Econometrica Supplementary Material

SUPPLEMENT TO "THE RISE OF FISCAL CAPACITY: ADMINISTRATION AND STATE CONSOLIDATION IN THE HOLY ROMAN EMPIRE"

(*Econometrica*, Vol. 92, No. 5, September 2024, 1439–1472)

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APPENDIX A: DATA DESCRIPTION

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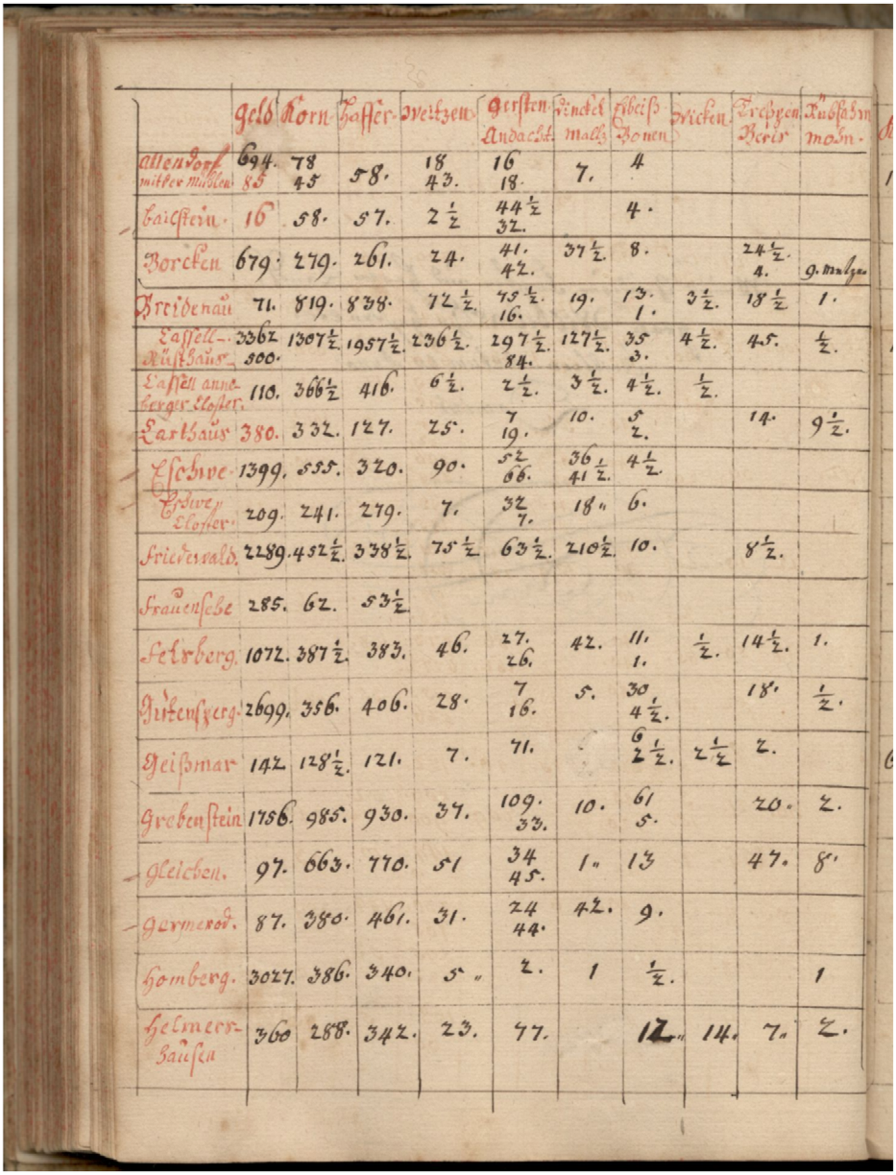

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Allendorf mitter Mühlen	694. 85	78 45	58.	18 43.	16 18.	7.	4			
Baicstein	16	58.	57.	2½	44½ 32.		4.			
Borcken	679.	279.	261.	24.	41. 42.	37½.	8.		24½. 4.	9. malz
Breidenau	71.	819.	838.	72½.	75½. 16.	19.	13. 1.	3½.	18½	1.
Cassell Rüsthaus	3362 500.	1307½.	1957½.	236½.	297½. 84.	127½.	35 3.	4½.	45.	½.
Cassell anneberger Closter	110.	366½	416.	6½.	2½.	3½.	4½.	½.		
Carlshaus	380.	332.	127.	25.	7 19.	10.	5 2.		14.	9½.
Eschwe	1399.	555.	320.	90.	52 66.	36½ 41½.	4½.			
Eschwe Closter	209.	241.	279.	7.	32 7.	18.	6.			
Friedewald	2289.	452½.	338½.	75½	63½.	210½.	10.		8½.	
Frauensehe	285.	62.	53½.							
Felsberg	1072.	387½.	383.	46.	27. 26.	42.	11. 1.	½.	14½.	1.
Gudensberg	2699.	356.	406.	28.	7 16.	5.	30 4½.		18.	½.
Geismar	142.	128½.	121.	7.	71.		6 2½.	2½	2.	
Grebenstein	1756.	985.	930.	37.	109. 33.	10.	61 5.		20.	2.
Gleichen	97.	663.	770.	51	34 45.	1.	13		47.	8.
Germerod	87.	380.	461.	31.	24 44.	42.	9.			
Homberg	3027.	386.	340.	5.	2.	1	½.			1
Helmershausen	360	288.	342.	23.	77.		12.	14.	7.	2.

FIGURE A.1.—Hessian Administrative Statistics. *Note*: Example page of the "Ökonomischer Staat," an administrative statistic compiled for Count Wilhelm IV of Hesse, which was completed in 1585. The source is page 220. It lists the revenues of local offices, separately for money and natural goods. This page shows the local offices of Allendorf to Helmershausen.

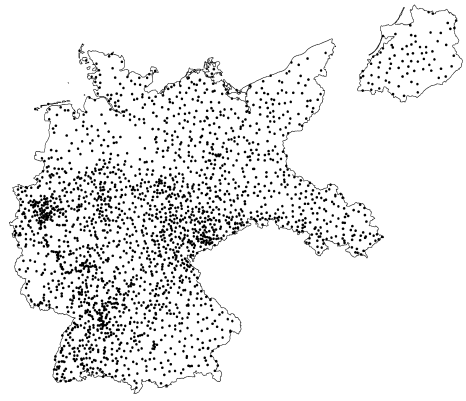

FIGURE A.2.—Locations of Cities. *Note*: The map illustrates the location of each city in our data.

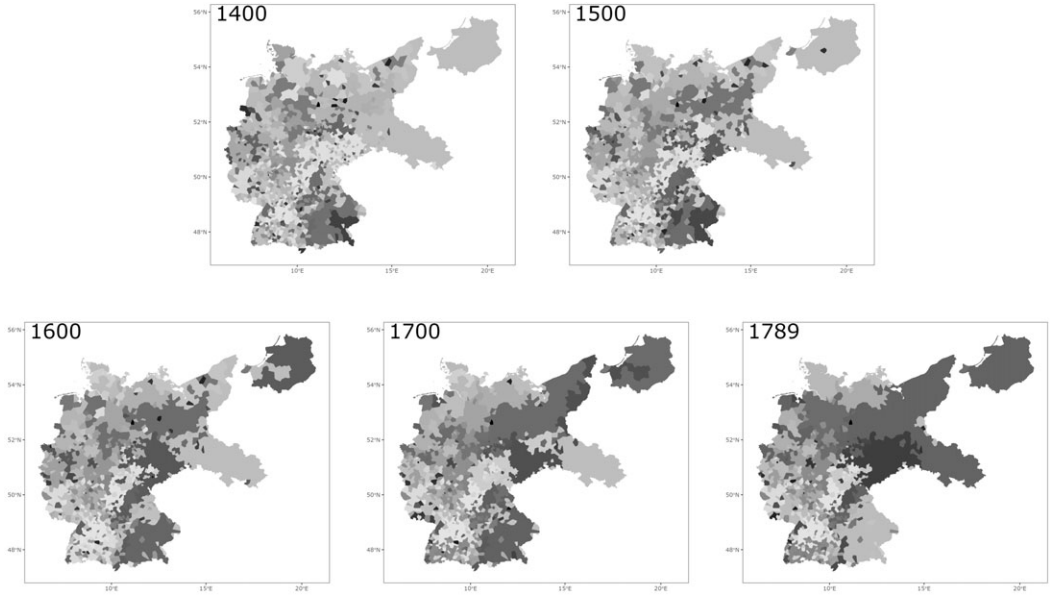

FIGURE A.3.—Territories Over Time. *Note*: The maps show territorial borders for the years 1400, 1500, 1600, 1700, and 1789. To map territories, we aggregate all cities' Thiessen polygons that belong to the same territory in a given year.

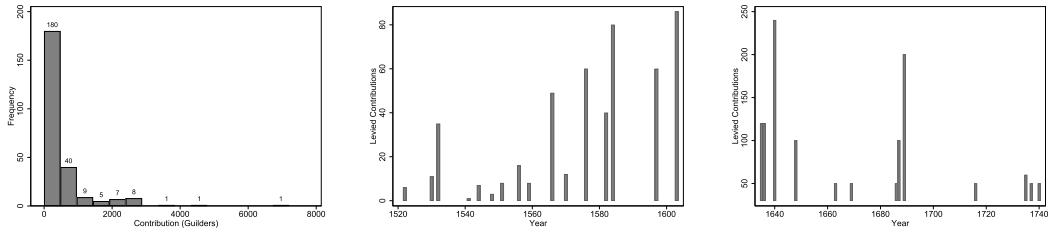

FIGURE A.4.—Imperial Tax Contributions. *Note*: The first graph shows the distribution of territories' contributions to one "Roman Month" (128,000 guilders) of Imperial Taxes in the Imperial Register of 1521. The horizontal axis denotes binned contributions, the vertical axis the number of territories in each bin. The second and third graph show the size of contributions in terms of multiples of "Roman Months" levied 1521 to 1617 and 1618 to 1789.

