The Effects of Land Redistribution: Evidence from the French Revolution

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Comments Welcome

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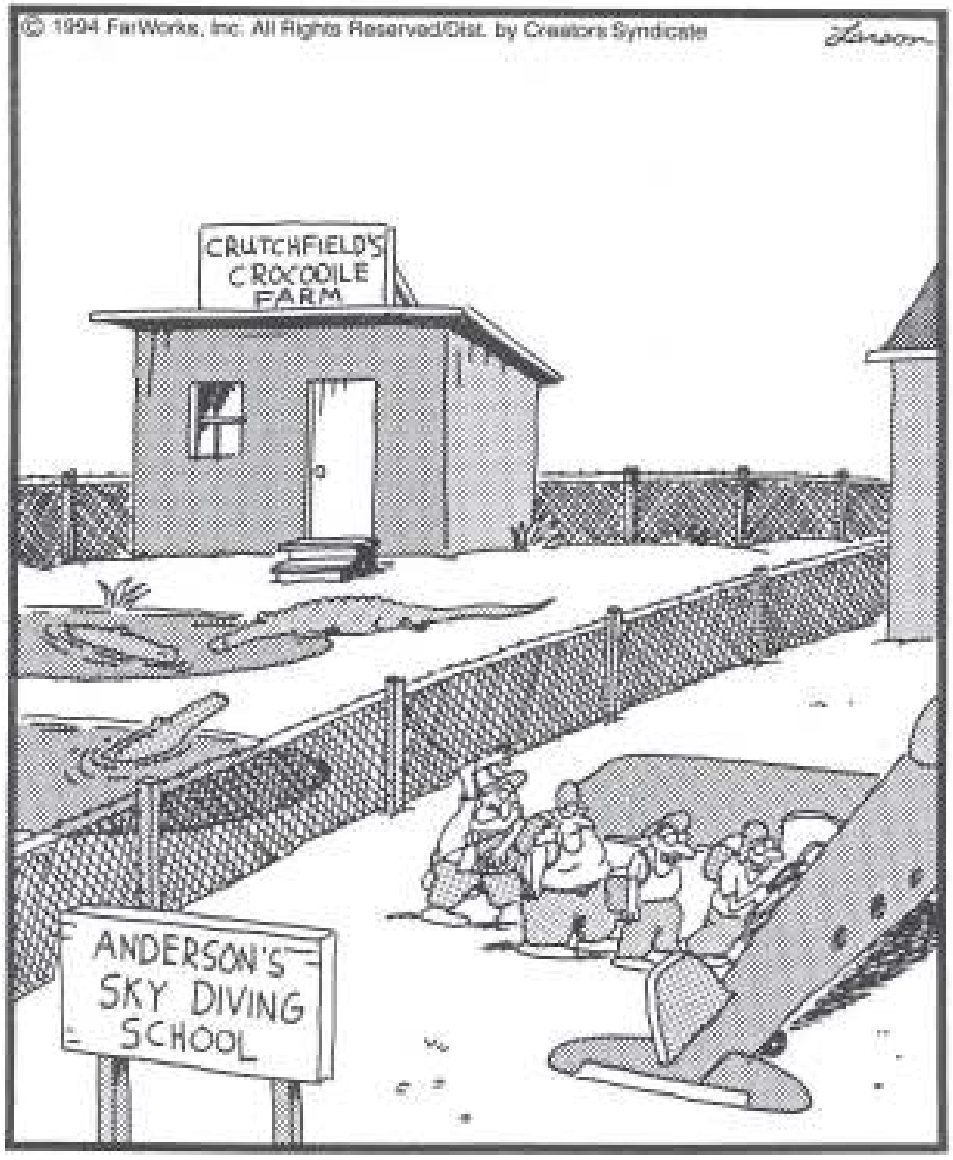
The Coase Theorem: A Practical Application



More trouble brewing

Two Competing Interpretations of the Coase Theorem

George Stigler

Ronald Coase

▸ a third interpretation...

The Coase Theorem: Interpretations

- The Stiglerian interpretation of the Coase Theorem is now standard. E.g. Shughart, Chappell, and Cottle, 1994, *Modern Managerial Economics*:

  > *In the absence of transaction costs, the allocation of resources is independent of the initial assignment of property rights.*

- What Coase actually said in his article:

  > *Direct government regulation will not necessarily give better results than leaving the problem to be solved by the market or the firm. But equally there is no reason why, on occasion, such government administrative regulation should not lead to an improvement in economic efficiency. This would seem particularly likely when, as is normally the case with the smoke nuisance, a large number of people are involved, and in which therefore the costs of handling the problem through the market or the firm may be high (Coase, 1960).*

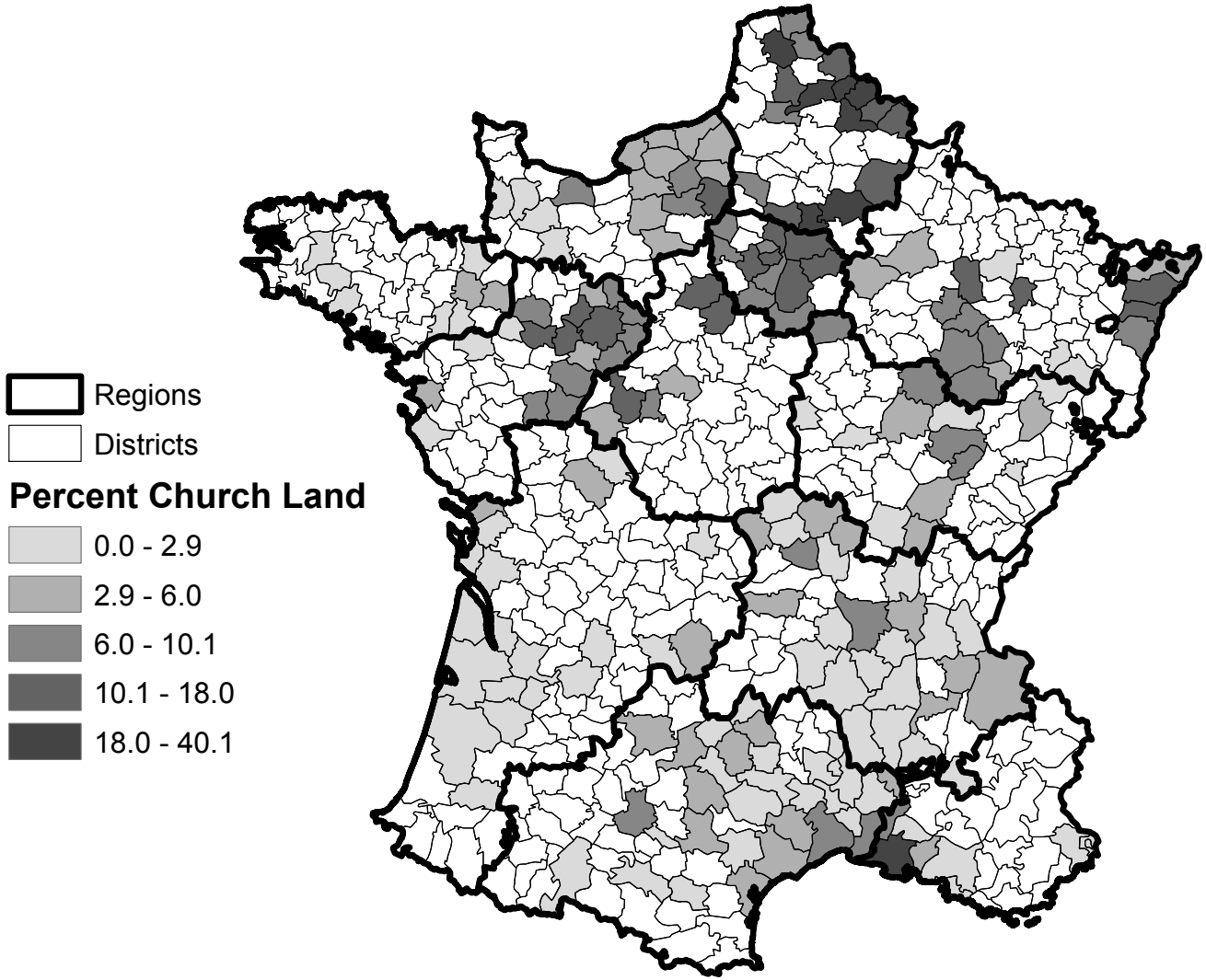
- Institutions that structure exchange (see Coase (1991)'s Nobel Lecture)

▸ Nobel Lecture

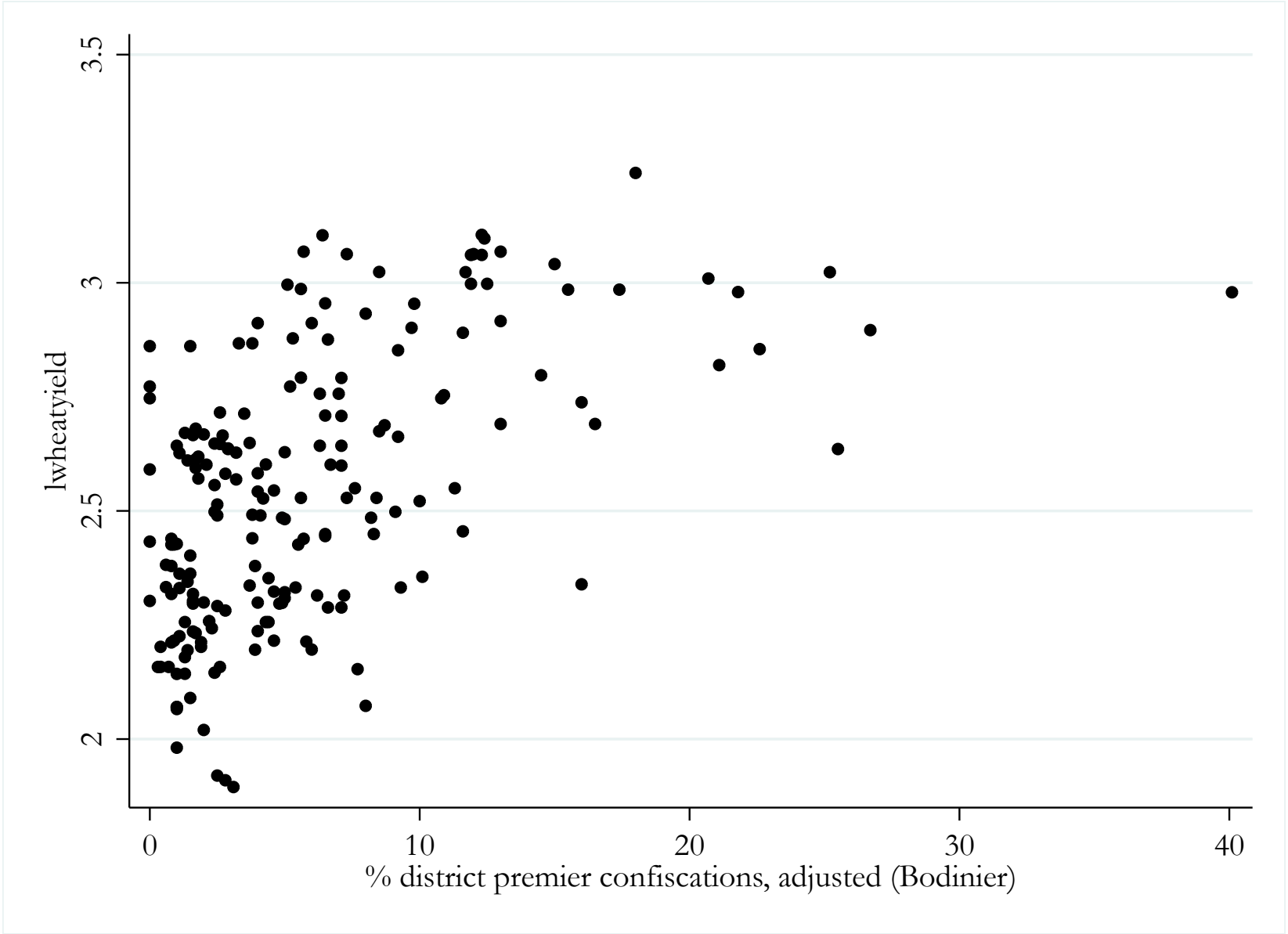
Confiscation of Church Land During Revolution

- On 2nd November 1789 the French Constituent Assembly nationalized all property owned by the Church (including archbishops, bishops, priests, nuns and monks) and by the Crown.
- Bodinier (1999) estimates that about 6.5% of land in France was confiscated from Church and sold during the French Revolution (range=0% to 40%, μ =6%, σ =5.9%). Our data will cover about two-thirds of these transfers (Bodinier, 1999, 11-12).
- The sale of these confiscated properties took place through auctions conducted by the district governments (until 1796) and departmental governments afterward.

French Districts and Revolutionary Auctions



Main Claim: The Redistribution of Confiscated Church Land And Higher Agricultural Productivity in 1841



Spatial Distribution

THEORY

- Before 1789 overlapping property rights prevented optimal investment in agriculture. Post-Revolution, feudal system eliminated, but...
- Positive transaction costs prevented Coase Theorem from operating in a "Stiglerian" manner...
- Auctions of church land lowered transaction costs in some regions and allowed for concentration of wealth...
- This concentration facilitated accumulation of physical capital (Galor and Moav, 2004)...
- Observed as:
  - Investments in irrigation and drainage
  - Investments in local public goods (e.g. roads)
  - Adoption of more modern agricultural techniques (e.g. four field rotation)

Property Rights Before and After 1789 Revolution

The sale of confiscated land, "...put large amounts of property on the market and completely redrew the distribution of landownership. Before the Revolution, the Abbey of Troarn had been the largest landowner in the Dives Basin. After the sale of the biens nationaux, large secular landowners took its place. ...In effect, the end of feudal privileges as well as the sale of church property swept away all overlapping property rights...(Rosenthal, 1992, p. 96)."

Research Questions

- In the wake of fundamental institutional reform, what role do transaction costs play in delaying reallocation of resources, and thus, development (Coase, 1960; Bleakley and Ferrie, 2014; Libecap and Lueck, 2011)?
- What role does inequality play in capital accumulation and investment (Galor and Moav, 2004)?
- How do we explain persistent differences in economic performance, even within the same regions?

Why focus on France at the end of the Old Regime?

- Interesting example of transition from feudal set of property rights to modern institutions.
- Large transfer of land (about 6.5% of total) from Church to secular hands using market mechanism (auctions).
- Transaction costs of land sales still positive after Revolution (e.g. negotiating leases on commons (Vivier, 1998) or uncertainty over ownership due to lack of centralized land registry (Bloch, 1929)).
- Confiscated church lands were auctioned off relatively quickly and without regards to equity considerations.
- Some regions received more 'shock therapy' than others by virtue of the church owning more land there. Did this matter?

The French Revolution and Land Redistribution

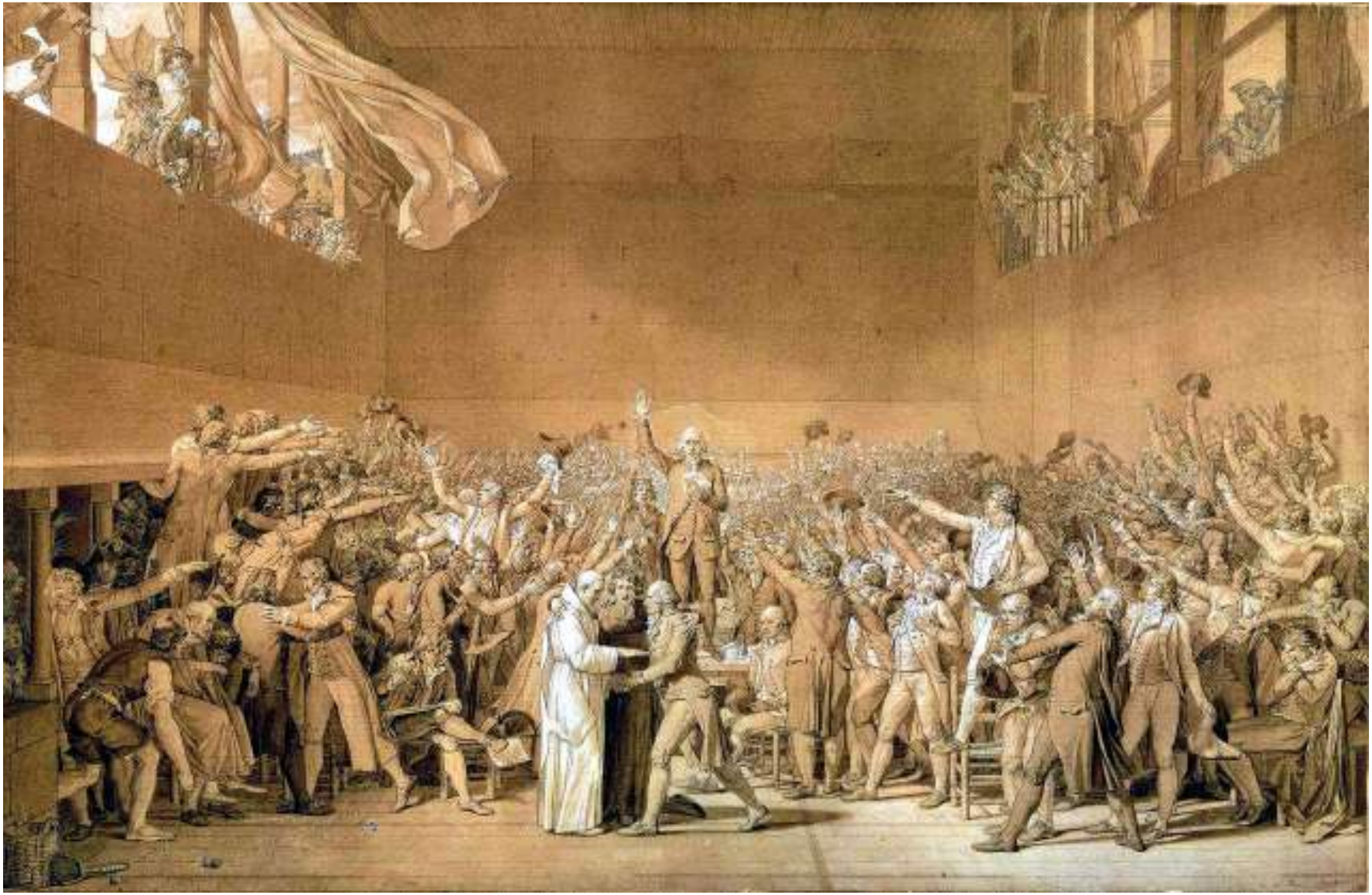
Feudalism and Overlapping Property Rights: Glebe Land

Feudalism and Overlapping Property Rights: Droit de Pulvérage

Figure: Lodève

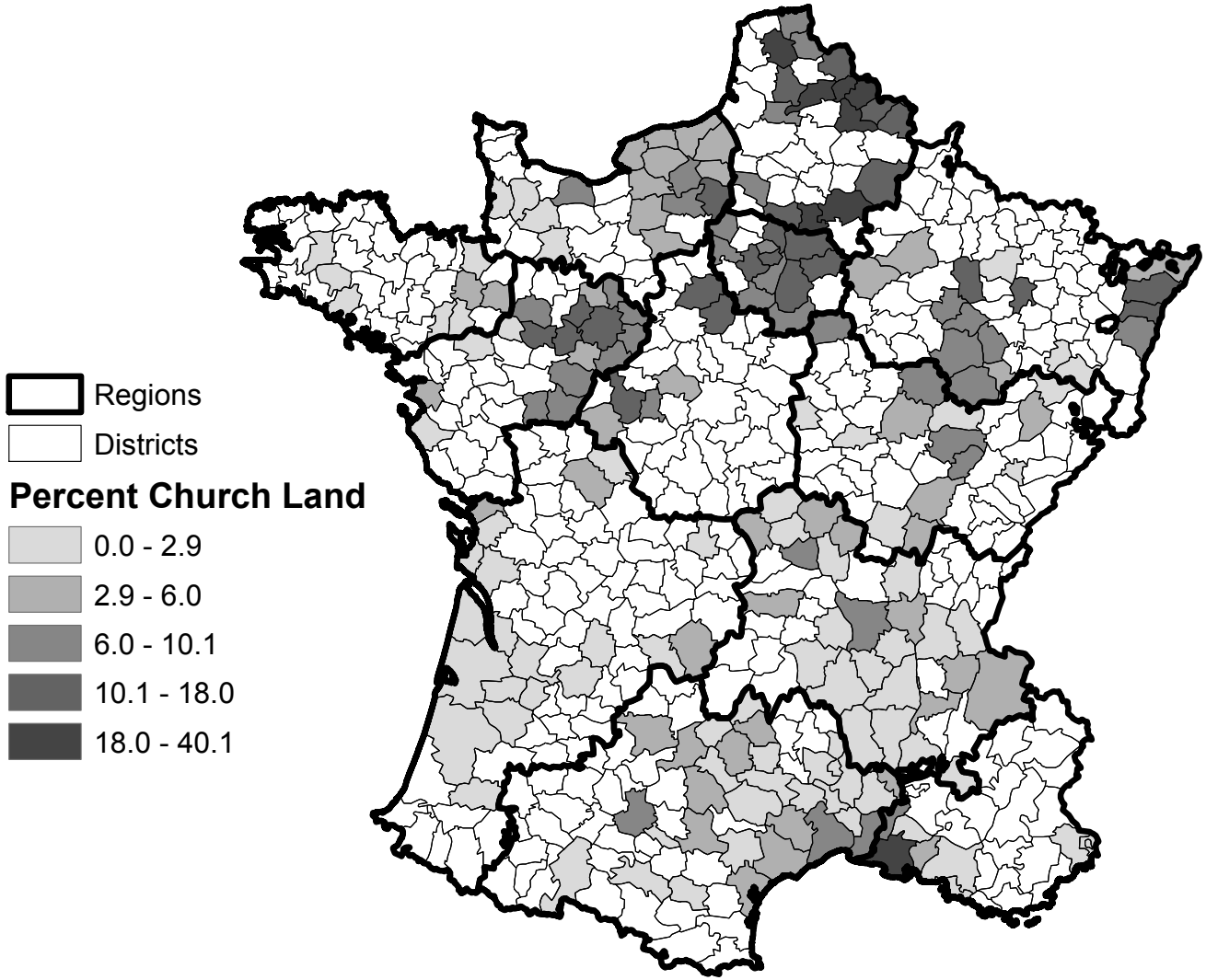
Figure: Overlapping property rights.

