

Understanding the Local Bias in Procurement

Evidence from National and Subnational governments

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Introduction

Big picture motivation

- Governments are big producers of final goods and services
 - Output = $G \approx 20\text{-}40\%$ GDP
- They buy intermediate inputs from private firms
 - Public procurement $\approx 10\text{-}20\%$ GDP

Q1: What factors determine government choices of inputs?

Q2: How do these choices affect governments' efficiency as final producers?

Introduction

This paper

Q1: What factors determine government choices of inputs?

→ Home bias is an important factor

Q2: How do these choices affect governments' productivity as final producers?

→ Home bias makes governments significantly less productive

Introduction

High geographical concentration of government purchases

- Government purchases are **highly geographically concentrated** in the EU
 - Regionally: > 50% awarded to local establishments
 - Nationally: > 98% awarded to national establishments
- Two potential explanations
 1. **Bilateral frictions** to procure goods and services
 - Ex: transport costs, information frictions, path dependence, etc.
 2. **Governments' home bias**
 - Ex: "Buy American Act" in US, "Buy Ontario" (BOBI) act in Canada

The case of Europe

- This phenomenon is particularly intriguing in the case of Europe
 - Public procurement market supposedly perfectly integrated
 - However, improving access to procurement markets **central in EC's agenda**
 - *"Increases government chances of getting better value for money and makes the use of public resources more efficient"*

Introduction

The role of governments in explaining the lack of market integration

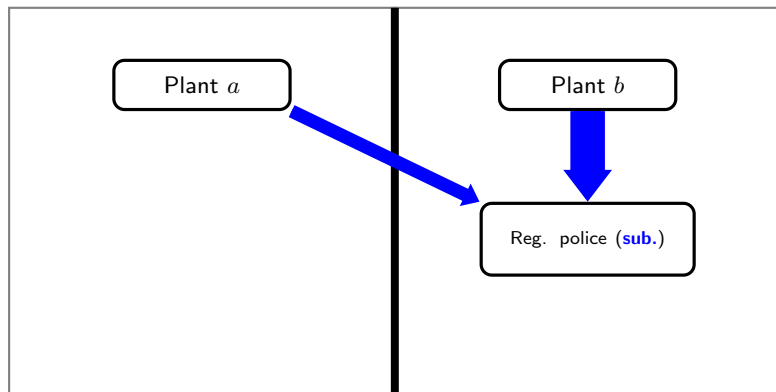
- Two strategies to identify governments' home bias
 1. Exploit co-existence of different government agencies in the same location
 - **Hypothesis:** "Home" has a different meaning for different government types
 - **Subnational governments** discriminate against establishments **from other regions**
 - **National governments** discriminate against establishments **from other countries**
 2. Natural experiment in France
 - Consolidation of regions in 2016: from 21 to 13
- ⇒ **Key in the two strategies:** control for *origin-destination* level confounding factors

