

Justices of the Peace: Legal Foundations of the Industrial Revolution

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Motivation

- We investigate the contribution of state capacity to economic development in England and Wales during the Industrial Revolution (IR)
- High state capacity—the ability of a government to accomplish its goals—is now viewed as fundamental to economic growth
- But in the IR period the state has generally been portrayed as, at best, passive (e.g., Gerschenkron, 1962; McCloskey 2016)
- We argue that the contribution of legal capacity—the state's ability to enforce laws—has been underappreciated by investigating the consequences of an expansion legal capacity of a particular kind.

Justices of the Peace and Legal Capacity

- We study legal capacity by analyzing the role of “Justices of the Peace”
- Uniquely in Europe, Britain relied on these unpaid magistrates to enforce laws
- The office was established in 1361 during the reign of Edward III and its primary initial focus was on enforcing the sovereign’s peace
- Over time, they became tasked with enforcing a broad range of laws relating to the economy, particularly after the Glorious Revolution and through the classic Industrial Revolution period
 - Supporting market interactions (property rights, contract enforcement)
 - Implementing regulations
 - Underpinning “fiscal capacity” (the ability of state to raise taxes)

A “Local Miniature of the Sovereign”

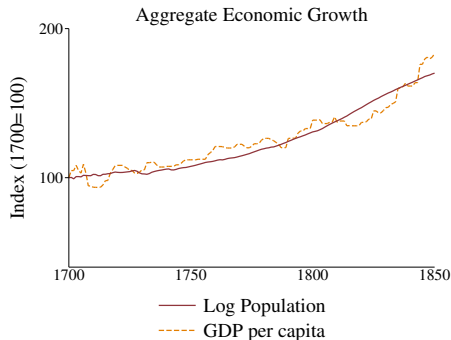
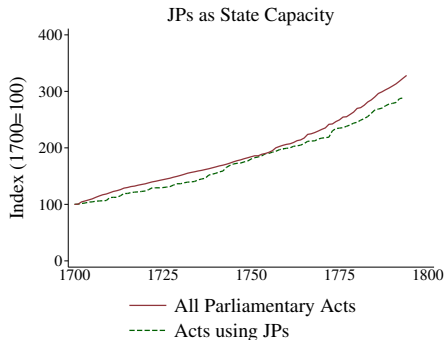


Note: Frontispiece from a 1669 “manual” discussing the duties of JPs

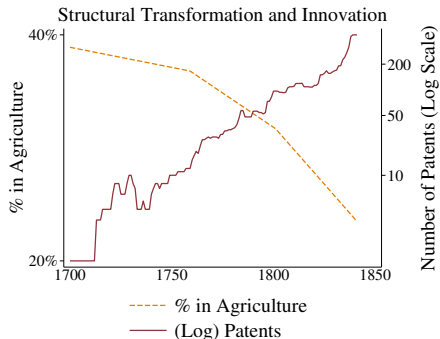
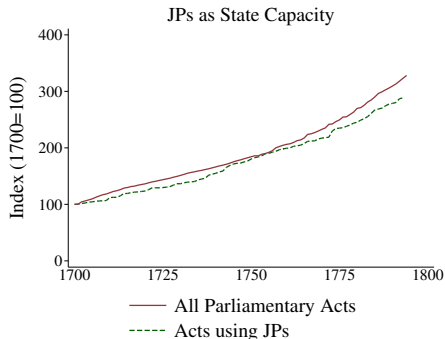
Justices and the State

- 1689 “Glorious Revolution” leads to British state becoming the archetypal “good institution” (North and Weingast, 1989)
- The role of the state expands during the eighteenth century
 - More laws passed and taxes collected (Lemmings 2015; Bogart and Richardson, 2011)
 - New regulation required as economy becomes more complex
- In absence of a modern bureaucracy, the state turns to JPs to undertake these tasks
 - $\Rightarrow$ Expansion of legal capacity

State Capacity and the Industrial Revolution



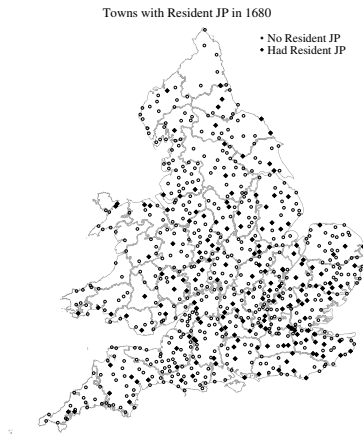
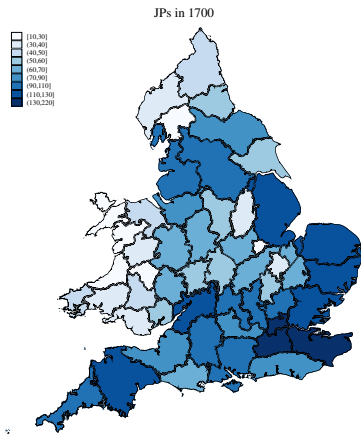
State Capacity and Economic Transformation



Testing the Role of Legal Capacity

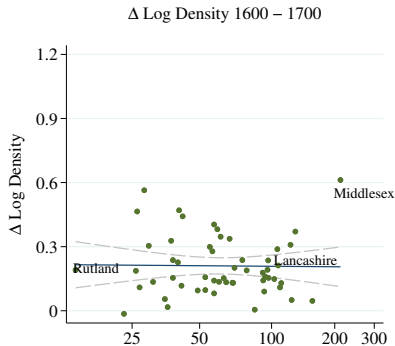
- Generally difficult to identify effects of state capacity on economic development due to reverse causality
- We exploit intra-country variation in access to JPs to test the importance of legal capacity
- Distribution of JPs at turn of 18th century determined by historical political and social factors in a pre-industrial economy
 - Factors orthogonal to future economic development
 - Before JP selection based on their contribution to the economy
 - Economic changes of industrial revolution were unimaginable
- Initial investment in state capacity can “kick-start” a positive feedback loop between economic development and future capacity investments

