Negative Shocks and Mass Persecutions: Evidence from the Black Death

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Comments Welcome

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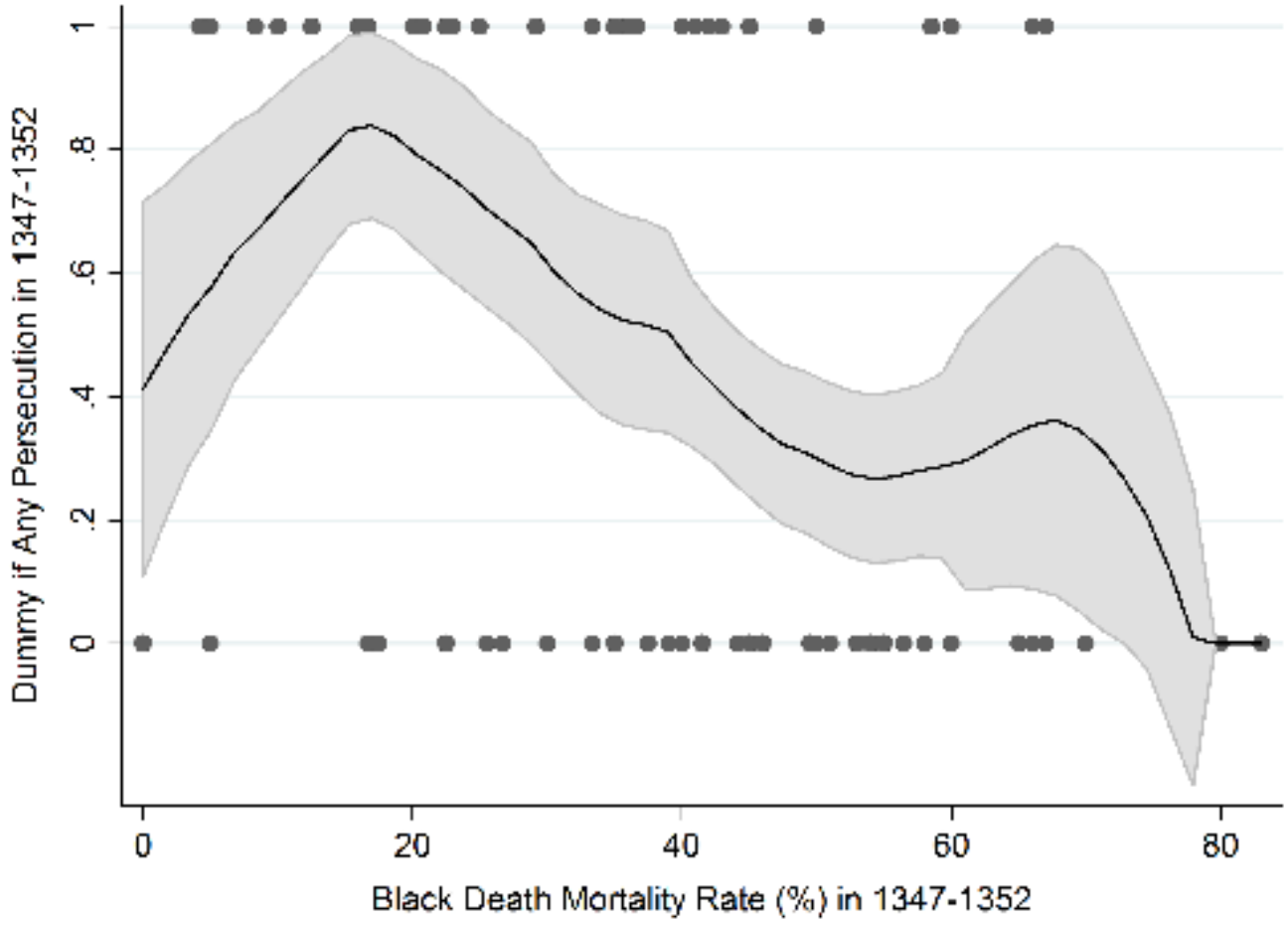
THIS PAPER

- Under what circumstances are minorities vulnerable to violence and persecution?
- We study the pogroms that took place during the **Black Death** (1347-1352). Killed $\approx$ 40% of Europe's population.
- Novel data set on Black Death mortality and Jewish persecutions for 124 cities.
- Were cities with high mortality rates more likely to persecute Jews? **No.**
- If high mortality, higher "economic value" of having Jews in the town? **Yes.**

Relationship between Black Death mortality and likelihood of a persecution, 1347-1352



Local smooth polynomial for the sample of 124 cities with Jews in 1347 and data on the cumulative Black Death Mortality rate (%) in 1347-1352.

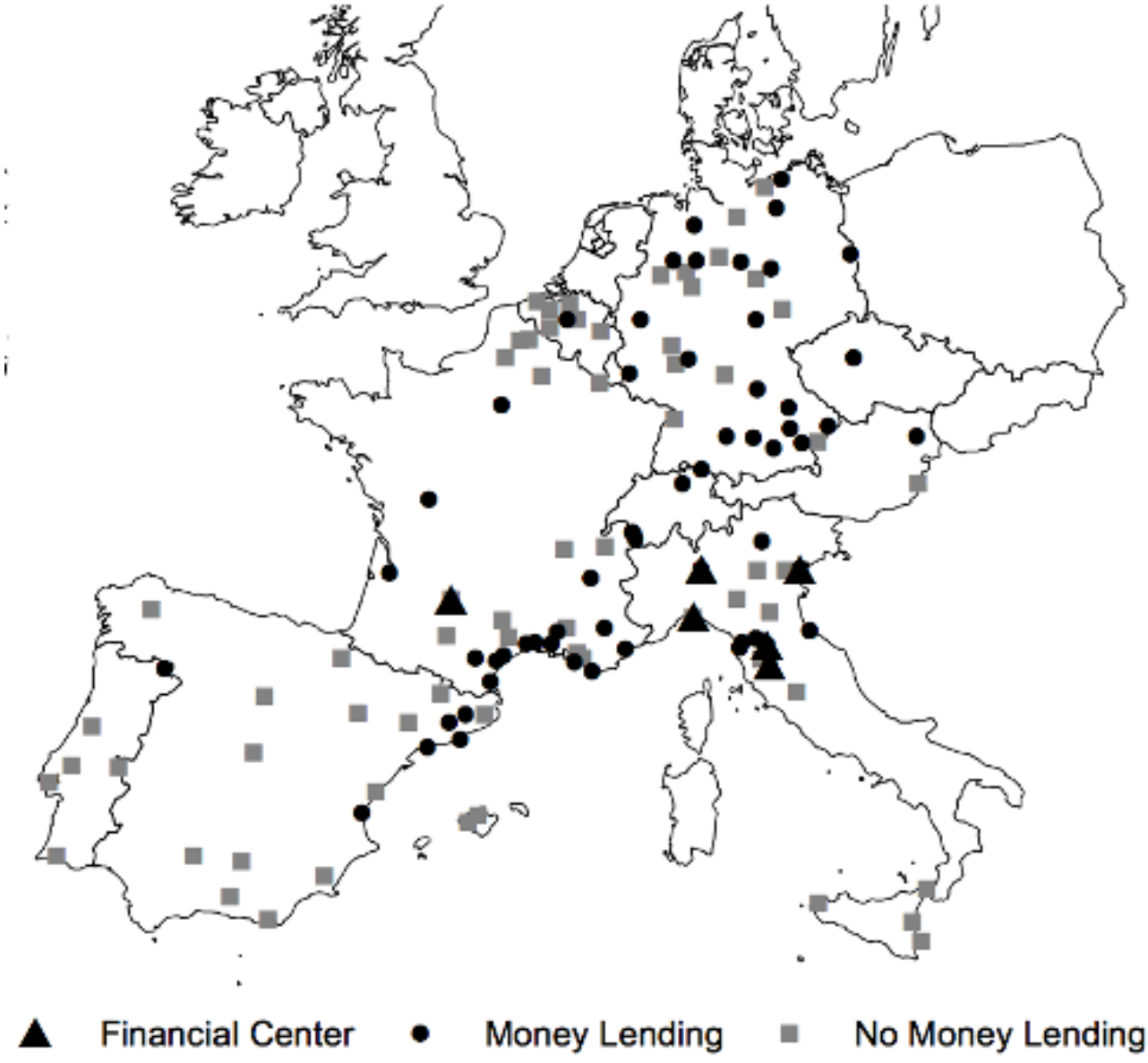
Theoretical Framework

- (i) People lose relations. (ii) The economy collapses initially.
- Two mechanisms at work when mortality rate increases:

1. **Scapegoating:** Members of the ingroup compensate severe utility loss from (i) and (ii), and proximity to *subsistence utility*, by blaming and plundering the outgroup $\rightarrow$ **persecution**.
2. **Inter-group complementarities:** the presence of the outgroup increases income (and hence utility) for the ingroup, especially if the local economy is severely disrupted $\rightarrow$ **protection**. ▸ complementarities

   Complementarities effect not necessarily internalized by the populace, but internalized by **local rulers**. ▸ political economy

Mechanisms: Complementarities



Main Data

- **Black Death mortality rates** (cumulative) for 263 towns in 13 European countries in 1347-1352 (Christakos et al 2005). **Year-month of first/last infection** for many towns.

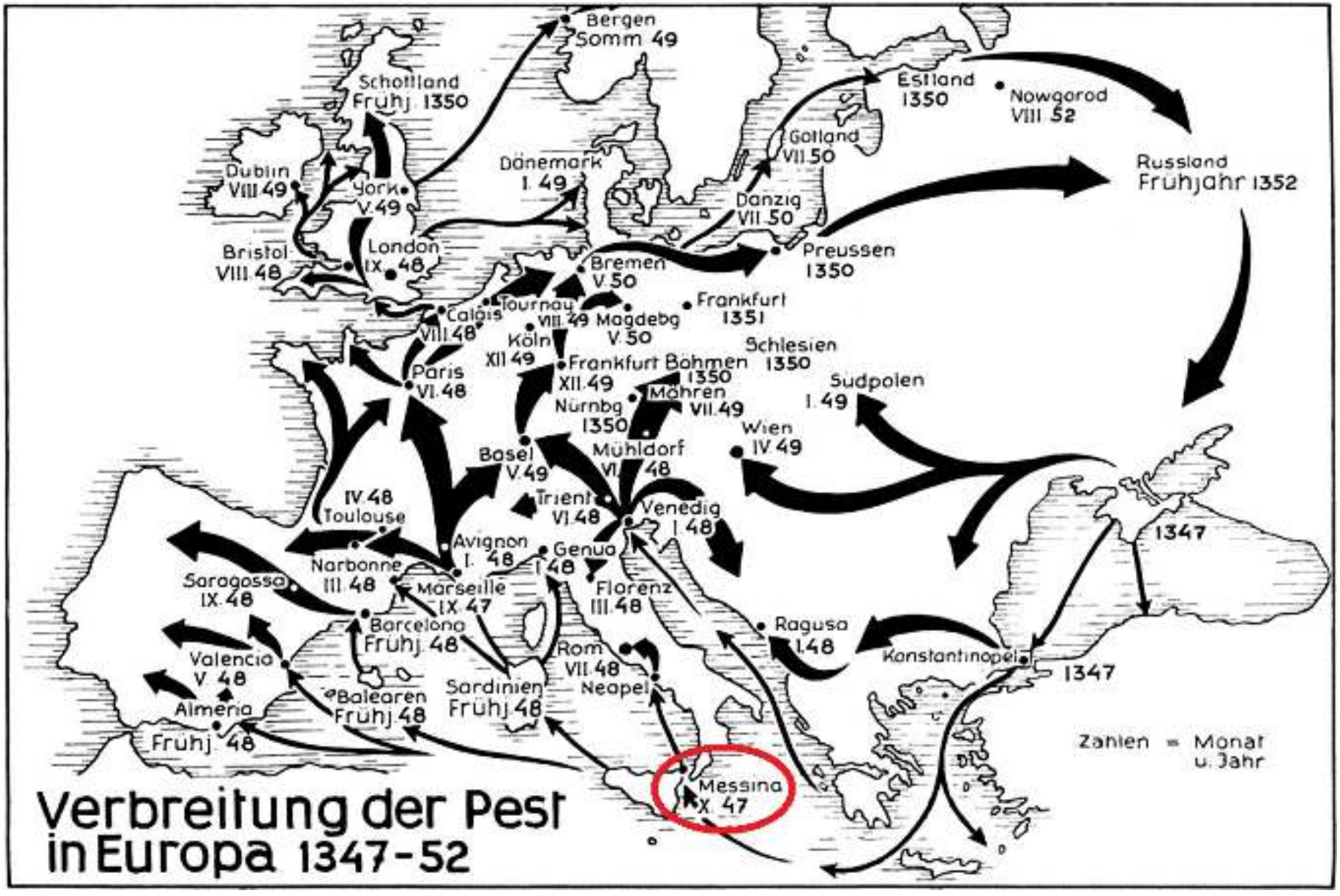
- **Jewish communities & persecutions** (if pogrom or expulsion) from *Encyclopedia Judaica*, *Jewish Encyclopedia*, and other sources. 363 towns with a community in 1347. ▸ Sample Entry

- **Sample:** 124 towns with a Jewish community in 1347 and mortality data (intersection of sets with 263 and 363 towns).

- Data on various **city-level controls** proxying for geography, trade, human capital and institutions:

  Temperature, elevation, soils, coast, rivers, latitude, longitude, population, roman roads, land routes, markets, Hansa League, universities, aqueducts, monarchy, self-governing, battles.

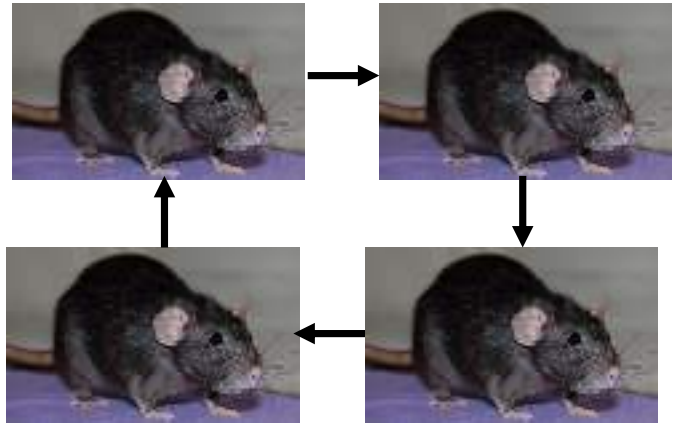
European outbreak in 1347-52. Port of entry: Messina (Oct 1347)



Disease contagion process of the Black Death.

