Crisis, State Capacity, and the Rise of Absolutism

A Design-based Analysis of the Thirty Years' War*

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Abstract

We examine how the Thirty Years' War (1618–48), the largest conflict in pre-modern Europe, gave rise to absolutism. We use planned troop movements from secret military communications to estimate the impact of town-level troop presence on the growth of fiscal and military capacity and the dismantling of parliaments. During the war, executive power increased to prevent plunder and coordinate military logistics. After the war, rulers used this capacity to consolidate autocratic rule via propaganda and repression. Courts and city leagues acted as a barrier to war-induced absolutism. With parliaments eliminated, militarized absolutist regimes persisted for centuries and provided fewer public goods. Our findings highlight a dynamic trade-off in the concentration of executive power during crises.

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I Introduction

During crises, societies face a fundamental choice. Centralizing power can improve coordination, yet it also raises the risk of institutional capture. From Roman emergency dictatorships to modern expansions of state authority, the consequences of delegating extraordinary powers to address emergencies have long been contested. While some view crises as the seed of executive entrenchment (Tocqueville, 1835), for others, such suspensions are limited in scope and reversible (Machiavelli, 1531; Rousseau, 1791). Despite the prominence of this trade-off in political economy, empirical evidence on its underlying mechanisms and long-run consequences remains limited.

We study historical states in Central Europe to investigate these dynamics. In 1500, most European polities had developed representative assemblies that constrained rulers and controlled taxation and war.[1] By 1700, however, this institutional landscape had shifted. Assemblies were increasingly sidelined as rulers relied on their own administrations to collect taxes and raise armies. This transformation marked the onset of the "Age of Absolutism."[2]

This paper links the rise of absolutism to the Thirty Years' War (1618–48), the largest conflict in pre-modern Europe and a turning point toward modern warfare based on large-scale resource mobilization (Parker, 1988; Roberts, 1995). At its peak, 300,000 soldiers were under arms. Locally, armies in the field created substantial challenges: where troops passed through, communities were expected to supply the resources needed to sustain them, under the threat of requisitioning and plunder. For many states, the war thus brought repeated military incursions and a struggle over European hegemony fought on their territory.

Our setting is therefore well-suited to examine the dynamics of crisis governance, offering two sources of variation within a narrow geographic region: first, long-range troop movements that generated finely grained variation in local troop presence; and second, idiosyncratic institutional variation across hundreds of sovereign states over centuries. These features allow us to trace a radical shift in state organization in the long run: the introduction of permanent taxation and standing armies, and the widespread dismantling of parliaments.

[1] Historians emphasize that these institutions were "parliaments in the proper sense of the term" (Carsten, 1959), sometimes predecessors for modern parliaments (Bosl, 1977; Oestreich, 1979), and thus forms of "early democracy" (Stasavage, 2020). We provide further discussion in Section II.

[2] Brandenburg-Prussia exemplifies this transformation. In 1600, parliament controlled taxation, troops, laws, and policing. By 1667, prince Frederick William noted "I have become convinced that I owe the preservation of my position (...) to God, and next to God, to my army" (Fay, 1917, p. 772f).

We construct novel panel data on parliaments, taxation administered by the ruler, and military personnel for 2,230 towns in 478 states, annually for the period 1500–1789. We relate these outcomes to local troop presence in the Thirty Years' War, when campaigns imposed a substantial logistical challenge for towns in the path of an army. We identify 863 towns with recorded troop presence during the war. Additionally, we gather detailed military information from archival maps, strategic briefs, and secret internal letter communications, identifying 548 realized and 307 counterfactual troop movements of major campaigns.

Our main analysis estimates the impact of town-level troop presence during the Thirty Years' War on three measures of absolutism in a panel with town and year fixed effects. We test for parallel trends using event studies.[3] For troop-exposed towns, we document an increase of 67% in the propensity of its regional parliament being eliminated.[4] These towns also experienced an immediate and persistent increase in the local incidence of ruler-administered taxes, at around 88% of the baseline propensity. Similarly, troop presence accounts for a doubling of the baseline number of military personnel originating from a town. We provide a range of robustness checks, including various control variables, matching approaches, and alternative outcome measures, which suggest that the effects are unlikely to be driven by omitted variables.

To address remaining endogeneity concerns, we develop a novel estimation strategy that uses detailed military information to identify ex-ante comparable towns that differed in troop presence. Troop movements were influenced by strategic considerations: Military leaders first selected a broad campaign path. Along the path, they aimed to take fortified towns and lead their army on the fastest possible route between these strategic targets. Since the route is pinned down by strategic endpoints and cost minimization between them, proximity to a least-cost route is plausibly unrelated to time-varying unobservables affecting state consolidation. We first measure each town's distance to the nearest least-cost path connecting two fortified towns within a campaign. A concern is that this proximity may also

[3] A balance exercise finds that predictors of troop presence are slow-moving or time-invariant, in line with findings of conflict prediction in present-day settings (Bazzi et al., 2022). With major troop movements driven by foreign intervention of external powers, geographical considerations were key to campaign plans.

[4] Parliaments typically comprised multiple towns. Since both our treatment and all remaining variables are measured at the town level, we adopt a town-year as our primary unit of analysis. This choice entails minimal loss: the median parliamentary constituency had only seven towns. Our results remain robust under alternative aggregations (constituency-year), econometric approaches (Cox proportional hazard models at both town and constituency levels), and standard errors (allowing for arbitrary spatial correlation).

capture town centrality, which could correlate with time-varying shocks. We therefore aim to compare towns near the realized path to towns that were ex-ante comparably likely to be near a least-cost path. We adapt the recentering approach of Borusyak and Hull (2023) to incorporate wartime contingencies: Using counterfactual campaign paths reconstructed from classified military communications, we compute the expected value of the least-cost-path instrument across many perturbations of the war and "recenter" the baseline instrument by subtracting this expectation. This removes identifying variation from towns that are almost always or almost never close to a campaign path, leaving variation from "compliers." Our findings are qualitatively unchanged when using this instrumental variable strategy.[5]

Next, we examine how the conflict gave rise to absolutism. Local troop presence bundles several channels through which executive constraints may have weakened. To structure the mechanism analysis, we develop a simple two-period framework, guided by historical evidence. We adapt the model of historical parliaments in Angelucci et al. (2024). A locality can either administer its own affairs and interact with the ruler through parliament (*Separation*), or it can cede administration to the ruler (*Delegation*).[6]

A *crisis* occurs when (i) a resource demand exceeds local provisioning capacity, and (ii) falling short poses an existential threat. In this case, a locality can attempt to remain separated — financing the deficit through alternative channels — or it can delegate administration to the ruler. Delegation entails a transfer of fiscal control: to make compensation credible, the locality must cede key components of its tax capacity (registers and collection infrastructure) to the ruler.[7]

Our treatment variable maps directly into this definition of a crisis. First, troop presence created a large, localized resource demand. Early modern armies relied on local provisioning,

[5]Additionally, our results are robust to two alternative exercises. First, we use the counterfactual campaign paths to directly construct propensity scores for our main OLS specification. Second, we implement adjustments commonly used with least-cost path instruments, including controlling directly for distance to fortified towns (Banerjee et al., 2020; Faber, 2014). Finally, we find that our campaign-path perturbations likely represent a lower bound on the relevant set of compliers, compared to more substantial (but still plausible) counterfactuals, such as campaigns targeting neighboring fortified towns or peace negotiations succeeding prior to 1648.

[6]See Section in Angelucci et al. (2024) for a brief discussion of the Thirty Years' War. A core result of this model is that parliamentary communication occurs if and only if towns are administratively separated. We therefore abstract from modeling an additional communication margin. This aligns with the evidence in Section II: local administration and the existence of parliament tended to move together.

[7]This logic parallels theories of ownership under contracting failures (Grossman and Hart, 1986) and their applications to politics (Acemoglu, 2003; Maskin and Tirole, 2004).

so securing upkeep became an immediate requirement once troops entered a locality. Second, troop presence posed an existential threat: if demands were not met, resources could be taken by force, including through plunder. For towns, this implied large gains from coordinated mitigation.[8]

We then derive and test empirical implications. Our core result aligns with the main prediction: crises increase the likelihood of delegation, weakening parliaments and expanding ruler administrations. We test two additional implications. First, delegation should be more likely when the ruler can coordinate provisioning at lower cost. Second, towns facing fewer contracting frictions — due to stronger pre-existing institutions — should be better able to remain separated. We construct empirical proxies for each of these concepts, drawing on the historical evidence.

To proxy for ruler coordination costs, we use military alliances. We code whether troops present in a town and the local ruler belonged to the same alliance, and interact troop presence with this binary variable. The interaction term is positive and statistically significant across all three main outcomes. Our estimates are also robust to excluding towns plausibly affected by direct destructive channels, such as nearby battles or territorial annexations. This pattern is consistent with historical evidence that absolutism expanded through ruler-mediated resource provisioning (Hintze, 1910).[9]

To proxy for contracting frictions, we use two town-level indicators of pre-war institutional quality, and examine heterogeneity in parliamentary elimination for treated towns. First, we code whether a town litigated in the Imperial high courts in the two decades before 1618. These courts played a central role in contract enforcement and wartime borrowing. In towns with prior litigation, the interaction with troop presence offsets the baseline effect: troop presence does not predict parliamentary elimination. Second, we interact troop presence with an indicator of pre-war membership in a city league (which organized credit during the

[8]Two key scope conditions apply: First, the unprecedented size and mobility of early modern armies left little room for effective resistance (Guthrie, 2002). Second, coordination was also in the interest of rulers and military leaders. For rulers, beyond an intrinsic interest in town survival, the war also coincided with a shift in the external threat environment — the "Military Revolution" (Parker, 1995) — that permanently increased the value of centralized coordination. For military leaders, orderly taxation was also incentive compatible: uncontrolled plunder raised short-run consumption but depleted future resources (Redlich, 1959), a "stationary bandit" logic in which taxation dominates predation (Olson, 1993; Sánchez De La Sierra, 2020).

[9]A related implication is that destruction should be less likely when coordination costs are lower. Consistent with this, we find that losses of capital or labor are less likely under allied troop presence.

war) and again find that the baseline effect on eliminating parliament is attenuated.

Finally, we examine how rulers sustained absolutism. Early modern technological constraints required local cooperation on two margins: wartime provisioning and postwar tax collection. Historical accounts point to landed elites as the key intermediaries, supplying rural surplus for troop provisioning as well as tax enforcement. Through the lens of our framework, local implementation creates an additional coalition problem: rulers must secure landed elite cooperation by credibly offering the spoils of absolutism.[10] Consistent with this logic, in towns exposed to troop presence, we find that (i) municipal functions shifted toward ruler-appointed outsiders; (ii) local nobles were more likely to enter military service under the ruler; and (iii) the absolutist state becomes more present through increases in local prints and portraits, consistent with historical accounts of the new elites accumulating "symbolic capital" (Bourdieu, 1977) in the emerging absolutist state.

We conclude our analysis by considering the effects of the war in the long run. The gap in militarization between treated and untreated towns, which opened during the Thirty Years' War, persisted until the twentieth century. In a cross-section at the end of the nineteenth century, we find that treated towns had more military notables, a higher population share of military personnel, and worse health outcomes, as measured through a higher share of war-disabled individuals and lower life expectancy.

These findings make three contributions. First, we study a critical juncture in state development. The Thirty Years' War is often described as the "first state formation war" (Burkhardt, 2018) that gave rise to the modern state system. Contemporary observers and later scholarship have linked the pervasiveness of warfare during this period to arguments for undivided sovereignty (Hobbes, 1651; Hobsbawm, 1954; Wilson, 2009). Yet despite its significance, systematic evidence on the long-run institutional consequences of the war remains limited.[11] We contribute to this literature by providing the first comprehensive quantitative analysis of this conflict. Our findings suggest that the war contributed to state consolidation while shifting authority away from representative bodies and toward rulers,

[10] This is consistent with Angelucci et al. (2024), who similarly argue that "limited state capacity forced rulers to delegate administrative control to local elites" (p. 1).

[11] Gierok (2023) and Schaff (2024) study 17 towns and the town of Nördlingen, respectively, documenting declines in civic wealth and rising within-town inequality after the war. Our results, which indicate an expansion of ruler taxation and a reallocation of authority from towns to territories, are consistent with these patterns. Heinz et al. (2023)study the impact of the war on crime in a nineteenth-century cross-section.

laying the foundations for absolutist rule. In doing so, we speak directly to the broader Early Modern decline of representative institutions (Stasavage, 2020).

Second, we provide an empirical test of the link between crises and autocracy. The claim that executives can coordinate states under duress more effectively is longstanding — from Bodin (1576), Machiavelli (1531), Rousseau (1791), and Tocqueville (1835) to recent formal treatments (Djankov et al., 2003; Aghion et al., 2004; Gratton and Lee, 2023).[12] We thus complement empirical work on the origins of state capacity (Sánchez De La Sierra, 2020; Mayshar et al., 2022; Allen et al., 2023; Chambru et al., 2024) by identifying a dynamic trade-off: capacity that initially helped prevent plunder later eroded constraints and entrenched autocracy. In this sense, we document mechanisms that push states off — and keep them on — the "narrow corridor" (Acemoglu and Robinson, 2019).

Finally, our results speak to the connection between warfare and state capacity (Tilly, 1990; Besley and Persson, 2010; Gennaioli and Voth, 2015). We complement empirical works that focus on the extensive margin of state capacity, by foregrounding implications for the *type* of state: wars can shift participation, militarization, and public goods provision in the long run.[13] Our findings echo evidence from modern conflicts that finds persistent effects of warfare on democratic backsliding (Benmelech and Monteiro, 2026). At the same time, our data and framework imply that institutional change is not mechanical. First, strong institutions can limit institutional capture.[14] Second, a direct implication of our framework is that the institutional effects of war depend on which stakeholder faces the crisis: When this stakeholder cannot credibly commit, it must ensure cooperation through institutional concessions.[15]

[12] In modern history, a focal point is Emergency Article 48 of the Weimar Constitution, widely viewed as facilitating the Nazi seizure of power (Agamben, 2005). Related work in public finance studies crisis-driven "ratchet effects" in government (Peacock and Wiseman, 1961; Rasler and Thompson, 1985; Higgs, 1987).

[13] We furthermore examine the social consequences of war: rulers used prints and portraits to consolidate power, leaving a persistent cultural legacy of conflict. These cultural channels tend to often be "subsumed" in accounts of warfare (Wilson, 2008, p.12). Exceptions link war to collective memory (Tur-Prats and Valencia Caicedo, 2020), heroism (Cagé et al., 2023), and gender norms (Gupta et al., 2024). Our detailed data furthermore allows us to explore a central but often overlooked mechanism of state-building during conflict: the development of logistical infrastructure for local resource mobilization. This complements a focus on more visible battles and territorial conquest. On this imbalance of attention, Tilly (1990, p. 81) observes that "the great seventeenth-century organizers of war involved themselves in supply as much as in battle."

[14] This set of results speaks to work linking initial conditions to institutional "bifurcation" post-conflict (Karaman and Pamuk, 2013; Dincecco and Wang, 2018; Kenkel and Paine, 2023; Cox et al., 2023).

[15] This perspective can help organize a range of findings from related settings. In the medieval Holy Roman Empire, Becker et al. (2025) show that noble feuds, precipitated by dynastic shocks such as the failure to

II Institutional Background

II.A State Organization: Princes and Parliaments

Our study is concerned with the institutional development of states in Central Europe before and after the Thirty Years' War (1618–1648). Political organization within states rested on two pillars: the ruler and the so-called 'Estates,' representing towns and the landed nobility.[16] The central distinction among states was between absolutist regimes, where power was concentrated in the ruler, and parliamentary systems, where representative institutions exercised significant power (Ertman, 1997).

Parliamentary Rule. Before the war, many states exhibited elements of parliamentarism, primarily through regional assemblies where Estates met with rulers to negotiate taxation and voice grievances. While less comprehensive than modern legislatures, "the assemblies of the Estates of many German principalities were indeed 'Parliaments' in the proper sense of the term, and their functions in the sixteenth, seventeenth, and eighteenth centuries were very similar to those of the English Parliament" (Carsten, 1959, p. 444).[17]

Initially formed around irregular taxation requests by the ruler, parliaments took on a permanent and central role in the governance of states. Estates controlled a wide array of governing functions: they administered taxes, recruited and salaried troops, appointed officials, and presided over law and policing (Clark, 2019).[18]

Absolutist Rule. In contrast to parliamentarism, absolutist governance was characterized by three key features: the absence of parliamentary constraints on the ruler (*'legibus absolutus'*), a fiscal apparatus directly controlled by the sovereign rather than the

produce an heir, increased tax sophistication and city council size. In these feuds, local rulers required buy-in from towns to raise armies. This dynamic mirrors the emergence of early modern parliaments more broadly, which were closely linked to urgent fiscal needs on the side of the ruler (Carsten, 1959). Cantoni et al. (2024) show that financing an Imperial war tax affected territorial autonomy: here, the Emperor had to grant control over fiscal infrastructure. On the reverse mechanism, Stasavage (2011) links the emergence of urban sovereignity to the ability to credibly borrow.

[16] Our analysis focuses on territorial states (prince-bishoprics and secular territories). We subsume under the term 'ruler' all specific titles of the leaders of these states (prince-bishop, prince-elector, ...).

[17] While mostly drawing representatives from towns and landed elites, these bodies could encompass a broad cross-section of society — burghers, clerics, and sometimes peasants (Blickle, 1997; Carsten, 1959). In Bavaria, the Estates represented 5,534 noble lineages, 90 market towns, and 34 towns (Lanzinner, 1980, p. 18). Where these parliaments endured, "they preserved the spirit of constitutional government and liberty in the age of absolute monarchy" (Carsten, 1959, p. 444), became precursors to modern German state parliaments (Grube, 1957), and shaped a participatory political culture (Habermas, 1982).

[18] Appendix Figure A.1 shows a stylized illustration of parliamentary rule. A similar regularization of fiscal constitutionalism in England has been studied, for example, by Pasquet (1925) and Angelucci et al. (2022).

Estates, and the maintenance of a standing army (Anderson, 1979). Absolutist rulers financed their regimes primarily through direct taxes called *Schatzung* or *Kontribution*, levied without parliamentary approval (Ullmann, 2005).[19] Military strength, in turn, relied on a broad base of locally embedded officers, who played a central role in recruiting and commanding the standing forces (Beloff, 1954). Taken together, these features concentrated political authority in the hands of the ruler. Over the course of the seventeenth century, many states shifted towards absolutism, though this process varied widely across regions.[20]

II.B The Thirty Years' War

Deferring to the large historical literature outlining the chronology of the Thirty Years' War (Wilson, 2009; Münkler, 2019), we emphasize four features of the conflict that are central for our research question. First, the *war parties* were characterized by foreign intervention and semi-autonomous military entrepreneurs, loosely organized into two competing coalitions. Second, war *strategy* relied on long-range troop movements: armies campaigned across large distances. Third, war *logistics* hinged on local extraction. Sustaining forces required large, continuous inflows of food, fodder, quarters, and cash contributions. Fourth, these challenges posed an *urban crisis*, imposing unprecedented burdens on towns. We illustrate these features in a case study of the Swedish campaigns of 1630–31, which also showcases our underlying data.

War Parties.

The Thirty Years' War began amidst rising confessional tensions in Bohemia, where Protestant elites revolted against Habsburg rule.[21] Although Habsburg forces won a decisive victory at White Mountain (1620), the region had polarized into blocs aligned with the "Catholic League" and the "Protestant Union." Displaced Protestant commanders, most notably Ernst von Mansfeld and Christian of Brunswick, sustained the resistance in the

[19] These levies were "direct taxes, derived from the assessment of the taxpayers' income and wealth conducted by designated officials. [...] In most states, *Schatzung* and *Kontribution* were synonymous umbrella terms" (Schomburg, 1992, p. 331f.). The tax was collected as a fixed sum, specified separately for each town by the central ruler administration, and was not earmarked.

[20] Reflecting on the ascent of absolutism in Prussia, Frederick II noted that before the Thirty Years' War, the Estates had still been "masters of the government" (Clark, 2019, p. 88) In contrast, when visiting Württemberg as late as 1800, the English statesman James Fox praised the "constitutionalism" he encountered (Grube, 1957, p. 2)

[21] Bohemia, and most Habsburg territories, lie outside our analysis region.

Rhineland and Lower Saxony, eventually drawing in external powers aiming to forestall Habsburg predominance. Christian IV of Denmark's intervention (1625) ended disastrously at the Battle of Lutter, allowing Catholic forces to advance to the Baltic coast. This was perceived as an existential threat for Sweden, which intervened in 1630. Under King Gustavus Adolphus, Swedish forces advanced as far south as the Alpine regions. However, the Swedish defeat at Nördlingen compelled the Protestant side to sign the Peace of Prague (1635). While this formally settled the religious civil war within the Empire, it also laid bare the underlying hegemonic conflict between the Bourbon and Habsburg dynasties: France, under Cardinal Richelieu, entered the war openly to sustain Swedish operations; this phase continued until exhaustion finally forced the settlement at Westphalia in 1648.

Strategy. Strategy concerned the choice of a campaign plan. A central goal was to secure fortified towns as sources of military strength and territorial control.[22] Figure I shows the campaign paths of the main Swedish army and associated town-level troop presence in 1630 and 1631 on a map of parliamentary constituencies in the Holy Roman Empire.[23] Upon landing on the Baltic coast, the Swedish army under King Gustavus Adolphus (1594–1632) initiated operations by securing fortified towns along the shoreline near Stettin (Panel A). By the autumn of 1630, Swedish forces advanced inland, targeting the key fortress of Frankfurt (Oder). Seeking a confrontation with Catholic forces, Gustavus moved westward through allied Brandenburg and Saxony with an army of 40,000 men. He won a decisive battle near Breitenfeld in September 1631.

After the victory of Breitenfeld, the Holy Roman Empire lay open. The king and his war council were divided between two possible continuations of the campaign path: a march on Vienna to directly threaten the Catholic Emperor; or march south, to weaken the Catholic prince bishops. In a narrow decision, the war council chose the latter option, and the Swedish army swept into southern Germany, taking Schweinfurt in October of 1631 and wintering in Mainz (Panel B) (Lundblad, 1826, p. 41).[24]

Campaign paths, thus, were not predetermined: military leaders evaluated multiple

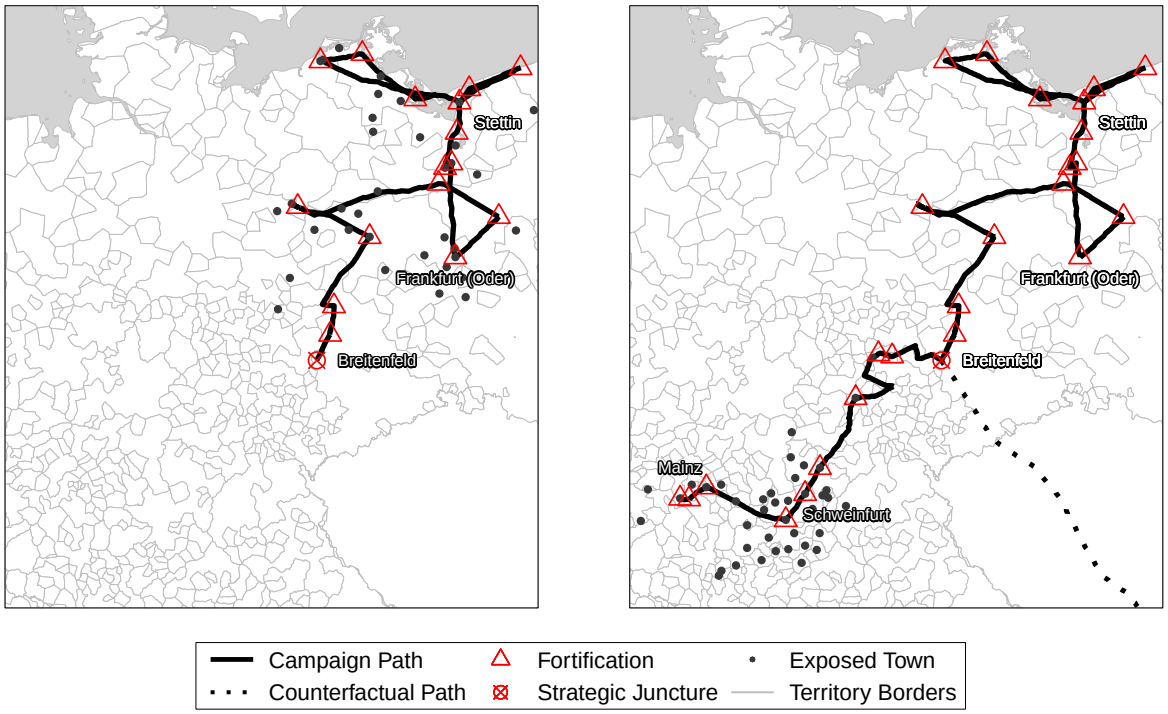
[22]The Thirty Years' War has been described as "the first pure fortifications war" (Menne, 1939, p. 47). For example, in a note dictated to his secretary in 1631, the Swedish king listed as a first priority for future action the "occupation of fortified places" (Wilson, 2010, p. 132).

[23]We describe the data collection effort underlying the construction of these maps in Section III.B.

[24]The decision was narrow during the council, and also contested thereafter — Oxenstierna, reflecting on this moment before the senate in Stockholm twenty years later, reiterated his opinion that a march on Vienna would have been preferable (Dodge, 1895). Clausewitz (1837) echoed this opinion 200 years later.