Heterogeneity in Legal Capacity

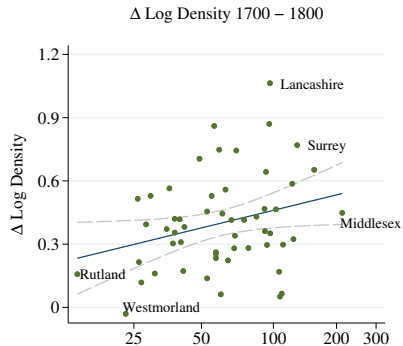


► Only Large Towns

1700 JPs and Historical Development



Number of JPs in 1700 (Natural Log Scale)



Related Literature

- We add empirical evidence of contribution of state—particularly legal—capacity to long-run economic development
 - Studies of legal capacity tend to use modern cross-country correlations (e.g., Besley and Persson, 2011) or proxies (e.g., Johnson and Koyama, 2014)
 - Most historical work studies fiscal capacity (e.g., Dincecco 2009; Dincecco and Prado 2012)
- We emphasize the importance of the state during the industrial revolution period
 - Most work has de-emphasized the role the state (e.g., Allen, 2009; Mokyr et al. 2023) with some exceptions (e.g., Weingast, 1995; Bogart and Richardson, 2011)
 - post-Glorious Revolution Parliament provides archetypal “good institution” (North and Weingast 1989)
- Emphasize importance of “street-level” legal institutions alongside the broad architecture of the legal system (La Porta et al., 2008)

Take-Aways

- Legal capacity played a key role in shaping the Industrial Revolution
 - Availability of legal capacity at the end of the 17th century shaped economic outcomes over the next 140 years
 - “Bringing the state back in” to the Industrial Revolution
- Early modern rulers could not immediately set up a modern bureaucracy in the face of economic growth
 - British monarchs and Parliament turned to elites through the existing structures of JPs
 - Faced constraints through the supply of available gentry

The Justices of the Peace

The “Rulers of the County”

- The institution of Justices of the Peace was established in 1361 to deal with “offenders, rioters, and all other barators”
- JPs served a county and made decisions across a wide—and expanding—range of domains
 - By 1368 implementing wage caps to deal with post-Black Death labor shortages
 - Economic role grew particularly during 18th century
- “gradually acquired a near monopoly of local judicial and administrative authority ... by the late seventeenth century most [other courts] were either nonexistent or insignificant. No local court now contested the justices’ local rule” (Landau, 1984, p7)
- Importance declined after the 1830s, but still exist today

Where did the JPs Act?

- Quarter Sessions: Full panel of JPs in a county
 - Tried criminal cases, maintained county services (infrastructure, apprenticeships, licensing, etc), managed county taxes (“rates”)
- Petty Sessions: Two or more justices
 - Private disputes, minor crimes, regulation
- Summary justice: decisions made by a single justice alone

What did JPs Do?

- JPs held a dizzying array of judicial and administrative roles
- We analyze these trends using two manuals which delineated JPs duties in 1642 and 1794
- Duties of JPs become increasingly “economic” over 18th century: regulation, contracts, taxation and infrastructure
- Consistent with pre-existing state capacity being drawn on to deal with needs of an industrializing economy
- Surviving JPs’ notebooks show that JPs provide a flexible dispute resolution outside of Quarter Sessions

▶ JPs’ duties over time

JPs and the Value of Money

Coin.

ONE justice, on complaint upon oath that there is just cause 11 G. 3. c. 40.
to suspect, that any person hath been concerned in counterfeiting the copper monies of this realm, may, by his warrant, cause the dwelling-house, room, workshop, &c. belonging to such suspected person, to be searched for tools and implements for coining such copper monies: and if any such tools or implements shall be found hid or concealed in any place so searched, it shall be lawful for any person whatsoever discovering the same, to seize such tools or implements, and carry the same forthwith to a justice, who shall cause the same to be secured and produced in evidence against any person, who shall be prosecuted for any of the offences aforesaid; and after they shall have been produced in evidence, the same, and all other so seized, shall forthwith, by order of the court, or by order of the justice, if there shall be no trial, be defaced and destroyed, or otherwise disposed of, as such court or justice shall direct. Defaced and destroyed.

Bricks *and* Tiles.

EVERY plain tile shall be $10\frac{1}{2}$ inches long, $6\frac{1}{4}$ broad, and half an inch and half a quarter thick: Roof tile, 13 inches long, half an inch and half a quarter thick; with convenient deepness: Gutter tile, and cover tile, $10\frac{1}{2}$ inches long, with convenient thickness, breadth, and deepness.—If any person shall set to sale any such tile otherwise made, he shall forfeit to the buyer double value of the tile, and make fine and ransom, at the king's will; to be recovered by action of debt, with costs. And also the justices of the peace and every of them may hear and determine offences against this act; who shall assess upon the offender no less fine than for every 1000 plain tiles 5s. for every 100 roof tiles 6s. 8d. and for every 100 corner or gutter tiles 2s.

17 Ed. 4. c. 4.

Dimensions of
tiles.

All bricks made for sale, shall, when burned, be not less than eight inches and a half long, two inches and a half thick, and four inches wide; and all pantiles, not less than 13 inches

17 G. 3. c. 42.

Of bricks and
pantiles.

and

Institutional Constraints

- JPs had a lot of autonomy: flexibility is (arguably) one of the institution's strengths
- But several formal institutions and informal norms ensure they acted legally
- Formal checks on decision-making develop over late 17th and 18th century (another strengthening of legal capacity)
 - Many powers required the presence of two or more JPs
 - Justices could be (and were) removed from the bench by writ due to misbehavior
 - Quarter Sessions could review JPs' decisions
 - Possibility for civil cases to be brought against the JPs
- Social norms of “gentlemanly conduct” disincentivized opportunistic behavior
 - Status rather than cash a key motivator for 18th century elites (Mokyr, 2008)

