compute METR for Canada.

FINAL NOTE

We are aware that some objectives of the project, for example computing the METR, will be more difficult to achieve than other. This will be taken into consideration in the end of the term appraisal.

² Brouillette, Dany (2010). A Descriptive Note on R&D Tax Credits in Canada and the United States, mimeo, Ottawa.