

Wars, Taxation and Representation: Evidence from Five Centuries of German History

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WARS, TAXATION, AND REPRESENTATION: EVIDENCE FROM FIVE CENTURIES OF GERMAN HISTORY

Sascha O. Becker

University of Warwick, UK
and Monash University, Australia

Andreas Ferrara

University of Pittsburgh, USA

Eric Melander

University of Birmingham, UK

Luigi Pascali

LUISS Guido Carli, Italy
and Pompeu Fabra University, Spain

Abstract

We provide causal evidence for the role of warfare in the development of medieval constitutionalism. Using novel data on the universe of German cities between 1290 and 1710, we show that military conflicts led to city councils that were larger, more likely to be elected by citizens, and more likely to include representatives of craft guilds. Additionally, these conflicts resulted in a substantial increase in local fiscal and spending capacity. We exploit the gender of the firstborn children of local nobles as a source of exogenous variation in conflicts. (JEL: N13, P48, R11)

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Teaching Slides

A set of Teaching Slides to accompany this article is available online as Supplementary Data.

1. Introduction

Starting in the 13th century, Europe experienced an extraordinary political divergence with respect to the other major contemporaneous world civilizations. A strip of land in Central Europe ranging from the Flemish and Dutch coast to Northern Italy witnessed the development of local centers of power—towns and cities—characterized by representative assemblies, rule of law, and substantial fiscal and spending capacity. This institutional framework is often referred to as “medieval constitutionalism”.¹

What are the origins of this political development? This is a fundamental question in the comparative development literature, as it has been argued that the experience of medieval constitutionalism provided Europeans with a series of ideological and administrative blueprints that later constituted the fundamental building blocks of the Western modern state—a state characterized by substantial fiscal capacity and bound by the rule of law.²

So far, scholarship on the origins of medieval constitutionalism has tended to favor different variations of a more general war-and-representation paradigm. The prevailing hypothesis, which we discuss in depth in Section 2, is that a series of historical developments combined with crucial geographical factors divided Central Europe into a myriad of small states with weak rulers constantly at war with each other. Representative assemblies were a fundamental tool to raise the taxes and credit

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E-mail: s.o.becker@warwick.ac.uk (Becker); a.ferrara@pitt.edu (Ferrara); e.melander@bham.ac.uk (Melander); luigi.pascali@upf.edu (Pascali)

1. See Sabetti (2004). An alternative expression used in the literature is “medieval communalism” (see Blickle 1997). It is important to note that “medieval” refers to the period when medieval constitutionalism was born, but does not limit the period in which it was in operation. Downing (1993) describes the slow decline of constitutionalism from 1640 over 100 years, an issue we will return to later.

2. Section 2.2 provides a discussion of this literature.

necessary to finance these wars. In this sense, repeated conflicts between the ruling elite and competing internal or external actors were the ultimate drivers of the rise and spread of medieval constitutionalism.

While a large theoretical and qualitative literature has advocated the bellicose origins of the rise of medieval constitutionalism, there is, to the best of our knowledge, no empirical research establishing a causal relationship. The two key objectives of our work are to provide evidence for one direction of causality, from wars to the spread of medieval constitutionalism, and to document the legacy of this institutional framework for the development of the Western modern state.

Specifically, we collected data for the universe of German towns and cities from the late 13th to the early 18th century and test whether exogenous threats to the ruling elite and resulting external or internal conflicts had a causal impact on the spread of local representative assemblies. To understand whether representative institutions were a means to raise fiscal capacity to finance wars, we also study the impact of conflicts on local fiscal and spending capacity. Finally, we analyze the long shadow that the sophisticated fiscal tools, developed within this context, cast on the territorial consolidation process that occurred in the 17th and 18th centuries.

The history of the city of Dortmund illustrates our main hypothesis. During a 20-month siege in 1388–1389, the city incurred heavy war debts. Funds to pay off the debts were raised by levying war taxes, including exceptional wealth taxes in 1393, 1395, and 1396. Citizens responded by revolting and were appeased by granting them participation on the city council in 1400, introducing six citizens' representatives. Once the conflict was over, the city kept higher levels of taxation and the city's increased fiscal capacity translated into additional public spending, with church renovations and the construction of a new church tower. In the half-century before the siege, and, hence, before the introduction of wealth taxes and citizens' representation, there is no evidence of similar public expenditures. Dortmund's early steps toward medieval constitutionalism are therefore closely entwined with its historical experience of war.

This paper is based on a large data collection effort and introduces two novel datasets, both with a panel structure covering every decade during the period 1290–1710. Our first dataset contains panel information on 2,340 German towns from the *Deutsches Städtebuch* (Keyser 1939–1974), a large encyclopedia covering the history of all German cities. We assembled four different types of data. First, we collected information on violent conflicts in which the cities were involved. These data include external conflicts with other polities, civil conflicts, and instances of social unrest. Second, we collected information on elections and political representation, two key components of medieval constitutionalism. We focus on city councils as representative political institutions; in the words of Stasavage (2016, p. 147), city councils were the “chief means of seeking consent [to tax] [...] at which representatives from different parts of a society would be able to express themselves”. We recorded whether the city council was elected by the citizens without the interference of the local nobility, the size of city councils, and whether the merchant and artisan guilds

had a permanent seat.³ Third, we collected detailed data on the tax system for the cities in our sample. We identify 28 different types of taxes and categorize them into two levels of sophistication: from simple taxes that do not require any registry (such as mill or road taxes, which could be charged on the spot) to sophisticated taxes (such as income or inheritance taxes) that require a registry and a specialized class of bureaucrats.⁴ These tax data introduce an important novelty compared to previous studies on fiscal capacity, which are usually based on measures of public spending, as they are better able to capture the amount of resources that the local government could theoretically extract if it chose to. Fourth, to capture public spending, we collected detailed data on each public construction event with a civil, military, or religious purpose.

The second dataset provides information about the European aristocracy. We start from the *Peerage* project (Lundy 2020), which comprises 680,000 European nobles and provides information about their entire network, with links formed by parenthood or marriage. We complement this dataset with hand-coded data on locations of births, deaths, and marriages, which allows us to link individual nobles to cities and territories. The main source of location data are the *Europäische Stammtafeln* (European Family Trees, Schwennicke 1998), supplemented with additional information from the *Peerage* itself.

We combine these two novel datasets to study the impact of conflicts on the emergence of local representative institutions. Using an illustrative event study as well as regression evidence, we show that wars are associated with a relative increase in the probability that citizens elect their city council and in the size of the city council. The question is whether this correlation has a causal interpretation.

To isolate an exogenous source of variation in conflicts and external threats, we use the gender of the firstborn of the most prominent local noble in the previous decade. This is motivated by the fact that a large number of conflicts within the German context were succession wars, fought about women's right to inherit as rulers. Notice that our instrument does not capture the gender of the actual ruler; it captures, instead, the gender of a minor, thus excluding the possibility that our results might be driven by the direct impact of the gender of the ruler on local institutions.^{5,6} Figure 1 uses the War of the Succession of Landshut (1503–1505) to illustrate how succession wars led to the rise and spread of medieval constitutionalism. When the Duke of Bavaria-Landshut, George, did not have a male heir, he named his firstborn daughter Elisabeth (born 1478) as successor in 1496, thus breaching a previous agreement within the House of

3. See Kjaer and Elklit (2014) on the relationship between assembly size and representativeness.

4. The rise of a dedicated bureaucracy is part of the process whereby rulers replaced medieval household-based government with bureaucratic government as they increasingly had to bargain with different parts of society. See Elton (1953) for this point in the context of Tudor England.

5. The minimum age to rule was 18 and, in some cases, up to 25.

6. The classical example, outside our own sample, is the War of the Austrian Succession (1740–1748), which involved all the great powers of Central Europe and was fought over Maria Theresa's succession to the Habsburg Monarchy, precluded to women by Salic Law.

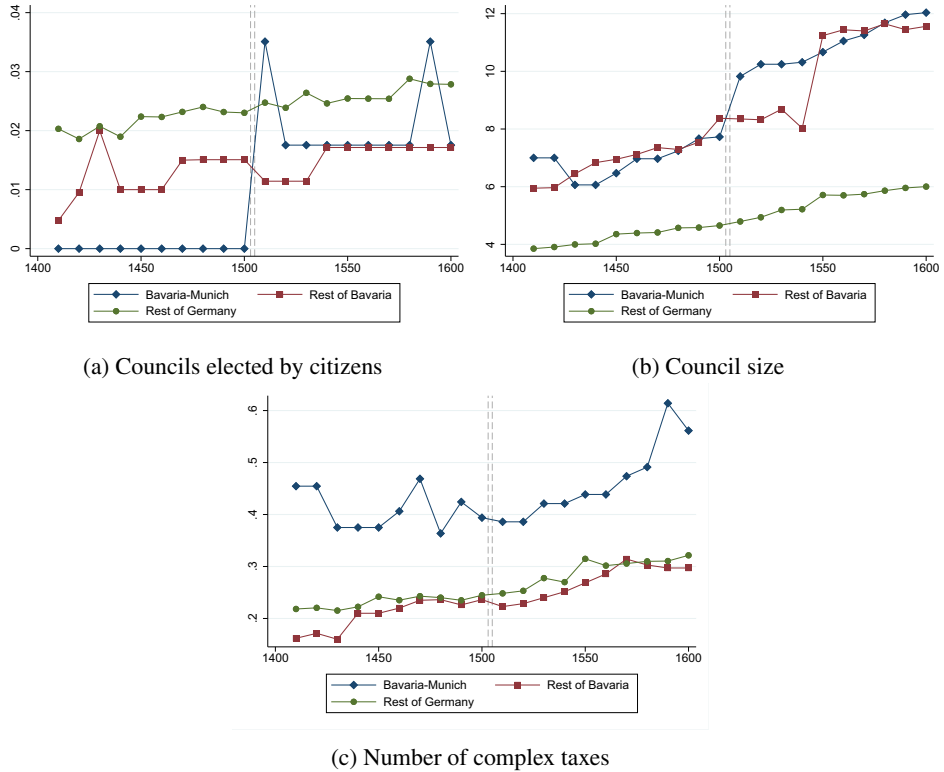


FIGURE 1. Territory case study—Bavaria-Munich and the Landshut Succession War. Evolution of political and taxation outcomes for cities in the territory of Bavaria-Munich, other cities in Bavaria and other cities in the German lands in the century before and after the Landshut Succession War (indicated with vertical dashed lines). The probability of citizens electing their local city council equals 1 if citizens can hold such elections without the interference of the local ruler. Council size is the number of members on the city council. Complex taxes refer to those taxes that require a register or administrative infrastructure to levy them because the taxed items are not easily observed, which includes income, wealth, or business taxes.