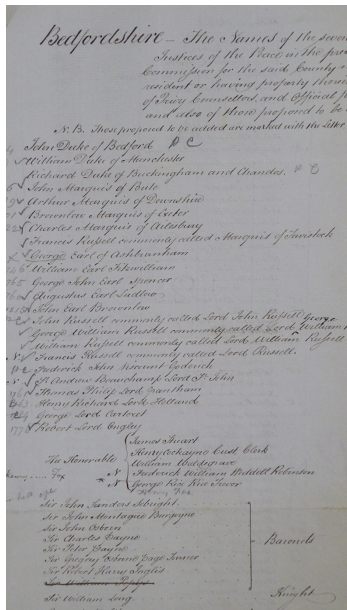
Legal Capacity and Economic Development

- Key question: (how much) did pre-modern legal capacity contribute to economic development?
- We examine economic development over the period when the JP was the primary legal arm of the state
 - From the Glorious Revolution (the start of JPs' economic role)...
 - ...to the Age of Reform (move away from gentry-based power structures)
- ⇒ Leverage heterogeneity in local legal capacity—the presence of JPs
 - County-level: Number of JPs, measured around 1700
 - Town-level: Presence of a resident JP in 1680

Measuring Local Legal Capacity

- We draw on a new dataset that we have assembled of county-level JPs drawn from a range of sources:
 - Landau (1984) gives counts of JPs in all or most counties between 1690 and 1709
 - Nine additional lists uncovered through comprehensive archival search
 - Fill in gap for Lancashire using Glassey (1979)
- In 1680 we are able to identify the towns JPs lived in, through matching a list of county JPs to a list of elites in Blome (1673)
 - Match based on county and (family) name—c.95% of JPs matched in elites list
 - (Relatively!) straightforward to geolocate towns
 - In total covers around 30% of JPs

List of JPs



Empirical Framework: Counties

$$y_{t,i} = \alpha + \beta_1 y_{1700,i} + \beta_2 \log(\text{JPs})_{1700,i} + \gamma X'_{1700,i} + \epsilon_i \quad (1)$$

- where i indexes counties in main specifications
- Main dependent variable: log population density
- $X'_{1700,i}$ are sets of control variables.
- Baseline county controls: 1700 log population density, % county exposed coal, second order polynomial in longitude & latitude
- Use rich set of additional controls

Other Data Sources

- Proxy economic development with county-level population density
 - The census gives county population estimates from 1801
 - Wrigley (2009) gives population estimates for English counties in 1600, 1700, 1750, and 1801
 - Owen (1959) provides estimates of early Welsh county population in late 17th century
- Other development outcomes:
 - New dataset of county-level government spending (infrastructure, poor law) 1748–1840
 - New measures of 1830 county property income and bank deposits
 - Occupational structure; number of railway stations; derived from CAMPOP data
 - Apprentices (Minns and Wallis, 2013; Zeev et al. 2017) and number of patents (Cox, 2020)
- Large number of controls for pre-1700 county and town characteristics from new and existing sources

Identification

- Key assumption: the number of county JPs in 1700 is (conditional on covariates) exogenous to *future* economic development
- Number of JPs determined by historical factors orthogonal to future economic growth
 - Determined by local political contestation, particularly the rise of parties in 17th century
 - Industrial Revolution was not foreseen and JPs' role was not primarily economic in 1700

Selection of JPs

- Key figure is the Lord Chancellor (LC), the head of the judiciary (and other roles) appointed by the Crown
 - LC received lists of nominations from local magnates / Lord Lieutenants in each county
 - Lord Chancellor could then amend by adding / removing names
- Main reasons for appointing JPs varied over time:
 1. pre-Civil War (1642–1651): loyalty to the crown, willingness to suppress opposition, channeling support of local magnates
 2. 1660–1750: loyalty to new political parties (Whigs and Tories)
 3. After 1750: administrative value

Demand-Side Pressures for JPs Pre-1700

- Historical literature emphasizes that political considerations dominated JP selection until the mid-seventeenth century, when practical concerns took over
 - Dowdell: in Medieval period, duelling county magnates struggled to get their clients onto Commission
 - Landau: Whig versus Tory tensions between 1690 and 1745: one LC would stack the benches with their party, then the next LC would do likewise
- In both cases: more political conflict means more JPs
 - Removing JPs was harder than appointing during eighteenth century
 - $\Rightarrow$ JP numbers are persistent
 - Benches “stacked” through political competition
 - $\Rightarrow$ More contested areas had more JPs

A “Gentry Constraint” on Legal Capacity

- Largely local men, drawn from the landed elite, without legal training (generally)
 - In 1680: 56% of JPs were esquires, 23% baronets/knights, 9% gentlemen; 6% nobles
- Unpaid, but their office accrued social status
 - Advantageous both on grounds of cost and in ensuring JPs had sufficient social standing to resolve disputes
 - Paternalistic motivation both to take office and to accept justices' decision-making
- Property qualification prevented JPs “whose poverty made them both covetous and contemptible”
- → Over a quarter of elites (27%) were JPs (42% of baronets/knights, 30% esquires) in 1680
- ⇒ location of elites a key predictor of location of JPs

The British Industrial Revolution

- Britain becomes first economy to enter “modern economic growth” during eighteenth-century
 - Classic industrial revolution period, marked by range of technological breakthroughs, starts around 1760
 - Over time has been recognized that many changes began earlier
 - Widespread changes affecting all parts of economy and society
- Multiple reinforcing revolutions (Allen, 2017): technological, demographic, urban, agricultural, commercial, transportation, financial, energy
- Many(!) theories of the Industrial Revolution, but the development of legal institutions is rarely seen as playing an important role

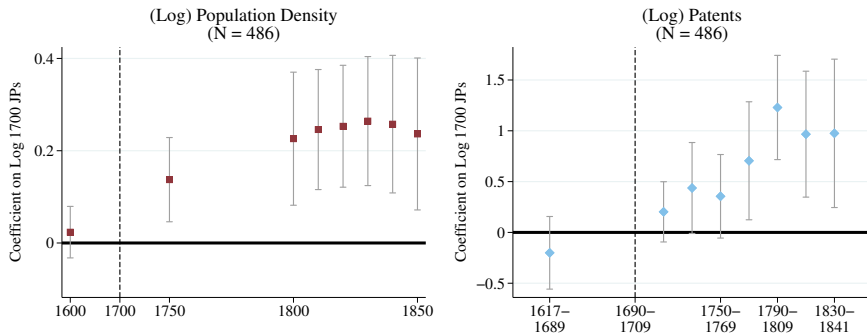
Table 1: Counties with greater legal capacity in 1700 experienced faster economic growth during the industrial revolution period ($N = 54$).