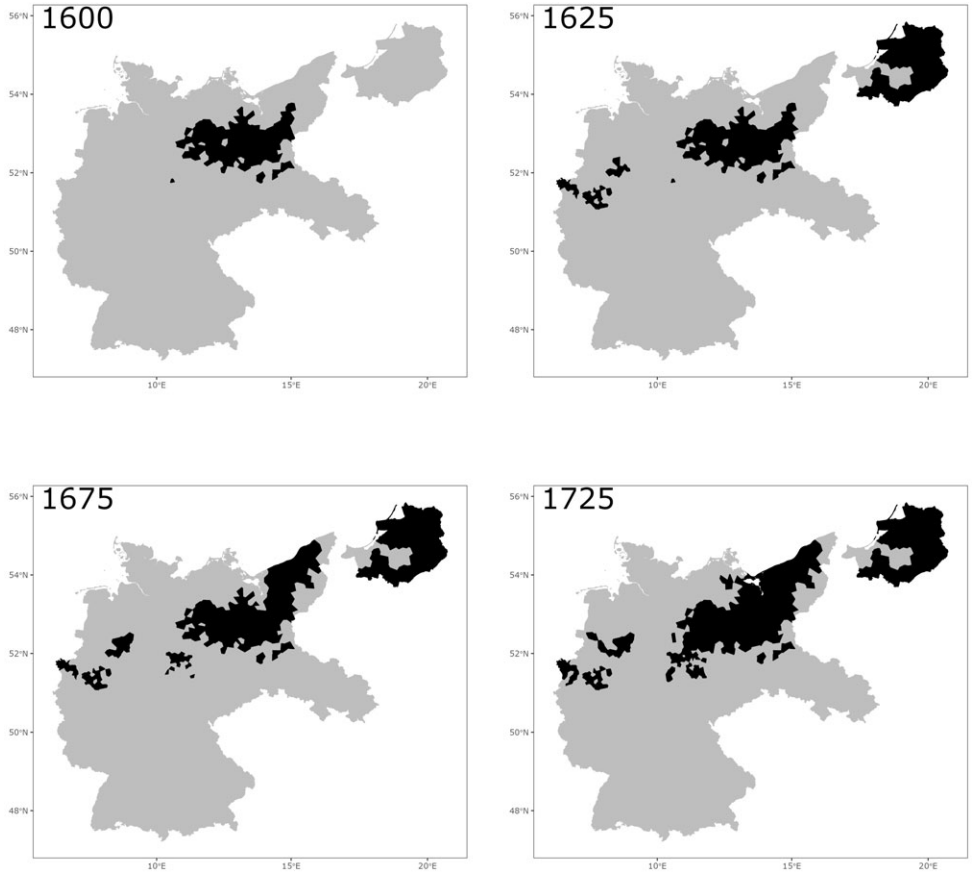

FIGURE A.5.—Brandenburg, 1600–1725. *Note*: The maps show the area governed by the dynasty ruling Brandenburg(-Prussia) between the years 1600 and 1725.

TABLE A.I
DATES OF FISCAL CENTRALIZATION.

Territory	Year	Name	Selected Sources
Prince-Bishopric of Augsburg	1718	Hofkammer	Wüst (1987, p.39)
Margravate of Baden-Baden	1588	Rentkammer	Carlebach (1906, p. 43)
Margravate of Baden-Durlach	1578	Rentkammer	Taddey (2000, p. 168)
Prince-Bishopric of Bamberg	1638	Hofkammer	Caspary (1976, p. 47–53)
Duchy of Bavaria	1550	Hofkammer	Spindler (1988, p. 378)
Principality of Bayreuth	1576	Hofkammer	Schaupp (2004, p. 171)
Margravate of Brandenburg	1577	Amtskammer	Schultze (2004, p. 142–3)
Duchy of Brunswick-Calenberg	1680	Kammer	Jeserich, Pohl, and von Unruh (1983, p. 754)
Duchy of Brunswick-Lüneburg	1616	Kammer	Jeserich, Pohl, and von Unruh (1983, p. 753)
Duchy of Brunswick-Wolfenbüttel	1636	Kammer	Jeserich, Pohl, and von Unruh (1983, p. 752)
Duchy of Cleves-Mark	1557	Rechenkammer	Schottmüller (1896, p. 66)
Electorate of Cologne	1587	Hofkammer	Wüst (1987, p. 37)
Bishopric of Eichstätt	1681	Hofkammer	Braun (1991, p. 94)
Landgravate of Hesse	1546	Rentkammer	Krüger (1980, p. 53)
Landgravate of Hesse-Darmstadt	1590	Rentkammer	Jeserich, Pohl, and von Unruh (1983, p. 648)
Landgravate of Hesse-Marburg	1567	Rentkammer	Jeserich, Pohl, and von Unruh (1983, p. 642)
Duchy of Jülich-Berg	1547	Rechenkammer	Sallmann (1902, p. 8)
Electorate of Mainz	1532	Hofkammer	Wüst (1987, p.37)
Duchy of Mecklenburg-Güstrow	1659	Kammer	Hamann (1965, p. 83)
Duchy of Mecklenburg-Schwerin	1660	Kammer	Hamann (1965, p. 83)
Duchy of Mecklenburg-Strelitz	1701	Kammer	Hamann (1965, p. 99)
Prince-Bishopric of Münster	1573	Rechenkammer	Jakob (1965)
County of Oldenburg	1623	Rentkammer	Ahrens (2003, p. 87)
Prince-Bishopric of Paderborn	1723	Hofkammer	Jeserich, Pohl, and von Unruh (1983, p. 735)
Electoral Palatinate	1557	Rechenkammer	Press (1970, p. 99–100)
Principality of Palatinate-Sulzbach	1615	Hofkammer	Jeserich, Pohl, and von Unruh (1983, p. 573)
County of Reuß-Greiz	1770	Kammer	Heß (1993, p. 51)
Duchy of Saxe-Eisenach	1672	Rentkammer	Heß (1993, p. 33)
Duchy of Saxe-Gotha	1640	Kammer	Heß (1993, p. 35)
Duchy of Saxe-Hildburghausen	1680	Kammer	Jeserich, Pohl, and von Unruh (1983, p. 857)
Duchy of Saxe-Meiningen	1680	Kammer	Heß (1993, p. 42)
Albertine Saxony	1524	Rentkammer	Schirmer (2006, p. 597)
Duchy of Saxe-Weimar	1633	Kammer	Heß (1993, p. 30–31)
County of Schaumburg-Lippe	1728	Rentkammer	Schneider (1983, p. 24)
County of Schwarzburg-Rudolstadt	1707	Kammer	Müller (2012)
Electorate of Trier	1719	Hofkammer	Flach (2021)
County of Waldeck	1696	Rentkammer	Martin and Wetekam (1971, p. 229)
Duchy of Württemberg	1521	Rentkammer	Bernhardt (1971, p. 32–33)
Bishopric of Würzburg	1553	Kammer	Reuschling (1984, p. 232–234)

Note: The table shows fiscally centralized territories and dates of fiscal centralization. Full references can be found in the reference section to the Supplemental Appendix.

APPENDIX B: ADVISORY COUNCILS AND ESTATES

B.1. *The Nature of Chambers*

As detailed in Section 2.3, we propose to see the Chamber as a layer in the bureaucracy of princes that employs "specialized problem solvers," and hence increases the utilization rate of fiscal knowledge. In this section, we discuss other plausible interpretations of the Chamber, providing evidence that they are not predominantly at play in the historical context we study.

Limiting corruption of high-ranking officials was not the primary reason to choose a collegial organization of Chambers. Instead, this structure was recommended so that Chamber officials could balance tasks and have a "more complete knowledge of the fiscal proceedings" (Jeserich, Pohl, and von Unruh (1983, p. 336)), consistent with the notion that knowledge is the central aspect of Chambers. While Chamber officials were compensated well, their salaries were not extraordinarily high, ranking 6th in personnel expenses in Hesse in the 1570s.[S.1]

Similarly, Chambers were not primarily trying to limit corruption of local administrators—centralized bookkeeping was also in the interest of local officials, who now had more legal security in the case of an audit (Jeserich, Pohl, and von Unruh (1983, p. 138)). In this sense, the introduction of Chambers had some features of a "Coasian bargain," although it was not the factor that initiated it.

Neither was the Chamber primarily an instrument to discipline princely expenses. The success of interventions in this sense[S.2] is unclear, and the literature generally agrees that a collegial Chamber did not substantially curtail the discretionary spending power of the prince (Reuschling (1984, p. 115)). In Hesse, Chamber officials attempted to discipline princely spending, but unpredictable ruler spending continued to preclude the introduction of budget planning (Zimmermann (1933, p. 109)). In Württemberg, expenses labeled "at my merciful prince and lord's behest" constituted an irregular and large part of overall expenses (Bütterlin (1977, p. 4)). Somewhat tellingly, Veit Ludwig von Senckendorff's "The German Principality" (1655), a handbook for rulers, mentioned that princes cannot be blamed if "they, to refresh themselves in the light of cumbersome governing work, use some of the Chamber funds on princely delights and practices."

B.2. *Advisory Councils*

In the late 15th century, collegially organized advisory councils to the prince (*Hofräte*) began to appear. Their mandate related more to the legal than the financial realm. Some territories, like Brandenburg, never introduced a Hofrat. We hence also collect data on privy councils (*Geheime Räte*), which were devised later and had a similar function.

The Supplemental Appendix, Figure B.1 shows the timing of the introduction of a collegial council relative to the introduction of a Chamber. There is no visible correlation between these events, confirming our reading of the historical literature. Moreover, in the (intensive margin) regressions in Supplemental Appendix, Tables D.X and D.XI, we directly control for the presence of councils. The main coefficient for fiscal centralization remains unaffected, and we find no direct effects of councils on our outcomes of interest.

[S.1] The Chamber master was paid 150 fl., less than other high-ranking administration officials such as the governor (*Statthalter*), chancellor, or vice-chancellor, whose salaries ranged from 160 to 200 fl. (Zimmermann (1933, p. 158)).

[S.2] For example, in the case of Bavaria, where duke Albrecht V committed to run all his expenses by the Chamber (Jeserich, Pohl, and von Unruh (1983, p. 581)).

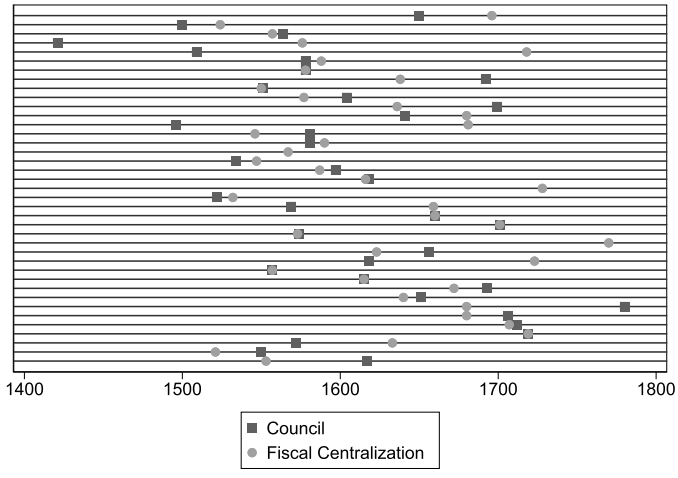

FIGURE B.1.—Introduction of Councils and Fiscal Centralization. *Note*: The figure shows the first introduction of collegial councils, and the timing of the adoption of Chambers across all territories that ever had a council or a Chamber.

B.3. *Estates*

Estates in the territories of the Empire gained in importance during the 15th century. They controlled extraordinary and large taxation requests, but were ultimately sidelined in favor of the princely Chambers, which controlled increasingly broad revenue streams. In Section 2, we present historical evidence that Chambers did not form part of the coordination between local nobility, clergy, and towns, but instead were closely tied to the sovereign's finances.[S.3]

The Supplemental Appendix, Figure B.2 shows the timing of the introduction of a Chamber relative to the time periods during which Estates were in existence. There is no correlation between these events, confirming our reading of the historical literature. Moreover, in the (intensive margin) regressions in the Supplemental Appendix, Tables D.X and D.XI, we directly control for the presence of Estates. The main coefficient for fiscal centralization remains largely unaffected, and we find no direct effects of Estates on our outcomes of interest.