Figure I: The Thirty Years' War: Swedish Invasion (1630–32)

A: July 1630 – September 1631 B: September – December 1631



Note These maps show main army troop movements, fortified towns, towns exposed to troops, and a strategic juncture of the two first campaigning years (1630–31) during the Swedish invasion in the Thirty Years' War. The troop leader is Gustavus Adolphus, King of Sweden. The dotted line in Panel B indicates the counterfactual campaign path to Vienna after the Battle of Breitenfeld. The base map shows parliamentary constituency boundaries. Details on the data underlying the maps are given in Section III.B.

options before deciding on the direction of movements. A substantial body of preserved primary sources stand testament to these inner workings of the war: in written instructions issued to troop leaders, "precise military orders were given regarding the march route and the quarters" (Kaiser, 1999, p. 47), frequently providing a set of options to choose from; secret letter communications and council minutes record instances in which leaders evaluated different possible routes. The availability of these source materials is unique to our setting.[25] Given the broad outline of a campaign path, the primary strategic objective of troop leaders revolved around the capture of key fortresses. To move quickly between fortifications, armies aimed to take the shortest path, often relying on "handwritten lists of settlements in sequential order along known routes between major destinations" (Wilson et al., 2023, p.

[25]For example, in a biography of Gustavus Adolphus, Dodge (1895, p. 335) writes: "Gustavus did not, like Caesar, write commentaries at the close of his campaign, in which he could state motives which accorded with the event; he wrote as and when he thought, in the midst of the utter uncertainty of events, and he voiced his every idea. The apparent indecision was a mere habit of thinking aloud. (...) What we know of Gustavus is largely drawn from his own letters written at the moment."

1057).

Logistics. Beyond foreign intervention, a reason for the long duration of the war originated in changes to military organization. The majority of the large armies were assembled through quasi-independent *military enterprisers* under contract to rulers. These forces were sustained by the local extraction of provisions, without regard to confession. This shifted the burden of upkeep onto the localities through which armies moved, and in turn allowed distant rulers to sustain operations without financing military costs from central treasuries. Military leaders aimed to avoid uncontrolled plundering to preserve troop discipline and ensure steady supplies.[26] Hence, a decentralized system of troop logistics developed, in which localities were required to pay, feed, and house soldiers, as well as to enlist recruits.

Urban Crisis. For towns, the arrival of troops posed a large organizational challenge.[27] Towns could attempt to address this challenge themselves, by credit-financing the required provisions. This required a large coordination cost.[28] In addition, suitable creditors were hardly found, with default risk high in an uncertain environment. Two institutional arrangements mediated some of these contracting frictions: First, the Imperial Court infrastructure mediated between creditors and debtors, ensuring a fair apportioning.[29] Second, city leagues would step in and fill deficits in the financing of their members. The city of Magdeburg, for example, received a large transfer from the Hanse to finance troop provisioning.

The alternative to self-financing was to rely on coordination by local rulers. Here,

[26] In the Swedish army, "plundering by individuals was punished by death" (Dodge, 1895, p. 78).

[27] For Tilly's occupation of the town of Coesfeld in 1623, a document of troop requirements survives. A captain was to receive four measures of wine, 20 measures of beer, 20 pounds of bread, 12 pounds of meat, two hens, half a sheep or calf per day. A uniformed lieutenant, cadet, and quartermaster were entitled to eight measures of beer, eight pounds of bread, four pounds of meat, and a quarter of a sheep or calf. A servant "in the draft" received two pounds of meat, three pounds of bread and three measures of beer per day. Horses received hay and straw, as well as a bushel of oats every three days. In addition to nutrition, the town had to supply firewood, candles, and salt to the soldiers free of charge. We include an example page of the document in Appendix Figure A.4. Adding to the organizational burden, soldiers often traveled in large cohorts, taking with them families, servants, and livestock. A document recording the quartering needs of two Catholic companies in 1648 lists 81 soldiers on horsebacks, 84 foot soldiers, 105 horses, 57 women, 48 children, 27 servants, 51 footboys, 3 maids, and 11 cows (Kraus, 2021, p. 215). Wallenstein's occupation of Pomerania in 1627 required the provision of food and fodder for 22,000 men.

[28] The town of Neumarkt sent an emissary by foot to Nürnberg, 40 kilometers away, to negotiate a reduction in required provisions.

[29] Appendix Figure A.13, Panels A and B show cases before the Imperial court regarding credit and troop burden; Panels C and D compare frequent words found in court cases from 1587–1617 vs. 1618–58, demonstrating a substantial shift toward issues of debt repayment.

so-called *war commissars* emerged, who served as a nexus between civilian and military administration, apportioning local granaries and assigning quarters. Allowing the ruler to take on coordination however entailed granting access to local taxation infrastructure, a step that was hard to reverse (Hintze, 1910). In the following, we set out to measure this troop presence and identify its impact on the organization of states.

III Data

To analyze the impact of the Thirty Years' War on state organization, we construct a dataset that integrates novel information on core state functions, detailed historical records of troop presence, and the consolidation of autocratic governance.[30]

III.A State Organization

Our main outcomes consist of three new measures capturing absolutist rule across 2,230 towns and their surrounding countryside within the Holy Roman Empire.[31]

To measure the erosion of parliamentarism, we map each town and its countryside to a regional parliamentary constituency. We identify 128 such constituencies through a systematic survey of regional historical works. For each town, we construct an indicator of whether its parliament was intact in a given year.[32]

To measure local fiscal capacity under absolutist rule, we draw on a comprehensive catalog of 3,885 town-level account books compiled in the *Index Librorum Civitatum* (Ranft et al., 2023). This source provides metadata on each book, including a classification and the specific years it covers.[33] We focus on the 735 account books that reference ruler-imposed taxes by name. Based on these, we construct an indicator of whether rulers levied a direct tax in a given town and year.

[30] We report summary statistics in Appendix Table A.1.

[31] We include all towns as depicted in the *Deutsches Städtebuch* (Keyser et al., 1939-2003). This source covers all settlements in the 1937 German borders that ever obtained town status. We exclude East Prussia because it is an exclave; this choice does not affect our empirical results.

[32] In Section IV, we conduct various robustness tests to account for the fact that a typical constituency comprised multiple towns. We follow the historical literature and do not count deputation diets or other limited committee meetings as a full parliamentary meeting.

[33] The Index is an ongoing project, and some German regions have yet to be incorporated. We exclude these regions from regression analyses that rely on the Index.

Local military capacity is measured using granular biographical data from the *Deutsche Biographie* (Hockerts and Lanzinner, 2022). This source contains records of 818,044 notable individuals from German-speaking regions. For our purposes, we identify 6,122 military personnel, extract information on their birthplaces, and link each to the nearest town. We classify these individuals as 'active' from the age of 20 until their death, enabling us to construct a panel of active military personnel by town and year.

We gather information on geographic characteristics of towns by measuring agricultural suitability (Fischer et al., 2021), terrain ruggedness, and distances to the coast as well as the nearest navigable river. We construct an indicator of whether a town was on a trade route. We also record the number of markets (Cantoni et al., 2020), the predominant religious denomination (Cantoni and Weigand, 2024), and the yearly mapping of towns to their rulers from 1500 to 1789 (Cantoni et al., 2019).

III.B Troop Presence

We introduce data quantifying troop presence across towns during the Thirty Years' War. The baseline data are collected from Keyser et al. (1939-2003) and local historical sources. We document the identity of the troops, and, where possible, the precise year of the event. Appendix Figure A.5 highlights all 863 troop-exposed towns in our data.

We then assemble original data on campaign paths, strategic destinations, and counterfactual campaign paths in the most comprehensive data set of the Thirty Years' War to date. We define our sample as the universe of the highest-ranking military commanders for the all major warring parties active in the Holy Roman Empire. This ensures that we capture the movements of the principal field armies that determined the war's strategic narrative. Using person-specific primary and secondary sources, we trace the locations of 18 leaders across 55 campaigns, identifying 548 distinct movements between locations. Appendix Table A.3 documents the warring parties, leaders, and sources. We restrict the data to campaigns conducted within the geographical boundaries of our study area. Consequently, the panel covers the active tenure of each commander; discontinuities in the timeline reflect the dismissal or death of a leader, or the absence of a main army in the region. Appendix Figures A.6 and A.7 display the campaign trajectories for all leaders.

Second, to identify strategic destinations, we rely on a systematic list of fortifications

in the Holy Roman Empire (Klöffler, 2024). We identify 330 towns that had a permanent fortification at the outset of the Thirty Years' War.

Third, we construct counterfactual campaign paths based on strategic briefs and internal letter communications. Our main source is the collection of letters of Axel Oxenstierna, Lord High Chancellor of Sweden between 1612 and 1654, who played a pivotal role as coordinator of the battlefield during the Thirty Years' War. A large part of his correspondence, numbering 4,419 letters, has been digitized and transcribed in Riksarkivet (2024). We use GPT to translate the letters into modern English and to select those relating to campaign strategy. Based on the instructions and deliberations in these letters, we reconstruct counterfactual troop movements. Complementing Oxenstierna's letters, we consult military biographies for strategic instructions from other correspondences, which in part derive from an analogous collection of letters of the main opponent of the Swedish army: Maximilian of Bavaria and his military commanders (Bierther et al., 1907–2021). In sum, we identify 307 counterfactual troop movements. Figure I, Panel B shows the counterfactual path debated by Gustavus Adolphus at the strategic juncture of Breitenfeld.

Finally, we collect data on the accompanying effects of the war, distinguishing between variables directly tied to local troop presence and those reflecting the indirect influence of the war. First, for each exposure event, we document whether there was physical destruction, such as the burning of a city. Second, we proxy the human toll of the war. In the absence of consistent population data for our sample, we instead draw on collections of birth and baptism records from Verein für Computergenealogie (2025).[34] We precisely geolocate all three million records with non-missing birth and death years. Based on these, we identify 13,893 individuals born in 479 towns in our dataset between 1590 and 1618. For each town, we compute the mean age at death for individuals born in this pre-war cohort, and then we categorize towns into those with above- or below-median life expectancy. To capture the indirect influence of the war, we geolocate 89 landmark battles of the Thirty Years' War (Bodart, 1908), and record which towns were annexed as a consequence of the conflict.

[34]This data was collected by a large set of genealogical associations, digitizing Church archives.

III.C Mechanism Data

To proxy for coordination costs between the ruler and the military, we collect information on war alliances: for each troop leader and each town, we code whether they were part of the Imperial-Catholic faction or the Protestant Union in a given year. Combining this information with our data on troop presence, we construct an indicator of whether a town was exposed to allied or enemy troops.

We rely on two proxies of town-level institutional quality. First, we measure pre-existing legal institutions by drawing on data from the Imperial High Court. We observe all surviving 40,797 high court cases (Schildt and Amend-Traut, 2023), restrict our attention to two decades prior to the Thirty Years' War (between 1600 and 1618), and match litigating parties to the towns in our data.[35] Furthermore, we use information from the *Deutsches Städtebuch* to measure membership in city alliances.

We gather data on the consolidation of absolutist rule. Two variables proxy for investments in symbolic capital through cultural representations of the ruler. First, we gather new data on printed portraits in German-speaking Europe between 1500 and 1800, including over 280,000 portraits in 2,000 places.[36] The source metadata allows us to identify rulers and their state officials. Second, we construct new data on printed text. We gather evidence on all known prints in German-speaking Europe between 1500 and 1800: over 863,000 publications printed in 1,000 places.[37] Using a dictionary-based approach from Just (2012), we classify print titles that mention rulers in militaristic contexts.

From Keyser et al. (1939-2003), we record the autocratic repression of local institutions, such as the appointment of a town mayor through the ruler. We construct a variable that counts the number of such instances of infringement in a given town and year.

To measure the co-optation of local elites into the state, we calculate the fraction of the

[35] These cases were archived centrally at the location of the Imperial High Court, so they do not exhibit place-specific selection.

[36] Data sourced from the "Digitaler Portraitindex druckgraphischer Bildnisse der Frühen Neuzeit." The index systematically catalogs printed portraits of rulers and other notable persons. Our data of portraits mainly encompasses print engravings (*Kupferstiche*), which were widely disseminated. The data is available at https://www.portraitindex.de.

[37] Data sourced from the 'Verzeichnis der im deutschen Sprachraum erschienenen Drucke des 16. Jahrhunderts' (VD 16), 'Verzeichnis der im deutschen Sprachraum erschienenen Drucke des 17. Jahrhunderts' (VD 17), and 'Verzeichnis der im deutschen Sprachraum erschienenen Drucke des 18. Jahrhunderts' (VD 18).

nobility that is in the military in a given town and year.[38]

III.D Long-Run Data

We assess the long-run effects of the war on militarization in the nineteenth and twentieth centuries. We identify the share of military personnel among the working-age population from the 1895 occupation census of the German Empire (Statistisches Reichsamt, 1897). This data covers 2,145 towns, nearly the entire sample.[39] We additionally collect three measures on the human toll of militarization. We calculate the proportion of war-disabled individuals based on the occupation census. Using the birth records from Verein für Computergenealogie (2025), we pool all births between 1800 and 1914 and again divide towns into an above- and below-median life expectancy category; given the increased coverage at this later time period, this covers 703,288 individuals in 1,905 towns.

IV Main Results: Troop Presence and the Rise of Absolutism

IV.A Empirical Setting

We begin by assessing the effect of the war on absolutism. The outcomes are the presence of parliaments, direct ruler taxation, and militarization. The unit of analysis is the town.[40]

Our descriptive evidence suggests a divergence in state organization around the Thirty Years' War. Figure II plots raw outcomes—parliaments, ruler taxes, and military notables—by troop presence. Trends are similar before the war and diverge afterwards. Before the war, almost 90 % of towns were covered by a parliamentary constitutency. Before the war, nearly 90% of towns were covered by a parliamentary constituency; by 1700, this share had fallen to 40%, especially in towns exposed to troops. We observe qualitatively similar shifts

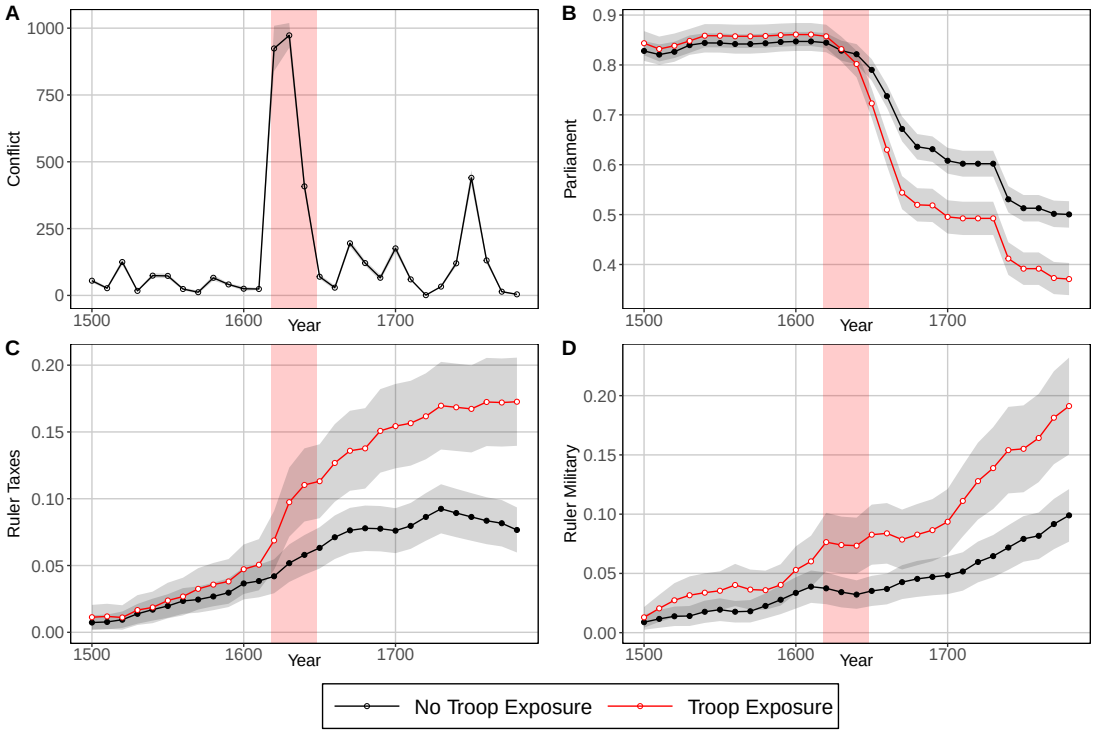
[38] In addition to the classification of a person as being in the military, the *Deutsche Biographie* also indicates nobility status for 5,036 individuals during our study period.

[39] We would like to thank Felix Kersting for kindly sharing this data.

[40] Troop presence was local, and most variables are measured at the town level. For parliamentary constituencies, this choice entails minimal loss: the median constituency comprised seven towns. We reserve Appendix Section B.1 for additional robustness checks on this aspect. Appendix Figure A.2 illustrates our data structure.

in ruler taxation and militarization.[41] While these descriptive patterns motivate our focus on the war as a turning point in state organization, they can only be suggestive.[42]

Figure II: The Thirty Years' War and the Rise of Absolutism



Note This plot presents raw data on our main outcomes, with 95 percent confidence intervals. Observations are at the town-year level, with the number of towns indicated in Table I. The sample comprises 290 years. The dependent variables are (1) conflict incidents in year t, (2) the share of towns represented in regional parliaments in year t, (3) the share of towns with records of direct ruler taxes in year t, and (4) the inverse hyperbolic sine of military personnel active in year t. Standard errors are clustered at the town level.

A key concern in regressing state outcomes on local troop presence are unobserved variables that might influence both the treatment and outcomes, hence confounding the causal interpretation of the estimates. We address this concern by approaching the treatment assignment process through a design-based perspective (Athey and Imbens, 2022).

The assignment of troops to towns during the Thirty Years' War was driven by the strategic considerations of military campaigns.[43] Strategy concerned the choice of a campaign

[41] Appendix Figure A.3 examines this transformation in a broader European sample by combining data on representative institutions from Abramson and Boix (2019) with conflict data from Brecke (1999). Conflict rises around the Thirty Years' War and remains elevated thereafter, while the territorial share governed by representative institutions declines from over 60% circa 1600 to below 30% by the end of the sample.

[42] The descriptive patterns suggest that the war coincides with a structural shift in the conflict regime. Thus, a key scope condition is that the war persistently increased the external threat environment. Within this shifted environment, we explore variation in conflict intensity, using the Thirty Years' War as a large but highly localized shock.

[43] We summarize the historical evidence to this end in Section II. Note that since we observe a common war shock — the entire Holy Roman Empire was enmeshed in the conflict — the treatment assignment concerns the intensive margin of war, that is, the course of individual campaign paths.

plan: Troop leaders decided on a broad campaign path. Along the path, they aimed to take fortified towns and lead their army on the fastest possible route between these strategic targets. Concerns about identification hence stem from strategic considerations, which could potentially have correlated with state organization outcomes. For example, a fortified town might have also had a better taxation infrastructure. Appendix Table A.2 allows for a first assessment of these concerns. We predict troop presence based on a number of town characteristics potentially tied to strategic considerations using a Probit model. All significant predictors are time-invariant or slow-moving.[44]

IV.B Baseline Empirical Strategy

We take a number of steps to empirically corroborate a causal link between the war and shifts in state organization. In our baseline regression specification, we estimate

$$Absolutism_{it} = \beta Treated_i \times Post1618_t + \alpha_i + \alpha_t + \varepsilon_{it}. \quad (1)$$

$Absolutism_{it}$ represents either an indicator of the elimination of regional parliaments for town i and year t, an indicator of the presence of direct ruler taxes, or the inverse hyperbolic sine of active military personnel. $Treated_i$ indicates whether a town was exposed to troops during the Thirty Years' War, while $Post1618_t$ is a dummy for the time period after 1618.[45] α_i and α_t are town and year-fixed effects, respectively. Importantly, the fixed effects absorb invariant characteristics, like the location of a town along a trade route, that might have influenced troop decisions.

[44]Such constant factors have been identified as key predictors of conflict also in present-day settings (Bazzi et al., 2022). In an exercise predicting conflict incidents in Colombia and Indonesia, "the most predictive risk factors tend to be slow moving or time invariant. [...] Surprisingly, predictive accuracy improves little when we add time-varying factors." In our context, three influential factors emerge: First, the choice of a broad campaign path reflects the importance of foreign intervention during the war: towns in locations closer to the fringes of the Holy Roman Empire on the coast or in the south were more likely to be exposed to troops. Second, fortified towns were more likely to be treated, reflecting their strategic importance. Third, static town characteristics played a role: towns around which resources could be mobilized more easily, since they were located on a trade route, belonged to a territory with a 16th-century fiscal Chamber (Cantoni et al., 2024), or were in a less rugged area, had a significantly larger propensity of troop presence. In contrast, local economic trends, captured by the number of markets or private and public buildings added between 1600 and 1618, are not significantly correlated with troop presence.

[45]We opt to anchor all troop events in the year 1618. In Appendix Section B.1, we show that our results are qualitatively unchanged if we restrict our data to all towns with known timing of (non-)presence, and consider a staggered treatment instead.

Table I shows results of estimating equation (1). Column 1 indicates that troop presence is associated with a significant increase in the propensity of the elimination of a regional parliament by 10.68 percentage points. This is sizeable given that overall, 16 percent of towns in our sample experience the elimination of parliaments. Similarly, troop presence accounts for a statistically significant, substantial increase in the incidence of direct ruler taxation at 88% of the baseline propensity. Finally, column 3 shows a doubling of the baseline inverse hyperbolic sine of military personnel originating from a town in association with the war.

Table I: Troop Presence and Absolutism

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.1069***	0.0626***	0.0433***
	(0.0356)	(0.0129)	(0.0122)
Standard-Errors	Constituency		City
R^2	0.70	0.56	0.44
Observations	646,700	422,820	646,700
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1). Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Next, we examine whether towns exposed to troops experienced differential time-varying shocks that influenced state organization prior to being treated. We estimate event study analogs of equation (1):

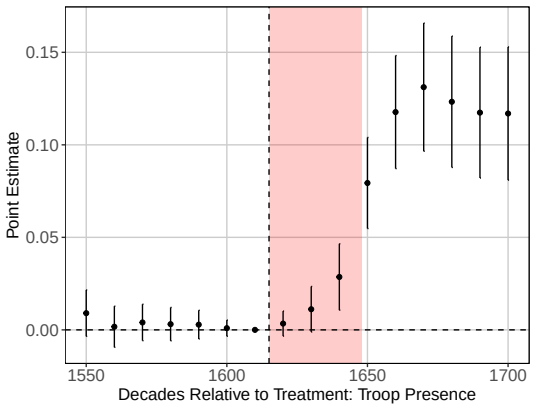
$$Absolutism_{it} = \sum_{\tau=-7}^{8} \beta_\tau Treated_i \times RelativeDecade_{\tau(t)} + \alpha_i + \alpha_t + \varepsilon_{it} \quad (2)$$

with all variables as defined above, and $RelativeDecade_t$ denoting decades until/since 1618. Results are shown in Figure III. The increases in all three outcomes are persistent and not led by pre-trends (Panels A-C). The effect of the war on parliaments (Panel A) takes hold

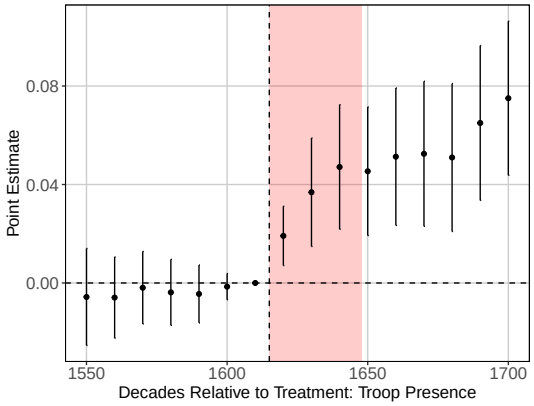
gradually. For taxes and military personnel, the effect is immediate and grows over time (Panels B and C).[46] In sum, treated and untreated towns did not display differential trends of state organization prior to the outbreak of the war. Since the strategic considerations of armies took into account mainly constant or slow-moving town characteristics, which would influence the level of state organization rather than relative trends, this appears plausible. We devote Appendix Section B.1 to robustness checks that support this claim.

Figure III: Troop Presence and Absolutism (Event Studies)

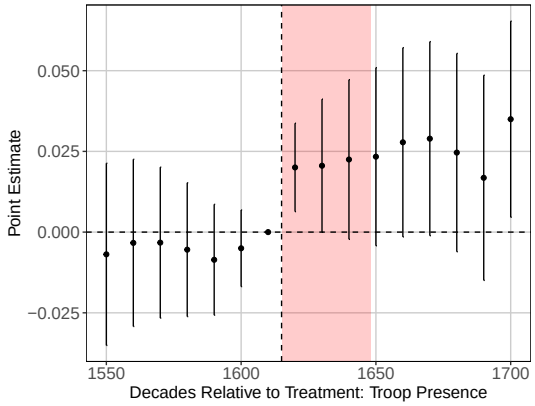
A: Parliament Eliminated



B: Ruler Taxes



C: Military Personnel



Note This plot shows results of estimating the event study regression in equation (2), with 95 percent confidence intervals. Observations are at the town-year level, with the number of towns indicated in Table I. The sample comprises 290 years. The dependent variables are (A) a binary variable of whether the parliament that represented town i has been eliminated in year t, (B) a binary variable of whether town i has records of direct ruler taxes in year t, and (C) the inverse hyperbolic sine of military personnel born in town i active in year t. The area shaded in red indicates the duration of the war. Standard errors are clustered at the town level.

