

# The economic effects of mafia: firm level evidence

## Online Appendix

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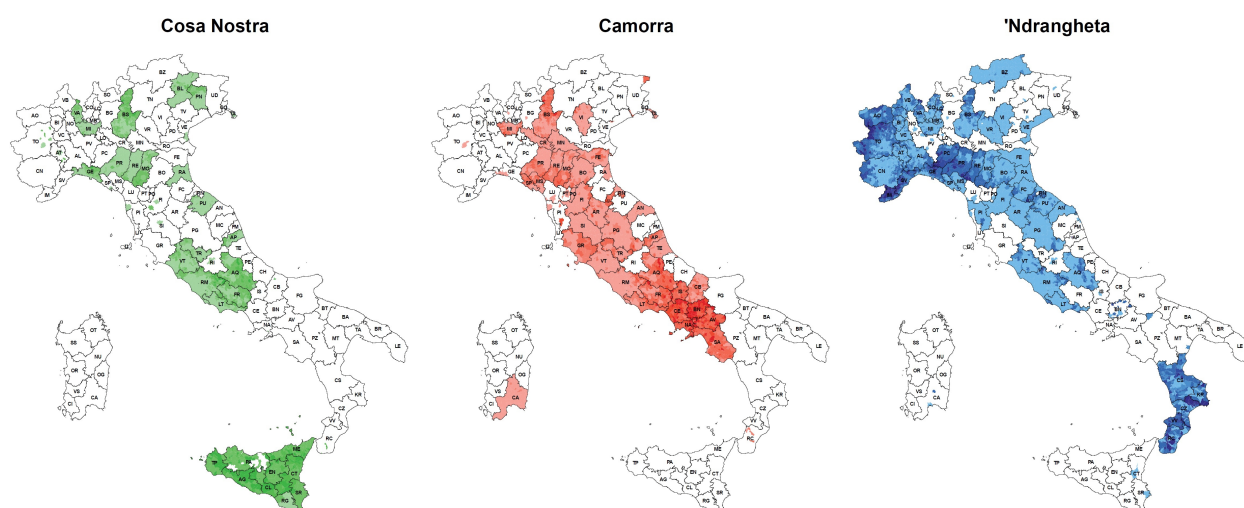
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### A Additional Figures and Tables

