# Tax Mimicking in Local Business Taxation

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# Large Theoretical Literature on Fiscal Interdependence of Local Governments

Depending on specific assumptions

- Nature of the central planner
- Tax rates residuals or choice variables
- ...

Different interaction processes

- Tax competition
- Yardstick competition
- Expenditure competition

# Questions to Validity of Spatial Lag Regressions & Existence of Tax Mimicking

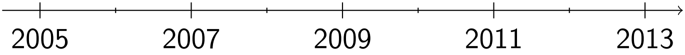
Spatial Lag Models vs. Quasi-Experimental Methods

- Lyytikainen (2012), Isen (2014), Baskaran(2014)
- No tax mimicking $\rightarrow$ No strategic interactions

But ...

- Agrawal (2015), Eugster & Parchet (2014)
- Tax mimicking $\rightarrow$ Tax competition

# Local Reform 2007
# Introduces New Local Business Tax




Local Business Tax

- 2007 reform to increase tax autonomy
- Tax base: Taxable business profits
- Tax rate: [0%, 1.5%]

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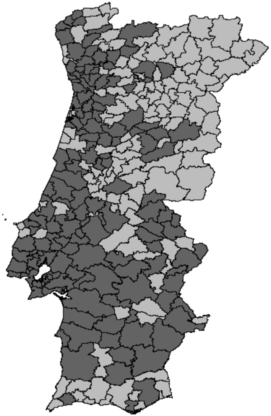
# Local Business Tax Substitutes
# Municipal Business Surcharge

Municipal Business Surcharge

- Base: Payable corporate tax
- Rate: [0%, 10%]
- Conditional extra revenue
- 161/278 municipalities



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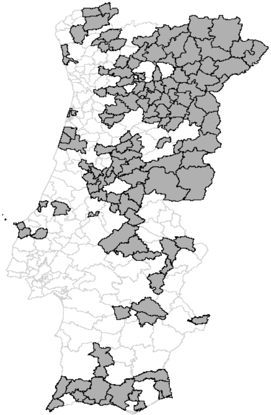


# Identification Strategy Relies on Exogenous Heterogeneity in Treatment Intensity

Exogenous Geographic Location

- Exposure to local business taxation
  - Neighbors $\rightarrow$ Treatment
  - Non-neighbors $\rightarrow$ Control

Different Definitions of Neighbor

- Contiguous border
- Within-district contiguous border
- Fixed critical distance

# Are More Exposed Municipalities More Likely to Levy the Local Business Tax?

Difference-in-differences methodology

$$Y_{it} = \gamma_i + \delta \left( N_i \cdot d_t \right) + Z'_{it}\beta + \gamma_{st} + \epsilon_{it} \tag{1}$$

- $N_i$ - treatment assignment
- $d_t$ - post-treatment indicator

# Internal Validity is Based on Means Comparison across Groups

Internal Validity

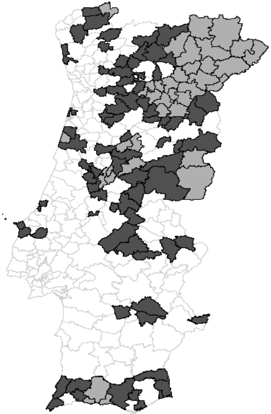
- Common trends assumption
- Placebo tests

Alternative:

- Means & balance tests
  - Socio-economic variables
  - Political environment

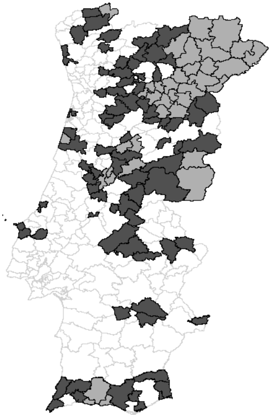
# Tax Mimicking

# Within-District Neighbors - Short-run



| | Prob. | Tax Rate | Tax Rev. |
|---|---|---|---|
| | I | II | III |
| Neighbors | 0.137 | 0.201 | 0.283 |
| | (0.057) | (0.083) | (0.133) |
| | [0.016] | [0.016] | [0.034] |
| $\neq$ District | 0.122 | 0.166 | 0.193 |
| | (0.060) | (0.077) | (0.105) |
| | [0.043] | [0.031] | [0.065] |
| District x year | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes |
| Sample period | 2005-10 | 2005-10 | 2005-10 |
| Observations | 702 | 702 | 702 |
| Municipalities | 117 | 117 | 117 |

# Within-District Neighbors - Long-run



| | Prob. | Tax Rate | Tax Rev. |
|---|---|---|---|
| | I | II | III |
| Neighbors | 0.128 | 0.190 | 0.274 |
| | (0.063) | (0.091) | (0.145) |
| | [0.040] | [0.036] | [0.059] |
| $\neq$ District | 0.150 | 0.205 | 0.192 |
| | (0.088) | (0.117) | (0.143) |
| | [0.088] | [0.079] | [0.180] |
| District x year | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes |
| Sample period | 2005-13 | 2005-13 | 2005-13 |
| Observations | 1053 | 1053 | 1053 |
| Municipalities | 117 | 117 | 117 |