	DV = 1840 Log Population Density				
(Log) JPs 1700	0.26*** (.074)	0.24** (.093)	0.29*** (.043)	0.39*** (.066)	0.31*** (.115)
(Log) Population Density 1700	1.00*** (.042)	1.00*** (.042)	1.03*** (.043)	0.93*** (.066)	0.99*** (.052)
% of Area Exposed Coal	0.19*** (.044)	0.19*** (.045)	0.18*** (.046)	0.20*** (.047)	0.19*** (.045)
(Log) Gentry 1670		0.02 (.102)			
Contested Elections 1660–89			−0.05 (.045)		
Area of County				−0.08 (.063)	
Number of Towns in 1670					−0.04 (.072)
Coordinates	Y	Y	Y	Y	Y

Notes: “Coordinates” include a second order polynomial in longitude and latitude. The number of gentry in 1670 is based on Blome (1673) and includes all individuals classified as either an esquire or a gentleman. Variables not reported in logarithms are standardized. Robust standard errors are reported in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

County-Level Economic Development



Note: The figure displays coefficient estimates from two-way fixed effects specifications. Specifically, each coefficient in the plot relates to the interaction between 1700 county JPs and an indicator for a particular year. All specifications include county- and year-fixed effects, and interactions between the year fixed effects and the set of baseline controls—log population density in 1700, the second order degree polynomial in longitude and latitude, and the percent of a county with exposed coal. A constant of one is added to account for the fact several counties had zero patents in each period. Figures for patents reflect the log of the number of patents granted in that county in the relevant period. The missing category in the left-hand panel is log population density in 1700, and in the right-hand panel it is patents registered between 1690 and 1709. Standard errors are clustered by county. Bars represent 95% confidence intervals.

► 1840 Results Table ► 2SLS ► Removing Outliers ► Moran's I

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 - ... the “Industrial Revolution” would still have happened in Lancashire (i.e., it would have grown more)

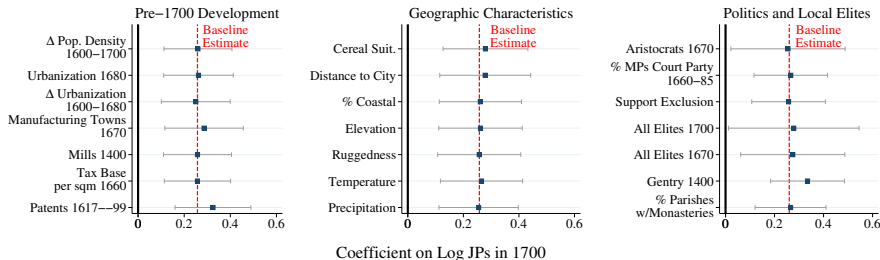
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Alternatively: a 1 s.d. increase in 1700 log JPs has around 80% effect size of a 1 s.d. increase in the proportion of a county exposed to coal.

Robustness to Alternative Controls

Estimated Effect of Log JPs in 1700 when Adding Controls For:



Note: Figure displays the regression coefficient on log JPs 1700 when estimating specifications 1 in Table 1 adding each of the controls above one-by-one (i.e., in separate specifications). Mills in 1400, gentry in 1400, and the percentage of parishes with monasteries are only available for counties in England—for these variables welsh counties are given an arbitrary value and a separate “Wales dummy” is included in the regressions. Measures of elites, tax base per square mile, and percent of parishes with monasteries are logged. Bars represent 95% confidence intervals.

Table 3: Higher legal capacity in 1700 positively affected a broad range of development outcomes in 1840 ($N = 54$).

	Property Income/area	Bank Deposits	Railway Stations	% Male Occupations:		
				Primary	Secondary	Tertiary
(Log) JPs 1700	0.23*** (.080)	4.08*** (1.308)	0.70** (.303)	−0.04* (.024)	0.02 (.022)	0.02** (.007)
(Log) Population Density 1700	0.99*** (.064)	−0.05 (.553)	0.49*** (.157)	−0.09*** (.022)	0.04*** (.014)	0.06*** (.012)
% of Area Exposed Coal	0.14*** (.037)	0.12 (.256)	0.39* (.204)	−0.06*** (.013)	0.06*** (.012)	−0.01** (.005)
Coordinates	Y	Y	Y	Y	Y	Y

Notes: Property income is from the 1843 land assessment (House of Commons, 1845). Bank deposits are measured in 1830 and are from Marshall (1835). The number of rail stations is measured in 1841, based on Henneberg et al. (2017) and Bogart et al. (2022). For the latter two variables, 1 is added due to zero-valued observations. Occupational shares are measured in 1841, based on Gatley et al. (2022). “Primary” includes agriculture and fishing, “Secondary” includes manufacturing and other industry, and “Tertiary” includes services—transport, retail, wholesale, professional, clerical, hospitality, government, and military. A fourth category of “Other” comprised approximately 15% of occupations nationally. “Coordinates” include a second order polynomial in longitude and latitude. % of Area Exposed Coal is standardized. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Empirical Specification: Towns

$$y_{i,1840} = \beta_1 \log \text{CountyJPs}_{i,1700} + [\beta_2 \text{hasJP}_{i,1680}] \\ + \lambda y_{i,1680} + \gamma_1 X_{i,1680} + \gamma_2 Z_{i,1680} + \epsilon_i$$

- i = towns
- y = population (1680 or 1840)
- hasJP is an indicator variable, equals 1 if town has a JP resident in 1680; 0 otherwise
- $\log \text{CountyJPs}_{1700}$ county-level number of JPs, as in county-level regressions
- X_i : town elite presence, economic (presence of manufacturing, mining, near Morden road, navigable rivers, harbour, free school, almshouse, number of market days); political (has MPs, elected officials); geographic (exposed coal, coastal, elevation, climate)
- Z_i : county-level controls / fixed effects
- As before, always include second order polynomial in longitude and latitude

Table 4: Greater county legal capacity led to urban development.