**Figure A.1:** Presence of organized crime groups

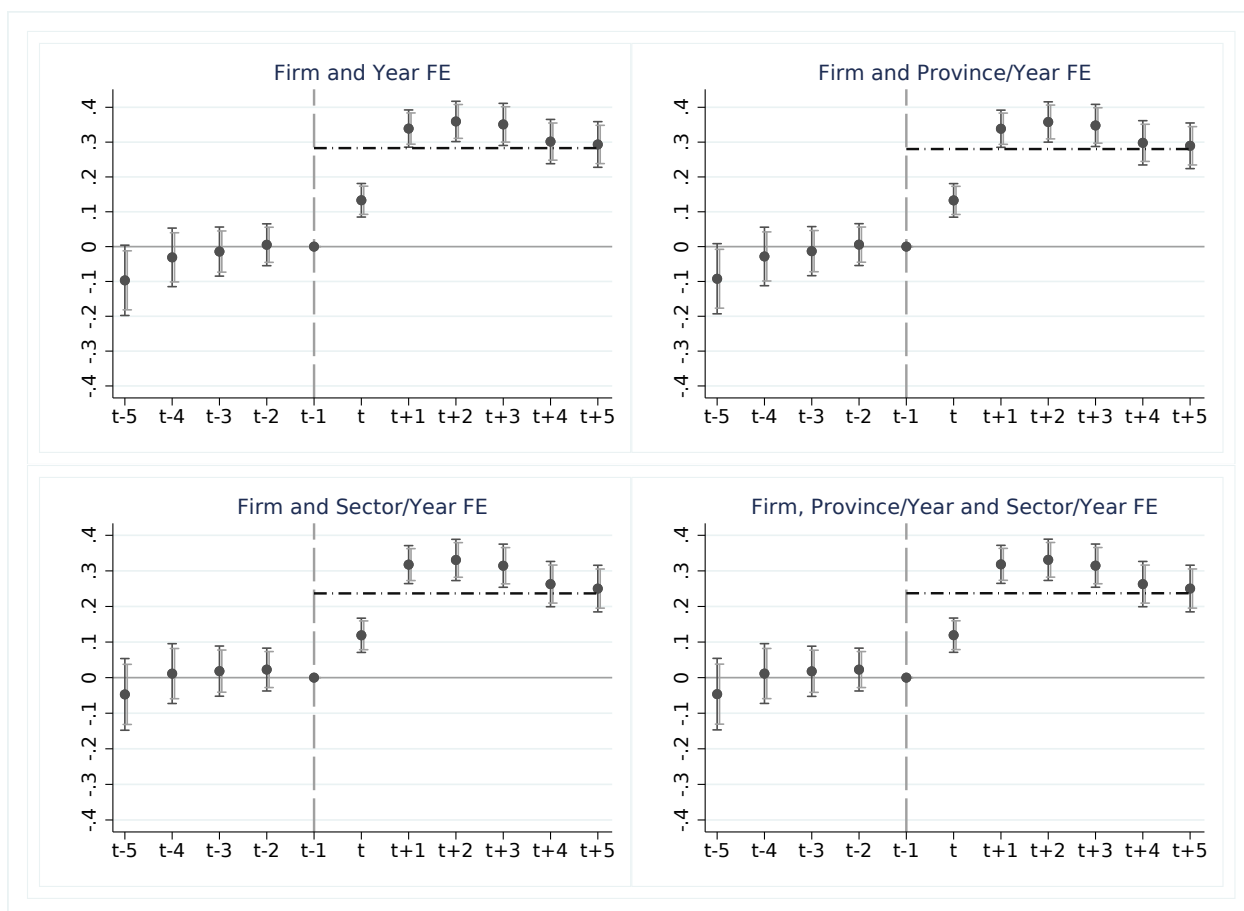


**Notes:** Transcrime Index based on: (1) murders and attempted murders of organized crime, (2) people reported for organized crime, (3) municipalities and public administrations dissolved for organized crime infiltration, (4) goods confiscated from organized crime, (5) active groups of organized crime reported in the DIA and DNA reports. Darker colors indicate higher presence of the mafia organization. **Source:** [Transcrime \(2013\)](#)

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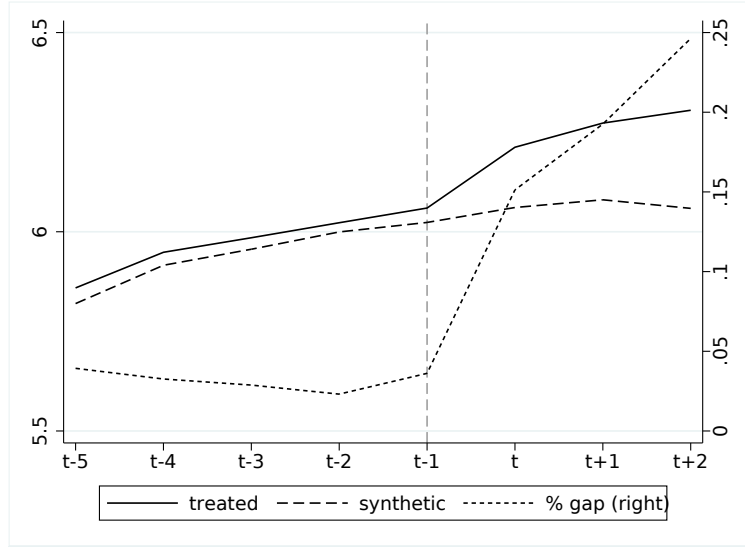
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**Figure A.2:** Robustness: effects of mafia infiltration on revenues.