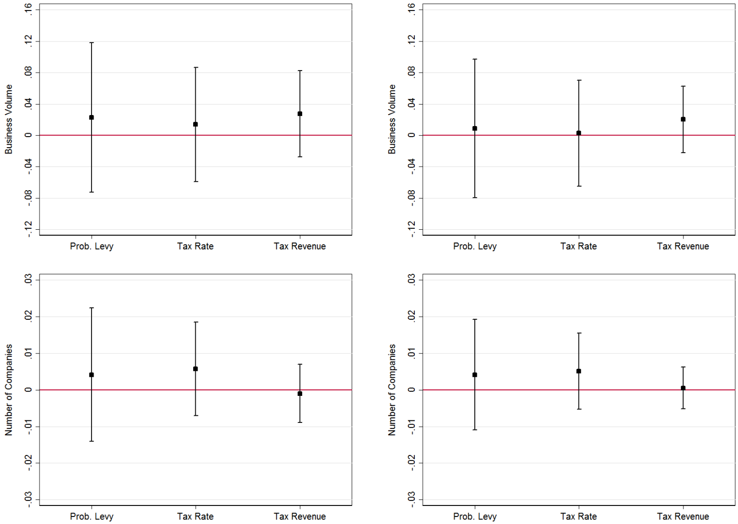
# Social Learning?

# No Evidence of Neighbor-by-Neighbor Contagion

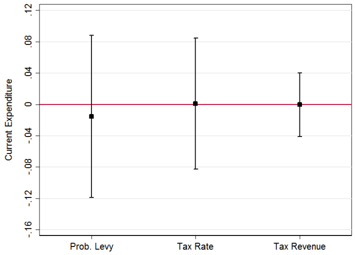
| | Prob. | Tax Rate | Tax Rev. |
|---|---|---|---|
| | I | II | III |
| Neighbors | 0.120 | 0.175 | 0.253 |
| | (0.054) | (0.079) | (0.134) |
| | [0.026] | [0.027] | [0.060] |
| 2009 | -0.111 | -0.157 | -0.063 |
| | (0.059) | (0.084) | (0.125) |
| | [0.060] | [0.062] | [0.613] |
| 2010 | 0.217 | 0.285 | 0.066 |
| | (0.121) | (0.132) | (0.172) |
| | [0.072] | [0.031] | [0.700] |
| 2011 | -0.087 | -0.131 | -0.168 |
| | (0.096) | (0.142) | (0.278) |
| | [0.367] | [0.354] | [0.545] |
| 2012 | 0.006 | 0.013 | 0.072 |
| | (0.188) | (0.281) | (0.490) |
| | [0.974] | [0.964] | [0.883] |
| 2013 | -0.099 | -0.148 | -0.055 |
| | (0.171) | (0.257) | (0.431) |
| | [0.563] | [0.565] | [0.899] |
| District x Year | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes |
| Observations | 1053 | 1053 | 1053 |
| Municipalities | 117 | 117 | 117 |

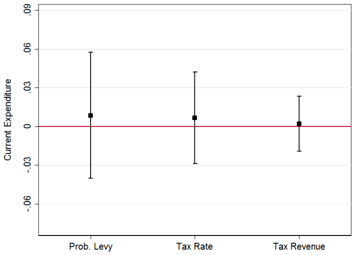
# Tax or Expenditure Competition?

# No Evidence of Tax Competition ...



# ...Nor of Expenditure Competition



# Yardstick Competition?

- Who levies the local business tax?
- What is the impact of the tax on reelection?

# Reliance on Local Business Tax Increases in the Incumbent's Victory Margin

| | Prob. | Tax Rate | Tax Rev. |
|---|---|---|---|
| | I | II | III |
| Neighbors x Margin | -0.154 | -0.226 | -0.312 |
| | (0.068) | (0.088) | (0.143) |
| | [0.024] | [0.010] | [0.029] |
| Neighbors | 0.162 | 0.238 | 0.324 |
| | (0.062) | (0.090) | (0.141) |
| | [0.009] | [0.008] | [0.021] |
| Margin | 0.073 | 0.113 | 0.227 |
| | (0.064) | (0.085) | (0.156) |
| | [0.255] | [0.184] | [0.145] |
| District x year | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes |
| Vote margin | 5 | 5 | 5 |
| Observations | 1053 | 1053 | 1053 |
| Municipalities | 117 | 117 | 117 |

# No Significant Impact of Business Tax on Reelection Probability

| | Prob. | | Tax Rate | | Tax Revenue | |
|---|---|---|---|---|---|---|
| | I | II | III | IV | V | VI |
| Reelection | -0.025 | 0.137 | 0.004 | 0.106 | -0.011 | 0.073 |
| | (0.167) | (0.092) | (0.115) | (0.066) | (0.069) | (0.041) |
| | [0.879] | [0.136] | [0.975] | [0.108] | [0.876] | [0.075] |
| District x Year | Yes | Yes | Yes | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Sample Period | 2005-10 | 2005-13 | 2005-10 | 2005-13 | 2005-10 | 2005-13 |
| Observations | 234 | 351 | 234 | 351 | 234 | 351 |
| Municipalities | 117 | 117 | 117 | 117 | 117 | 117 |

# Yardstick Competition as a Short-term Phenomenon

- Evidence of tax mimicking
- Dissipates in the long-run
- Levied by popular mayors
- No impact on reelection

Contributes to literature

- Tax mimicking (Yardstick competition)
- Yardstick competition & information
- Voting behavior

# Thank you!