Black rats infected with *Yersinia Pestis* traveling on boats and carts from Asia

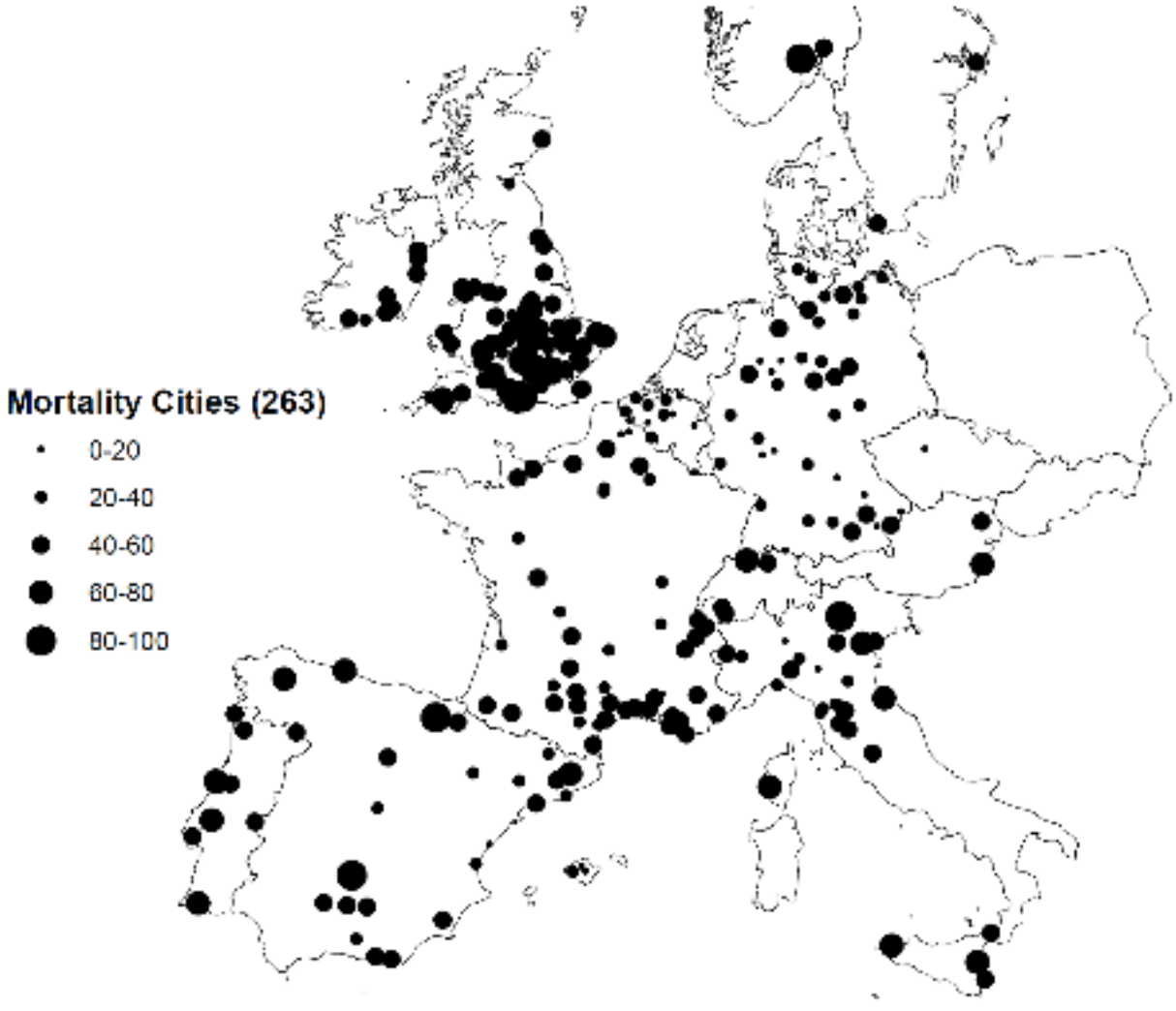
They infect European rats that in turn infect other European rats.



Humans infect other humans (**pneumonic plague**) and rats.

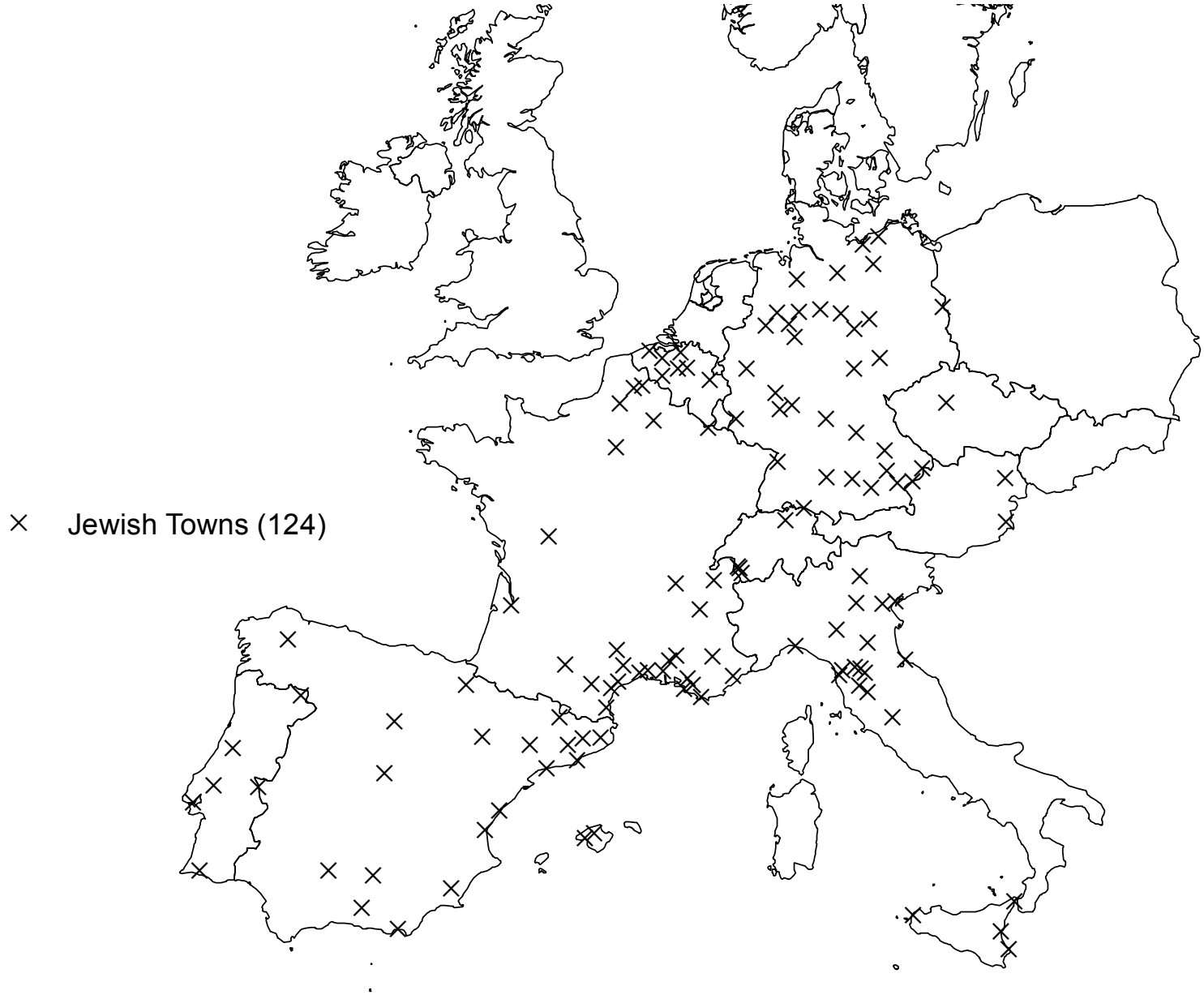
Fleas drink rat's blood. Bite humans once rats die (**bubonic plague**).

Figure 1: Black Death Mortality Rates (%) in 1347-1353

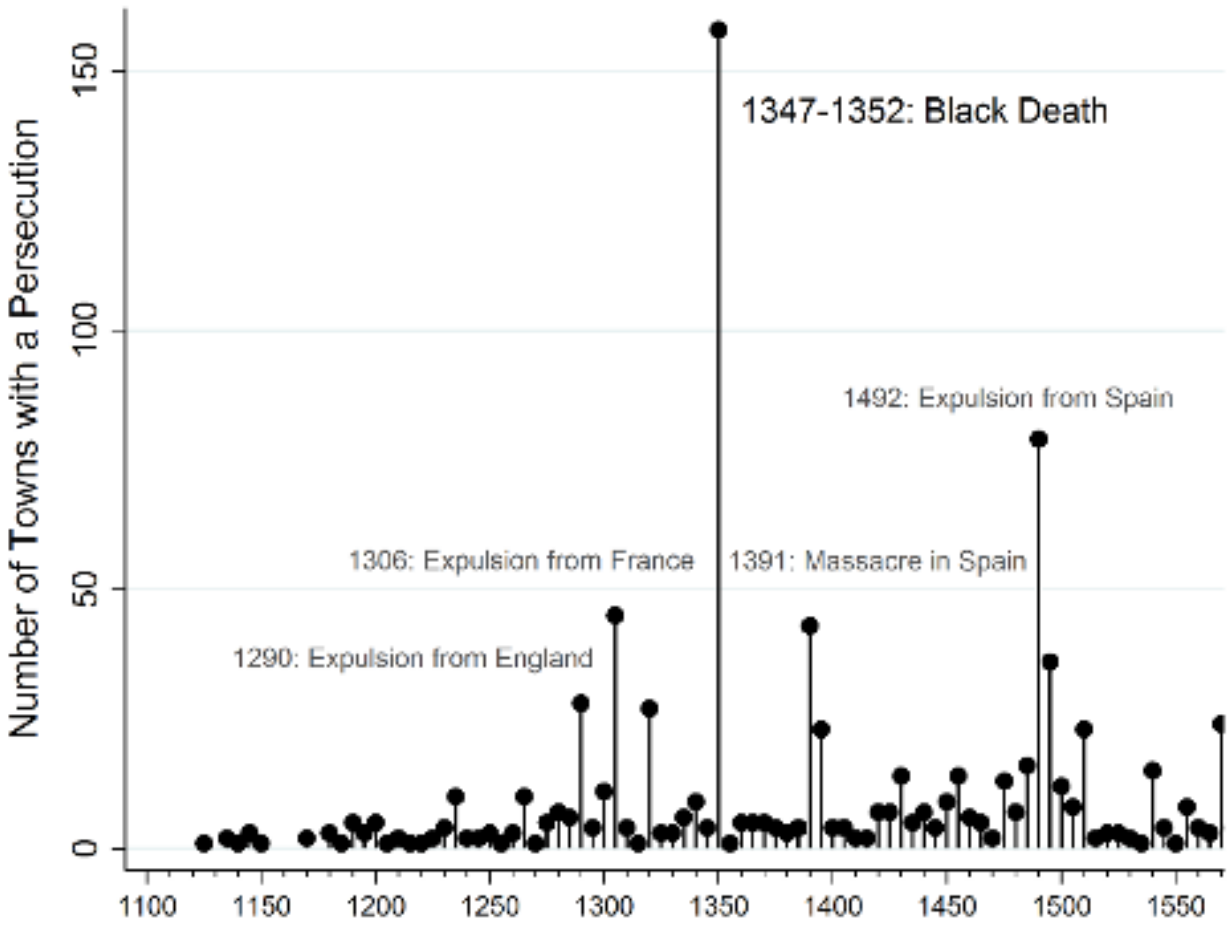


Historians argue that the Black Death was locally "exogenous": (i) **bubonic** (rats/fleas) more than pneumonic (humans), (ii) more virulent initially, but **randomness** in spread (rats/fleas boarded some ships/carts, and not others).

124 towns of our main sample (≈ 43% of Europe's urban pop.).



JEWISH PERSECUTIONS, 1100-1600



EMPIRICAL STRATEGY

- **Cross-sectional regressions** (for 124 cities i):

$$Persecution_{i,1347-1352} = \alpha + \beta Mortality_{i,1347-52} + X_i\theta + \epsilon_i$$

- *Persecution*: Dummy if persecution in the studied period.
- *Mortality*: Black Death mortality rate (%) in 1347-1352 (median duration $\approx$ 5 months, so this variable represents the cumulative rate over a period of a few months only).
- X: Set of controls.

BASELINE EFFECT

Strong negative effect of mortality, no long-run effect. 1 SD in mortality associated with a 0.34 SD reduction in likelihood of a persecution.

Table 1: BLACK DEATH MORTALITY RATES AND JEWISH PERSECUTIONS, 1100-1600

Dependent Variable: Dummy if Any Jewish Persecution in Period $[t\text{-}1;t]$:						
	Mortality in 1347-1352		Constant		Obs.	R2
1. $[t\text{-}1;t]$ = [1347-1352]	-0.009***	[0.002]	0.831***	[0.104]	124	0.12
2. $[t\text{-}1;t]$ = [1353-1400]	-0.004*	[0.002]	0.404***	[0.098]	122	0.02
3. $[t\text{-}1;t]$ = [1353-1500]	-0.000	[0.002]	0.640***	[0.099]	124	0.00
4. $[t\text{-}1;t]$ = [1353-1600]	0.000	[0.002]	0.724***	[0.088]	127	0.00

Notes: This table shows the constant α_t and the effect β_t of the Black Death mortality rate (%) in 1347-1352 on a dummy equal to one if there has been any persecution in various periods $[t\text{-}1;t]$, for the towns for which we have mortality data and in which we know that Jews were present in period $[t\text{-}1;t]$. Robust SE's: * p<0.10, ** p<0.05, *** p<0.01. See Web Appendix for data sources.