[S.3]Although increasingly sidelined from financial matters, for most territories Estates remained important pillars along other dimensions. They helped arbitrate inheritance disputes within noble lineages, and ensured ruler continuity in the case of underage rulers (Bütterlin (1977, p. 29)).

TABLE B.I
DATES OF COUNCIL ADOPTION.

Territory	Year	Name	Selected Sources
Prince-Bishopric of Augsburg	1509	Hofrat	Söhner (2021)
Margraviate of Baden-Baden	1578	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 308))
Margraviate of Baden-Durlach	1578	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Prince-Bishopric of Bamberg	1692	Geheimer Rat	Weiß (2010)
Duchy of Bavaria	1551	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Principality of Bayreuth	1421	Hofrat	Winkler (1999, p. 198))
Margraviate of Brandenburg	1604	Geheimer Rat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Duchy of Brunswick-Calenberg	1641	Geheimer Rat	Jeserich, Pohl, and von Unruh (1983, p. 320))
Duchy of Brunswick-Lü neburg	1618	Hofrat	von der Ohe (1955, p. 45))
Duchy of Brunswick-Wolfenbü ttel	1699	Geheimer Rat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Duchy of Cleves-Mark	1564	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Electorate of Cologne	1597	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Bishopric of Eichstätt	1496	Hofrat	Heidingsfelder (1911, p. 43))
Landgraviate of Hesse	1581	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Landgraviate of Hesse-Darmstadt	1581	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Landgraviate of Hesse-Marburg		–	Jeserich, Pohl, and von Unruh (1983, p. 309))
Duchy of Jülich-Berg	1534	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 320))
Electorate of Mainz	1522	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 320))
Duchy of Mecklenburg-Güstrow	1569	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Duchy of Mecklenburg-Schwerin	1660	Geheimer Rat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Duchy of Mecklenburg-Strelitz	1701	Geheimer Rat	Hamann (1965, p. 99))
Prince-Bishopric of Münster	1574	Hofrat	Press (1970, p. 38))
County of Oldenburg	1656	Geheimer Rat	Jeserich, Pohl, and von Unruh (1983, p. 792))
Prince-Bishopric of Paderborn	1618	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 735))
Electoral Palatinate	1557	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 736))
Principality of Palatinate-Sulzbach	1615	Hofrat	Rösel (2010)
County of Reuß-Greiz		–	Willoweit (1982)
Duchy of Saxe-Eisenach	1693	Geheimer Rat	Jeserich, Pohl, and von Unruh (1983, p. 771))
Duchy of Saxe-Gotha	1651	Geheimer Rat	Schwebel (1944)
Duchy of Saxe-Hildburghausen	1780	Geheimer Rat	Jeserich, Pohl, and von Unruh (1983, p. 309))
Duchy of Saxe-Meiningen	1706	Geheimer Rat	Jeserich, Pohl, and von Unruh (1983, p. 853))
Duchy of Saxe-Weimar	1572	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 854))
Albertine Saxony	1500	Hofrat	Jeserich, Pohl, and von Unruh (1983, p. 854))
County of Schaumburg-Lippe		–	Wahl (1938)
County of Schwarzburg-Rudolstadt	1712	Geheimer Rat	Heß (1993, p. 23))
Electorate of Trier	1719	Hofrat	Schnelling (1991, p. 14))
County of Waldeck	1650	Samtrat	Willoweit (1982)
Duchy of Württemberg	1550	Hofrat	Heß (1993, p. 23))
Bishopric of Würzburg	1617	Geheimer Rat	Heß (1993, p. 23))

Note: The table shows the dates of the introduction of the first collegial councils. Full references can be found in the reference section to the Supplemental Appendix.

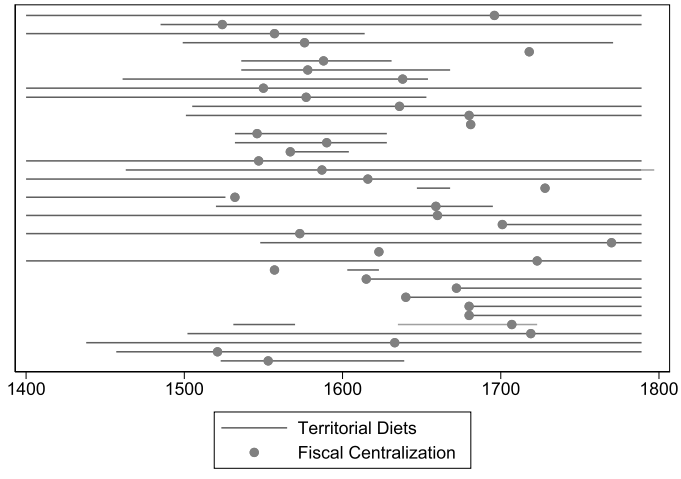

FIGURE B.2.—Activity of Estates and Fiscal Centralization. *Note*: The figure shows the time period during which Estates were active, for all territories that ever fiscally centralize. Dots indicate the timing of the introduction of a Chamber.

TABLE B.II

PRESENCE OF ESTATES.

Territory	Years	Selected Sources
Prince-Bishopric of Augsburg	–	Lanzinner (2011)
Margravate of Baden-Baden	1536–1631	Gut (1970, p. 355)
Margravate of Baden-Durlach	1536–1668	Gut (1970, p. 379)
Prince-Bishopric of Bamberg	1461–1654	Staudenmaier (2014)
Duchy of Bavaria	1302–1803	Folz (1974, p. 197)
Principality of Bayreuth	1499–1771	Schaupp and Schnupp (2017)
Margravate of Brandenburg	1345–1653	Sieg (2003, p. 128)
Duchy of Brunswick-Calenberg	1501–1803	bei der Wieden (2004, p. 280)
Duchy of Brunswick-Lüneburg	1392–1807	bei der Wieden (2004, p. 359)
Duchy of Brunswick-Wolfenbüttel	1505–1801	bei der Wieden (2004, p. 414)
Duchy of Cleves-Mark	1347–1614	Schulze (1907, p. 18–20)
Electorate of Cologne	1463–1794; 1797–1803	Ruppert (1972, p. 57)
Bishopric of Eichstätt	–	Lanzinner (2011)
Landgravate of Hesse	1532–1628	Siebeck (1914, p. 1)
Landgravate of Hesse-Darmstadt	1532–1628	Siebeck (1914, p. 1)
Landgravate of Hesse-Marburg	1567–1604	Siebeck (1914, p. 53–54)
Duchy of Jülich-Berg	1347–1802	von Below (1885, p. 18)
Electorate of Mainz	1346–1526	Fischer (2010)
Duchy of Mecklenburg-Güstrow	1520–1695	Folz (1974, p. 197)
Duchy of Mecklenburg-Schwerin	1279–1918	Folz (1974, p. 197)
Duchy of Mecklenburg-Strelitz	1701–1918	Folz (1974, p. 197)
Prince-Bishopric of Münster	1278–1802	Schmitz-Kallenberg (1936, p. 34–35)
County of Oldenburg	–	Oldenburgische Landschaft (2014, p. 80)
Prince-Bishopric of Paderborn	1326–1802	Jacobs (1937, p. 46)
Electoral Palatinate	1603–1623	Gothein (1888, p. 39–41)
Principality of Palatinate-Sulzbach	1615–1808	Rösel (2010)
County of Reuß-Greiz	1548–1867	Espig (2008, p. 265)
Duchy of Saxe-Eisenach	1674–1809	Schirmer (2008, p. 61–64)
Duchy of Saxe-Gotha	1640–1810	Stievermann (2008)
Duchy of Saxe-Hildburghausen	1680–1807	Witter (2008, p. 253–258)
Duchy of Saxe-Meiningen	1680–1789	Witter (2008, p. 239–241)
Albertine Saxony	1485–1831	Landtag (2021)
Duchy of Saxe-Weimar	1438–1831	Landtag (2021)
County of Schaumburg-Lippe	1647–1668	von Stieglitz (2004, p. 391–404)
County of Schwarzburg-Rudolstadt	1531–1570; 1635–1723	Herz (1997, p. 13–15)
Electorate of Trier	1502–1801	Dillinger (2009)
County of Waldeck	1400–1789	Martin and Wetekam (1971)
Duchy of Württemberg	1457–1805	Baden-Württemberg (2008)
Bishopric of Würzburg	1523–1639	Neumaier (2010)

Note: The table shows fiscally centralized territories and years of Estate activity. If 1789 is given as the end date, Estates existed until at least the year 1789 (similarly for 1400 as the start date).

APPENDIX C: CHAMBER FRAMEWORK

In the following, we present a formal model of the decision to introduce a Chamber, based on the historical narrative from Section 2. Due to narrow foresight and limited knowledge about future costs and benefits of Chambers, the decision is static. Rulers aim to maximize spending R. They have demesnes of size D and are facing a fiscal demand shock of size T, for example, through the holding of court. Handling revenues is complex; hence, the ruler can only utilize a fraction $(1-\rho)D$ of the demesnes, and he needs to

spend $(1+\rho)T$ out of the demesnes to absorb the fiscal shock, where $\rho \in [0,1]$ is the baseline fiscal inefficiency of the princely administration.[S.4] In accordance with the historical evidence, the level of efficiency loss scales with the size of the demesnes and the fiscal shock. Hence, the ruler can spend

$$(1-\rho)D - (1+\rho)T = R.$$

Consulting the Estates is necessary if the territory is facing existential financial crises, but it does not provide revenue to the ruler above this purpose.[S.5] A ruler can institute a Chamber C, adding a layer to the princely administration that specializes on fiscal tasks. This reduces the fiscal inefficiency by a factor of $\mu_C \in [0,1]$: $\rho_C = \rho(1-\mu_C)$. Demesnes are fully exploited ($\rho_C = 0$) if $\mu_C = 1$. There are fixed costs P_C associated with the introduction of a Chamber. The Emperor levies Imperial taxes IT, with the territorial lords acting as mediators. Territorial lords will not agree to acting as mediators if they are financially harmed by levying the tax. On the other hand, the Emperor, the Imperial diet, and the Estates will tightly monitor compliance and bar arbitrary taxation under the guise of the Imperial tax. Hence, the ruler can credibly ask $IT(1+\rho)$ from his tax base, which is the amount necessary to entirely cover the Imperial tax, with which he needs to comply, in the absence of a Chamber.

The full spending maximization problem hence is

$$\begin{aligned}&\big(1-\rho(1-\mu_C C)\big)D - \big(1+\rho(1-\mu_C C)\big)T \\ &\quad - \big(1+\rho(1-\mu_C C)\big)IT + (1+\rho)IT - P_C C = R,\end{aligned}$$

where C is an indicator whether a ruler has instituted a Chamber. This expression simplifies to

$$(D-T) - (D+T)\rho + (D+T+IT)\rho\mu_C C - P_C C = R.$$

The first term describes the size of net demesnes (after taking into account the spending shock), absent efficiency considerations. The second term is the efficiency loss on net demesenes. The third term is the gain in efficiency from introducing a Chamber. Chamber adoption is then determined by the threshold rule

$$(D+T+IT)\rho\mu_C > P_C.$$

The likelihood of Chamber adoption increases with the size of the princely demesnes, the size of the fiscal demand shock, the size of the Imperial tax levy, the baseline inefficiency of revenue collection, and the efficiency gain resulting from the Chamber; it decreases with the cost of Chamber adoption. Furthermore, princely revenues increase with Imperial tax levies if there is a Chamber, and are not affected if there is no Chamber.

