Seeds

Targeting and Propaganda in Autocratic Development Policy

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- work in progress -

NSE Workshop
September 16, 2024

Introduction

In a nutshell

This study was inspired by the economic analysis in Carillo 2021 and tries to illuminate *development under autocracy* analysing the **Battle for Wheat**, a flagship agricultural policy in fascist Italy.

It focuses on:

1. its long-term *legacy*,
   → support for **neo-fascist** party MSI
2. the *mechanism* behind its persistence,
   → responsibility attribution by **radio** propaganda
3. and the political *determinants* of the policy.
   → **opposition** to the regime, **collective action** potential

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Contribution

And (in-exhaustive) literature review

- Does development **endanger or entrench** autocrats?
  - Development → democratisation demands (Treisman 2020): it can create a bourgeoisie (Lankina and Libman 2021), industrial labour (Rueschemeyer et al. 1992), and widen education (Chang and Wu 2022; Palma and Reis 2021).
  - Development → regime legitimacy: autocracies seek it (Geddes and Zaller 1989) to enhance compliance (Beetham 2013), increasingly through economic performance (S. Guriev and Treisman 2019; S. M. Guriev and Treisman 2022; Rozenas and Stukal 2019) seen as a "*key source of regime stability in non-democracies*" (Beazer and Reuter 2019).
- Do autocrats favour **loyal or opposing** communities?
  - Loyalists: ensure integrity of ruling coalition by distributing public goods (**buenodemesquitaLogicPoliticalSurvival2005**),
  - Opponents: counter subversive threats by "buying off" problematic segments of society (Bueno de Mesquita and Smith 2010).

History

The Battle for Wheat

Italy's reliance on imports:
→ autarchy (Lyttelton 2004)
→ agricultural modernization (Segre 1982)
The **Battle for Wheat** (BfW) began in 1925:

- introduction of enhanced varieties by Strampelli (Salvi, Porfiri, and Ceccarelli 2013)
- subsidies for machinery and fertilizers
- boosted *Travelling Chairs of Agriculture*

Impact on the diet is debated (Cohen 1979) but it increased wheat productivity (Carillo 2021).

History

Radio and MSI

- (Rural) **radio**: rolled out starting in 1922. It was the main propaganda avenue (Monteleone 1976; Brendon 2000) + leveraged the BfW (Isola 1990; Galdi, Pietra, and Savini 2010): the best wheat farmers were "*the vanguards of the battle*" (Cannistraro 1975).
- **Movimento Sociale Italiano** (MSI): founded in 1946 "*in opposition to the democratic system to maintain the idea of fascism alive*" (Ignazi 1998) to the point of being indicted in 1973 for reconstituting the PNF.

History

Takeaway

Historical argument:

1. the BfW sizeably increased *wheat productivity*,
2. the radio spread *propaganda* frequently connected to the BfW,
3. votes for the MSI signal *fascist regime support* or fascist preferences.
   $\rightarrow$ ex-post proxy for support created beforehand

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Data

Core variables

- **Wheat yields improvement**: $BfW_i = \bar{y}_{1923-1928} - y_{1929}$ from the Agricultural Cadastre of 1929, digitized by Carillo 2021
- **Theoretical yield improvements**: FAO GAEZ v.3
- **Radio signal**: digitized records and calculated with Irregular Terrain Model by Gagliarducci et al. 2020
- **Electoral data**: 1919, 1921 and 1924 collected by Acemoglu et al. 2022, 1948-1992 from Eligendo systematised by Bailo 2021
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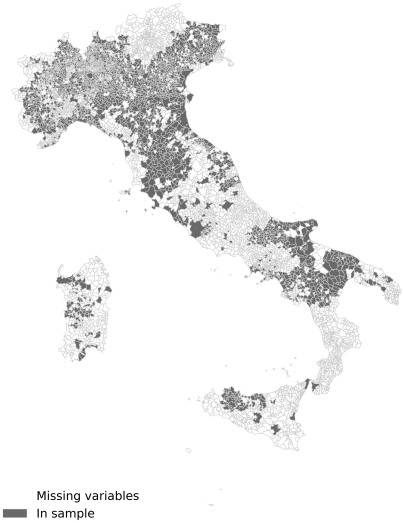
Data