[46] Section V provides a detailed examination of the mechanisms underlying the gradual dismantling of parliaments.

IV.C Instrumental Variable

In light of the event studies presented in Figure III, a possible confounding factor would need to vary over time and across towns, coincide with the onset of the Thirty Years' War, and produce an immediate and persistent kink or discontinuity in state organization outcomes. To rule out the unlikely presence of such a confounding factor, we use detailed military information in an instrumental variables approach.

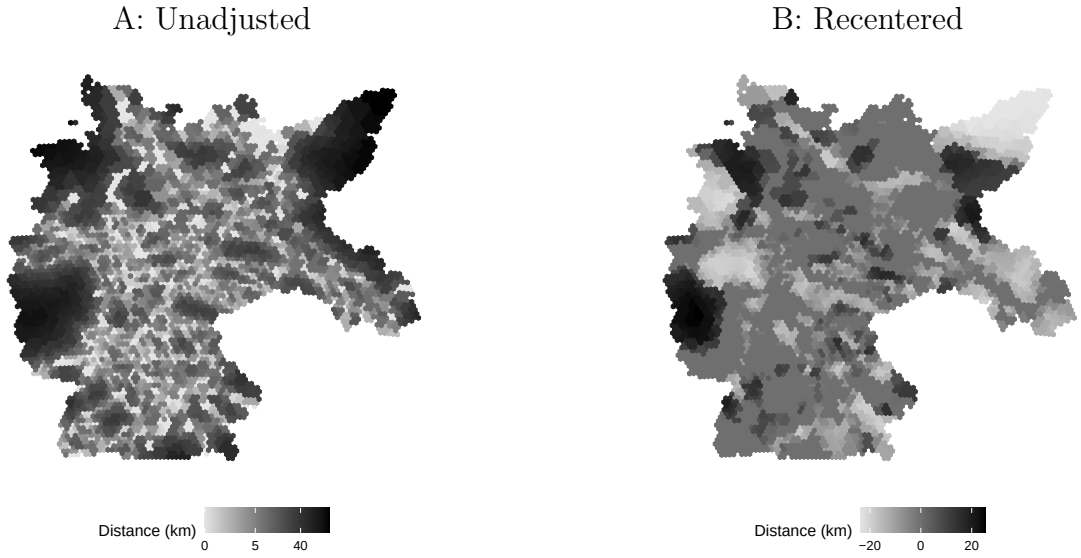
IV.C.1 Baseline Instrument

Our starting point are threats to identification that emerge from campaign strategy as discussed in Section IV.A. We proceed in two steps. In a baseline instrument, we focus on the concern that non-random deviations from the fastest route between fortified towns correlate with state outcomes. Then, we account for the strategic centrality of towns by recentering the instrument. The baseline approach is similar to canonical 'least-cost path' instruments (Banerjee et al., 2020; Faber, 2014). In our context, each campaign forms a connected graph in which troop movements are edges and towns are nodes. We restrict each campaign graph to just the start and end nodes, as well as all fortified towns along the way. Second, we connect this subset of nodes using least-cost paths. Finally, we calculate the inverse hyperbolic sine of the distance of each town in our data to the closest campaign least-cost path. Figure IV, Panel A, shows the spatial distribution of our instrument. This instrumental variable is relevant: the first-stage F statistic is 42, suggesting that troops mainly followed the fastest routes between targets.[47] The exclusion restriction requires that distance from the closest campaign least-cost path only influences state outcomes through troop presence. We discuss this assumption in detail below.

In Table II, Panel A, we estimate equation (1) using the instrumental variable. Compared to the results in Table I, estimates point in the same direction and are also statistically significant at the 1% level. Also, estimated coefficients are substantively larger than their OLS counterparts. We interpret this fact through the lens of heterogeneous treatment effects. Our instrumental variable analyses focus on the central campaigns of the main armies, whereas our baseline exposure events also include smaller exposure events. As local

[47] Appendix Figure A.8 shows, in our example of Sweden in 1630–31, that the campaign least-cost path closely tracks our more finely-grained campaign path data.

Figure IV: Campaign Distance Instrument (Unadjusted and Recentered)



Note This map shows the spatial distribution of the unadjusted instrument (Panel A), and the recentered instrument, which is obtained by subtracting the expected instrument from 1,000 counterfactuals (Panel B). Appendix Figure A.9 shows the expected instrument. Details on the construction of counterfactuals are given in Section III.B and Appendix Section B.3.

contributions to troops were "levied on the basis of the effective [...] strength of troops" (Redlich, 1959; Ritter, 1903), we expect the estimated effect to increase in troop size. Further, under the exclusion restriction, our estimated coefficients reflect a local average treatment effect of the complier population: those towns that would not have been exposed to troops, had they not been on the least-cost path of a major campaign. This likely reflects a set of towns that were more peripheral and hence experienced the most drastic treatment effect of integration into the central state, compared to towns that were already non-peripheral and integrated prior to troop presence. Historical examples speak to this notion. For the small town of Kitzingen, incidentally exposed to Gustavus Adolphus on his way between the fortified towns of Nürnberg and Erfurt, "wartime contributions constituted a 1,000% increase on peacetime tax burdens" (Wilson, 2018, p. 237). Also, Wallenstein's occupation terms with backward Pomerania in 1627 generated six times the annual pre-war tax revenue. In Appendix Section B.2, we demonstrate that these instrumental variable results are maintained in various robustness checks.

Table II: Troop Presence and Absolutism (Instrumental Variable)

	Parliament Eliminated	Ruler Taxes	Military Personnel
	(1)	(2)	(3)
Panel A: Unadjusted Instrument			
Troop Exposure	0.4987***	0.3357***	0.5998***
	(0.133)	(0.119)	(0.171)
R^2	0.70	0.56	0.44
Panel B: Recentered Instrument			
Troop Exposure	0.5815**	0.6967**	0.8831**
	(0.247)	(0.295)	(0.385)
R^2	0.70	0.56	0.44
Number of Observations	646,700	422,820	646,700
Number of Towns	2,230	1,458	2,230
Outcome Def.	(0/1)	(ihs)	(0/1)
Town FE	✓	✓	✓
Year FE	✓	✓	✓
Cluster	Town	Town	Town

Note This table presents results of estimating equation (1), using an instrumental variable based on the distance of a town to the closest campaign least-cost path (Panel A), or the recentered instrumental variable, which is obtained by subtracting the expected instrument from 1,000 counterfactuals (Panel B). Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

IV.C.2 Recentered Instrument

The causal interpretation of the results in Panel A of Figure II relies on the assumption that strategic centrality does not constitute a source of bias. The exclusion restriction might be violated for two reasons. First, our instrumental variable reflects the distance to fortified towns as strategic targets. Second, towns close to a least-cost campaign path were likely more centrally located; this centrality is again picked up by the instrument.[48]

To address strategic confounders in a unified way, we aim to adjust our estimates for the expected value of the instrument given an ex-ante probability distribution over possible campaigns. This approach essentially discounts evidence from towns in central locations that would have been close to a troop movement under any circumstance (Borusyak and Hull, 2023).[49] We construct a set of counterfactual campaign paths based on internal military

[48]Some works that employ 'least-cost path' instruments take this concern into account and assume the exclusion restriction to hold conditional on a set of distance controls (Faber, 2014). We demonstrate that our results are robust to this approach in Appendix Section B.2.

[49]Appendix Section B.3 discusses our implementation of Borusyak and Hull (2023) in detail.

communications, as described in Section III.B. To obtain a probability distribution over these possible campaigns, we permute between realized and counterfactual paths at each juncture point, and thus construct a set of 1,000 different different campaign scenarios of the war. We re-compute our instrument in each of the scenarios, and then calculate the average value of the instrument across counterfactuals. This expected instrument accounts for the inherent centrality of towns within the campaigning efforts. 'Recentering' the realized instrument, that is, subtracting its expected counterpart, removes this centrality.[50] Figure IV, Panel B shows the recentered instrument.[51]

An example illustrates the recentering approach: the towns of Frankfurt (Oder) and Schweinfurt (depicted in Figure I) are both on a campaign path and hence have an unadjusted instrument value of zero. While Frankfurt was an important node on the way from the Baltic Coast to the interior of Germany, Schweinfurt, further south, did not have the same military centrality. Reflecting this fact, Frankfurt is visited in all counterfactuals, resulting in a recentered instrument value of zero. Schweinfurt, on the other hand, is not always visited, and its expected instrument is eight kilometers larger than the realized instrument.

In Table II, Panel B, we employ the recentered instrument. Compared to the results in Panel A, the sign and significance of coefficients are qualitatively unchanged, underlining that troop presence is causally linked to taxation, militarization, and parliament elimination. The quantitative changes of coefficients in comparison to Panel A are again informative. Now, our estimates focus on the complier population across counterfactual campaigns, hence zeroing in on the most incidentally exposed towns. The increased coefficients for taxation and parliament elimination suggest larger treatment gains for this set of towns. We devote Appendix Section B.4 to demonstrate that these instrumental variables results hold up in various robustness checks.

V Mechanism

War may have weakened executive constraints through multiple channels. The evidence in Section II points to one mechanism in particular: the local presence of troops created

[50] This permutation-based approach follows Section 4 of Borusyak and Hull (2023).

[51] Note that recentering can affect the instrument value in both directions: some towns are exposed more than expected, and others receive less exposure than in the counterfactual scenarios.

a provisioning crisis, and rulers resolved these crises in ways that expanded their political authority. Section V.A formalizes this mechanism in a two-period framework. Appendix Section C.1 presents additional historical evidence, and Sections V.B–V.D evaluate empirical implications of the framework as well as potential alternative channels.

V.A Framework

Model Set-Up

Players and Timing. There are two agents: a Town (T) and a Ruler (R). Time runs for two periods, $t \in \{1, 2\}$. Agents are risk-neutral and do not discount the future. In each period, agent $j \in \{T, R\}$ receives income $Y_{j,t} = 1$.

Crisis. In period $t = 1$, the Town faces an exogenous fiscal shock of size $d > 1$: it must provision troops passing through the locality. This obligation must be met in full in period 1. If it is met, the Town survives and produces $Y_{T,2} = 1$ in period 2; if it is not, the Town is destroyed and $Y_{T,2} = 0$. A central friction in this environment is limited commitment: promises made in period 1 to compensate those who provide additional resources are only imperfectly enforceable in period 2. This is consequential because crisis finance is inherently intertemporal — resources must be mobilized immediately, whereas repayment can occur only subsequently. In the framework, a crisis therefore occurs when: (i) a resource demand exceeds local capacity, (ii) falling short is an existential threat, and (iii) contractual frictions render future compensation imperfectly enforceable.

Regime Choice. The crisis can be managed under one of two institutional arrangements. Under *Separation*, the Town retains control over local administration and continues to interact with the Ruler through parliament. Under *Delegation*, the Town cedes administration to the Ruler.[52] The key distinction between the two regimes is how they shape the credibility of intertemporal compensation. Under delegation, the transfer of fiscal control gives the Ruler a direct claim on future local revenues. Delegation therefore does not merely provide financing in period 1; it also relaxes the commitment problem in period 2 by reallocating control over the fiscal administration itself.

[52] In this paper, we abstract from a separate communication margin. A core result in Angelucci et al. (2024) is that parliamentary communication occurs if and only if towns remain administratively separate. This accords with the evidence in Section II: local administrative autonomy and parliamentary participation tended to move together.

Regime 1: Separation.

Under Separation, the Town attempts to cover the crisis through alternative channels while retaining administrative autonomy. Doing so requires paying a fixed coordination cost κ_T. The Town contributes its entire period-1 income, $Y_{T,1} = 1$, and borrows the remaining amount:

$$b \equiv (d + \kappa_T) - 1.$$

The Town promises repayment r in period $t = 2$. But this promise is only imperfectly enforceable. With probability $\pi \in (0, 1]$, repayment can be enforced and lenders receive r; with probability $1-\pi$, enforcement fails, the Town defaults, and lenders receive 0. Separation therefore preserves autonomy, but is subject to weak contract enforcement.

Regime 2: Delegation.

Alternatively, the Town may delegate administration to the Ruler. Delegation entails a transfer of fiscal control: the Town cedes key components of local tax capacity — for example, tax registers and collection infrastructure — to the Ruler. This transfer renders the arrangement credible. Absent the a transfer, a promise to compensate the Ruler in period 2 is subject to the same limited commitment under Separation. Delegation therefore couples financing in period 1 with control rights over future revenue extraction.

In period $t = 1$, the Town again contributes $Y_{T,1} = 1$. The Ruler finances the remaining requirement — that is, the fiscal shortfall together with the cost of organizing provision under centralized administration. The Ruler's required investment is

$$I_R \equiv (d - 1) + \kappa_R.$$

In period $t = 2$, the Ruler uses ownership over fiscal administration to extract as much as possible from the Town. Total extraction is given by

$$Tr \equiv \kappa_R + \tau,$$

where κ_R compensates the Ruler for coordination costs and τ denotes a net transfer.

The distinction between the two regimes therefore turns on ownership structure. Under Separation, the Town retains administrative autonomy, but compensation to outside lenders

remains imperfectly enforceable. Under Delegation, the Town relinquishes administrative control and, in doing so, grants the Ruler a more secure claim on future local revenues.

Equilibrium

We solve for the Subgame Perfect Nash Equilibrium. The Town chooses the regime that maximizes expected consumption, subject to feasibility and participation constraints.

Feasibility of Separation.

Assume throughout that lenders are risk-neutral and competitive, implying a zero-profit condition $\pi r = b$.[53] The repayment required to raise b is therefore

$$r = \frac{d + \kappa_T - 1}{\pi}.$$

Separation is feasible if and only if this promised repayment can be supported by the period-2 income of the Town, that is, if $r \leq Y_{T,2} = 1$. Equivalently,

$$\pi \geq d + \kappa_T - 1.$$

When this condition holds, the Town can finance the crisis while remaining under Separation, and its expected cost is

$$b = d + \kappa_T - 1.$$

When it fails, separation cannot address the crisis: absent delegation, the Town is destroyed.

Feasibility and Participation under Delegation.

Delegation requires both that the Ruler be able to finance the intervention in period 1 and that both parties be willing to accept the arrangement.

First, the Ruler must be able to cover the required investment I_R out of period-1 income $Y_{R,1} = 1$:

$$(d - 1) + \kappa_R \leq 1 \quad \Longleftrightarrow \quad d + \kappa_R \leq 2.$$

This is the feasibility condition for delegation.

Second, the Ruler participates only if the period-2 transfer compensates for the period-1

[53] Allowing lenders to charge a markup would only strengthen the case for delegation.

expense. Since delegation gives the Ruler a credible claim on future revenues, this requires

$$\kappa_R + \tau \geq (d-1) + \kappa_R \quad \Longleftrightarrow \quad \tau \geq d - 1.$$

Third, the Town accepts delegation only if it weakly prefers it to its outside option. When Separation is feasible, that outside option is to remain under local control and finance the crisis independently. In that case, the Town chooses Delegation if the total transfer to the Ruler is lower than the expected cost of Separation:

$$\kappa_R + \tau < d + \kappa_T - 1.$$

When Separation is infeasible, the outside option of the Town is destruction. In that case, Delegation is preferred whenever the Town retains non-negative consumption in period 2:

$$1 - Tr \geq 0 \quad \Longleftrightarrow \quad \kappa_R + \tau \leq 1.$$

Comparative Statics.

In the following, we restrict attention to the case in which delegation is feasible, that is,

$$d + \kappa_R \leq 2.$$

This separates the choice between institutional arrangements from the cases in which the Ruler is financially incapable of intervening at all.[54]

Figure V plots the regions of certain destruction, voluntary and forced delegation in τ-d space, with $\kappa_R = 0.4$, $\kappa_T = 0.7$, $\pi = 0.6$. Formal proofs are given in Appendix Section C.3. Three implications follow immediately.

First, an increase in d weakly shifts the equilibrium from separation toward delegation. A larger shock tightens the feasibility condition for separation, (V.A), and, when separation remains feasible, raises its cost relative to delegation through the comparison (V.A).

[54] Staying inside this corridor of d was incentive compatible for military commanders. Uncontrolled plunder raised short-run consumption but depleted future resources, so leaders preferred negotiated contributions (Redlich, 1959). This more broadly reflects settings in which a "stationary bandit" seeks orderly taxation over predation (cf. Olson, 1993; Sánchez De La Sierra, 2020; Henn et al., 2024). We explore this assumption empirically in Section V.B.

Second, a decrease in κ_R weakly enlarges the delegation region. Lower ruler coordination costs reduce the total extraction required under delegation, making delegation more attractive when separation is feasible and more likely to preserve the Town when separation is infeasible. This also shrinks the destruction region. The relevant conditions are (V.A) and (V.A).

Third, an increase in π, improving the contracting environment, enlarges the separation region and makes permanent ruler takeover less likely. Better enforcement relaxes the condition for financing under separation, (V.A), thereby reducing the range of cases in which the Town must turn to delegation.

Our treatment variable maps directly into this definition of a crisis. First, troop presence created a large, localized resource demand. Early modern armies relied on local provisioning, so securing upkeep became an immediate requirement once troops entered a locality. Second, troop presence posed an existential threat: if demands were not met, resources could be taken by force, including through plunder. For towns, this implied large gains from coordinated mitigation.

Our core result from Section IV aligns with the main prediction: crises increase the likelihood of delegation, weakening parliaments and expanding ruler administration. We test two additional implications. First, delegation should be more likely when the ruler can coordinate provisioning with the army at lower cost. Second, towns facing fewer contracting frictions — due to stronger pre-existing institutions — should be better able to remain separated. We construct empirical proxies for each of these concepts, drawing on the historical evidence.

V.B Coordination and Executive Capacity

Our empirical analysis tests the two main hypotheses emerging from this framework. First, troop presence should be significantly less likely to coincide with destruction when coordination was facilitated. Second, executive capacity should be more likely to emerge where coordination between troops and local rulers was easier. We operationalize the notion of easier coordination by coding whether troops and local rulers belonged to the same military alliance in a given treatment instance.[55] Appendix Table A.4 shows that, across the full

[55] We distinguish between the two primary sides in the conflict: Catholic- and Protestant-aligned forces, with coding details provided in Section III.B.

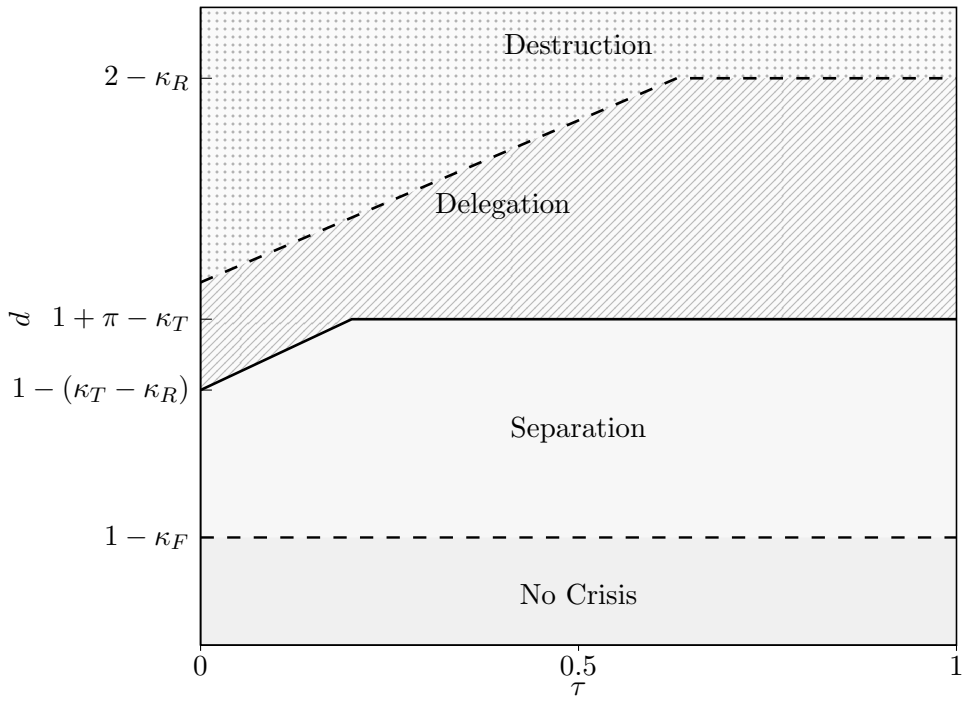


Figure V

Note The figure partitions the (τ, d)-space into four regions: *No Crisis*, *Separation*, *Delegation*, and *Destruction*. The dashed and solid boundaries indicate the threshold values of d as a function of τ that separate these regimes. Parameter values are $\kappa_R = 0.4$, $\kappa_T = 0.7$, $\pi = 0.6$. Formal proofs are given in Appendix Section C.3.

sample of treatment events, the destruction of capital and labor — measured by whether a town was destroyed due to troop presence or experienced above-median population losses during the war, respectively — was less likely when the troops administering the treatment were allied with the local rulers.[56]

We then augment equation (1) by interacting the treatment variable with this coordination indicator. Table III presents results. The coefficient on the interaction term is positive, statistically significant, and sizeable across all three outcome measures.[57]

Taken together, these findings support the relevance of a coordination-based mechanism in the expansion of executive capacity, operating against the backdrop of a credible threat of violence. This interpretation is consistent with qualitative accounts of the Thirty Years' War. Hintze (1906) argues that the rise of military officials responsible for provisioning troops laid

[56] Appendix Table A.5 provides further evidence that the interaction betw

[57] These results remain robust when excluding exposure events involving troops operating in their domestic territories, as shown in Appendix Table A.6. This suggests, in line with the historical evidence, that the strategic 'overstaffing' of armies to weaken local elites was not primarily at play.

Table III: Troop Presence and Coordination

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.0828*	0.0352**	-0.0010
	(0.0427)	(0.0180)	(0.0121)
Troop Presence × Alliance	0.0400	0.0436*	0.0734***
	(0.0346)	(0.0227)	(0.0199)
Standard-Errors	Constituency		City
R^2	0.70	0.56	0.44
Observations	646,700	422,820	646,700
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1), with an additional interaction term if a troops were allied with the ruler. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

the institutional groundwork for absolutism in Prussia. In a broader account of autocratic state formation, Fraenkel (1941) highlights the Thirty Years' War as a critical moment in the emergence of extraordinary commissarial authority, showing how the logistical demands of military coordination gave rise to a 'dual state' that bypassed parliamentary institutions.

V.C Legal Resistance and Parliamentary Survival

To proxy for contracting frictions, we use two town-level indicators of pre-war institutional quality, and examine heterogeneity in parliamentary elimination for treated towns. First, we code whether a town litigated in the Imperial high courts in the two decades before 1618. As outlined in Section II, these courts played a central role in contract enforcement and wartime borrowing. Second, we interact troop presence with membership in a city league (which provided credit during the war).

Table IV shows results. In towns with prior litigation, the interaction with troop presence offsets the baseline effect: troop presence does not predict parliamentary elimination. In column 2, we find that the baseline effect on eliminating parliament is attenuated also for

city leagues.

Table IV: Troop Presence and Parliament Elimination (Contracting)

	Parliament Eliminated		
	(1)	(2)	(3)
Troop Presence	0.1210***	0.1153***	0.1280***
	(0.0393)	(0.0363)	(0.0398)
Troop Presence × Court Access	-0.1151**		-0.1047**
	(0.0482)		(0.0469)
Troop Presence × City League		-0.1083**	-0.0851**
		(0.0435)	(0.0426)
R^2	0.72	0.72	0.72
Observations	646,700	646,700	646,700
Number of Towns	2,230	2,230	2,230
Outcome Mean	0.2949	0.2949	0.2949
Town FEs	✓	✓	✓
Year FEs	✓	✓	✓
Controls	✓	✓	✓
Cluster	Constituency	Constituency	Constituency

Note This table presents results of estimating equation (1), with additional interaction terms if a contracting mechanism is present. The contracting mechanisms are defined as (i) an indicator of whether the town was part of a city league in the 1600–1618 period, or (ii) an indicator of whether the town litigated against its ruler in the Imperial High Court in the 1600–1618 period. The sample comprises 290 years. The dependent variable is a binary variable of whether the parliament that represented town i has been eliminated in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

V.D The Consolidation of Absolutism

Rulers retained the local recruitment and taxation infrastructure resulting from the war even after troops had moved on, permanently bypassing Estate consent. How did this consolidation of absolutism occur following the initial expansion in executive capacity?

Early modern administrative constraints required local cooperation on two margins: wartime provisioning and postwar tax collection. Historical accounts point to landed elites as the key intermediaries: troop provisioning required rural surplus, and tax enforcement required local personnel. Through the lens of our model, introducing local implementation creates a coalition problem: rulers must secure landed elite cooperation by credibly offering the "spoils of absolutism."[58]

[58]This is consistent with Angelucci et al. (2024), who similarly argue that "limited state capacity forced rulers to delegate administrative control to local elites" (p. 1).

This consolidation of executive power, combined with the erosion of autonomous elite authority, made "the court, administrative, and military appointments increasingly attractive to the local nobles" (Wilson, 2009, p. 359), further weakening the role of parliaments.

We evaluate these mechanisms empirically, within the limitations inherent in early modern data. We re-estimate equation (1) using four outcomes: the presence of printed ruler portraits; militaristic prints; instances of repression, proxied through local infringements by rulers; and elite co-optation, proxied by the share of nobles in military service. Appendix Section C.4 illustrates examples from our data. Table V presents the results. Troop exposure is significantly associated with all four outcomes. Figure VI shows that these effects emerged immediately and were not led by pre-trends.