The Early Revolution and the Tennis Court Oath, 20 June 1789



Church Lands as Fiscal Boon to State

French Districts and Revolutionary Auctions



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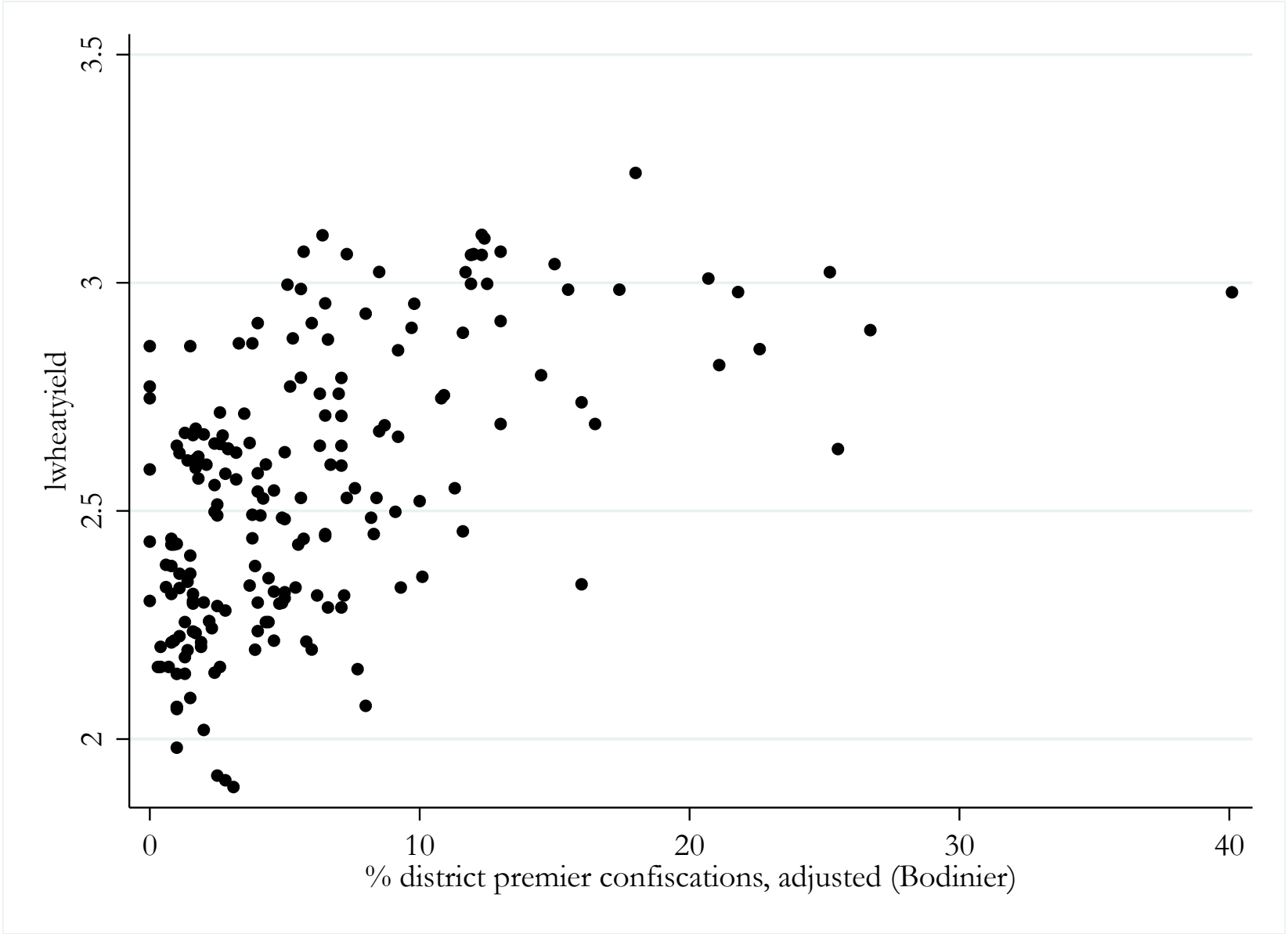


Spatial Distribution

We adopt several strategies to establish causality

- Condition on potential suitability wheat agriculture using data from the GAEZ (Fischer et al., 2002). more
- Control for the integration of each district in market system using measures of market access (Donaldson, 2016). more
- Include twelve region fixed effects.
- Placebo analysis using potato yields. more
- IV strategy based on the premise that centers of Church administration were more likely to prevent Church lands from falling into the hands of secular landowners during the medieval period. more
- Show the effect dissipates over the course of nineteenth century.

Baseline Output Specifications

We run regressions of the form...

$$\text{Log Wheat Yield 1841}_i = \alpha + \beta \text{Percent Confiscated}_i + \gamma \text{Soil Suitability}_i + \\ + \delta \text{Market Access 1789}_i + \theta_j + \varepsilon_i \tag{1}$$

Where $\text{Percent Confiscated}_i$ is the percentage of land auctioned off in district i

(50 = 50%) and θ_j are 12 region fixed effects based on the current classification of regions by the French government.

The Effect of Confiscations on 1841 Wheat Yields

	Panel A: Dependent Variable: Log Wheat Yield in 1841					
	(1)	(2)	(3)	(4)	(5)	(6)
Percent Confiscated	0.0276***	0.0245***	0.0199***	0.00983***	0.00945***	0.00941***
	(0.00376)	(0.00387)	(0.00341)	(0.00345)	(0.00339)	(0.00341)
Wheat Suitability	No	Yes	Yes	No	Yes	Yes
Market Access 1789	No	No	Yes	No	No	Yes
Region FE's	No	No	No	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	0.294	0.337	0.452	0.588	0.590	0.591

▸ nonparametrics

The Effect of Confiscations on 1852 Land Use

3 field vs. 4 field

	Panel A: Dep. Variable: Percent Land Fallow					
	(1)	(2)	(3)	(4)	(5)	(6)
Percent Confiscated	-0.00639***	-0.00529***	-0.00400***	-0.00387***	-0.00385***	-0.00384***
	(0.00106)	(0.00115)	(0.00108)	(0.00134)	(0.00134)	(0.00134)
Wheat Suitability	No	Yes	Yes	No	Yes	Yes
Market Access 1789	No	No	Yes	No	No	Yes
Region FE's	No	No	No	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	0.135	0.181	0.259	0.424	0.421	0.421
	Panel B: Dep. Variable: Percent Land Artificial Prairie					
	(1)	(2)	(3)	(4)	(5)	(6)
Percent Confiscated	0.00404**	0.00324***	0.00267***	0.00183**	0.00160**	0.00160**
	(0.000777)	(0.000750)	(0.000725)	(0.000731)	(0.000720)	(0.000723)
Wheat Suitability	No	Yes	Yes	No	Yes	Yes
Market Access 1789	No	No	Yes	No	No	Yes
Region FE's	No	No	No	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	0.154	0.227	0.269	0.450	0.480	0.477

nonparametrics

Investment in Irrigation and Drainage During the Old Regime and 19th Century

- The social returns to draining marshes and irrigation investment exceeded the costs during the 18th century (Rosenthal, 1992).
- However, overlapping property rights raised the transaction costs of making these investments. In particular, issues with the definition of the commons made it unclear who would benefit from land improvements.
- The church was a major stakeholder in these debates and was often involved in litigation surrounding irrigation investments.
- By the early 19th century, investment in drainage and irrigation was one of the cutting edge agricultural technologies. E.g. inventions to manufacture pipes were prominently displayed at the 1856 World's Fair (Barral, 1862).

A Pipe Manufacturing Machine

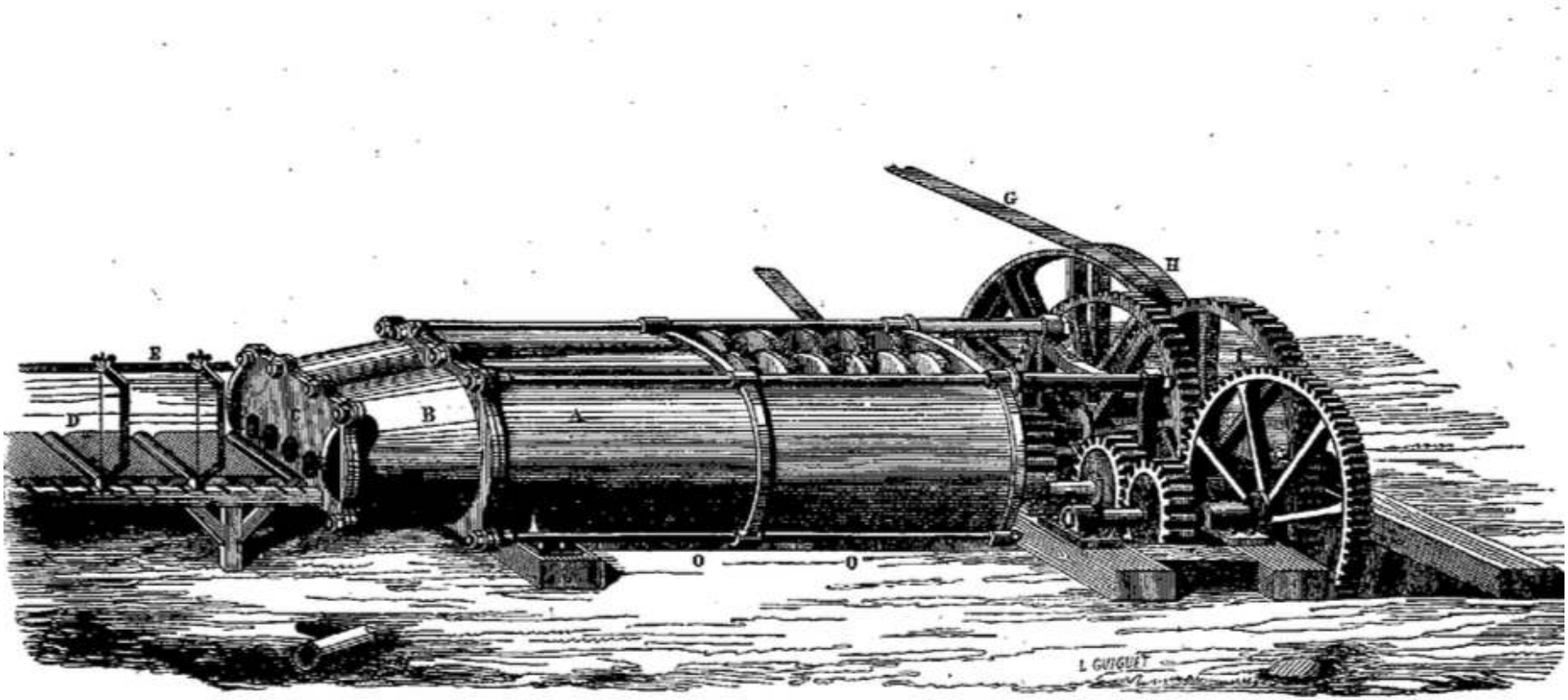
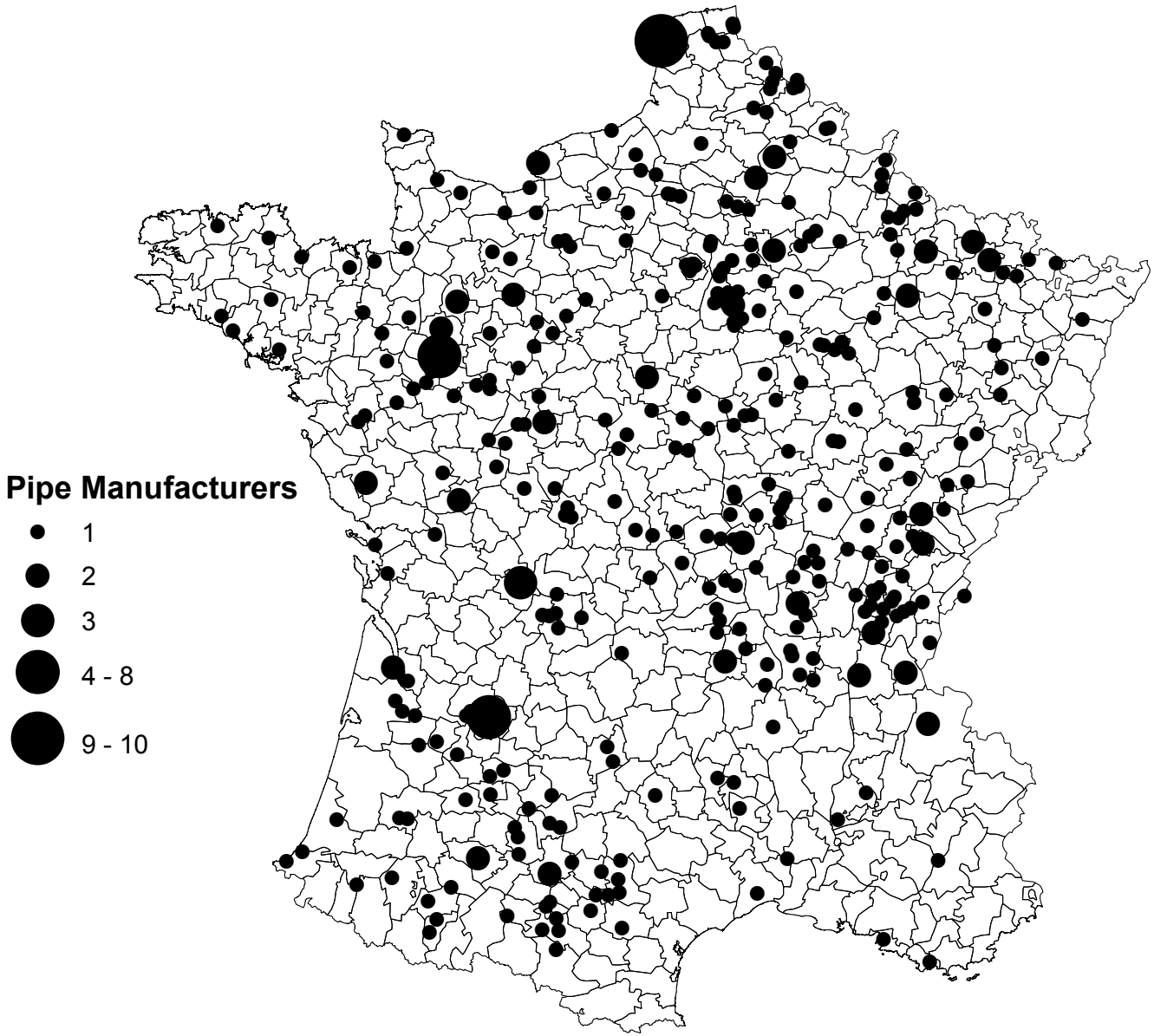


Fig. 448. — Vue en perspective de la machine à étirer les tuyaux de drainage de M. Fowler.

The Geographic Distribution of Pipe Manufacturers, 1856



Allocating Pipe Manufacturers to Districts with a 25k Buffer

Baseline Investment Specification

We run regressions of the form...

$$\text{Number of Pipe Mnfgs 1856}_i = \alpha + \beta \text{Percent Confiscated}_i +$$

$$+ \gamma \text{Elevation Range}_i + \delta \text{Market Access 1789}_i + \theta_j + \varepsilon_i \quad (2)$$

Where Percent Confiscated$_i$ is the percentage of land auctioned off in district i (50 = 50%) and θ_j are 12 region fixed effects based on the current classification of regions by the French government.

To control for suitability to drain or irrigate, we construct the elevation range for each district using the NASA 90 meter SRTM data (Jarvis et al., 2008).