Control sets

- *Agricultural*: Caloric Suitability Index, baseline wheat suitability
- *Geographic*: distance from waterways and urban centres, density of railroads, historical malaria, elevation, ruggedness, municipal area
- *Social*: literacy, workforce composition, average farm size, land GINI
- *Political*: fascist organisation (branch and donors), fascist violence, new towns, PNF and PSU vote shares

Data

Geographic coverage



Results

Legacy - OLS

	MSI vote %			
BfW	0.039**	0.035**	0.041**	*0.037***
	(0.013)	(0.014)	(0.014)	(0.014)
Caloric suitability	-0.180**	-0.308**	-0.289**	-0.246**
	(0.028)	(0.032)	(0.033)	(0.033)
Wheat suitability	-0.059**	-0.226**	-0.225**	-0.205**
	(0.012)	(0.017)	(0.017)	(0.017)
Provinces × elections FE	✓	✓	✓	✓
Agricultural	✓	✓	✓	✓
Geographic		✓	✓	✓
Societal			✓	✓
Fascist				✓
Mean outcome	3.236	3.236	3.236	3.236
Adjusted R^2	0.386	0.398	0.404	0.412
F-stat	32.342	75.655	66.991	74.430
Municipalities-elections	38725	38725	38725	38725

In all tables, robust standard errors are shown in parentheses.
+, *, and ** correspond to 10, 5, and 1% levels of significance, respectively.

Results

Legacy - DiD

Difference-in-difference:

- *High BfW*: above median yield improvement (also non-negligible improvement)
- *Post*: after democratisation

Parallel trends based on PNF vote shares (levels and trends).

Results

Legacy - DiD

	MSI vote %			
High BfW × *Post*	0.554+ (0.335)	0.554+ (0.335)	0.554+ (0.335)	0.554+ (0.335)
Municipality FE	✓	✓	✓	✓
Agricultural	✓	✓	✓	✓
Geographic		✓	✓	✓
Societal			✓	✓
Fascist				✓
Mean outcome	7.490	7.490	7.490	7.490
Adjusted R^2	0.191	0.191	0.191	0.191
F-stat	6691.269	6691.269	6691.269	6691.269
Municipalities-elections	49558	49558	49558	49558

Results

Legacy - IV

The DiD is not entirely satisfying.

There is a good instrument for yield improvements (identified by Carillo 2021):

- theoretical change moving from low to intermediate level of input in **FAO's GAEZ v.3** potential yields.

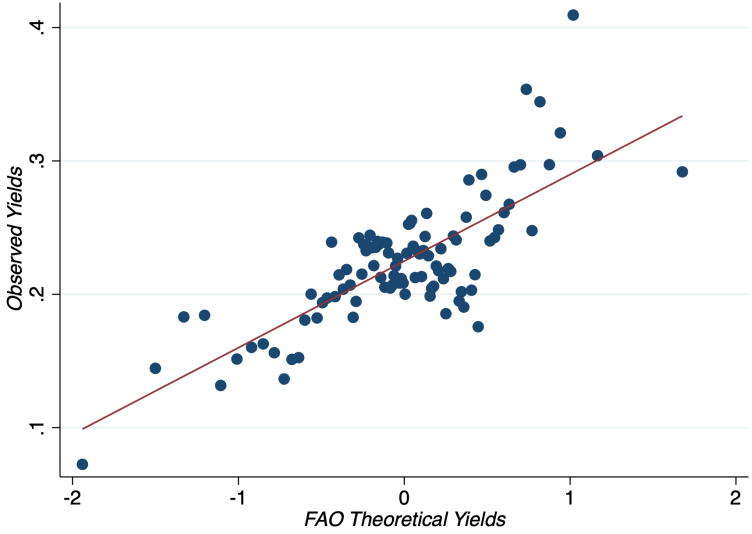
Carillo 2021 constructs an indicator:

$$PRI = \frac{\text{intermediate-input wheat yields} - \text{low-input wheat yields}}{\text{low-input all crops yields}}$$