Table V: Troop Presence and the Consolidation of Absolutism

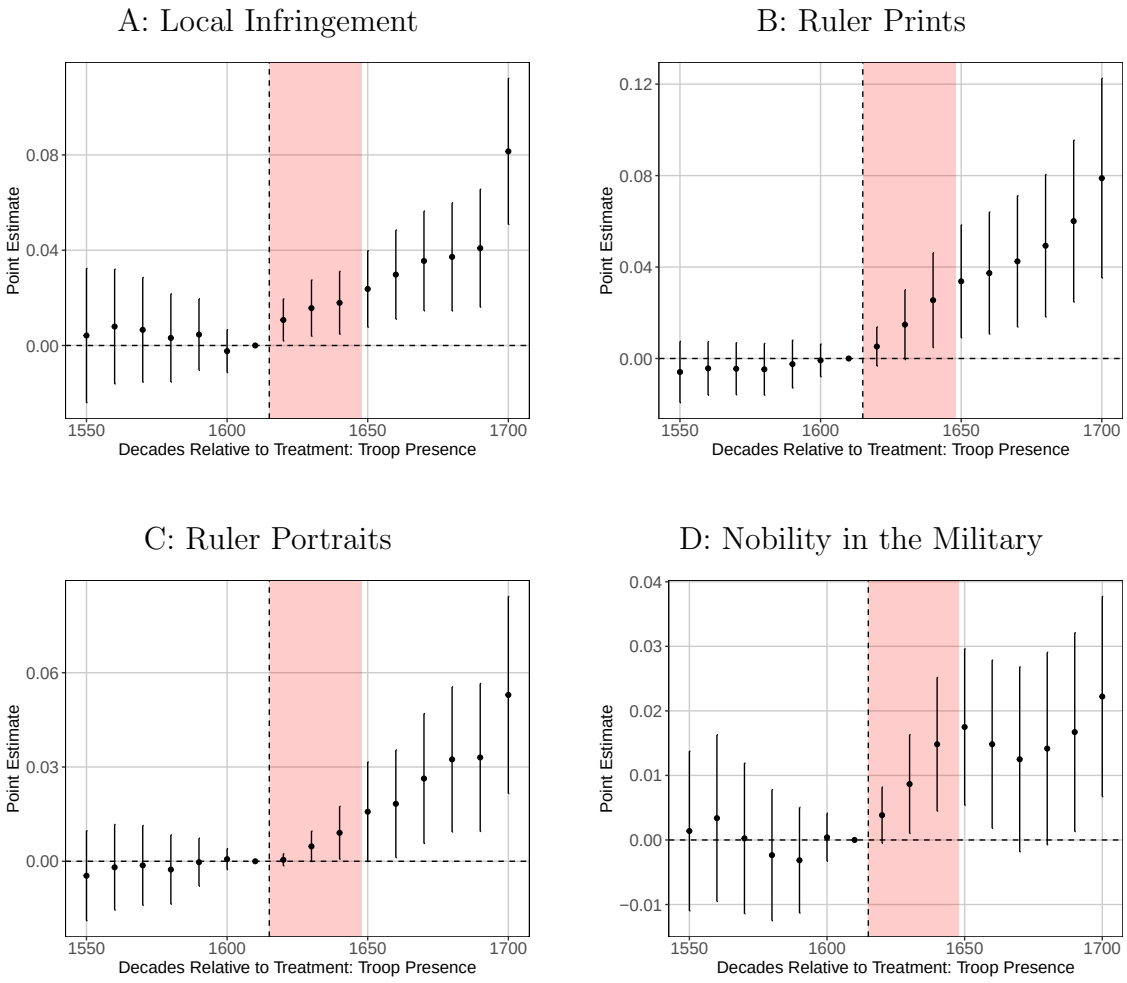
	Ideology		Repression	Co-optation
	Ruler Prints	Ruler Portraits	Infringement Count	Nobility in the Military
	(1)	(2)	(3)	(4)
Troop Presence	0.0540***	0.0347***	0.0593***	0.0134***
	(0.0181)	(0.0131)	(0.0150)	(0.0048)
R^2	0.57	0.51	0.61	0.27
Observations	646,700	646,700	646,700	646,700
City Units	2,230	2,230	2,230	2,230
Outcome Mean	0.05	0.02	0.14	0.02
Outcome Def.	(ihs)	(ihs)	(ihs)	(0/1)
City FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓
Cluster	City	City	City	City

Note This table presents results of estimating equation (1). Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) the inverse hyperbolic sine of the instances of repression of local institutions in town i and year t, (2) the inverse hyperbolic sine of the number of ruler prints with a militaristic title from town i and year t, (3) the inverse hyperbolic sine of the number of portraits of the ruler state in i in year t, and (4) the share of nobility from town i in year t that is also in the military. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

V.E Absolutism in the Long Run

Our results point to a critical juncture (Acemoglu and Robinson, 2013; Callen et al., 2024): the war created a window of opportunity for absolutism, and in the absence of effective resistance, this new institutional equilibrium endured for centuries. To document its long-

Figure VI: Troop Presence and the Consolidation of Absolutism (Event Studies)



Note This plot shows results of estimating the event study regression in equation (2), with 95 percent confidence intervals. Observations are at the town-year level, with the number of towns indicated in Table I. The sample comprises 290 years. The dependent variables are (A) the inverse hyperbolic sine of the instances of repression of local institutions in town i and year t, (B) the inverse hyperbolic sine of the number of ruler prints with a militaristic title from town i and year t, (C) the inverse hyperbolic sine of the number of portraits of the ruler state in i in year t, and (D) the share of nobility from town i in year t that is also in the military. Standard errors are clustered at the town level.

run persistence, we revisit our data on military biographies from the *Deutsche Biographie*, which provides consistent coverage up to 1900. Following the approach in Section IV, we construct an indicator variable that equals one if there is at least one notable military figure from city i who is alive and over the age of 20 in year t.

Panel A of Figure VII compares treated and untreated towns. Prior to 1618, both groups followed a similar, low-level trajectory. However, after the war, militarization in treated towns steadily increased, with roughly 30% of them producing notable military figures by the end of the nineteenth century. Panel B focuses exclusively on treated towns, this time distinguishing between towns that did and did not experience the elimination of parliament. Here too, we see a growing divergence in militarization beginning in the mid-seventeenth century, which persisted for centuries.

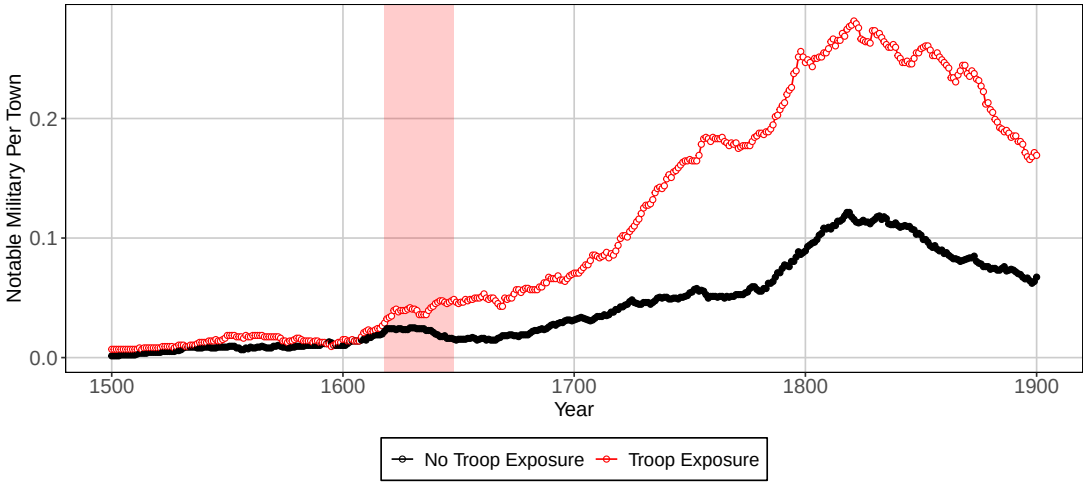
We further explore the implication of this long-run militarization in a nineteenth-century cross-section of towns. We estimate

$$Absolutism_i \quad = \beta Treated_i + X'\gamma + \varepsilon_{it}, \tag{3}$$

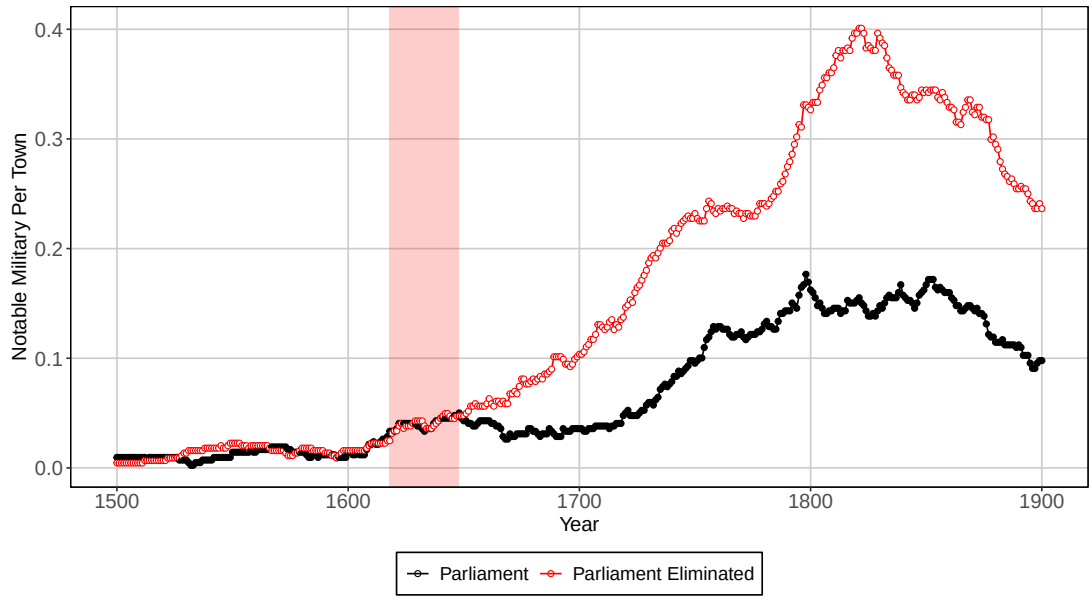
where $Absolutism_i$ is the number of Military notables in 1914, share of military personnel among the working-age population in 1895, the share of war-disabled individuals in the same year, or an indicator of whether town inhabitants had below-median life expectancy in the 1800–1914 period. X bundles all pre-1618 geographic and economic covariates, and we use Conley standard errors with a cutoff of 100km. Table VI shows results: treated towns had more military notables, more military personnel, more war-disabled individuals, and lower life expectancy.

Figure VII: Troop Presence and Long-Run Militarization

A: Militarization By Troop Presence



B: Militarization By Parliament Survival, Conditional on Exposure



Note The plot shows the average number of military personnel as coded from the *Deutsche Biographie* from 1500 to 1900, separately for groups of towns. Panel A distinguishes treated and untreated towns. Panel B separates towns by the elimination of parliament, in a sample of treated towns. Details on the construction of the data are given in Section III.

Table VI: Troop Presence and Militarization in the Nineteenth Century

	Military Notables (1)	Share Military (2)	Below-Median Life Exp. (3)	Share Invalid (4)
Troop Presence	0.0496**	0.1540***	0.0641***	0.2062***
	(0.0203)	(0.0474)	(0.0234)	(0.0475)
Observations	2,230	2,145	1,905	2,145
R^2	0.00	0.01	0.00	0.01
Outcome Def.	(cont.)	(std.)	(0/1)	(std.)
Outcome Mean	0.10	0.00	0.50	0.00
Standard Errors	Robust	Robust	Robust	Robust

Note This table presents results of estimating equation (3), Standard errors are indicated in the table *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

VI Conclusion

In this paper, we document the rise of absolutism in response to the Thirty Years' War (1618–1648), the largest conflict in pre-modern Europe. Using planned troop movements from secret military communications, we estimate how town-level war exposure led to the growth of fiscal and military capacity while dismantling parliaments. We find that the coordination of military logistics shifted authority toward the executive, and that legal institutions acted as a constraint on war-induced absolutism.

These results suggest a dynamic trade-off between dictatorship and disorder during states of emergency (Hobbes, 1651; Tocqueville, 1835; Djankov et al., 2003). Crises increase the returns to centralized coordination, shifting capacity towards the executive. Such shifts can incentivize the executive to invest in institutions that permanently sideline executive constraints.

The Thirty Years' War marked a turning point in militarization and the consolidation of executive power in German-speaking Europe. Absolutism entrenched a culture that increasingly valued command and loyalty over openness and deliberation. Historians have argued that this militaristic legacy hindered the adoption of liberal-democratic values and ultimately turned into the most potent threat to the European order (Carsten, 1958; Rosenberg, 1958). Moreover, the expansion of executive powers during the war set a precedent for future autocratic consolidation. In 1933, the emergence of militarized executive officials under dictatorship drew on a legacy of 'exceptional rule' rooted in early modern absolutism (Hachtmann and Süß, 2006).

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Supplementary Appendix: For Online Publication

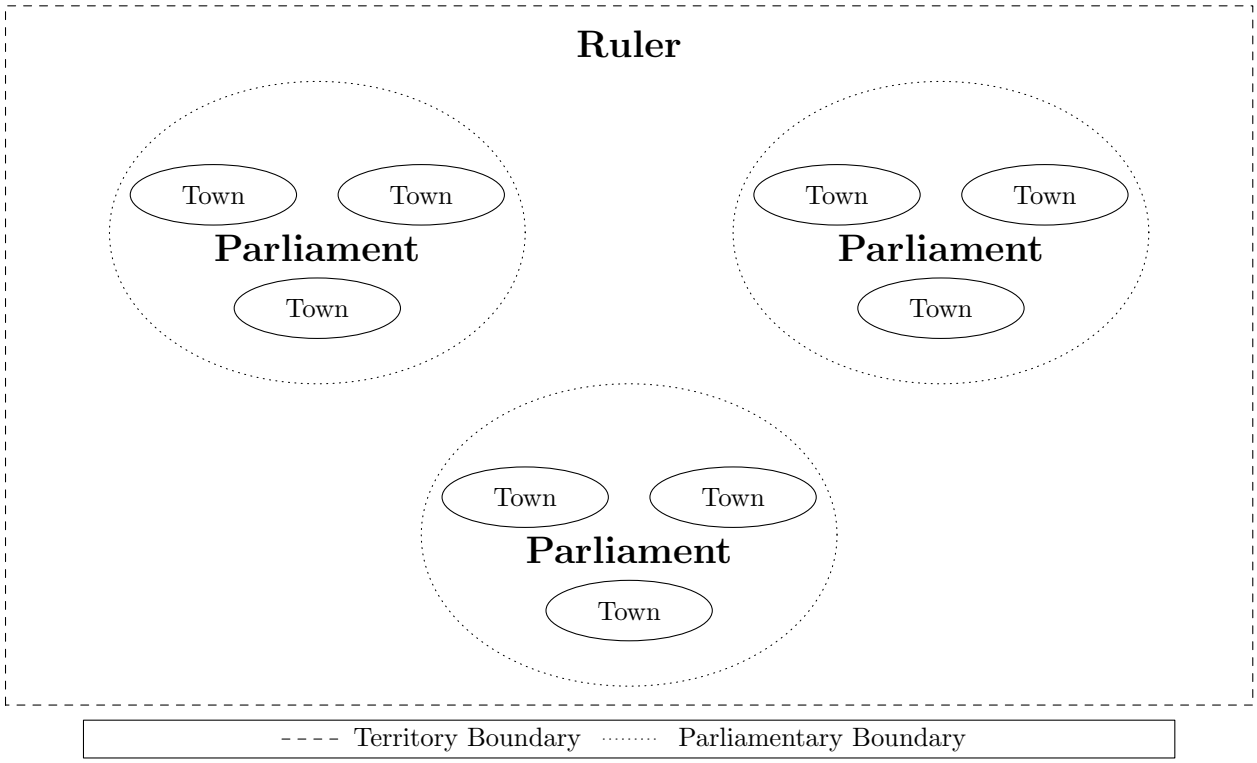
A Tables and Figures

Table A.1: Summary Statistics

Variable	Mean	SD	Min	Max	N
Troop Presence	0.39	0.49	0	1.00	646700
Parliament Eliminated	0.29	0.46	0	1.00	646700
Ruler Taxes	0.07	0.25	0	1.00	422820
Military Personnel	0.06	0.32	0	5.58	646700
Ruler Prints	0.05	0.35	0.00	7.55	646700
Ruler Portraits	0.02	0.26	0.00	7.26	646700
Infringement Count	0.14	0.37	-0.88	2.89	646700
Nobility in the Military	0.02	0.14	0.00	1.00	646700
Allied Presence	0.23	0.42	0	1	646700
Distance Coast (std.)	0.00	1.00	-2.16	1.67	2230
Latitude	50.94	1.59	47.41	54.91	2230
Longitude	11.02	2.88	6.09	18.92	2230
Fortified in 1618	0.15	0.36	0.00	1.00	2230
On Trade Route in 1618	0.60	0.49	0.00	1.00	2230
Fiscal Chamber in 1618	0.43	0.50	0.00	1.00	2230
Ruggedness (std.)	0.00	1.00	-1.17	7.43	2230
Distance River (std.)	0.00	1.00	-0.98	5.17	2230
Agricultural Suitability (std.)	0.00	1.00	-2.33	3.12	2230
Markets 1600-1618 (std.)	0.00	1.00	-0.14	20.95	2230
Public Construction 1600-1618 (std.)	0.00	1.00	-0.18	10.68	2230
Private Construction 1600-1618 (std.)	0.00	1.00	-0.13	13.21	2230
Troop Distance (ihs)	8.87	2.68	0.00	12.59	2230
Troop Distance Recentered (ihs)	-0.17	0.83	-7.47	3.88	2230
Military Notables	0.1	0.44	0.0	5.24	2230
Share Military	0.0	1.00	-0.4	16.23	2145
Share Invalid	0.0	1.00	-0.6	12.17	2145
Below-Median Life Exp.	0.5	0.50	0.0	1.00	1905

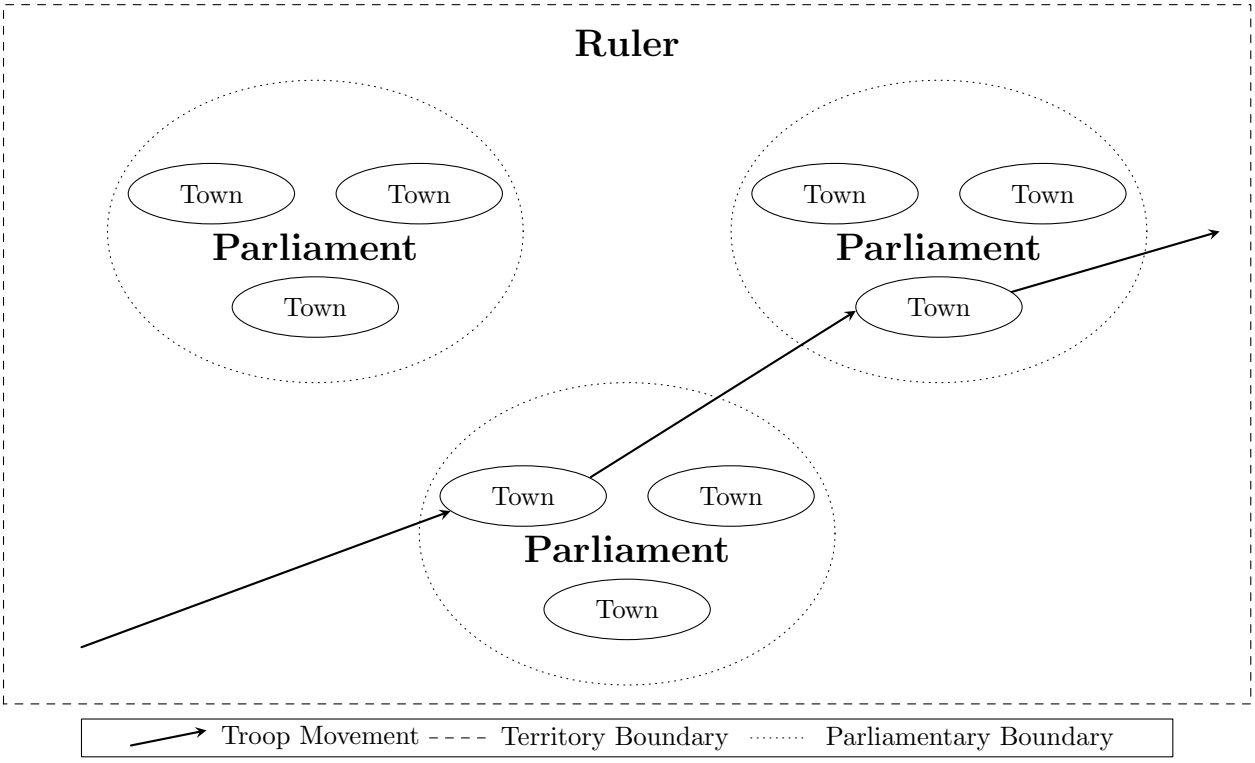
Note This table presents summary statistics. Observations are at the town level, with the number of towns listed in the table.

Figure A.1: Stylized Parliamentary Rule Structure



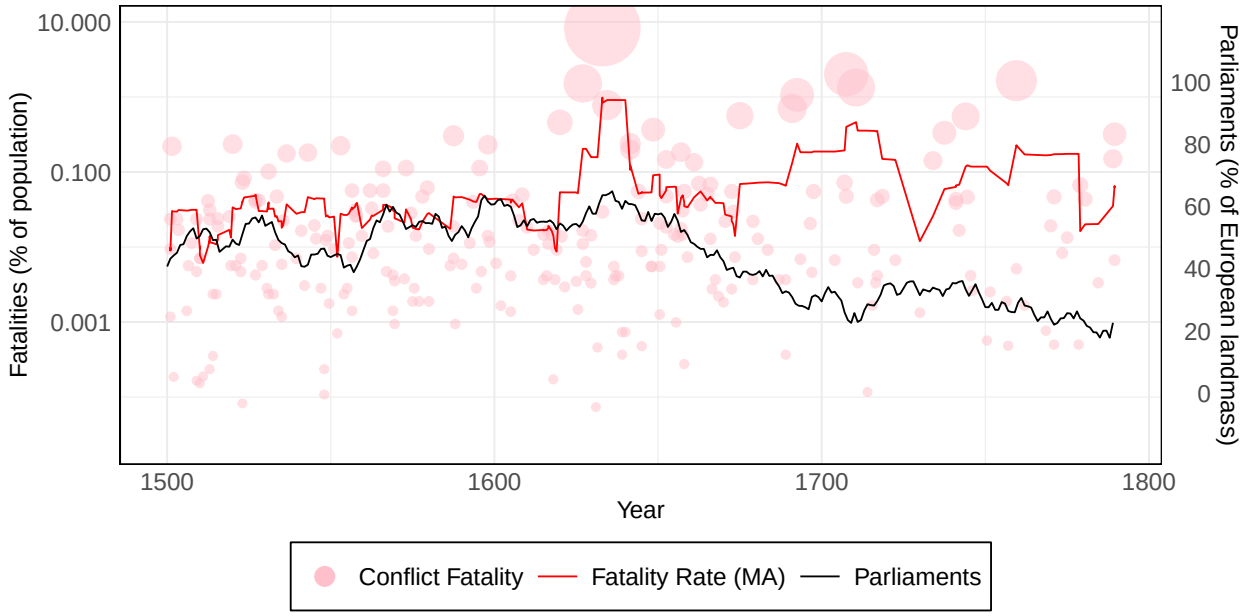
Note This plot shows a stylized overview over the structure of parliamentary rule. Towns belong to parliamentary regions. A ruler might ruler over multiple parliamentary regions.

Figure A.2: Stylized Parliamentary Rule Structure and Troop Movements



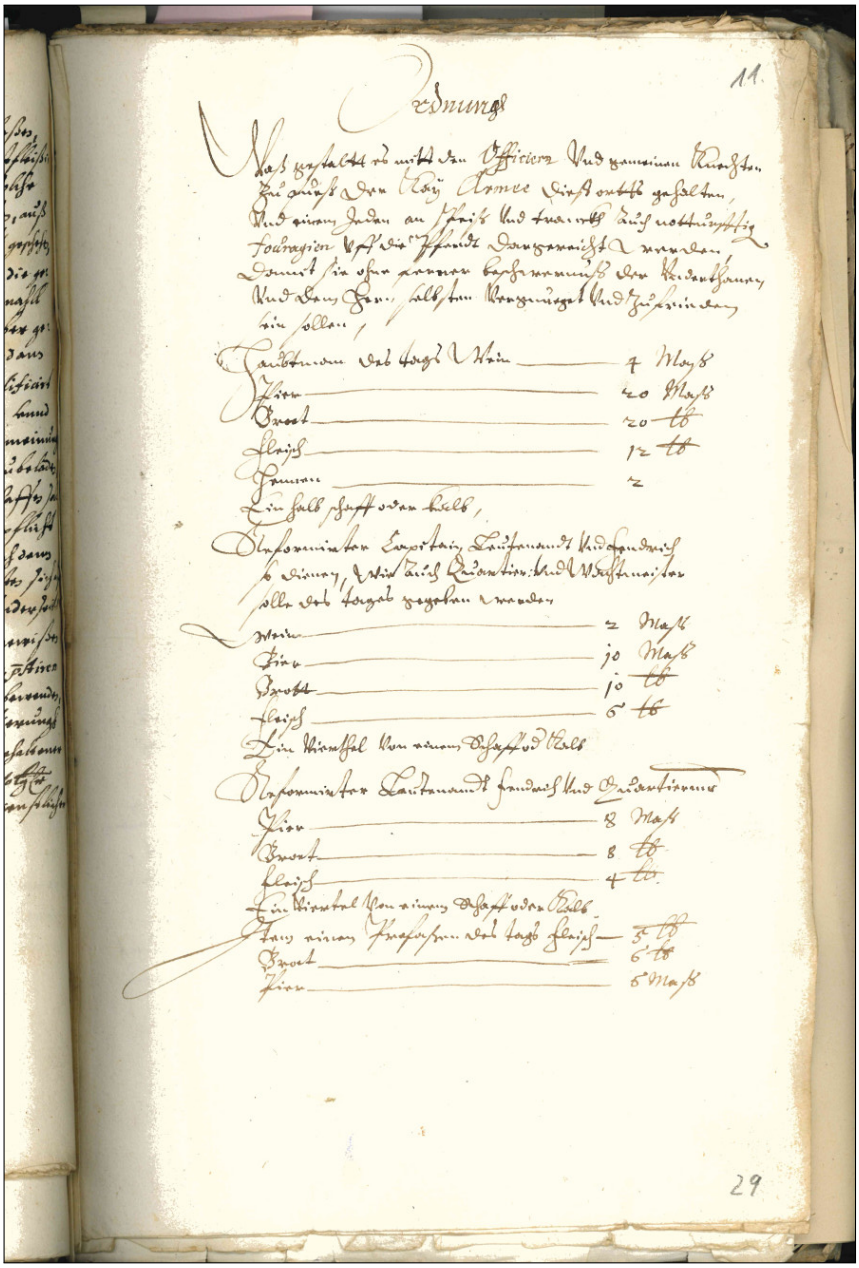
Note This plot complements Appendix Figure A.1 with troop movements. Troop movements, decided on by independent military leaders affiliated with a warring party, exposed individual towns to soldiers.