The Effect of Confiscations on Investment in Drainage and Irrigation, 1856

	Dependent Variable: Number of Pipe Manufacturers in 1856					
	(1)	(2)	(3)	(4)	(5)	(6)
Percent Confiscated	0.242***	0.202***	0.208***	0.189***	0.167**	0.164**
	(0.0633)	(0.0634)	(0.0645)	(0.0656)	(0.0669)	(0.0674)
Elevation Range	No	Yes	Yes	No	Yes	Yes
Market Access 1789	No	No	Yes	No	No	Yes
Region FE's	No	No	No	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	0.100	0.124	0.122	0.347	0.379	0.383

▸ nonparametrics

Changes in Market Access between 1789 and 1841

Figure: Road Network in 1789

Figure: Road Network in 1841

The Effect of Confiscations on Changes in Market Access, 1789-1841

	Panel A: Dep. Variable: Change in Market Access 1789-1841					
	(1)	(2)	(3)	(4)	(5)	(6)
Percent Confiscated	0.00344	0.00786**	0.0102**	0.00768	0.00763	0.00925
	(0.00394)	(0.00398)	(0.00392)	(0.00672)	(0.00669)	(0.00652)
Market Access 1789	No	Yes	Yes	No	Yes	Yes
Elevation Range	No	No	Yes	No	No	Yes
Region FE's	No	No	No	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	-0.003	0.047	0.066	0.033	0.029	0.045

The Effect of Confiscations on Changes in Market Access, 1789-1841

Panel B: Dep. Variable: Change in Market Access with 1789 Population

	(1)	(2)	(3)	(4)	(5)	(6)
Percent Confiscated	0.00322*	0.00593***	0.00575***	0.00412**	0.00407**	0.00443**
	(0.00184)	(0.00185)	(0.00178)	(0.00199)	(0.00192)	(0.00185)
Market Access 1789	No	Yes	Yes	No	Yes	Yes
Elevation Range	No	No	Yes	No	No	Yes
Region FE's	No	No	No	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	0.010	0.141	0.137	0.344	0.350	0.354

Panel C: Dep. Variable: Change in Market Access with 1789 Transport Networl

	(1)	(2)	(3)	(4)	(5)	(6)
Percent Confiscated	0.00233	0.00391	0.00584*	0.00538	0.00539	0.00644
	(0.00327)	(0.00336)	(0.00318)	(0.00586)	(0.00591)	(0.00580)
Market Access 1789	No	Yes	Yes	No	Yes	Yes
Elevation Range	No	No	Yes	No	No	Yes
Region FE's	No	No	No	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	-0.004	-0.001	0.014	-0.008	-0.014	-0.008

▸ nonparametrics

The Potato as Placebo

- Potential yields, as defined by the FAO, of both potatoes and wheat are highly correlated. more
- Potatoes were extremely robust and could be grown virtually anywhere, regardless of irrigation or drainage. more
- Potatoes were typically not grown on as large a scale as wheat and, as such, high fixed cost investments in irrigation or drainage would have been less likely to be undertaken by potato producers. more

The Effect of Confiscations on 1841 Potato Yields

	Panel A: Dependent Variable: Log Potato Yield in 1841					
	(1)	(2)	(3)	(4)	(5)	(6)
Percent Confiscated	0.0267***	0.0232***	0.0186***	0.00388	0.00370	0.00370
	(0.00652)	(0.00675)	(0.00674)	(0.00579)	(0.00586)	(0.00588)
Potato Suitability	No	Yes	Yes	No	Yes	Yes
Market Access 1789	No	No	Yes	No	No	Yes
Region FE's	No	No	No	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	0.095	0.121	0.162	0.466	0.463	0.460

IV Analysis: Distance to Nearest Bishopric

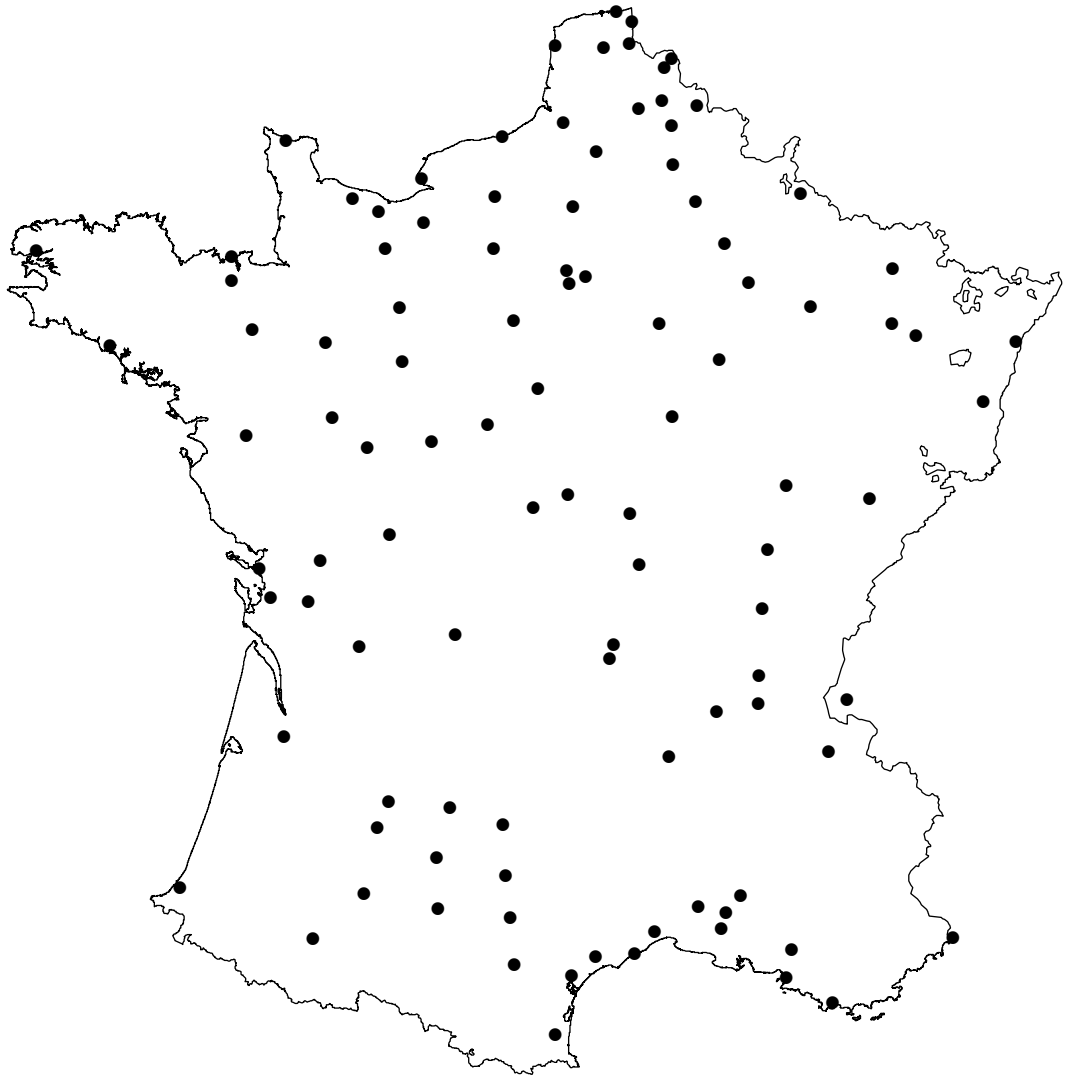
- Between the fourth and sixth centuries, the Catholic Church acquired vast amounts of land. Merovingian ruler of Gaul, Chilperic, declared " . . . that all the wealth of the kingdom had been transferred to the churches" (Goody, 1983, p. 112).

- Between the sixth and eleventh centuries, one of the chief roles of a Bishop was to protect the lands that had been acquired by the Church from the depredations of the laity.

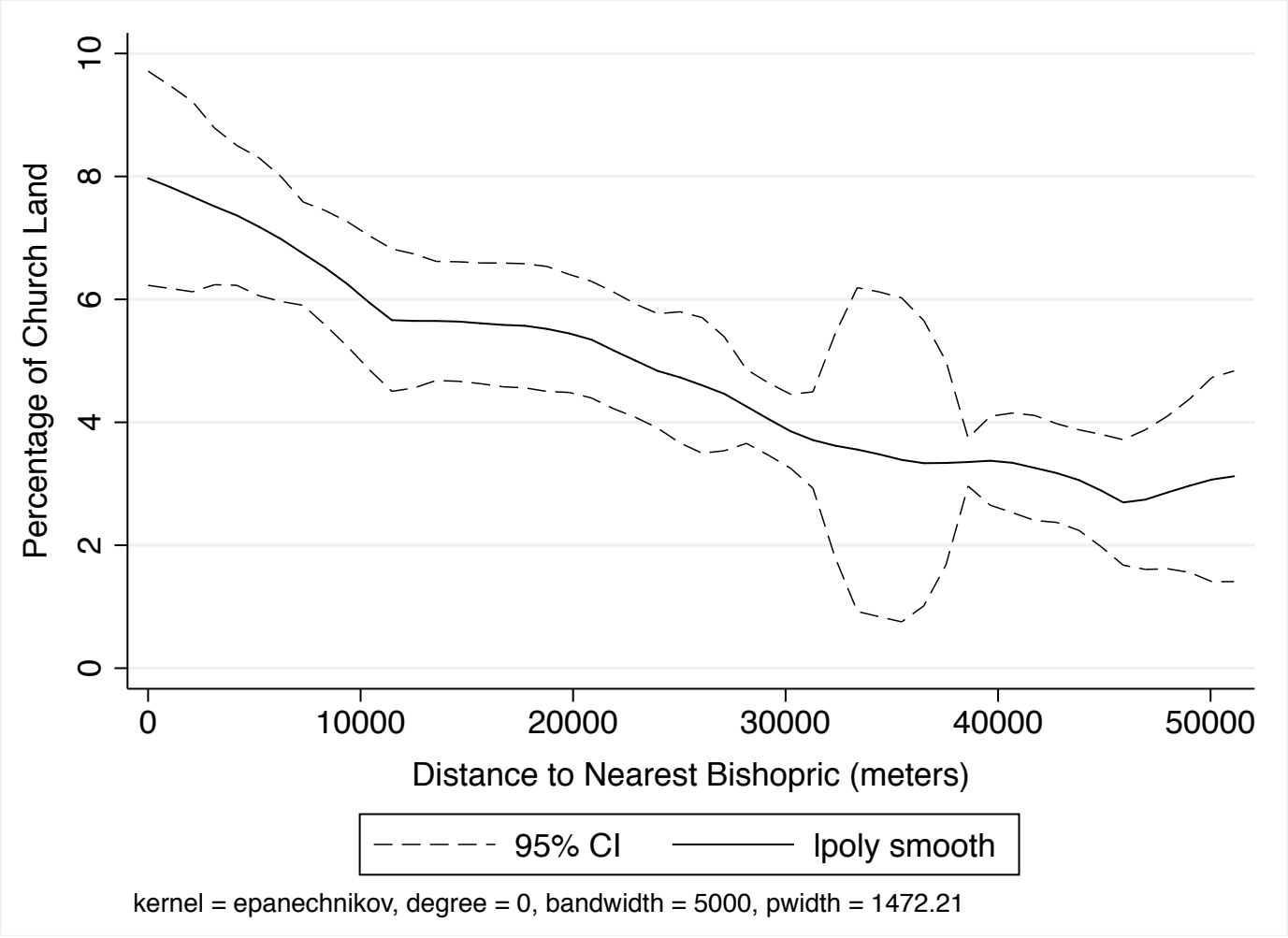
- Scholar-monk Bede complains in letter to Archbishop of York in 734 of the rapid acquisition of "...the Church in the hands of laymen" as he requests the appointment of a Bishop to his territory.

- Bishoprics established by 1200. This is before two biggest factors shaping urban network in pre-modern France:
  - The Black Death (1347-52) (Jedwab et al., 2016; Pamuk, 2007).
  - Opening of the Columbian Exchange (post 1492) (Acemoglu et al., 2005).

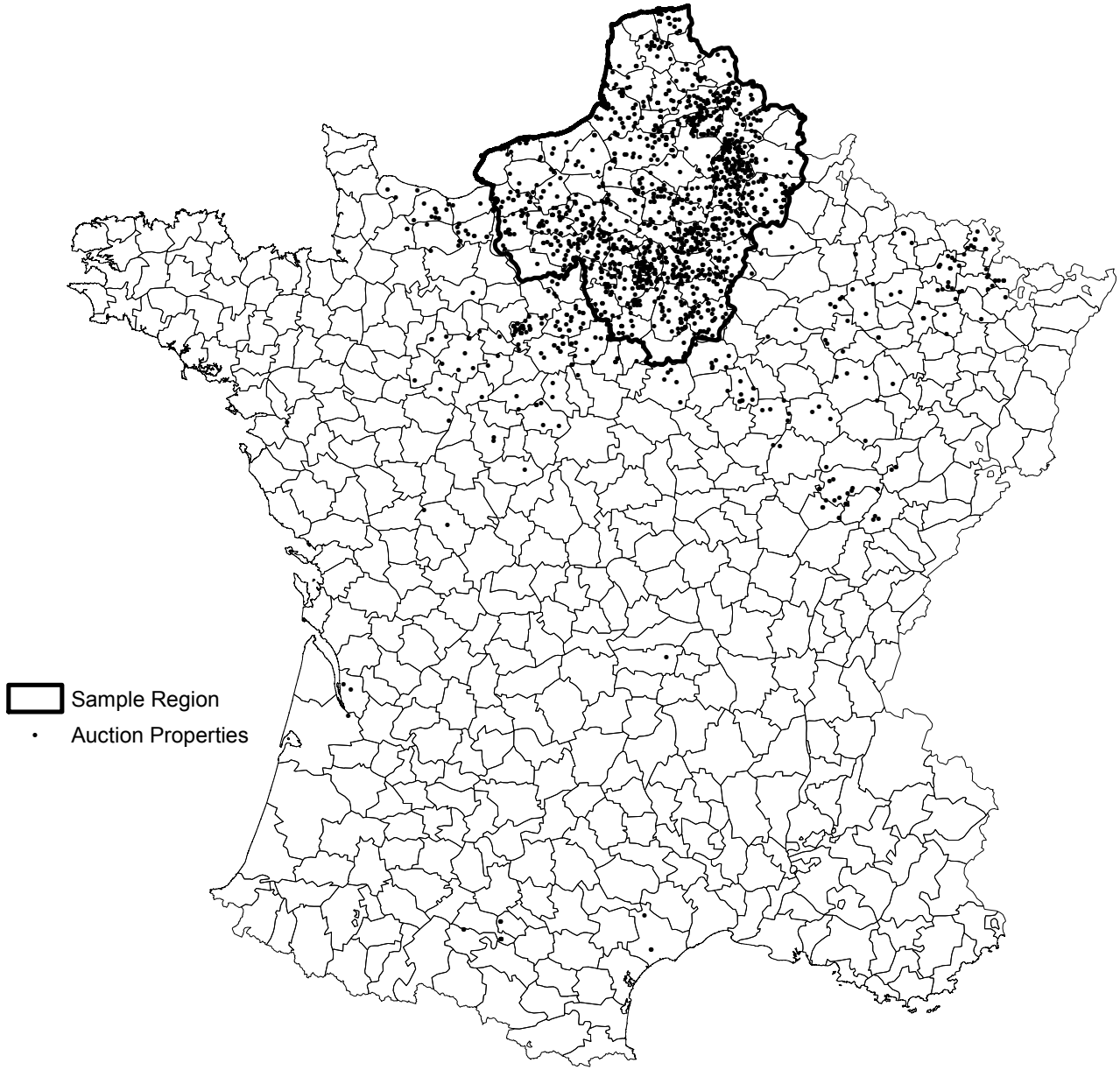
IV Analysis: Spatial Distribution of Bishoprics



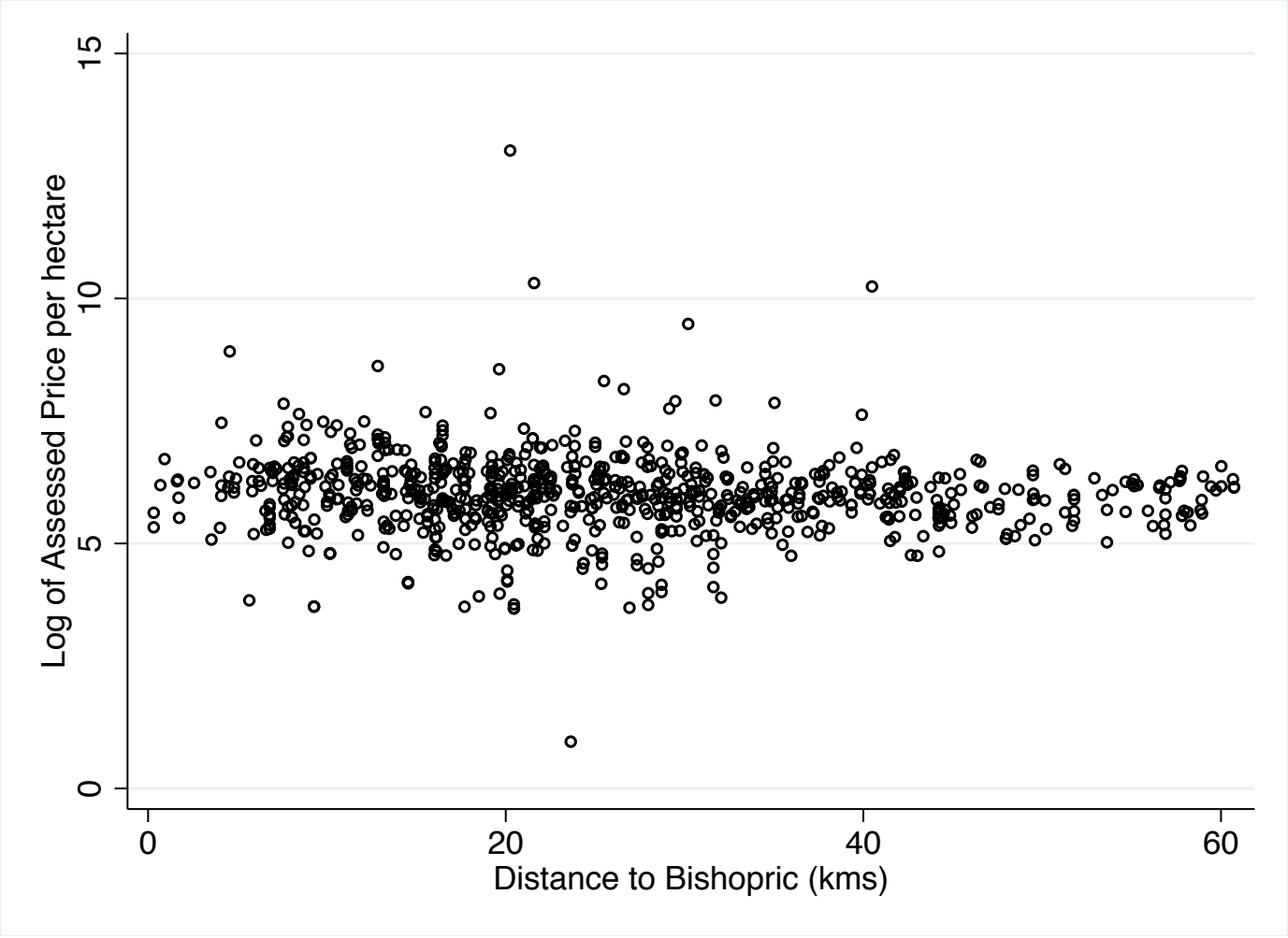
IV Analysis: Relevance? Distance to Nearest Bishopric



IV Analysis: Validity? Auction Properties Map



IV Analysis: Validity?



IV Analysis: Distance to Nearest Bishopric

	IV *(Distance Bishopric)*
Wheat Yields	0.0513*** (F=10.63) (0.0153)
Wheat Yields (FE)	0.0578*** (F=8.54) (0.0192)
Pipe Mnfg.	0.447** (F=11.09) (0.199)
Pipe Mnfg. (FE)	0.731** (F=7.89) (0.298)
Fallow	-0.0107* (F=10.63) (0.00570)
Fallow (FE)	-0.0203*** (F=8.54) (0.00785)
Prairies	0.00616** (F=10.63) (0.00295)
Prairies (FE)	0.00780** (F=8.54) (0.00391)

Robustness

We check for robustness by controlling for...

- potato suitability more
- clustering standard errors at department level more
- emigré confiscations more
- Trim top and bottom 5% of confiscations more
- Different travel costs for calculating market access more
- Average auction price for confiscated plots (restricted sample) more
- Average size of auction plots (restricted sample) more

Land Inequality and Ownership

- Galor & Moav (2004) unifies the Classical and Credit Market Imperfection approaches to development.
- In the presence of imperfect capital markets, during early stages of development capital accumulation facilitated by inequality since savings rates are an increasing function of wealth.
- By contrast, as human capital becomes more important, credit market imperfections combined with inequality becomes a drag on growth.
- Earliest data we have on land inequality are from 1862 and at Department level.
- Estimate quantile regressions with standard errors clustered at department level.