Wittelsbach. Duke Albert of Bavaria-Munich, who according to the house treaty would have been the legal successor in the absence of a male heir, refused to concede: this led to a destructive two-year war in the Landshut lands. The figure plots the evolution of our key variables of interest for the cities belonging to Bavaria-Munich, compared to the rest of Bavaria and the other German regions over the period 1400–1600.⁷ Cities in Bavaria-Munich saw an immediate increase in the probability that citizens elect their city councils and in the size of the council. These changes persisted in the following decades. In addition, the fiscal system became increasingly more sophisticated starting

7. Notice, we follow the evolution of the Bavaria-Munich territory, rather than Bavaria-Landshut, because the sovereign of Bavaria-Landshut disappears following the war, and the majority of its cities enters Bavaria-Munich.

a couple of decades after the conflict: this is consistent with temporary war taxes evolving into more sophisticated fiscal capacity, based on income and wealth taxes.⁸

In our regression analysis, our first stage estimates confirm that the gender of the firstborn has a large impact on the probability that the city is involved in a conflict with a different polity in the subsequent decade, while it does not seem to impact civil conflicts and social unrest. Using the gender of nobles' firstborn children as an exogenous source of variation, we then find that wars led to more representative local institutions. Exposure to one additional conflict is associated with a 2–3 percentage point increase in the probability that citizens elect the council without interference of the local ruler, an expansion of the council by approximately two members, and an increase in the probability of guild representation in the council by 13 percentage points. These effects are large if we consider that cities are involved in wars three times per century, on average. The impact of conflicts on local institutions persists one generation after the end of the war and is not explained by pre-trends when we consider the generation before the war. Moreover, results are not explained by a particular region or century and are robust to excluding decades with religious wars, thus implying that they are not driven by conflicts relating to the Protestant Reformation.

We notice here that a female firstborn might give rise to an armed threat to the ruler not only by external actors (such as rulers from other polities) but also by internal ones (such as competing elites within the same polity). The first stage regressions indicate that our instrument captures mainly exogenous external threats, as it predicts external wars but not different measures of civil conflict and social unrest. Still, one might believe that there are other dimensions of internal threats that are not well-measured in our data. In this case, we should interpret our two-stage least squares (2SLS) regressions as capturing the impact of a general exogenous threat (either internal or external) to the ruling elite on the development of local representative institutions. We do not believe that this is a serious challenge to our identification strategy. Quite the opposite: the great majority of the theoretical literature (discussed later in the Introduction and in Section 2), which argues for the bellicose origins of representative institutions and provides the theoretical framework of our study, does not distinguish between internal and external threats to the ruler.

8. In the Appendix, we present a further illustration from a different time period and a different corner of the German lands. Julius Franz, duke of Saxe-Lauenburg in north-western Germany, found himself without a male heir and proclaimed female succession to permit his firstborn daughter, Anna Maria, to succeed him. This move was not warmly received by other potential successors to the duchy. Notably, Georg Wilhelm, duke of nearby Braunschweig–Lüneburg, invaded the territories of Saxe-Lauenburg and occupied them over a number of years (1689–1693). We track the evolution of our main outcomes of interest—council elections, council sizes and complex forms of taxation—in the affected regions of north-western Germany over a half-century around the conflict (we cannot take a longer view, given that our sample ends in 1710). We report these in [Online Appendix Figure A1](#), and compare them to concurrent developments in other parts of northern Germany and elsewhere in Germany. The onset of conflict triggered an increase in the propensity of councils to be elected by citizens, as well as an increase in the levying of sophisticated forms of taxation. Effects on the average size of councils are less clear-cut, but even with constant council sizes the increase in the proportion of these that were elected by citizens is indicative of an increase in representation in response to war and heightened taxation.

After studying the impact of conflicts on the development of institutions typical of medieval constitutionalism, we move to study their impact on local fiscal capacity. Using the same panel 2SLS design, we show that wars resulted in an immediate increase in spending on military buildings and a long-term permanent increase in the adoption of sophisticated taxes, such as taxes on income, wealth, and inheritances. Sophisticated taxes broadened the tax base but often required the development of additional administrative capacity and more complex registries in addition to the consent of the population to be taxed. Overall, the tax results are suggestive that political representation was used as a bargaining chip to raise local taxes in times of war, and that these bargains led to persistent changes to the structure of cities' tax systems.

Finally, we relate the experience of medieval constitutionalism with the process of territorial consolidation that, starting from the 17th century, eventually led to the rise of the modern Western states. We document two facts. First, we show that territories that included cities with more sophisticated tax systems in the 16th century were those that expanded the most in the following 250 years. Second, using data on 289 territorial changes from 1400 to 1750, we show that fiscal capacity became a crucial factor of territorial expansion only from the 17th century on. The breaking point in this century coincides with the Military Revolution, a sequence of technological innovations that transformed armed conflicts and increased the importance of fiscal capacity for military success (see Tilly 1975, 1990; Gennaioli and Voth 2015). In recent work, Cantoni, Mohr, and Weigand (2024) highlight the importance of the new centralized territorial fiscal systems in fostering state consolidation in Europe in the Early Modern era.⁹ We complement their findings by highlighting the parallel importance of city-level tax systems until at least 1700. These results confirm the conjecture that the origins of the Western modern state lay in the administrative “technologies” developed within the framework of medieval constitutionalism.

Admittedly, a caveat of our empirical exercise is its limited geographical scope. Ideally, to explain the singular European path towards the development of communal institutions, one would need historical data at a global scale. Unfortunately, to our knowledge, such data do not exist, and we are forced instead to limit our analysis to (a large part of) Central Europe. Still, the fact that conflicts and armed threats led to this institutional development in the German lands is an important piece of evidence in favor of the bellicose origins of local representative institutions in the Middle Ages. In a sense, our exercise is similar in spirit to other studies in the social sciences, going back at least to Weber (1905), that have used German history as a testing ground for a series of theories attempting to explain the early rise of Europe. This includes works that have emphasized the role of institutions (Acemoglu et al. 2011; Dittmar and Meisenzahl 2020), human capital (Cantoni and Yuchtman 2014; Dittmar and Seabold 2019), and religion (Becker and Woessmann 2009; Cantoni 2015).

9. In related work, Schönholzer and Weese (2022) study the consolidation of the European state system from 1000–1850 as a result of wars and competition between states. Moreover, Ottinger and Voigtländer (2025) show a strong positive relationship between rulers' intellectual capabilities and state-level outcomes.

Our paper contributes to several other strands of the literature in economics and political science. First, our findings relate to previous work on the bellicose origins of representative institutions, which has a long pedigree in the social sciences. The broad idea is that representation and some fundamental rights were necessary for medieval rulers to raise taxes in times of war. Proponents of this fiscal contract (North 1981; Bates and Lien 1985; Levi 1988) argue that the monitoring and sanctioning related to tax collection is costly. Rulers can reduce these costs by making credible commitments to citizens, giving them a say over policies. An alternative theoretical approach has emphasized the fundamental role of city councils and parliaments to convey information on the number and wealth of taxpayers and to get in touch with public opinion in preparation for changes in the tax burden (Strayer and Taylor 1939, p. 22; Strayer 1970, p. 66). Taxation was not the only part of the financial toolkit of European rulers. Other authors have emphasized the role of credit (Stasavage 2011, 2016). Rulers had to borrow to meet the expenses of war. Representative assemblies were a solution to the commitment problem of rulers with their future creditors.¹⁰

The literature on wars and representative institutions is largely theoretical and qualitative, while, to the best of our knowledge, there is no causal empirical evidence. In a survey of the literature, Stasavage (2016, p. 155) writes: “So far, the evidence suggests some causal link between warfare and representative institutions, although we do not know in which direction causality runs. War might lead to institutional development, but institutional development would also make it easier to wage war.”^{11,12} One key contribution of our work is to provide evidence for one direction of causality, from wars to representation. Representation in German cities in the late Middle Ages and early modern period was by no means universal as in modern democracies. Still, medieval constitutionalism in German cities did encompass the

10. A recent literature also looks at the impact of wars on modern democratic liberal states. Ticchi and Vindigni (2008) argue that, in modern wars, democratic institutions were essential to keep high the morale of armies formed by conscripted citizens: they were a commitment device to promise future redistribution of income.

11. Two related empirical works study the relationship between conflicts and political representation in European history: de Magalhaes and Giovannoni (2022) use data on European polities between 1350 and 1700 to argue that parliaments were more likely to be called by the rulers in periods of wars or external threat; Blaydes and Paik (2016) show that European areas with large number of Holy Land crusaders were more likely to develop autonomous urban institutions.

12. Note, however, that there is a related growing empirical literature on the impact of democratic institutions on fiscal capacity, which usually makes the case that democratic institutions are able to gather more fiscal revenues. Angelucci, Meraglia, and Voigtländer (2022) show that cities in England in which taxes were raised by local officials rather than external sheriffs in the 12th century were the same cities that entered the English Parliament when it was created in 1295. The king had to negotiate directly with these cities to raise new taxes and the efficient place to do so was the Parliament. Dincecco, Federico, and Vindigni (2011) look at Italian states before the unification and show that parliamentary regimes gathered more taxes and spent more on public goods compared to absolutist regimes. A similar result is obtained by Dincecco (2009), who studies Europe from 1650 to 1913 and shows that centralized and limited regimes were associated with significantly higher revenues than fragmented and absolutist ones.

basic elements of modern states: representation and fiscal capacity, which we link to the experience of wars.¹³

Second, our paper contributes to a newer empirical literature on the impact of wars on urban growth and development in Europe.¹⁴ Specifically, our results are suggestive of one particular channel through which wars might have fostered economic development in these cities: the development of representative institutions together with improvements in fiscal and spending capacity.¹⁵

Third, our empirical results speak to a large literature in political science, which goes back to Alexis de Tocqueville and John Stuart Mill, and which highlights the legacy of medieval constitutionalism on the rise of state capacity in Central Europe. To the best of our knowledge, we are the first to show in an identified empirical framework the causal chain connecting conflicts in the Middle Ages to the rise of medieval constitutionalism, to the formation of local fiscal capacity, and, finally, to the formation of the modern state.

The rest of this paper is structured as follows. Section 2 discusses the historical background. Section 3 introduces the city-level data and the genealogical data on the German nobility. We describe our empirical strategy and demonstrate the importance of conflict in transforming local political institutions and laying the foundations of medieval constitutionalism in Section 4. Section 5 discusses the implication of the rise of medieval constitutionalism for the development of local fiscal capacity and ultimately for the formation of modern states. Section 6 concludes.

2. Historical Background

2.1. *The Origins of Medieval Constitutionalism*

A large literature in political science posits the origins of the main features of medieval constitutionalism in Central Europe in the first two centuries of the second millennium. In these years, the region was characterized by a myriad of weak rulers constantly at war with each other. The origin of their weakness is often traced to the Treaty

13. The findings of Cox, Dincecco, and Onorato (2024) are consistent with ours. They link the emergence of local communes and parliaments to bargaining between merchants and local rulers. They argue that fragmentation of polities and wars decreased the bargaining power of local rulers, while the bargaining power of merchants rose in wake of the Commercial Revolution. As trade increased the profitability for merchants of being involved in the political process, this led to a shift in political power.

14. See, for example, Dincecco and Onorato (2016) and Dincecco and Prado (2012).

15. Recent empirical work confirms that city autonomy and participatory political institutions were important contributors to city growth and economic development (Acemoglu, Johnson, and Robinson 2005; Bosker, Buringh, and Van Zanden 2013; Stasavage 2014; Cox 2017). Most closely related to our work, due to a shared historical setting, is Wahl (2019), who finds a robust association between participative institutions and population growth in a sample of 282 medieval German cities. Historical communal institutions in Italy have also received considerable attention in this literature (Coleman 1999; DeLong and Shleifer 1993; Putnam, Leonardi, and Nanetti 1993; Guiso, Sapienza, and Zingales 2016).