IDENTIFICATION STRATEGIES

- Bias problematic if we overestimate the "protective" effect of high mortality. For example, if towns with high probability of persecutions also happen to have low mortality.

- Scientific & historical evidence that mortality rates (*not* timing) **exogenous**.

- No **placebo** effects before the plague (e.g., in 1321-1346).

$$Persecution_{i,1341-1346} = \alpha + \beta Mortality_{i,1347-52} + X_i\theta + \epsilon_i$$

- **Controls**. For example, Jewish hygiene practices (imagine more Jews $\rightarrow$ persecution, and more Jews $\rightarrow$ lower mortality).

- **IV**: (i) Epidemic more virulent in early months. Cities "randomly" infected earlier should have higher mortality rates. (ii) Access to Messina, conditional on access to all towns.

PARALLEL TRENDS

No placebo effect of the Black Death *before* the Black Death (1347-52)

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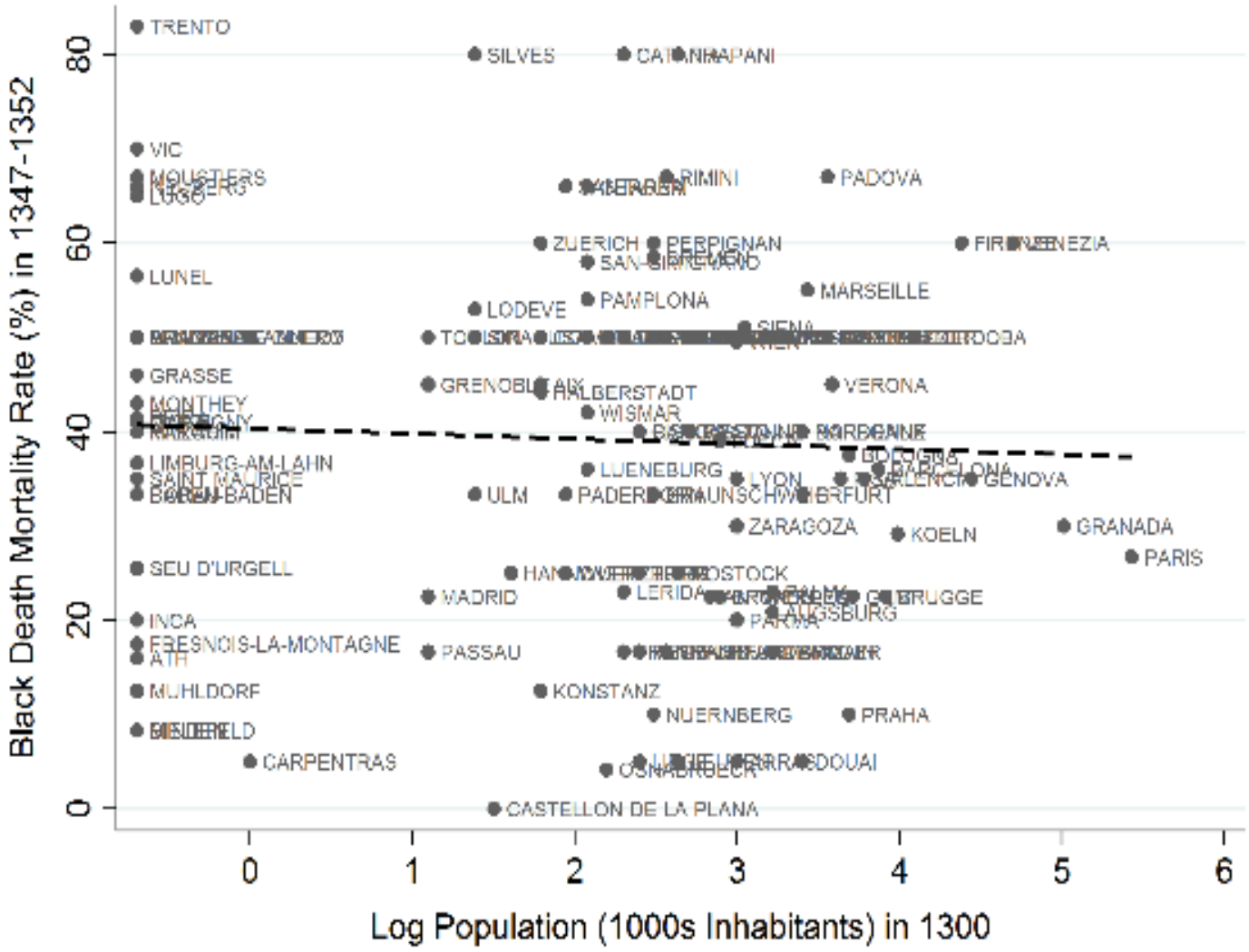
5. $[t\text{-}1;t]$ = [1341-1346]	0.001	[0.000]	-0.004	[0.004]	122	0.01
6. $[t\text{-}1;t]$ = [1321-1346]	-0.001	[0.001]	0.144**	[0.068]	126	0.01
7. $[t\text{-}1;t]$ = [1300-1346]	-0.001	[0.002]	0.255***	[0.082]	131	0.00
8. $[t\text{-}1;t]$ = [1200-1346]	-0.003	[0.002]	0.370***	[0.090]	132	0.02

Notes: This table shows the constant α_t and the effect β_t of the Black Death mortality rate (%) in 1347-1352 on a dummy equal to one if there has been any persecution in various periods $[t\text{-}1;t]$, for the towns for which we have mortality data and in which we know that Jews were present in period $[t\text{-}1;t]$. Robust SE's: * p<0.10, ** p<0.05, *** p<0.01. See Web Appendix for data sources.

Black Death Mortality Unrelated to Observables

Dependent Variable:	Black Death Mortality Rate (%, 1347-1352)							
	(1)		(2)		(3)		(4)	
Average Temperature 1500-1600 (d)	-0.23	[0.68]					0.26	[0.83]
Elevation (m)	-0.01	[0.01]					-0.00	[0.01]
Cereal Suitability Index	-2.28*	[1.28]					-2.52	[1.52]
Pastoral Suitability Index	4.58	[5.25]					-0.87	[6.49]
Coast 10 Km Dummy	-6.67	[4.98]					-8.94	[5.82]
Rivers 10 Km Dummy	-3.15	[3.08]					-4.26	[3.85]
Latitude (d)	-2.39***	[0.58]					-1.90**	[0.79]
Longitude (d)	0.62**	[0.30]					1.09**	[0.42]
Log Town Population in 1300			-1.41	[1.23]			-1.56	[1.57]
Maj.Roman Rd (MRR) 10 Km Dummy			0.49	[8.48]			-4.74	[6.30]
MRR Intersection 10 Km Dummy			9.67*	[5.71]			8.62	[5.65]
Any Roman Rd (ARR) 10 Km Dummy			6.78	[9.23]			10.39	[7.57]
ARR Intersection 10 Km Dummy			-5.54	[5.53]			-2.15	[5.49]
Medieval Route (MR) 10 Km Dummy			1.07	[4.42]			-1.73	[4.06]
MR Intersection 10 Km Dummy			-3.04	[5.14]			-3.94	[5.41]
Market and Fair Dummy			-5.14	[4.38]			-0.97	[5.16]
Hanseatic League Dummy			-1.03	[6.30]			7.20	[6.88]
Log Market Access in 1300			0.51	[1.00]			-0.07	[1.06]
Aqueduct 10 Km Dummy			3.19	[4.22]			-0.33	[4.66]
University Dummy			3.88	[6.47]			4.43	[7.02]
Monarchy in 1300 Dummy					3.18	[5.44]	6.85	[5.51]
State Capital in 1300 Dummy					7.06	[6.43]	2.01	[7.45]
Parliamentary Activity in 1300-1400					5.08	[4.66]	-0.32	[4.59]
Log Distance to Nearest Parliament					4.49**	[1.95]	0.59	[2.09]
Self-Governing City in 1300 Dummy					-5.30	[4.04]	2.04	[4.38]
Battle w/i 100 Km in 1300-1350 Dummy					-3.59	[3.85]	-6.48	[4.31]
Obs.; R^2	124; 0.27		124; 0.12		124; 0.15		124; 0.36	

Mortality Rates (1347-1353) and Initial City Size (1300).



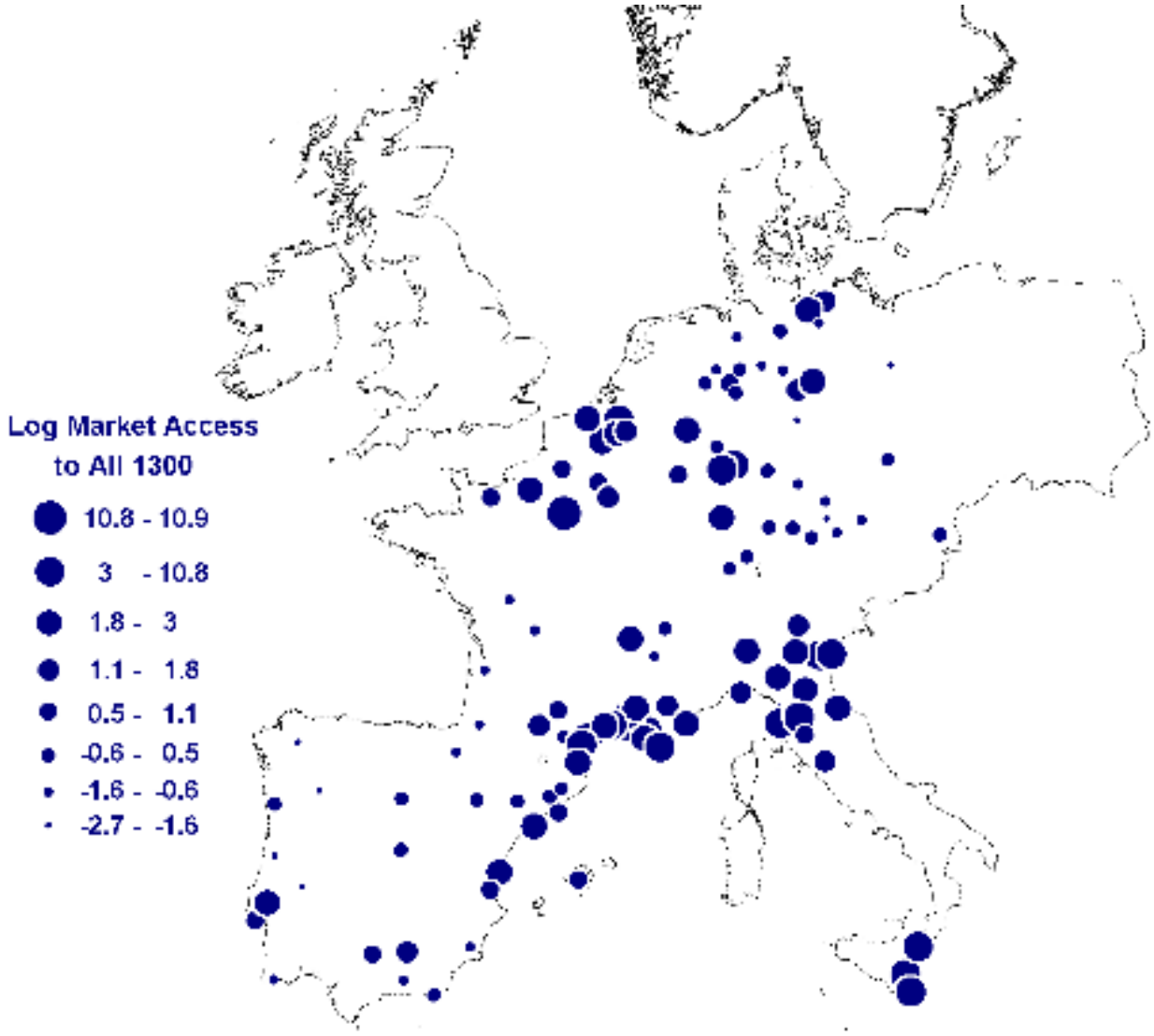
Slope of -0.55; Obs. = 124; R2 = 0.00.

Market Access (for city i and other cities j, $MA_i = \sum_j \frac{P_j}{D_{ij}^{\sigma}}$)

Different **travel speeds** for four transport technologies: *seas*, *rivers*, *Roman or medieval roads*, and *porters* (source: Boerner and Severgnini 2014). $\sigma = 3.8$

