Who Pays for Funding Cuts?  
-- The Effect of Provincial Funding on Tuition Fees

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Funding  
> budget reductions.

Motivation

Theory

Resource dependence theory (RDT)

Reliance on a resource provided by an external party would push institutions under the possible control of the provider depending on the importance of the resource.

Common Resolution: Resource diversification (e.g., seeking alternative resources)

PSEIs will always find ways to lift the pressure of provincial funding income by seeking other types of resources via two ways:

1. attracting more students who are paying higher tuition fees
2. raising tuition at all levels

Due to the lack of enrollments data:

QUESTION: What is the marginal effect of the decreasing provincial government funding on Canadian public PSEIs on their domestic and international tuition levels?

Chen & Parnes Theory

Left-wing parties: promote community participation and favor public spending increases. Right-wing parties: rely more on market mechanisms and aim at education privatization and budget reductions.

Contribution

- Focus on the institutional level data, rather than provincial level
- Look into the Policy Effect of the provincial tuition freeze
- Adopt Political ideologies as instruments
- Canadian Context
- Enrollment scheme: domestic and international
- Tuition levels dependent on the 2 types of students (e.g., Quebec, and Nova Scotia)
- Categorization by the institutions’ research-intensity
- Tuition level: Average of Upper and Lower tuition fees across disciplines, and then weighted again by the number of disciplines.

Data

- Participation in the domestic and international tuition levels.
- Main Sources of PSEI

Definition

- Public Post-Secondary Education Institutions (PSEIs)
- Enrollment level: the number of students enrolled in the different levels of government (provincial, district).
- Main Sources of PSEI income:
  - Provincial government: mainly through the student loan program.
  - Research intensity: in Canada, the different provinces have their own student loan programs.
- Categorization is based on the research activity of the universities.
- Institutions with a large number of research dollars are classified as more research-intensive institutions.
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Summary Statistics

<table>
<thead>
<tr>
<th>Source</th>
<th>Percent of Domestic Students</th>
<th>Percent of International Students</th>
<th>% Change in Tuition Fees 2009-2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>65.2%</td>
<td>53.8%</td>
<td>-8.0%</td>
</tr>
<tr>
<td>International</td>
<td>23.8%</td>
<td>38.2%</td>
<td>-4.0%</td>
</tr>
</tbody>
</table>

Key Findings

A 10% cut of real appropriations granted to an institution leads to a decrease of $150,000 in the domestic tuition levels for 2.37% of all PSEIs, and in approximately 10% of the most intensive flagship universities.

A 10% decline in real funding brings about a 1.5% decrease in domestic students’ tuition fees and a 3.5% decrease in flagship universities’ international tuition fees.

IV Results

| Dependent Variable:  
<table>
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<th>(in Halifax average domestic tuition)</th>
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<td>PSEIs that had a 10% cut of real appropriations were expected to have a tuition freeze in their domestic level.</td>
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IV First Stage

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Theory

IV Results

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Methodology

OLS Models

\[
\text{Dependent Variable} = \beta_0 + \beta_1 \text{Domestic Funding Cut} + \beta_2 \text{Provincial Funding Cut} + \text{controls} + \mu
\]

- \(\beta_1\): coefficient of the domestic funding cut
- \(\beta_2\): coefficient of the provincial funding cut
- Controls include: 
  - Institutional fixed effects
  - Number of PSEIs
  - Number of domestic and international student enrollment

| Panel B: Dependent Variable:  
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Robustness Check

- Clustering on the other levels:
  - dividing provinces into regions by economic volumes
  - Using the 2007 unrevved tuition data

- Adding the long list of provincial controls, such as:
  - More controls for the provincial level: 
    - More controls for the provincial level: 
      - the size of the provincial government, the total tax revenue, the total number of provincial employees, the share of the provincial government in the province’s GDP.

- The Effect of Provincial Funding on Tuition Fees

Implication

- This research helps to:
  - Understand how institutions will adjust their tuition levels when there is a real funding cut.
  - Assess the probability of tuition levels.
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For Provincial Governments:

- Common knowledge: Governments primarily serve the interests of the residents.
- An alternative to higher education students adopt government support policy, and the funding cut will likely lead to a reduction in the number of domestic students.
- The government will likely reduce the number of students who are paying higher tuition fees.
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International Student Side:

- The consistently increasing international tuition fees is in a consequence of the funding cuts.
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Future Paths

- Explore how PSEIs will respond to a real funding cut across disciplines.
- tomato of tuition with possible higher returns after graduation naturalistic factor that can influence the level of student satisfaction.
- Length of job searching period
- Each discipline has a lower and upper bound of tuition level
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- Different types of tuition policies
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