Average Size of Farms at Department Level: Quantile Regressions

Dependent. Variable: Average Farm Size in 1862						
	Quantile Regression Estimates					OLS
	0.10	0.25	0.50	0.75	0.90	Coeff.
Percent Confiscated	0.053	0.065	0.359	0.615***	0.547***	0.213
	(0.059)	(0.108)	(0.224)	(0.210)	(0.0.216)	(0.133)
Wheat Suitability	Yes	Yes	Yes	Yes	Yes	Yes
Market Access 1789	Yes	Yes	Yes	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	0.10	0.08	0.15	0.14	0.06	0.15

▸ distributions

Convergence

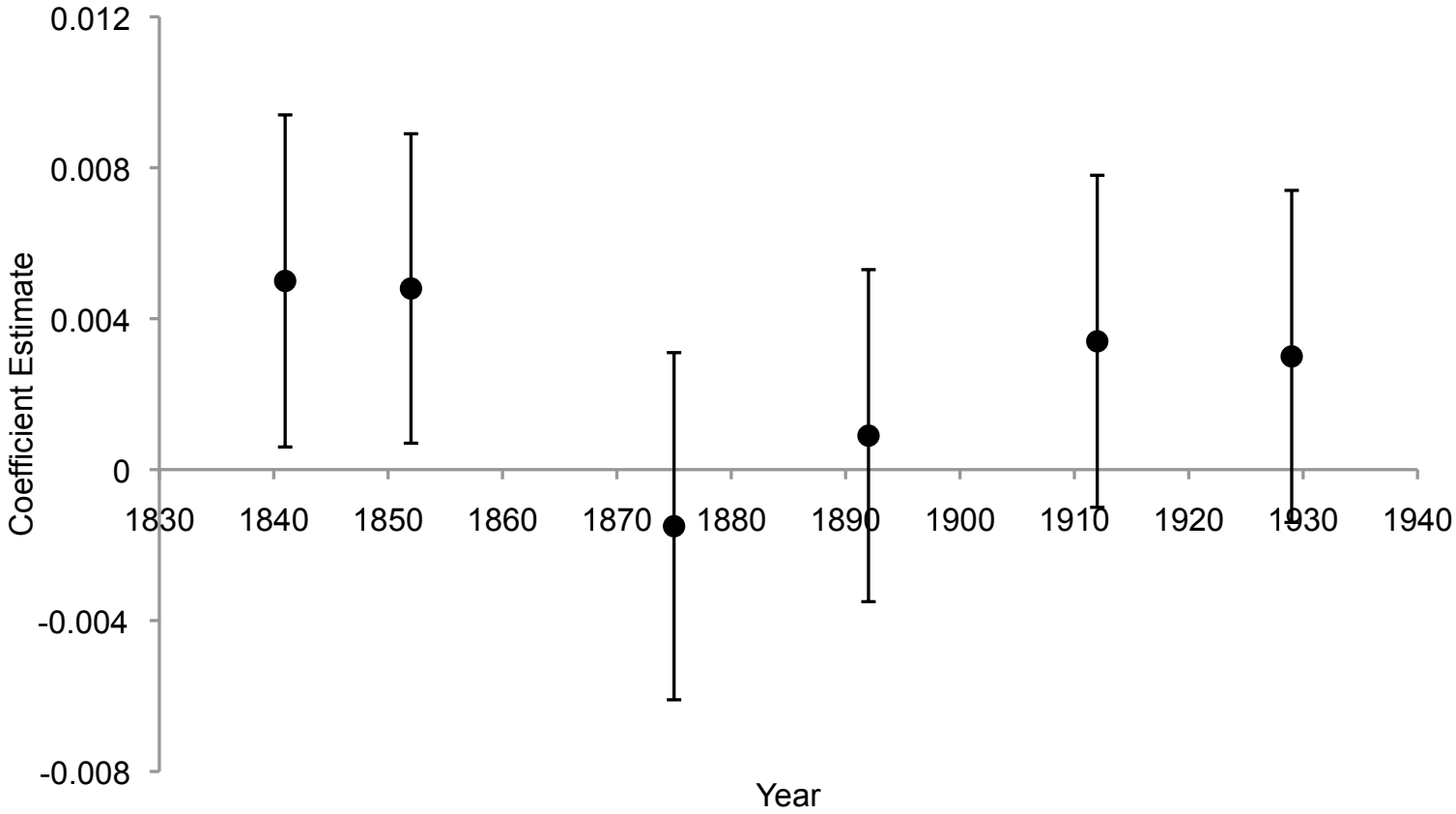
- An implication of the theory presented above is that, over time, the advantage granted by Revolutionary auctions should decline (i.e. treatment and control groups should converge).

- To test this we run flexible specifications using data from 1841, 1852, 1875, 1892, 1912, and 1929.

$$\text{Log Yield}_{dt} = \sum_{t=1841}^{1929} \beta_t \text{Percent Confiscated}_d + \sum_{t=1841}^{1929} \gamma_t \text{Soil Suitability}_d + \sum_{t=1841}^{1929} \delta_t \text{Market Access 1789}_d + \sum_{t=1841}^{1929} \phi_t \theta_j + \varepsilon_{dt} \tag{3}$$

- The data from 1875 onwards are at the department level (a higher level of aggregation). As such, we cluster standard errors at the department level.

Convergence: Relationship between Revolutionary confiscations and superior wheat yields disappears over time, as we would expect



more

Conclusions

- **Main takeaway:** The impact of fundamental institutional reform can be impeded by transaction costs and, as such, the initial allocation of property rights can matter a great deal for subsequent economic performance.
- The (top-down) confiscation and (bottom-up) reallocation of church land during the Revolution mattered for subsequent economic development.
- In places with more Revolutionary auctions of land: Agricultural productivity in wheat (and rye) was higher. Investment in irrigation and drainage was higher. Land use was more efficient (4 vs 3 field system). Investment in the road network was higher.
- One mechanism through which this occurred was increased land inequality generated through the market oriented, bottom-up, auctions of Church land during the Revolution.
- Over time, the positive effects of the Revolutionary auctions disappears.

Relevance for today?

Ajit Pai @AjitPaiFCC · Jul 20

Paper by @TheresaSFinley/@Raphael_Franck/@ndjohnson analyzes effects of post-French Revolution land redistribution. noeldjohnson.net/noeldjohnson.n…

> **Abstract:** This study exploits the confiscation and auctioning off of Church property that occurred during the French Revolution to assess the role played by transaction costs in delaying the reallocation of property rights in the aftermath of fundamental institutional reform. French districts with a greater proportion of land redistributed during the Revolution experienced higher levels of agricultural productivity in 1841 and 1852 as well as more investment in irrigation and more efficient land use. We trace these increases in productivity to an increase in land inequality associated with the Revolutionary auction process. We also show how the benefits associated with the head-start given to districts with more Church land initially, and thus greater land redistribution by auction during the Revolution, dissipated over the course of the nineteenth century as other districts gradually overcame the transaction costs associated with reallocating the property rights associated with the feudal system.

8 3 7

Andy Gooch
@SirGoochness

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#NetNeutrality

9:14 AM - 20 Jul 2017

Data

- Percent land auctioned-off by Revolutionary government (prémiere origine) from Bodinier and Teyssier (2000). These data are compiled from regional studies and archival work done by Bodinier himself. They are incomplete and, as such, we investigate selection.
- District level wheat yields in 1841, 1852, 1875, 1892, 1912, and 1929 from the *Statistique Agricole*. We also collect data on potato yields from the same source as a placebo in 1841 and 1852.
- Soil potential for wheat and/or potato cultivation from the GAEZ (Fischer et al., 2002). more
- We use maps of roads, canals, rail lines, rivers and seas from 1789 and 1841 as well as district level populations to construct market access of districts as well as it's change. more
- Village level data from Barral (1862) on the location of pipe manufacturers in 1856. more
- To control for suitability to drain or irrigate, we construct the elevation range for each district using the NASA 90 meter SRTM data (Jarvis et al., 2008).
- Data on Department-level land inequality in 1862 and percent sharecroppers in 1852.

Robustness: Potato

	Potato
Wheat Yields	0.0200***
	(0.00346)
Wheat Yields (FE)	0.00939***
	(0.00341)
Pipe Mnfg.	0.221***
	(0.0693)
Pipe Mnfg. (FE)	0.159**
	(0.0665)
Fallow	-0.00399***
	(0.00109)
Fallow (FE)	-0.00382***
	(0.00135)
Prairies	0.00244***
	(0.000667)
Prairies (FE)	0.00155**
	(0.000612)

Robustness: Cluster Departement

	Cluster Dept
Wheat Yields	0.0199***
	(0.00401)
Wheat Yields (FE)	0.00941**
	(0.00463)
Pipe Mnfg.	0.208**
	(0.0795)
Pipe Mnfg. (FE)	0.164**
	(0.0668)
Fallow	-0.00400***
	(0.00146)
Fallow (FE)	-0.00384**
	(0.00146)
Prairies	0.00267***
	(0.000987)
Prairies (FE)	0.00160**
	(0.000643)

Robustness: Emigré Confiscations

	Emigré Confiscations
Wheat Yields	0.0200***
	(0.00337)
Wheat Yields (FE)	0.00890**
	(0.00342)
Pipe Mnfg.	0.208***
	(0.0640)
Pipe Mnfg. (FE)	0.152**
	(0.0651)
Fallow	-0.00392***
	(0.00106)
Fallow (FE)	-0.00390***
	(0.00137)
Prairies	0.00273***
	(0.000698)
Prairies (FE)	0.00145**
	(0.000689)

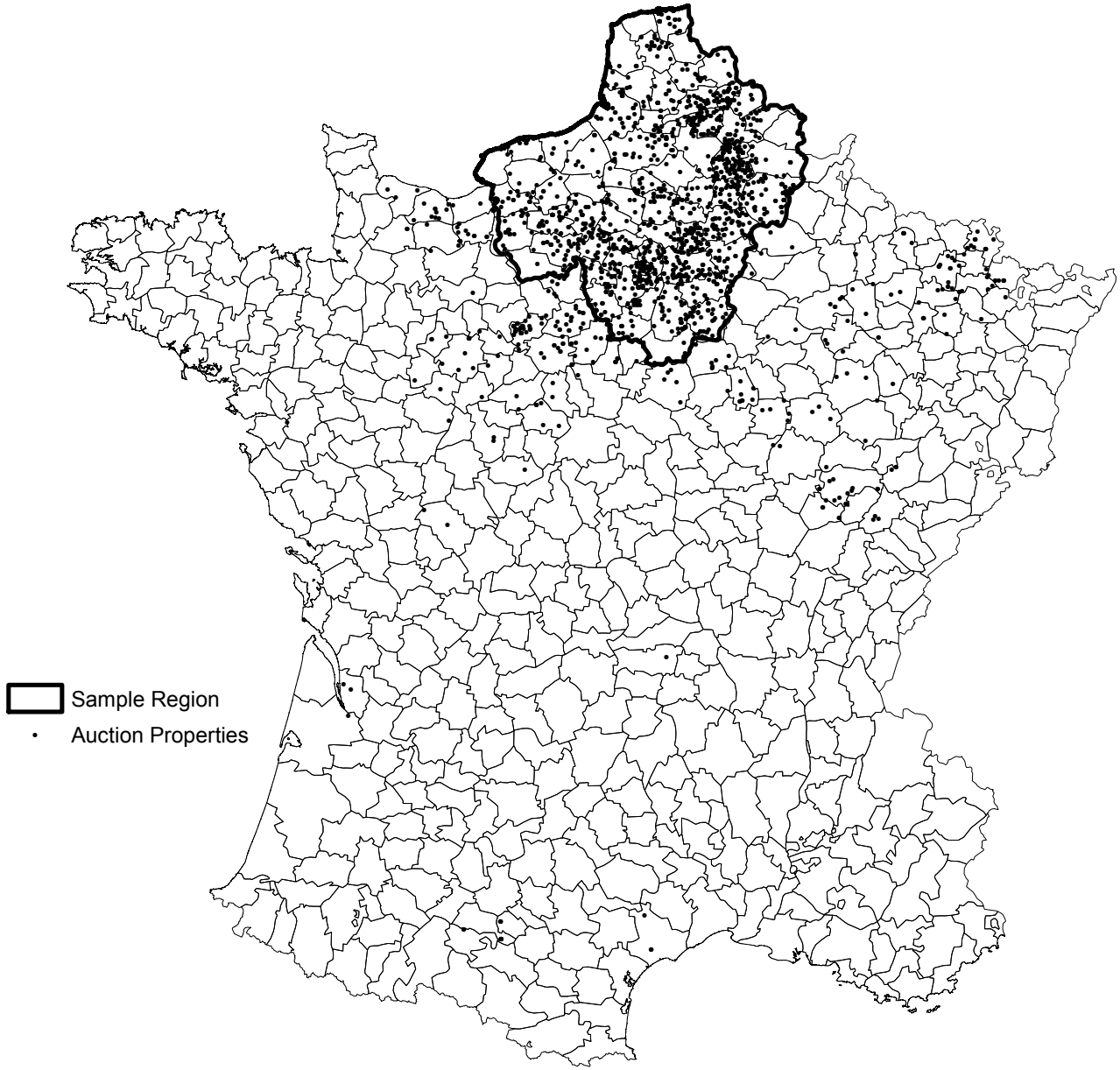
Robustness: Trim Top and Bottom 5%

	Trim Top and Bottom 5%
Wheat Yields	0.0311***
	(0.00474)
Wheat Yields (FE)	0.0172***
	(0.00612)
Pipe Mnfg.	0.207**
	(0.103)
Pipe Mnfg. (FE)	0.182*
	(0.0941)
Fallow	-0.00553***
	(0.00178)
Fallow (FE)	-0.00703***
	(0.00191)
Prairies	0.00462***
	(0.000978)
Prairies (FE)	0.00343***
	(0.00122)

Robustness: Alternative Market Access Travel Cost Measures

	Market Access Alt BO	*Market Access Alt CA*	*Market Access Alt MA*
Wheat Yields	0.0162***	0.0231***	0.0210***
	(0.00316)	(0.00380)	(0.00355)
Wheat Yields (FE)	0.00916***	0.00991**	0.00973***
	(0.00340)	(0.00340)	(0.00338)
Pipe Mnfg.	0.192***	0.203***	0.210***
	(0.0621)	(0.0633)	(0.0637)
Pipe Mnfg. (FE)	0.166**	0.153**	0.156**
	(0.0668)	(0.0654)	(0.0659)
Fallow	-0.00312***	-0.00490***	-0.00436***
	(0.00112)	(0.00115)	(0.00111)
Fallow (FE)	-0.00375***	-0.00403***	-0.00396***
	(0.00135)	(0.00137)	(0.00136)
Prairies	0.00200***	0.00307***	0.00278***
	(0.000687)	(0.000767)	(0.000748)
Prairies (FE)	0.00154**	0.00166**	0.00164**
	(0.000722)	(0.000734)	(0.000731)

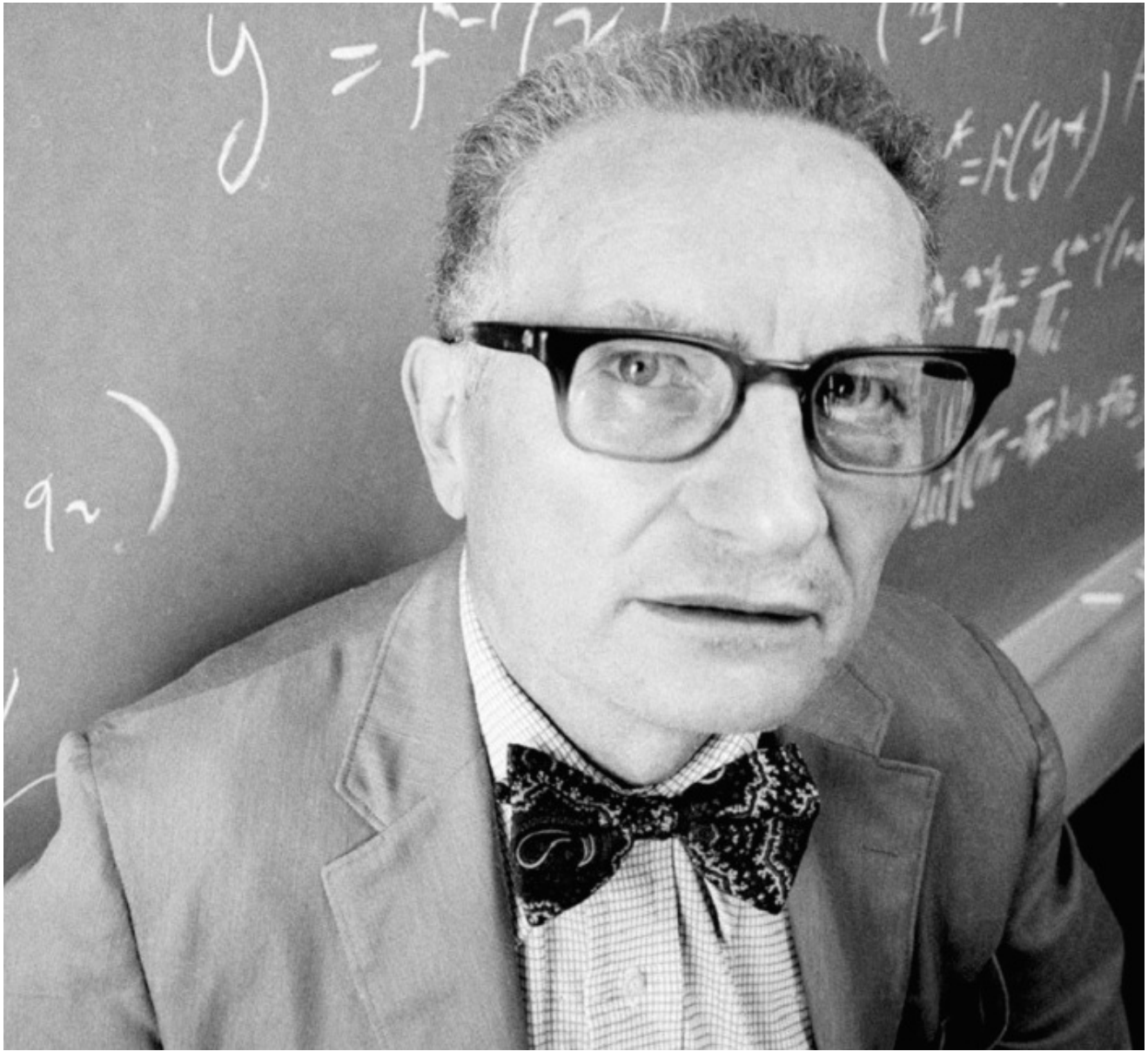
Auction Properties Map



Robustness: Auction Books Controls

	Average Auction Price	*Average Auction Size*
Wheat Yields	0.00635**	0.00644**
	(0.00240)	(0.00246)
Wheat Yields (FE)	---	---
Pipe Mnfg.	0.252**	0.202**
	(0.100)	(0.0900)
Pipe Mnfg. (FE)	---	---
Fallow	-0.00320**	-0.00438***
	(0.00123)	(0.000779)
Fallow (FE)	---	---
Prairies	-0.00122	-0.00163*
	(0.000755)	(0.000822)
Prairies (FE)	---	---