Introduction

Strategy # 1

REGION *A*

REGION *B*



Subnat non-local purchases

$$\overbrace{X_{AB}^s(a)}$$

$$\overbrace{X_{BB}^s(b)}$$

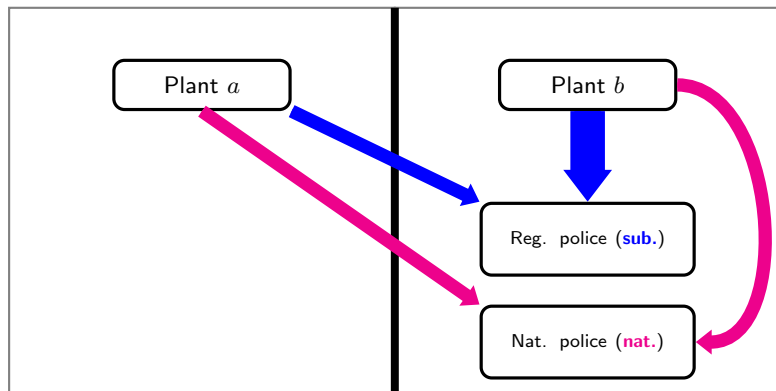
Subnat local purchases

Introduction

Strategy # 1

REGION A

REGION B



Subnat non-local purchases

$$\overbrace{X_{AB}^s(a)}$$

$$\overbrace{X_{BB}^s(b)}$$

Subnat local purchases

Nat non-local purchases

$$\overbrace{X_{AB}^n(a)}$$

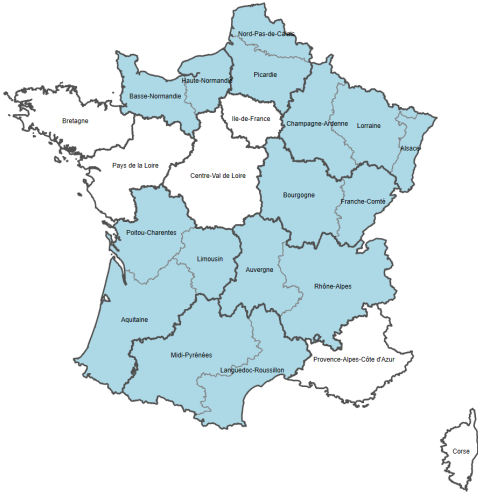
$$\overbrace{X_{BB}^s(b)}$$

Nat local purchases

vs.

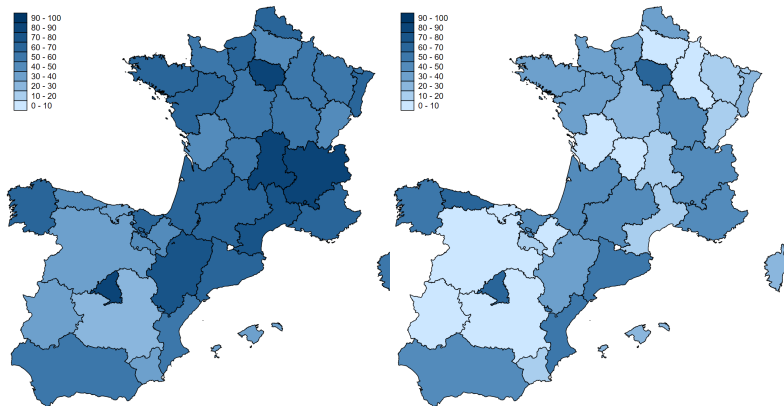
Introduction

Strategy # 2



Notes: This figure shows the French distribution of regions before and after the integration 2016 integration reform. Regions in blue refer to regions that were affected by the integration process. Thin lines in grey represent the regional borders before the reform. Thick lines in black represent the regional borders after the reform.

Local expenditure shares in France and Spain



A) Sub-national governments (56%)

B) National governments (29%)

A naive look at the data

A simple decomposition

- **Local share:** Share of expenditure in region r on establishments from r

$$\lambda_{rr} = \frac{X_{rr}}{X_r} = \frac{X_{rr}^{nat} + X_{rr}^{sub}}{X_r^{nat} + X_r^{sub}}$$

- Simple manipulations allow to decompose it into 4 different components

$$\lambda_{rr} = \underbrace{0.53}_{\left(\frac{X_r^{nat}}{X_r^{nat} + X_r^{sub}} \right)} \underbrace{0.13}_{\left(\frac{X_{rr}^{nat}}{X_r^{nat}} \right)} \underbrace{0.29}_{\text{local sh nat. } (\lambda_{rr}^{nat})} + \underbrace{0.87}_{\left(\frac{X_r^{sub}}{X_r^{sub} + X_r^{sub}} \right)} \underbrace{0.56}_{\left(\frac{X_{rr}^{sub}}{X_r^{sub}} \right)} \underbrace{\text{local sh sub-nat. } (\lambda_{rr}^{sub})}$$

- Naive counterfactual: set $\lambda_{rr}^{sub} = \lambda_{rr}^{nat}$ and re-compute λ_{rr}

– Aggregate local share would decrease to $\hat{\lambda}_{rr} = 0.29$ ($\downarrow 45\%$)

by sector

Strategy # 1

Regressions

Intensive margin

- sales by establishment j (in o) of product k to government type g in region d

$$\log X_{j,od}^{k,g} = \beta \times \underbrace{\mathbb{1}(o \neq d)}_{\text{non-local}} \times \underbrace{\mathbb{1}(g = s)}_{\text{sub. gov.}} + \text{FE}_j + \text{FE}_d^g + \text{FE}^{k,g} + \mathbf{FE}_{od} + \epsilon_{j,od}^{k,g}$$

Extensive margin

- share of establishments located in o that sell product k in d to govt type g

$$S_{od}^{k,g} = \exp\left[\gamma \times \underbrace{\mathbb{1}(o \neq d)}_{\text{non-local}} \times \underbrace{\mathbb{1}(g = s)}_{\text{sub. gov.}} + \text{FE}_d^g + \mathbf{FE}_{od} + \text{FE}^{gk} \right] u_{od}^{k,g}$$