	DV = (Log) 1840 Town Population					
(Log) JPs 1700	0.40** (.159)	0.41** (.166)	0.42** (.167)	0.43*** (.151)	0.29* (.168)	0.43** (.170)
x Large Town				-0.02 (.136)		
x Had Coal					0.77** (.311)	
x Self-Governing						-0.06 (.113)
Had Coal	0.40*** (.135)	0.35*** (.127)	0.37*** (.127)	0.37*** (.126)	0.57*** (.151)	0.37*** (.127)
Stage Town		0.26*** (.091)	0.23*** (.087)	0.23*** (.086)	0.24*** (.089)	0.23*** (.088)
Self-Governing			0.16** (.076)	0.16** (.075)	0.16** (.074)	0.16** (.074)
(Log) Town Population 1680	0.96*** (.054)	0.82*** (.066)	0.79*** (.071)	0.81*** (.083)	0.78*** (.070)	0.79*** (.072)
Towns	703	703	703	703	703	703
Counties	54	54	54	54	54	54
Coordinates	Y	Y	Y	Y	Y	Y
County Controls	Y	Y	Y	Y	Y	Y
Geographic Controls	Y	Y	Y	Y	Y	Y
Economic Controls	N	Y	Y	Y	Y	Y
Political Controls	N	N	Y	Y	Y	Y

Table 6: Legal capacity had heterogeneous effects on occupational structure depending on town characteristics.

	DV = % Male Occupations in:					
	Agriculture		Secondary		Tertiary	
(Log) JPs 1700	-0.06** (.030)	-0.04 (.033)	0.03 (.020)	0.01 (.020)	0.03** (.014)	0.03** (.014)
x Had Coal		-0.10** (.048)		0.14*** (.039)		-0.01 (.018)
x Had Harbor		-0.00 (.034)		-0.05* (.025)		0.05** (.025)
Had Coal	-0.08*** (.022)	-0.11*** (.028)	0.04** (.020)	0.08*** (.025)	-0.01 (.010)	-0.02 (.011)
Had Harbor	-0.06** (.025)	-0.06** (.025)	0.03* (.016)	0.03** (.014)	0.05*** (.014)	0.05*** (.016)
Towns	691	691	691	691	691	691
Counties	54	54	54	54	54	54
Coordinates	Y	Y	Y	Y	Y	Y
County Controls	Y	Y	Y	Y	Y	Y
Geographic Controls	Y	Y	Y	Y	Y	Y
Economic Controls	Y	Y	Y	Y	Y	Y
Political Controls	Y	Y	Y	Y	Y	Y

Table 5: Having a resident JP in 1680 led to higher town population in 1840.

	DV = (Log) 1840 Town Population					
Had Resident JP 1680	0.19*** (.073)	0.17** (.074)	0.14** (.068)	0.18** (.073)	0.16** (.073)	0.12* (.066)
(Log) JPs 1700	0.43*** (.158)	0.40** (.160)	0.42** (.165)			
Had Aristocrat		-0.00 (.050)	-0.01 (.045)		-0.02 (.052)	-0.03 (.046)
Had Gentry		0.06 (.097)	0.05 (.085)		0.10 (.098)	0.08 (.087)
Had MPs		0.11* (.061)	0.02 (.064)		0.09 (.057)	-0.01 (.061)
Self-Governing 1670			0.15** (.073)			0.15* (.077)
Towns	703	703	703	703	703	703
Counties	54	54	54	54	54	54
County FE	N	N	N	Y	Y	Y
Baseline Controls	Y	Y	Y	Y	Y	Y
County Controls	Y	Y	Y	N	N	N
Geographic Controls	Y	Y	Y	Y	Y	Y
Economic Controls	N	N	Y	N	N	Y
Political Controls	N	N	Y	N	N	Y

Mechanisms

- Broad role of JPs in the economy makes it hard to distinguish the channels through which they affected development
- We test two:
 1. Contract enforcement: number of apprentice contracts in a county
 - JPs responsible for policing 1562 Statute of Artificers
 - Until 1814, completed seven-year apprenticeship a legal requirement to work in most trades
 - Created a national skilled labour market “supervised by the main local agents of the state” (Wallis, 2019)
 2. Fiscal capacity: total county expenditure on a) poor law and b) infrastructure
 - JPs responsible for resolving poor law disputes
 - Directly responsible for spending on county expenditure on bridges, roads, etc

Mechanisms

Table 7: JPs positively impacted outcomes that were directly related to their duties.

	Dependent Variable = (Log) Expenditure On:				
	(Log) Apprentices	Poor Relief	Criminal Justice	Bridges	Highways
(Log) JPs 1700	1.39*** (.124)	1.61*** (.216)	1.33*** (.151)	2.03*** (.338)	1.26*** (.164)
(Log) JPs 1700 x_post-1750	−0.02 (.075)	−0.31 (.193)			
Baseline Controls	Y	Y	Y	Y	Y
Coordinates	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
<i>N</i>	4,940	1,188	1,896	1,896	150
Counties	52	54	54	54	54
Period	1710– –1804	1748– –1839	1792– –1839	1792– –1839	1812– –1838

Conclusion

- Parliament passed an increasing volume of legislation during the seventeenth century
- To enforce that legislation they relied on an ancient institution—the Justices of the Peace
- Counties with an advantage in legal capacity experienced more growth during the Industrial Revolution period
 - Initial “boost” persisted over a century
 - Consistent with theoretical argument of self-reinforcing virtuous cycle between state capacity investments and economic growth
- State can play important role in development even in the absence of a centralized bureaucracy

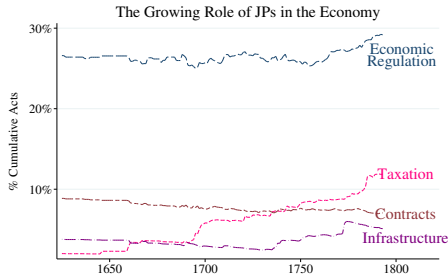
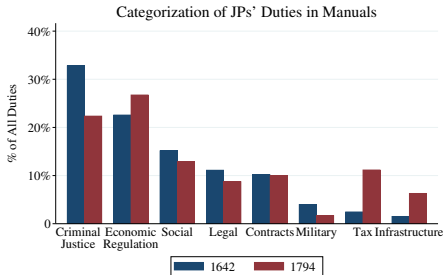
Implications for the Industrial Revolution debate

- Role of legal institutions underestimated in many theories of the IR
- To explore this, we identify legal capacity developed *before* the Glorious Revolution
 - Not motivated by concerns over *future* economic growth
- This suggests an alternative channel through which the gentry shaped the IR (Heldring et al, 2021)
- Our results are consistent with a specific dimension of state capacity being important in facilitating growth early in the eighteenth century
- But as well as speaking to specific debates about the origins of the Industrial Revolution, it is in tune with contemporary discussions about the importance of legal institutions/state capacity in shaping development.