[S.4] We assume here that the inefficiency of spending and raising revenue is the same to keep the number of parameters low.

[S.5] To finance extraordinary expenses, a ruler can petition the Estates for taxes. However, these are tightly earmarked: both levying and spending takes place outside the ruler's fiscal bureaucracy. Hence, the budget constraint becomes

$$(1-\rho)D - (1+\rho)T + E = R + E,$$

with E the size of the Estate tax.

Since Chambers are permanent, a Chamber is present in a territory at time t according to the following equation:

$$C_t \equiv \max\left\{\mathbb{1}\left[(D_\tau + T_\tau + IT_\tau)\rho_\tau \mu_{C_\tau} > P_{C_\tau}\right]\right\}_{\tau=\underline{t}}^{t}.$$

From the historical evidence, we expect fiscal demand shocks T and IT to be the main dynamic (intensive margin) drivers of Chamber adoption, in line with anecdotes of overwhelmedness of bureaucracies. We expect ρ_τ, μ_{C_τ}, and P_{C_τ} to be relatively time-invariant, with the fixed costs of adopting a Chamber mainly governing the extensive margin of whether a territory ever adopts a Chamber.

APPENDIX D: ROBUSTNESS

D.1. *Alternative Estimation Specification*

TABLE D.I

PREDICTING FISCAL CENTRALIZATION, ALTERNATIVE SPECIFICATIONS.

	Fiscal Centralization					
	(1)	(2)	(3)	(4)	(5)	(6)
Ruggedness	−0.000751	0.455	−0.0914	−0.0292	−0.210	0.00734
	(0.108)	(1.059)	(0.0672)	(0.0230)	(0.131)	(0.0485)
Distance to Water	0.0263*	0.302*	0.0109	0.00616	−0.00822	0.00203
	(0.0154)	(0.173)	(0.00679)	(0.00405)	(0.00924)	(0.00579)
Agricultural Suitability	0.0967	−0.840	0.145	0.0481	0.330	0.0128
	(0.163)	(0.995)	(0.124)	(0.0492)	(0.245)	(0.0561)
Mining	8.840	3.587	−1.231	−1.882**	0.123	−1.075
	(7.220)	(3.103)	(1.220)	(0.848)	(1.006)	(1.338)
Secondary Rulers	−0.125	−0.261	−0.146	−0.00764	0.196	0.170
	(0.243)	(0.636)	(0.162)	(0.224)	(0.515)	(0.423)
Hanse Cities	0.0283	0.182	−0.778	0.00478	−0.298	−0.281
	(0.761)	(1.232)	(1.042)	(0.346)	(1.183)	(0.391)
Charter Cities	−0.121	−0.172	−0.423	−0.215	0.0592	−0.0906
	(0.193)	(0.275)	(0.504)	(0.322)	(0.750)	(0.286)
Markets, past decade	0.0419	0.234	0.185	0.0522*	0.209	0.0595**
	(0.0803)	(0.421)	(0.113)	(0.0278)	(0.148)	(0.0272)
Construction, past decade	0.0403	0.193	−0.166*	−0.0872	−0.238*	−0.0454
	(0.0450)	(0.220)	(0.0920)	(0.0532)	(0.124)	(0.0711)
Cities	0.147	0.0824	0.187	1.686	0.546	4.549*
	(0.182)	(0.651)	(0.590)	(1.281)	(0.988)	(2.659)
Attacks, past decade	0.0424	0.901	0.206	0.0379	0.347	0.0511*
	(0.0980)	(0.607)	(0.176)	(0.0246)	(0.296)	(0.0282)
Neighb. Mil. Constr., past decade	−0.102	−0.593	−0.441	−0.563**	−0.305	−0.365
	(0.0643)	(0.551)	(0.272)	(0.270)	(0.301)	(0.443)
Centralized Neighbors	−0.795***	0.748*	−0.226	−0.833	−0.222	−0.725
	(0.196)	(0.392)	(0.539)	(0.587)	(0.601)	(0.602)
Contribution (share)	0.849***	0.854***	0.363**	0.208***	0.283**	0.139**
× ln Roman Months	(0.237)	(0.237)	(0.148)	(0.0662)	(0.130)	(0.0635)
Observations	10,520	10,500	10,165	10,165	7829	7829
Model	OLS	OLS	OLS	Cox	OLS	Cox
Territories	all	all (ln sums)	all (fd)	all (fd)	1500 (fd)	1500 (fd)
R^2	0.140	0.144	0.0703		0.0833	
Baseline Controls			✓		✓	✓
Territory FEs	✓	✓				
Decade FEs	✓	✓	✓		✓	

Note: The table presents results of estimating equation (1) in different specifications. Observations are at the territory-decade level. The sample comprises 39 decades and 636 territories. The dependent variable is a binary indicator reflecting the decade of introduction of the Chamber in a territory. We omit the territory from our sample thereafter, reflecting the absorbing state of this treatment. "Baseline Controls" indicates controls for the initial level of the independent variables, measured in 1500 or at the earliest available time period (for territories that start to exist after 1500). In column 1, we divide predictors (excluding the number of cities and the Imperial tax) by the number of cities in a territory. In column 2, we include all predictors as (log) sums at the territory level. In columns 3–6, we consider the first differences of all predictor variables. Standard errors are clustered at the territory level.

TABLE D.II

ALTERNATIVE STANDARD ERRORS.

	Territory	Imperial Circle	Conley (100 km)	Conley (200 km)	Conley (400 km)
Vanishing					
Treated	0.025	0.041	0.028	0.036	0.011
Treated × Decades Since	0.002	0.002	0.002	0.002	0.002
Size					
Treated	0.048	0.054	0.052	0.052	0.053
Treated × Decades Since	0.005	0.006	0.004	0.006	0.005
Compactness (Terr.)					
Treated	0.9	0.9	1.06	0.71	0.46
Treated × Decades Since	0.1	0.1	0.06	0.09	0.06
Compactness (Cities)					
Treated	1.0	0.8	1.0	0.9	0.5
Treated × Decades Since	0.1	0.2	0.1	0.1	0.1
Pawns					
Treated	0.7	0.41	0.25	0.008	0.02
Treated × Decades Since	0.1	0.06	0.04	0.064	0.06
Marriages (Rulers)					
Treated	0.16	0.14	0.16	0.13	0.14
Treated × Decades Since	0.03	0.03	0.03	0.03	0.03
Marriages (Cities)					
Treated	0.6	0.5	0.6	0.4	0.4
Treated × Decades Since	0.1	0.1	0.1	0.1	0.1
Military					
Treated	0.015	0.013	0.013	0.006	2e-04
Treated × Decades Since	0.001	0.001	0.001	0.001	8e-04

Note: The table presents standard errors of estimating the effect of fiscal centralization on outcomes and mechanisms from Sections 5 and 6 in their baseline specifications. The columns show results for standard errors clustered at the territory level (1), the Imperial Circle level (2), and Conley standard errors with a bandwidth of 100 km (3), 200 km (4), and 400 km (5). Observations are at the territory-year level (for vanishing, size, compactness (terr.)), at the city-year level (for compactness (cities), pawns, and military), and at the secular territory-year level (for marriages). The sample comprises 390 years and 636 territories (2382 cities and 29 secular territories). The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t, the natural logarithm of cities in territory j in year t it rules alone, the compactness measure defined at the level of territories or cities in each year t, a binary variable considering whether city i was pawned to a territory $j' \neq j$ in year t, the number of military construction events in city i in territory j in year t, the marriage success for territory j, as measured by the number of connected rulers or cities in each year t.

TABLE D.III

TERRITORIAL SURVIVAL: PROBABILITY OF VANISHING, ONLY YEAR FES.

	Vanishing					
	Conflict and Conquest		Purchase		Extinction	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	−0.127	−0.147	−0.0486	−0.0430	−0.0404	−0.0509
	(0.0167)	(0.0196)	(0.0107)	(0.0105)	(0.0650)	(0.110)
Treated × Decades Since		0.00229		−0.000637		0.00119
		(0.00131)		(0.00112)		(0.00901)
Observations	102,825	102,825	102,825	102,825	102,825	102,825
R^2	0.01	0.01	0.00	0.00	0.00	0.00
Mean dep. var	0.13	0.13	0.06	0.06	0.21	0.21
Year FEs	✓	✓	✓	✓	✓	✓

Note: The table presents results of estimating equation (2), including only year fixed effects. Observations are at the territory-year level. The sample comprises 390 years and 636 territories. The dependent variable is an indicator that reflects whether a territory j vanishes in year t. We omit the territory from our sample thereafter, reflecting the absorbing state of this treatment. Standard errors are clustered at the territory level.

TABLE D.IV

TERRITORIAL SURVIVAL: PROBABILITY OF VANISHING, TERRITORIES IN 1500.

	Vanishing					
	Conflict and Conquest		Purchase		Extinction	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	−0.105	−0.148	−0.0353	−0.0288	0.0315	0.123
	(0.0172)	(0.0267)	(0.0108)	(0.0119)	(0.0841)	(0.144)
Treated × Decades Since		0.00434		−0.000660		−0.00927
		(0.00149)		(0.00132)		(0.00708)
Observations	79,598	79,598	79,598	79,598	79,598	79,598
R^2	0.01	0.01	0.01	0.01	0.01	0.01
Mean dep. var	0.07	0.07	0.03	0.03	0.11	0.11
Year FEs	✓	✓	✓	✓	✓	✓

Note: The table presents results of estimating equation (2), including only year fixed effects and for the subset of territories that exist in 1500. Observations are at the territory-year level. The sample comprises 390 years and 636 territories. The dependent variable is an indicator that reflects whether a territory j vanishes in year t. We omit the territory from our sample thereafter, reflecting the absorbing state of this treatment. Standard errors are clustered at the territory level.

D.2. *Illustration of Lineage Coding*

We consider the exemplary case of Brandenburg (later Brandenburg-Prussia) to illustrate the frequently encountered conceptual impossibility of tracing territories far into the 15th century.

In our data, the Hohenzollern-Brandenburg lineage comes into existence in 1486, 91 years before it introduces a Chamber in 1577.

This lineage is the result of a three-way split of the inheritance of Albrecht Achilles among three brothers: his lands in Franconia were split into the territories of Ansbach and Kulmbach (where Ansbach, the historical seat of the lineage, constituted the main inheritance part), and into Brandenburg, ruled by Johann Cicero. Previously, Margrave Frederick of Ansbach had been awarded Brandenburg in 1417, split the inheritance three-way in 1440, but the split had been short-lived, since Johann, who had been granted Kulmbach, died in 1464, and Frederick II, who had been granted Brandenburg, had died in 1471. So, Albrecht Achilles, the brother who had been awarded Ansbach, jointly ruled the three parts until his death.