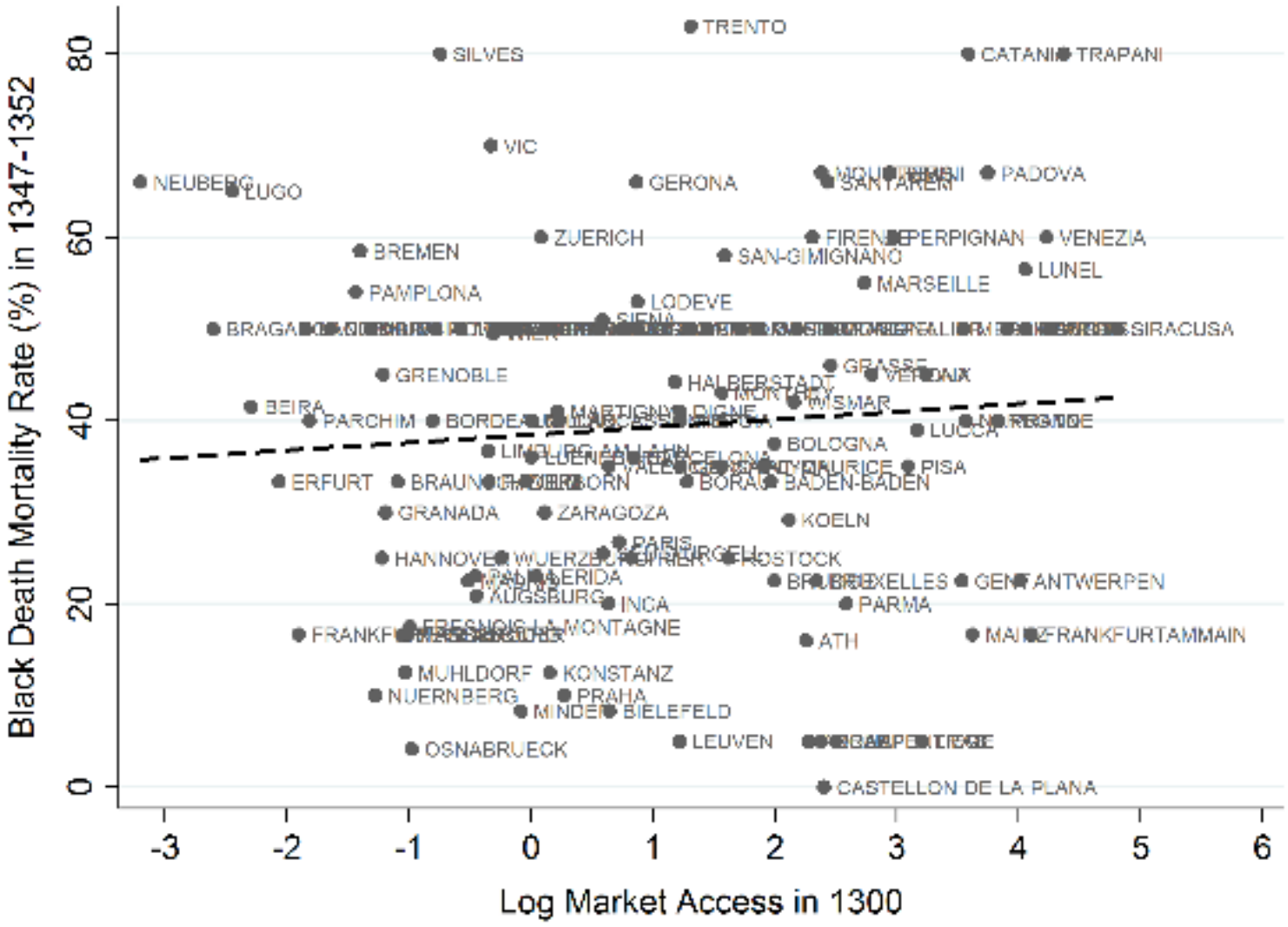
▸ MA Construction

Market Access (for city i and other cities j, $MA_i = \sum_j \frac{P_j}{D_{ij}^{\sigma}}$)



For the 124 towns, market access to other European towns (N = 1,869) in 1300.

Mortality Rates (1347-1353) and Initial Market Access (1300)



Slope of 0.85; Obs. = 124; R2 = 0.01.

ROBUST TO MANY DIFFERENT CONTROLS AND SPECIFICATIONS...

- Instrumental Variables Regressions ▸ IV Regs
- Preventive persecutions ▸ Preventive
- Alternative measures of persecution ▸ Alternative
- Outliers ▸ Outliers
- Measurement of Jewish presence and mortality ▸ Measurement

Mechanisms: Scapegoating vs. Complementarities

- We interact mortality with city characteristics that may affect the respective magnitudes of the **scapegoating** (α) and **complementarities** (β) effects.

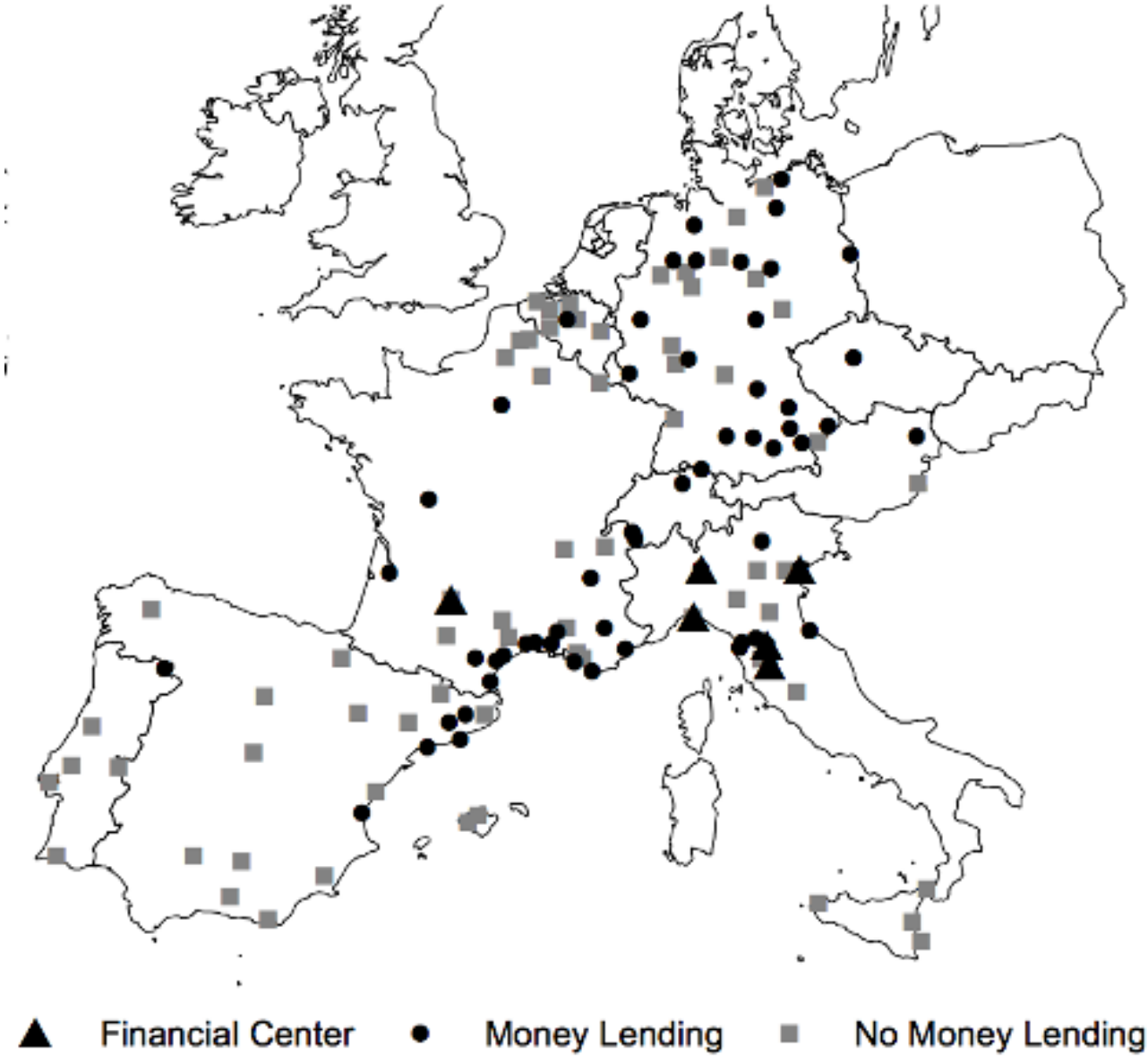
$$P_{i,1347-52} = \alpha + \beta \mathrm{M}_{i,1347-52} + \gamma \mathbf{X}_i + \delta \mathrm{M}_{i,1347-52} * \mathbf{X}_i + \varepsilon_i \qquad (1)$$

- If interacted effect of mortality rate and the characteristic (δ) > 0, the scapegoating effect is reinforced.

  Persecution more likely if history of antisemitism or "fake news"
- If interacted effect of mortality rate and the characteristic (δ) < 0, the complementarities effect is reinforced.

  Persecution less likely if important economic role (e.g., finance)
- We also report the significance of the total effect of mortality ($\beta + \delta$) to show if the mechanism shuts down the protective effect.

Mechanisms: Complementarities



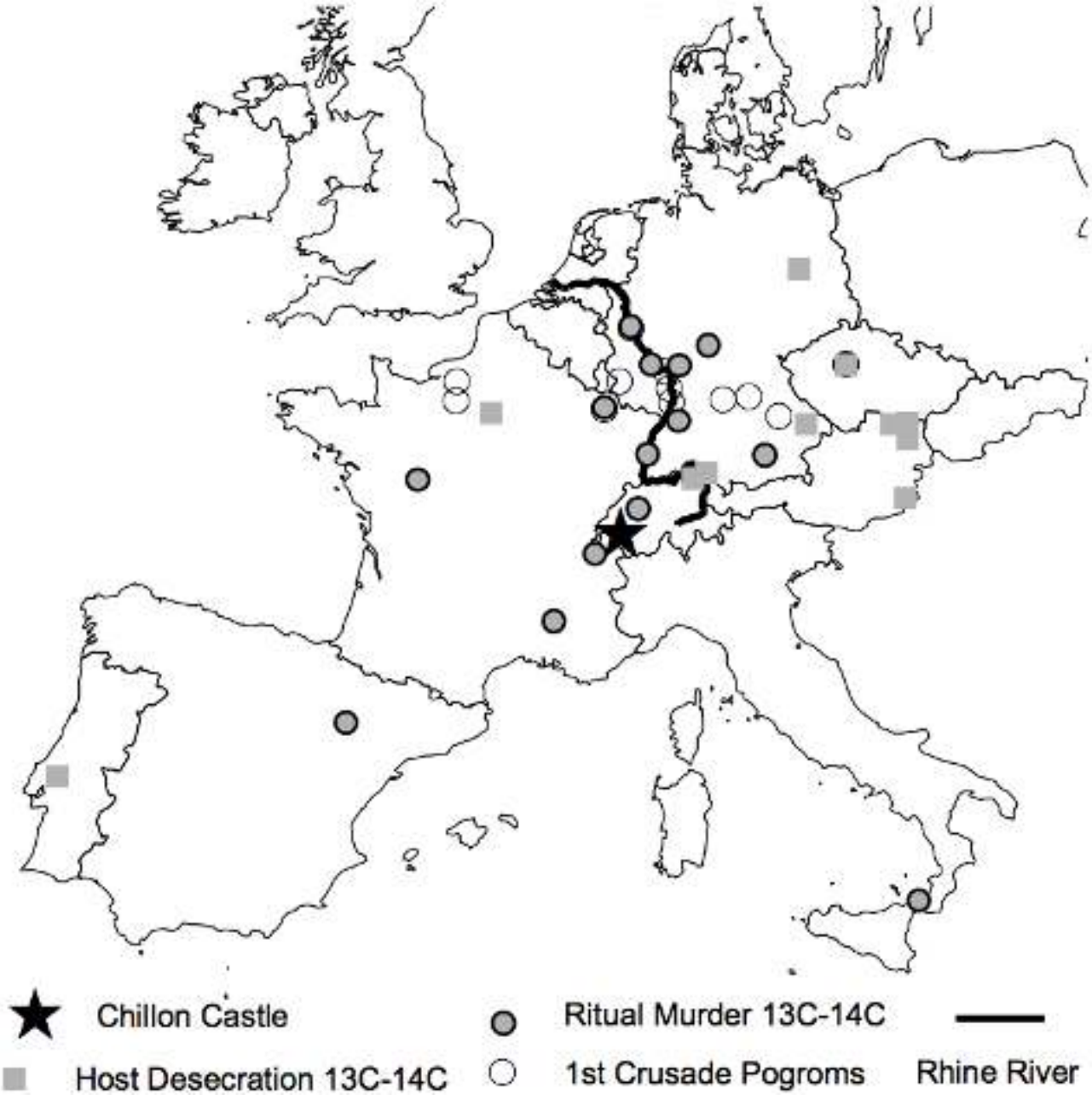
Mechanisms: Complementarities

- Stronger negative relationship between plague mortality and persecution in towns where Jews offer specialized economic services:
- **Moneylending services** (papal prohibition on usury, but competition from Cahorsins and "Lombards"):
  - If farther from main financial centers in 14th century.
  - If lend to people in the town (often the only option at all).
- **Trade networks** (merchants relied on credit to fund trade, since costly to move bullion over long distances):
  - Cities close to other cities with a Jewish community.
  - No effects for Hansa cities though (substitute non-Jewish trading network?)

Complementarities

Dependent Variable: Dummy if Any Jewish Persecution in 1347-1352:						
Effect of:	Mortality		Mortality x		Sum	
Rows 1-11: Dummy Equal to 1 if:	Rate (β)		Dummy (δ)		($\beta + \delta$)	
1. Close to Major Financial Centers	-0.008***	[0.002]	0.008***	[0.002]	0.000	[0.000]
2. Jews Lend Money in the Town	-0.006*	[0.003]	-0.009**	[0.004]	-0.014***	[0.002]
9. Top 10% Jewish Centrality Index	-0.008***	[0.002]	-0.010**	[0.004]	-0.018***	[0.004]
10. Hanseatic League	-0.009***	[0.002]	0.005	[0.005]	-0.004	[0.004]

Mechanisms: Fake News



MECHANISMS: SCAPEGOATING

- Persecute more in towns with **conspiracy theories/fake news**:
  - Proximity to Chillon (origin of rumour that Jews poisoned wells)
  - Proximity to Rhine (spread of rumour)

Link to Modern Example

SCAPEGOATING

Dependent Variable: Dummy if Any Jewish Persecution in 1347-1352:						
Rows 1-17: Dummy Equal to 1 if:	Effect of: Mortality Rate (β)		Mortality x Dummy (δ)		Sum ($\beta + \delta$)	
1. Close to Chillon Castle (Origin of Rumor)	-0.010***	[0.002]	0.016*	[0.009]	0.006	[0.009]
2. Close to Towns Warned by Letter (Path of Rumor)	-0.010***	[0.002]	0.017*	[0.009]	0.007	[0.009]
3. Close to Rhine River (Path of Rumor)	-0.009***	[0.002]	0.017**	[0.007]	0.008	[0.007]

MECHANISMS: SCAPEGOATING

- Persecute more in towns with **history of antisemitism**:
  - Persecution in past 5 or 25 years
  - First Crusade (1096) pogroms
  - Ritual murder (13th century) accusations
  - Host desecration (1st half of 14th century) accusations

In Brosingen (Hungary) the Jews opened the veins of a wheelwright's child and sucked his blood. (Drawing after a Polish plaque)

Link to Modern Example

SCAPEGOATING

Dependent Variable: Dummy if Any Jewish Persecution in 1347-1352:						
Effect of: Rows 1-17: Dummy Equal to 1 if:	Mortality Rate (β)		Mortality x Dummy (δ)		Sum ($\beta + \delta$)	
1. Close to Chillon Castle (Origin of Rumor)	-0.010***	[0.002]	0.016*	[0.009]	0.006	[0.009]
2. Close to Towns Warned by Letter (Path of Rumor)	-0.010***	[0.002]	0.017*	[0.009]	0.007	[0.009]
3. Close to Rhine River (Path of Rumor)	-0.009***	[0.002]	0.017**	[0.007]	0.008	[0.007]
9. Very Recent Persecution in 1340-1346	-0.010***	[0.002]	0.039*	[0.021]	0.029	[0.021]
10. Close to Pogrom 1st Crusade (1096)	-0.009***	[0.002]	0.016**	[0.007]	0.007	[0.007]
11. Close to Alleged Ritual Murder 13C	-0.010***	[0.002]	0.016**	[0.008]	0.006	[0.007]
12. Close to Alleged Host Desecration 1st Half 14C	-0.010***	[0.002]	0.011**	[0.005]	0.001	[0.005]

MECHANISMS: SCAPEGOATING

- We know the **month of first infection** for each town:
  - Periods of reflection and penance such as **Advent (December)** & **Lent (February-March)**: Catholics must confess their sins, fast, make amends → persecute less.