no change in other crops equation

Results

Legacy - IV



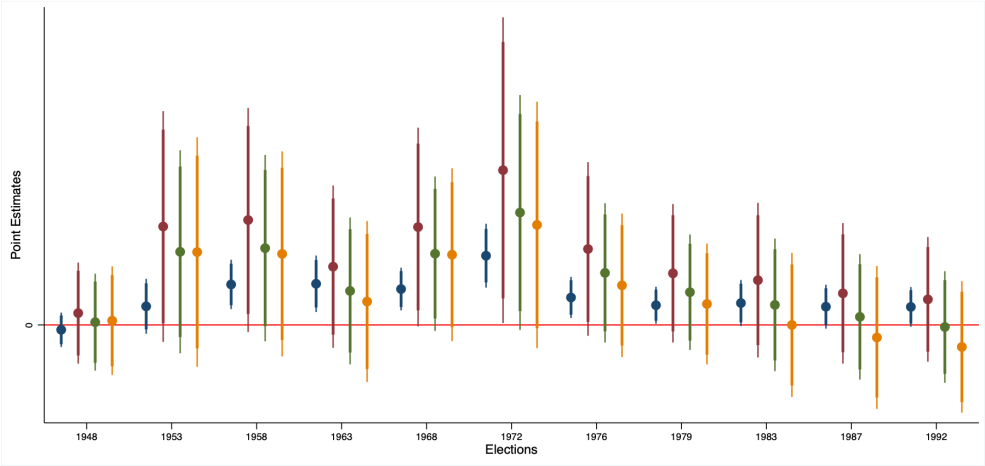
Results

Legacy - IV

	MSI vote %			
BfW	1.249**	2.815**	1.914**	1.433**
	(0.154)	(0.569)	(0.483)	(0.472)
Provinces × elections FE	✓	✓	✓	✓
Agricultural	✓	✓	✓	✓
Geographic		✓	✓	✓
Societal			✓	✓
Political				✓
Mean outcome	3.258	3.258	3.258	3.258
Kleibergen-Paap F-stat	458.384	60.020	62.617	58.561
F-stat	53.133	43.335	45.453	50.111
Municipalities-elections	35842	35842	35842	35842

Results

Legacy - IV



5 and 10% confidence intervals shown.

Results

Radio mediation

	MSI vote %			
	Weak Signal		Strong Signal	
	OLS	IV	OLS	IV
BfW	-0.037	4.808	0.051**	2.417*
	(0.026)	(3.591)	(0.018)	(0.960)
Provinces × elections FE	✓	✓	✓	✓
Free-space signal	✓	✓	✓	✓
All control sets	✓	✓	✓	✓
Mean Outcome	3.20	3.20	3.29	3.29
F-stat	37.89	12.41	38.67	20.84
Kleibergen-Paap F-stat		2.74		24.66
Municipalities × elections	17475	17475	18280	18280

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Free-space signal	✓	✓	✓	✓
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Mean Outcome	3.20	3.20	3.29	3.29
F-stat	37.89	12.41	38.67	20.84
Kleibergen-Paap F-stat		2.74		24.66
Municipalities × elections	17475	17475	18280	18280

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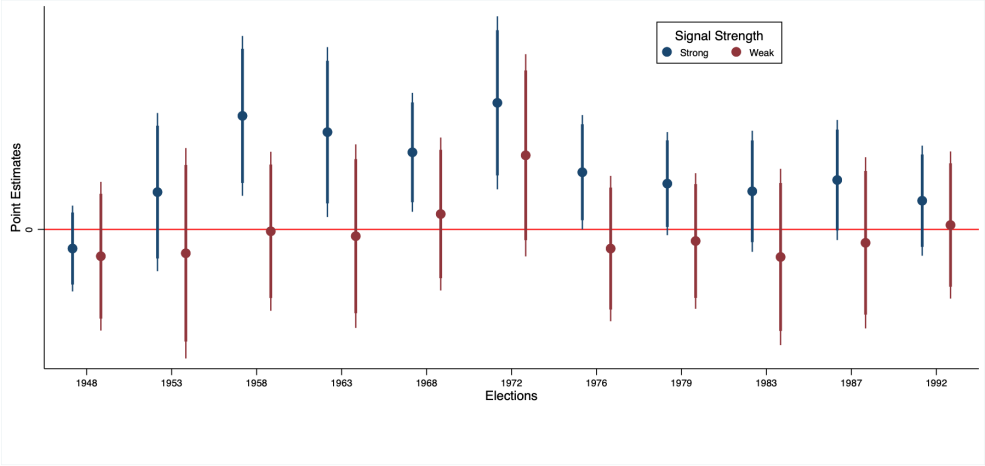

Column 1 specification. 5 and 10% confidence intervals shown.

Radio propaganda seems key to persistence.