Figure A.3: War and Absolutism



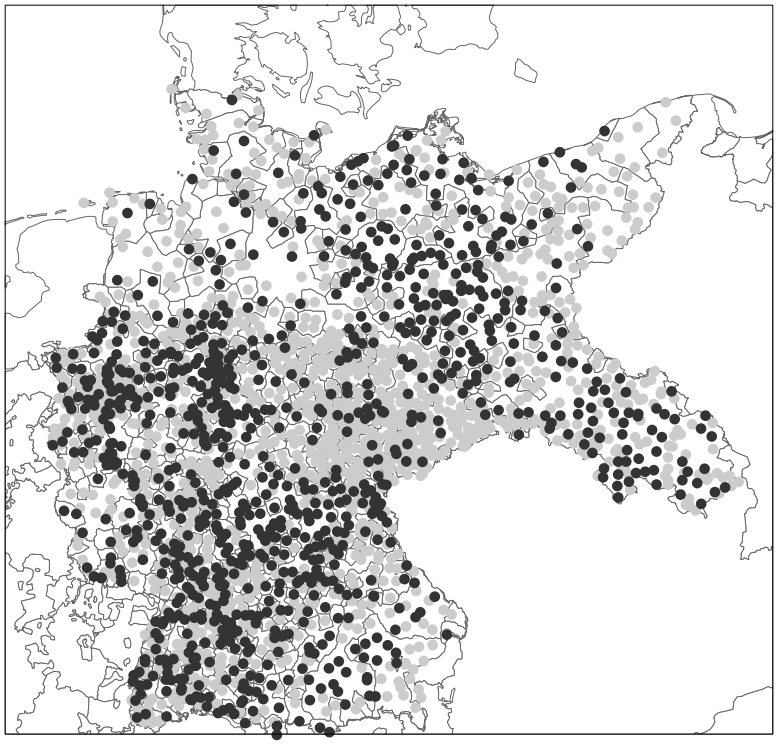
Note This figure plots the joint evolution of parliamentary governance and war, 1500–1800. The right y-axis reports the share of European land area governed by parliaments (Abramson and Boix, 2019). The left y-axis reports average conflict-related deaths per 1,000 world population per decade (Brecke, 1999).

Figure A.4: Tilly's Troop Requirements of the Town of Coesfeld, 1623



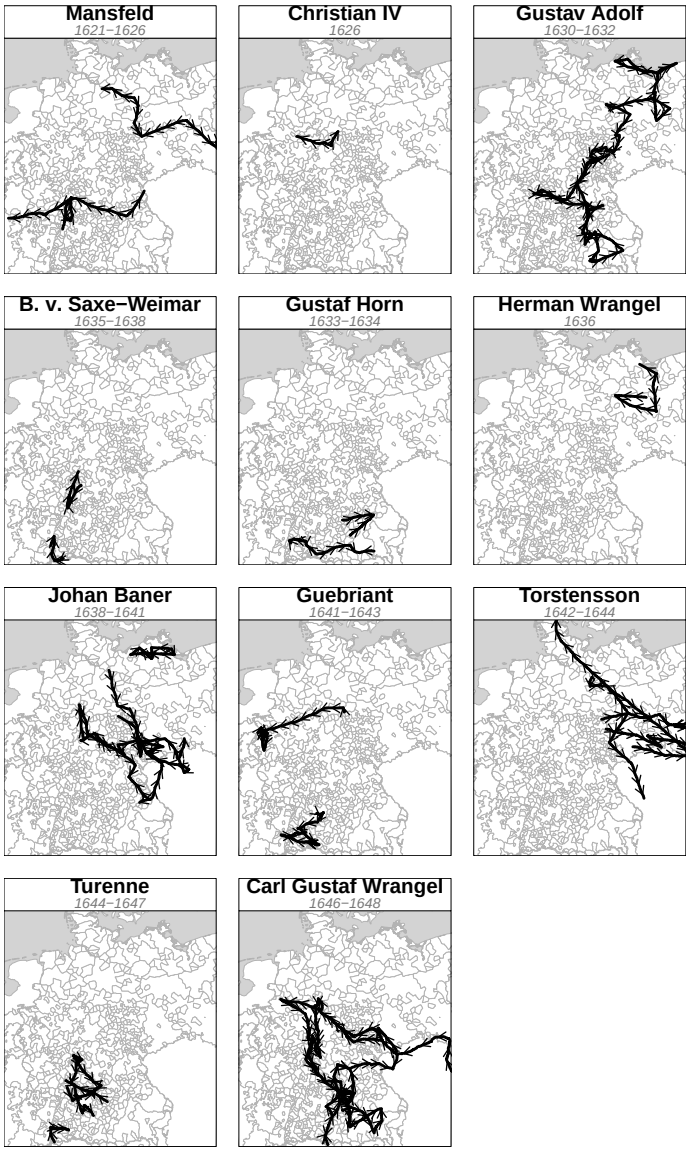
Note. Example page of Tilly's troop requirements of the town of Coesfeld, located in the Bishopric of Münster, in 1623. It lists nutrition demands separately for different military ranks.

Figure A.5: Troop Presence of Towns



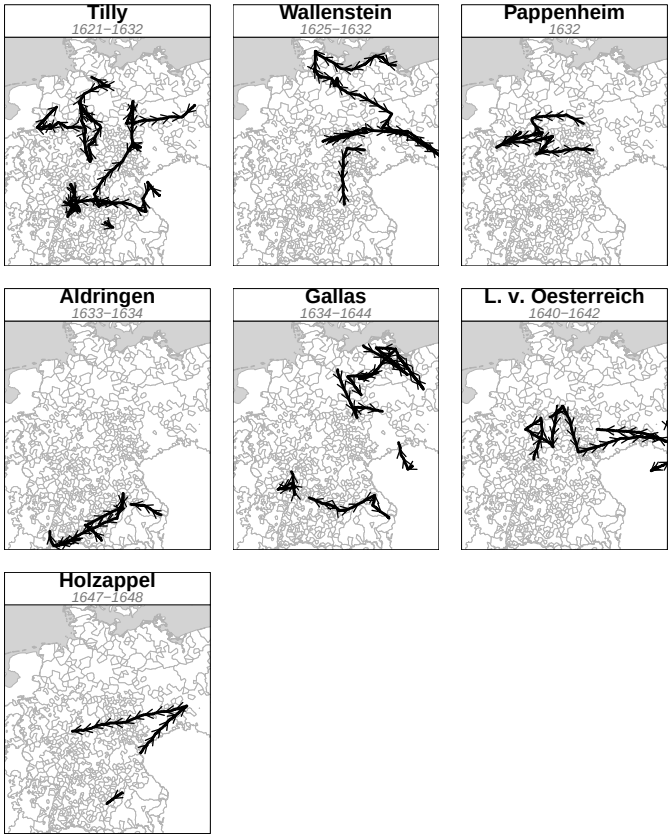
Note This map illustrates the troop presence data. Each point is the location of a town in our data. Highlighted points are towns that have an associated troop presence event. The base map shows parliamentary constituencies in the Holy Roman Empire.

Figure A.6: Major Campaign Paths of Anti-Imperial Military Commanders



Note This map plots the main Anti-Imperial coalition armies in the Thirty Years' War and traces their campaign trajectories. In each panel, black lines show a commander's campaign routes; repeated arrowheads indicate direction. Panel titles report the commander's name and years of active campaigning. Leaders typically recruited locally and began campaigning in spring. Details on the construction of the data are given in Section III.B.

Figure A.7: Major Campaign Paths of Imperial Military Commanders



Note This map plots the main Imperial coalition armies in the Thirty Years' War and traces their campaign trajectories. In each panel, black lines show a commander's campaign routes; repeated arrowheads indicate direction. Panel titles report the commander's name and years of active campaigning. Leaders typically recruited locally and began campaigning in spring. Details on the construction of the data are given in Section III.B.

Table A.2: Troop Presence (Balance)

	Troop Exposure				
	(1)	(2)	(3)	(4)	(5)
Distance Coast (std.)	-0.1239**				-0.1434**
	(0.0574)				(0.0589)
Latitude	-0.1055***				-0.1525***
	(0.0368)				(0.0394)
Longitude	-0.0120				0.0059
	(0.0106)				(0.0117)
Fortified in 1618		0.3298***			0.2224***
		(0.0750)			(0.0778)
On Trade Route in 1618			0.5543***		0.5360***
			(0.0574)		(0.0589)
Fiscal Chamber in 1618			0.1352**		0.1415**
			(0.0560)		(0.0565)
Ruggedness (std.)			-0.0119		-0.0839**
			(0.0299)		(0.0380)
Distance River (std.)			-0.0505*		-0.0160
			(0.0298)		(0.0331)
Agricultural Suitability (std.)			0.0065		0.0428
			(0.0302)		(0.0316)
Markets 1600-1618 (std.)				0.0240	0.0259
				(0.0259)	(0.0255)
Public Construction 1600-1618 (std.)				0.0318	0.0236
				(0.0266)	(0.0270)
Private Construction 1600-1618 (std.)				0.0272	0.0157
				(0.0271)	(0.0259)
Observations	2,230	2,230	2,230	2,230	2,230

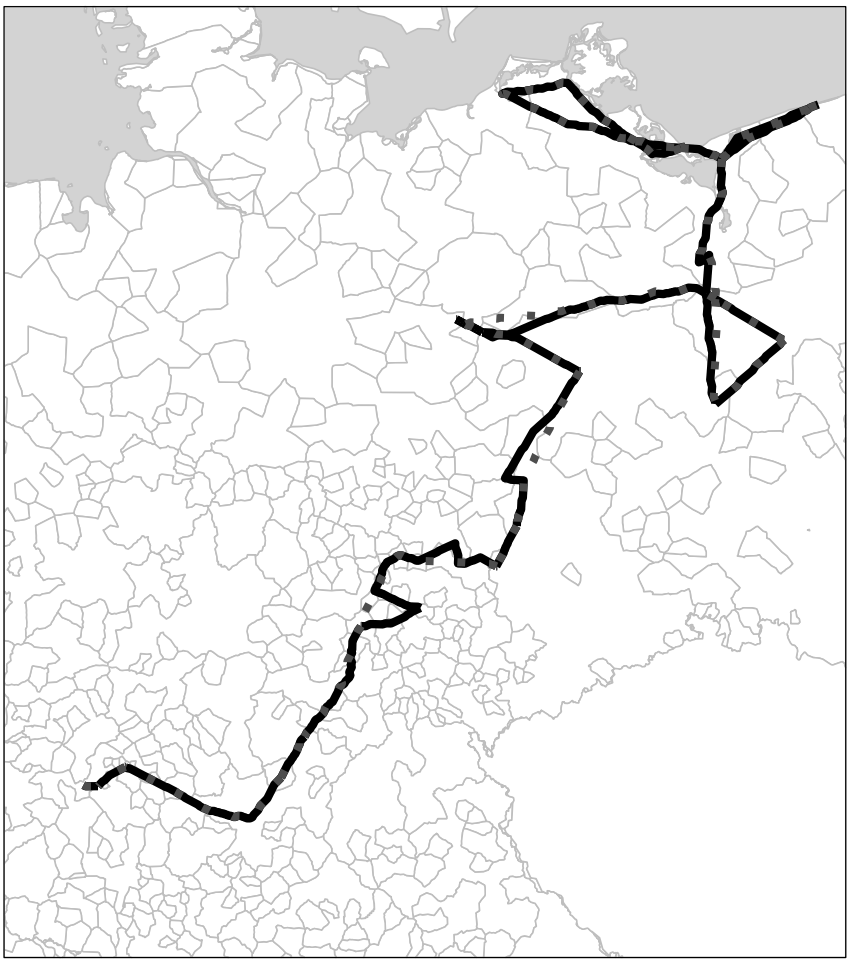
Note This table presents results of estimating the equation $Treated_i = X_i\gamma + \varepsilon_i$, with X_i denoting covariates, in a Probit model. Observations are at the town level, with the number of towns listed in the table. The dependent variable is an indicator of whether a town was exposed to troops during the Thirty Years' War. Standard errors are robust. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table A.3: Troop Leaders

War Party	Troop Leader	Campaign Years	Main Sources
Catholic League	Tilly	1618-1632	Kaiser (1999); Schmidt-Brentano (2022)
Catholic League	Johann von Aldringen	1632-1634	Brohm (1882); Schmidt-Brentano (2022)
Denmark	Christian IV	1625-1629	Lockhart (2014); Opel (1872); Schmidt-Brentano (2022)
France	Bernard of Saxe-Weimar	1635-1639	Droysen (1885); Schmidt-Brentano (2022)
France	Guébriant	1639-1643	Schmidt-Brentano (2022)
France	Turenne	1643-1648	Neuber (1869); Schmidt-Brentano (2022)
Imperial	Wallenstein	1625-1630; 1632-1633	Schmidt-Brentano (2022); Von Ranke (1869)
Imperial	Pappenheim	1632	Stadler (1991); Schmidt-Brentano (2022)
Imperial	Matthias Gallas	1634-1639; 1643-1645; 1646-1647	Höbelt (2016); Schmidt-Brentano (2022)
Imperial	Leopold Wilhelm	1639-1643; 1645-1646	Schmidt-Brentano (2022)
Imperial	Holzappel	1647-1648	Höfer (1997); Schmidt-Brentano (2022)
Protestant	Mansfeld	1618-1626	Gindley (1884); Anonymous (1622); Schmidt-Brentano (2022); Wedgwood (1969)
Sweden	Gustavus Adolphus	1630-1632	Dodge (1895); Roberts (1958); Geijer (1845)
Sweden	Gustav Horn	1632-1634	Geijer (1845); Lorentzen (1894)
Sweden	Herman Wrangel	1634-1636	Geijer (1845); Lorentzen (1894)
Sweden	Johan Banér	1637-1641	Geijer (1845); Schmidt-Brentano (2022)
Sweden	Lennart Torstensson	1641-1644	Merian (1700); Geijer (1845); Lorentzen (1894)
Sweden	Carl Gustaf Wrangel	1644-1648	Merian (1700); Steckzén (1920); Geijer (1845); Lorentzen (1894)

Note This table shows the war parties, the main troop leaders, their campaigning years in service of the war party, and the sources we consult to reconstruct their movements. Details on the construction of the data are given in Section III.B.

Figure A.8: Least-Cost Campaign Path vs. Actual Campaign Path



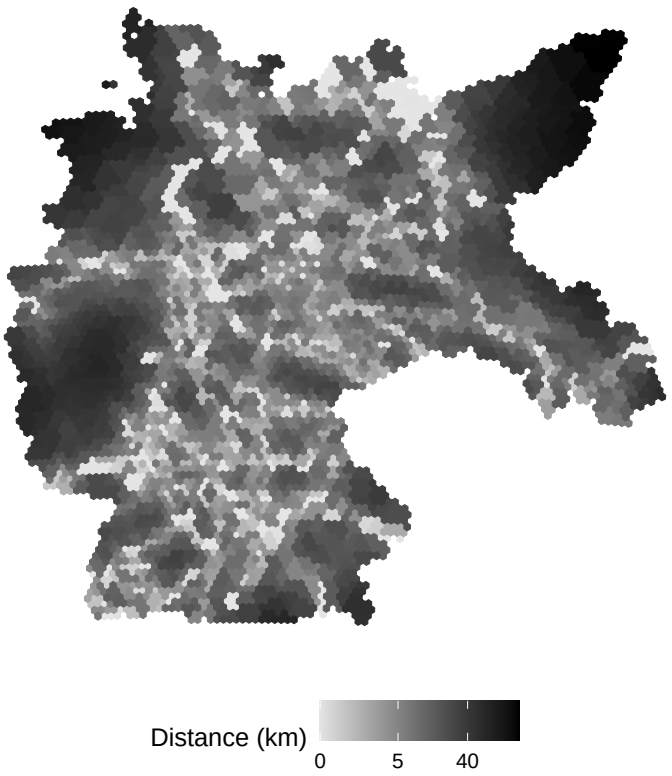
Note This map shows an illustrative example of the least-cost path between fortified towns, compared to the actual campaign path, in the context of the campaigns depicted in Figure I. Details on the construction of least-cost paths and campaign paths are given in Section III.B.

Table A.4: Allied Troop Presence and Destruction

	Destruction (1)	Violence (2)	Below-Median Life Exp. (3)	Migrated (4)
Allied Presence	-0.0843***	-0.0117***	-0.1003***	-0.1076***
	(0.0296)	(0.0043)	(0.0231)	(0.0383)
Observations	863	863	181	181
R^2	0.01	0.00	0.01	0.02
Outcome Def.	(0/1)	(0/1)	(0/1)	(0/1)
Outcome Mean	0.56	0.01	0.49	0.42
Standard Errors	200 km	200 km	200 km	200 km

Note This table presents results from estimating $Destruction_i = \beta SameAlliance_i + \varepsilon_i$ in a sample of towns with $TroopExposure_i = 1$, where $Destruction_i$ and $SameAlliance_i$ are described in the main text. Observations are at the town level, with the number of towns indicated in the table. Standard errors are indicated in the table. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Figure A.9: Instrument (Expected)



Note This map shows the spatial distribution of the average instrument from 1,000 counterfactuals. Details on the construction of counterfactuals are given in Section III.B and Appendix Section B.3.

Table A.5: Allied Troop Presence and Destruction (Interaction)

	Below-Median Life Exp. (1)	Migrated (2)
Troop Presence	0.0801	0.1261**
	(0.0500)	(0.0493)
Troop Presence × Alliance	-0.1003***	-0.1076***
	(0.0243)	(0.0394)
Observations	449	449
R^2	0.00	0.02
Outcome Def.	(0/1)	(0/1)
Outcome Mean	0.48	0.39
Standard Errors	200 km	200 km

Note This table presents results from estimating $Destruction_i = \beta TroopExposure_i + \alpha TroopExposure_i \times SameAlliance_i + \varepsilon_i$, where $Destruction_i$ and $SameAlliance_i$ are described in the main text. Observations are at the town level, with the number of towns indicated in the table. Standard errors are indicated in the table. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table A.6: Troop Presence and Coordination (Subset)

	Parliament Eliminated	Ruler Taxes	Military Personnel
	(1)	(2)	(3)
Troop Presence	0.0770*	0.0386**	0.0029
	(0.0431)	(0.0186)	(0.0124)
Troop Presence × Alliance	0.0369	0.0430*	0.0736***
	(0.0380)	(0.0237)	(0.0210)
Standard-Errors	Constituency		City
R^2	0.71	0.57	0.45
Observations	622,340	413,250	622,340
City Units	2,146	1,425	2,146
Outcome Mean	0.30	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

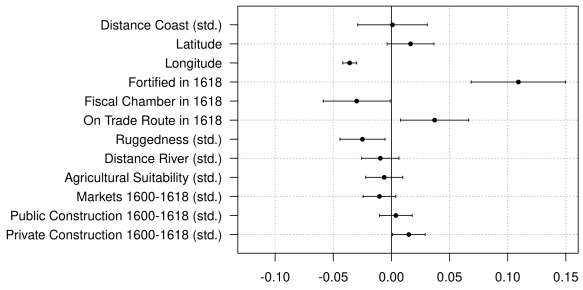
Note This table presents results of estimating equation (1), augmented with an indicator of whether the troop presence occurred in the same military alliance. The sample drops towns where military and local population were under the same territory. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table A.7: Troop Presence and Coordination (Mechanism Outcomes)

	Ideology		Repression	Co-optation
	Ruler Prints	Ruler Portraits	Infringement Count	Nobility in the Military
	(1)	(2)	(3)	(4)
Troop Presence	0.0119	0.0081	0.0151	0.0024
	(0.0233)	(0.0132)	(0.0195)	(0.0061)
Troop Presence × Alliance	0.0699**	0.0442**	0.0735***	0.0183**
	(0.0310)	(0.0215)	(0.0246)	(0.0080)
R^2	0.57	0.51	0.61	0.27
Observations	646,700	646,700	646,700	646,700
City Units	2,230	2,230	2,230	2,230
Outcome Mean	0.05	0.02	0.14	0.02
Outcome Def.	(ihs)	(ihs)	(ihs)	(0/1)
City FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓
Cluster	City	City	City	City

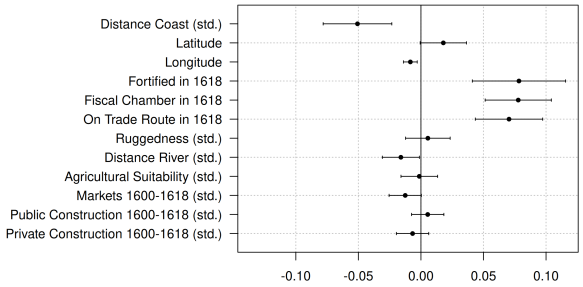
Note. This table presents results of estimating equation (1), with an additional interaction term if troops were allied with the ruler. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) the inverse hyperbolic sine of the instances of repression of local institutions in town i and year t, (2) the inverse hyperbolic sine of the number of ruler prints with a militaristic title from town i and year t, (3) the inverse hyperbolic sine of the number of portraits of the ruler state in i in year t, and (4) the share of nobility from town i in year t that is also in the military. Standard errors are clustered at the town level. *, **, and *** denote significance at the 10, 5, and 1 percent levels, respectively.

Figure A.10: High Court Cases (Balance)



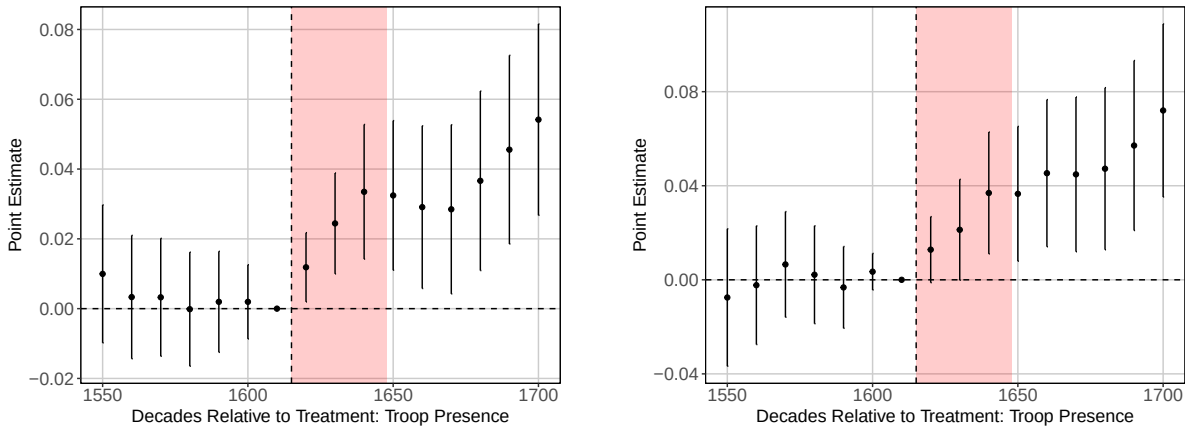
Note This graphs presents results of estimating the equation $Court_i = X_i\gamma + \varepsilon_i$, with X_i denoting covariates, in a Probit model. Observations are at the town level, with the number of towns listed in the table. The dependent variable is an indicator of whether a town litigated at the Imperial Court between 1600 and 1618.