**Notes:** Each dot is the point estimate of the treatment effect in different years before and after the treatment (leads and lags); vertical bands are the corresponding 90% and 95% confidence intervals.  $t - 1$  is the reference category.

**Figure A.3:** Synthetic control results: robustness



**Notes:** (Log of) revenues in the treated and synthetic control units (left axis). Difference between treated and synthetic control units (right axis);  $t$  denotes the year from 'ndrangheta infiltration.

**Table A.1:** Treated and synthetic control units *before* infiltration ( $t - 1$ ).

	Treated	Synthetic	$\Delta$	Standard error
	(1)	(2)	(3)	(4)
(log) Revenues	7.412	7.504	-0.092	0.105
(log) Wage bill	5.078	5.202	-0.123	0.135
(log) Capital stock	5.545	5.628	-0.083	0.137
Risk score	4.840	4.876	-0.037	0.074
(log) Labor productivity	2.253	2.206	0.047	0.074
Return on Assets (percentile)	54.66	52.61	2.046	1.119
Leverage	0.739	0.740	-0.001	0.015
=1 if North West	0.429	0.430	-0.002	0.021

**Notes:** Columns (1) and (2) report mean values for infiltrated firms and for their corresponding synthetic control units;  $\Delta$  is the difference in means between the two columns; Column 4 reports the robust standard errors for the test of differences between (1) and (2).

## B Misclassification error

Let  $N\tilde{D}R_i = 0, 1$  be the real 'ndrangheta affiliation status and call  $a$  the probability of classifying an infiltrated firm as a non-infiltrated one and  $b$  the probability of classifying a non-infiltrated as infiltrated:

$$\begin{aligned} a &= Pr(NDR_i = 0 | N\tilde{D}R_i = 1) \\ b &= Pr(NDR_i = 1 | N\tilde{D}R_i = 0) \end{aligned} \tag{B.1}$$

then the coefficient we estimate through OLS is:

$$\hat{\beta}_{OLS} = (1 - a - b)\beta \tag{B.2}$$

This implies that OLS estimates will converge in probability to a value between  $-\beta$  and  $\beta$ . Moreover, as long as both errors are below 0.5, i.e. it is truly more likely that a person working in a firm of central and northern Italy is associated to 'ndrangheta if she is born in Calabria and carries a family name of one of the clans operating in the area than if she is either born somewhere else or has a different family name ( $a < 0.5$ ); it is truly more likely that someone who is not born in Calabria and whose family name is not one of those identified by the Antimafia department is not affiliated to 'ndrangheta than it is someone with the specified characteristics ( $b < 0.5$ ).

$$\begin{aligned} Pr(N\tilde{D}R_i | Surname_i \in APC \text{ and } R_i = Calabria) &> \\ Pr(N\tilde{D}R_i | Surname_i \notin APC \text{ or } R_i \neq Calabria) & \end{aligned} \tag{B.3}$$

$$\begin{aligned} Pr(N\tilde{D}R_i = 0 | Surname_i \notin APC \text{ or } R_i \neq Calabria) &> \\ Pr(N\tilde{D}R_i = 0 | Surname_i \in APC \text{ and } R_i = Calabria) & \end{aligned} \tag{B.4}$$

where  $R_i$  is the region of birth of individual  $i$ ,  $Surname_i$  her last name and APC is the list of the Anti-mafia Parliamentary Commission containing the 'ndrangheta clans.

Under monotonicity conditions (B.3) and (B.4) the estimated effect of 'ndrangheta will have the correct sign and a magnitude that is lower than the true parameter of interest.<sup>1</sup>

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<sup>1</sup>For a similar discussion see also [Gagliarducci and Manacorda \(2019\)](#).

## References

- Gagliarducci, S. and M. Manacorda (2019). Politics in the family. nepotism and hiring decisions of italian firms. *American Economic Journal: Applied Economics*.
- Transcrime (2013). Gli investimenti delle mafie. Progetto PON Sicurezza, 2007-2013, Transcrime and Università Cattolica del Sacro Cuore Milano.