In our data, we hence record a short-lived Hohenzollern-Brandenburg lineage, ruled by Frederick II, and going extinct with his heirless death, and then the Hohenzollern-Brandenburg lineage of Johann Cicero, starting in 1486.

Note that this will add considerable selection to our event study estimates in the "long" preperiod window: Hohenzollern-Brandenburg is not observed more than 9 decades prior to the treatment. At the same time, the Margravian lineage, which combines Kulmbach, Ansbach, and Brandenburg at times, but is broken up in 1486 and never treated, will enter the estimation through year fixed effects for other eventually-treated territories that existed in the first half of the 15th century, thus pulling their coefficient for far-back preperiods down. Similar feudal remnants of briefly large, loosely governing lineages that are broken up in the 15th century and are no clear predecessors for the states that followed them existed in the area of Saxony, Bavaria, and Lower Saxony.

D.3. *Intensive Margin and Controls*

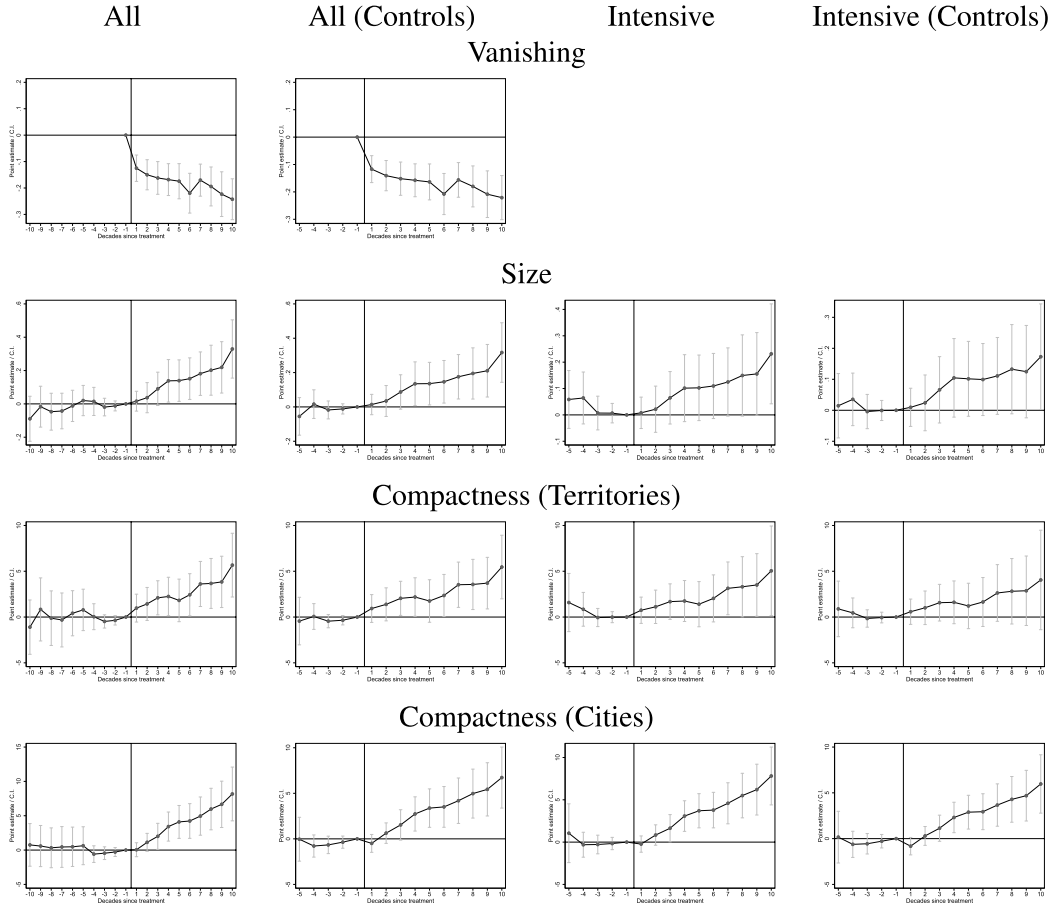

FIGURE D.1.—Territorial Consolidation, Intensive Margin and Controls. *Note*: The figure shows the equivalent of Figures 1 and 2 in the first column. Second column shows results from including controls in the estimation. Third column shows results from only considering territories that ever fiscally centralize. Fourth column shows results for the intensive margin, including controls. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (first row), the natural logarithm of cities in territory j in year t it rules alone (second row), the compactness measure defined either at the level of territories j (third row) or of cities i (fourth row), in each year t. Controls are an indicator for whether there were any attacks to the territory (city) in the past decade, an indicator of neighboring military construction activity in the past decade, an indicator of any fiscally centralized neighbors, and an indicator of the presence and activity of Estates (where applicable).

TABLE D.V

TERRITORY SIZE, INTENSIVE MARGIN.

	Single Ruler		Uncontested		All	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.0167	0.0140	−0.00555	−0.00801	0.00435	0.00220
	(0.0459)	(0.0445)	(0.0418)	(0.0401)	(0.0420)	(0.0405)
Treated × Decades Since		0.0220		0.0200		0.0174
		(0.00679)		(0.00660)		(0.00645)
Observations	9241	9241	9241	9241	9241	9241
R^2	0.95	0.95	0.96	0.96	0.96	0.96
Territory FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓

Note: The table shows the equivalent of Table III, including only intensive-margin territories into the analysis. The sample comprises 390 years and 39 territories. The dependent variable is the natural logarithm of cities in territory j in year t.

TABLE D.VI

TERRITORIAL COMPACTNESS, INTENSIVE MARGIN.

	Domestic Border			
	Territories		Cities	
	(1)	(2)	(3)	(4)
Treated	0.529	0.480	1.358	0.449
	(1.060)	(1.008)	(1.029)	(0.996)
Treated × Decades Since		0.400		0.461
		(0.218)		(0.180)
Observations	9241	9241	662,808	662,808
R^2	0.92	0.93	0.85	0.85
City FEs			✓	✓
Territory FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓

Note: The table shows the equivalent of Table IV, including only intensive-margin territories into the analysis. The sample comprises 390 years and 39 territories (1949 cities). The dependent variable is the compactness measure defined either at the level of territories j (columns 1 and 2) or of cities i (columns 3 and 4), in each year t.

TABLE D.VII

TERRITORIAL SURVIVAL: PROBABILITY OF VANISHING (CONTROLS).

	Vanishing					
	Conflict and Conquest		Purchase		Extinction	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	−0.136	−0.108	−0.0432	−0.0194	0.0653	0.0680
	(0.0248)	(0.0217)	(0.0147)	(0.00994)	(0.125)	(0.140)
Treated × Decades Since		−0.00366		−0.00314		−0.000360
		(0.00180)		(0.00183)		(0.00929)
Observations	102,825	102,825	102,825	102,825	102,825	102,825
R^2	0.07	0.07	0.08	0.08	0.03	0.03
Mean dep. var	0.13	0.13	0.06	0.06	0.21	0.21
Controls	✓	✓	✓	✓	✓	✓
Territory_FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓

Note: The table shows the equivalent of Table II, including controls into the analysis. The sample comprises 390 years and 636 territories. The dependent variable is a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t. Controls are an indicator for whether there were any attacks to the territory in the past decade, an indicator of neighboring military construction activity in the past decade, and an indicator of any fiscally centralized neighbors.

TABLE D.VIII

TERRITORY SIZE (CONTROLS).

	Single Ruler		Uncontested		All	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.214	0.0649	0.167	0.0248	0.155	0.0357
	(0.0598)	(0.0481)	(0.0483)	(0.0387)	(0.0491)	(0.0373)
Treated × Decades Since		0.0197		0.0187		0.0158
		(0.00466)		(0.00498)		(0.00459)
Observations	102,825	102,825	102,825	102,825	102,825	102,825
R^2	0.95	0.95	0.95	0.95	0.95	0.95
Controls	✓	✓	✓	✓	✓	✓
Territory FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓

Note: The table shows the equivalent of Table III, including controls into the analysis. The sample comprises 390 years and 636 territories. The dependent variable is the natural logarithm of cities in territory j in year t. Controls are an indicator for whether there were any attacks to the territory in the past decade, an indicator of neighboring military construction activity in the past decade, and an indicator of any fiscally centralized neighbors.

TABLE D.IX

TERRITORIAL COMPACTNESS (CONTROLS).

	Domestic Border			
	Territories		Cities	
	(1)	(2)	(3)	(4)
Treated	3.566	1.379	2.679	1.049
	(1.239)	(0.946)	(0.943)	(0.914)
Treated × Decades Since		0.289		0.332
		(0.104)		(0.120)
Observations	102,825	102,825	826,408	826,408
R^2	0.94	0.94	0.88	0.88
Controls	✓	✓	✓	✓
City FEs			✓	✓
Territory FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓

Note: The table shows the equivalent of Table IV with controls. The sample comprises 390 years and 636 territories (2382 cities). The dependent variable is the compactness measure at the level of territories j (columns 1 and 2) or of cities i (columns 3 and 4), in each year t. Controls are indicators for whether there were any attacks to the territory (city) in the past decade, for neighboring military construction activity in the past decade, and for any fiscally centralized neighbors.

TABLE D.X

TERRITORY SIZE, INTENSIVE MARGIN (CONTROLS).

	Single Ruler		Uncontested		All	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.0378	0.0379	0.0255	0.0255	0.0302	0.0303
	(0.0449)	(0.0449)	(0.0417)	(0.0411)	(0.0420)	(0.0415)
Council	−0.0375	−0.0445	−0.0615	−0.0672	−0.0463	−0.0511
	(0.0559)	(0.0550)	(0.0535)	(0.0529)	(0.0544)	(0.0538)
Estates	−0.113	−0.0856	−0.0976	−0.0755	−0.0736	−0.0550
	(0.0765)	(0.0776)	(0.0666)	(0.0680)	(0.0670)	(0.0681)
Treated × Decades Since		0.0155		0.0127		0.0107
		(0.00531)		(0.00582)		(0.00536)
Observations	9241	9241	9241	9241	9241	9241
R^2	0.95	0.96	0.97	0.97	0.96	0.97
Controls	✓	✓	✓	✓	✓	✓
Territory FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓

Note: The table shows the equivalent of Table III, including only intensive-margin territories into the analysis, and including controls. The sample comprises 390 years and 39 territories. The dependent variable is the natural logarithm of cities in territory j in year t. Controls are an indicator for whether there were any attacks to the territory in the past decade, an indicator of neighboring military construction activity in the past decade, and an indicator of any fiscally centralized neighbors.

TABLE D.XI

TERRITORIAL COMPACTNESS, INTENSIVE MARGIN (CONTROLS).