Paul Anthony Samuelson of Gary Indiana

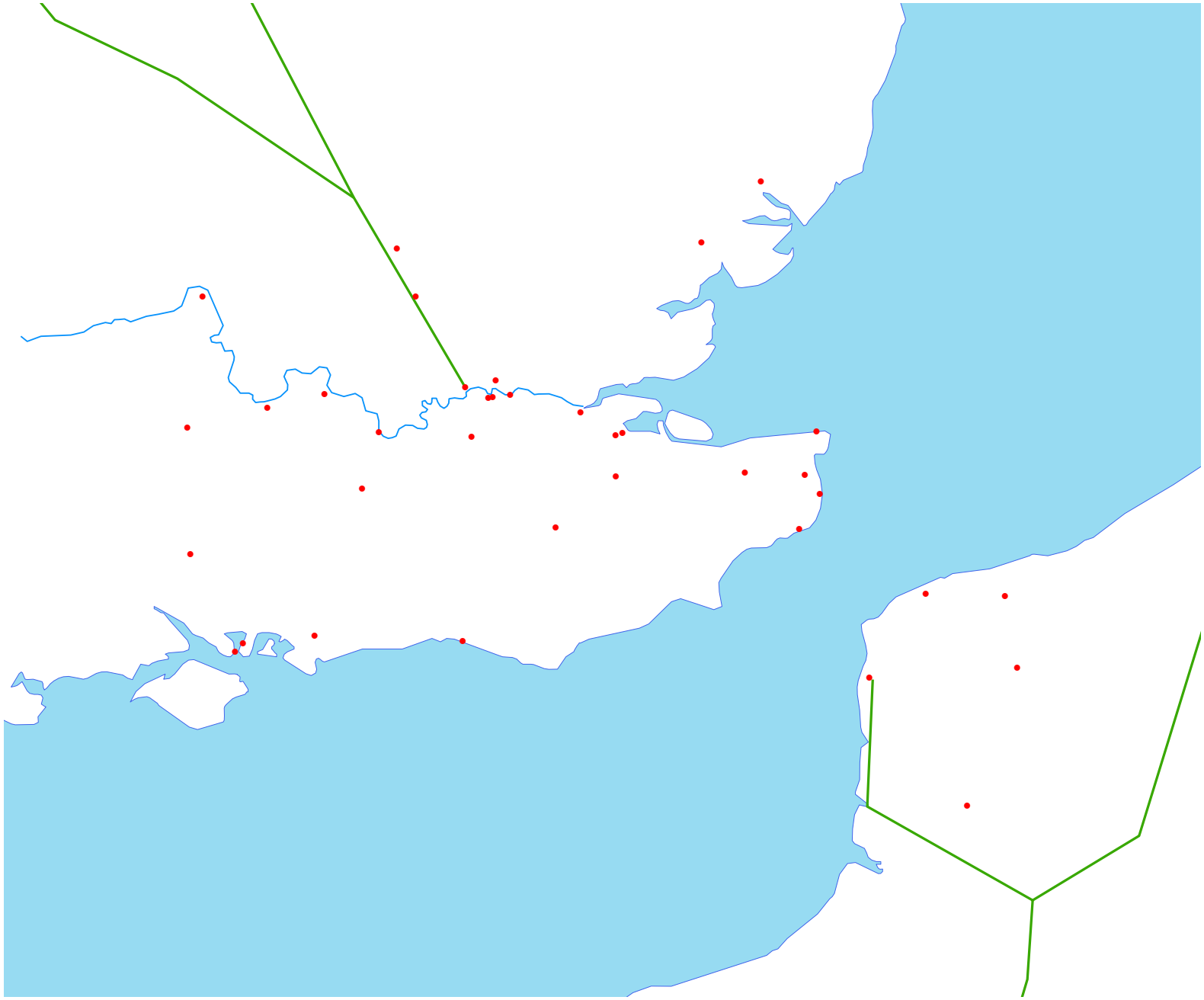


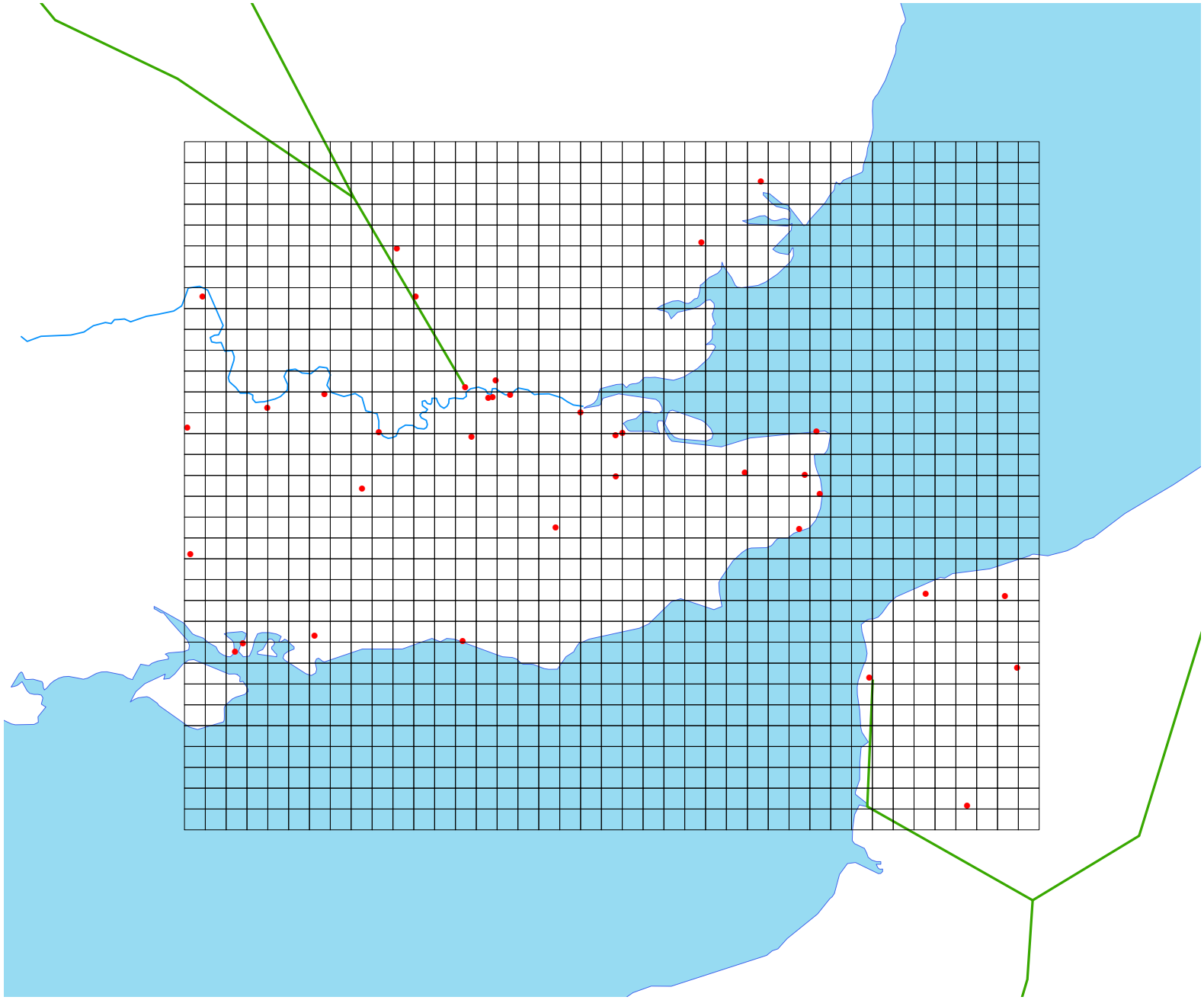
Market Access in 1789 and 1841

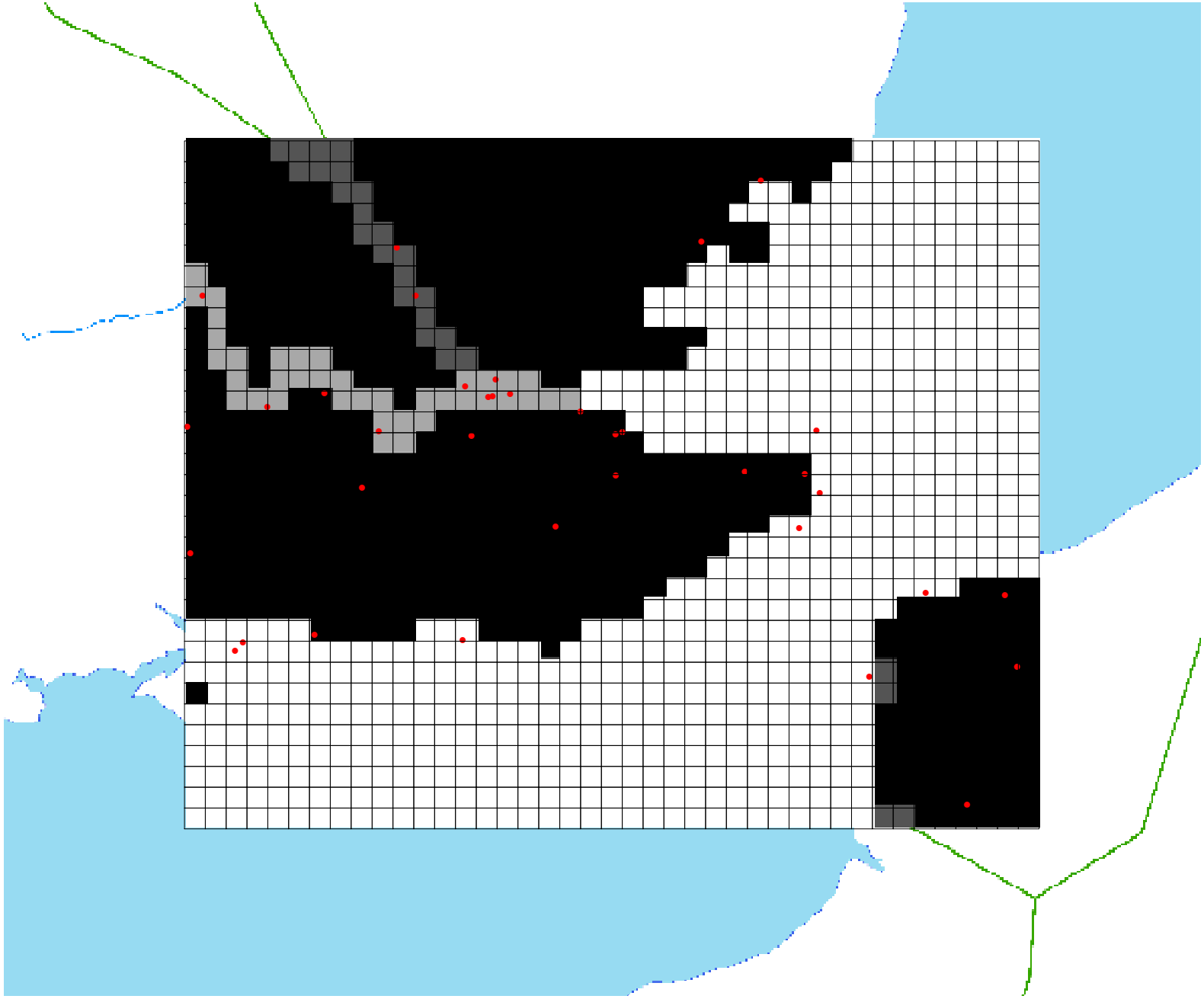
- Market access measures the integration of a region within surrounding markets.
- Can be micro-founded (Donaldson and Hornbeck, 2016; Eaton and Kortum, 2002).
- For district i we calculate market access as:

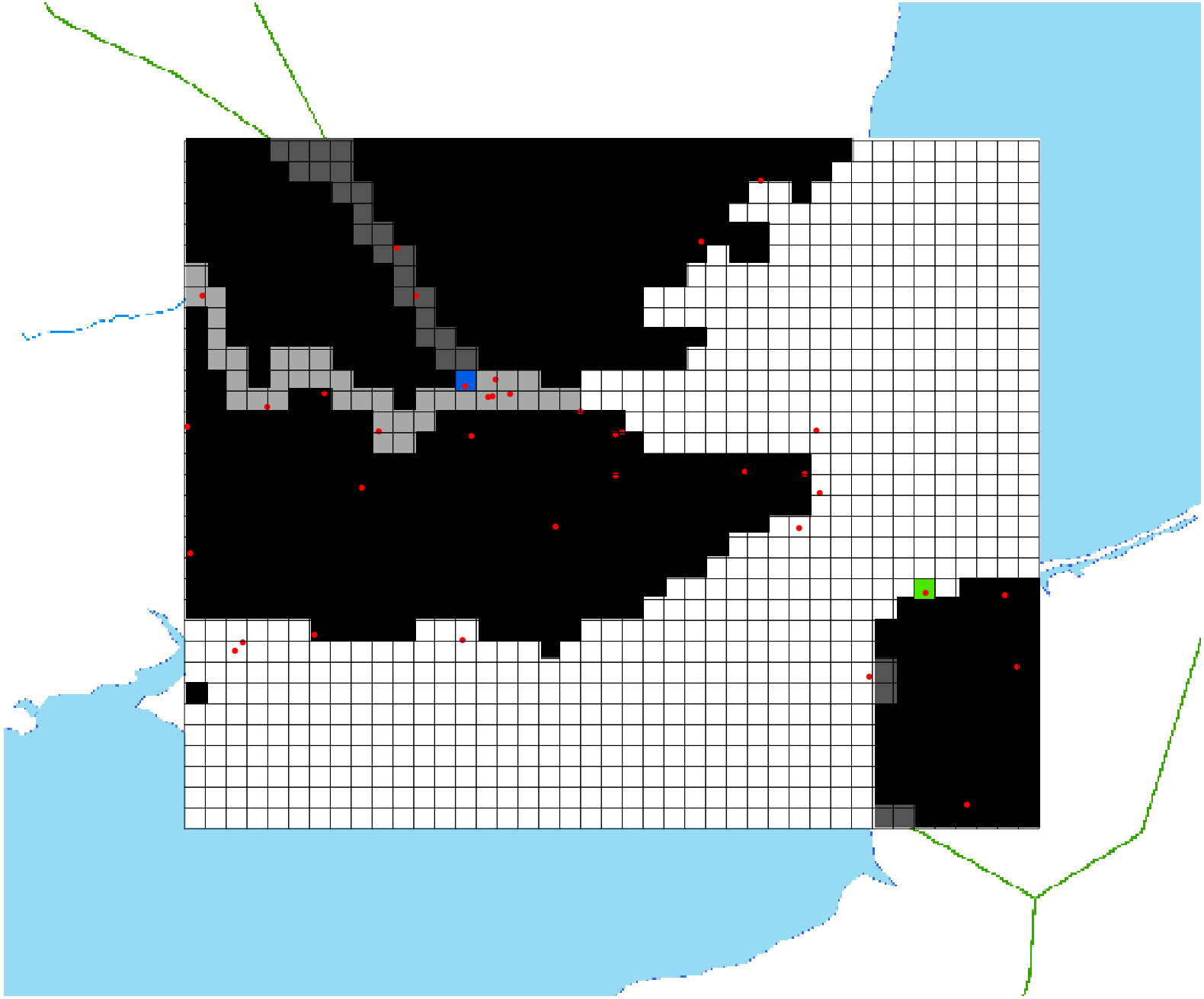
$$MA_i = \sum_{j}^{d} N_j \tau_{ij}^{-\sigma} \tag{4}$$

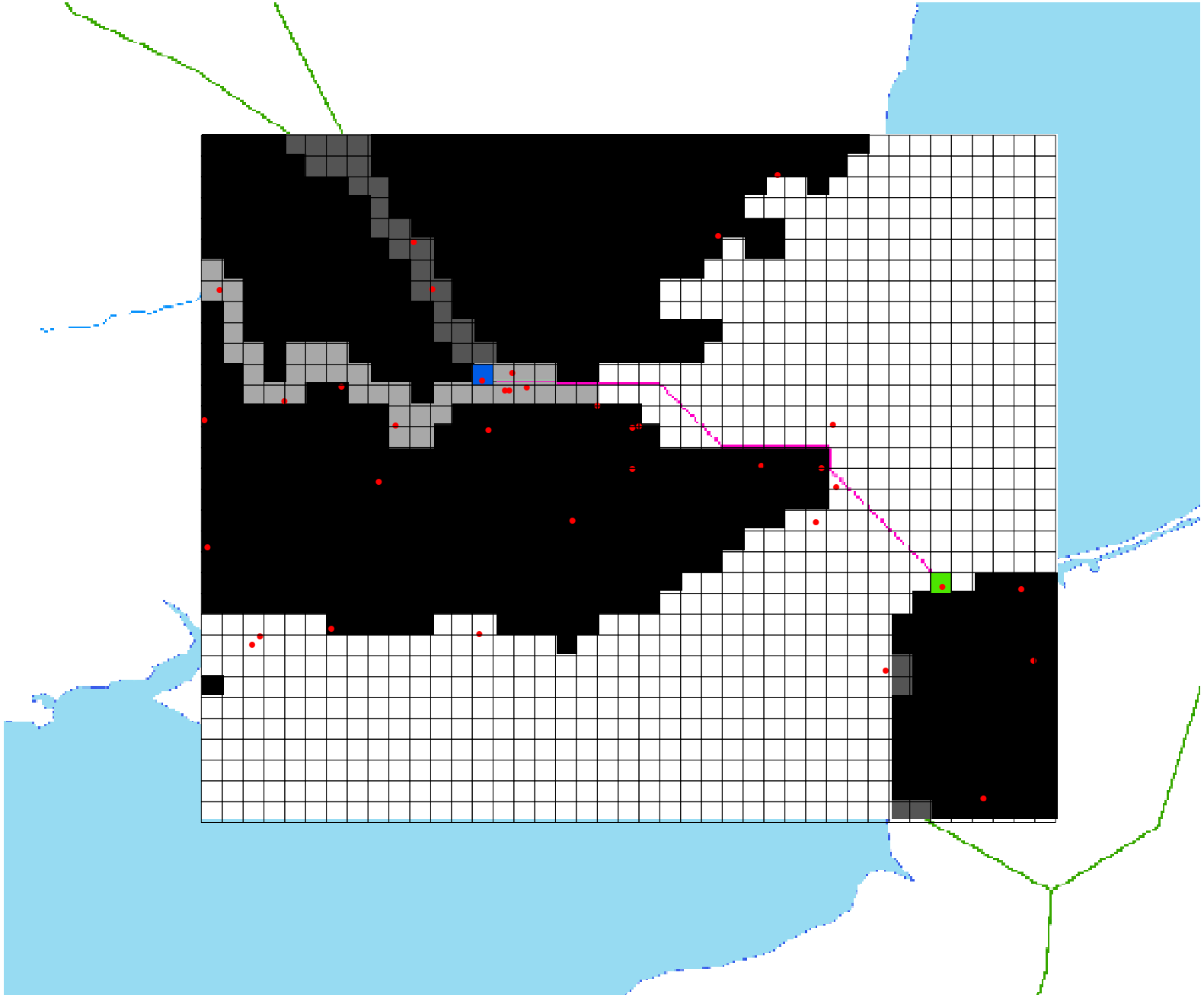
- Where d is the number of other districts, N is the population of the district, σ is a trade elasticity (higher=more responsive to cost of trade), and τ is the least cost travel cost between district i and j.
- We include in d "own district" as well as non-French cities with population greater than 2,000 in 1800 within 500km of national border.











Return

DRAINAGE

IRRIGATIONS — ENGRAIS LIQUIDES

J.-A. BARRAL

Directeur du Journal d'agriculture pratique,
Membre de la Société impériale et centrale d'Agriculture,
Ancien élève et répétiteur de chimie de l'École Polytechnique, membre de la Société
Philomatique, du Conseil d'Administration et du Bureau de la Société d'encouragement, des
Académies nationale, des Sociétés d'Agriculture ou Académies de Caen,
Clermont, Dijon, Florence, Lille, Luxembourg, Rouen, Nancy, Madrid,
New-York, Rome, Toulouse, Turin, Vienne (Autriche), etc.

TOME TROISIEME.

PARIS

LIBRAIRIE AGRICOLE DE LA MAISON RUSTIQUE

RUE JACOB, 26

1857

Les tuyaux ont commencé à être employés en 1852. M. de Westerveller, dans sa propriété de Cornaton, sur la commune de Confrançon, près de Bourg, a drainé 15 hectares, dont 7 de prés, 5 de terres labourables et 3 de marais, à l'aide de tuyaux pris à la tuilerie fondée par M. Chambaud, à Saix, près de Bourg. Cette même tuilerie a fourni

Return

Data on abbeys and taxes they pay

ABBAYES ET ABBÉS COMMENDATAIRES,

Leur taxe en Cour de Rome, & leur revenu.

A, *signifie que l'Abbaye eſt de l'Ordre de S. Auguſtin*; B, *de l'Ordre de S. Benoît*; C, *de Cîteaux*; P, *de Prémontré*; S, *ſéculier.*

Nom.	Abb.	*Titul.*	Dioc.	*Flor.*	Revenu.	*Ordre.*
17..	*Abbecourt*,	de Tilly,	*Chartres*,	24 fl.	6000 l.	P
17..	Simonnet	de Coulmiers,	*Coadjuteur.*			
1779	*Acey*,	Marnezia,	*Beſançon*,	80 fl.	6000 liv.	C
1768	*Ahun*,	de Nefmond,	*Limoges*,	200 fl.	1200 liv.	B
1762	*Aiguebelle*,	de Peinier,	*Saint-Paul-Trois-Châteaux*,	2500 fl.	3000 liv.	C
1760	*Aiguevive*,	Noguier,	*Tours*,	120 fl.	2400 liv.	A
1786	*Airvaux*,	du Houx de Dombaſle,	*la Rochelle*,	350 flor.	6000 liv.	A
1758	*Aiſnay*,	de Jarente,	*Lyon*,	317 fl.	31000 liv.	S

Data on dioceses and taxes they pay

CLERGÉ DE FRANCE.

ARCHEVÊQUES ET ÉVÊQUES,

leur taxe en Cour de Rome, & leur revenu.