Strategy # 1

Regressions: Baseline results

Table: Estimating Governments' Home bias

	Intensive margin	Extensive margin
Dependent variable:	$\log(\log X_{j,od}^{k,g})$	$S_{od}^{k,g}$
	(1)	(2)
non-local=1 × sub.gov=1	-0.259*** (0.053)	-0.582*** (0.067)
Establishment FE	Yes	N/A
Origin × Dest. FE	Yes	Yes
Gov type × Dest. FE	Yes	Yes
Gov type × Sector FE	Yes	Yes
Observations	105,724	156,924
R-squared	0.563	0.431
Estimator	OLS	PPML

- **IM:** Non-local estab. (relative to local) **sell** $\approx 23\%$ **less** to subnational than to national
- **EM:** Non-local estab. (relative to local) **participate** $\approx 44\%$ **less** in subnational than in national

Strategy # 1: Our reduced form estimates through a simple model

A multi-region version of Melitz

- Use a simple trade model to interpret our estimates
- **Result:** Subnational governments, relative to the national ones:
 - Impose an **extra variable cost of 11%** no non-local establishments
 - Impose an **extra entry cost of 12%** no non-local establishments
- How reasonable are these values?
 - Compare them with actual “buy local” policies in US states
 - Ex: 8% extra cost imposed by South Carolina to all other states
 - Ex: 5% extra cost imposed by Nevada to all other states

actual law

distribution across the US

matrix

Strategy # 1: Quantify the cost of home bias

Simple counterfactual

- **What if subnational governments behaved as their national counterparts?**

Market integration:

→ The local expenditure share by subnational governments ↓ by ≈ 21%

Governments' efficiency:

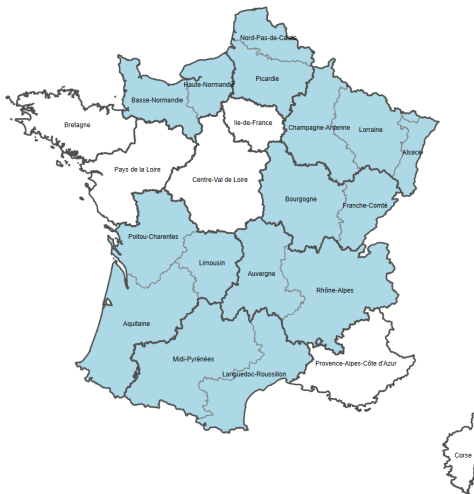
→ The price index of subnational governments ↓ by ≈ 6%

→ Under government expenditure fixed, i.e., $P^s Y^s$ unchanged:

$$Y^s \uparrow \text{ by } \approx 6\% \quad !!!$$

Strategy # 2

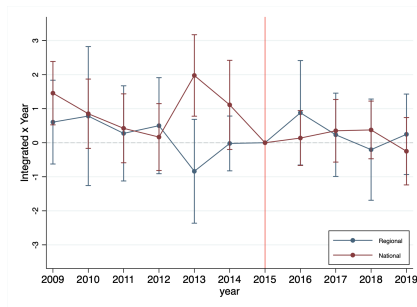
Context



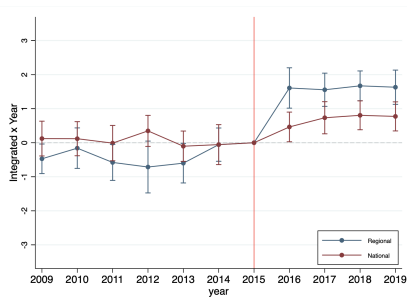
Notes: This figure shows the French distribution of regions before and after the integration 2016 integration reform. Regions in blue refer to regions that were affected by the integration process. Thin lines in grey represent the regional borders before the reform. Thick lines in black represent the regional borders after the reform.

Strategy # 2

Regressions: baseline results



(a) Intensive margin



(b) Extensive margin

Notes: This figure reports the effect of the French regional integration separately for the *intensive margin* (panel A) and the *extensive margin* (panel B). In particular, it shows the evolution of the estimated β 's and γ 's.

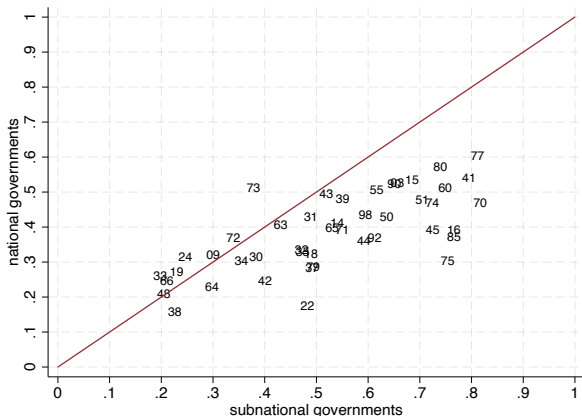
- Integration in procurement occurs through the extensive margin only