MECHANISMS: SCAPEGOATING

- We know the **month of first infection** for each town:
  - Feast days such as **Easter (e.g., 20 April 1348, so April-May) & Christmastide (January):** Jews held guilty of Jesus' crucifixion. In many regions, illegal for Jews to be seen in public during the Holy Week leading to Easter (Jesus' resurrection from the dead).

    Jews historically seen as **"Christ-killers"** $\rightarrow$ persecute more.

SCAPEGOATING

Dependent Variable: Dummy if Any Jewish Persecution in 1347-1352:						
Rows 1-17: Dummy Equal to 1 if:	Effect of: Mortality Rate (β)		Mortality x Dummy (δ)		Sum ($\beta + \delta$)	
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12. Close to Alleged Host Desecration 1st Half 14C	-0.010***	[0.002]	0.011**	[0.005]	0.001	[0.005]
13. Month of First Infection is December (Advent)	-0.009***	[0.002]	-0.022**	[0.009]	-0.031***	[0.013]
14. Month of First Infection is January (Christmastide)	-0.011***	[0.002]	0.016**	[0.007]	0.005	[0.007]
15. Month of First Infection is February or March (Lent)	-0.008***	[0.002]	-0.014***	[0.003]	-0.022***	[0.002]
16. Month of First Infection is April or May (Easter)	-0.011***	[0.002]	0.011*	[0.006]	0.000	[0.006]
17. Month of First Infection is October (2nd Planting)	-0.009***	[0.003]	0.011***	[0.004]	0.002	[0.003]

▸ All Months

Conclusions

- The Black Death shock made Jewish communities particularly vulnerable to violence due to scapegoating.
- However, cities with higher mortality rates were less likely to persecute.
- Overall, results suggest that interethnic economic complementarities can play a role in sustaining tolerance between a minority and majority community. ▸ lit 1: neg. shocks & persecution ▸ lit 2: complementarities & persecution
- Also find evidence for persistent economic benefits of **not** persecuting the Jewish community during Black Death, consistent with Johnson & Koyama (2017) (results not discussed). ▸ City Growth Results

Organization of Black Death Pogroms

- Not at all clear these were mob led persecutions.
- In the *Germania Judaica* there is only one case of a persecution proceeding against the will of the ruling elites (in Halle) (Cohn, 2007, 21).
- But a lot of heterogeneity in elite opinion. E.g. Pope Clement VI called for the Jews to be protected during Black Death in *Sicut Jedeis* on 26 September 1348. '…German chroniclers, who represented a cross-section of the intellectual elites…show a wide spectrum of attitudes and beliefs concerning the question of Jews poisoning wells (Cohn, 2007, 15).

Black Death Mortality and Market Access

- Market Access for city j is defined as:

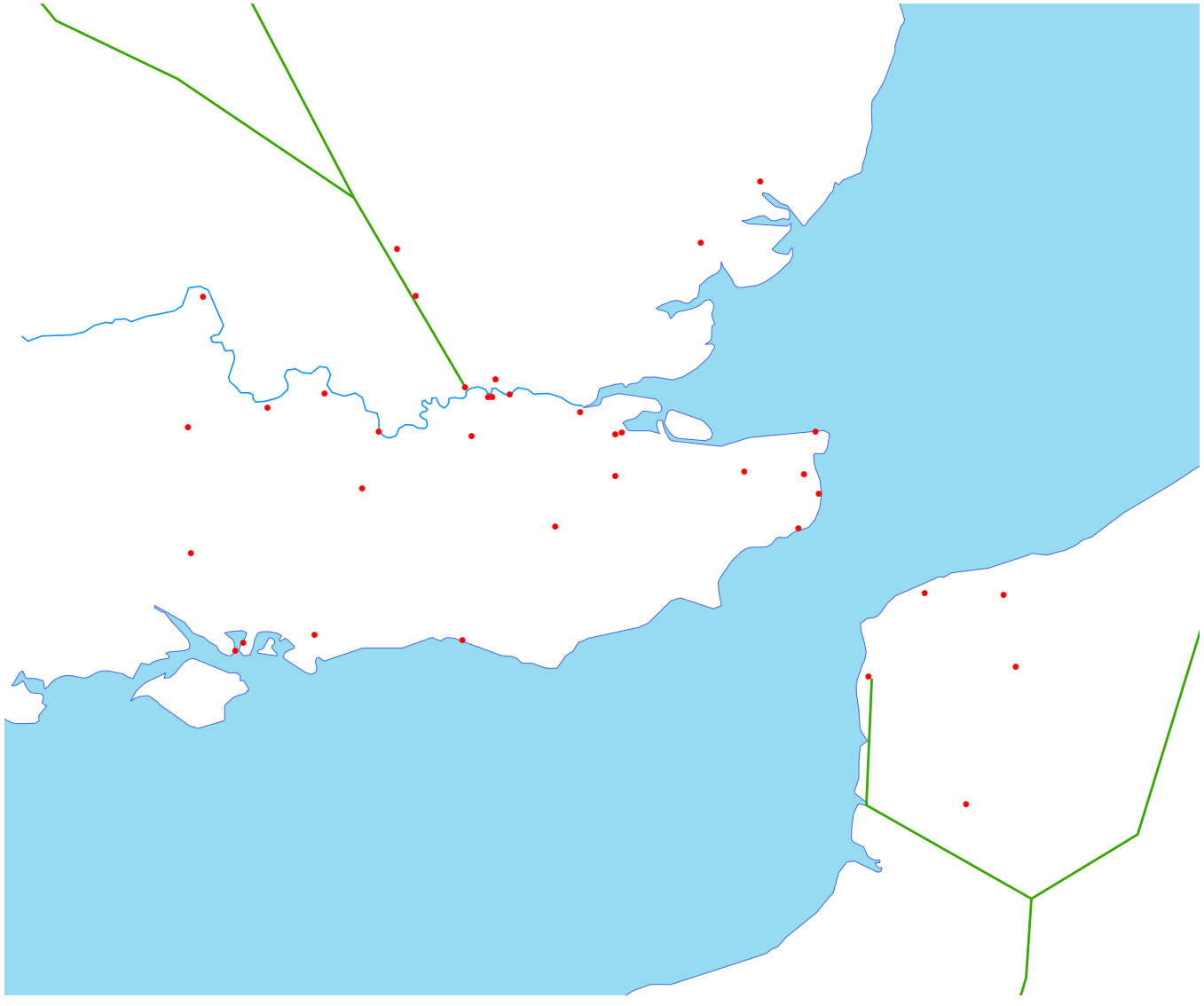
$$MA_j = \sum_{i=j} N_i \tau_{ji}^{-\sigma} \tag{2}$$

- where N_i is the population of city i, τ_{ji} is the cost of travel between cities j and i, and σ is a trade elasticity (from Donaldson & Hornbeck (2015) = 3.8).

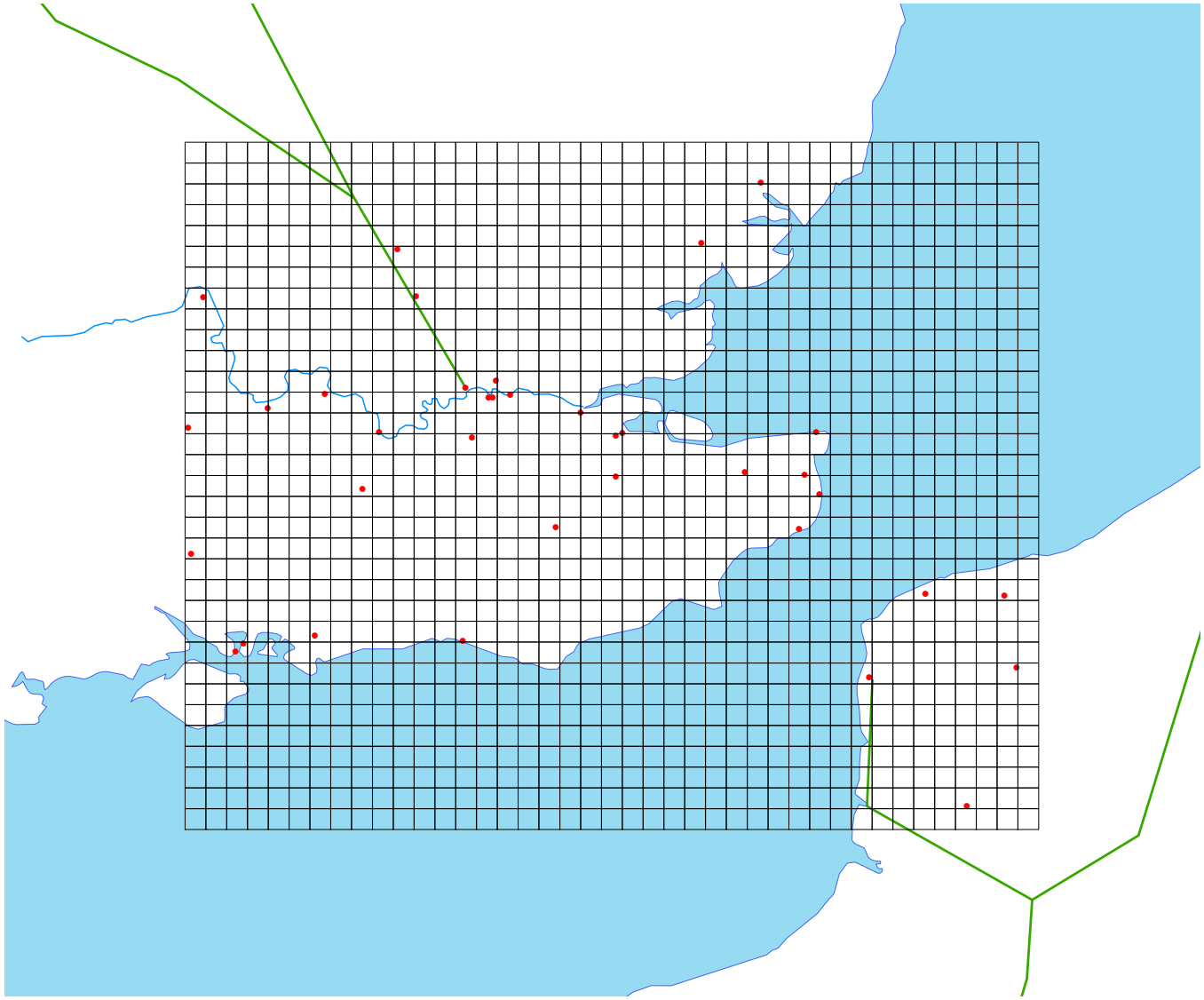
- The average cost of transport per km/ton expressed in terms of cereals in the early 20th century was: 8.8 k.g for porters, 3.9 for transportation by cart, 0.99 for river transport, and 0.3-0.4 kg for sea transport (Bairoch, 1990, 141).

- Where does τ_{ji}, or, 'travel cost' come from?

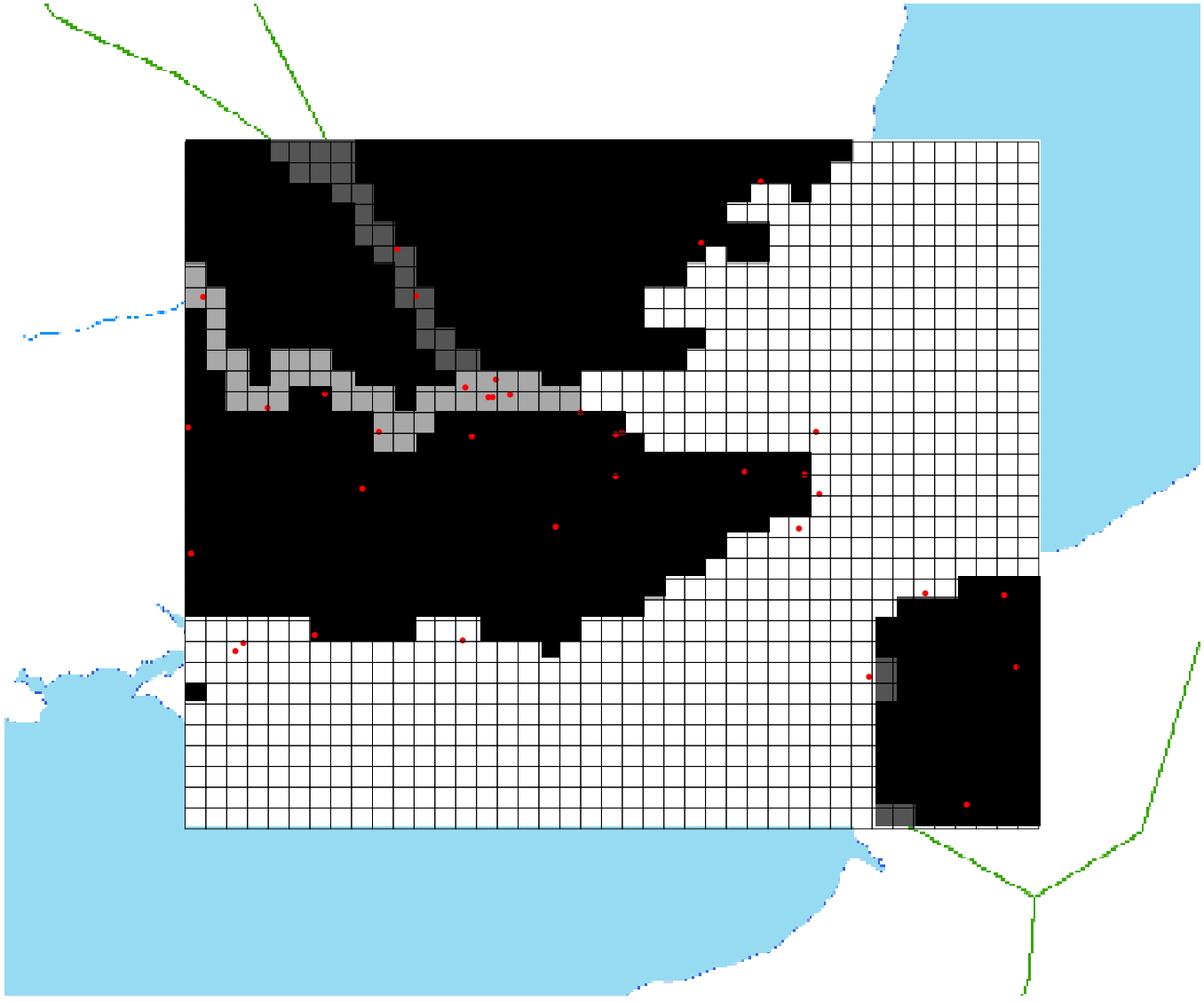
START WITH VECTOR DATA CONTAINING CITIES, RIVERS, SEAS, AND TRADE ROUTES. . .