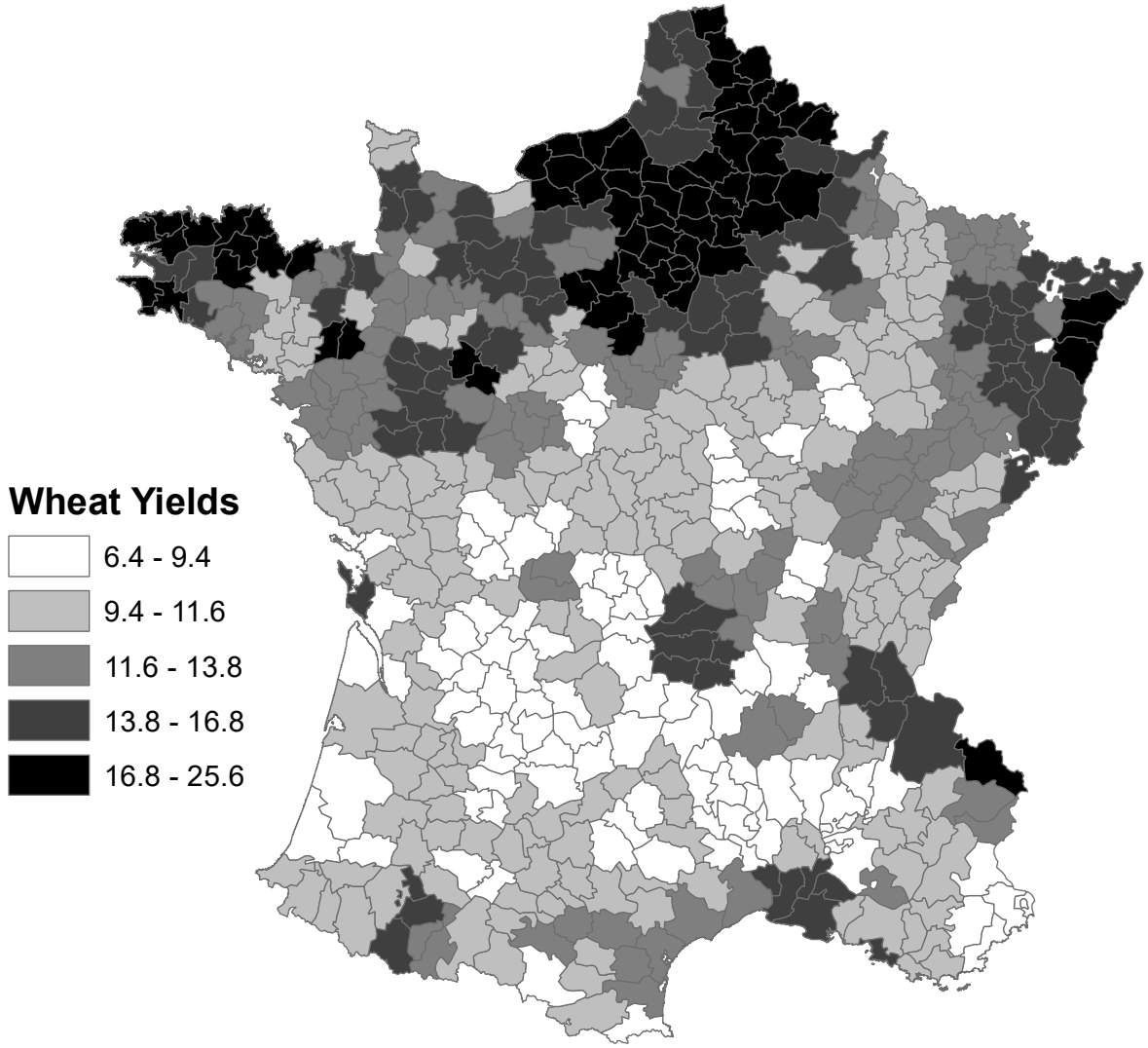
1781 PARIS, Antoine Eléonor Léon le Clerc de Juigné, né à *Paris* le 2 Novembre 1728, sacré Evêque de Châlons-sur-Marne le 29 Avril 1764; 4285 florins, 200000 livres, *Cures* 479.

1780 CHARTRES, Jean Baptiste Joseph de Luberfac, né à *Limoges* le 15 Janvier 1740, sacré Evêque de Tréguier le 6 Août 1775; 4000 fl. 25000 l. 810

1779 MEAUX, Camille Louis Apollinaire de Polignac, né à *Paris* le 31 Août 1745, sacré le 8 Août 1779; 2000 fl. 22000 l. 231

1758 ORLEANS, Louis Sextius de Jarente de la Bruyere, né à *Aix* en 1706, sacré Evêque de Digne le 17 Septembre 1747; 2000 fl. 50000 liv. 265

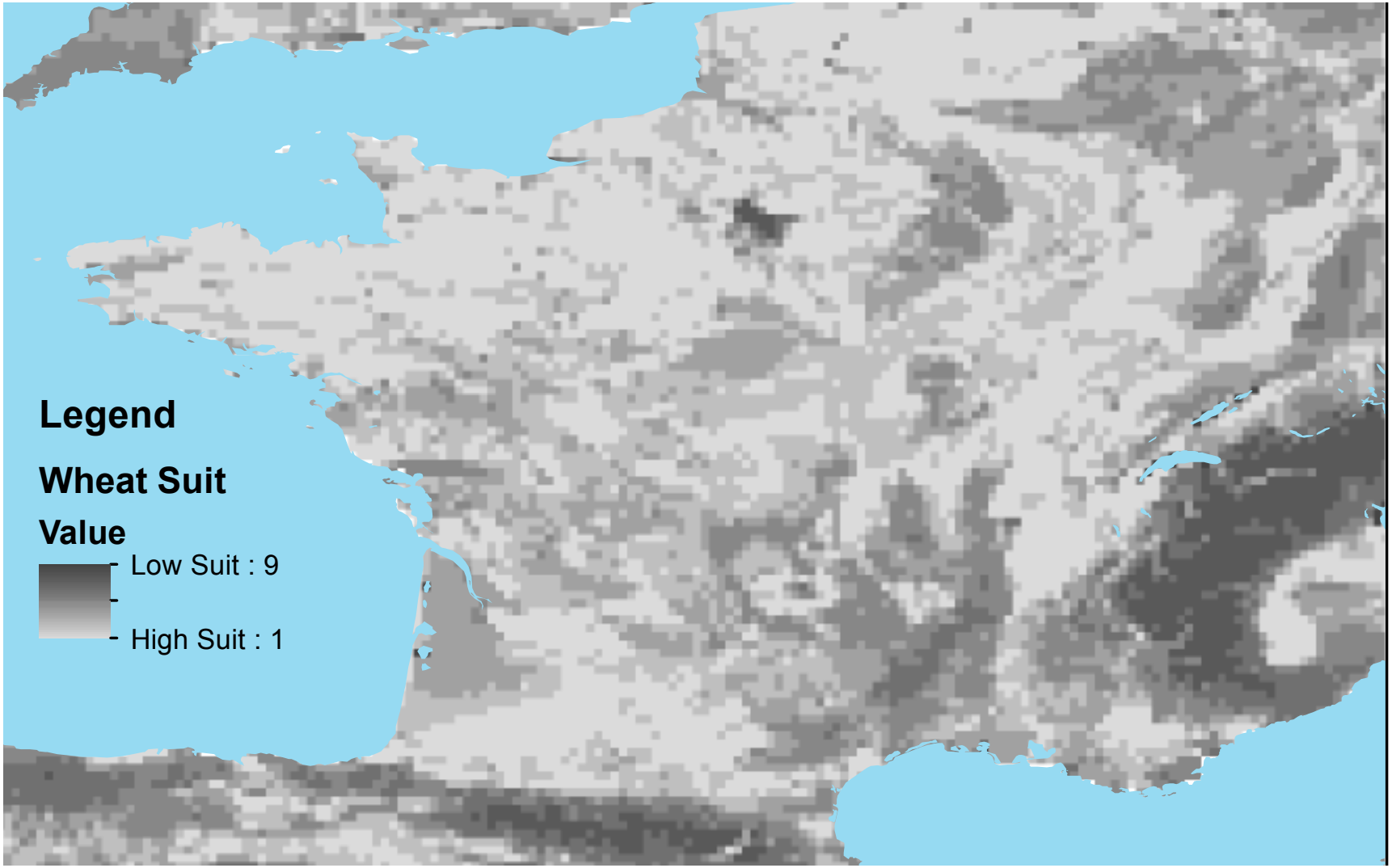
Return


Wheat Yields
6.4 - 9.4
9.4 - 11.6
11.6 - 13.8
13.8 - 16.8
16.8 - 25.6

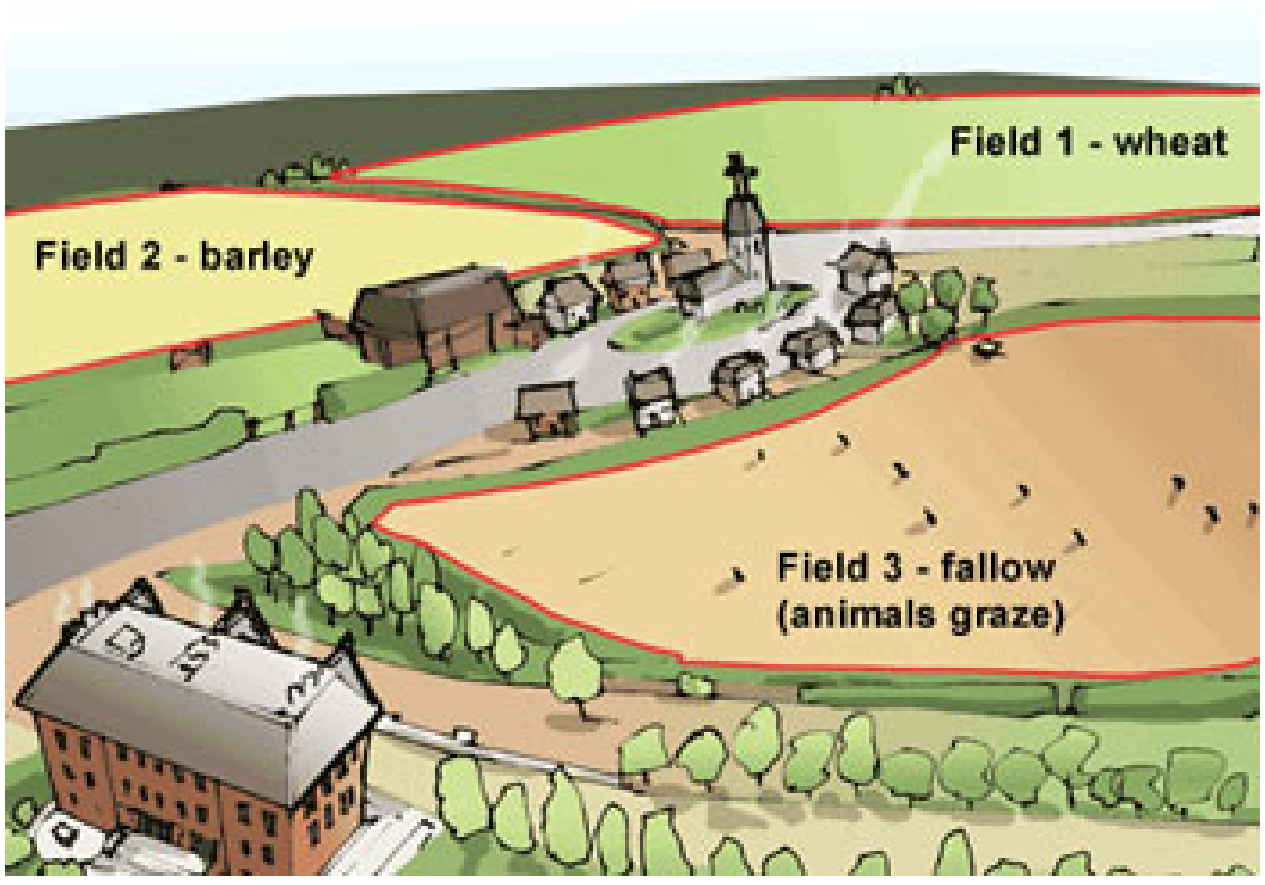
GAEZ Soil Suitability

- At resolution of 0.5 by 0.5 degrees, combines data on:
  - Climate characteristics (e.g. precipitation, frequency of wet days, mean temperature, daily temperature range, vapor pressure, cloud cover, sunshine, ground-frost frequency, and wind speed)
  - Land characteristics (soil type and slope)
  - Crop constraints
- Index from 0 to 9 for *potential* of region to grow crop.
- Assume low inputs and no irrigation.

GAEZ Soil Suitability



Three Field Crop Rotation



Four Field Crop Rotation

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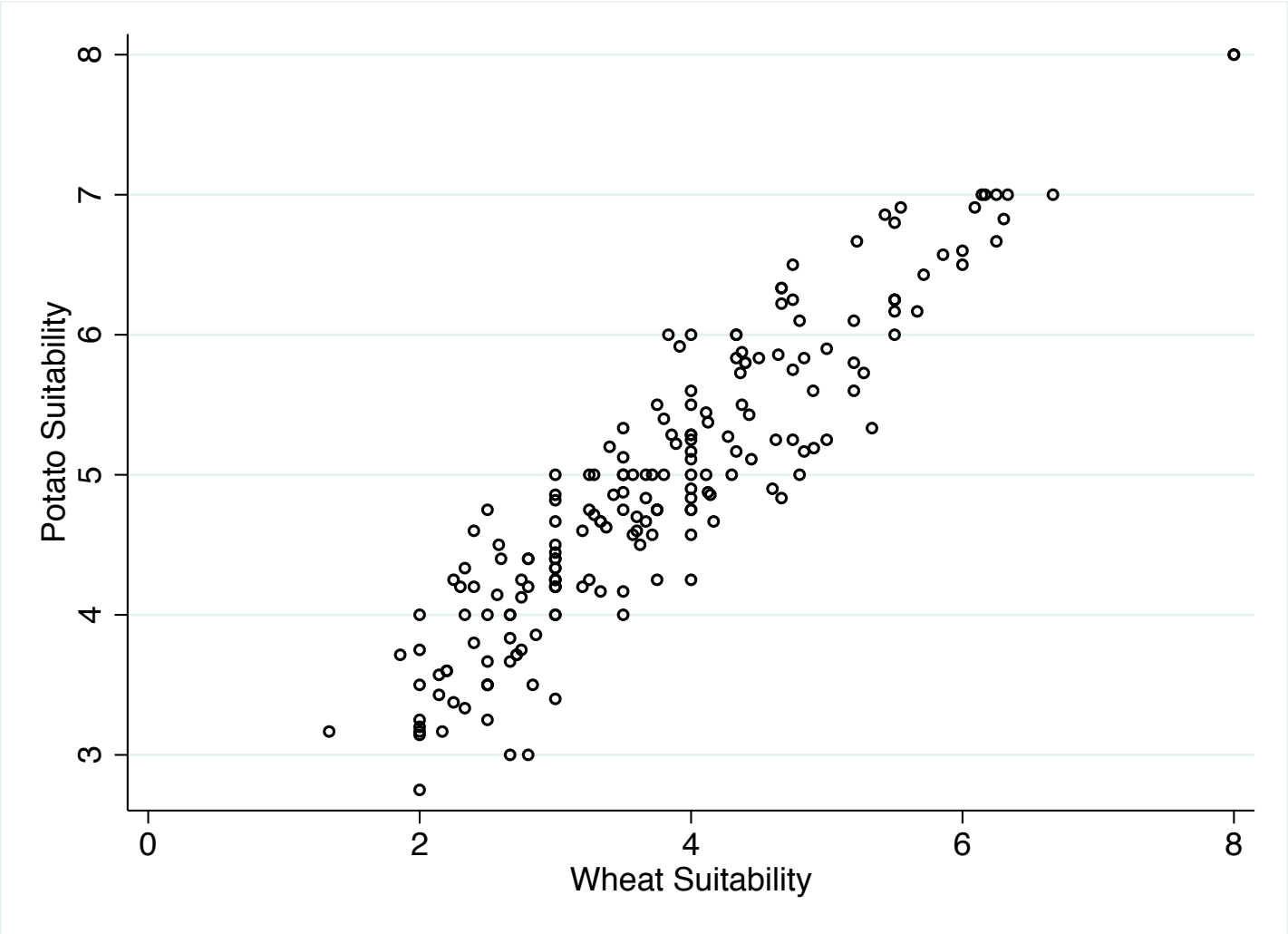
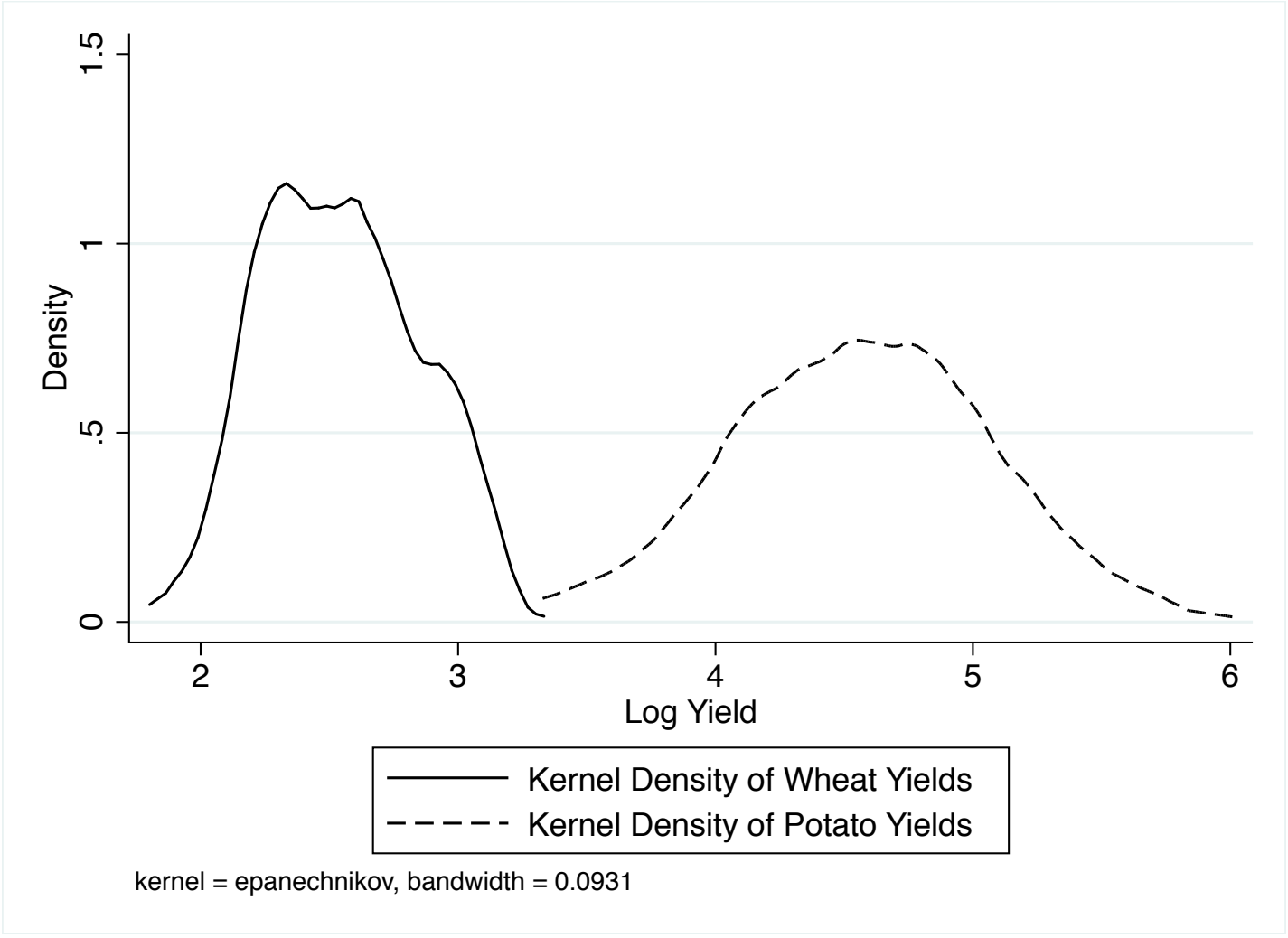
Vivier, Nadine (1998), *Propriété collective et identité communale: les biens communaux en France 1750-1914*, Vol. 46, Publications de la Sorbonne.