FIGURE 2. De facto territorial boundaries in Europe, the Middle East and North Africa, 1290–1710. De facto territorial boundaries from the Centennia Historical Atlas (Clockwork Mapping 2018) overlapped at decadal intervals for the period 1290–1710 (light gray). Modern state boundaries also shown (black).

of Verdun, when the Carolingian Empire was divided into three parts: West Francia, Lotharingia (the Middle Kingdom), and East Francia. Lotharingia and East Francia were never fully consolidated due to a combination of large geographical obstacles and peculiar succession laws (Downing 1993; Stasavage 2011). The presence of mountains and rivers resulted in poor internal communications and gave the possibility to small insurgent polities to defend themselves from central armies, while the absence of universally accepted succession laws created continuous dynastic disputes.^{16,17} Eventually, central Europe disintegrated into hundreds of small polities continuously at war with each other.¹⁸

16. Several scholars have emphasized the role of Europe's fractured physical geography in explaining its historical political fragmentation. A prominent example can be found in *The Rise and Fall of the Great Powers* by Kennedy (1987): "For this political diversity Europe had largely to thank its geography. There were no enormous plains over which an empire of horsemen could impose its swift dominion; nor were there any broad and fertile river zones like those around the Ganges, Nile, Tigris and Euphrates, Yellow, and Yangtze, providing food for masses of toiling and easily conquerable peasants. Europe's landscape was much more fractured, with mountain ranges and large forests separating the scattered population centers in the valleys, and its climate altered considerably from north to south and west to east. This had a number of important consequences. For a start, it both made difficult the establishment of unified control, even by a powerful and determined warlord, and minimized the possibility that the continent could be overrun by an external force like the Mongol hordes" (p. 17). See Fernandez-Villaverde et al. (2023) for an empirical validation.

17. We discuss succession laws and their impact on conflicts extensively in Section 4.2.

18. Figure 2 illustrates the history of territorial borders in Europe during our sample period: No other region shows the same density of borders as Central Europe. Figure A2 (source: Jia, Roland, and Xie

The rise in local representative institutions and the rule of law at the dawn of the second millennium have been related to the interaction between the absence of a strong central state and, depending on the author, either the European military system or the European financial markets of the time.¹⁹

Downing (1993) and Hoffman and Norberg (1994) emphasize the role of the European military system.²⁰ European armies were usually composed of a combination of knights and city militias. The war machine was expensive, especially for weak rulers that could not count on a centralized state and a centralized fiscal machine. Rulers were then compelled to distribute a series of privileges and immunities to convince knights and militias to join their armies. Originally, knights were military specialists that fought in exchange for land. These soldiers began to secure a system of hereditary rule over their allocated land together with a series of jurisdictional and administrative immunities. These immunities were then safeguarded by assemblies of knights: it is exactly from these assemblies that the first European parliaments emerged. City militias were instead provided by towns. Usually town-dwellers exchanged military services for a set of privileges, the most important of which were voice in town assemblies, immunities and guarantees of legal access.

Stasavage (2011, 2016) emphasizes instead the role of credit to fight wars. The absence of a strong state and a centralized fiscal system implied that rulers had to borrow to meet war expenses: only then these expenses could be spread into the future and paid with taxes or the spoils of war. Usually, the only group of individuals with enough liquidity to finance a war were rich merchants, typically located in large cities. When absolute rulers sought to borrow money, however, they faced a classical commitment problem. Limits to the power of the executive and the spread of local representative institutions were a solution to this problem: by conceding representation to citizens in towns and cities, the rulers were giving their creditors a degree of control over future policies and a series of jurisdictional and administrative immunities.

Whether the precarious balance between weak European rulers led to the rise of medieval constitutionalism through the need to continuously raise armies of knights

(2024) in the [Online Appendix](#) shows the differences between East Asia and Europe. As can be seen, from the second millennium, there was no large state in Europe, as compared to East Asia where 80% of the population was concentrated in a centralized state (China).

19. Stasavage (2010) shows empirically that, within Europe, smaller polities tended to have representative assemblies that were more active and had more extensive prerogatives.

20. Hoffman and Norberg (1994) write: “Between the end of the Middle Ages and the outbreak of the French Revolution Western states were sucked into a vortex of near permanent war, war that grew costly with every battle call. For rulers traditionally obliged to live on their own, the cost of fighting soon exceeded their income from Crown lands and customary dues. Their pockets nearly empty, they were often forced to strike deals that meant sharing political power in return for higher taxes. In some instances, the eventual result was a representative government” (p. 1). They conclude that: “In the end, representative institutions, not absolute monarchy proved superior in revenue extraction. Where representative bodies held the ultimate authority as in the Netherlands or eighteenth-century England, they facilitated taxing. Representation in the English parliament created a willingness to pay; so did the older attitudes about contributing to the government. Where forceful representative institutions were absent, though, fiscal paralysis was almost inevitably the result” (p. 306).

and city-militias or through the need of credit for the continuous financing of wars, the motors of this change were those towns located in a strip of land extending from present-day Belgium and the Netherlands to Northern Italy, passing through the German lands of Central Europe. These towns acquired the right to establish their own representative governments, separate from the administrative web of kings, nobles, and bishops, while simultaneously sending representatives to regional parliaments. Previous empirical literature has shown the link between the rise of autonomous urban governance and the origins of parliaments. Cox, Dincecco, and Onorato (2024) empirically demonstrate a causal relationship using data on representative assemblies in several European polities from 1000 to 1600. In the context of the Crown of Aragon during 1100–1327, Møller (2017) argues that “the rise of the towns is the most important [factor] for turning assemblies into representative institutions.”²¹ The absence of data on city representatives in parliaments in Central Europe limits the scope of our article to the bellicose origins of autonomous urban governance.²² However, a causal link between conflicts and city representation in the Imperial and regional Diets is likely, given the experience of other European regions.

The German city of Worms was one of the first cities to receive a town charter (in 1074). For the first time, residents of the city were explicitly identified as citizens (*cives*), a term that recalled the privileged political and legal status of free individuals in ancient Rome with respect to laws, property, and governance. The charter was conceded by the Holy Roman Emperor, Henry IV, in exchange for the city’s financial and political support in the Emperor’s conflict with the Pope, provided by merchants and Jews from Worms (Abulafia 2014, p. 45). In the words of the Emperor, during the struggle against the Pope and his allies: “when every single city seemed to have been virtually closed against our approach [...] only Worms, in the common goodwill of its citizens, preserved itself for our coming.” Another notable example of the military origins of town charters and local representation is provided by the city of Augsburg. Emperor Rudolf I conceded free city status to Augsburg in return for paying an outstanding debt (Nicholas 2014, p. 207), contracted to sustain the military effort against the King of Bohemia.

21. Møller (2017) also shows that succession issues, wars and taxation were the main drivers behind the summoning of these assemblies.

22. van Zanden, Buringh, and Bosker (2012) did collect data on parliamentary activity in different parts of Europe from the 12th to the 18th century, documenting the rise and decline of European parliaments. In the German context, they cover the Imperial Diet as well as seven regional Diets (Württemberg, Hesse, Saxony, the Palatinate, Bavaria, Brandenburg). They write (in their footnote 64): “Classifying cities according to whether or not they actually had their own representative in parliament would be a very interesting extension [and] would involve a substantial data collection exercise to collect all this information for all cities and centuries in our sample”. We did try to collect this information but were unable to construct a systematic dataset. Nonetheless, there is substantial narrative evidence linking regional conflicts to both the activities of these diets and their openness to city representatives. An exemplary case is the first meeting of the Württemberg Diet in Leonberg in 1457. The list of participants is unknown, but the notables of several towns were invited. Interestingly, and in line with our empirical strategy, this Diet was called in response to succession issues in one of the two Württemberg dynasties, which also involved a military standoff that was peacefully resolved (see Fischer 1992).

It is important to stress that the development of city self-governance in the Holy Roman Empire (see Weber 1921) is by no means limited to the so-called Free and Imperial Cities, which held the status of “Imperial immediacy” and were subordinate only to the Emperor. Also territorial cities and towns (*Landstädte*), which were subordinate to a territorial prince—be it an ecclesiastical lord (such as a prince-bishop) or a secular prince—were able to gain such rights. In his comprehensive work on German towns, Walker (1971, p. 20) writes: “The ingenuity with which communities expanded almost any right or immunity in the direction of effective autonomy was boundless...”.²³ In fact, a key aspect of our paper is to show that many cities were able to elect their own city councils.

The political life of the city was centered on the city councils. These bodies met frequently and played an active role in monitoring not only taxation but also public spending and borrowing. At the beginning, councils were composed of a small number of individuals. However, starting in the 14th century, they grew larger and more representative.²⁴ Their work was increasingly supplemented by specialized committees. For instance, by 1450, Frankfurt am Main had 18 specialized committees supervising the military, finance, and justice, which supported the council in the administration of the city. The local administration of these towns was unquestionably oligarchic, especially in their earlier days, with a governing elite composed mainly of merchants, military specialists, and legal experts. However, even the most oligarchic towns guaranteed some fundamental freedoms: citizens were free from feudal ties and services and had access to an efficient legal system (Downing 1989). Citizenship was usually granted after residing within the town walls for a period of time, typically 1 year.

2.2. *The Long Shadow of Medieval Constitutionalism on the Formation of the Modern State*

*“The origins of the modern state are to be found in the Middle Ages”*²⁵

The medieval constitutionalism framework started declining in the German lands from the second half of the 17th century (Downing 1993). The formation of the Kingdom of Prussia (1701) highlights the development away from the fractionalization of the Holy Roman Empire (into hundreds of territorial units) toward fewer and more centralized political entities.²⁶ Our sample period, therefore, ends in this decade. This process of centralization in the 17th century is not unique to Central Europe. The

23. His work (1648–1871) refers to the later part of our sample period, when consolidation into larger territorial units had already started. Towns were even more autonomous before.

24. In a dataset of 282 relatively large German towns, Wahl (2019) documents that the share of cities with institutionalized burgher representation increased from 1% in 1100 to 4% in 1200, 10% in 1300, and peaked at 40% in 1500.

25. Opening sentence of Blickle (1997).

26. Frederick William (1640–1688) established an absolute monarchy in Brandenburg-Prussia and created a professional centralized army. In 1701 his son, Frederick III upgraded Prussia from a duchy

Military Revolution, a series of radical changes in military strategy and technology due to the introduction of portable firearms and the rise of infantry, had introduced large economies of scale in warfare. The result was a generalized process of centralization of power that concluded in the formation of the European modern states (Tilly 1975, 1990; Gennaioli and Voth 2015).