Thank you!

Additional Results

The Changing Role of the JPs

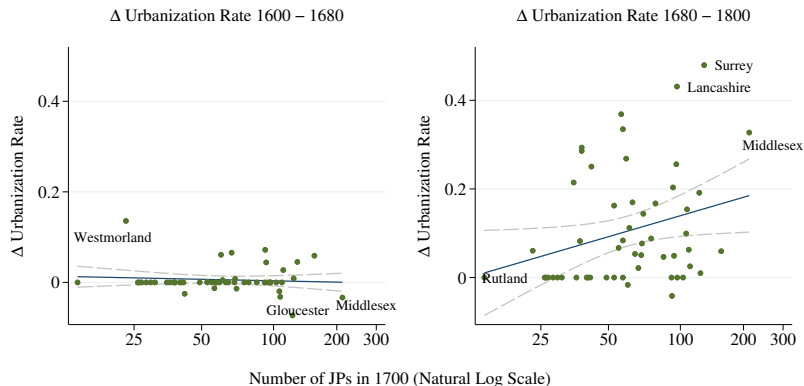


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JP Responsibilities: Keywords

1. Social: motions for dealing with poverty, disability, infants, youths, the elderly, misdemeanours of a moral nature.
2. Criminal: criminal justice.
3. Economic: relating to businesses, crafts, labour, and trade.
4. Contracts: relating making, maintaining, and regulation of contracts for employment apprenticeships, marriages, land-transfer, trusteeships, sales, annuities etc.
5. Legal: enactments of warrants, recognisances, bail, indictments, etc.
6. Infrastructure: maintenance, creation, and use of infrastructure like roads, bridges, markets
7. Military: preparing for war or dealing with military insurrection.
8. Taxation: assessment, collection and dealing with the non-payment of rates, duties and other forms of taxation

JPs in 1700 and Pre-1700 Urban Development



Note: Urbanization Rate is the share of county population in towns larger than 5,000 inhabitants.

Model: Basics

- There are two groups of elites, each of size E . One group is loyal and one group is rival.
- Let P_L and P_R be the number of loyal and rival elites installed as JPs and let $P = P_L + P_R$ be the total number of JP's appointed.
- JPs are appointed by a minister who cares about benefits $B(P, \theta)$ created by JPs.
- These could be economic benefits or political benefits with $B(P, \theta)$ where θ is index of demand for JPs. We assume that the function is increasing and concave in P and increasing in θ with $B_{P\theta}(P, \theta) > 0$.
- Having rival JPs in place has as convex cost $\alpha C(P_R)$ where $C(\cdot)$ is increasing and convex function, with α indexing the strength of these costs which might reflect, for example, how entrenched is the local elite.

The Optimal Choice of JPs

The choice made by the minister is a pair which maximizes

$$\{\hat{P}_L, \hat{P}_R\} = \arg \max_{P_L \leq E, P_R \leq E} [B(P_L + P_R, \theta) - \alpha C(P_R)].$$

The optimal choice of JPs is then characterized in

Proposition

1. *All qualified members of the loyal elite are appointed as JPs, i.e. $\hat{P}_L = E$.*
2. *If*

$$B_P(E + P_R, \theta) - \alpha C_P(0) > 0$$

then some members of the rival elite are also appointed, i.e. $\hat{P}_R > 0$ and this number is increasing in θ and decreasing in E .

3. *The total number of JPs is (weakly) increasing in θ and strictly increasing in E .*

Instrumental Variables

Table 2: The estimated effect of 1700 JPs on economic development is similar when instrumenting with the number of JPs in 1544 ($N = 54$).

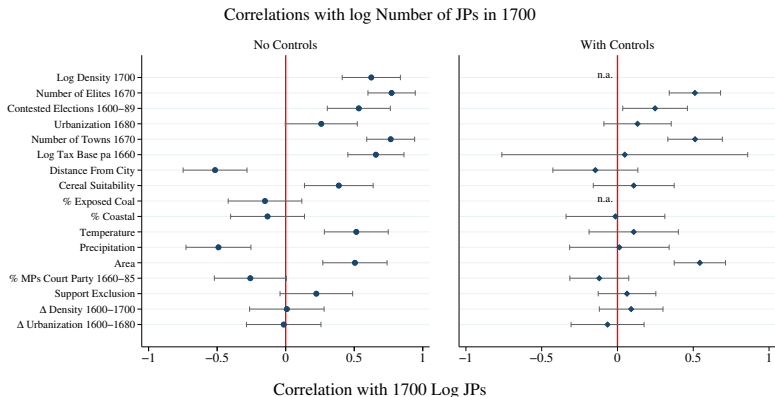
	First Stage	DV = (Log) 1840 Population Density		
		Reduced Form	OLS	2SLS
(Log) JPs 1544	0.97*** (.227)	0.23* (.118)		
(Log) JPs 1700			0.26*** (.042)	0.23*** (.052)
Baseline Controls	Y	Y	Y	Y
Coordinates	Y	Y	Y	Y
First Stage F-Stat				18.4

Notes: “Baseline Controls” include (log) 1700 population density and the percent of a county with exposed coal. “Coordinates” include a second order polynomial in longitude and latitude. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The Supply of Potential JPs

- The literature emphasizes that almost all JPs were elites, many titled or landed
- We investigate this quantitatively using a list of the nobility and gentry by first and last name residing in a county (Blome's *Britannica* published in 1673)
- We link this to a list of 1680 JPs in each county and their first and last name
- 95% of the JPs exactly or almost exactly match to an individual or family name in Blome
- 56% of JPs were esquires, 23% baronets/knights, 9% gentlemen; 6% nobles
- Over a quarter of elites (27%) were JPs (42% of baronets/knights, 30% esquires)
- Some evidence of selection occurring down the class ladder

JPs in 1700 and County Observables



Note: The left-hand panel displays uni-variate correlations between log JPs in 1700 and each variable. The right-hand panel displays partial correlations, after controlling for baseline regression controls—log population density in 1700, % county exposed to coal, and a second order polynomial in longitude and latitude. These control variables are, consequently, excluded from the right-hand panel. Bars reflect 95% confidence intervals. The wide confidence interval relating to the 1660 tax base per acre reflects a very high ($r=0.82$) correlation with 1700 log population density.

