

**Comments  
on  
Effects of Policy Incentives and the Geography of Exports  
to Foster Innovation in Canadian Firms**

**Ram Acharya**

**Department of Innovation, Science and Economic Development,  
Canada**

## **Objectives**

- **To analyze the impact of public policy initiatives on firms' innovation**
- **To analyze the interplay of innovation with the geography of exports**
  - Both objectives are addressed by differentiating manufacturing and service sectors

## **Data**

- **Canadian Survey of Innovation and Business Strategy (SIBS) 2009 and 2012**
  - Both surveys have similar questions (but not the same firms except a few?).
- **Number of surveyed firms: 6,233 (in 2009) and 7,818 (in 2012)**
- **Regression sample: 4,024 (2009) and 4,285 (2012)**

## Estimating Equations

$$\begin{aligned}
 \text{Innovation} = & \underbrace{\sum_{s=1}^3 \beta_s \text{Size}}_{\text{Size}} + \underbrace{\beta_{HC} \text{CAN} + \beta_{HU} \text{USEU} + \beta_S \text{Subsidiary}}_{\text{HQ}} \\
 & + \beta_C \text{Competition} + \underbrace{\beta_{OG} \text{Offshore} + \beta_{OS} \text{Offshore}}_{\text{Offshoring}} \\
 & + \underbrace{\beta_{p1} \text{Grants} + \beta_{p2} \text{TaxCrddit} + \beta_{p3} \text{IRAP} + \beta_{p4} \text{XIncentive}}_{\text{Policy variables}}
 \end{aligned}$$

$$\begin{aligned}
 & \text{Log} \left( \frac{\text{InnovationExpenditure}}{\text{Emp}} \right) \\
 = & \underbrace{\beta_C \text{CAN} + \beta_P \text{Prov} + \beta_L \text{Local}}_{\text{Domestic Markets}} + \underbrace{\beta_{US} \text{US} + \beta_{EU} \text{EU} + \beta_A \text{ASIA}}_{\text{Foreign Markets}} \\
 & + \underbrace{\beta_{p1} \text{Grants} + \beta_{p2} \text{TaxCrddit} + \beta_{p3} \text{IRAP} + \beta_{p4} \text{XIncentive}}_{\text{Policy variables}}
 \end{aligned}$$

## Results

- **These two regressions are run for**
  - all sample
  - manufacturing and
  - services separately and
  - also for 2009 and 2012 data separately
- **3 sectors × 2 equations × 2 years = 12 regressions.**
- **Results: Nothing that clearly stands out; depend on which year, which sector and so on!**

## Comments

- **Data limitation: For research on deeper issues**
  - Cross section / mostly binary and qualitative responses
  - Using two years of data does not help, rather weakens the paper
  - Focus on recent year (2012) and broaden the questions or the robustness of the data
- **Data broadening: Linking SIBS with other variables**
- **Content: Message**
  - Focus: first 14 pages of discussion can be substantially cut
  - long discussion of government role and innovation across different countries
  - literature quoted too frequently and without any common thread

## Comments

- **Estimation:**

- When it comes to the core, the paper ends too quick (rationale of variables, reference for dummy, what does the coefficients mean etc.)
- overplays the difference between manufacturing and services
- overplays with dummies (why so many of them in one go, what happens if the same firm is have unity in few dummies?)
- Why not run regression on just government policy variables first then interact other dummy variables with those that are significant, one at a time
- same with geography: start with domestic vs. exporting firms (one dummy) extend logically

- **How does it contribute to the literature?**

**Thank you!**