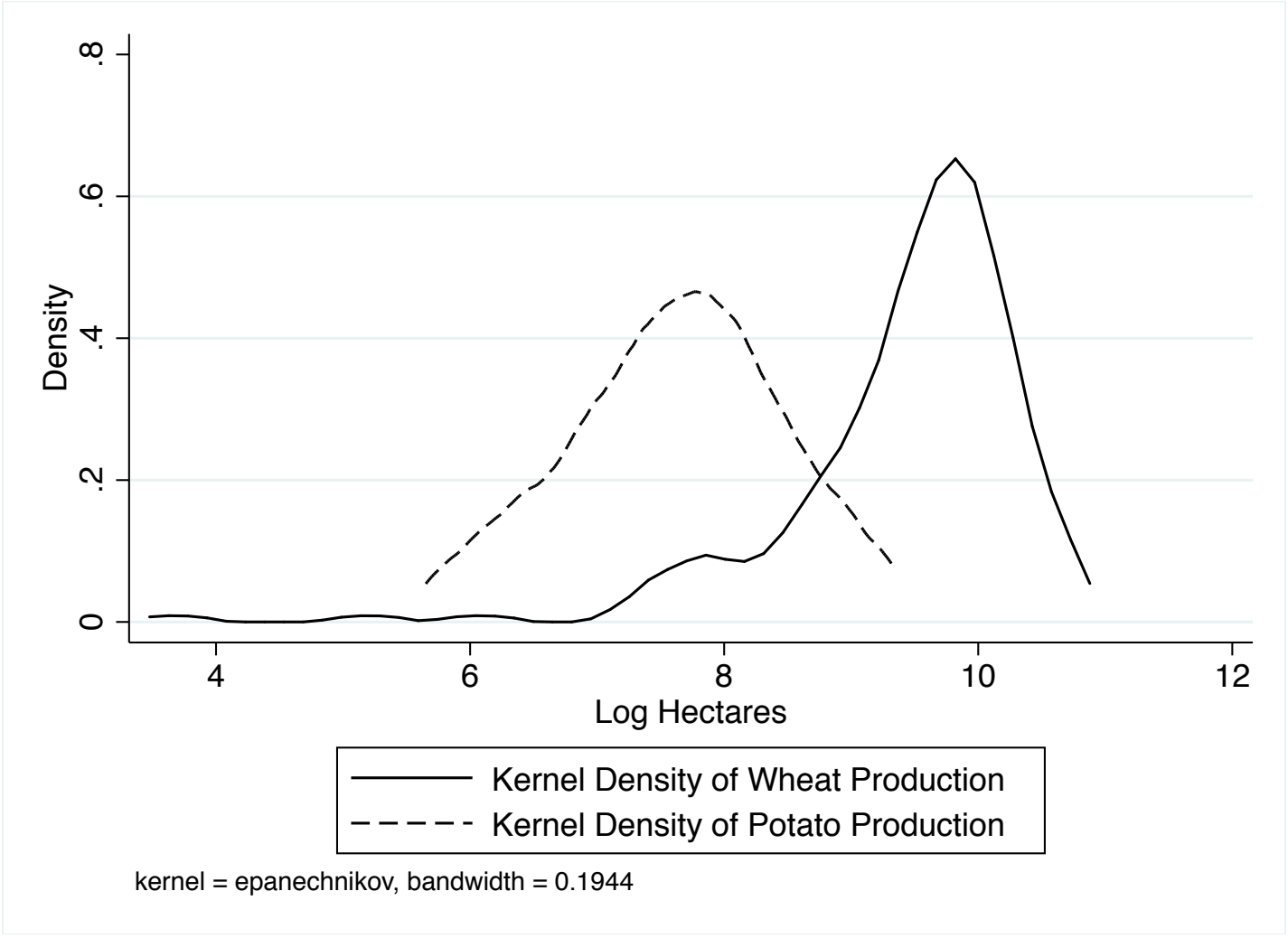
Wheat vs. Potato Potential Suitability



Actual Wheat Yields vs. Actual Potato Yields in 1841



Acreage in Wheat vs. Potatoes, 1841



IV Analysis: Distance to Nearest Bishopric

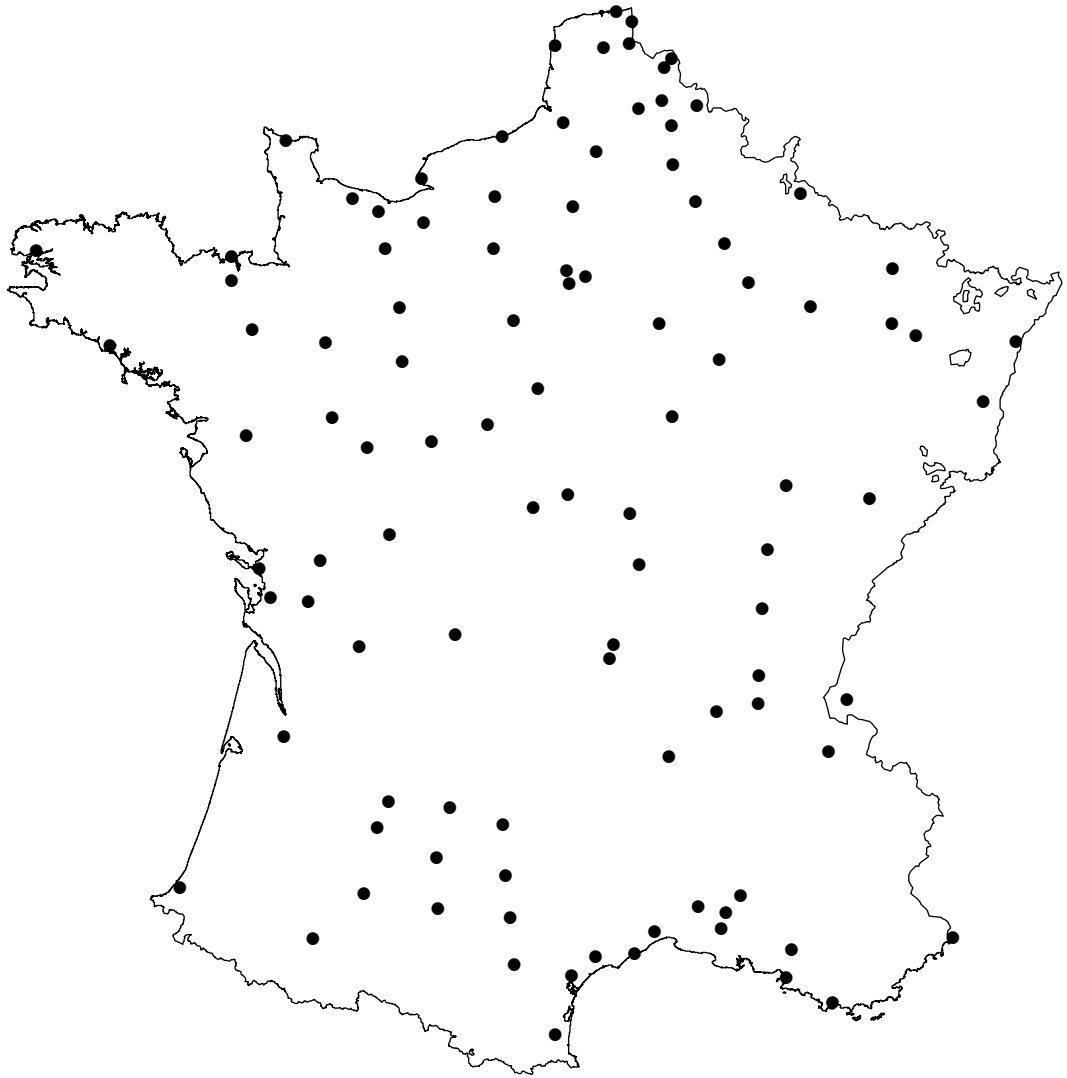
- Between the fourth and sixth centuries, the Catholic Church acquired vast amounts of land. Merovingian ruler of Gaul, Chilperic, declared " . . . that all the wealth of the kingdom had been transferred to the churches" (Goody, 1983, p. 112).

- Between the sixth and eleventh centuries, one of the chief roles of a Bishop was to protect the lands that had been acquired by the Church from the depredations of the laity.

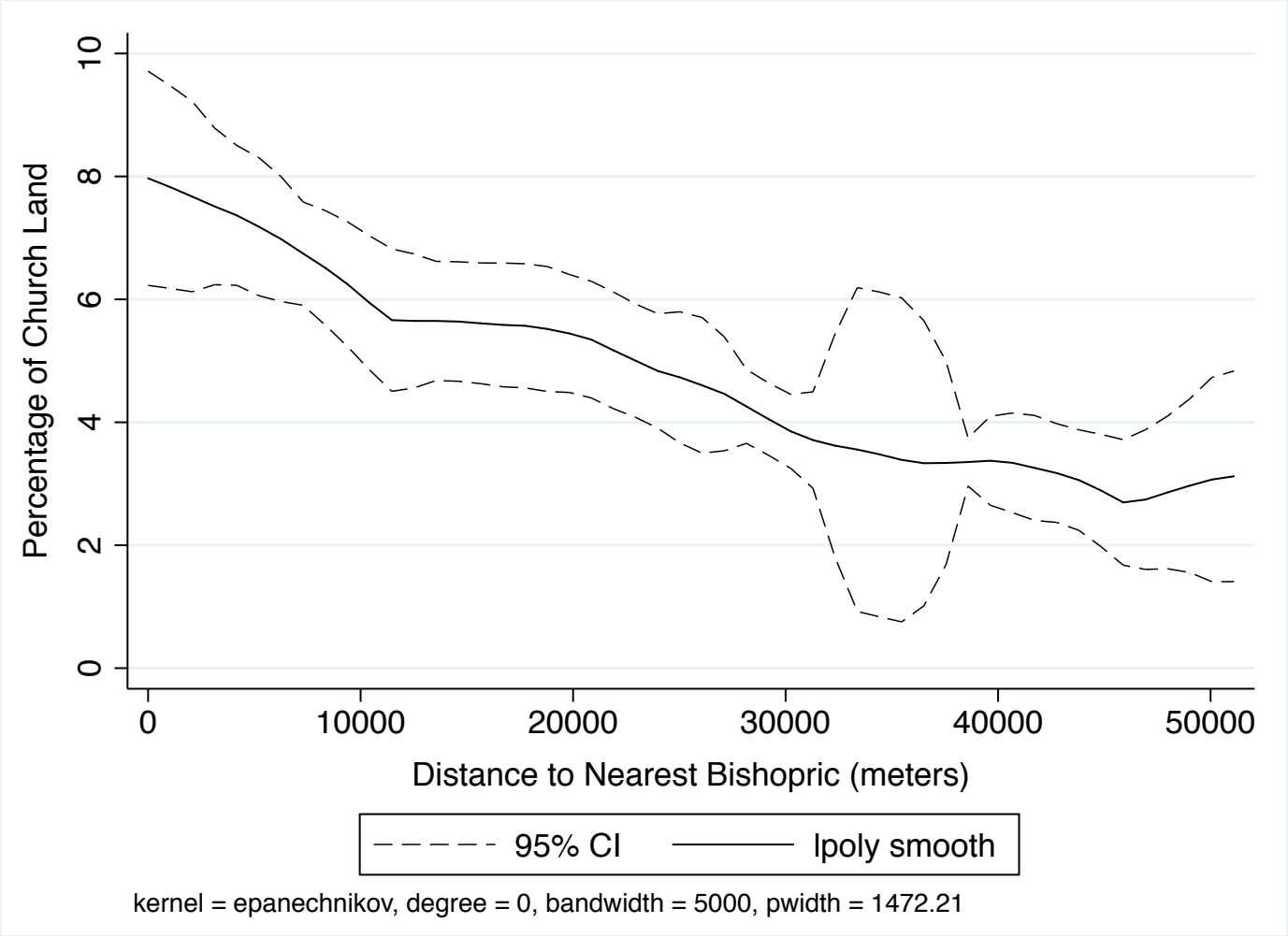
- Scholar-monk Bede complains in letter to Archbishop of York in 734 of the rapid acquisition of "...the Church in the hands of laymen" as he requests the appointment of a Bishop to his territory.

- Bishoprics established by 1200. This is before two biggest factors shaping urban network in pre-modern France:
  - The Black Death (1347-52) (Jedwab et al., 2016; Pamuk, 2007).
  - Opening of the Columbian Exchange (post 1492) (Acemoglu et al., 2005).

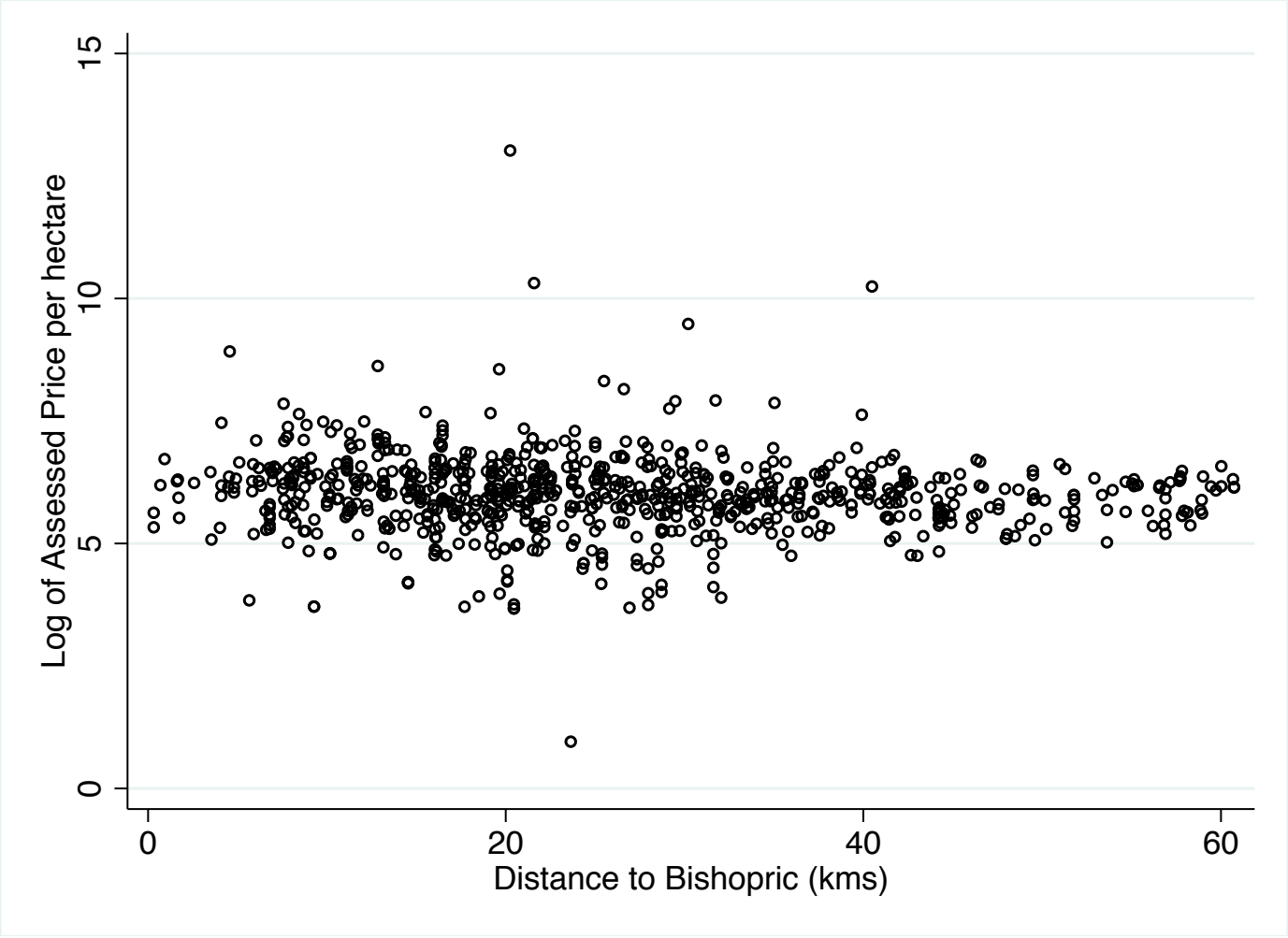
IV Analysis: Spatial Distribution of Bishoprics



IV Analysis: Relevance



IV Analysis: Validity?



IV Analysis: Second Stage Results

	IV (*Distance Bishopric*)
Wheat Yields	0.0513*** (F=10.63)
	(0.0153)
Wheat Yields (FE)	0.0578*** (F=8.54)
	(0.0192)
Pipe Mnfg.	0.447** (F=11.09)
	(0.199)
Pipe Mnfg. (FE)	0.731** (F=7.89)
	(0.298)
Fallow	-0.0107* (F=10.63)
	(0.00570)
Fallow (FE)	-0.0203*** (F=8.54)
	(0.00785)
Prairies	0.00616** (F=10.63)
	(0.00295)
Prairies (FE)	0.00780** (F=8.54)
	(0.00391)

The Potato as Placebo

- Potential yields, as defined by the FAO, of both potatoes and wheat are highly spatially correlated. more
- Potatoes were extremely robust and could be grown virtually anywhere, regardless of irrigation or drainage. more
- Potatoes were typically not grown on as large a scale as wheat and, as such, high fixed cost investments in irrigation or drainage would have been less likely to be undertaken by potato producers. more

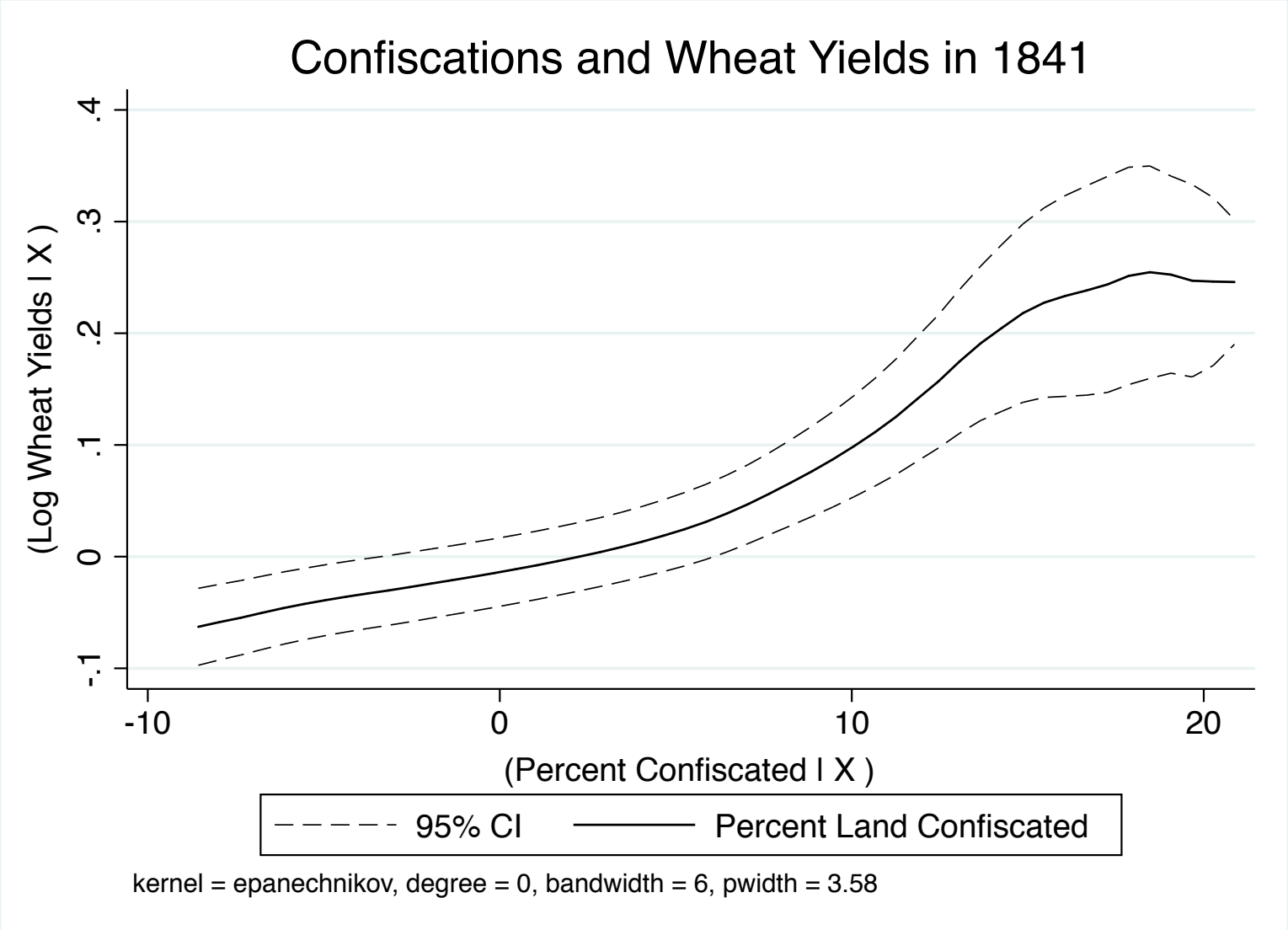
The Effect of Confiscations on 1841 Potato Yields