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Table 1: Counties with greater legal capacity in 1700 experienced faster economic growth during the industrial revolution period ($N = 54$).

	DV = 1840 Log Population Density				
(Log) JPs 1700	0.26*** (.074)	0.24** (.093)	0.29*** (.043)	0.39*** (.066)	0.31*** (.115)
(Log) Population Density 1700	1.00*** (.042)	1.00*** (.042)	1.03*** (.043)	0.93*** (.066)	0.99*** (.052)
% of Area Exposed Coal	0.19*** (.044)	0.19*** (.045)	0.18*** (.046)	0.20*** (.047)	0.19*** (.045)
(Log) Gentry 1670		0.02 (.102)			
Contested Elections 1660–89			−0.05 (.045)		
Area of County				−0.08 (.063)	
Number of Towns in 1670					−0.04 (.072)
Coordinates	Y	Y	Y	Y	Y

Notes: “Coordinates” include a second order polynomial in longitude and latitude. The number of gentry in 1670 is based on Blome (1673) and includes all individuals classified as either an esquire or a gentleman. Variables not reported in logarithms are standardized. Robust standard errors are reported in parentheses.

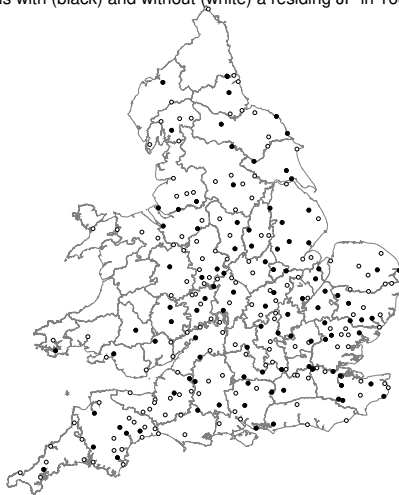
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Spatial Distribution of JPs II

Towns with (black) and without (white) a residing JP in 1680

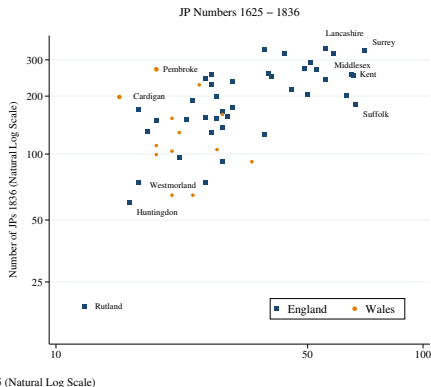
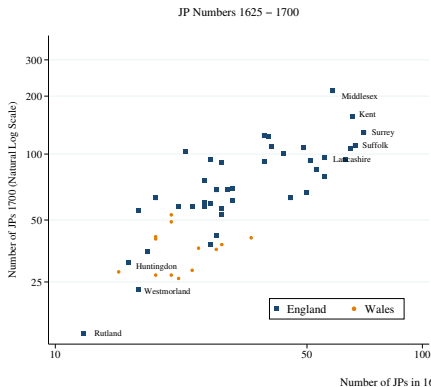


Towns with (black) and without (white) a residing JP in 1680



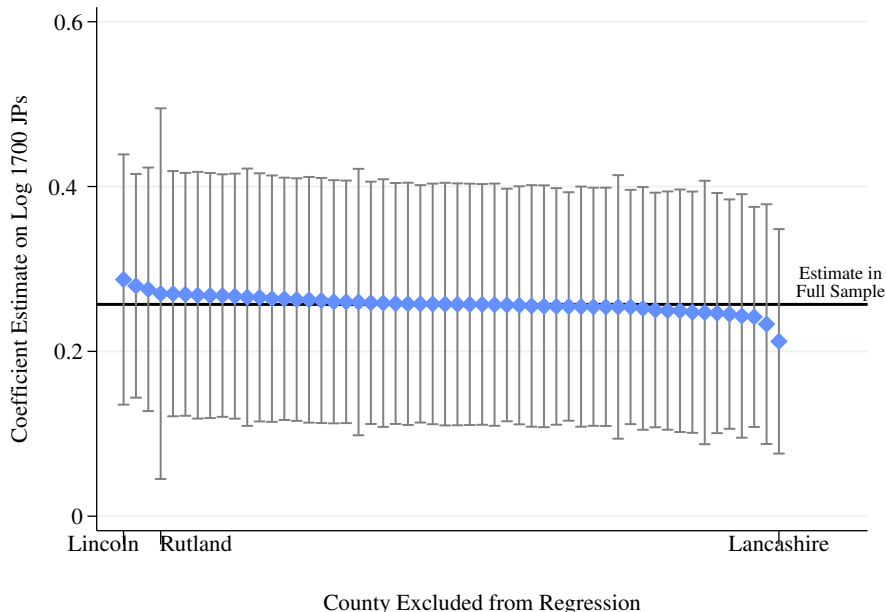
Note: Towns restricted to have 1680 population greater than 1000

