

# Audit publicity and tax compliance: a quasi-natural experiment

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- ▶ Decision to evade influenced by several factors:
  - ▶ Parameters of tax system
    - ▶ penalty and audit probability
    - ▶ tax rate
  - ▶ Perceived audit probability and proportion of tax evaders
    - ▶ administrator-to-taxpayer communications
    - ▶ taxpayer-to-taxpayer communications
    - ▶ media reports (...this paper!)

# Research Question

- ▶ What effect, if any, does audit publicity have on VAT compliance?
- ▶ Empirical strategy
  - ▶ Exploit audit blitz in two Italian cities.
  - ▶ *Sharp* and *explicit* difference in publicity
    - ▶ Genua: “*private*” blitz –no media coverage
    - ▶ Milan: “*public*” blitz –with media coverage
  - ▶ Difference in Difference design at sectoral level
- ▶ Findings
  - ▶ Publicity increased VAT payments in Milian relative to Genua
    - ▶ effect short lived
    - ▶ no evidence of an effect 3 months after the Blitz

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# Why would publicity affect compliance?

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- ▶ Perceived probability of audits:
  - ▶ if the blitz is interpreted as greater investments to fight tax evasion, or because of salience of audits
  - ▶ if taxpayers take into account the budget constraints of the Revenue Agency
- ▶ Tax morale:
  - ▶ information about the share of non-compliant taxpayers and the amount of evasion

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# What is a blitz?

- ▶ Targeted and unannounced audits by revenue agency (*Agenzia delle Entrate*) and police force (*Guardia di Finanza*)
- ▶ Target few dozens to a couple of hundreds of economic activities
  - 1800 economic activities inspected during blitzes in first half of 2012
- ▶ Usually “*private*” (such as the one in Genoa)
  - only affected shop sellers aware of the blitz
- ▶ Two “*public*”: Cortina (Dec. 2011); Milan (Jan. 2012)
  - every shop seller in the city ended up being aware.

# What is a blitz?

## ▶ **Milan blitz – Public**

- ▶ Sat.28 night-Sun.29 morning Jan. 2012
- ▶ compliance of sales reports (regular release of receipts)
- ▶ 350 businesses
- ▶ bars, discotheques, restaurants, clothes shops

## ▶ **Genoa blitz – Private**

- ▶ same sectors as in Milan
- ▶ 6 Jan. 2012, all day (same month as in Milan)
- ▶ compliance on sales reports (as in Milan)
- ▶ propensity to evade similar to Milan



# Evidence of publicity

Table: Media coverage (number of articles) of the two blitzes

Blitz	Google News	Newspapers I	Newspapers II
Milan	326	35	19
Genoa	40	9	6

The Google News results are as of 26th of November 2015, selecting the category News, the date of the blitz and using “blitz + evasione+city” as search criterion. Newspapers I: “*Eco della Stampa*”, Newspapers II: *La Repubblica* and *Il Corriere della Sera*.

+ Google Trends (“*evasione*”, Italy, Jan.2012): peak on 29 Jan. 2012.

- ▶ Confidential database provided by *Agenzia delle Entrate*:
  - ▶ monthly VAT payments (= declared difference between VAT collected on sales and VAT paid on purchases)
  - ▶ aggregated at the sector level for each city-month
  - ▶ 18 B2C sectors (4 involved in the blitzes)
  - ▶ Jan. 2009 - Nov. 2013
  - ▶ number of VAT-taxpayers by city-month-sector (accounts for difference in size and changes in population of VAT payers)
- ▶ ISTAT: city-specific monthly price index
- ▶ **Calculate VAT payment per taxpayer**: 2124 obs (59 months, 2 cities, 18 sectors)



# Identification strategy

1. Define  $\delta_{m,y,s} = \log(M_{m,y,s}) - \log(G_{m,y,s})$

2. For each sector, regress (using OLS):

$$\delta_{y,m,s} = \sum_{y=2010}^{2014} v_y \xi_y + \sum_{m=1}^{12} \mu_m \gamma_m + \epsilon_{m,y,s}$$

[ $v_y, \gamma_m$ : year and month FE, to control for fiscal deadlines and macro trend]