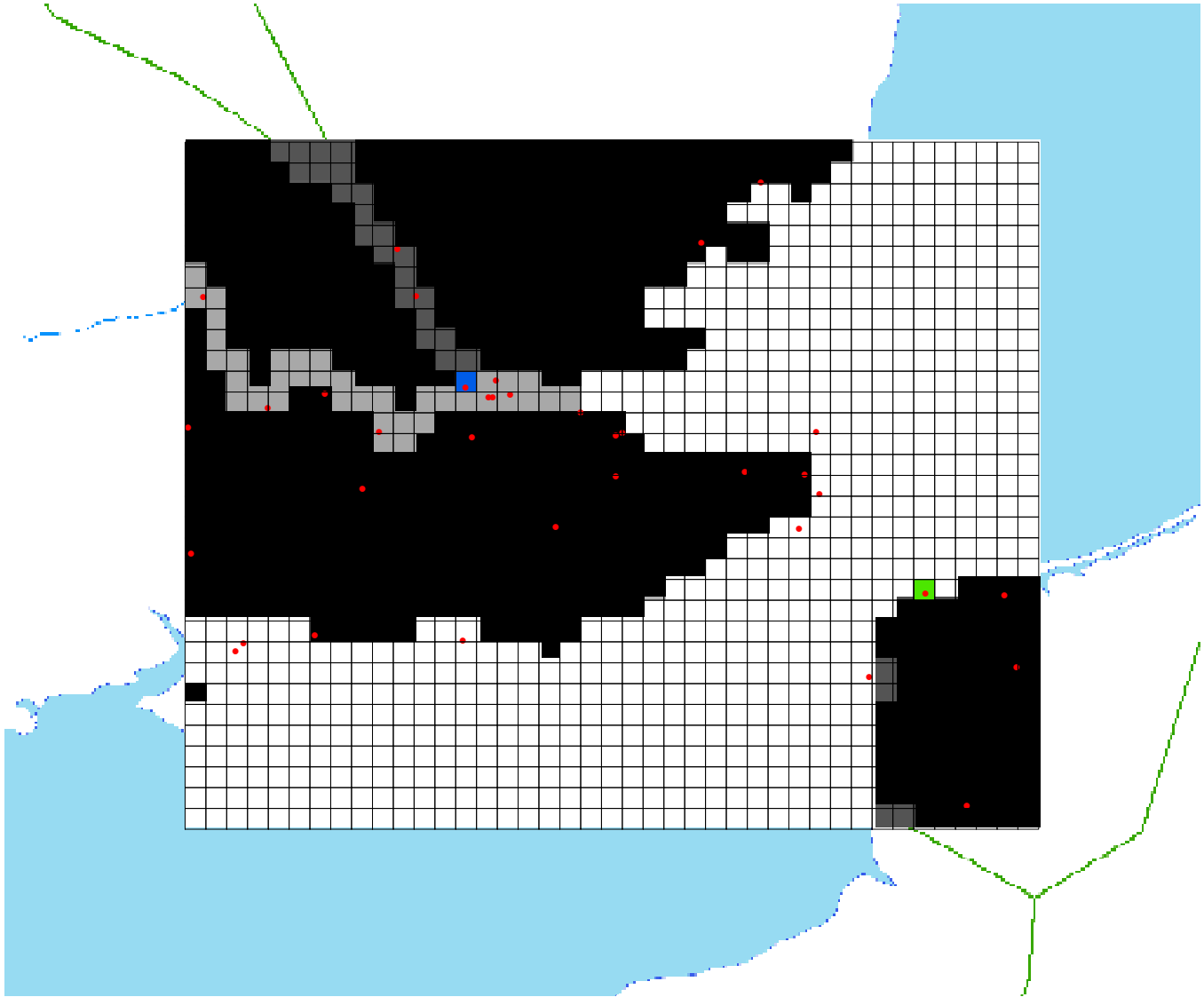
Superimpose a 5km x 5km grid...



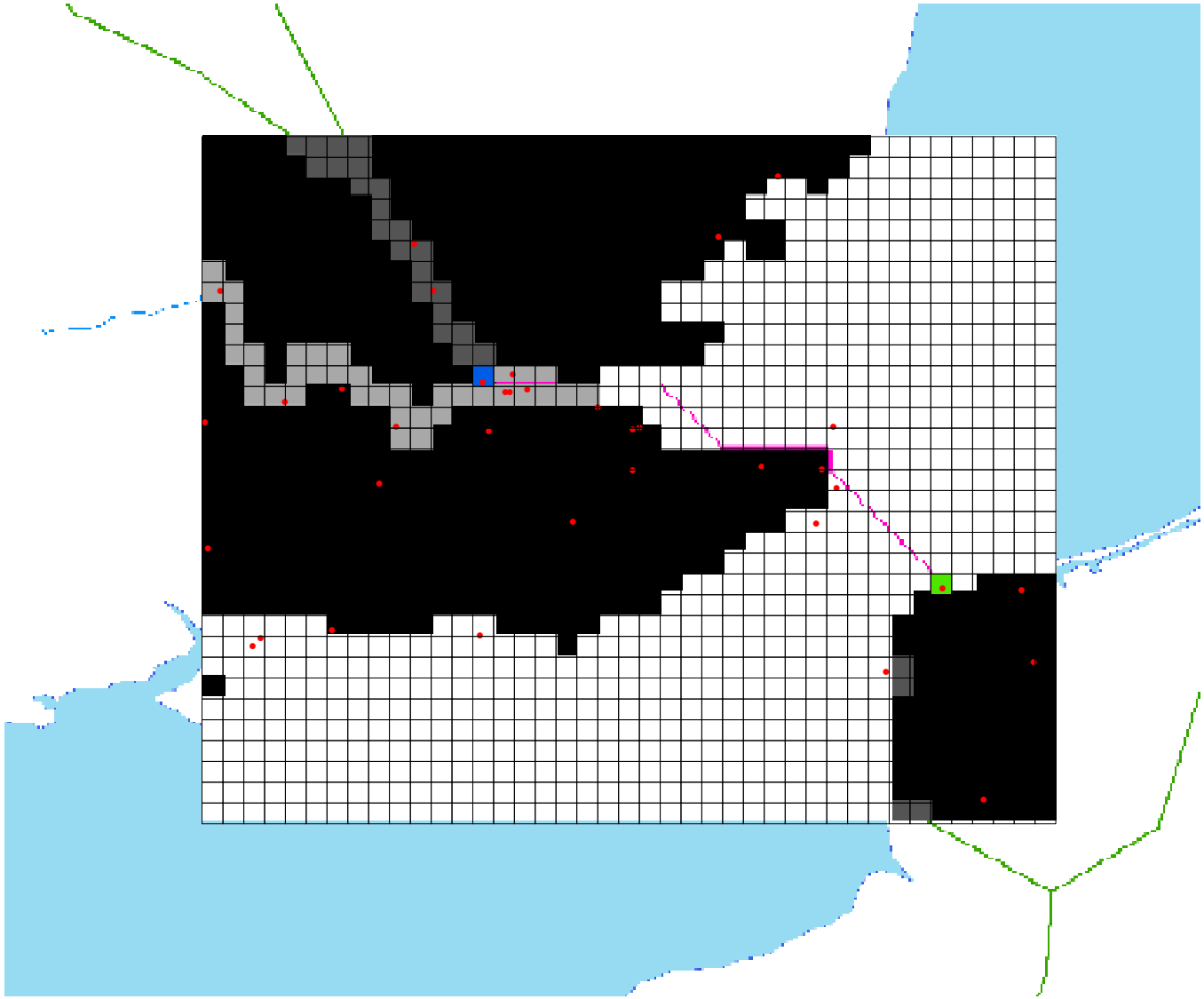
TRANSFORM INTO A RASTER TAKING VALUE OF LEAST COST TRANSPORT FOR EACH GRID...



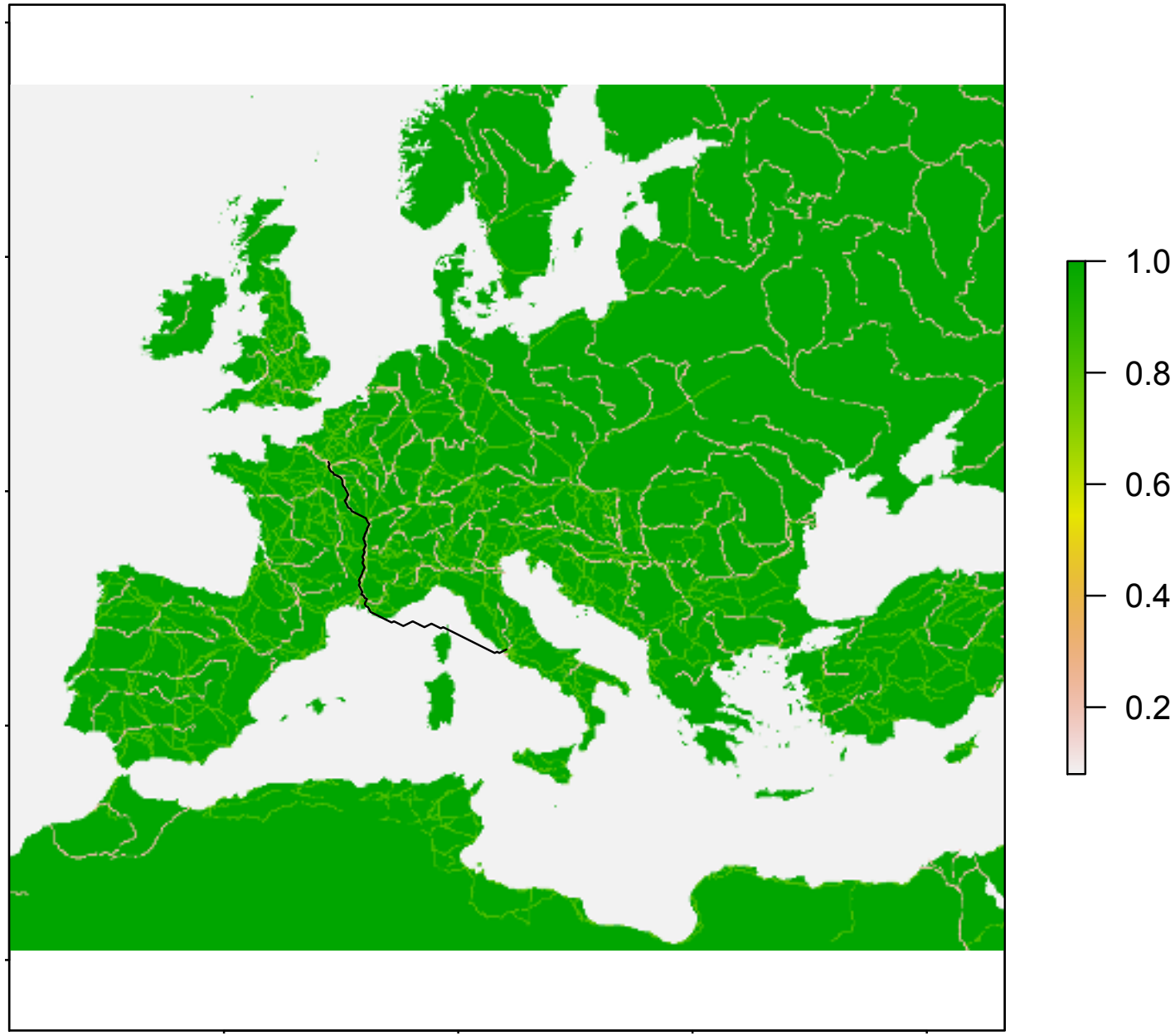
Choose two cities: London and Calais...



Apply Dijkstra's Algorithm to identify least cost path and cost of taking least cost path (τ)...



RINSE AND REPEAT 1,603,840 TIMES. . .



Return

Table 4: MORTALITY RATES AND PREVENTIVE PERSECUTIONS

Dependent Variable: Dummy if Any Jewish Persecution in 1347-1352:

	Mortality 1347-1352		Constant		Obs.
1. Baseline (Row 1 of Table 1)	-0.009***	[0.002]	0.831***	[0.104]	124
2. Add Dummy if Year-Month of Infection > Sept. 1348	-0.007***	[0.002]	0.601***	[0.138]	124
3. Row 2 + Log Dist. to Chillon + Dummy x Log Dist.	-0.007***	[0.002]	-0.251	[0.899]	124
4. Row 2 + Log Dist. to Rhine + Dummy x Log Dist.	-0.005**	[0.003]	-0.972	[0.773]	124
5. Row 2 + Log Dist. to Flagellants + Dummy x Log Dist.	-0.007***	[0.002]	0.499***	[0.133]	124
6. Drop if Likely Preventive Based on Year	-0.009***	[0.002]	0.806***	[0.107]	121
7. Drop if Possibly Preventive Based on Year	-0.009***	[0.002]	0.788***	[0.109]	119
8. Drop if Likely Preventive Based on Year-Month	-0.008***	[0.002]	0.754***	[0.111]	115
9. Drop if Possibly Preventive Based on Year-Month	-0.008***	[0.002]	0.763***	[0.112]	114

Notes: Row 2: We add a dummy if the town was first infected after September 1348 (incl.). Rows 3-5: We also control for the log Euclidean distance to Chillon, the Rhine, and the path of the flagellants, and their interaction with the post-September 1348 dummy. Rows 6-9: We drop the towns where it is likely/possible that the persecution preceded the Black Death, based on the year/month of first infection in the town. Robust SE's: * p<0.10, ** p<0.05, *** p<0.01. See Web Appendix for data sources.