Strategic Allocation

IV - Reduced form

	MSI vote %			
PRI	0.177**	0.182**	0.120**	*0.082***
	(0.022)	(0.031)	(0.030)	(0.031)
Provinces × elections FE	✓	✓	✓	✓
Agricultural	✓	✓	✓	✓
Geographic		✓	✓	✓
Societal			✓	✓
Fascist				✓
Mean outcome	3.236	3.236	3.236	3.236
Adjusted R^2	0.387	0.399	0.404	0.412
F-stat	61.867	81.945	68.517	75.543
Municipalities-elections	38725	38725	38725	38725

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Strategic Allocation - Yields

OLS magnitude is smaller than the IV, but when controlling for political factors they get closer.

To isolate the endogenous element of yield improvements, I look at $Bf W - B\hat{f}W \rightarrow$ higher values imply higher than expected improvements.

Results

Strategic Allocation - Yields

	$BfW - B\hat{f}W$			
Fascist vote %	0.001	0.001	0.000	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Socialist vote %	0.163**	0.171**	0.120*	0.123*
	(0.050)	(0.050)	(0.054)	(0.054)
'20 Agr. strikes			0.434**	0.429**
			(0.032)	(0.032)
Provinces × elections FE	✓	✓	✓	✓
Societal	✓	✓	✓	✓
Red Scare			✓	✓
Fascist		✓		✓
Mean outcome	0.696	0.696	0.696	0.696
Adjusted R^2	0.346	0.348	0.366	0.367
F-stat	15.288	12.676	25.454	20.771
Municipalities-elections	10921	10921	10921	10921

Results

Strategic Allocation - Yields, argument

- When treatment is assigned based on *geo-morphological characteristics* (IV) the impact is *large*.
- When it is assigned endogenously, hence *politically* (OLS) the impact is *smaller*,
- because ex-ante opposed units are treated more!
- In fact, *controlling for political factors*, OLS and IV estimates look more *similar*.

The BfW looks like a political consolidation effort, in line with some historical accounts (e.g. Gagliardi 2012; Foot 2022).

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Strategic Allocation - Radio Reception

I also look at the improvement in radio signal by calculating ΔSignal Strength $= \bar{s}_{1925-1929} - s_{1925}$.

	Δ Signal Strength			
Fascist vote %	-0.040**	-0.040**	-0.046**	-0.046**
	(0.012)	(0.012)	(0.012)	(0.012)
Socialist vote %	8.340**	8.251**	7.369**	7.282**
	(0.885)	(0.886)	(0.947)	(0.947)
'20 Agr. strikes			3.702**	3.684**
			(0.367)	(0.365)
Provinces × elections FE	✓	✓	✓	✓
Societal	✓	✓	✓	✓
Red Scare			✓	✓
Fascist		✓		✓
Mean outcome	33.831	33.831	33.831	33.831
Adjusted R^2	0.831	0.832	0.833	0.833
F-stat	54.915	42.197	46.921	39.792
Municipalities-elections	11429	11429	11429	11429

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Next Steps

Some of the things to be thought more about

- *Targeting*, conceptually and empirically:
  - Is it targeting (supply-side) or just labor organisation (demand-side)?
  - How to disentangle them?
- *Legacy*, empirically:
  - Why is GAEZ a weak instrument without radio?
  - Robustness? → more appropriate handling of standard errors:
    - clustering in finite populations (Abadie et al. 2023), packages for continuous variables?
    - geospatial correlation (Conley 1999)
    - autocorrelation (Newey and West 1987)
  - Radio reception? → regenerate radio with model for FM (Russo 2024)

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  - Radio reception? → regenerate radio with model for FM (Russo 2024)

Next Steps

Some of the things to be thought more about

- *Targeting*, conceptually and empirically:
  - Is it targeting (supply-side) or just labor organisation (demand-side)?
  - How to disentangle them?
- *Legacy*, empirically:
  - Why is GAEZ a weak instrument without radio?
  - Robustness? → more appropriate handling of standard errors:
    - clustering in finite populations (Abadie et al. 2023): packages for continuous variables?
    - geospatial correlation (Conley 1999)
    - autocorrelation (Newey and West 1987)
  - Radio reception? → regenerate radio with model for FM (Russo 2024)

Conclusion

Tentative take-home message(s)

The case of the Battle for Wheat in fascist Italy suggests that in autocracies:

- and benefits are strategically allocated to *collective-action-threatening opposition*.
- development policy durably *entrenches* autocrats *when* its benefits are clearly attributed through *propaganda*,
- (Infrastructure-enabling propaganda is, likewise, *strategically allocated*.)