	Panel A: Dependent Variable: Log Potato Yield in 1841					
	(1)	(2)	(3)	(4)	(5)	(6)
Percent Confiscated	0.0267***	0.0232***	0.0186***	0.00388	0.00370	0.00370
	(0.00652)	(0.00675)	(0.00674)	(0.00579)	(0.00586)	(0.00588)
Potato Suitability	No	Yes	Yes	No	Yes	Yes
Market Access 1789	No	No	Yes	No	No	Yes
Region FE's	No	No	No	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	0.095	0.121	0.162	0.466	0.463	0.460

Robustness: Potato

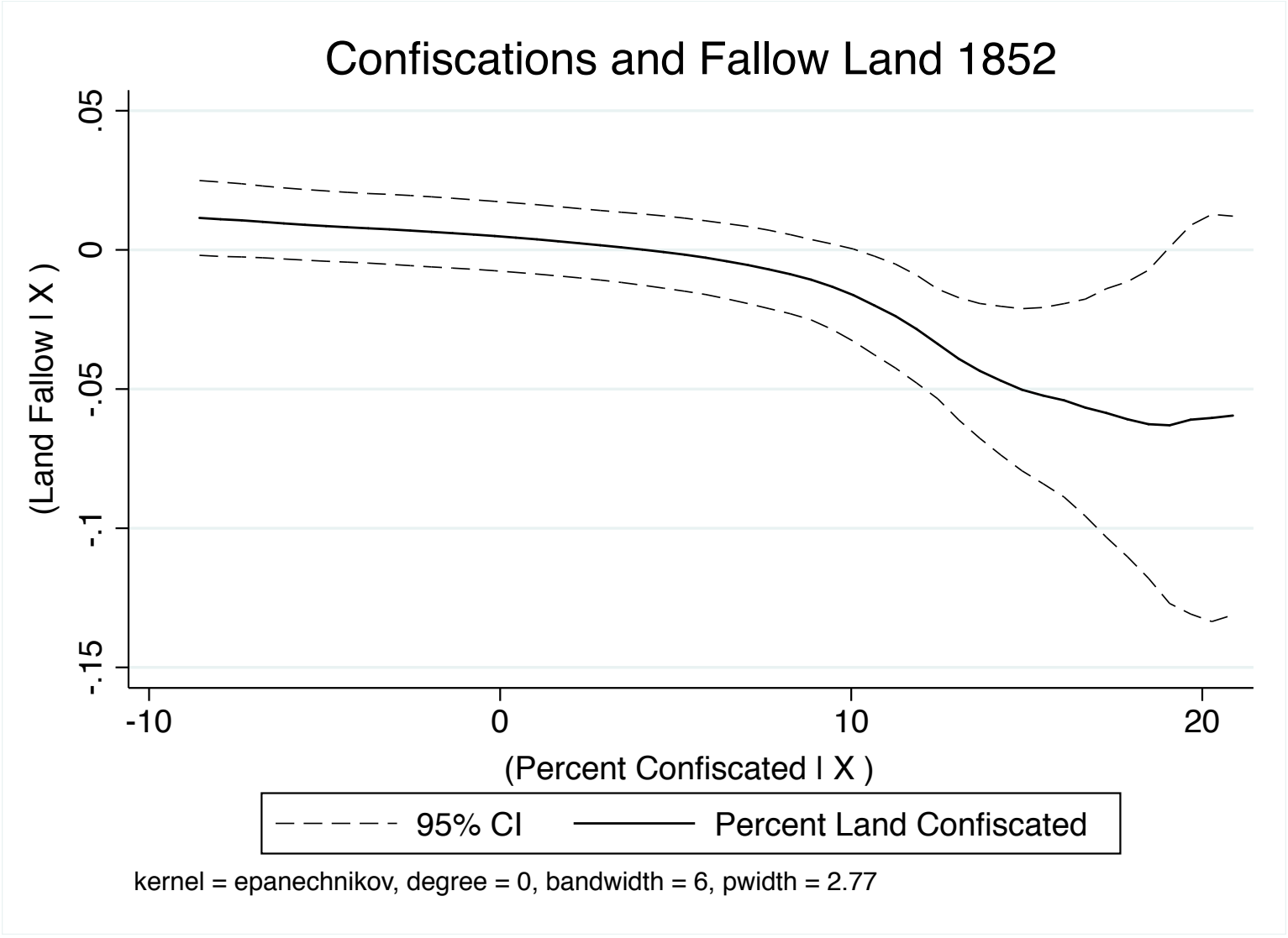
	Potato
Wheat Yields	0.0200***
	(0.00346)
Wheat Yields (FE)	0.00939***
	(0.00341)
Pipe Mnfg.	0.221***
	(0.0693)
Pipe Mnfg. (FE)	0.159**
	(0.0665)
Fallow	-0.00399***
	(0.00109)
Fallow (FE)	-0.00382***
	(0.00135)
Prairies	0.00244***
	(0.000667)
Prairies (FE)	0.00155**
	(0.000612)

The Effect of Confiscations on 1841 Wheat Yields

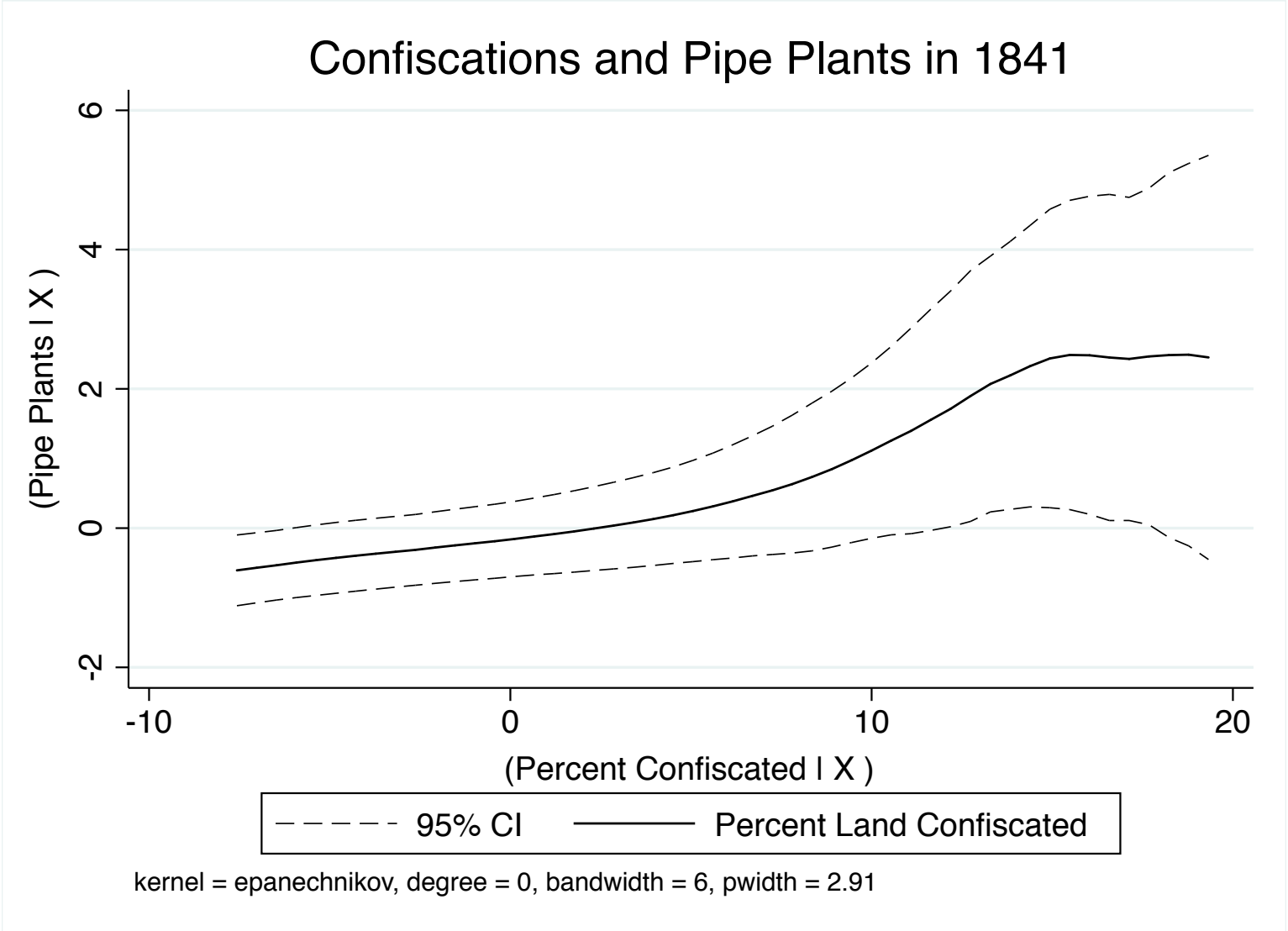


The Effect of Confiscations on 1852 Land Use

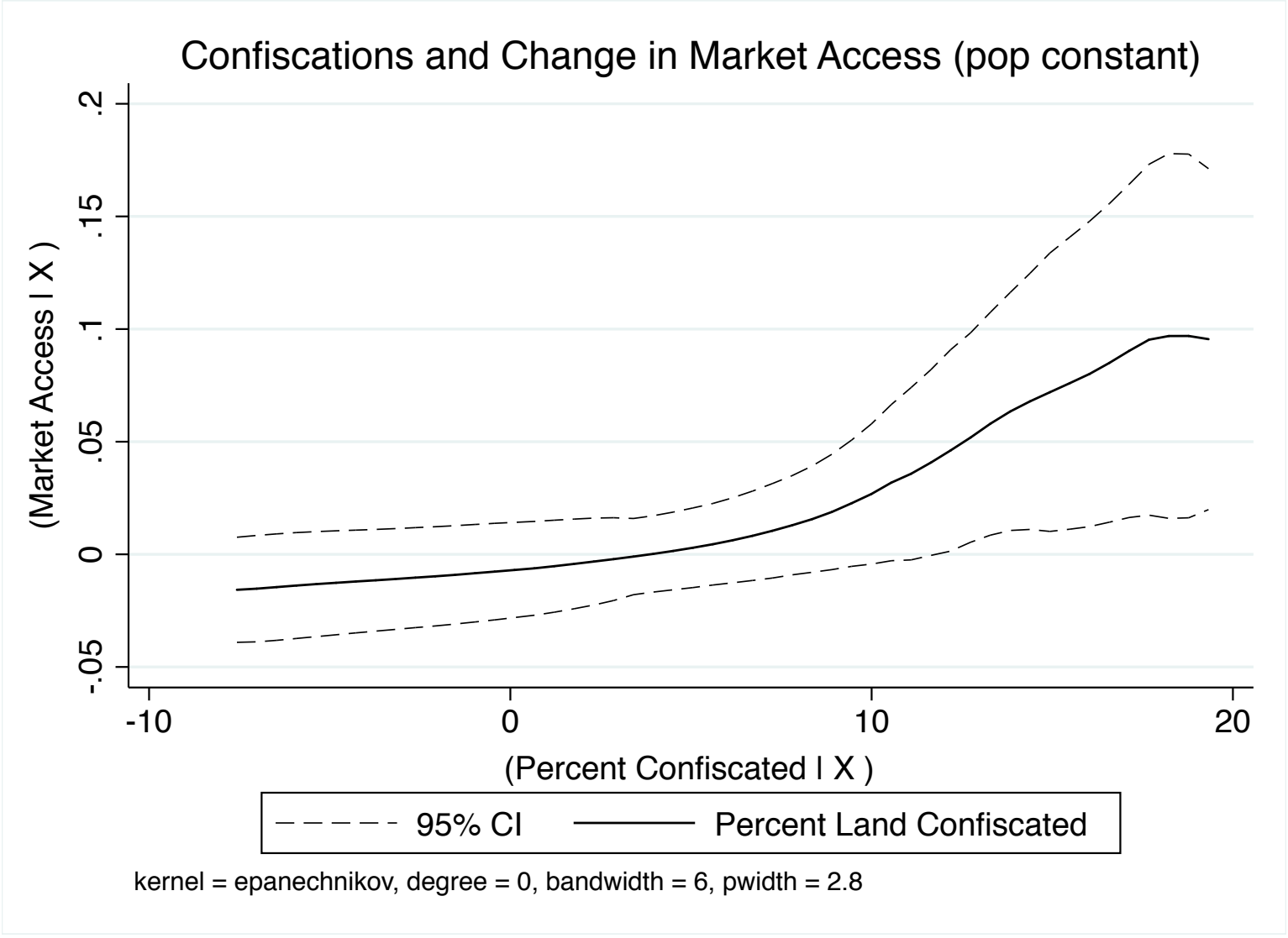
▸ 3 field vs. ▸ 4 field



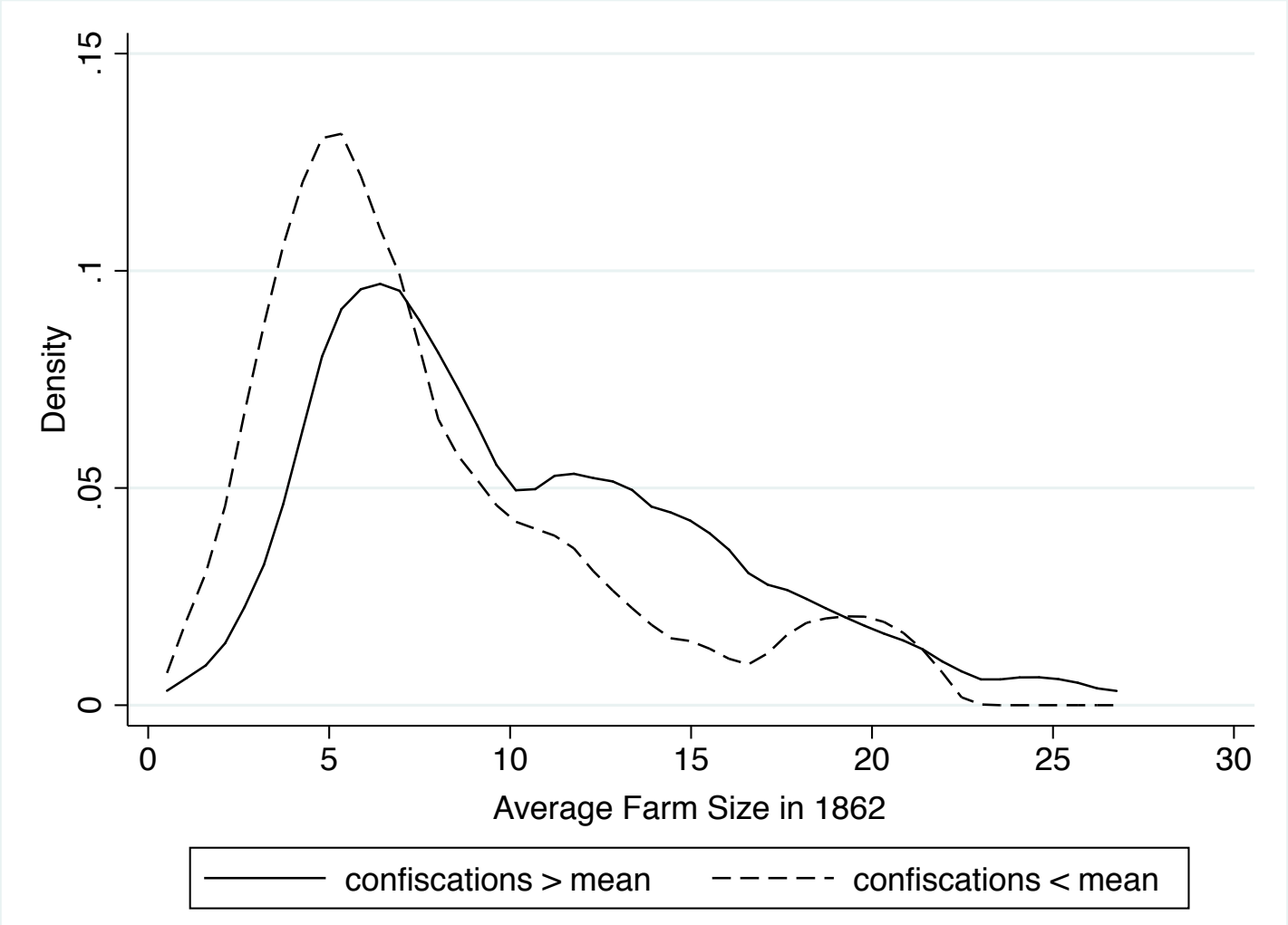
The Effect of Confiscations on Investment in Drainage and Irrigation, 1856



The Effect of Confiscations on Changes in Market Access, 1789-1841



Distribution of average farm sizes above and below mean confiscations in 1862



Percent Sharecroppers in 1852

	Dependent. Variable: Percent Sharecroppers, 1852					
	(1)	(2)	(3)	(4)	(5)	(6)
Percent Confiscated	-0.0234***	-0.0211***	-0.0170***	-0.00941**	-0.00976**	-0.00977**
	(0.00370)	(0.00374)	(0.00363)	(0.00380)	(0.00379)	(0.00380)
Wheat Suitability	No	Yes	Yes	No	Yes	Yes
Market Access 1789	No	No	Yes	No	No	Yes
Region FE's	No	No	No	Yes	Yes	Yes
N	194	194	194	194	194	194
adj. R-sq	0.176	0.195	0.268	0.473	0.473	0.470

Convergence

	Dep. Variable: Log Wheat Yields	
	(1)	(2)
Percent Confiscated X 1841	0.0094**	0.0050*
	(0.0046)	(0.0027)
Percent Confiscated X 1852	0.0078*	0.0048*
	(0.0043)	(0.0025)
Percent Confiscated X 1875	-0.0002	-0.0015
	(0.0024)	(0.0028)
Percent Confiscated X 1892	0.0021	0.0009
	(0.0020)	(0.0027)
Percent Confiscated X 1912	0.0045*	0.0034
	(0.0024)	(0.0027)
Percent Confiscated X 1929	0.0036*	0.0030
	(0.0021)	(0.0027)
Wheat Suitability X Year	Yes	Yes
Market Access 1789 X Year	Yes	Yes
Region FE's X Year	Yes	Yes
Year Dummies	Yes	Yes
Robust Estimator	No	Yes
N	1,152	1,152
adj. R-sq	0.71	0.77

Coase, in his 1991 Nobel Prize acceptance speech, suggests what he *really* thinks the "Coase Theorem" is about: Focusing on the **institutions which structure exchange.**

I tend to regard the Coase Theorem as a stepping stone on the way to an analysis of an economy with positive transaction costs. . . If we move from a regime of zero transaction costs to one of positive transaction costs, what becomes immediately clear is the crucial importance of the legal system in this new world. . . While we can imagine in the hypothetical world of zero transaction costs that the parties to an exchange would negotiate to change any provision of the law which prevents them from taking whatever steps are required to increase the value of production, in the real world of positive transaction costs such a procedure would be extremely costly, and would make unprofitable, even where it was allowed, a great deal of such contracting around the law. . . It makes little sense for economists to discuss the process of exchange without specifying the institutional setting within which the trading takes place since this affects the incentives to produce and the costs of transacting.

main