The main peculiarities of the European modern state were their high levels of state (fiscal) capacity and the fact that the executive power was bounded by the rule of law. It is important to notice that an influential literature in political science—going back to Alexis de Tocqueville and John Stuart Mill (for an exhaustive review, see Møller 2018)—posits that this latter distinctive characteristic of European states is the result of the legacy of medieval constitutionalism. Strayer (1970, p. 40) emphasizes the role of medieval constitutionalism in the development of a first group of professional administrators. Isaacs and Prak (1996) highlight the role of medieval city-states as “laboratories of political technique” pointing to their contribution to the development of the essential tools of modern statehood in the realms of fiscal and diplomatic affairs. In the words of Dilcher (1997, p. 234): “The sovereigns had [...] successfully included within their states many aspects of that modernity on which the cities had been based for centuries [...] the enforcement of peace, legal security by strengthening jurisdiction and the creation of a fixed body of legislation, the introduction of Roman law and the learned jurist, rational administration and educated officials, the protection and promotion of trade and industry, order and social discipline by means of ordinances relating to law and order...”.²⁷

3. Data

3.1. German City-Level Data

Our main data source is the *Deutsches Städtebuch* (Encyclopedia of German Cities), a series of volumes edited by Erich Keyser (1939–1974) that provide information on each city in the German Empire incorporated prior to the compilation of the *Städtebuch*. The book offers a systematic treatise of the history of German cities from their foundation until the 20th century. A separate article is devoted to each city, following a consistent structure that divides the city history into 20 topics. These include sections on a city’s past names, its geographic location, its local economy, educational and church systems,

to a kingdom and crowned himself King Frederick I. His successor, Frederick William I created a centralized bureaucracy and fiscal system in the kingdom. This brought an end to the phase of medieval constitutionalism in German history.

27. Some classic works of Weber (1921) and Pirenne (1927–2014) trace the origins not only of state capacity and rule of law but also of European democracies to Europe’s medieval cities. These works were written before the democratic Weimar Republic ended in fascism, arguably as a result of continued resentment against democracy especially by the German right (Mommsen 1996). So, by no means is there a linear process leading from medieval constitutionalism to modern democracy.

and so on. Particularly relevant for our purposes are section 5 on buildings, section 9 on the administration of the city, section 10 on warfare and conflicts experienced by the city, and section 13 on its financial system (including its means of taxation). Excerpts from the *Städtebuch* are shown in [Online Appendix Figure A3](#).

3.1.1. Conflicts. Our main explanatory variable is a measure of a city's exposure to conflict. From the relevant section of the *Städtebuch*, we record for each city the dates of violent conflicts in which the city was involved. The conflict information in the *Städtebuch* is detailed, and we are able to classify each conflict according to its type. We capture involvements elsewhere (if the city engaged in raids or wars in other territories), battles fought in the vicinity of the city, sieges, sackings, partial destruction of the city, complete destruction of the city, and occupation. We therefore have a rich set of information both on the occurrence of conflicts as well as their nature. The level of detail is significantly more comprehensive than other frequently used sources, such as Brecke (1999) and Clodfelter (2008). The latter begins in 1494. While Brecke (1999) begins in 900 CE, the source does not provide detailed information on the location of wars and battles but instead lists belligerent countries or parties without further geographic information. Our data allow us to go back further in time than Clodfelter (2008) while having information on the cities that were affected by different conflicts. The later data in both sources, starting in the 15th century, focus primarily on battles. While battles are no doubt important considerations for local rulers, we are also able to capture other forms of conflict. Indeed, extensive sieges or occupations (which can last months, years, or even decades) plausibly exert greater pressure on rulers to tax than more short-lived battle events.

3.1.2. Internal Conflicts. Our data on conflict exposure allow us to measure external threats to cities. But internal conflict and unrest may also be important considerations for local rulers. In fact, the birth of a female child might weaken the ruler in other ways that might increase the bargaining power of non-nobles and lead to more council representation (independent of warfare). To this end—again drawing on information from the *Städtebuch*—we record for each city the dates of various forms of social unrest and internal conflict. The richness of our source provides us not only with information on radical or violent forms of conflict (such as uprisings or revolts), but also on more subtle, non-violent forms (such as formal grievances, popular movements, or legal action undertaken by citizens against political elites).

3.1.3. Political Institutions. To investigate the inclusiveness and representativeness of local institutions, we focus on characteristics of the city councils, which had legislative and administrative power in the local context. Using information from the *Städtebuch*, we record the year in which the council is first mentioned as well as (where applicable) its end date, its size, and the identity of its members. We also collect data on who elects or appoints council members. We construct three main political institutional variables. To capture the opportunities for political participation by citizens, we define an indicator taking a value of 1 if the council is directly elected by citizens without

the interference of the local lord. Second, to capture the strength and breadth of the council, we define a count variable of the number of council members. Third, for a subset of our cities, we rely on data by Wahl (2019), which provide an indicator for whether the guilds are represented on the council.

While Wahl's data are on the city-century level, we collected additional information on the exact timing of guild representation—to build a city-decade panel—and on the type of guild entering the city council, distinguishing between merchant and craft guilds.²⁸ Online Appendix Figure A4 considers the sample of cities covered by Wahl and reports the share of cities in which new guilds join the city council every century from 1300 onward, separately for merchant and craft guilds. As can be seen, the number of new merchant guilds joining the city council is close to nil in our sample period. If we consider the restricted sample that we use in our 2SLS regressions, every instance of new guild representation involves either craft guilds entering the city council (the great majority) or both craft and merchant guilds entering the council together (a few cases). Thus, our analysis is almost exclusively about craft guilds. This is expected: the 14th century corresponds to what historians often call the *Zunftrevolution*, or “guild revolution,” a period in which craft guilds entered the political arena of German towns and cities, often replacing the merchant guilds.²⁹

3.1.4. Taxation. Cities enjoyed significant fiscal freedoms over our sample period. Even though they were an important source of revenue for kings and emperors, they mainly conducted fiscal policy for their own development and upkeep by taking on debt and raising taxes of their own accord (Kuske 1904). This was by no means a privilege of free imperial cities alone, such as Nördlingen.³⁰ Also cities like Erfurt—which never enjoyed imperial status—were known to conduct independent fiscal policy and taxation.³¹

We assemble information on the cities' fiscal capacity by collecting information on the taxes levied in the cities from the *Städtebuch*. We categorize individual taxes into 28 distinct types. We further aggregate these into two levels of sophistication according

28. Distinguishing between craft and merchant guilds is not easy in the German context. In many cases, a guild could have both an artisan and a merchant component. A notable example is the weavers' guild in Augsburg, which included merchant entrepreneurs among its members from the onset and still did so in the 15th and early 16th century. The Fugger family, for instance, belonged to this guild.

29. As noted by the Encyclopedia Britannica: “It followed that such [merchant] guilds were unlikely to survive the urban social upheavals of the late thirteenth and fourteenth centuries, the so-called *Zunftrevolution*, which transferred all or part of the political and economic powers of the patriciate to the craft guilds, or mysteries. By the early years of the fifteenth century most European merchant guilds had disappeared into oblivion or survived as attenuated bodies, deprived of any genuine economic function.” Source: <https://www.britannica.com/topic/merchant-guild>.

30. Dorner (1905, p. 10) describes Nördlingen as a closed and unified tax community, which levied and redistributed taxes according to its own will. He also provides several examples of the city's fiscal autonomy such the exemption from taxes by Emperor Konrad IV.

31. Erfurt had several departments that collected and redistributed taxes for specific purposes while remaining surpluses would be surrendered to the city's treasury, demonstrating that taxes were primarily raised and spent locally (Horn 1904).

to whether or not a registry was required to collect the tax. We determine the level of complexity of each tax by the required knowledge or administrative structure that needed to exist in order to levy the tax, as well as the ease with which the taxable quantity could be observed. For example, an income tax requires knowledge of an easily concealed quantity and a correspondingly large administrative effort to observe and collect. On the other end of the spectrum are simple taxes that did not require a registry or specific knowledge of the quantity to be taxed. These include trade taxes that are levied on each traveling merchant who seeks entry into the city or at toll stations. [Online Appendix Table A1](#) provides a detailed overview of our classification scheme, including the assigned level of complexity, type of tax, and a brief description of the taxes and the ways in which they were raised, with examples, if appropriate.

3.1.5. Construction of Public Buildings. Finally, we collect information on the construction of public buildings. Specifically, we record all major construction events that take place over the course of the city's history. These include religious buildings (such as churches, chapels, and monasteries), civil buildings (such as schools, town halls, and other seats of administration), and military buildings (such as walls, towers, and city gates). This data collection is inspired by Cantoni, Dittmar, and Yuchtman (2018), who coded construction events in German cities before and after the Protestant Reformation (1475–1600), although it covers a longer period (1290–1710). In the absence of data on public expenditure, we will use these data on public constructions to illustrate how conflicts affect the level and nature of public spending.

3.2. Data on the German Nobility

In our instrumental variables strategy, explained at greater length in Section 4 below, we use the gender of the firstborn children of important nobles as shocks to the likelihood that cities experience conflict. We combine two data sources to create a dataset of nobles, which we then link to the German cities in the *Städtebuch*. The first is the *Peerage* project (Lundy 2020), which compiles data on more than 680,000 European nobles.³² The *Peerage* database contains information on nobles' dates of birth, death, and marriages.³³ In addition, we collect basic information on gender and age. Further, the *Peerage* contains information allowing us to link each noble to their parents, siblings, spouses, and children. As an example, [Online Appendix Figure A5](#) shows the *Peerage* entry for Wolfgang, Duke of Braunschweig-Grubenhagen. Based on this information, we are able to reconstruct the European nobility network at any given point in time.

32. Accessed 20 January 2020.

33. In some instances, only the date of birth *or* death is available. In such cases, we impute the missing date using the median age of all nobles known for certain to be alive at the same time as the given noble.

To supplement this data, we digitize information from the *Europäische Stammtafeln* (European Family Trees, Schwennicke 1998), in particular Volumes 1–1, 1–2, and 1–3. These volumes cover 379 family trees of ruling families in the German lands. [Online Appendix Figure A6](#) shows an example of a family tree for the dukes of Braunschweig-Grubenhagen, and a detailed individual entry is shown in [Online Appendix Figure A7](#). Note that this entry is the same individual, Wolfgang, as identified in the *Peerage* example above. The *Stammtafeln* provide additional valuable information on *locations* of births, deaths, marriages, and other events, which allows us to link individual nobles to cities within the German lands. Additionally, where available, we supplement this information using data on locations from the *Peerage* itself.

We use the information on the locations and life events of nobles to link them spatially and temporally to the *Städtebuch* cities. The data on parental, sibling, and marital ties between nobles allow us to reconstruct the network of the European nobility each decade, yielding a potentially disconnected, undirected, and unweighted graph.³⁴ Finally, for each noble, we identify the year of birth and gender of their firstborn child.

Equipped with this information, we construct our instrument for conflict. For each city-decade, we assign a noble to cities using a grid cell approach.³⁵ Cities are grouped according to 1×1 degree grid cells.³⁶ In each decade, we associate a noble with a grid cell if the noble is associated with any city in that grid cell. We then identify the best-connected noble in each grid cell by counting the number of direct links the noble has to other nobles in the European nobility network (their degree centrality). This measure of importance correlates closely with other possible measures of nobles' importance, such as the length of the nobles' entry in the *Peerage* database.^{37,38}

34. We consider each of the following relationships to constitute a direct link between nobles: parent, child, sibling, and spouse.

35. We discuss the relative merits of this approach when we describe our empirical strategy in Section 4 below.

36. As explained further below, we use 1×1 degree grid cells because the resulting 89 cells match well the number of polities in the German lands, which vary from 46 to 101 over our sample period. We use grid cells instead of actual polities to avoid concerns about endogenous borders, as also discussed below.