	Domestic Border			
	Territories		Cities	
	(1)	(2)	(3)	(4)
Treated	1.114	1.115	1.844	1.457
	(1.120)	(1.066)	(1.028)	(0.914)
Council	−1.014	−1.153	−1.751	−2.043
	(1.114)	(1.065)	(1.832)	(1.695)
Estates	−0.419	0.117	−1.786	−1.471
	(0.998)	(1.099)	(1.596)	(1.584)
Treated × Decades Since		0.308		0.296
		(0.236)		(0.147)
Observations	9241	9241	662,808	662,808
R^2	0.93	0.93	0.86	0.86
Controls	✓	✓	✓	✓
City FEs			✓	✓
Territory FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓

Note: The table shows the equivalent of Table IV, including only intensive-margin territories and with controls. The sample comprises 390 years and 39 territories (1949 cities). The dependent variable is the compactness measure defined either at the level of territories j (columns 1 and 2) or of cities i (columns 3 and 4), in each year t. Controls are an indicator for whether there were any attacks to the territory (city) in the past decade, an indicator of neighboring military construction activity in the past decade, and an indicator for fiscally centralized neighbors.

D.4. *Matching*

TABLE D.XII

MATCHING (1500 PROBIT PROPENSITY SCORE): NEAREST NEIGHBOR.

	Vanishing	Size	Compactness	
	(1)	(2)	(3)	(4)
Treated	−0.0004	0.0403	0.6421	0.2090
	(0.0007)	(0.0585)	(1.337)	(1.182)
Treated × Decades Since	-4.39×10^{-5}	0.0180	0.2470	0.4981
	(6.11×10^{-5})	(0.0063)	(0.1503)	(0.1976)
R^2	0.04731	0.94563	0.91171	0.85284
Observations	15,858	15,858	15,858	583,022
Number of Units	78	78	78	2166
Territory fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
City fixed effects				✓

Note: The table presents results of estimating the effect of fiscal centralization on outcomes from Section 5 in a subsample obtained by nearest neighbor matching of territories, based on their predicted baseline probability of Chamber adoption. Observations are at the level of territories (columns 1–3) or cities (column 4). The sample comprises 390 years. The number of territories or cities in the sample is given in the table. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories (column 3) or cities (column 4) in each year t. Standard errors are clustered at the territory level.

TABLE D.XIII

MATCHING (1500 PROBIT PROPENSITY SCORE): FULL.

	Vanishing	Size	Compactness	
	(1)	(2)	(3)	(4)
Treated	−0.0193	0.0936	4.796	7.009
	(0.0102)	(0.0731)	(3.272)	(4.189)
Treated × Decades Since	−0.0014	−0.0001	−0.0970	−0.1599
	(0.0010)	(0.0077)	(0.2248)	(0.2488)
R^2	0.04759	0.90338	0.89155	0.79362
Observations	102,825	102,825	102,825	826,408
Number of Units	636	636	636	2382
Territory fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
City fixed effects				✓

Note: The table presents results of estimating the effect of fiscal centralization on outcomes from Section 5 in a subsample obtained by full matching of territories, based on their predicted baseline probability of Chamber adoption. Observations are at the level of territories (columns 1–3) or cities (column 4). The sample comprises 390 years. The number of territories or cities in the sample is given in the table. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories (column 3) or cities (column 4) in each year t. Standard errors are clustered at the territory level.

TABLE D.XIV

MATCHING (1500 PROBIT PROPENSITY SCORE): 90TH PERCENTILE.

	Vanishing	Size	Compactness	
	(1)	(2)	(3)	(4)
Treated	−0.0247	0.1126	1.810	0.3276
	(0.0253)	(0.0969)	(2.081)	(1.222)
Treated × Decades Since	−0.0013	0.0212	0.3629	0.4935
	(0.0014)	(0.0098)	(0.2194)	(0.1921)
R^2	0.03180	0.89573	0.85520	0.84555
Observations	13,952	13,952	13,952	594,226
Number of Units	68	68	68	2113
Territory fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
City fixed effects				✓

Note: The table presents results of estimating the effect of fiscal centralization on outcomes from Section 5 in a subsample obtained by restricting to the 90th percentile of territories, based on their predicted baseline probability of Chamber adoption. Observations are at the level of territories (columns 1–3) or cities (column 4). The sample comprises 390 years. The number of territories or cities in the sample is given in the table. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories (column 3) or cities (column 4) in each year t. Standard errors are clustered at the territory level.

TABLE D.XV

MATCHING (1500 TERRITORY SIZE): NEAREST NEIGHBOR.

	Vanishing	Size	Compactness	
	(1)	(2)	(3)	(4)
Treated	−0.0322	0.0971	1.996	0.4252
	(0.0329)	(0.0577)	(1.146)	(1.201)
Treated × Decades Since	−0.0024	0.0220	0.3387	0.5672
	(0.0026)	(0.0095)	(0.2318)	(0.1860)
R^2	0.03753	0.92320	0.89956	0.85681
Observations	14,111	14,111	14,111	566,205
Number of Units	77	77	77	2134
Territory fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
City fixed effects				✓

Note: The table presents results of estimating the effect of fiscal centralization on outcomes from Section 5 in a subsample obtained by nearest neighbor matching of territories, based on their size in 1500. Observations are at the level of territories (columns 1–3) or cities (column 4). The sample comprises 390 years. The number of territories or cities in the sample is given in the table. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories (column 3) or cities (column 4) in each year t. Standard errors are clustered at the territory level.

TABLE D.XVI

MATCHING (1500 TERRITORY SIZE): FULL.

	Vanishing	Size	Compactness	
	(1)	(2)	(3)	(4)
Treated	−0.0714	0.2179	3.592	2.925
	(0.0657)	(0.0853)	(1.661)	(1.613)
Treated × Decades Since	−0.0133	0.0168	0.2214	0.3767
	(0.0072)	(0.0138)	(0.3417)	(0.1580)
R^2	0.06926	0.85894	0.86629	0.85124
Observations	102,825	102,825	102,825	826,408
Number of Units	636	636	636	2382
Territory fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
City fixed effects				✓

Note: The table presents results of estimating the effect of fiscal centralization on outcomes from Section 5 in a subsample obtained by full matching of territories, based on their size in 1500. Observations are at the level of territories (columns 1–3) or cities (column 4). The sample comprises 390 years. The number of territories or cities in the sample is given in the table. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories (column 3) or cities (column 4) in each year t. Standard errors are clustered at the territory level.

TABLE D.XVII

MATCHING (1500 TERRITORY SIZE): 90TH PERCENTILE.

	Vanishing	Size	Compactness	
	(1)	(2)	(3)	(4)
Treated	0.0100	0.2271	4.871	0.7277
	(0.0199)	(0.1463)	(2.631)	(1.334)
Treated × Decades Since	−0.0109	0.0324	0.7912	0.6105
	(0.0106)	(0.0173)	(0.3286)	(0.2092)
R^2	0.04812	0.84587	0.84782	0.83724
Observations	11,074	11,074	11,074	577,447
Number of Units	68	68	68	2086
Territory fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
City fixed effects				✓

Note: The table presents results of estimating the effect of fiscal centralization on outcomes from Section 5 in a subsample obtained by restricting to the 90th percentile of territories, based on their size in 1500. Observations are at the level of territories (columns 1–3) or cities (column 4). The sample comprises 390 years. The number of territories or cities in the sample is given in the table. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories (column 3) or cities (column 4) in each year t. Standard errors are clustered at the territory level.

TABLE D.XVIII

MATCHING (1521 IMPERIAL TAX REGISTER): NEAREST NEIGHBOR.

	Vanishing	Size	Compactness	
	(1)	(2)	(3)	(4)
Treated	−0.0446	0.0584	1.631	0.2078
	(0.0265)	(0.0620)	(1.473)	(1.073)
Treated × Decades Since	−0.0017	0.0204	0.2760	0.5621
	(0.0018)	(0.0062)	(0.1547)	(0.2158)
R^2	0.02617	0.96400	0.92185	0.87462
Observations	19,054	19,054	19,054	514,080
Number of Units	77	77	77	2073
Territory fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
City fixed effects				✓

Note: The table presents results of estimating the effect of fiscal centralization on outcomes from Section 5 in a subsample obtained by nearest neighbor matching of territories, based on their Imperial Register share in 1521. Observations are at the level of territories (columns 1–3) or cities (column 4). The sample comprises 390 years. The number of territories or cities in the sample is given in the table. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories (column 3) or cities (column 4) in each year t. Standard errors are clustered at the territory level.

TABLE D.XIX

MATCHING (1500 IMPERIAL TAX REGISTER): FULL.

	Vanishing	Size	Compactness	
	(1)	(2)	(3)	(4)
Treated	−0.0584	0.0319	1.244	2.666
	(0.0409)	(0.0524)	(1.188)	(2.159)
Treated × Decades Since	−0.0019	0.0172	0.2290	0.2636
	(0.0047)	(0.0049)	(0.1064)	(0.2205)
R^2	0.04335	0.95810	0.93305	0.87757
Observations	102,825	102,825	102,825	826,408
Number of Units	636	636	636	2382
Territory fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
City fixed effects				✓

Note: The table presents results of estimating the effect of fiscal centralization on outcomes from Section 5 in a subsample obtained by full matching of territories, based on their Imperial Register share in 1521. Observations are at the level of territories (columns 1–3) or cities (column 4). The sample comprises 390 years. The number of territories or cities in the sample is given in the table. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories (column 3) or cities (column 4) in each year t. Standard errors are clustered at the territory level.

TABLE D.XX

MATCHING (1500 IMPERIAL TAX REGISTER): 90TH PERCENTILE.

	Vanishing	Size	Compactness	
	(1)	(2)	(3)	(4)
Treated	−0.0231	0.0472	1.595	0.0864
	(0.0171)	(0.0604)	(1.265)	(1.326)
Treated × Decades Since	−0.0001	0.0200	0.2340	0.5819
	(0.0003)	(0.0053)	(0.1246)	(0.2178)
R^2	0.02111	0.97839	0.95514	0.88482
Observations	22,388	22,388	22,388	491,798
Number of Units	68	68	68	2019
Territory fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
City fixed effects				✓

Note: The table presents results of estimating the effect of fiscal centralization on outcomes from Section 5 in a subsample obtained by restricting to the 90th percentile of territories, based on their Imperial Register share in 1521. Observations are at the level of territories (columns 1–3) or cities (column 4). The sample comprises 390 years. The number of territories or cities in the sample is given in the table. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories (column 3), or cities (column 4) in each year t. Standard errors are clustered at the territory level.

D.5. *Instrumental Variables Estimates*

Motivation and assumptions. We leverage the random timing and size of overall Imperial tax levies in an instrumental variables framework. In line with the model-derived expression of Chamber adoption, we define our instrumental variable for the presence of a Chamber as the maximum Imperial tax contribution a territory has faced up to year t:

$$z_{it} = \max\{IT_{i\tau}\}_{\tau=1400}^{t},$$

where $IT_{it} = s_i g_t$ and s_i is the Imperial register share of territory i and g_t the overall Imperial tax request of the Emperor.

The instrument satisfies the relevance condition both in historical reading—the Imperial tax is a large fiscal demand shock, compared to other proceedings of the prince—and in the empirical analysis: The Imperial tax is a consistent predictor of Chamber adoption in our hazard model, and the F-statistic associated with the instrument coefficient in the first stage is 24.32. Since the probability of introducing a Chamber monotonically increases in the Imperial tax, monotonicity also holds.