Figure A.11: Town Alliance (Balance)



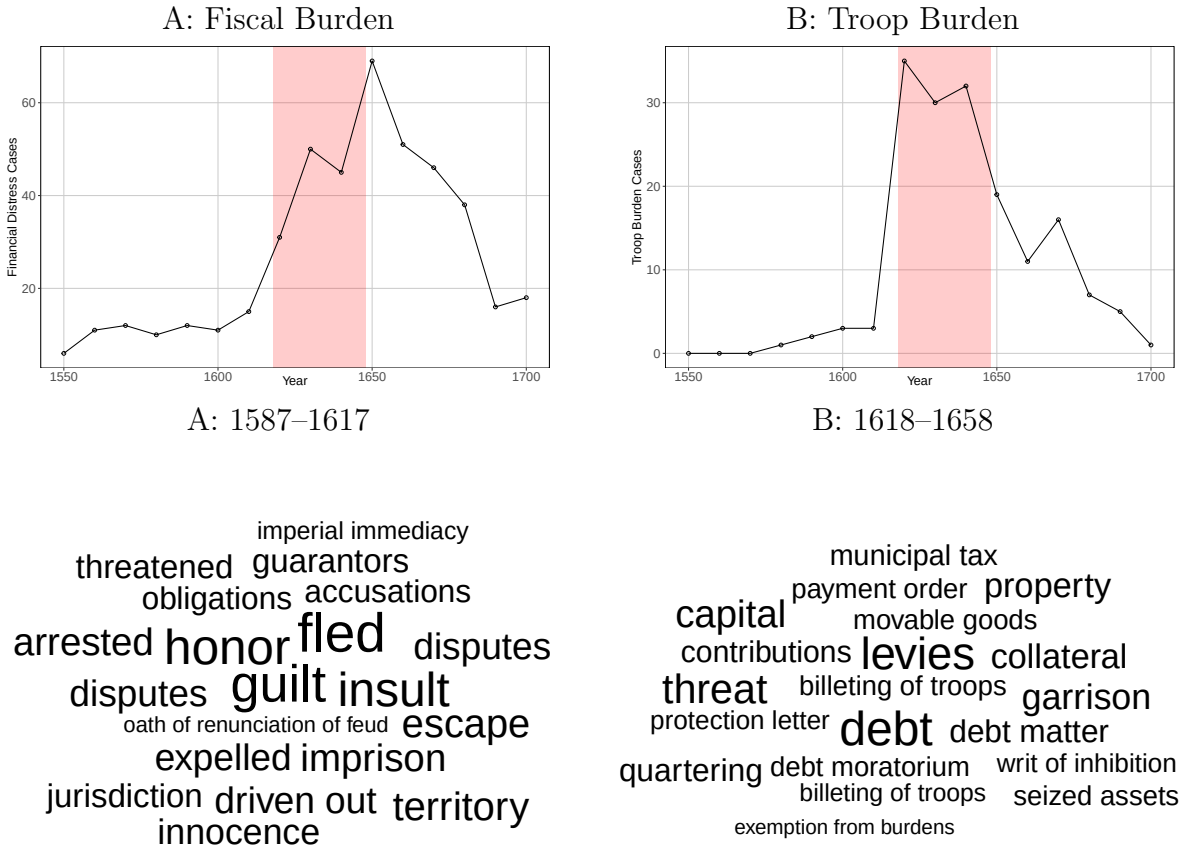
Note This graphs presents results of estimating the equation $Court_i = X_i\gamma + \varepsilon_i$, with X_i denoting covariates, in a Probit model. Observations are at the town level, with the number of towns listed in the table. The dependent variable is an indicator of whether a town litigated at the Imperial Court between 1600 and 1618.

Figure A.12: Complex and Simple Taxes



Note This graphs plots the evolution of complex and simple taxes in our data, following the classification of Becker et al. (2025).

Figure A.13: High Court Cases



Note This figure shows the evolution of Imperial Court cases concerning fiscal and troop burdens before and after the Thirty Years' War (Panels A and B), as well as word clouds of cases at the High Imperial Court in 1587–1617 and 1618–1658 (Panels C and D).

Table A.8: Troop Presence and Militarization in the Nineteenth Century (IV

	Military Notables (1)	Share Military (2)	Below-Median Life Exp. (3)	Share Invalid (4)
Troop Presence	0.8872***	2.325***	0.5035***	1.951***
	(0.2535)	(0.6477)	(0.1622)	(0.5700)
Observations	2,230	2,145	1,905	2,145
IV	✓	✓	✓	✓
Outcome Def.	(cont.)	(std.)	(0/1)	(std.)
Outcome Mean	0.10	0.00	0.50	0.00
Standard Errors	Robust	Robust	Robust	Robust

Note This table presents results of estimating equation (3), using an instrumental variable based on the distance of a town to the closest campaign least-cost path. Standard errors are indicated in the table *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

B Robustness Checks

B.1 Baseline Empirical Strategy Robustness

Section IV.B suggests a causal link between the war and shifts in state organization. We take a number of steps to demonstrate the robustness of this link. First, we directly account for a broad range of potential strategic confounders in our baseline estimates. In Appendix Table B.1, we flexibly control for geographic and economic covariates, such as the presence of a fortification or the presence of a trade route in 1618.[1] Our results are robust to accounting for these town characteristics, which suggests that time-varying unobserved shocks do not confound our estimation.

Second, we demonstrate that our results hold up when considering variation *within* states: since our treatment and outcomes are determined at the local level (cf. Appendix Figure A.2), and since some towns change territory over time, Appendix Table B.2 additionally includes territory fixed effects. This does not qualitatively affect our results. We note that our results are not driven solely by Prussia or by any other single territory, as shown in Appendix Figure B.1. In Appendix Table B.7, we show that our findings hold when we exclude all locations that never convened a parliament.

Third, we present a number of strategies to construct more comparable control groups. Taking a holistic approach to military targeting, we include all of our economic and geographic town-level covariates to estimate treatment propensity scores via Probit, which are then used for nearest-neighbor matching. Appendix Table B.3 shows that the matching is effective in establishing covariate balance across treated and untreated towns.[2] In Appendix Table B.4, we demonstrate that our results are robust to estimating equation (1) in this matched sample. The method of calculating propensity scores does not drive our results: results are qualitatively unchanged if we use full instead of nearest-neighbor matching (Appendix Table B.5), or draw on Euclidean distance in the nearest-neighbor match (Appendix Table B.6). To account for targeting more directly, Section II suggests that the primary military objective was to take fortified towns, while the exposure of non-fortified towns was more incidental. In Appendix Table B.8, we repeat our main analysis using just the sample of non-fortified towns, which does not affect our results. In the same spirit, and to the same effect, Appendix Table B.9 excludes from our sample the places featured in maps compiled by the Swedish military during the Thirty Years War.[3]

Fourth, we examine the robustness of our results to the measurement of our outcomes. Appendix Table B.10 shows the relationship between troop presence and parliament

[1] Parallel to the balance exercises in Appendix Table A.2, our covariates are distance to the coast (std.), latitude, longitude, an indicator of whether a town was fortified in 1618, an indicator of whether a town was on a trade route in 1618, an indicator of whether a town was in the jurisdiction of a fiscal Chamber in 1618, ruggedness (std.), distance to the closest navigable river (std.), agricultural suitability (std.), the number of markets added in 1600-1618 (std.), and public and private construction events 1600-1618 (std.), all interacted with $Post1618_{it}$.

[2] Using the standardized mean difference as a metric, Appendix Figure B.3 further underlines covariate balance in the matched sample.

[3] We extract this information from Riksarkivet (2024). Swedish military success and planning crucially hinged on maps of strategic targets. During his advance into central Germany, the Swedish king wrote to Stockholm on July 2, 1631: "All our maps stop here," and included orders to send the best map makers from Sweden to the German mainland in order to collect and make maps of target towns (Gäfvert, 1998, p. 309).

elimination obtains when we aggregate our panel to the constituency-year level, considering the share of treated towns in a constituency as our treatment. Appendix Tables B.12 and B.13, show restrictive standard errors for the remaining two outcomes — direct ruler taxes and military personnel. Additionally, we consider the use of the inverse hyperbolic sine of military personnel. Appendix Table B.14 implements robustness checks suggested by Chen and Roth (2024). This does not affect the statistical significance of our results.

Finally, we consider as treatment the staggered timing of the first town-level exposure event, instead of the interaction with $Post1618_t$. We omit from our sample all treated towns for which we do not know the exact exposure year and re-estimate equation (1) instead with the dummy $Exposure_{it}$ if town i has had troop presence in any $t' \geq t$. Appendix Table B.15 shows that our results are robust to this specification.[4]

Table B.1: Troop Presence and Absolutism (Controls)

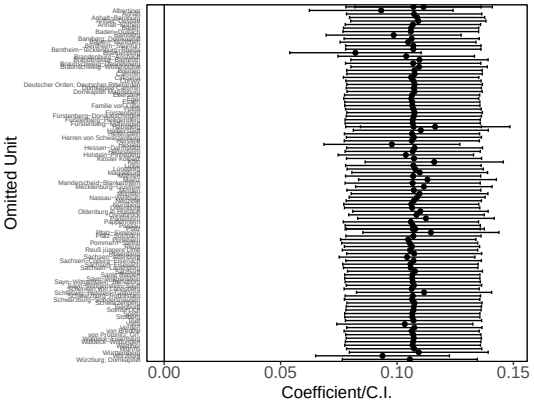
	Parliament Eliminated	Ruler Taxes	Military Personnel
	(1)	(2)	(3)
Troop Presence	0.1025***	0.0495***	0.0305***
	(0.0352)	(0.0131)	(0.0114)
Standard-Errors	Constituency		City
R^2	0.72	0.58	0.45
Observations	646,700	422,820	646,700
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City
Controls	✓	✓	✓

Note This table presents results of estimating equation (1), including controls. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Controls are distance to the coast (std.), latitude, longitude, an indicator of whether a town was fortified in 1618, an indicator of whether a town was on a trade route in 1618, an indicator of whether a town was in the jurisdiction of a fiscal Chamber in 1618, ruggedness (std.), distance to the closest navigable river (std.), agricultural suitability (std.), the number of markets added in 1600-1618 (std.), and public and private construction events 1600-1618 (std.), all interacted with $Post1618_{it}$. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

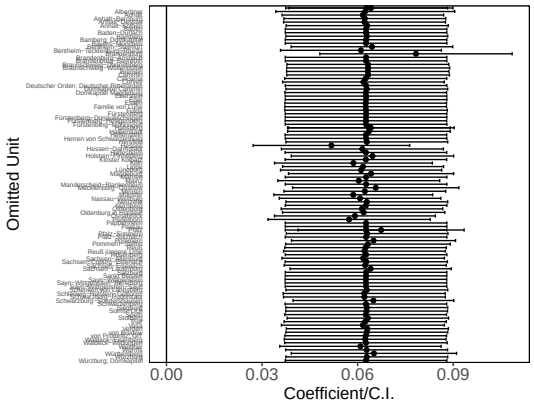
[4]Our results also hold when we instead use methodologies that are robust to heterogeneous treatment effects (De Chaisemartin and d'Haultfœuille, 2020).

Figure B.1: Troop Presence and Absolutism (Leave-Out Plots – Territory)

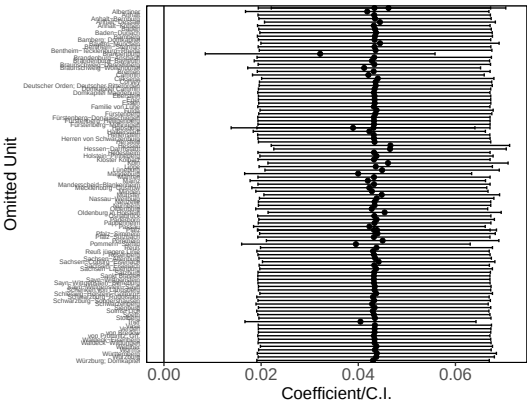
A: Parliament Eliminated



B: Ruler Taxes



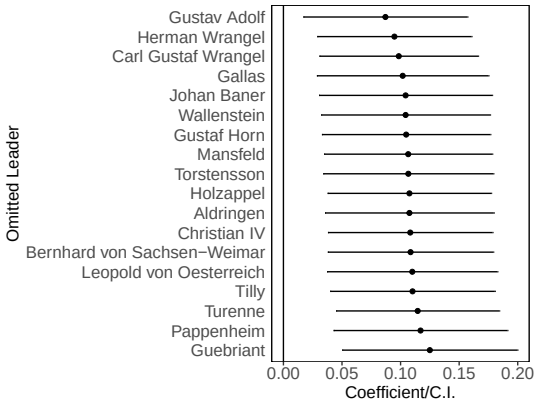
C: Military Personnel



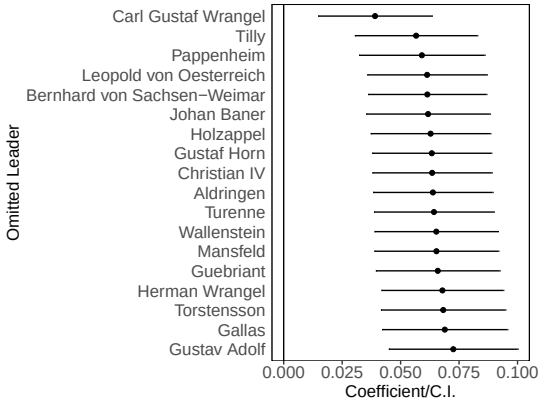
Note This plot shows results of estimating equation (1), with 95 percent confidence intervals, leaving out one territory that ever convened a parliament at a time. Observations are at the town-year level. The full sample comprises 290 years and 2,230 towns. The dependent variables are (A) a binary variable of whether the parliament that represented town i has been eliminated in year t, (B) a binary variable of whether town i has records of direct ruler taxes in year t, and (C) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level.

Figure B.2: Troop Presence and Absolutism (Leave-Out Plots – Leader)

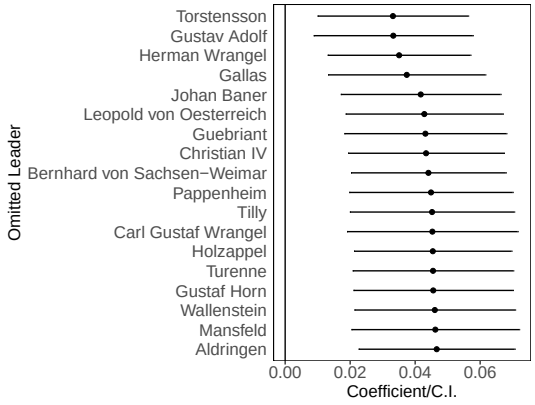
A: Parliament Eliminated



B: Ruler Taxes



C: Military Personnel



Note This plot shows results of estimating equation (1), with 95 percent confidence intervals, leaving out one leader at a time. Each troop presence event is assigned to the nearest troop movement of a military leader. Observations are at the town-year level. The full sample comprises 290 years and 2,230 towns. The dependent variables are (A) a binary variable of whether the parliament that represented town i has been eliminated in year t, (B) a binary variable of whether town i has records of direct ruler taxes in year t, and (C) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level.

Table B.2: Troop Presence and Absolutism (Territory Fixed Effects)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.0907***	0.0648***	0.0527***
	(0.0325)	(0.0129)	(0.0123)
Standard-Errors	Constituency		City
R^2	0.78	0.58	0.46
Observations	646,700	422,820	646,700
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Territory FEs	✓	✓	✓
Cluster	City	City	City
Territory FEs	✓	✓	✓

Note This table presents results of estimating equation (1), including territory fixed effects. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.3: Troop Presence (Balance, Matched Sample)

	Troop Exposure				
	(1)	(2)	(3)	(4)	(5)
Distance Coast (std.)	-0.0523				-0.0564
	(0.0632)				(0.0648)
Latitude	-0.0503				-0.0443
	(0.0406)				(0.0433)
Longitude	0.0082				0.0143
	(0.0120)				(0.0131)
Fortified in 1618		0.1149			0.1337
		(0.0793)			(0.0818)
On Trade Route in 1618			-0.0182		-0.0270
			(0.0688)		(0.0703)
Fiscal Chamber in 1618			0.0544		0.0674
			(0.0616)		(0.0621)
Ruggedness (std.)			0.0334		0.0299
			(0.0332)		(0.0440)
Distance River (std.)			-0.0087		-0.0124
			(0.0333)		(0.0370)
Agricultural Suitability (std.)			-0.0169		-0.0111
			(0.0322)		(0.0344)
Markets 1600-1618 (std.)				0.0288	0.0290
				(0.0291)	(0.0288)
Public Construction 1600-1618 (std.)				0.0281	0.0273
				(0.0299)	(0.0304)
Private Construction 1600-1618 (std.)				0.0078	0.0042
				(0.0286)	(0.0292)
Observations	1,726	1,726	1,726	1,726	1,726

Note This table presents results of estimating the equation $Treated_i = X_i\beta + \varepsilon_i$, with X_i denoting covariates, in a Probit model. Observations are at the town level. The sample is a matched sample as described in Appendix Section B.1. The number of towns is indicated in the table. The dependent variable is an indicator of whether a town was exposed to troops during the Thirty Years' War. Standard errors are robust. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Figure B.3: Troop Presence (Balance, Full Sample and Matched Sample)



Note This graph shows the balance of pre-war observables with respect to the treatment, in the full (white dots) and matched (black dots) sample. The matched sample is obtained via Probit nearest-neighbor matching using distance to the coast (std.), latitude, longitude, an indicator of whether a town was fortified in 1618, an indicator of whether a town was on a trade route in 1618, an indicator of whether a town was in the jurisdiction of a fiscal Chamber in 1618, ruggedness (std.), distance to the closest navigable river (std.), agricultural suitability (std.), the number of markets added in 1600-1618 (std.), and public and private construction events 1600-1618 (std.).

Table B.4: Troop Presence and Absolutism (Nearest-Neighbor Matching)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.1004***	0.0552***	0.0388***
	(0.0343)	(0.0139)	(0.0133)
Standard-Errors	Constituency		City
R^2	0.70	0.56	0.44
Observations	500,540	319,580	500,540
Matched Sample	✓	✓	✓
City Units	1,726	1,102	1,726
Outcome Mean	0.31	0.08	0.07
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1), in a matched sample. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. The matched sample is obtained via Probit distance nearest-neighbor matching using all town covariates in Table B.3. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.5: Troop Presence and Absolutism (Full Matching)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.1000***	0.0517***	0.0413***
	(0.0381)	(0.0165)	(0.0138)
Standard-Errors	Constituency		City
R^2	0.70	0.56	0.43
Observations	646,700	422,820	646,700
Matched Sample	✓	✓	✓
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1), in a matched sample. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t. (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. The matched sample is obtained via Probit distance full matching using all covariates in Table B.3. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.6: Troop Presence and Absolutism (Euclidean Distance Matching)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.0947***	0.0504***	0.0451***
	(0.0292)	(0.0142)	(0.0129)
Standard-Errors	Constituency		City
R^2	0.70	0.57	0.45
Observations	500,540	300,730	500,540
Matched Sample	✓	✓	✓
City Units	1,726	1,037	1,726
Outcome Mean	0.32	0.08	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1), in a matched sample. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. The matched sample is obtained via Euclidean distance nearest-neighbor matching using all covariates in Table B.3. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.7: Troop Presence and Absolutism (Ever Convened Parliament)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.1153***	0.0616***	0.0452***
	(0.0394)	(0.0135)	(0.0134)
Standard-Errors	Constituency		City
R^2	0.57	0.56	0.44
Observations	564,050	380,770	564,050
City Units	1,945	1,313	1,945
Outcome Mean	0.19	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1), in a sample that only includes town which ever convened a parliament. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.8: Troop Presence and Absolutism (Non-Fortified)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.1067***	0.0564***	0.0215**
	(0.0375)	(0.0133)	(0.0107)
Standard-Errors	Constituency		City
R^2	0.70	0.58	0.38
Observations	551,000	353,220	551,000
City Units	1,900	1,218	1,900
Outcome Mean	0.29	0.06	0.03
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

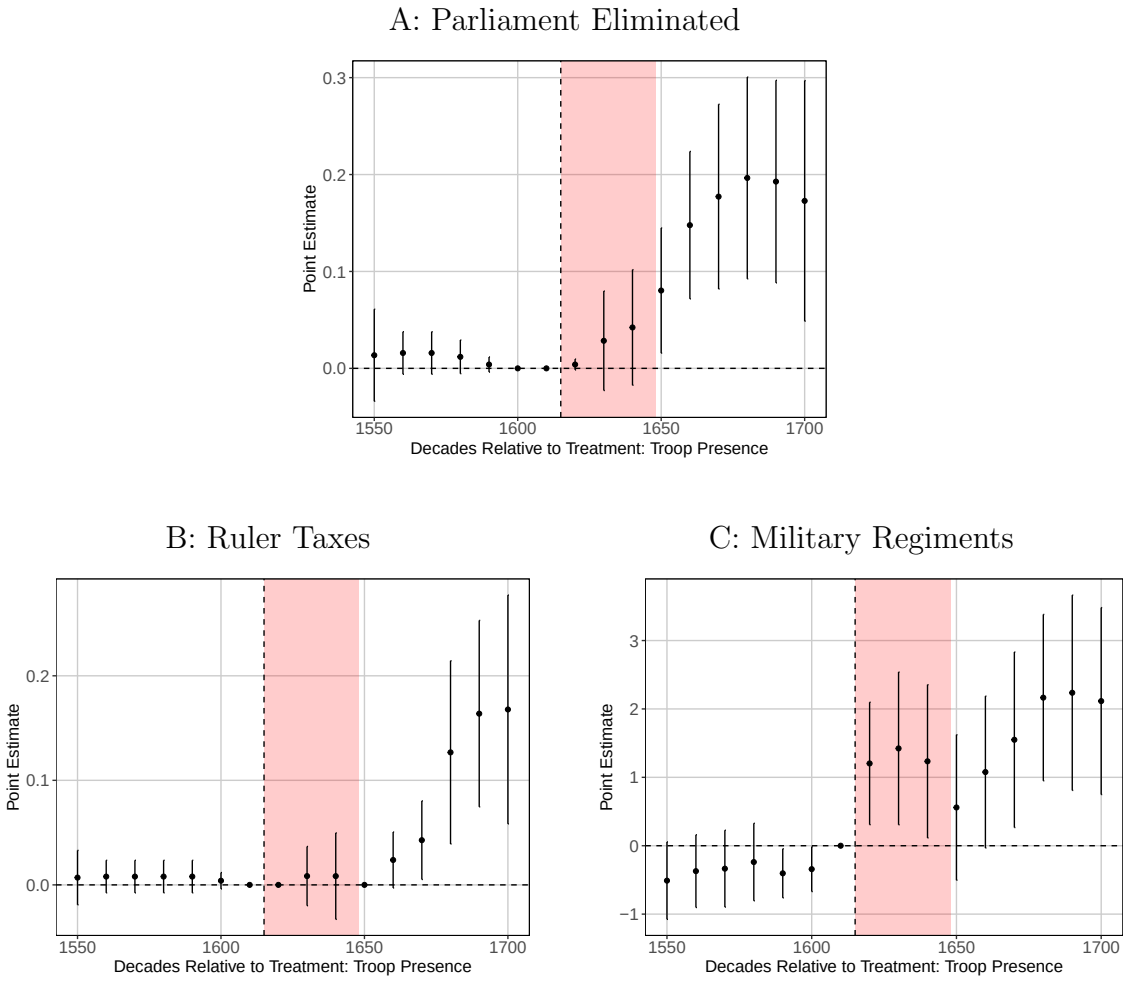
Note This table presents results of estimating equation (1), in a sample that omits fortified towns as of 1618. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.9: Troop Presence and Absolutism (Not in Swedish Plans)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.1074***	0.0688***	0.0245**
	(0.0360)	(0.0137)	(0.0108)
Standard-Errors	Constituency		City
R^2	0.71	0.57	0.40
Observations	602,910	390,340	602,910
City Units	2,079	1,346	2,079
Outcome Mean	0.29	0.07	0.04
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1), in a sample that omits towns featured in Swedish military plans. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Figure B.4: Troop Presence and Absolutism (Event Studies, Parliamentary Constituency-Level)



Note This plot shows results of estimating the event study regression in equation (2) at the level of parliamentary constituencies. Observations are at the constituency-year level. The independent variable is an indicator whether an above median share of towns in the parliamentary constituency j were exposed to troops during the Thirty Years' War. The dependent variables are (A) a binary variable of whether parliamentary constituency j has been eliminated in year t, (B) a binary variable of whether parliamentary constituency$j$ has records of ruler taxes in year t (as recorded in Härter and Stolleis (2023), and (C) the inverse hyperbolic sine of troops (regiments) in parliamentary constituency j active in year t (as documented in Tessin (1986)). The area shaded in red indicates the duration of the war. Standard errors are clustered at the parliamentary constituency level.

Table B.10: Troop Presence and Absolutism (Parliamentary Constituency-Level)

	Parliament Eliminated	Active Troop Size	Uniform Indirect Tax
	(1)	(2)	(3)
Troop Presence ihs	0.0747***	1.453***	0.0636***
	(0.0190)	(0.1782)	(0.0145)
R^2	0.78	0.58	0.44
Observations	50,170	50,170	50,170
Constituency Units	173	173	173
Outcome Mean	0.38	2.68	0.09
Outcome Def.	(0/1)	(ihs)	(0/1)
Constituency FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	Constituency	Constituency	Constituency

Note This plot shows results of estimating the event study regression in equation (2) at the level of parliamentary constituencies. Observations are at the constituency-year level. The independent variable is an indicator whether an above median share of towns in the parliamentary constituency j were exposed to troops during the Thirty Years' War. The dependent variables are (A) a binary variable of whether parliamentary constituency j has been eliminated in year t, (B) a binary variable of whether parliamentary constituency$j$ has records of ruler taxes in year t (as recorded in Härter and Stolleis (2023), and (C) the inverse hyperbolic sine of troops (regiments) in parliamentary constituency j active in year t (as documented in Tessin (1986)). The area shaded in red indicates the duration of the war. Standard errors are clustered at the parliamentary constituency level.