37. The ever-changing territorial configurations in the German lands make it impossible to systematically verify that changes in the best-connected nobles always correspond to changes in the local ruling dynasty. Any discrepancies may introduce measurement errors that weaken our first stage; however, as we show below, our instrument remains sufficiently strong. Upon inspecting the nobles used to construct our instrument, we are confident that it generally captures changes in local rule. Consider, for instance, the city of Kassel in central Germany. In the 14th century, our procedure picks Ernst of Osterode as the relevant noble. Ernst was a member of a notable family ruling the Principality of Grubenhagen in the vicinity of Kassel. Moving several centuries forward in time, in the 17th century our procedure picks Karl I Ludwig: He was Elector Palatine and married into the House of Hesse-Kassel, rulers of the Landgraviate of Hesse-Kassel and with their seat in Kassel. Despite very different territorial and dynastic contexts at these two points in time, our procedure identifies relevant nobles for the construction of our instrument.

38. It is worth noting that conflicts involving the most connected (and thus most significant) nobles are likely to be larger—an aspect that cannot be directly measured in the data. Consequently, the conflicts captured by our instrument are likely to be the most costly and, therefore, the ones more likely to be reported by city historians. Given our aim to link conflicts to taxation, this may be more of a strength

Having identified for each grid-cell-decade observation a best-connected noble, we check whether that noble had their firstborn child in the given decade. If so, we create an indicator taking a value of 1 if the first child was female, 0 if male. If the best-connected noble did not have their first child in the given decade, the instrument takes a missing value for the given grid-cell-decade. Finally, the instrument value (0, 1, or missing) is assigned to all cities in the given grid-cell-decade. The grid cell approach allows us to assign an instrument value to cities, which are not directly linked to a noble (through the city being a noble's location of birth or death, e.g.), but which are in the vicinity of locations linked to nobles and therefore likely to be affected by these nobles' birth events.^{39,40}

3.3. Other Data Sources and Descriptive Statistics

We describe the various additional data sources that we use to construct a series of control variables in [Appendix B](#). In the same Appendix, we provide descriptive statistics for all variables of interest both for our full sample and for the restricted sample used for our instrumental variables estimation.

4. Conflicts and Medieval Constitutionalism

4.1. Motivating Case Study: A Territory's First Conflict as an Event

Before formalizing the empirical analysis, we illustrate the relationship between wars and our main outcomes of interest—elections and the size of city councils—using the raw data. Specifically, we consider the share of cities in a polity with an elected city

than a limitation of our IV, as smaller conflicts are less likely to result in substantial changes. We thank an anonymous referee for highlighting this important point.

39. In an ideal world, we would consider the ruler of the city rather than the most connected noble in the cell. However, there are data reasons and conceptual reasons why we do not. First, our primary source of data, the *Deutsches Städtebuch* (Keyser 1939–1974), does not systematically list each individual ruler, and we are not aware of any other source that does. Second, even at a conceptual level, it is not possible to systematically identify a single ruler for all German cities: (1) power in a town can be shared between different families (for instance, in 15th-century Württemberg, power was shared by two families); (2) even within a family, it is not always clear who is in charge; (3) the territories over which families operate vary continuously; (4) in the same territories, different authorities might exert different powers over different sets of people (for instance, bishops, Emperors, the aristocracy, and so on); (5) fiefdoms, loaned to another ruler, complicate defining the ultimate owner; for instance, in Albertine Saxony at the end of the 16th century, around half of the princely demesnes were pawned away (Schirmer 2008, p. 83); and (6) territorial polities emerged from the 17th century.

40. Of course, it may be the case that some cities in a given grid cell are completely unrelated to nobles assigned to that grid cell. Nobles may have a residence in a locality different to the one they are ruling over, for instance. Cities in that locality will therefore be unaffected by the first births of such nobles. This would go against finding an effect of nobles' firstborn children on subsequent conflict. As we show when discussing our first-stage estimates in Section 4 below, our instrument is strong even in the potential presence of such concerns.

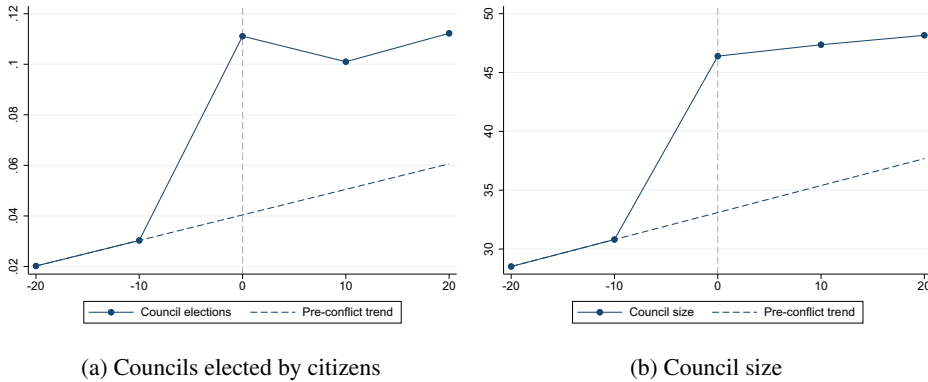


FIGURE 3. Territory-level event study. Evolution of political outcomes for territories before and after the first conflict to which they are exposed. The probability of citizens electing their local city council equals 1 if citizens can hold such elections without the interference of the local ruler. Council size is the number of members on the city council.

council and the number of members of city councils within a polity. We then compare how these variables deviate from their overall trend when the polity is involved in its *first* conflict. Results are illustrated in Figure 3. The figure shows the disruptions in local political institutions brought about by the first conflict. The conflict leads to a substantial jump from the underlying trend in the two variables: the average share of cities with elected councils increases from 3% to 11%, while the number of members of city councils increases from 31 to 47. These increases survive for the following two decades and are not explained by pre-trends.^{41,42}

4.2. Empirical Strategy

The motivating exercise above is, of course, only suggestive. We now turn to a formal empirical analysis to estimate the causal effect of conflicts on local political institutions. We estimate equations of the following form:

$$y_{ict} = \alpha_i + \lambda_t + \beta \text{Conflict}_{ct} + X'_{ict}\pi + \varepsilon_{ict}, \quad (1)$$

where cities are indexed by subscripts i , 1×1 degree grid cells by c , and decades by t . This specification includes city fixed effects α_i to capture time-invariant factors that lead to differences in outcomes across cities, while common aggregate shocks over

41. In [Online Appendix Figure A8](#), we show that these patterns hold also when restricting the exercise to conflicts before 1600. This serves to show that these patterns are not driven by the Thirty Years' War.

42. Additionally, in [Online Appendix Figure A9](#), we repeat the same exercise, but weight cities by their entry length in the *Städtebuch* (Keyser 1939–1974) when constructing the territory-level measures. This effectively gives higher importance to cities whose history is more extensively documented. Results confirm the broad qualitative patterns, and indeed become suggestive of stronger and longer lasting effects of conflict on institutions.

time are absorbed by the decade fixed effects λ_t . The outcome variable, y_{ict} , measures how inclusive urban institutions are. Specifically, we consider three outcomes: an indicator for whether the city council is elected, the number of members of the council, and an indicator for whether the city guilds had a permanent seat in the council. The treatment variable Conflict_{ct} is an indicator taking a value of 1 if any conflict took place in grid cell c in decade t .

In the benchmark estimates, treatment is defined at the level of the grid cell rather than the polity of the city. This is because polity borders are clearly endogenous to political institutions. For instance, both the cities' political institutions and the probability that cities are involved in a conflict are affected by polity size. Our benchmark approach, which exogenously imposes a grid cell structure, does not suffer from such endogeneity concerns. The size of our grid cells is chosen so that the number of cells is similar to the number of actual polities. Specifically, the sample is divided into 89 cells, while the number of polities varies from 46 to 101 throughout the time period of analysis. Such a grid-cell approach is commonly used in the literature.⁴³ Still, in a series of robustness checks, we show that all our results also remain robust when the treatment is defined at the territorial level, rather than that of the cell. Specifically, in this case, we consider a time-invariant territorial measure in which cities are grouped together if they belonged to the same territorial unit at each point throughout the sample period ("same territorial history").

We run regressions at the city-level as this allows us to control for the city-level confounders discussed earlier. An analysis with data aggregated at the grid-cell level or at the polity level would not allow us to do this in the same flexible way. To correct for spatial auto-correlation of the error term, we estimate standard errors in two different ways: we allow either for clustering at the grid cell level or for spatial auto-correlation, using Conley (1999) standard errors, with distance cutoffs of 100, 200, 300, 400, or 500 kilometers. As results do not differ substantially, we report the clustered standard errors in the main tables in the paper, while we show that results are robust when using Conley standard errors in the Appendix.

A concern with the baseline specifications in (1) is that conflicts might be endogenous. Not only is war potentially a choice of the local rulers, but the causality between conflicts and political institutions may run both ways (Stasavage 2016). In fact, a large literature has established that autocratic regimes are more prone to be involved in conflict.⁴⁴

43. See Bosker, Buringh, and Van Zanden (2013), Iyigun, Nunn, and Qian (2017), and Kitamura and Lagerlöf (2020), among others.

44. One of the most enduring and influential ideas in international relations is that democratic states fight fewer interstate wars and, in particular, fewer wars against each other. The idea is theoretically rooted in the work of Immanuel Kant, who argued that interactions between states with a republican form of government give "a favorable prospect for [...] perpetual peace." This has led to a large literature empirically documenting a negative association between democracy and conflict, leading one scholar to comment that democratic peace is "the closest thing we have to an empirical law in the study of international relations." Although most of these works use data from the 19th to the 21st centuries, some articles also cover ancient Greece (Russett and Antholis 1992) and Renaissance Italy (Sobek 2003). Beyond the

As such, a simple Ordinary Least Squares (OLS) regression of equation (1) would likely underestimate the true effect of wars on the development of inclusive political institutions and on the provision of public goods.

To isolate exogenous variation in the likelihood that a particular region is involved in a conflict in a certain decade, we use the gender of the firstborn child of the most prominent local noble in the previous decade. The key advantage of this instrument for conflict is the nature of the shock it gives rise to. Nobles have no control over the gender of their firstborn child; upon having their first child, they enter into a lottery in which either realization (a male or a female child) is equally likely. We notice here that our dataset includes stillbirths, so we are considering the first child, even if it did not survive. Moreover, by considering the gender of a minor and not of the ruler, we are excluding the possibility that our results might be driven by different ways of governing between female and male rulers.⁴⁵

Table 1 provides evidence that the characteristics of nobles perfectly balance along

extraordinary convergence of research results that confirm that “democracies rarely fight each other” (see Maoz and Abdolali (1989); Russett (1993) for reviews), there is more recent, significant evidence that this finding has a causal component. Specifically, three approaches have been used to argue causality. The first approach uses nonparametric sensitivity analysis. For instance, Imai and Lo (2021) show that overturning the negative association between democracy and conflict in the 19th and 20th centuries would require a confounder about 50 times more prevalent in democratic dyads than in other dyads. The second approach has used surveys and experiments to support the idea that citizens of democracies are significantly less likely to support the use of force against democracies compared to using force against non-democracies (Geva, DeRouen, and Mintz 1993; Mintz and Geva 1993; Rousseau 2005; Johns and Davies 2012; Lacina and Lee 2013; Tomz and Weeks 2013; Reiter 2017; Brandts et al. 2021). A third empirical means of demonstrating causation is to engage in process tracing through case studies. Scholars have presented several individual case studies of the democratic peace in events such as the Peloponnesian wars and other conflicts between ancient Greek cities, the 19th-century American diplomatic crises, the 1898 Fashoda Crisis, the onset of World War II, the Spanish–American War, and many others (Russett and Antholis 1992; Ray 1995; Risse-Kappen 1995; Elman 1997; Owen 1997; Rousseau 2005; Schultz 2001). Several case studies have illustrated distinct aspects of the causal logic behind democratic peace. For instance, they show how democracies can more effectively communicate intentions and incur greater consequences for breaking promises due to audience costs (Schultz 2001), and highlight the challenges elected leaders face in manipulating public opinion to support unwarranted wars (Reiter 2017). One of the most compelling examples of democratic peace in action is the transformation of Western Europe post-World War II. Here, democratic principles played a pivotal role in swiftly and thoroughly resolving one of history’s most intense interstate conflicts—the rivalry between France and Germany (Russett and Oneal 2001). There is extensive work on the European Middle Ages as well. For instance, Weart (1998) argued that representative regimes never fight with each other with case studies that include the medieval Italian cities, the Swiss republics in 15th–17th century, and the 17th-century Dutch Republic. The democratic peace literature had, from the very beginning, relevant political implications. In fact, since Woodrow Wilson at the end of World War I, it has been a US doctrine to encourage the spread of democracy internationally to promote peace worldwide. More recently, US President Bill Clinton stated that “to ensure our security and to build a durable peace, we must support the advance of democracy elsewhere. Democracies don’t attack each other,” while President George W. Bush said, “The reason why I’m so strong on democracy is democracies don’t go to war with each other.”