The proposed instrumental variable shares the features of shift-share (or "Bartik") instruments, being the product of a share s_i and historical shocks g_t. Identification in this shift-share design comes from the exogeneity of the shocks, even in presence of endogenous exposure weights (Borusyak, Hull, and d'Haultfœuille (2022)). In our setting, Imperial taxation requests can be considered orthogonal to a territory's internal developments, since they are presented to the entire Imperial diet based on the Ottoman army movements on the Eastern border, far from the territories studied in our sample. Taxation requests are uncorrelated across Imperial diets. We hence have a setting with quasirandom shock assignment and many sufficiently weakly correlated shocks.

Finally, in the present setting ruler revenues are not affected by Imperial taxes in the absence of a Chamber. This is a result of the political economy of the Holy Roman Empire:

TABLE D.XXI

MAIN OUTCOMES, INSTRUMENTAL VARIABLES APPROACH.

	Vanishing	Size	Compactness
	(1)	(2)	(3)
Panel A: Fiscal Centralization (OLS)			
Treated	−0.194	0.225	3.736
	(0.0296)	(0.0608)	(1.239)
Panel B: Fiscal Centralization (IV)			
Treated	−0.935	0.803	12.07
	(0.214)	(0.258)	(4.257)
Observations	102,825	102,825	102,825
Territory FEs	✓	✓	✓
Year FEs	✓	✓	✓

Note: The table presents results of estimating the effect of fiscal centralization on vanishing probability, size, and territorial compactness. Panel A presents results for actual fiscal centralization treatment. Panel B shows results when using Imperial tax contributions as an instrumental variable for the treatment. Observations are at the territory-year level. The sample comprises 390 years and 636 territories. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories in each year t (column 3). In panel A, column 1 pools the results of Table II, columns 3 and 5 (vanishing due to conflict or purchase). Column 2 is the same as Table III, column 1. Column 3 is the same as Table IV, column 1. We use the maximum Imperial tax contribution a territory has faced up to year t as an instrumental variable for the presence of a Chamber as described in Section 5.5. The F-statistic associated with the instrument coefficient in the first stage is 24.32. Standard errors are clustered at the territory level.

since rulers need to comply with being mediators of the Imperial tax, they will not accept reduced revenues. On the other hand, since Estates, the Imperial diet, and the Emperor do not want to strengthen the ruler, he cannot increase revenues through the Imperial tax absent the Chamber. In the framework of Section C, we have that $\frac{\partial R}{\partial IT} = \rho\mu_C C$, and hence $= 0$ if there is no Chamber. As such, one can be confident that the exclusion restriction holds.

Results. Under these conditions, the maximum Imperial tax contribution a territory has faced up to year t is a valid instrumental variable for the presence of a Chamber. The IV estimator then yields a local average treatment effect, and compliers in this setting are territory-years for which

$$\max\left\{\mathbb{1}\left[(D_\tau + T_\tau + IT_\tau)\rho_\tau\mu_{C_\tau} > P_{C_\tau}\right]\right\}_{\tau=\underline{t}}^{t} = 1$$

but

$$\max\left\{\mathbb{1}\left[(D_\tau + T_\tau)\rho_\tau\mu_{C_\tau} > P_{C_\tau}\right]\right\}_{\tau=\underline{t}}^{t} = 0,$$

so that these territories would not (yet) have adopted a Chamber, were it not for the Imperial tax.

Table D.XXI, panel B, shows the effect of fiscal centralization on the main outcomes of Section 5, employing the maximum Imperial tax contribution a territory has faced up

to year t as an instrumental variable for the presence of a Chamber.[S.6] Point estimates are highly significant, of the same sign but larger in magnitude than the corresponding OLS estimates (reported in panel A for comparison). Note that we cannot estimate an IV analogue of the specification with time-varying effects (i.e., we cannot estimate a "Treated $\times$ Decades Since" interaction), since the instrumental variable does not predict an exact date of adoption.

Instrument Robustness. Additionally, we explore the relevance of the instrument in robustness checks. One implication of the relevance assumption is that any instrumental variable derived from counterfactual shock paths should have less explanatory power over our treatment than the realized shock path. We hence conduct randomization inference by repeating our first stage estimation with counterfactual Imperial tax requests. We hold fixed the size and order of taxation requests, and only consider the random timing of the shocks. We proceed in four steps. First, we randomly distribute Imperial tax requests between the years 1500 to 1740, drawing from the uniform distribution without replacement and preserving the order of requests. We then compute the instrument based on this shock path. Third, we compute the associated F-statistics for the first stage, based on the counterfactual instrument. Finally, repeating these steps 1000 times, we compute the fraction of times in which F-statistics from the realized shock path are larger than those from counterfactual shock assignments. If there is signal in the realized instrumental variable, the F statistic of the associated first-stage regression should be larger than those obtained with counterfactual instruments.

This analysis is demanding, since our instrument is defined as the backward-looking maximum, and the counterfactual instrument will coincide with the realized instrument in many time periods, limiting the variation between counterfactual and realized instrument. Comparing the results of 1000 simulated shock paths to the realized shock path, we find the associated first stage F statistic of the true instrument to be lower in 1.5% of cases. We additionally assess the robustness of this finding to assumptions about the shock distribution. Assuming instead a truncated normal distribution of the shocks (governed by the empirically observed mean and standard deviation), the first stage F statistic of the true instrument is lower in 5.6% of cases. Drawing from a truncated log-normal distribution, we find this fraction to be 5.2%. To assess the influence of the left- or right-skewedness of the distribution in a more disciplined way, we turn to a continuous Bernoulli distribution, where the shape parameter $\lambda \in (0, 1)$ governs the mass of the distribution in the left tail (λ close to 0) or right tail (λ close to 1).[S.7] When searching over values of $\lambda = \{0.3, 0.4, \ldots, 0.7\}$, we find the maximum fraction of times in which the true instrument produces a lower first stage F statistic to be 7.3%. We take this as evidence that, despite the high correlation between realized and counterfactual instruments, there is significant influence even in the year-by-year timing of the shocks.

Alternative IV definition. In Table D.XXII, we additionally consider a definition of the instrument that is the cumulative sum of past Imperial taxation requests. In this interpretation of the fiscal shock, the fiscal administration does not "learn"; also taxation requests

[S.6] Importantly, Imperial tax levies were driven by external political developments, especially the rise of the Ottoman Empire, which affected most directly the eastern Habsburg lands. These territories are far from our area of analysis, and we exclude scattered minor Habsburg land holdings from our data for consistency.

[S.7] The continuous Bernoulli distribution is defined on the unit interval. We shift and rescale drawn values so that they lie in the same years as the uniform and truncated (log-)normal simulated values. For all continuous distributions, we round to the nearest integer value. We achieve sampling without replacement by redrawing a shock vector if it has repeated integer values.

TABLE D.XXII

MAIN OUTCOMES, INSTRUMENTAL VARIABLES APPROACH.

	Vanishing	Size	Compactness
	(1)	(2)	(3)
Panel A: Fiscal Centralization (OLS)			
Treated	−0.194	0.225	3.736
	(0.0296)	(0.0608)	(1.239)
Panel B: Fiscal Centralization (IV)			
Treated	−0.949	0.729	11.02
	(0.216)	(0.232)	(3.971)
Observations	102,825	102,825	102,825
Territory FEs	✓	✓	✓
Year FEs	✓	✓	✓

Note: The table presents results of estimating the effect of fiscal centralization on vanishing probability, size, and territorial compactness. Panel A presents results for actual fiscal centralization treatment. Panel B shows results when using Imperial tax contributions as an instrumental variable for the treatment. Observations are at the territory-year level. The sample comprises 390 years and 636 territories. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories in each year t (column 3). In panel A, column 1 pools the results of Table II, columns 3 and 5 (vanishing due to conflict or purchase). Column 2 is the same as Table III, column 1. Column 3 is the same as Table IV, column 1. We use the maximum Imperial tax contribution a territory has faced up to year t as an instrumental variable for the presence of a Chamber as described in Section 5.5. The F-statistic associated with the instrument coefficient in the first stage is 37.46. Standard errors are clustered at the territory level.

smaller than the largest previously encountered request will provide an incentive to introduce a Chamber. The results are robust to this alternative specification.

D.6. *Heterogeneous Treatment Effects*

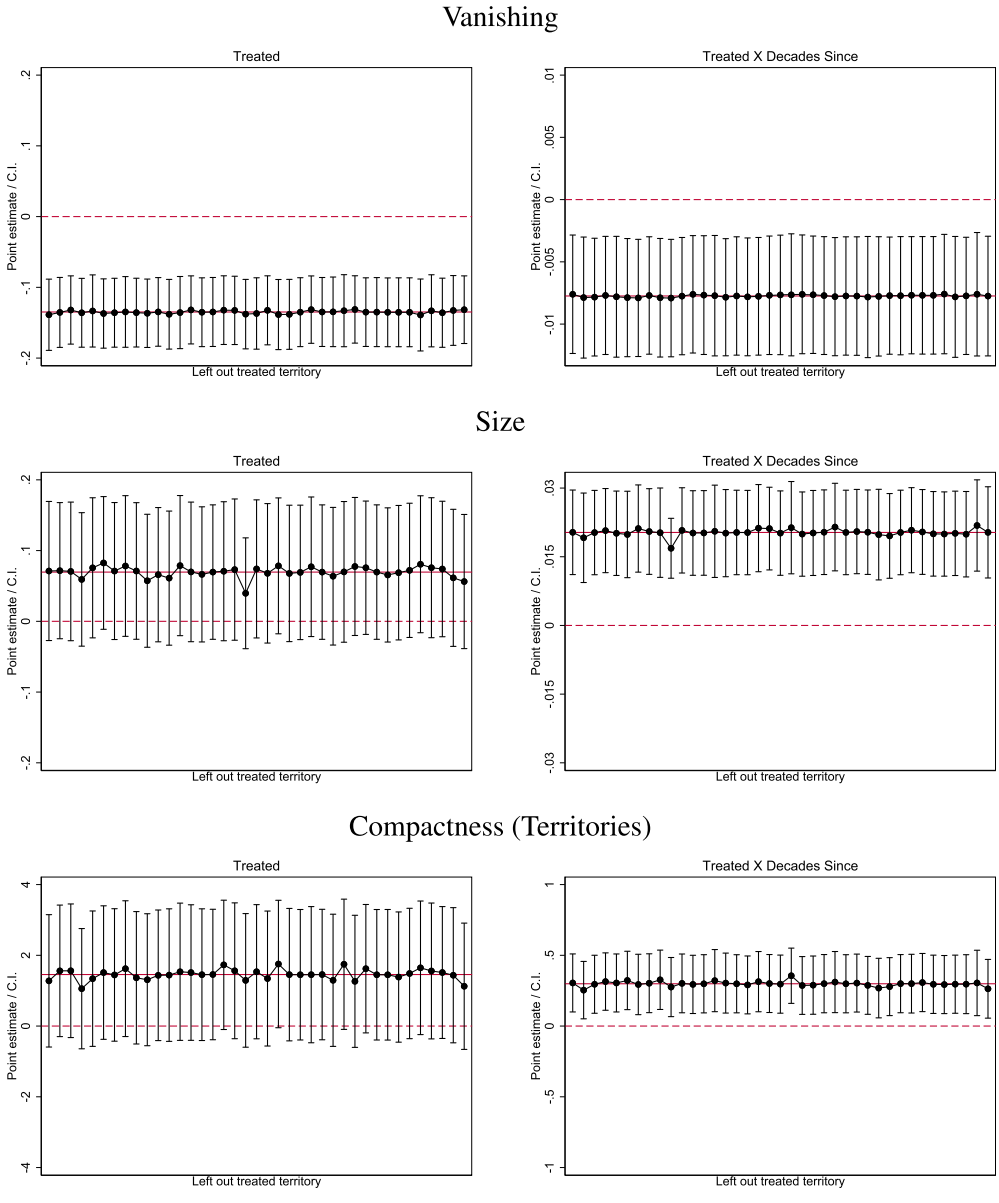

FIGURE D.2.—Leave-Out Coefficient Plots. *Note*: The plots show results for omitting one (eventually) fiscally centralized territory at a time from the sample, with 95% confidence intervals. Top panel shows the probability of vanishing as in Table II. Middle panel shows territory size as in Table III, column 2. Bottom panel shows territorial compactness as in Table III. Left column shows β_1, and right column shows β_2. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (top panel), the natural logarithm of cities in territory j in year t it rules alone (middle panel), the compactness measure defined at the level of territories in each year t (bottom panel).