Return

Table 5: MORTALITY AND PERSECUTIONS, ALTERNATIVE OUTCOMES

Dependent Variable: Dummy if ...	Mortality 1347-1352		Constant		Obs. (Sample)
1. Baseline: Persecution (N = 58)	-0.009***	[0.002]	0.831***	[0.104]	124 (All)
2. Pogrom (N = 53)	-0.007***	[0.002]	0.720***	[0.105]	124 (All)
3. Expulsion (N = 13)	-0.004**	[0.001]	0.244***	[0.077]	124 (All)
4. Expulsion or Annihilation (N = 32)	-0.009**	[0.004]	0.837***	[0.137]	58 (Persecution)
5. Annihilation (N = 19)	-0.008*	[0.004]	0.694***	[0.166]	45 (Pogrom Only)
6. Burning (N = 8)	-0.003	[0.002]	0.178	[0.108]	45 (Pogrom Only)
7. Mob Involved (N = 11)	-0.010***	[0.003]	0.556***	[0.160]	45 (Pogrom Only)
8. Annihilation, Burning or Mob (N = 28)	-0.010**	[0.004]	0.844***	[0.157]	45 (Pogrom Only)
9. Persecution + Successful Prevention (N = 61)	-0.009***	[0.002]	0.857***	[0.103]	124 (All)
10. Persecution - Failed Prevention (N = 50)	-0.009***	[0.002]	0.751***	[0.103]	124 (All)
11. Any Attempt to Prevent (N = 11)	0.003	[0.003]	0.075	[0.086]	61 (Row 9)

Notes: Row 4: Annihilation dummy equal to one if all Jews are killed. Row 6: Burning dummy equal to one if at least one Jew is burned. Row 7: Mob dummy equal to one if the persecution is initiated by a mob. Rows 9-10: We know if the local authority tried to prevent a persecution, and succeeded in doing so. Robust SE's: * p<0.10, ** p<0.05, *** p<0.01. See Web Appendix for data sources.

Results on **intensive margin**: Stronger protective effect for pogroms, and for most "cruel" pogroms among pogroms (annihilation, mob involved).

▸ Return

Dependent Variable: Dummy if Any Jewish Persecution in 1347-1352:					
	Mortality 1347-1352		Constant		Obs.
1. Baseline (Row 1 of Table 1)	-0.009***	[0.002]	0.831***	[0.104]	124
2. Use Encyclopedia Judaica Only	-0.013***	[0.002]	0.933***	[0.106]	97
3. Drop if Unsure about Jewish Presence	-0.011***	[0.002]	0.935***	[0.104]	112
4. Also Drop if Unsure about Jewish Persecution	-0.012***	[0.002]	0.957***	[0.109]	92
5. Drop Description-Based Mortality Data	-0.011***	[0.003]	0.927***	[0.110]	97
6. Drop Desertion-Based Mortality Data	-0.006**	[0.003]	0.624***	[0.131]	99
7. Drop Number-Based Mortality Data	-0.010***	[0.003]	0.921***	[0.138]	52
8. Use Only Number-Based Mortality Data	-0.007**	[0.003]	0.704***	[0.159]	72
9. Drop if Mortality Rate = 50%	-0.009***	[0.002]	0.828***	[0.103]	96
10. Keep Top and Bottom 25% in Mortality	-0.008***	[0.002]	0.813***	[0.117]	53
11. Use All Towns with Mortality Data	-0.007***	[0.001]	0.533***	[0.070]	263
12. Use Extrapolated Mortality	-0.015***	[0.002]	0.963***	[0.075]	363
13. Drop if France Today	-0.012***	[0.002]	0.984***	[0.098]	95
14. Drop if Germany Today	-0.006**	[0.003]	0.574***	[0.134]	91
15. Drop if Italy Today	-0.007**	[0.003]	0.804***	[0.114]	104
16. Drop if Portugal Today	-0.009***	[0.002]	0.824***	[0.106]	118
17. Drop if Spain Today	-0.010***	[0.002]	0.887***	[0.108]	103
18. Conley standard errors (100 km)	-0.009***	[0.002]	0.831***	[0.112]	124

Return

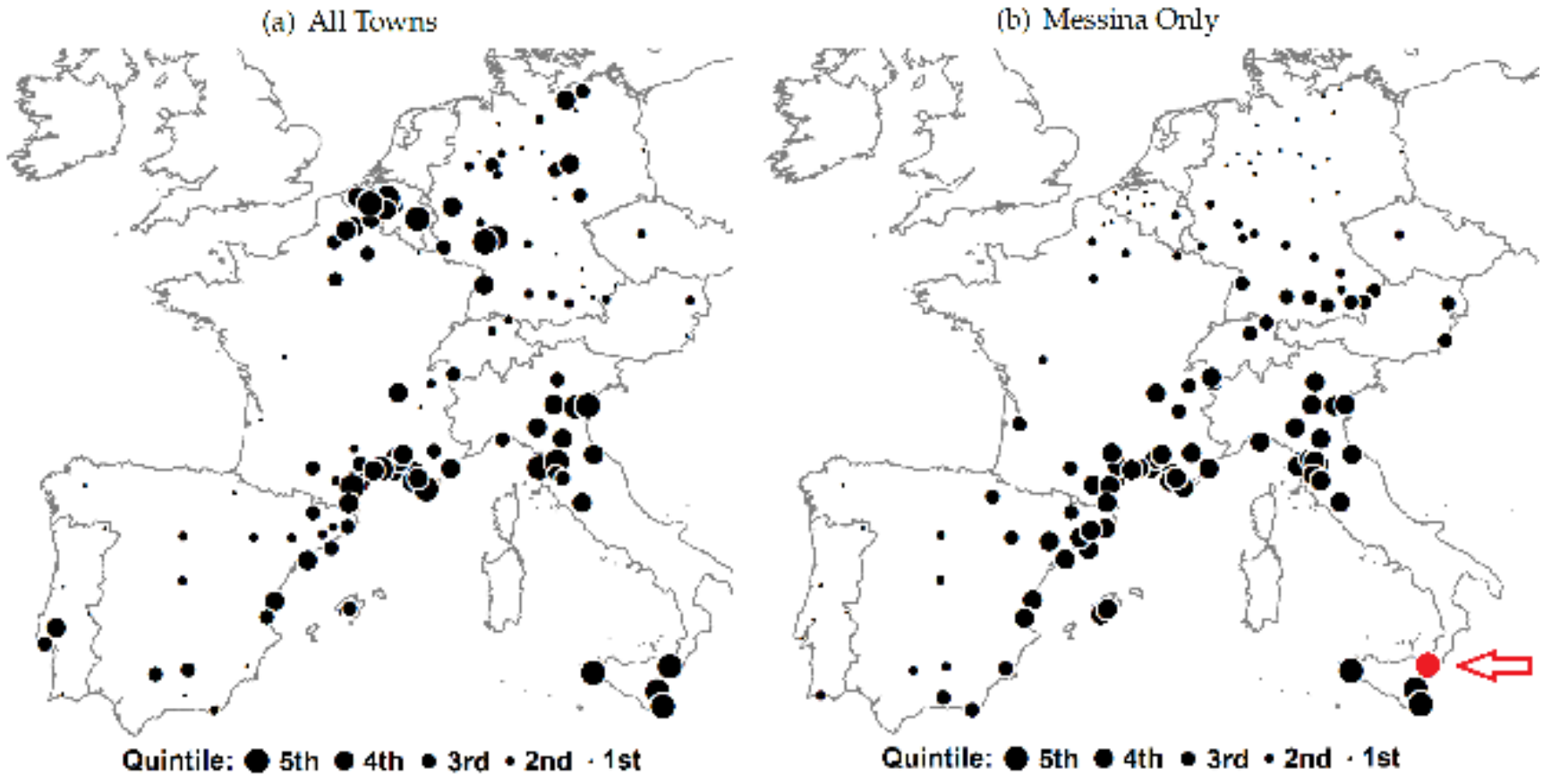
Interethnic Complementarities

- Botticini & Eckstein (2012) argue that by the fourteenth century, Jews are overrepresented in banking. This was driven by human capital and was a natural extension of their activities as merchants and traders.

- Jews were very often welcome members of the community because of the financial services they provided (Shatzmiller, 1974,1990; Toaff, 1979). E.g. Jan. 1406 Florentine patriciate expelled Jewish usurers from towns of hinterland. There had been war, and elites saw this action as a fiscal relief for subjects. However, over next 20 years Arezzo, Pistoia, and San Gimingnano 'wrote threatening petitions' demanding the Jews be returned or else taxes withheld (Cohn, 2007, 23-4).

- Also overrepresented in medicine. By 14th century represent about 1% of population but 50% of physicians (Efron, 2008,Shatzmiller, 1994).

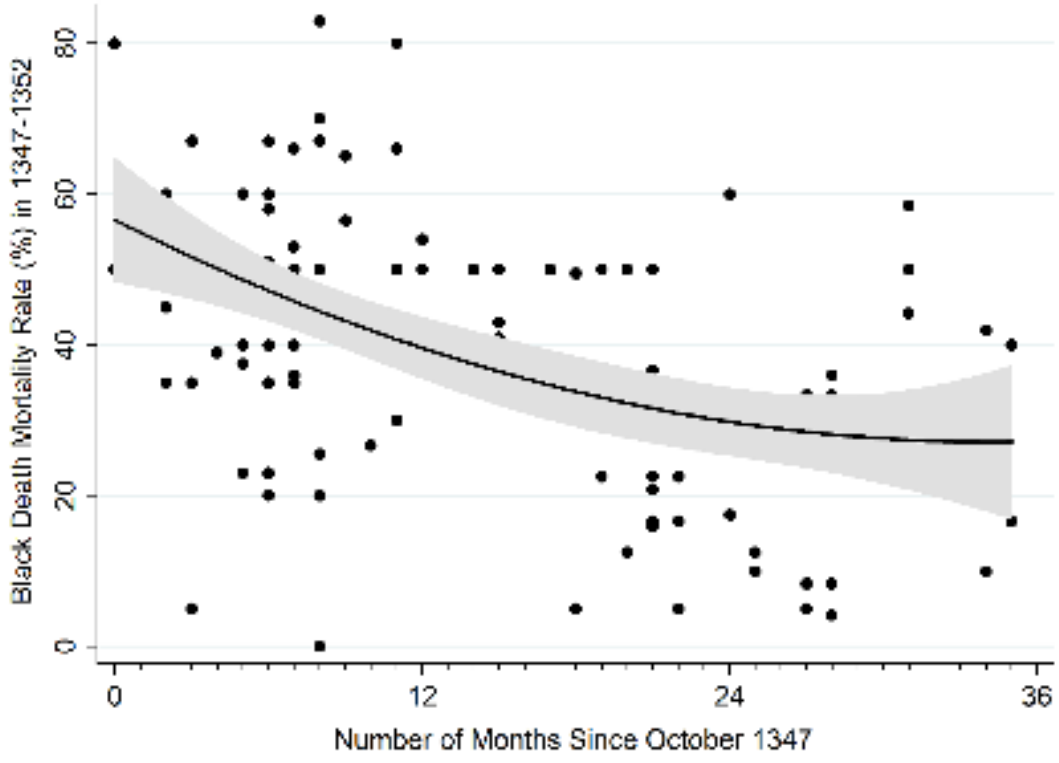
Figure 7: Market Access to All Towns vs. Market Access to Messina Only, 1300.



Notes: Panel (a) shows for the 124 towns of the main sample their log market access to all towns in 1300. Panel (b) shows for the same 124 towns their log market access to Messina in 1300. See notes under figure 5(b) for details on how market access is calculated. We use as an instrument log market access to Messina, conditional on log market access to all towns. See Web Appendix for more details on data sources.

IV1: Log market access to Messina, controlling for log total market access

Figure 8: Timing of the Onset of the Black Death and Black Death Mortality



Notes: This figure shows for the 124 towns of the main sample the relationship between cumulative Black Death mortality rates (%) in 1347-1352 and the specific timing of the onset of the Black Death in the town. Number of months is measured since October 1347, the date Messina—the port of entry of the Black Death in Europe—was first infected. Towns which were infected earlier had higher mortality rates (Y = 52.01*** -0.87*** X; Obs. = 124; R2 = 0.22). See Web Appendix for more details on data sources.