Thank you!

Parallel Trends

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	PNF vote % (1919-1924)							
	Levels				Trends			
High BfW	0.152	-0.028	0.059	-0.006	0.893	1.035	1.105	1.324
	(0.216)	(0.216)	(0.216)	(0.177)	(2.101)	(2.144)	(2.075)	(2.106)
Provinces × elections FE	✓	✓	✓	✓	✓	✓	✓	✓
Agricultural	✓	✓	✓	✓	✓	✓	✓	✓
Geographic		✓	✓	✓		✓	✓	✓
Societal			✓	✓			✓	✓
Political				✓				✓
Municipalities-elections	10833	10833	10833	10833	3075	3075	3075	3075
Mean outcome	22.697	22.697	22.697	22.697	24.167	24.167	24.167	24.167
Adjusted R^2	0.885	0.886	0.887	0.924	0.328	0.330	0.334	0.342
F-stat	39.215	28.404	21.499	74.921	1.858	1.924	1.839	3.810

IV
PRI Composition

$$PRI_{low,i} = \sum_c \frac{\bar{p}_0^w \hat{q}_{c,(low)}^w}{\sum_j \bar{p}_0^j \hat{q}_{c,(low)}^j} P(c|c \in i) \tag{1}$$

$$PRI_{int,i} = \sum_c \frac{\bar{p}_0^w \hat{q}_{c,(int)}^w}{\sum_j \bar{p}_0^j \hat{q}_{c,(low)}^j} P(c|c \in i) \tag{2}$$

$$PRI_i = PRI_{int,i} - PRI_{low,i} \tag{3}$$

i are municipalities, j crops, and c GAEZ cells, all at constant '19 prices (p).

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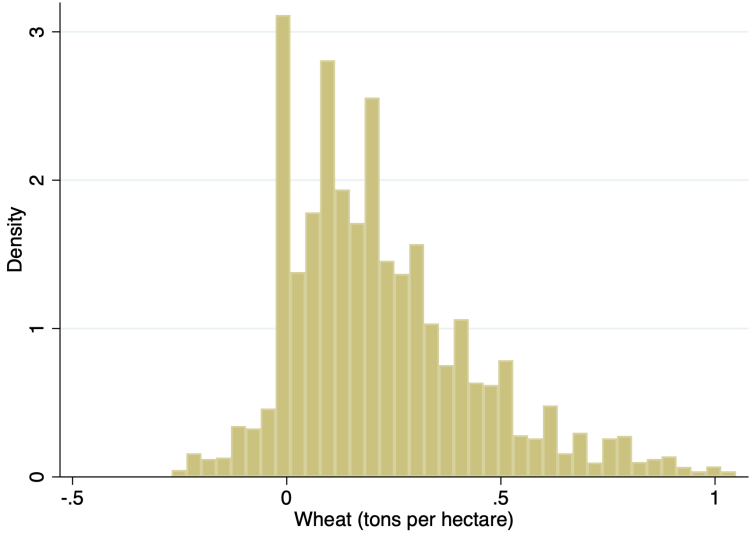
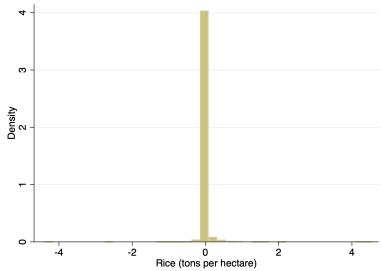
IV

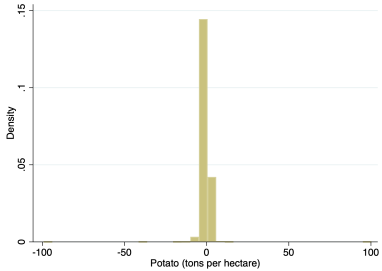
Crops Change

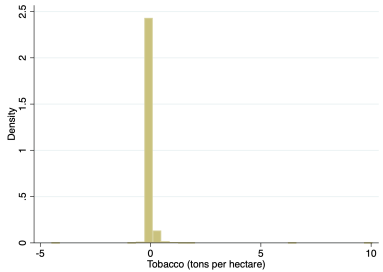


IV

Crops Change







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