45. This is important in light of the work of Dube and Harish (2020), who find that married queens acted more aggressively compared to kings. Specifically, they write: “Queenly reigns may have had greater capacity than kingly reigns because of asymmetries in how they utilized their spouses. Queens often enlisted their husbands to help them rule, in ways that kings were less inclined to do with their wives. For example, queens often put their spouses in charge of the military or fiscal reforms. This greater spousal division of

TABLE 1. Balance on noble characteristics—female firstborn instrument.

	Mean (male firstborn)	Mean (female firstborn)	Differences	<i>p</i> -value
Dummy: any child	1.000	1.000	0.000	.
Age when had first child	27.852	28.364	−0.512	0.317
Age at death	55.468	54.593	0.875	0.302
Age at first marriage	23.876	24.304	−0.428	0.353
Centrality at age 10 (number of links)	3.913	4.061	−0.148	0.434
Number of characters in Peerage	3,560.638	3,611.476	−50.839	0.545
Number of footnotes in Peerage	5.089	4.760	0.329	0.229
Number of references in Peerage	1.546	1.542	0.004	0.964
Number of characters in Peerage (Father)	4,220.099	4,340.264	−120.164	0.306
Number of footnotes in Peerage (Father)	6.654	6.668	−0.015	0.967
Number of references in Peerage (Father)	2.192	2.301	−0.109	0.376

Note: Balance test on observable characteristics of the nobles used to construct the female firstborn instrument. Mean values are reported separately for nobles whose firstborn is male and for nobles whose firstborn is female. Differences in means and associated *p*-values are also reported.

observable dimensions when considering the firstborn gender lottery. For instance, nobles who had a daughter as their first child were married and became parents at the same age as nobles who had a son, and they had very similar levels of centrality in the network of aristocracy when they were born. Furthermore, Figure A10 (reported in the [Online Appendix](#)) shows that our instrument not only balances on nobles' characteristics, but also on the characteristics of cities, including the distance to the nearest trade route, imperial city status, market rights, Hanse city status, access to a river or coast, and the length (in pages) of the entry in Keyser (1939–1974).

Female firstborn children are more problematic when it comes to inheritance and succession. A significant number of conflicts within the Holy Roman Empire, at least until the Protestant Reformation, were succession wars and were often fought about women's right to inherit because rulers without sons might attempt to change succession laws to allow their daughter to succeed them.⁴⁶ Succession among the upper nobility was governed by private family rules, the "House Laws".^{47,48} By virtue

labor may have enhanced the capacity of queenly reigns, enabling queens to pursue more aggressive war policies" (p. 2582).

46. One might be tempted to say that the gender of the firstborn is bound to be a weak instrument as families would react by trying to have a son following a firstborn daughter. It turns out, however, that even with this limitation, our instrument is powerful. Also, it may seem intuitive to consider the absence of a male heir as potential instrument rather than the gender of the firstborn. Such an instrument, however, would reflect endogenous choices as nobles might seek to conceive children until a male birth is realized. [Online Appendix Table A2](#) shows a comparison between nobles with and without a male heir, which reveals significant differences between the two. In particular, nobles without a male heir are less likely to have any children, are slightly older when and if they do have a child (obviously, a girl, given the absence of a male heir), significantly younger when they die, and more central in the network of nobles—all of which are likely to have a direct influence on local political institutions.

47. Later, in the 19th century, the term "private law of princes" was used.

48. The main source of law, for each family, was a collection of documents including testaments, family compacts, treaties with other families, treaties with the Emperor, and rules laid down by the patriarch.

of being mainly family rules, there was no uniform succession rule applying to all dynasties across all centuries. However, the norm was male succession, which could result in challenges to the ruling family upon the birth of a firstborn girl. Recall, for example, the case of George, Duke of Bavaria-Landshut, who named his daughter Elisabeth as his heir. In 1503, this breach of the agreements of the House of Wittelsbach provoked a two-year succession war between Bavaria-Landshut and Bavaria-Munich. Elsewhere in the German lands, the city of Cologne—an important Holy Roman trading centre—can trace the origins of its communal institutions to the War of the Limburg Succession (1282–1288). Disputes arose when Waleran IV, Duke of Limburg, died without a male heir. Reginald I (the husband of Waleran’s firstborn daughter and only child, Ermengarde) and Adolf VII (Waleran’s nephew), both staked claims to the Duchy and conflict ensued involving a host of local powers. In exchange for their services during the war, the citizens of Cologne gained independence from the Archbishopric and the city later achieved Imperial City status. As we stressed earlier, the birth of a female firstborn could also trigger internal conflicts as an internal city opposition might feel encouraged to challenge a ruler who is considered to be in a weaker position, compared to having had a male firstborn.

The corresponding first-stage equation in our instrumental variables strategy is

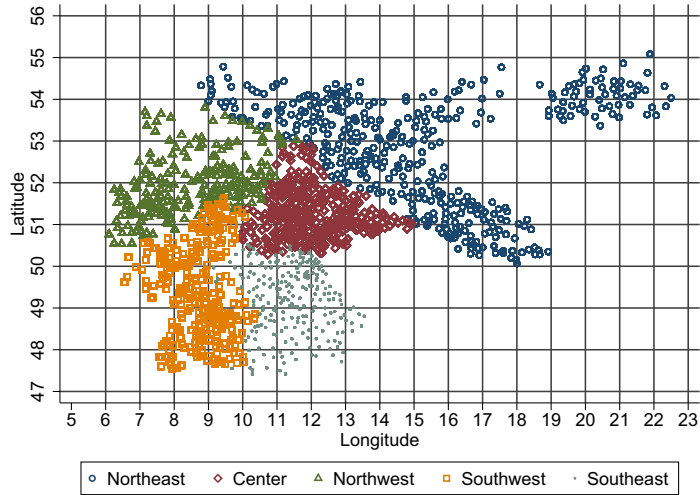
$$\text{Conflict}_{ct} = \eta_i + \delta_t + \gamma \text{Daughter}_{c,t-1} + X'_{ict} \varphi + v_{ct}, \quad (2)$$

where $\text{Daughter}_{c,t-1}$ is an indicator taking a value of 1 if the best-connected noble in grid cell c has a firstborn daughter in decade $t - 1$, 0 if the firstborn is a son.⁴⁹ Note, therefore, that the sample we use for the instrumental variables strategy includes only those cell-decade combinations in which the best-connected noble has their firstborn child. This comes at the cost of reducing the size of the sample we have at our disposal for the two-stage least squares estimation.⁵⁰ Reassuringly, as shown in Figure 4, the cities entering our first child subsample are not systematically drawn from any

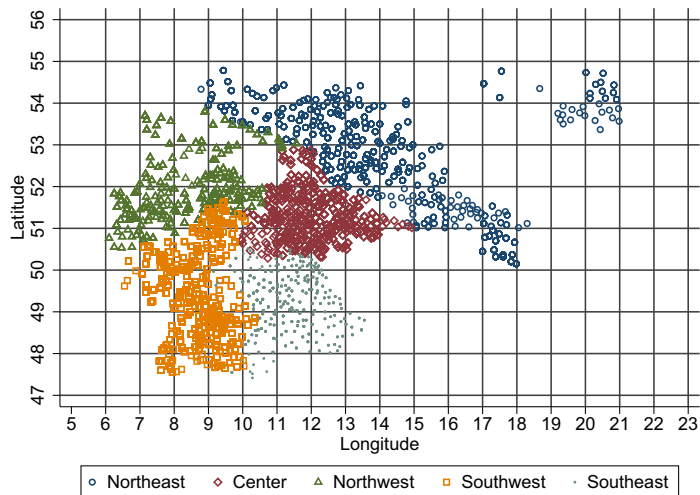
Only in the absence of specific family provisions, succession was decided by general principles that had been developing through the centuries and were based on a mixture of ancient German law, canon law, and medieval Roman law (Moser 1737–53).

49. We pick the “best-connected” noble on the basis of degree centrality in the wider European network of aristocracy. That is, the best-connected noble is chosen based on the number of direct familial links they have to other nobles. This measure of centrality correlates closely with other measures of the importance of nobles, such as the length of their entry in the *Peerage* database. This gives us confidence that we are using the firstborn children of important nobles, who are likely to be key in determining war and peace in a region, to define our shocks. For further details on the data used to construct these shocks, see Section 3 above. It is also important to note that our data does not allow us to ascertain for each and every conflict whether or not it was de facto (i) part of a succession war, (ii) was fought *because* the ruler lacked a male successor and *nominated* a female successor instead, and (iii) whether the dynasty’s house rule allowed for female succession at different points in time. The instrument, therefore, has some flavor of an intention-to-treat approach.

50. This approach follows the spirit of local average treatment effects, where a specific instrument picks a specific source of exogenous variation (“compliers”) and where “always-takers” or “never-takers” do not provide identifying variation. Similarly, here we exploit only variation stemming from birth events. Of course, conflicts also happen independent of birth events, but those are not picked up by our instrument.



(a) Full Sample



(b) First Child Sample

FIGURE 4. Cities by region and sample. Map of the 2,340 cities in the Keyser books by region for the full sample (panel a) and the sample of cities lying in cells that receive values for our firstborn-child gender instrument at any point in the sample period between 1290 and 1710. Regions are defined by the Keyser volume a city appears in. Latitude and longitude lines show the 1×1 degree grid cells.

particular region of Germany. Furthermore, [Online Appendix Figure B2](#) demonstrates that birth events are evenly distributed across grid cells and across decades. As expected, births are also equally likely to result in male and female firstborn children. For completeness, when describing our results below, we additionally show that

OLS results are very similar between the full sample and the restricted first-child subsample.⁵¹

4.3. Empirical Findings

4.3.1. First-Stage Results. In Table 2, we report estimations of the first-stage relationship between the gender of nobles' firstborn children and subsequent incidence of conflict. Throughout, our main estimation sample spans the years 1290–1710. Given the one-decade lag structure of our first-stage equation, this temporal restriction implies that we use shocks to conflict arising from a firstborn daughter up until the year 1700.