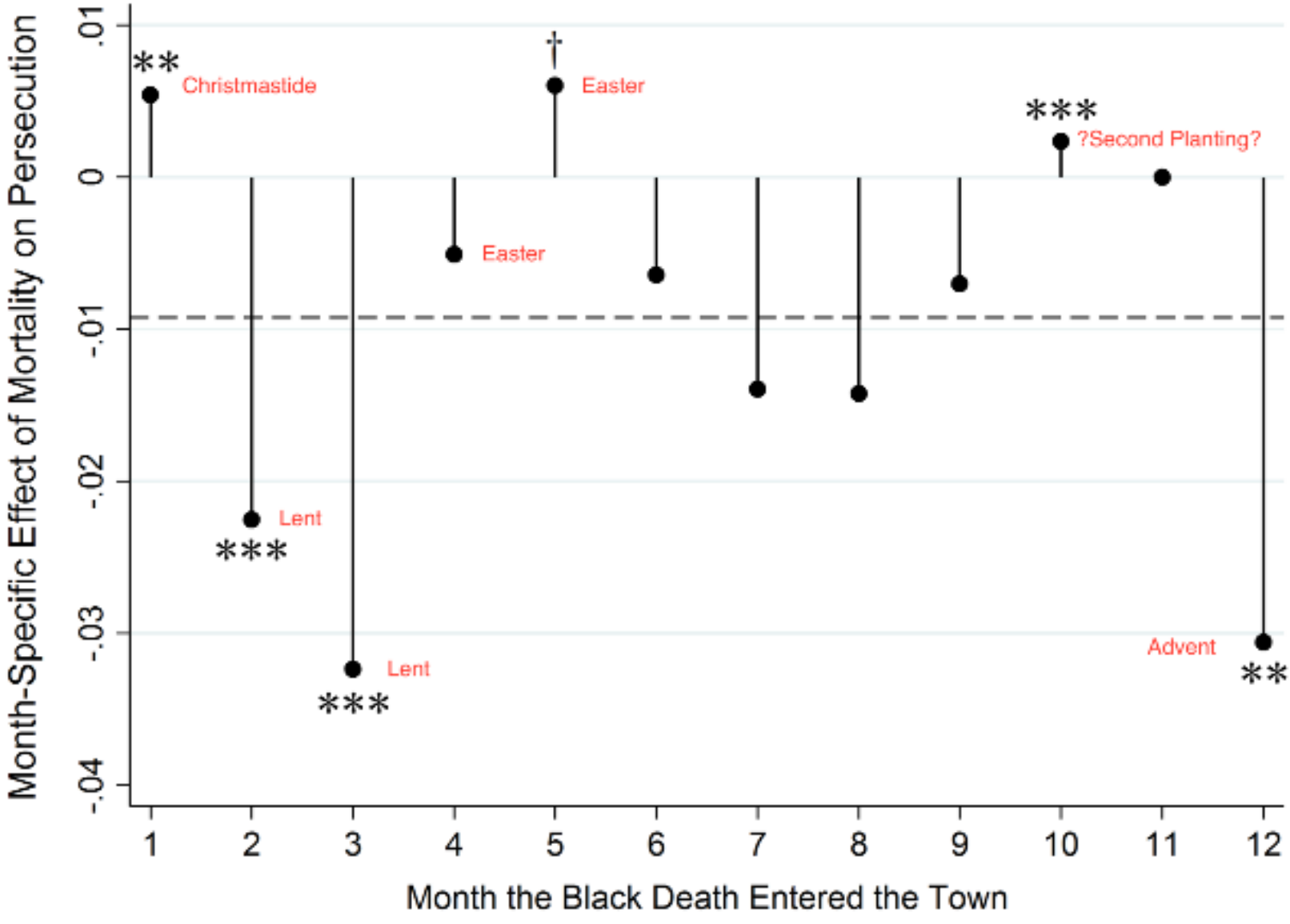
IV2: Number of months between Oct 1347 and month of first infection.

Table 3: MORTALITY RATES AND PERSECUTIONS, INVESTIGATION OF CAUSALITY

Dependent Variable: Dummy if Any Jewish Persecution in 1347-1352:

	Mortality 1347-1352		Constant		Obs.
1. Baseline (Row 1 of Table 1)	-0.009***	[0.002]	0.831***	[0.104]	124
2. Drop if Jews ≥ 5% of Town Population	-0.008***	[0.002]	0.779***	[0.113]	107
3. Controls for Jewish Cemetery, Quarter and Synagogue	-0.009***	[0.002]	0.808***	[0.117]	124
4. Controls for Years of First Entry and Last Reentry	-0.009***	[0.002]	0.814***	[0.197]	124
5. Control for Jewish Centrality Index	-0.009***	[0.002]	0.814***	[0.197]	124
6. Row 2 + Row 3 + Row 4 + Row 5	-0.009***	[0.003]	0.478*	[0.279]	107
7. Drop if Known Number of Victims	-0.009***	[0.002]	0.775***	[0.111]	115
8. Dummy if Persecution in 1321-1346	-0.009***	[0.002]	0.812***	[0.107]	124
9. Dummy if Persecution in 1300-1346	-0.009***	[0.002]	0.816***	[0.108]	124
10. Control for Number of Persecutions in 1321-1346	-0.009***	[0.002]	0.812***	[0.107]	124
11. Control for Number of Persecutions in 1300-1346	-0.009***	[0.002]	0.836***	[0.106]	124
12. Drop Top and Bottom 25% in Mortality	-0.015**	[0.007]	1.049***	[0.295]	71
13. Drop if Natural Baths or Response	-0.009***	[0.002]	0.812***	[0.106]	121
14. All Controls of Table 2	-0.005*	[0.003]	1.373	[1.344]	124
15. IV1: Log MA to Messina, Control for Log MA (F: 31.0)	-0.016***	[0.005]	1.134***	[0.184]	123
16. IV1 + Latitude, Longitude and their Squares (F: 4.3)	-0.023*	[0.014]	8.356*	[4.606]	123
17. IV2: #Months between Oct 1347 and First Infection (F: 33.2)	-0.028***	[0.006]	1.567***	[0.240]	124
18. IV2 + Latitude, Longitude and their Squares (F: 7.3)	-0.029**	[0.015]	6.116	[5.522]	124
19. IV1 + IV2 + Latitude, Longitude and Squares (F: 4.4)	-0.019*	[0.011]	8.652**	[4.239]	123
20. Reduced-Form Effect of Log MA to Messina, Ctrl for Log MA	-0.071***	[0.002]	-0.192	[0.200]	123
21. Row 20, for Dummy if Any Jewish Persecution in 1321-1346	-0.001	[0.007]	0.061	[0.076]	121
22. Row 20, for Dummy if Any Jewish Persecution in 1300-1346	-0.003	[0.013]	0.103	[0.136]	121
23. Reduced-Form Effect of #Months btw Oct 1347 and 1st Inf.	0.024***	[0.004]	0.113	[0.069]	124
24. Row 23, for Dummy if Any Jewish Persecution in 1321-1346	-0.002	[0.002]	0.108**	[0.047]	122
25. Row 23, for Dummy if Any Jewish Persecution in 1300-1346	-0.004	[0.004]	0.207***	[0.007]	122

Effect of Black Death Depended on Month of First Infection



Pizzagate conspiracy theory

From Wikipedia, the free encyclopedia

"Pizzagate" connected Comet Ping Pong (pictured) to a fictitious child sex ring.[1]

Pizzagate is a debunked[2][3] conspiracy theory that emerged during the 2016 United States presidential election cycle. The theory, which went viral, claimed that John Podesta's emails, which were leaked by WikiLeaks, contained coded messages referring to human trafficking and connecting a number of restaurants in the United States and members of the Democratic Party with a fabricated child-sex ring. The false theory has been extensively discredited by a wide array of organizations and described as a "fictitious conspiracy theory" by the District of Columbia Police Department.

Public opinion

A poll conducted by Public Policy Polling on December 6–7, 2016, asked 1,224 U.S. registered voters if they thought Hillary Clinton was "connected to a child sex ring being run out of a pizzeria in Washington DC?" The poll showed that 9% said that they did believe she was connected, 72% said they did not, and 19% were not sure.[70][71][72] The full results, organized according to which candidate the respondents supported in the 2016 presidential election, were as follows:[72]

U.S.

#PIZZAGATE RESURFACES AN OLD ANTI-SEMITIC SLANDER

Newsweek

The underpinnings of the baby's blood allegations will be horrifyingly familiar to Jews who grew up hearing about it from family members who escaped European pogroms. "The 'blood libel' refers to a centuries-old false allegation that Jews murder Christians—especially Christian children—to use their blood for ritual purposes, such as an ingredient in the baking of Passover matzah (unleavened bread)," according to the Anti-Defamation League. "It is also sometimes called the 'ritual murder charge.' The blood libel dates back to the Middle Ages and has persisted despite Jewish denials and official repudiations by the Catholic Church and many secular authorities. Blood libels have frequently led to mob violence and pogroms, and have occasionally led to the decimation of entire Jewish communities."

The New York Times

Mahmoud Abbas Claims Rabbis Urged Israel to Poison Palestinians' Water

By [redacted] [redacted]

President Mahmoud Abbas of the Palestinian Authority addressing a session Thursday in the European Parliament in Brussels.

JERUSALEM — Echoing anti-Semitic claims that led to the mass killings of European Jews in medieval times, President Mahmoud Abbas of the Palestinian Authority accused rabbis in Israel of calling on their government to poison the water used by Palestinians.

He made the unsubstantiated allegation during a speech to the European Parliament on Thursday.

Prime Minister Benjamin Netanyahu of Israel said in a statement later that Mr. Abbas had spread a "blood libel" in the speech.

Mr. Abbas made the allegation in the context of calling for the revival of a long dormant committee of Israeli, Palestinian and American officials that was created to expose and denounce incitements from either side in the Israeli-Palestinian conflict. "We are against incitement," he began in his speech.

"Just a week ago, a week, a group of rabbis in Israel announced, in a clear announcement, demanding their government, to poison, to poison, the water of the Palestinians," he said. "Is this not incitement? Is this not clear incitement, to the mass murder of the Palestinian people?"

Mr. Abbas was repeating a claim initially made on the website of an office of the Palestine Liberation Organization. Anadolu, the Turkish state run news agency, repeated the claim on Sunday. It was echoed in The Gulf News, a daily newspaper in Dubai. The Anadolu article said that a Rabbi Shlomo Milma, whom it called the "chairman of the Council of Rabbis in the West Bank settlements," had issued an "advisory opinion in which he allowed Jewish settlers to poison water in Palestinian villages and cities in the West Bank."

The Israeli newspaper Haaretz reported that news outlets had not been able to find a Rabbi Milma or any listing for the council mentioned in the article.

We estimate two models.

Model 1 tells us if Jewish *presence* in a city was correlated with higher population growth:

$$\log L_{i,t} = \kappa J_{i,[t-1;t]} + \beta_t M_{i,1347-52} + \mu_i + \lambda_t + \varepsilon_{i,t} \ . \tag{3}$$

Model 2 tells us if an *expulsion* or *pogrom* against Jews during the Black Death period had a long-run impact on city growth:

$$\begin{aligned} \log L_{i,t} = {} & \phi P_{i,1347-52} \times 1(t > 1400) + \pi J_{i,1347-52} \times 1(t > 1400) \\ & + \kappa' J_{i,[t-1;t]} + \beta'_t M_{i;1347-52} + \mu'_i + \lambda'_t + \varepsilon'_{i,t} \ . \end{aligned} \tag{4}$$

Jewish Presence and Growth

Dependent Variable: Log Town Population in Year t:				
Panel A: Effect of Jewish Presence in Period $[t\text{-}1; t]$ Dummy		Coeff.	SE	Obs.
1.	Baseline Effect of Jewish Presence Dummy	0.33***	[0.04]	16,821
2.	Row 1 + Including the Lag of Log Town Population in t-1	0.24***	[0.03]	16,821
3.	Individual Effect of Jewish Presence Dummy	0.12*	[0.06]	16,821
	Individual Effect of Jewish Presence Share	0.26***	[0.07]	
4.	*Entries:* Effect if Jews Absent in Previous Period $[t\text{-}2; t\text{-}1]$	0.35***	[0.05]	16,821
	Exits: Effect if Jews Present in Previous Period $[t\text{-}2; t\text{-}1]$	0.12**	[0.05]	
5.	Effect of Jewish Presence Dummy Before 14th Century	0.31***	[0.04]	16,821
	Effect of Jewish Presence Dummy After 14th Century	0.40***	[0.06]	
Panel B: Effect of Black Death Persecutions in 1347-1352 After 14th Century		Coeff.	SE	Obs.
1.	Baseline Effect of Persecution in 1347-1352 Dummy After 14th Century	-0.21*	[0.11]	16,821
2.	Effect of Pogrom in 1347-1352 Dummy After 14th Century	-0.31***	[0.12]	16,821
	Effect of Expulsion in 1347-1352 Dummy After 14th Century	0.24	[0.16]	

Sample Entry

Krems:

> *In the 13th and 14th centuries the Krems community was one of the most important in Austria. The Jews were moneylenders and they were not restricted to dwellings in any one quarter of the city. Persecutions occurred in 1337 and 1347. On Sept. 29, 1349, inflamed by rumors that the Jews had caused the Black Death, the populace of Krems and the nearby villages massacred most of the Jews and plundered their homes. A few escaped to the fortress. Duke Albrecht V ordered his soldiers to punish the attackers, laid penalties on the city, and sentenced three of the ringleaders to death. In 1355 Jews are recorded as living in Krems, owning houses all over the city,*

Some entries contain more details. Others are more laconic.

LITERATURE 1

- **Negative shocks and persecutions of minorities**:
  - **Scapegoating**: poli sc, psychology, sociology: Dollard (1939), Girard (1978), Allport (1979), Staub (1992), Glick (2009).
  - When negative shocks/trends, majority group may develop a compelling, shared ideology leading to discrimination of minority group (extreme form: genocide).
  - Weather shocks and *witch killings* (Oster, 2004; Miguel, 2005), Jewish *pogroms* (Anderson et al., 2016; Grosfeld, Sakalli & Zhuravskaya, 2017).
  - Literature on **economics of mass killings** (Easterly et al., 2006; Caselli et al., 2015; Esteban et al., 2015): outcome of strategic and rational economic calculation.
  - Minorities remain targets of violence across many parts of the world. Why protected in some places but not in others?

LITERATURE 2

- Role of **cultural factors vs. economic complementarities** between groups in treatment received by minorities:
  - **Jews:** Voigtländer & Voth (2012, 2013), Grosfeld, Rodnyansky & Zhuravskaya (2013), Becker & Pascali (2016), Grosfeld, Sakalli & Zhuravskaya (2017).
  - **Other ethnic or religious groups:** Jha (2007, 2013), Mitra & Ray (2014), Yanagizawa-Drott (2014).
  - **Women:** Goldin (1991), Acemoglu et al. (2004), Fernandez et al. (2004), Doepke et al. (2015).
  - **Immigrants, political polarization:** Mayda (2006), Facchini & Mayda (2009), Becker et al (2016), Autor et al (2016).
- For a given mortality shock, Jews are persecuted:
  - (i) less when important economic role (e.g., finance)
  - (ii) more when antisemitism, conspiracy theories/fake news