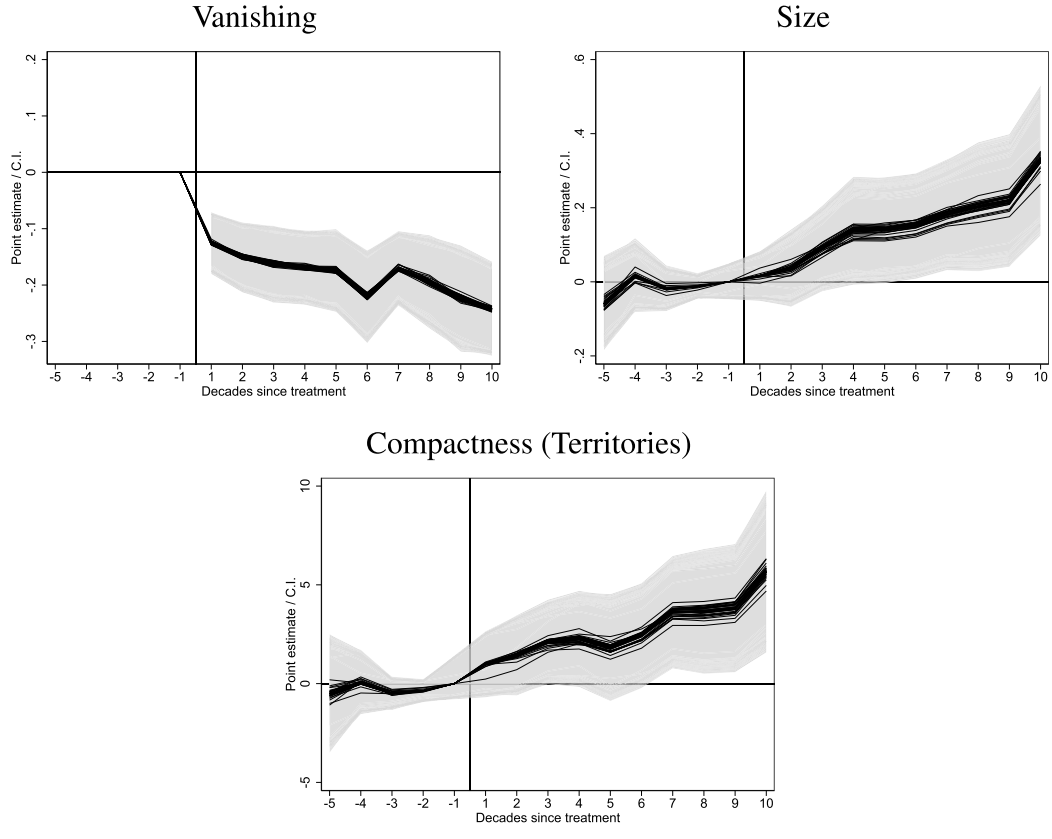

FIGURE D.3.—Leave-Out Event Study Plots. *Note*: The plots show results for omitting one (eventually) fiscally centralized territory at a time from the sample, with 95% confidence intervals. Panels A, B, and C correspond to the respective panels in Figures 1 and 2. The dependent variables are (A) a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t, (B) the natural logarithm of cities in territory j in year t it rules alone, (C) the compactness measure defined at the level of territories in each year t.

TABLE D.XXIII

DE CHAISEMARTIN AND D'HAULTFŒUILLE (2024).

	Vanishing	Size	Compactness	Comp. (Cities)
	(1)	(2)	(3)	(4)
Panel A: Two-Way Fixed Effects				
Treated	−0.186	0.238	3.799	3.435
	(0.0279)	(0.0625)	(1.276)	(1.147)
Panel B: De Chaisemartin and D'Haultfoeuille				
Treated(Avg.)	−0.144	0.215	3.475	5.676
	(0.0187)	(0.0808)	(1.433)	(2.219)
Observations	10,619	10,619	10,619	87,168

Note: The table presents results of applying the estimator in De Chaisemartin and d'Haultfœuille (2024) to our main outcome regressions. In panel A, we report the coefficients from two-way fixed effects regression. We deviate from the results in the main text body in two ways: (i) we aggregate our data from yearly to decadal frequency, and (ii) we also proxy three-way fixed effects through a territory-city and a decade fixed effect. Despite the deviations, results are very similar to their counterparts in the main text body. The deviations ensure comparability with panel B, in which we report the average effect from the $DID_{+,l}$ estimator from De Chaisemartin and d'Haultfœuille (2024) for $l \in \{0, 1, \ldots, 20\}$. By averaging the effect of 200 years following the treatment, this is (asymptotically) similar to the differences-in-differences interpretation of the fixed effects regression. We run 200 bootstrap replications. Observations are at the territory-decade level. The sample comprises 39 decades and 636 territories (2382 cities). The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (column 1), the natural logarithm of cities in territory j in year t it rules alone (column 2), the compactness measure defined at the level of territories in each year t (column 3), the compactness measure defined at the level of cities in each year t (column 4). Standard errors are clustered at the territory level.

TABLE D.XXIV

WEIGHTS.

	Territories	Cities
Pos. Weight ATT	494	23,904
Neg. Weight ATT	49	8875
Sum Neg. Weight	−0.0038	−0.086

Note: The table shows the weights associated with territory-level and city-level two-way fixed effects regressions in our sample. The first row shows the number of observations that receive a positive weight. The second row shows the number of observations that receive a negative weight. The final row shows the sum of negative weights.

D.7. *Alternative Outcome Definition*

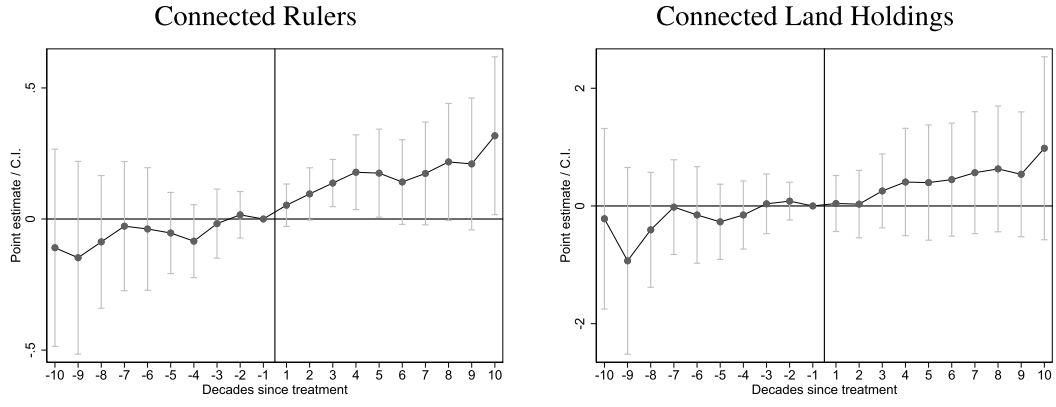

FIGURE D.4.—Marriage Gains (Alternative Connectedness Measure), Event Study. *Note*: The figure presents the analogue to panels A and B in Figure 5, considering gains in closeness to rulers instead of gains in immediate network connectedness.

TABLE D.XXV

MARRIAGE GAINS (ALTERNATIVE CONNECTEDNESS MEASURE).

	Connectedness Gains			
	Rulers		Land Holdings	
	(1)	(2)	(3)	(4)
Treated	0.0969	0.114	0.115	0.326
	(0.0542)	(0.0625)	(0.310)	(0.332)
Treated × Decades Since		0.00920		0.115
		(0.0138)		(0.0891)
Observations	4296	4296	4296	4296
R^2	0.34	0.35	0.57	0.58
Territory FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓

Note: The table presents the analogue to Table VIII, considering gains in closeness to rulers instead of gains in network connectedness.

D.8. *Mediation Analysis*

TABLE D.XXVI

MEDIATION ANALYSIS (DATA RULES).

	Vanishing		Size		Compactness	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Reduction of Pawns						
Treated	−0.194	−0.174	0.225	0.112	3.736	2.870
	(0.0296)	(0.0308)	(0.0608)	(0.0539)	(1.239)	(1.477)
Treated × Mechanism		−0.0563		0.312		2.407
		(0.0372)		(0.128)		(2.523)
Panel B: Construction of Military Buildings						
Treated	−0.194	−0.125	0.225	0.145	3.736	2.829
	(0.0296)	(0.0280)	(0.0608)	(0.0896)	(1.239)	(1.675)
Treated × Mechanism		−0.103		0.119		1.352
		(0.0285)		(0.118)		(2.263)
Panel C: Successful Marriage Politics						
Treated	−0.194	−0.212	0.225	0.137	3.736	3.288
	(0.0296)	(0.0305)	(0.0608)	(0.0447)	(1.239)	(1.464)
Treated × Mechanism		0.0718		0.353		1.802
		(0.0398)		(0.176)		(2.567)
Observations	102,825	102,825	102,825	102,825	102,825	102,825
Territory FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓

Note: The table presents results of estimating the effect of differential access to Chamber mechanisms on the consolidation outcomes from Section 5. The panels distinguish different data-driven definitions of mechanism access: territories that, in the first 100 years following the introduction of a Chamber, reduced the number of pawns at least three times (panel A), had at least three military buildings (panel B) or were in the 75th percentile of marriage success (panel C). Observations are at the territory-year level. The sample comprises 390 years and 636 territories. The dependent variables are a binary variable that reflects whether a territory j vanishes due to conflict or purchase in year t (columns 1 and 2), the natural logarithm of cities in territory j in year t it rules alone (columns 3 and 4), the compactness measure defined at the level of territories in each year t (columns 5 and 6). Standard errors are clustered at the territory level.

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Co-editor Alessandro Lizzeri handled this manuscript.

Manuscript received 1 March, 2022; final version accepted 6 August, 2024; available online 6 August, 2024.