Table B.11: Troop Presence and Parliament Elimination (Standard Errors)

	Parliament Eliminated					
	(1)	(2)	(3)	(4)	(5)	(6)
Troop Presence	0.1069***	0.1069***	0.1069***	0.1069***	0.1069***	0.1069***
	(0.0148)	(0.0356)	(0.0244)	(0.0305)	(0.0414)	(0.0327)
Standard-Errors	City	Constituency	Grid Cell	50km	100km	200km
R^2	0.70	0.70	0.70	0.70	0.70	0.70
Observations	646,700	646,700	646,700	646,700	646,700	646,700
Number of Towns	2,230	2,230	2,230	2,230	2,230	2,230
Outcome Mean	0.29	0.29	0.29	0.29	0.29	0.29
Town FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓

Note This table presents results of estimating equation (1), using different standard errors. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variable is a binary variable of whether the parliament that represented town i has been eliminated in year t. Standard errors are clustered at the level of (1) towns, (2) constituencies, or Conley standard errors with a cutoff of (3) 50km, (4) 100km, or (5) 200km. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.12: Troop Presence and Ruler Taxes (Standard Errors)

	Ruler Taxes					
	(1)	(2)	(3)	(4)	(5)	(6)
Troop Presence	0.0626***	0.0626***	0.0626***	0.0626***	0.0626**	0.0626**
	(0.0129)	(0.0176)	(0.0212)	(0.0213)	(0.0295)	(0.0313)
Standard-Errors	City	Constituency	Grid Cell	50km	100km	200km
R^2	0.56	0.56	0.56	0.56	0.56	0.56
Observations	422,820	422,820	422,820	422,820	422,820	422,820
Number of Towns	1,458	1,458	1,458	1,458	1,458	1,458
Outcome Mean	0.07	0.07	0.07	0.07	0.07	0.07
Town FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓

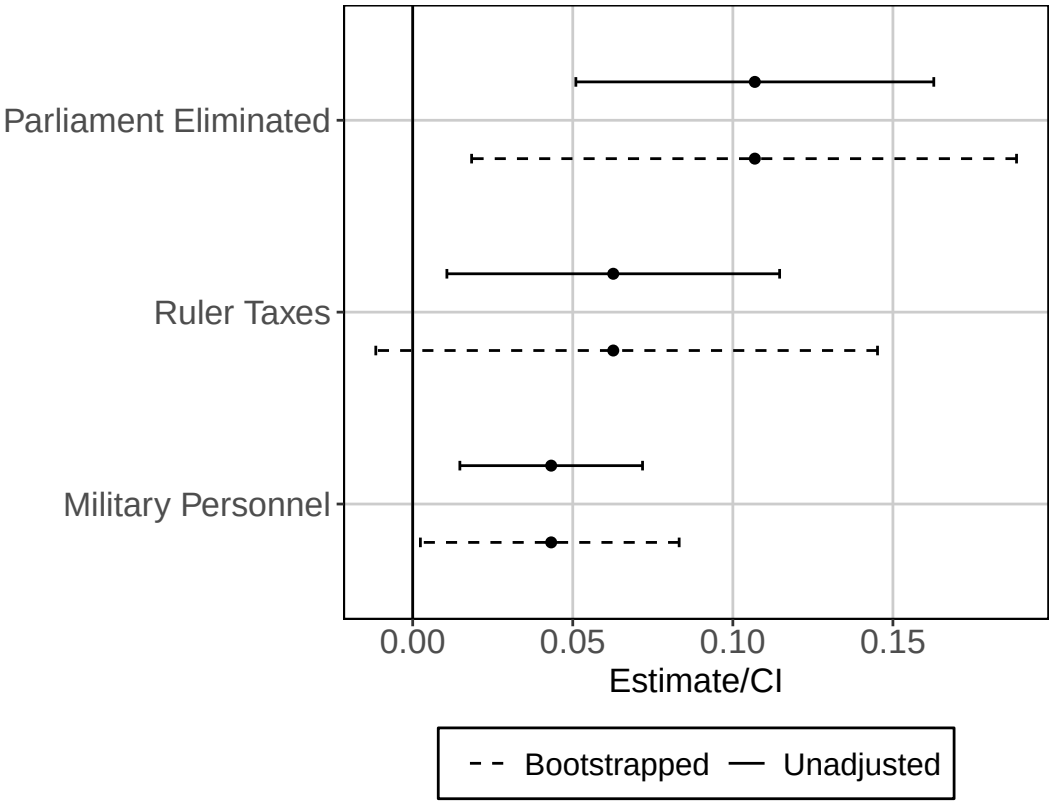
Note This table presents results of estimating equation (1), using different standard errors. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variable is a binary variable of whether town i has a record of direct ruler taxes in year t. Standard errors are clustered at the level of (1) towns, (2) constituencies, or Conley standard errors with distance cutoffs as indicated in columns (3-5). *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.13: Troop Presence and Military Personnel (Standard Errors)

	Military Personnel					
	(1)	(2)	(3)	(4)	(5)	(6)
Troop Presence	0.0433***	0.0433***	0.0433***	0.0433***	0.0433***	0.0433***
	(0.0122)	(0.0130)	(0.0123)	(0.0129)	(0.0134)	(0.0165)
Standard-Errors	City	Constituency	Grid Cell	50km	100km	200km
R^2	0.44	0.44	0.44	0.44	0.44	0.44
Observations	646,700	646,700	646,700	646,700	646,700	646,700
Number of Towns	2,230	2,230	2,230	2,230	2,230	2,230
Outcome Mean	0.06	0.06	0.06	0.06	0.06	0.06
Town FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓

Note This table presents results of estimating equation (1), using different standard errors. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variable is the inverse hyperbolic sine of military personnel born in town i active in year t, and Standard errors are clustered at the level of (1) towns, (2) constituencies, or Conley standard errors with distance cutoffs as indicated in columns (3-5). *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Figure B.5: Troop Presence and Absolutism (Standard Errors: Leader Wild Cluster Bootstrap)



Note This plot shows results of estimating equation (1), with 95 percent wild cluster bootstrap confidence intervals at the leader level. Each troop presence event is assigned to the nearest troop movement of a military leader. Observations are at the town-year level. The full sample comprises 290 years and 2,230 towns. The dependent variables are (A) a binary variable of whether the parliament that represented town i has been eliminated in year t, (B) a binary variable of whether town i has records of direct ruler taxes in year t, and (C) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level.

Table B.14: Troop Presence and Military Personnel (ihs Robustness)

	Military Personnel					
	(1)	(2)	(3)	(4)	(5)	(6)
Troop Presence	0.0433***	0.0248***	0.0272***	0.0487***	0.0964***	0.0239***
	(0.0122)	(0.0083)	(0.0088)	(0.0137)	(0.0261)	(0.0066)
R^2	0.44	0.43	0.44	0.44	0.41	0.38
Observations	646,700	646,700	646,700	646,700	646,700	646,700
Number of Towns	2,230	2,230	2,230	2,230	2,230	2,230
Outcome Mean	0.0573	0.0285	-0.0678	-0.9348	-2.861	0.0367
Town FEs	✓	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Cluster	Town	Town	Town	Town	Town	Town
LHS Definition	ihs	x=0	x=0.1	x=1	x=3	any

Note This table presents results of estimating equation (1), using different outcome definitions. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variable is the military personnel born in town i active in year t. Variations in the transformation of the dependent variable are as noted in the column description. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.15: Troop Presence and Absolutism (Exact Timing)

	Parliament Eliminated	Ruler Taxes	Military Personnel
	(1)	(2)	(3)
Troop Presence	0.1107***	0.0623***	0.0411***
	(0.0371)	(0.0129)	(0.0120)
Standard-Errors	Constituency		City
R^2	0.70	0.56	0.44
Observations	646,700	422,820	646,700
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1), in sample that includes only towns with precisely dated troop presence (or no troop presence). The independent variable is an indicator that takes the value of 1 after the first exposure event in a town has been documented. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

B.2 Unadjusted Instrument Robustness

This section is concerned with the robustness of the findings in Panel A of Table II. In Appendix Table B.16, we demonstrate that our results are robust to including flexible controls. Controls are as defined in Appendix Table B.1.

Second, we demonstrate that our results hold up when considering variation within territories: Appendix Table B.17 additionally includes territory fixed effects. This does not qualitatively affect our results.

Appendix Table B.18 leans further into the interpretation of the instrument as identifying incidentally exposed towns: We narrow the sample to exclude all fortified towns, and again, results are robust.

Table B.16: Troop Presence and Absolutism (Unadjusted Instrument, Controls)

	Parliament Eliminated	Ruler Taxes	Military Personnel
	(1)	(2)	(3)
Troop Presence	0.5031**	0.3357***	0.5992***
	(0.2024)	(0.1192)	(0.1714)
Standard-Errors	Constituency		City
R^2	0.70	0.56	0.44
Observations	646,700	422,820	646,700
IV	✓	✓	✓
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City
Controls	✓	✓	✓

Note This table presents results of estimating equation (1), using an instrumental variable based on the distance of a town to the closest campaign least-cost path. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Controls are distance to the coast (std.), latitude, longitude, an indicator of whether a town was fortified in 1618, an indicator of whether a town was on a trade route in 1618, an indicator of whether a town was in the jurisdiction of a fiscal Chamber in 1618, ruggedness (std.), distance to the closest navigable river (std.), agricultural suitability (std.), the number of markets added in 1600-1618 (std.), and public and private construction events 1600-1618 (std.), all interacted with $Post1618_{it}$. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.17: Troop Presence and Absolutism (Unadjusted Instrument, Territory Fixed Effects)

	Parliament Eliminated	Ruler Taxes	Military Personnel
	(1)	(2)	(3)
Troop Presence	0.3332**	0.2844***	0.5475***
	(0.1435)	(0.0998)	(0.1542)
Standard-Errors	Constituency		City
R^2	0.78	0.58	0.46
Observations	646,700	422,820	646,700
IV	✓	✓	✓
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Territory FEs	✓	✓	✓
Cluster	City	City	City
Territory FEs	✓	✓	✓

Note This table presents results of estimating equation (1), using an instrumental variable based on the distance of a town to the closest campaign least-cost path and including territory fixed effects. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.18: Troop Presence and Absolutism (Unadjusted Instrument, Excluding Fortified Towns)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.6822**	0.3039**	0.3995**
	(0.3403)	(0.1209)	(0.1728)
Standard-Errors	Constituency		City
R^2	0.70	0.57	0.38
Observations	551,000	353,220	551,000
IV	✓	✓	✓
City Units	1,900	1,218	1,900
Outcome Mean	0.29	0.06	0.03
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1), using an instrumental variable based on the distance of a town to the closest campaign least-cost path. The data are subset to exclude fortified towns. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

B.3 Borusyak and Hull (2023)

Notation

As our baseline causal model, consider a simplified (time-invariant) version of regression equation (1):

$$y_i = \beta x_i + \varepsilon_i$$

with $i = 1, \ldots, N$ for the N towns in the Holy Roman Empire, $x_i = TroopPresence_i$ an indicator of the presence of troops in town i during the Thirty Years' War, and $y_i = RulerTaxes_i$ an indicator of the levying of ruler taxes. We aim to estimate β.[5]

Our instrument is, for each town, the inverse hyperbolic sine of the distance to the closest campaign least-cost path. This instrument is computed according to a known, deterministic function:

$$z_i = \tau\left(CampaignPaths; Loc_i\right)$$

with components:

- $CampaignPaths = (Realized_k)_{k=1}^{K}$: a vector of all realized and counterfactual campaigns, with $Realized_k$ an indicator of whether campaign k was realized.
- Loc_i: the geographic loction of town i.
- $\tau\left(CampaignPaths, Loc_i\right)$: a function that proceeds in four steps.
    1. For each realized campaign (i.e. each nonzero element in $CampaignPaths$), calculate least-cost paths that connect fortified towns.
    2. Collect all realized campaigns in one spatial line object.
    3. Calculate the minimum distance of town i to this spatial line object.
    4. Take the inverse hyperbolic sine of this distance.

In the notation of Borusyak and Hull (2023), the function $\tau\left(CampaignPaths; Loc_i\right)$ can thus be written as $f\left(g; w_i\right)$, with

- $f() = \tau()$ a common function,
- $g = CampaignPaths$ a vector of shocks, and
- $w_i = Loc_i$ a unit-specific measure of exposure.

The dimension of g is $K = |R| + |C|$ with R the set of realized campaigns and C the set of counterfactual campaigns. We describe the construction of these sets in Section III.B.

[5] Extending the argument to our other outcomes, or to a panel setting with $t = 1500, \ldots, 1789$, is straightforward.

Assumptions

Drawing on this notation, we discuss the three key assumptions in Borusyak and Hull (2023):

- Assumption 1 (Shock exogeneity): $g \perp \varepsilon | w$.

  This assumption states that there is an as-good-as-random component to the decision of troop leaders to take one route but not the other and that this decision is orthogonal to town unobservables conditional on town locations. Motivated by the historical evidence in Section II.B, which highlights that campaign paths were not deterministic and that geographical determinants were key to the strategy of invading armies, this appears plausible.[6]

- Assumption 2. (Known assignment process): $G(g|w)$ is known in the support of w.

  Analogous to the approach in Borusyak and Hull (2023), Section 4, we apply a clustered permutation of campaign paths: At each juncture, we assume $G(g|w)$ to be uniform over all possible continuations of the campaign path.[7]

- Assumption 3. (Weak mutual dependence): $\mathbb{E}_{P_N}\left[\frac{1}{N^2}\sum_{i,j}|\mathrm{Cov}_{P_N}\left[\tilde{z}_i, \tilde{z}_j \mid w\right]|\right] \to 0$.

  This requires the shocks to induce 'enough' cross-sectional variation in the recentered instrument. Our setting has a large number of shocks that traverse different geographic regions and hence impact different sets of towns. The impact of any finite set of shocks on the covariance of the recentered instrument is hence small, and mutual dependence low.

If these three assumptions are satisfied, estimates using the recentered instrument are consistent for β (Proposition 1).

Implementation Algorithm

We use the fact that $z_i = \tau\left(CampaignPaths; Loc_i\right)$ together with Assumption 2 to obtain counterfactual values of the instrument.

Our algorithm proceeds in three steps:

1. **Shock Distribution.** We use $G(g|w)$ to obtain different realizations of the vector $g = CampaignPaths$. We sample campaigns uniformly at random from the junctures at which possible campaign routes branch off. We repeat this process 1,000 times.

2. **Instrument Function.** We plug each realization of $CampaignPaths$ into $\tau()$ to compute the instrument. For each campaign that has $Realized_k = 1$ in the counterfactual, we fit a least-cost path between the start node, end node, and fortified town, as described in Section III.B. We connect these points using least-cost paths and calculate the minimum distance of each town to the closest least-cost path.

3. **Expected Instrument.** We average the resulting instrument across each realization of $CampaignPaths$ to obtain the expected instrument of each town.

[6] Strictly speaking, from a 'design-based' perspective (considering the sample to be fixed and the course of the war, to be stochastic), Assumption 1 is satisfied by default (Borusyak and Hull, 2023).

[7] In Borusyak and Hull (2023), this permutation is applied within clusters of similar planned lines in the Chinese high-speed rail network. We discuss the robustness of our results to this assumption below.

B.4 Recentered Instrument Robustness

Overall Robustness

This section is concerned with the robustness of the findings in Panel B of Table II. In Appendix Table B.19, we demonstrate that our results are robust to including flexible controls.[8]

Second, we demonstrate that our results hold up when considering variation within territories: Appendix Table B.20 additionally includes territory fixed effects. This does not qualitatively affect our results.

Appendix Table B.21 shows that results are robust when narrowing the sample to exclude all fortified towns.

Table B.19: Troop Presence and Absolutism (Recentered Instrument, Controls)

	Parliament Eliminated	Ruler Taxes	Military Personnel
	(1)	(2)	(3)
Troop Presence	0.5828	0.6983**	0.8836**
	(0.3723)	(0.2988)	(0.3858)
Standard-Errors	Constituency		City
R^2	0.70	0.56	0.44
Observations	646,700	422,820	646,700
Recentered IV	✓	✓	✓
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City
Controls	✓	✓	✓

Note This table presents results of estimating equation (1), using a recentered instrumental variable based on the distance of a town to the closest campaign least-cost path. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Controls are distance to the coast (std.), latitude, longitude, an indicator of whether a town was fortified in 1618, an indicator of whether a town was on a trade route in 1618, an indicator of whether a town was in the jurisdiction of a fiscal Chamber in 1618, ruggedness (std.), distance to the closest navigable river (std.), agricultural suitability (std.), the number of markets added in 1600-1618 (std.), and public and private construction events 1600-1618 (std.), all interacted with $Post1618_{it}$. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

[8] Controls are the same as in Appendix Table B.1.

Table B.20: Troop Presence and Absolutism (Recentered Instrument, Territory Fixed Effects)

	Parliament Eliminated	Ruler Taxes	Military Personnel
	(1)	(2)	(3)
Troop Presence	0.5695*	0.6638**	0.8921**
	(0.3261)	(0.2755)	(0.3633)
Standard-Errors	Constituency		City
R^2	0.78	0.58	0.46
Observations	646,700	422,820	646,700
Recentered IV	✓	✓	✓
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Territory FEs	✓	✓	✓
Cluster	City	City	City
Territory FEs	✓	✓	✓

Note This table presents results of estimating equation (1), using an instrumental variable based on the distance of a town to the closest campaign least-cost path and including territory fixed effects. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.21: Troop Presence and Absolutism (Recentered Instrument, Excluding Fortified Towns)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.6523	0.6225***	0.5648*
	(0.4300)	(0.1954)	(0.3240)
Standard-Errors	Constituency		City
R^2	0.70	0.58	0.38
Observations	551,000	353,220	551,000
Recentered IV	✓	✓	✓
City Units	1,900	1,218	1,900
Outcome Mean	0.29	0.06	0.03
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

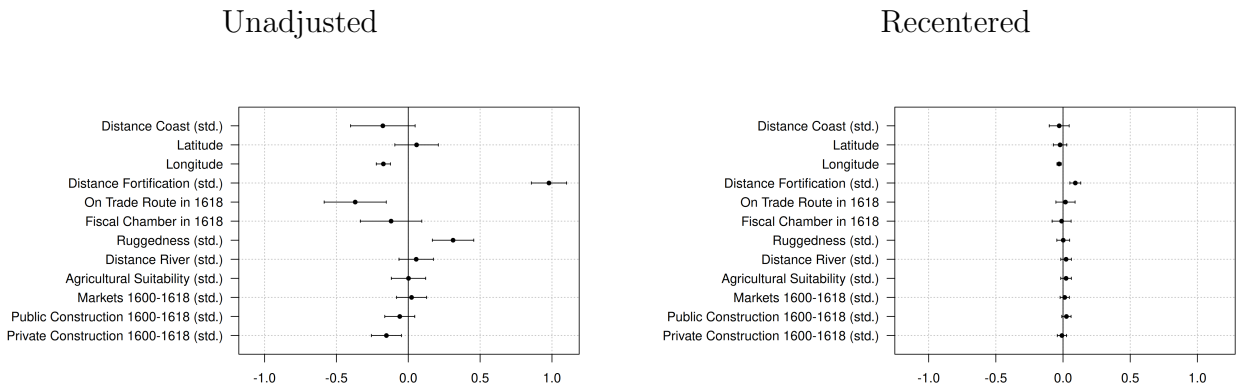
Note This table presents results of estimating equation (1), using an instrumental variable based on the distance of a town to the closest campaign least-cost path. The data are subset to exclude fortified towns. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Specification Tests

We follow Section 4 in Borusyak and Hull (2023) to conduct specification tests. In Appendix Figure B.6, we show that recentering the instrument drastically reduces the imbalance in covariates across treatment and control groups, conditional on the instrument. We regress the unadjusted (left figure) and recentered (right figure) instrument on pre-war observables as listed in the respective figure.

Additionally, the expected instrument is not predictive of the recentered instrument: in a regression of the recentered instrument on the expected instrument, the R^2 is 0.01. (In contrast, regressing the unadjusted instrument on the expected instrument yields an R^2 of 0.92.)

Figure B.6: Balance of Observables with Respect to the Instrument (Unadjusted and Recentered)



Note The figure shows estimated coefficients and 95% confidence intervals from a regression of the unadjusted (left figure) and recentered (right figure) instrument on pre-war observables.

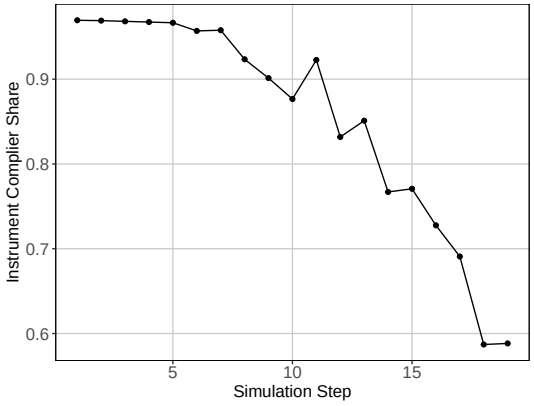
Robustness to Assignment Process

Our data collection attempts to identify possible choices between campaign paths that were narrow from the perspective of contemporaries and military historians. Nevertheless, the context requires us to make assumptions about $G(g|w)$. In our baseline specification, we apply a clustered permutation of campaign paths: At each juncture, we assume $G(g|w)$ to be uniform over all possible continuations of the campaign path. Appendix Table B.22 shows results from an instrumental variables regression using the unadjusted instrument, including the expected treatment as an exogenous control. Results are very similar to Panel B of Table II.

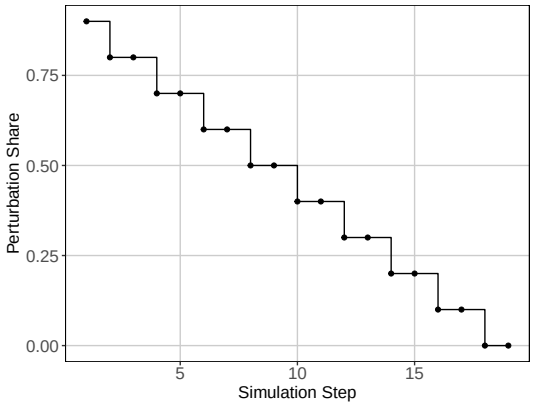
Next, we show robustness to the choice of $G(g, w)$. In line with a suggestion in Borusyak and Hull (2023), we control for an alternative expected instrument. Instead of assuming a uniform probability of the choice of campaign path at each juncture node, we estimate the probability of realizing a campaign path based on campaign observables, via maximum likelihood estimation in 10-fold cross-validation. Appendix Table B.23 shows results when including this alternative expected instrument; results are robust.

Figure B.7: Complier Share under Counterfactual Campaign Perturbations

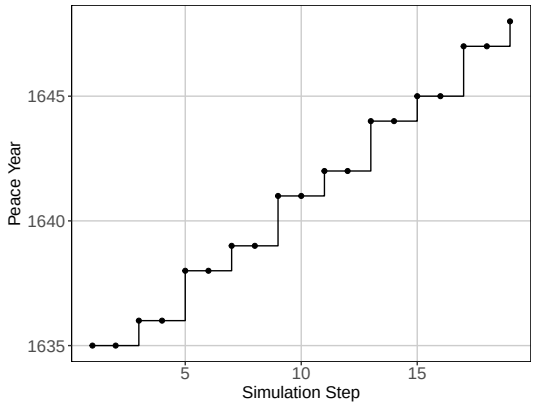
A: Instrument Complier Share



B: Campaign Perturbations



C: Peace Perturbations



Note These graphs plots the share of compliers for our instrument (Panel A) as we simulate random perturbations to individual campaigns (Panel B) and impose a counterfactual peace date after the Peace of Prague (1635).

Table B.22: Troop Presence and Absolutism (Expected Instrument)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.6117	0.7998**	0.9864*
	(0.4971)	(0.3954)	(0.5297)
Standard-Errors	Constituency		City
R^2	0.70	0.56	0.44
Observations	646,700	422,820	646,700
IV	✓	✓	✓
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City
Controls	✓	✓	✓

Note This table presents results of estimating equation (1), using an instrumental variable based on the distance of a town to the closest campaign least-cost path. The expected instrument is included as a control. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.23: Troop Presence and Absolutism (Alternative Expected Instrument)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.5029	0.8167**	0.9523*
	(0.4756)	(0.3906)	(0.4962)
Standard-Errors	Constituency		City
R^2	0.70	0.56	0.44
Observations	646,700	422,820	646,700
IV	✓	✓	✓
City Units	2,230	1,458	2,230
Outcome Mean	0.29	0.07	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City
Controls	✓	✓	✓

Note This table presents results of estimating equation (1), using an instrumental variable based on the distance of a town to the closest campaign least-cost path. The expected instrument is calculated through estimating the probability of realizing a campaign path based on campaign observables, via maximum likelihood estimation in 10-fold cross-validation. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.24: Troop Presence and Absolutism (Matched Placebos)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.0872**	0.0598***	0.0297**
	(0.0343)	(0.0150)	(0.0131)
Standard-Errors	Constituency		City
R^2	0.70	0.57	0.42
Observations	430,360	264,770	430,360
Matched Sample	✓	✓	✓
City Units	1,484	913	1,484
Outcome Mean	0.32	0.08	0.06
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1), comparing places with troop presence to close untreated places along the counterfactual campaign path. We assign each town to the nearest troop movement of a given campaign. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

Table B.25: Troop Presence and Absolutism (IV Recentered, Matched Placebos)

	Parliament Eliminated (1)	Ruler Taxes (2)	Military Personnel (3)
Troop Presence	0.1004***	0.0667***	0.0376***
	(0.0348)	(0.0136)	(0.0132)
Standard-Errors	Constituency		City
R^2	0.70	0.56	0.45
Observations	500,540	318,420	500,540
Matched Sample	✓	✓	✓
City Units	1,726	1,098	1,726
Outcome Mean	0.31	0.07	0.07
Outcome Def.	(0/1)	(0/1)	(ihs)
City FEs	✓	✓	✓
Year FEs	✓	✓	✓
Cluster	City	City	City

Note This table presents results of estimating equation (1), using the recentered instrumental variable and comparing places with troop presence to close untreated places along the counterfactual campaign path. We assign each town to the nearest troop movement of a given campaign. Observations are at the town-year level, with the number of towns indicated in the table. The sample comprises 290 years. The dependent variables are (1) a binary variable of whether the parliament that represented town i has been eliminated in year t, (2) a binary variable of whether town i has a record of direct ruler taxes in year t, and (3) the inverse hyperbolic sine of military personnel born in town i active in year t. Standard errors are clustered at the town level. *, **, and *** denote significance on the 10 percent, 5 percent, and 1 percent level, respectively.