In principle, a female firstborn might pose a threat to the ruler both by external and internal competing actors. In the first three columns of Table 2, we analyze the impact of the gender of the firstborn on external conflicts, while in the subsequent three columns, we analyze the impact of the firstborn on internal conflicts. As we will see, the instrument seems to work primarily through external conflicts.

The first column of Table 2 reports the first-stage relationship from a specification in which we include city and decade fixed effects. The first-stage effect is large, statistically significant, and in the expected direction: when the best-connected noble in a given grid cell has a firstborn daughter (as opposed to a firstborn son), the cell is approximately 22.8 percentage points more likely to experience conflict in the following decade. In column 2, we include linear city time trends. The coefficient becomes even larger with these trends that rule out that secular changes over time in cities' conflict potential are driving our effect. In column 3, we repeat the analysis from the previous column but assign conflicts at the territory rather than the cell level. While the effect size of 10.5 percentage points is around one-third of the specification in column 2, this is unsurprising as territories for the most part are smaller than grid cells. Hence, not only the coefficient but also the unconditional probability of a territory-level conflict is lower. Yet, our instrument remains strong also in this specification. We prefer the grid cell approach for reasons discussed earlier, but we show that all our results are robust to assigning conflicts at the territory level. A simple back-of-the-envelope calculation suggests that almost half of the external conflicts in our sample can be explained by our instrument.⁵²

In columns 4–6, we repeat the same regressions using the occurrence of internal conflicts as the outcome. A weakened ruler facing increased bargaining power from other internal actors (put differently: the threat of an internal conflict, as opposed to an

51. As an additional check, we regress an indicator for whether an observation enters the first-child subsample on observable city characteristics. This check is reported in Figure A11 in the [Online Appendix](#). Reassuringly, entry into the sample used for our 2SLS estimation balances on these observables.

52. The predicted increase in conflict probability implied by the coefficient in column 2 is $0.47 \times 0.34 = 0.16$ (the share female first births in our sample multiplied by the associated increase in conflict probability). This is approximately 44% of the unconditional conflict probability (0.36).

TABLE 2. First stage regressions.

	Pr(Conflict)=1			Pr(Internal Conflict)=1		
	(1)	(2)	(3)	(4)	(5)	(6)
Female firstborn = 1	0.228*** (0.064)	0.335*** (0.087)	0.105*** (0.037)	-0.104 (0.068)	-0.071 (0.086)	-0.040 (0.027)
City FE	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes
City linear trend		yes	yes		yes	yes
Level of conflict assignment	cell	cell	territory	cell	cell	territory
Observations	5,091	5,091	5,085	5,091	5,091	5,085
Cells	56	56	56	56	56	56
Outcome mean	0.355	0.355	0.144	0.232	0.232	0.096

Note: First stage regressions of the conflict probability for cities in the 1×1 degree cell c in decade t on an indicator for whether the most connected noble in the cell had a female firstborn child in the previous decade (columns 1 and 2). In column 3, the conflict indicator is assigned at the level of territorial histories. Columns 4 to 6 repeat the same exercises, using an indicator for internal conflict as the outcome variable. The most connected noble is identified as the person with the most links in the family network of the German and European nobility. The comparison group are cities in cells where the most connected noble had a male firstborn child in the previous decade. The unit of observation is a city-decade and the sample consists of German cities from 1290 to 1710. Standard errors are reported in parentheses and are clustered at the 1×1 degree cell level (specifications implementing Conley (1999) standard errors with cutoffs at 100, 200, 300, 400, and 500 kilometers are reported in [Online Appendix Figure C6](#)). Significance levels are denoted by $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

external one) might also have an incentive to make concessions to their subjects.⁵³ However, we do not find any evidence of a correlation between the gender of the firstborn and internal conflicts. We further unpack this null result in Table 3, by showing separately that neither violent nor non-violent forms of internal conflict are triggered by female firstborn children. Still, one might believe that there are other dimensions of internal threats that are not well-measured in our data. In this case, we should interpret our 2SLS regressions in the following subsections as capturing the general impact of an exogenous threat (either internal or external) to the ruling elite on the development of local representative institutions.

What is the path from a female firstborn child to conflict? As noted above, our instrument has an “intention-to-treat” flavor; Table 4 unpacks this first-stage relationship further. To begin, in column 1, we restate the main first-stage specification and, in column 2, we show that a firstborn daughter leads to higher probability of conflict not only in the next decade but also in the subsequent one ($t + 10$). Next, in columns 3 and 4, we show that a female firstborn child significantly increases a

53. Notice that the theoretical literature on the link between civil conflicts and political representation is mixed. Internal conflicts might promote political representation through a bargaining process between the ruler and competing elites (North 1981), but they might also lead to the complete collapse of local governments (Bates 2008).

TABLE 3. The firstborn daughter IV and internal conflicts.

	Cell-level internal conflicts			City-level internal conflicts		
	Any (1)	Violent (2)	Non-violent (3)	Any (4)	Violent (5)	Non-violent (6)
Female firstborn = 1	-0.071 (0.086)	-0.068 (0.066)	0.056 (0.075)	-0.001 (0.004)	-0.002 (0.004)	0.001 (0.003)
City FE	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes
City linear trend	yes	yes	yes	yes	yes	yes
Sample	1st child	1st child	1st child	1st child	1st child	1st child
Observations	5,091	5,091	5,091	5,091	5,091	5,091
Cells	56	56	56	56	56	56
Outcome mean	0.232	0.129	0.123	0.010	0.006	0.004

Note: This table shows the lack of a statistical relationship between the female firstborn instrument and measures of internal conflict using the sample of cities in the IV sample. Standard errors are reported in parentheses and are clustered at the 1×1 degree cell level. Significance levels are denoted by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

noble's probability of failing to ever produce any male children.⁵⁴ This holds also when controlling for the noble's age upon having their first child and their total lifespan. The effect of a firstborn daughter on conflict is significantly heightened if no male children are produced (column 5).⁵⁵ This additional effect is amplified still further if the noble dies soon after having their firstborn daughter (column 6).⁵⁶ While we do not explicitly employ this information in our instrumental variables strategy below, the patterns documented in Table 4 tell a story where succession considerations play an important role.⁵⁷

54. Recall the case of George, Duke of Bavaria-Landshut, and his firstborn daughter Elisabeth. In the absence of a male heir, George named Elisabeth his successor, thereby incurring the wrath of Duke Albert of Bavaria-Munich.

55. Interestingly, the firstborn daughter's effect on conflict is also significant if the noble produces male children. There can be several reasons behind this result: the son might die before succession or be considered inept to govern. Also, a firstborn daughter followed by a son might generate conflicts between families that apply patrilinear succession versus families that apply primogeniture.

56. Another approach to test the impact of the death of nobles with firstborn daughters, or no male children at all, is to assign these "shocks" in the decade of the nobles' death rather than the decade of the birth of their firstborn child. We pursue this approach in Appendix Table A3. First, we assign the outcome of the firstborn gender lottery in the decade of death of the associated noble, and show that this leads to significantly heightened likelihood of conflict in the following decade. Then, we confirm that nobles with firstborn daughters are more likely to die without ever having a male child (mirroring our findings in Table 4). Lastly, we show that upon the death of a noble lacking male children, conflict is 17 percentage points more likely than upon the death of a noble with a male heir (an effect size equivalent to over 50% of the average probability of conflict in the sample).

57. A placebo check with a slightly different flavor lends further support to the interpretation that considerations of succession are behind the impact of female firstborn children on conflict. Ecclesiastical domains in the German lands were governed by bishops and other non-secular overlords. In such places, succession disputes should therefore conceivably not be driven by the gender of nobles' progeny. Using

TABLE 4. The path from female firstborns to conflict.

	Pr(Conflict)	Pr(Conflict) _{t,t+10}	Pr(No male child ever)		Pr(Conflict)	
	(1)	(2)	(3)	(4)	(5)	(6)
Female firstborn = 1	0.335*** (0.087)	0.347*** (0.084)	0.659*** (0.079)	0.648*** (0.079)	0.183** (0.088)	0.202** (0.086)
ln(Age at first child)				0.137 (0.151)		
ln(Lifespan)				-0.359*** (0.073)		
Female firstborn = 1 × no male child ever Dies within 10 years					0.230** (0.104)	0.180 (0.132)
Female firstborn = 1 × dies within 10 years						-0.011 (0.235)
Female firstborn = 1 × no male child ever × dies within 10 years						-0.121 (0.365)
Combined effect					0.413	0.596
F-test joint significance (p-value)					0.0005	0.0001
City FE	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes
City linear trend	yes	yes	yes	yes	yes	yes
Observations	5,091	5,091	5,091	5,091	5,091	5,091
Cells	56	56	56	56	56	56

Note: First stage regressions to unpack the path from nobles' firstborn daughters to conflict. The baseline first stage is reported in column 1: An indicator for whether a conflict occurred in the city's 1×1 degree cell in a given decade is regressed on an indicator for whether the most connected noble in the cell had a female firstborn child in the previous decade. In column 2, the outcome is an indicator for whether a conflict occurred in decade t and/or $t + 1$. In columns 3 and 4, the outcome is an indicator for whether the noble used to construct the instrument failed to produce a male heir. In column 5, the main first stage specification is augmented with an interaction between the instrument and an indicator for whether the noble failed to produce a male heir. In column 6, the main first stage specification is further augmented with interactions with an indicator for whether the noble dies within 10 years of having their first child. All specifications include city and decade fixed-effects, as well as a city-specific linear trend. Standard errors are reported in parentheses and are clustered at the 1×1 degree cell level. Significance levels are denoted by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Lastly, we show in [Online Appendix Table A5](#) that conflict is crucial, in the context of our instrumental variables strategy, to the story we will now tell about the rise of medieval constitutionalism. If a female firstborn child signaled a noble's weak political position, this may have emboldened citizens to demand more political rights, which would imply a violation of the exclusion restriction. [Online Appendix](#)

data on bishop cities from [Rubin \(2014\)](#), we test this directly. We construct two variants of our main treatment variable (conflict), still maintaining our grid cell-based approach to assigning treatment: one which "switches on" for all cities in a cell-decade if a bishop ("ecclesiastical") city in that cell is exposed to conflict in that decade, and a corresponding one that switches on if a non-bishop ("non-ecclesiastical") city in that cell is exposed to conflict in that decade. As we report in [Online Appendix Table A4](#), nobles' female firstborn children do not have any effect whatsoever on conflict in ecclesiastical cities. Instead, conflict induced by firstborn daughters are phenomena solely present in non-ecclesiastical cities.

Table A5 considers cities where there was a female firstborn in decade $t - 1$, but where no conflict occurred in decade t . There is no reduced-form relationship between the instrument and our political outcomes. This suggests that the instrument affects outcomes via the conflict channel but not on its own.