Conclusions

- Governments' HB promising factor in explaining
 1. Procurement market integration in the EU
 2. Governments' (in) efficiency in producing public goods
 3. Spatial distribution of economic activity
- However, many open questions:
 1. Efficiency considerations at the local vs. EU level, e.g., spatial misallocation
 2. What about the private sector? Probably the best benchmark
 3. External validity? Currently working on building a dataset for US states

A naive look at the data

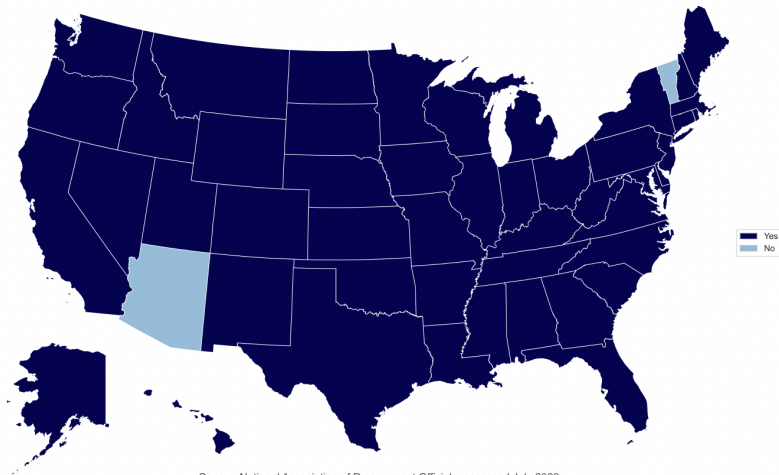
Local shares by sector [back](#)



- Examples:
 - “Laboratory, optical and precision equipments (38)”
 - “Software package and information systems (48)”
 - “Food, Beverage, Tobacco and related products (15)”
 - “Education and Training Services (80)”

State-Level Protectionism

Does The State Have An In-State Preference Law?



Source: National Association of Procurement Officials, accessed July 2023
<https://www.naspo.org/research-innovation/state-preference-repository/>

State-Level Protectionism

Explicit Preference Laws

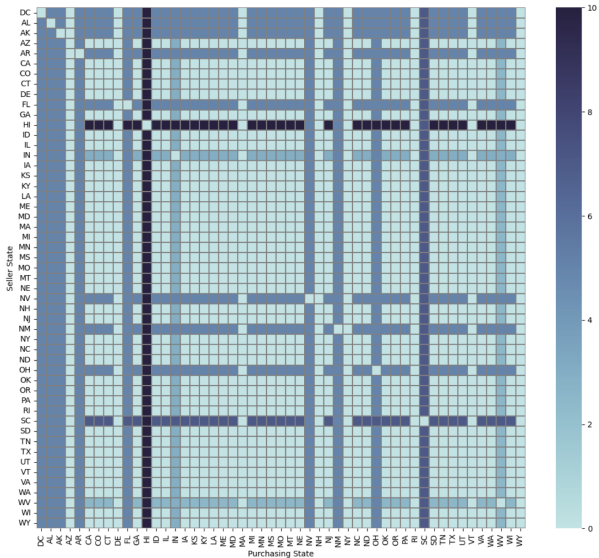
- Example home preference law:

NRS 333.3354 – Introduced 2017

1. If a business that qualifies as a **Nevada-based business** submits a:
 - a) Bid to furnish **commodities** that was solicited pursuant to NRS 333.300, the bid shall be deemed to be **5 percent lower than the bid actually submitted**;
 - b) Proposal to contract for **services**, the score assigned to the proposal pursuant to NRS 333.335 shall be deemed to be **5 percent higher than the score actually awarded**.
- Laws covering limited sectors follow a similar design but specify a specific good (e.g. coal) or a sector (e.g. forestry products)

back

Look at actual policies in US States' Procurement



Procurement Data

Our sample (all EU countries potentially)

- Current sample: France and Spain
 - **Sellers**: 190,000 plants (firm*location): name, location (region)
 - **Buyers**: 10,000 government agencies: name, location (region)
 - **Contract information**: Good/service (CPV code), value, date
 - **Time period**: 2009-2019
- Data work: Classify “buyers” into different gov. levels
 - **Local (18.6%), Provincial (16.1%), Regional (23.6%), National (41.7%)**
- Aggregation: 2 government levels:
 - **Subnational governments** (87% of total expenditure)
 - **National governments** (13% of total expenditure)
 - Similar sectorial composition (goods \approx 17%, services \approx 53%, construction \approx 30%)