C Historical Case Studies

This appendix provides historical case studies to support the mechanisms discussed in Sections V.B and V.D of the main text. We repeat every sentence of the main text in italics and provide relevant case studies below the sentence. Section C.1 addresses the initial coordination and development of executive capacity during the war. Section C.2 examines the persistence of these changes post-war. Section C.4 details examples from data sources on prints, portraits, and infringement.

C.1 Initial Coordination and Executive Capacity

Troops posed a credible and significant threat of violence to towns.
Troops advancing in the Upper Palatinate threatened to burn civilian houses unless they were supplied: "Thus, the quartered guests of Paul Brunner (in the Upper Palatinate) threatened around 1632 to set his house on fire if he did not provide them with adequate provisions" (Kraus, 2021, p. 273). Otherwise, soldiers resorted to violent self-provisioning: "When the monthly pay failed to arrive in 1631, the soldiers ran into the villages and forcibly provided for themselves." (Kraus, 2021, p. 273)

Since armies almost entirely depended on local resources, upkeep was a central organizational requirement once troops had advanced on a town.
War provisioning had to be local, as "centralized war financing was hardly feasible in practice" (Kraus, 2021, p. 217). By 1635, "the imperial-league army was supplied 98% from local contributions" (Kraus, 2021, p. 218). See also the footnote at the close of Section II.B for the large list of troop supplies required during exposure.

Armies could acquire resources through plunder or taxation: plunder maximized short-term consumption but devastated the local resource base, undermining future extraction and military discipline.
In Hesse, "even before the coming of troops, there were many villages who were on the margins of subsistence." (Theibault, 1995, p. 141) Fearing the erosion of discipline, "plundering by individuals was punished by death" in the Swedish army (Dodge, 1895, p. 78) and also under Wallenstein.

Taxation, by contrast, required coordination but enabled more sustainable provisioning. This suggests considerable scope for taxation to mitigate the damage caused by troop presence.
In the Swedish army, "Gustavus explicitly ordered his generals to follow Wallenstein's example of systematic contributions drawn through local tax structures, rather than ad hoc demands that caused widespread devastation." (Wilson, 2010, p. 245). Kraus (2021, p. 452) notes military leaders aimed to not devastate "the economic strength and stability of quartered regions."

Under these conditions, military leaders actively sought coordination with rulers.
Tilly, for example, strictly "ordered that commanders cooperate with territorial administrators in keeping a weekly record of which soldiers were quartered in which households" (Theibault, 1995, p. 141). During Wallenstein's campaign in Pomerania (1627), he urged the duke to provide supplies, implicitly threatening violence: "In order

to preserve better discipline and to prevent the complete ruin of the country, we amicably request that Your Grace makes arrangements to provide the troops with the necessary sustenance." (Wilson, 2010, p. 107)

Coordinating taxes with local rulers had two key advantages. First, centralized intervention was important, as effective provisioning depended on the surrounding countryside of the town.
In the town of Neumarkt, ruler-led coordination between the town and countryside was key: "In 1646, the war commissariat sent a provisions commissioner to Neumarkt, who was to request the necessary provisions from the relevant and nearby estates and then distribute them accordingly." (Kraus, 2021, p. 221) Also in Auerbach, centralized distribution was managed by a ruler official: "The Auerbach provisions office distributed in the year 1621 127,050 loaves of bread and 1,095 buckets of beer [...] The distribution was apparently handled personally by the *Kastner*." (Kraus, 2021, p. 222).

Second, rulers could serve as quicker and more legitimate intermediaries between civilian and military authorities than parliamentary bodies, which faced high transaction costs due to long planning horizons and the need to coordinate across stakeholders.
On ruler legitimacy, Kraus (2021, p. 324) notes that "princely officials were generally held in high regard not only by the local population but also by the military." Thus, "the different levels of the hierarchy within the army negotiated with the corresponding levels of the administrative hierarchy within the territory." (Theibault, 1995, p. 138) Civilian complaints speak to the inadequacy of the legislature in comparison: "As early as 1631, however, the government had considered stripping the magistrate of responsibility for distributing provisions and managing their payment. These deliberations were likewise prompted by complaints that civic officials 'had no respect from the soldiers and were unable to collect payment'." (Kraus, 2021, p. 227)

A key facilitator of such coordination was the presence of a shared military alliance between the army and the ruler: this lowered the cost of communication at all levels and gave rulers clearer incentives to provision the troops.
Kraus (2021, p. 451) notes, in the context of territories allied with the Catholic League, that "local administrators, in particular, often shared the same social background and habitus as the League's officer corps, allowing them to interact with officers on equal footing." In the vast majority of cases, thus, "successful military enterprise rested on a direct relationship with a ruler." (Parrott, 2017, p. 78)

Local populations, moreover, proved willing to cede autonomy to forestall the greater evil of military reprisals.
Kraus (2021, p. 458) notes that "the shared goal — managing the war — motivated subjects to accept, and in some cases even explicitly demand, greater influence of the princely administration in their daily lives." Thus, "over time, the influence of local administrators on urban war governance increased. By 1639, the city even complained that Kastner Rexrada, despite being commissioned by the government, 'refused to take responsibility for the contribution on behalf of the city'." (Kraus, 2021, p. 227) Local officials gave some legitimacy to the contributions: "For example, the allocation of military quarters was carried out by local offices based on constantly updated reports on population figures,

available housing capacity, and related data. Likewise, when setting the contribution rates for each billeting, the Kastner assessed the individual economic situation of the subjects. In addition, subjects could appeal to the government through the formal process of petition (*Supplikationsweg*)." (Kraus, 2021, p. 446) Thus, "the terms of the provisions ordinance were burdensome for the villagers, but they were as clear and fairly apportioned." (Theibault, 1995, p. 141)

Overall, the unprecedented size and mobility of early modern armies left little room for effective resistance once forces were en route.
Of villages in the Werra region in Hesse, Theibault (1995, p. 142) notes that "active resistance was the hardest to justify [...] the balance of forces was so unequal that such attacks were suicidal." Thus, civilians did not resist: "there is no evidence that the villagers of the Werra ever tried to fend off occupation by force [...] most villagers adopted the option of passive acceptance." (Theibault, 1995, p. 143) Instead of defense, surrender was common: after the Batte of Nördlingen in 1634, "almost all Protestant garrisons in south Germany surrendered" (Parker, 1997, p. 348).

Taken together, these findings support the relevance of a coordination-based mechanism in the expansion of executive capacity.
Given the violent scope conditions of the context, coordination with the ruler benefited all parties: "For the city, it provided an ally with greater authority over the military [...] and enforcement means such as military execution. The government thereby gained insight and intervention possibilities in municipal administration, and the military [...] obtained a court of appeal." (Kraus, 2021, p. 228). Examining the alternative hypothesis of destruction, Theibault (1995, p. 143) notes that "the primary objective of the soldiers was to find provisions, not to destroy property in the occupied territory." Similarly, Press (1988, p. 280) notes that the war "above all provoked autonomous action by the princes," rather than working through destruction.

The logistical demands of military coordination gave rise to a 'dual state' that bypassed parliamentary institutions.
Hintze (1910) highlights how, in Prussia, initially temporary war commissariates became central to enhancing executive power and circumventing estates. In Neumarkt in 1646, a provisioning commissar managed resource allocation (Kraus, 2021, p. 221), and by 1649, a *Kastner* was tasked with contribution assessments, ending municipal autonomy (Kraus, 2021, p. 246). "The entire tax-structure, civil service and local administration of the Great Elector came into being as technical sub-departments of the *Generalkriegskommissariat* [...] The Prussian bureaucracy, in other words, was born as an offshoot of the Army." (Anderson, 1979) Hintze (1910, p. 242) notes that "the Prussian administrative organization of the 18th century had its characteristic core in the commissariates," which stood "at the center of the great monarchical reforms that created the modern state."

C.2 The Consolidation of Absolutism

Rulers retained the local recruitment and taxation infrastructure resulting from the war even after troops had moved on, permanently bypassing Estate consent.

"Occupying troops had imposed their own framework of collecting taxes [...] Those taxes continued after the war, as the central administration adopted the mechanisms and terminology of the troops."(Theibault, 1995, p. 195) Wilson (2010, p. 810) notes that, "The growth of military taxation eroded the Estates' role, since the burdens were often imposed without consultation. Many territorial rulers continued these taxes after 1648." In Prussia, taxes were levied unilaterally (Carsten, 1958, p. 181). Additionally, wartime administrative practices persisted: separate registers tracked arrears (Theibault, 1995, p. 195), and in Abterode, the "contribution collector" role became a permanent fixture (Theibault, 1995, p. 196).

The few surviving accounts suggest that the experience of emergency (Not) during the war prompted subjects to infer a broader necessity (Notwendigkeit) for centralized authority.
Theibault (1995, p. 195) notes that "occupying forces imposed contributions justified by 'emergency (Notdurft)' during the war," and that "the confusion and desperation underscored the necessity of some kind of protection and thus provided a basis for the revival of central rule after the war." The experience of violence drove "the acceptance of new security structures," including standing armies (Rohrschneider and Tischer, 2018; Bahlcke, 2012, p. 27). Overall, 'necessity' became an "argument to legitimize change" (Wilson et al., 2023).

A larger body of surviving evidence for this rationale is closely tied to state influence.
Samuel Pufendorf argued in 1672 that the state's purpose was "that men, by means of mutual cooperation and assistance, be safe against the harms and injuries they can and commonly do inflict on one another," asserting the sovereign's right to "force individual citizens to contribute so much of their own goods as the assumption of those expenses is deemed to require." (Pufendorf, 1672)

Rulers themselves invoked the maxim that 'necessity knows no law' and employed both visual and written propaganda to legitimize their claims to authority.
Pamphlets were key to propaganda: "The principal task of the pamphlet now consisted in the evaluation and interpretation of current events, as well as in the dissemination of religious and political propaganda." (Harms, 1985, p. 141) The court shaped public narratives through printed poratraits and pamphlets, as Bauer (1997, p. 191) notes: "Courtly publicity was primarily constituted through the production, distribution, and reception of specific printed media." Bavarian propaganda, for instance, celebrated alleged successes like the 1703 Neuburg campaign despite it having failed in reality (Arndt, 2013, p. 41). Arndt (2013, p. 374) observes that the absolutist Wittelsbach court bluntly acknowledged publishing prints "to whitewash its undertakings."

Beyond persuasion, rulers also intervened directly, forcibly dissolving parliaments and co-opting local institutions.
Military force was used to suppress parliamentary opposition in Cleves-Mark, for example (Press, 1991, p. 324). In 1667, the Elector of Brandenburg and ruler of Cleves-Mark famously wrote: "I have become convinced that I owe the preservation of my position (...) to God, and next to God, to my army" (Fay, 1917, p. 772f).

This consolidation of executive power, combined with the erosion of autonomous elite authority, made the court, administrative, and military appointments increasingly attractive to the local nobles.
In Brandenburg, Frederick William's approach of selective favors to the nobility fractured the Estates, as Carsten (1958) notes: "A party came into being which supported his policy, and the Estates were no longer united in their opposition." This division was evident when fourteen Cleves noblemen, including five councilors, two officials, and one army officer, protested a deputation they had not approved, citing its derogation of their master. Similarly, a pro-electoral noble faction, with seven of twelve protesters being councilors, officers, or officials, opposed another unconsented deputation, leading to rival assemblies as "the Estates were now split beyond repair" (Carsten, 1958).

C.3 Framework: Proofs

Baseline Assumptions and Parameter Space. Let Θ be the set of parameter vectors $\theta = (\pi, d, \kappa_T, \kappa_R, \tau) \in \mathbb{R}^5$ satisfying:

$$d > 1, \qquad \pi \in (0, 1], \qquad \kappa_T \geq 0, \qquad \kappa_R \geq 0.$$

Lenders are risk-neutral and competitive. Under Separation, the zero-profit condition requires $\pi r = d + \kappa_T - 1$, which yields the interest rate

$$r = \frac{d + \kappa_T - 1}{\pi}.$$

We restrict attention to the admissible parameter domain $\mathcal{A} \subset \Theta$ wherein Delegation is a feasible candidate regime for the Town, defined by:

$$\mathcal{A} = \{\theta \in \Theta \mid d + \kappa_R \leq 2 \text{ and } \tau \geq d - 1\}.$$

The condition $d + \kappa_R \leq 2$ represents the Ruler's period-1 resource feasibility constraint, and $\tau \geq d - 1$ is the Ruler's participation constraint.
Given $\theta \in \mathcal{A}$, the Town's continuation payoffs under Separation (U_T^S) and Delegation (U_T^D) are given by:

$$U_T^S(\theta) = \begin{cases} 1 - (d + \kappa_T - 1), & \text{if } \pi \geq d + \kappa_T - 1, \\ -\infty, & \text{if } \pi < d + \kappa_T - 1, \end{cases}$$

where the assignment of $-\infty$ formally captures the infeasibility of Separation (the Town's borrowing capacity cannot cover the crisis shock), and

$$U_T^D(\theta) = 1 - (\kappa_R + \tau).$$

The Town selects the regime that maximizes its continuation payoff.

Equilibrium Partition.
Based on the payoff functions, the admissible domain $\mathcal{A}$ is partitioned into four regions:

- **Separation** (S): Separation is feasible and yields a weakly higher payoff than

Delegation.

$$S = \{\theta \in \mathcal{A} \mid \pi \geq d + \kappa_T - 1 \text{ and } d + \kappa_T - 1 \leq \kappa_R + \tau\}. \tag{4}$$

- **Voluntary Delegation (D_V)**: Separation is feasible, but Delegation yields a strictly higher payoff.

$$D_V = \{\theta \in \mathcal{A} \mid \pi \geq d + \kappa_T - 1 \text{ and } \kappa_R + \tau < d + \kappa_T - 1\}. \tag{5}$$

- **Forced Delegation (D_F)**: Separation is infeasible, and Delegation yields weakly non-negative period-2 consumption.

$$D_F = \{\theta \in \mathcal{A} \mid \pi < d + \kappa_T - 1 \text{ and } \kappa_R + \tau \leq 1\}. \tag{6}$$

- **Destruction (X)**: Separation is infeasible, and Delegation yields negative period-2 consumption, destroying the Town.

$$X = \{\theta \in \mathcal{A} \mid \pi < d + \kappa_T - 1 \text{ and } \kappa_R + \tau > 1\}. \tag{7}$$

Proof of partition exhaustiveness and mutual exclusivity. For any $\theta \in \mathcal{A}$, the logical proposition $\pi \geq d + \kappa_T - 1$ is either true or false. If true, $\theta \in S \cup D_V$. The strict linear order on the real numbers ensures exactly one of $d + \kappa_T - 1 \leq \kappa_R + \tau$ or $\kappa_R + \tau < d + \kappa_T - 1$ holds, uniquely assigning θ to S or D_V. If false, $\theta \in D_F \cup X$, and similarly, exactly one of $\kappa_R + \tau \leq 1$ or $\kappa_R + \tau > 1$ holds, uniquely assigning θ to D_F or X. ■

Proposition 1: The Effect of Shock Size d
Statement. Fix $(\pi, \kappa_T, \kappa_R, \tau)$. Let d', d'' be two shock sizes such that $d' < d''$, and assume the corresponding parameter vectors $\theta', \theta'' \in \mathcal{A}$. If $\theta' \in D_V \cup D_F$, then $\theta'' \in D_V \cup D_F$. Conversely, if $\theta'' \in S$, then $\theta' \in S$. Consequently, increasing d on the admissible domain can move the equilibrium from Separation to Delegation, but never from Delegation to Separation.
Proof. Define the Separation-feasibility threshold function $\phi(d) = d + \kappa_T - 1$. Since $d' < d''$, we have $\phi(d') < \phi(d'')$.
First, suppose $\theta' \in D_V \cup D_F$. We show $\theta'' \in D_V \cup D_F$:

1. Assume $\theta' \in D_F$. By definition, $\pi < \phi(d')$ and $\kappa_R + \tau \leq 1$. Since $\phi(d') < \phi(d'')$, it follows that $\pi < \phi(d'')$. Thus, $\theta'' \in D_F$.

2. Assume $\theta' \in D_V$. By definition, $\pi \geq \phi(d')$ and $\kappa_R + \tau < \phi(d')$. Because $\pi \leq 1$, we have $\kappa_R + \tau < \phi(d') \leq 1$. We evaluate θ'' in two subcases:

   - If $\pi < \phi(d'')$, then since we established $\kappa_R + \tau < 1$, we have $\theta'' \in D_F$.
   - If $\pi \geq \phi(d'')$, then $\kappa_R + \tau < \phi(d') < \phi(d'')$, which yields $\theta'' \in D_V$.

   In both subcases, $\theta'' \in D_V \cup D_F$.

Second, suppose $\theta'' \in S$. By definition, $\pi \geq \phi(d'')$ and $\phi(d'') \leq \kappa_R + \tau$. Since $\phi(d') < \phi(d'')$, we strictly have $\pi > \phi(d')$ and $\phi(d') < \kappa_R + \tau$. This implies $\theta' \in S$. ■

Proposition 2: The Effect of the Ruler's Coordination Cost κ_R
Statement. Fix (π, d, κ_T, τ). Let κ'_R, κ''_R be two values such that $\kappa''_R < \kappa'_R$, and assume the corresponding parameter vectors $\theta', \theta'' \in \mathcal{A}$. Then:

1. If $\theta' \in D_V$, then $\theta'' \in D_V$.
2. If $\theta' \in D_F$, then $\theta'' \in D_F$.
3. If $\theta'' \in X$, then $\theta' \in X$.

Consequently, lowering κ_R strictly preserves and weakly expands both delegation regions D_V and D_F, and strictly preserves and weakly shrinks the destruction region X.
Proof. The Separation-feasibility condition, $\pi \geq d + \kappa_T - 1$, is independent of κ_R. Thus, θ' and θ'' share the same feasibility status for Separation.

1. Suppose $\theta' \in D_V$. Then Separation is feasible ($\pi \geq d+\kappa_T-1$) and $\kappa'_R+\tau < d+\kappa_T-1$. Since $\kappa''_R < \kappa'_R$, it follows strictly that $\kappa''_R + \tau < \kappa'_R + \tau < d + \kappa_T - 1$. Hence, $\theta'' \in D_V$.
2. Suppose $\theta' \in D_F$. Then Separation is infeasible ($\pi < d + \kappa_T - 1$) and $\kappa'_R + \tau \leq 1$. Since $\kappa''_R < \kappa'_R$, it follows strictly that $\kappa''_R + \tau < \kappa'_R + \tau \leq 1$. Hence, $\theta'' \in D_F$.
3. Suppose $\theta'' \in X$. Then Separation is infeasible ($\pi < d+\kappa_T-1$) and $\kappa''_R+\tau > 1$. Since $\kappa'_R > \kappa''_R$, it follows strictly that $\kappa'_R + \tau > \kappa''_R + \tau > 1$. Hence, $\theta' \in X$. ■

Proposition 3: The Effect of the Contracting Environment π
Statement. Fix $(d, \kappa_T, \kappa_R, \tau)$. Let π', π'' be two values such that $\pi' < \pi''$, and assume the corresponding parameter vectors $\theta', \theta'' \in \mathcal{A}$. Then:

1. If $\theta' \in S$, then $\theta'' \in S$.
2. If $\theta' \in D_V$, then $\theta'' \in D_V$.
3. If $\theta'' \in D_F$, then $\theta' \in D_F$.
4. If $\theta'' \in X$, then $\theta' \in X$.

Consequently, improving the contracting environment (increasing π) strictly preserves and weakly expands the parameter sets for Separation and Voluntary Delegation, and strictly preserves and weakly shrinks the sets for Forced Delegation and Destruction.
Proof. The distinctions between S and D_V, and between D_F and X, depend only on $(d, \kappa_T, \kappa_R, \tau)$ and are therefore invariant to changes in π. The equilibrium partition depends on π solely through the Separation-feasibility condition $\pi \geq d + \kappa_T - 1$.

1. Suppose $\theta' \in S$. Then $\pi' \geq d + \kappa_T - 1$ and $d + \kappa_T - 1 \leq \kappa_R + \tau$. Since $\pi'' > \pi'$, we have $\pi'' > d + \kappa_T - 1$. The second condition is unaffected, yielding $\theta'' \in S$.
2. Suppose $\theta' \in D_V$. Then $\pi' \geq d + \kappa_T - 1$ and $\kappa_R + \tau < d + \kappa_T - 1$. Since $\pi'' > \pi'$, we have $\pi'' > d + \kappa_T - 1$. The second condition is unaffected, yielding $\theta'' \in D_V$.
3. Suppose $\theta'' \in D_F$. Then $\pi'' < d + \kappa_T - 1$ and $\kappa_R + \tau \leq 1$. Since $\pi' < \pi''$, we have $\pi' < d + \kappa_T - 1$. The second condition is unaffected, yielding $\theta' \in D_F$.
4. Suppose $\theta'' \in X$. Then $\pi'' < d + \kappa_T - 1$ and $\kappa_R + \tau > 1$. Since $\pi' < \pi''$, we have $\pi' < d + \kappa_T - 1$. The second condition is unaffected, yielding $\theta' \in X$. ■

C.4 Data Sources

We describe here examples of the portrait, print, and local infringement data introduced in Section III.C.

C.4.1 Portraits

Panel A of Appendix Figure C.1 shows a 1701 portrait of Frederick I, King of Prussia, in armour with the subtext 'strong and wise king'. Panel B shows a 1679 portrait of Maximilian Emanuel, Duke of Bavaria, also in armour. In the bottom is a poem that celebrates his military victories.

Figure C.1: Examples: Portrait Printed Graphics

A: Frederick I



B: Maximilian Emanuel



Note Panel A: https://www.portraitindex.de/bilder/zoom/sbb-wadzeck-000226. Panel B: https://www.portraitindex.de/documents/obj/33423445.

C.4.2 Prints

Examples of classified titles in our data include:

- "The King of Prussia and his soldiers' conversation with God, along with a triumphal ode of the King of Prussia, 1759" [Original: "des koenigs in preussen und seiner kriegs-knechte gespraech mit gott, samt einer triumpfs-ode des koenigs in pressen"]

- "Victory-crowned weapons of the imperial, electoral, Bavarian, and other allied imperial peoples, as they were led before, during, and after the glorious victory obtained on August 12, 1687, against the hereditary enemy of Christianity at Mohács, under the high command of the two incomparable heroes of Bavaria and Lorraine" [Original: "sieg-bekroente waffen der kayserlich- chur- bayrisch- und anderer aliirten reichs-voelckerwie solche vor/ in/ und nach der den 12. augusti dieses 1687. jahrs. wieder den erb-feind christl. namens bei mohatz ruehmlichst erhaltenen victori unter hohem commando der beeden unvergleichlichen heroen von bayern und lothringen ... gefuehrt worden."]

- "Brief exposition of the reasons why His Electoral Highness of Brandenburg, etc., was compelled to take up defensive arms against Electoral Cologne and Münster, 1673" [Original: "kurtze fuerstellung. aus was ursachen se. churfl. durchl. zu brandenburg/ in preussen/ zu magdeburg/ guelich/ cleve/ bergen/ stettin/ pommern/ [et]c. hertzog/ [et]c. [et]c. unuembgaenglich bewogen worden/ wider chur coelln und muenster die defensions-waffen zu ergreiffen."]

C.4.3 Infringement

We measure autocratic repression of local institutions using data from (Keyser et al., 1939-2003), a comprehensive historical encyclopedia chronicling events in German towns. Our variable counts the number of infringement instances per town and year, focusing on cases such as the direct appointment of town mayors by rulers or other interventions in local governance that eroded local autonomy
Examples in our data include:

- In Borken (Westfalen), in 1624: " the territorial lord revoked all rights, freedoms, and privileges of the city due to its recalcitrance and appointed the city authorities himself" [Original: "Infolge der religioesen Wirren zu Ende 16. Jh. Kaempfe mit dem Landesherrn, der 1624 der Stadt wegen ihrer Widersetzlichkeit alle Rechte, Freiheiten und Priv. nahm, selbst die Stadtobrigkeit ernannte;"]

- In Moeckern, in 1710: "the king regulated the municipal administration after the ruler's office had intervened in the appointment of council positions" [Original: "1710 Regulierung des rathaeusl. Wesens durch Kg., nachdem Amt Eingriffe in die Besetzung der Ratsstellen vorgenommen hatte."]

- In Freystadt (Bayern), in 1662: "council elections were only allowed in the presence of the lord's chief official, indicating a restriction on urban self-governance" [Original: "1662 Ratswahl nur in Anwesenheit des herrschaftlichen Oberamtmannes."]

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