Persistence in JP Numbers

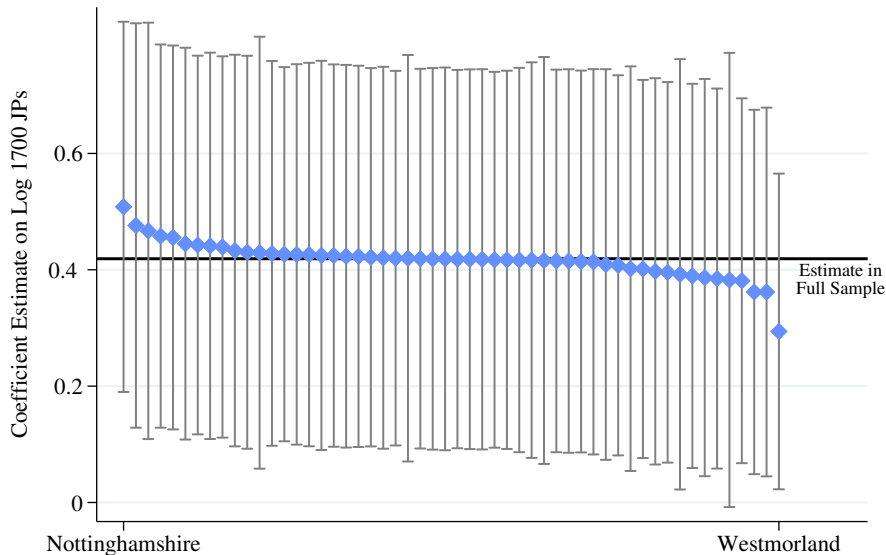


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County-Level Analysis: Removing Counties

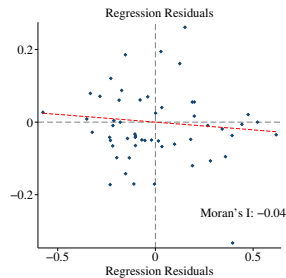
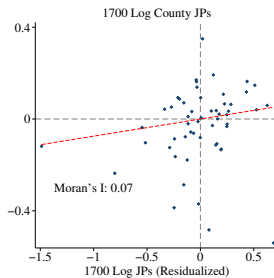
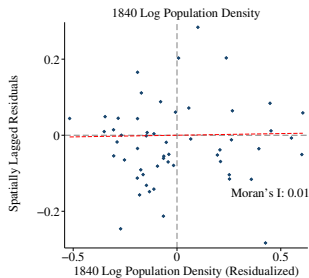


Town-Level Analysis: Removing Counties



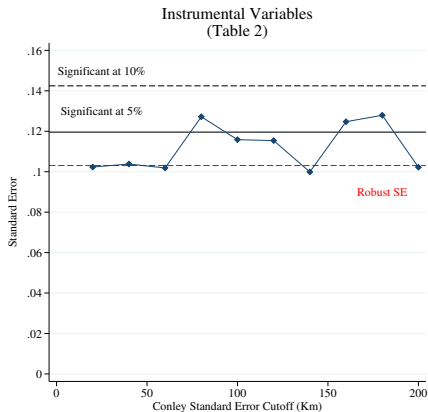
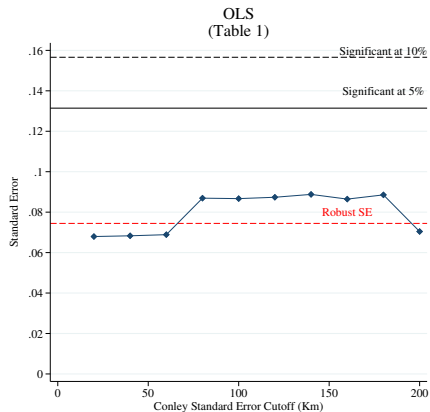
County Excluded from Regression

Spatial Autocorrelation: County-Level



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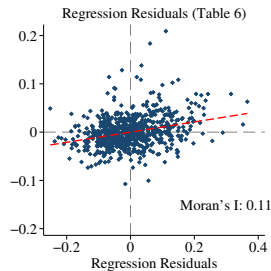
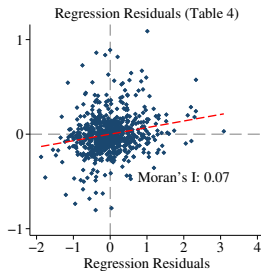
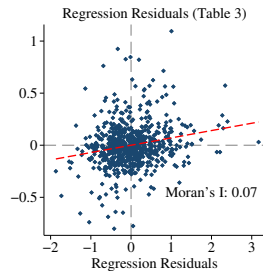
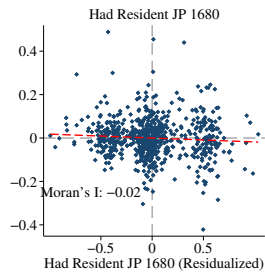
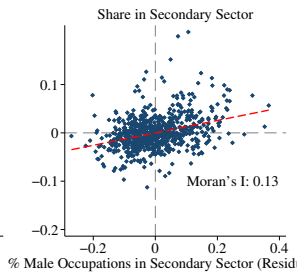
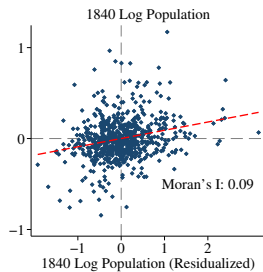
Conley Standard Errors: County-Level



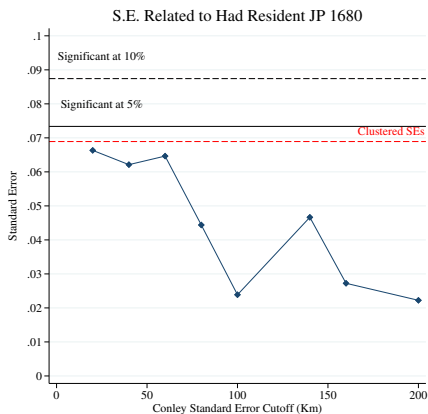
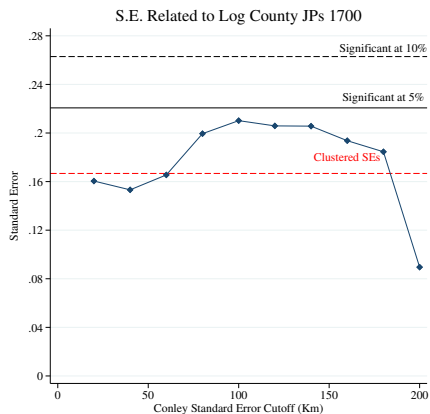
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Spatial Autocorrelation: Town-Level

Spatially Lagged Residuals



Conley Standard Errors: Town-Level



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