3. Mann-Whitney test on pooled  $\epsilon_{y,m,s}$  from the 18 sectors:

**H0**: values in set  $\mathcal{B} = \{\epsilon_{y,m,s} | (y, m) = (2012, 2)\}$  distributed like values in  $\mathcal{C} = \{\epsilon_{y,m,s} | (y, m) \neq (2012, 2)\}$

**H1**: values in  $\mathcal{B}$  are larger

[residuals treated as independent innovation: Pearson correlations not different from 0]

- ▶ Reject  $H_0$  ( $p = 0.015$ )  $\Rightarrow$  Publicity affects compliance
  - ▶ VAT payments in Milan  $>$  VAT payment Genua in the month after the blitz
- ▶ Magnitude of the effect:
  - ▶ **8m €: extra VAT payment in Mi**
- ▶ Short term effect
  - ▶ 3.6m € ( $p = 0.081$ ) in March after Blitz
  - ▶ no statistically significant effect in subsequent periods: (but hidden by confounding factors?)

# Robustness

- ▶ Rerun the MW test by removing one sector at a time (always  $p < 0.05$ )
- ▶ Drop the four sectors involved in the blitzes ( $p = 0.030$ )  
⇒ effect does not depend on direct involvement
- ▶ Separate MW tests on each sector. P-values aggregated via Fischer method ( $p = 0.0027$ )
- ▶ Include in  $\mathcal{C}$  (control period) only residuals for months before the blitzes ( $p = 0.019$ )
- ▶ Placebo for Feb. of other years (2009, 2010, 2011, 2013): not significant.
- ▶ Placebo for all months:

# Conclusions

- ▶ What we find?
  - ▶ Publicity of Italian audit blitz affects VAT compliance
  - ▶ Effect appears to be short lived
- ▶ What are the implications?
  - ▶ Suggests publicizing all future blitzes if cost of publicity lower than additional revenue
  - ▶ Worth noting that publicity as stopped; high political costs
- ▶ Future efforts?
  - ▶ Continue quest for firm-level data from the revenue agency.

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# The End!

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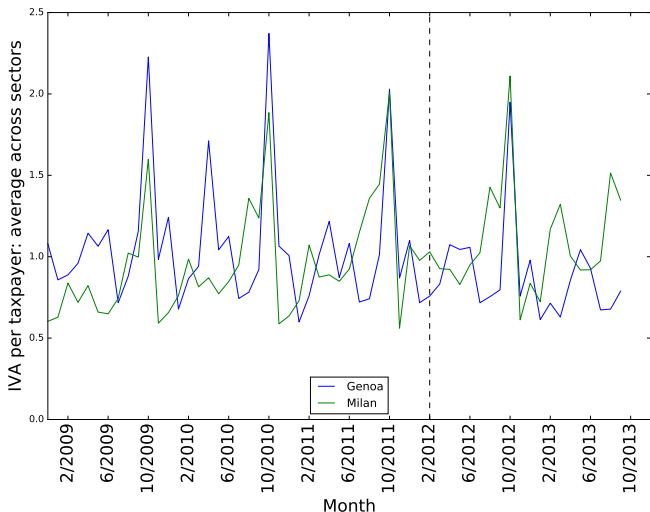
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# History of reported VAT payments



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- ▶ high correlation
- ▶ seasonal fiscal deadlines

# Identification strategy

- ▶ Define  $\delta_{m,y,s} = \log(M_{m,y,s}) - \log(G_{m,y,s})$ 
  - ▶ [ $M_{m,y,s}$ : VAT payments in Milan in month  $m$  of year  $y$ , for sector  $s$ ]
- ▶ **Hypothesis:**  $\delta_{Feb.,2012,s} > \delta_{m \neq Feb., y \neq 2012,s}$ 
  - ▶ DID: compares payments in month after blitz to payments in all other months
- ▶ We use a non-parametric approach
  - ▶ across sectors: VAT payments differently distributed
    - ▶ differences in average shop size, value of good sold...
    - ▶ and in the response to information about blitzes (does the customer go to the service provider or viceversa?)
  - ▶ within sectors: no hints that the distribution of VAT payments over time should be normal; asymptotic assumptions inappropriate (59 obs per city-sector)

# Robustness

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