4.3.2. Conflicts, Council Presence, and Elections. We use the first-stage relationship between nobles' firstborn children and conflict in the instrumental variables framework described above to explore the impact of wars on local political institutions. In the first stage, the birth of a firstborn daughter (as opposed to a firstborn son) in the previous decade constitutes a shock that increases the probability that a grid cell is involved in conflict in the following decade. We then use this exogenous variation in conflict to estimate its impact on political institutions in the second stage. The first outcome we consider is the extensive-margin effect of conflict on the presence of a city council. The outcome is an indicator that equals 1 if a council is present in the city in a given decade and 0 otherwise, which we regress on an indicator for whether any conflict took place in the grid cell associated with the city. The estimates from this exercise cannot be interpreted causally due to the likely downward bias arising from the reverse and negative relationship between conflicts and political institutions (autocratic rulers are also likely to be more belligerent). We therefore turn to the instrumental variables strategy explained above, where we use the gender of nobles' firstborn children as a shock to generate exogenous variation in conflict in a first stage. The nature of this instrument reduces our sample to those grid cell-decade observations for which the best-connected noble has their firstborn child.

Table 5 reports the estimates. The first two columns present the most parsimonious OLS specification (controlling solely for city and decade fixed effects) for the full sample (column 1) and the restricted sample for which our instrumental variable is defined (column 2). In both cases, the estimated coefficient on Conflict_{ct} is positive and statistically significant, though larger in the restricted sample. In this case, the occurrence of a conflict is associated with a 2.5 percentage point increase in the probability of having a city council. Column 3 reports the 2SLS results, where the estimated coefficient on Conflict_{ct} is of a similar magnitude to the OLS estimates. In columns 4–7, we adopt a more stringent 2SLS specification that includes city-specific linear time trends and conduct a series of robustness checks: dropping observations affected by religious wars, adding additional controls, and weighting by the number of cities in each grid cell. The IV regression results, when controlling for city trends, indicate an increase in the probability of having a council following conflict exposure of 7.3–10.3 percentage points. Given a baseline mean of 28.4% of cities with a council during the sample period, this is a sizeable effect. The result also holds when we measure conflict exposure at the territory level rather than the grid cell level (column 8).

While the extensive margin is an important step toward citizen representation, it is possible that an established council is merely run by associates of the local ruler. We therefore now study whether a city's citizens were directly involved in electing local councils. Concretely, in equation (1) above, y_{ict} will be an indicator taking a

TABLE 5. Conflicts and council presence.

	Pr(Council present) = 1							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Conflict	0.006** (0.003)	0.025* (0.014)	0.038 (0.050)	0.103** (0.043)	0.073* (0.043)	0.101** (0.043)	0.080** (0.031)	
Conflict (territory)								0.328* (0.187)
City FE	yes	yes	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes	yes	yes
City linear trend				yes	yes	yes	yes	yes
Excl religious wars					yes			
Controls						yes		
Weighted							yes	
Sample	full	1st child	1st child	1st child	1st child	1st child	1st child	1st child
Estimator	OLS	OLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
Observations	61,077	5,091	5,091	5,091	3,713	5,091	5,091	5,091
Cells	89	56	56	56	46	56	56	56
Outcome mean	0.259	0.284	0.284	0.284	0.251	0.284	0.284	0.284
K-P F-Stat			12.573	14.775	10.868	14.949	16.947	7.934

Note: OLS and 2SLS regressions of an indicator for whether a city has a council on an indicator for whether a conflict occurred in the city's 1×1 degree cell in a given decade (columns 1–7). Column 8 reports results with the conflict indicator assigned at the level of territorial histories. The unit of observation is a city-decade and the sample consists of German cities from 1290 to 1710. The full sample includes all cities in all cells, whereas the first child sample includes cities which lie in a cell to which an instrument value has been assigned. Conflicts are instrumented by an indicator for whether the most connected noble in the cell had a female firstborn child in the previous decade. The most connected noble is identified as the person with the most links in the family network of the German and European nobility. All regressions include city and decade fixed effects. If included, the vector of controls consists of cities' article page length in the Keyser books, interacted with century fixed effects. Standard errors are clustered at the 1×1 degree cell level. Significance levels are denoted by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

value of 1 if citizens elected the council without the interference of the local lord. Results from this exercise are reported in Table 6. Column 1 presents OLS estimates of equation (1), in which we regress an indicator for whether citizens elected the council on an indicator for whether any conflict took place in the grid cell associated with the city. As before, we only include city and decade fixed-effects in this first specification. We find a positive relationship between conflict and elected city councils: exposure to conflict is associated with a 0.3 percentage point increase in the probability that a city's council is elected by its citizens. In column 2, we again repeat the previous regression using only the cities in the IV sample, which also finds a 0.3 percentage point increase in the probability that citizens elect the council, albeit estimated with lower precision.

In column 3, we report results from a 2SLS estimation. Concretely, a conflict induced by the birth of a firstborn daughter causes an increase of 2.6 percentage points in the probability that citizens elect the city council. Exposure to wars therefore plays an important role in the establishment of inclusive political institutions, a result which

TABLE 6. Conflicts and council elections.

	Pr(Citizens elect council) = 1								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Conflict	0.003***	0.003	0.026*	0.016**	0.015**	0.023**	0.016**	0.020**	
	(0.001)	(0.003)	(0.014)	(0.008)	(0.007)	(0.009)	(0.008)	(0.009)	
Has council					0.018				
					(0.015)				
Conflict (territory)									0.051**
									(0.023)
City FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
City linear trend				yes	yes	yes	yes	yes	yes
Excl religious wars						yes			
Controls							yes		
Weighted								yes	
Sample	full	1st child	1st child	1st child	1st child	1st child	1st child	1st child	1st child
Estimator	OLS	OLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
Observations	61,077	5,091	5,091	5,091	5,091	3,713	5,091	5,091	5,085
Cells	89	56	56	56	56	46	56	56	56
Outcome mean	0.022	0.022	0.022	0.022	0.022	0.021	0.022	0.022	0.022
K-P F-Stat			12.573	14.775	14.798	10.868	14.949	16.947	7.906

Note: OLS and 2SLS regressions of an indicator for whether citizens in a city elect their own city councils without intervention of the local ruler on an indicator for whether a conflict occurred in the city's 1×1 degree cell in a given decade (columns 1–8). Column 9 reports results with the conflict indicator assigned at the level of territorial histories. The unit of observation is a city-decade and the sample consists of German cities from 1290 to 1710. The full sample includes all cities in all cells, whereas the first child sample includes cities which lie in a cell to which an instrument value has been assigned. Conflicts are instrumented by an indicator for whether the most connected noble in the cell had a female firstborn child in the previous decade. The most connected noble is identified as the person with the most links in the family network of the German and European nobility. All regressions include city and decade fixed-effects. If included, the vector of controls consists of cities' article page length in the Keyser books, interacted with century fixed-effects. Standard errors are clustered at the 1×1 degree cell level (specifications implementing Conley (1999) standard errors with cutoffs at 100, 200, 300, 400, and 500 kilometers are reported in [Online Appendix Figure C6](#)). Significance levels are denoted by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

is in line with the theory on the roots of medieval constitutionalism. Furthermore, the difference in magnitude between our instrumental variables result and the coefficients reported in columns 1 and 2 highlights the dangers of causally interpreting downward-biased OLS estimates in this context. In the following columns, we introduce additional controls and sample restrictions. First, in column 4, we include a city-specific linear time trend, a demanding specification that constitutes our baseline throughout the rest of the analysis. Though the point estimate is slightly attenuated, it remains statistically and economically significant.

The presence of an elected council presumes the presence of a council to be elected. To ensure that results are not driven simply by the establishment of new councils, in column 5, we include an indicator for the presence of a council as a control. While this result has to be interpreted with caution given that council presence itself is a potential outcome of conflicts, the addition of this control does not substantially alter the estimated impact of conflicts on council elections. To reconcile this finding with our previous results in [Table 5](#), consider that, on average, council elections follow

the establishment of a city council by approximately a century. This is suggestive that conflicts might have triggered the initial set-up of the institution in the first part of the sample, while leading to the broadening of citizen participation in a later period.

A number of religious wars were fought in the German lands in the centuries following the Protestant Reformation. These wars were different in nature from the conflicts arising from the shock that we exploit in our instrumental variables strategy. In addition, religious ideological competition was an important driver of cities' public goods provision (Dittmar and Meisenzahl 2020). To ensure that our results are not picking up such dynamics, in column 6, we completely exclude all decades during which religious wars were fought. Results are very similar to the baseline.

In column 7, we control for cities' entry length in the *Städtebuch*, interacted with century fixed effects. This captures any differential impact over time of some cities being more extensively documented in our main data source. In [Online Appendix Table A6](#), we report specifications with additional controls.⁵⁸ Throughout, results are highly robust, which is unsurprising given the exogeneity of the shock that we are exploiting in our first stage. In column 8, we report a weighted regression where we take the number of cities in each grid cell as weights. This is to account for the fact that some grid cells are more sparsely covered than others. Results are substantively unchanged.

Finally, we assign conflict at the level of common territorial histories (rather than at the grid cell level) in column 9. The estimated coefficient is slightly larger in this specification, which is to be expected given that this measure of conflict—by assigning it at the level of a much tighter geographical unit—captures external threats that are closer and more pressing to local rulers.

4.3.3. Conflicts and Council Size. Our second measure of the quality of political institutions is the size of the city council, where larger councils are taken to better represent the interests of the local citizenry. In our historical setting, council expansions are often associated with greater direct representation of citizens.⁵⁹ The city of Braunschweig, for example, expanded its *gemeine Rat* (“common council”) in 1386 to enable direct representation of citizens from Braunschweig's distinct municipal areas. We therefore turn to results using council size as the outcome of equation (1) in [Table 7](#). As before, OLS results (columns 1 and 2) are likely biased downwards, but the point estimates nevertheless points toward a positive correlation between

58. Columns 1 and 2 of [Online Appendix Table A6](#) reproduce columns 4 and 7 of [Table 6](#); in subsequent columns, we add additional controls one by one, and all at once in the final column. These additional controls include a range of city characteristics, interacted with century fixed effects (columns 3–10). In order of inclusion, we introduce controls for cities' proximity to trade routes, imperial and market city status, Hanse and university cities, river and coastal access, and broad region fixed effects. In column 11, we control for a measure of the mean winter temperature in each cell-decade to capture any impact of particularly harsh climatic conditions. Finally, in column 12, we include all of the controls together.

59. For the modern era, see Kjaer and Elklit (2014) for an empirical test of the relationship between assembly size and representativeness.

TABLE 7. Conflicts, council size, and guild representation.

	Council size							Guilds on council		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Conflict	0.068 (0.064)	0.928*** (0.259)	2.135*** (0.941)	1.678* (0.847)	2.177** (0.868)	2.112** (0.930)	1.716** (0.827)		0.135* (0.073)	0.135* (0.073)
Has council				7.553*** (0.548)				6.790** (3.183)		-0.007 (0.022)
Conflict (territory)										
City FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
City linear trend	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Excl religious wars					yes					
Controls						yes				
Weighted							yes			
Sample	full						yes			
Estimator	OLS	OLS	2SLS	2SLS	2SLS	2SLS	Columns 2–10: first child sample 2SLS	2SLS	2SLS	2SLS
Observations	61,077	5,091	5,091	5,091	3,713	5,091	5,091	5,085	792	792
Cells	89	56	56	56	46	56	56	56	53	53
Outcome mean	5.218	5.275	5.275	5.275	4.658	5.275	5.275	5.278	0.014	0.014
K-P F-Stat			14.775	14.798	10.868	14.949	16.947	7.906	10.036	10.167

Note: OLS and 2SLS regressions of the number of members of a city's council on an indicator for whether a conflict occurred in the city's 1×1 degree cell in a given decade (columns 1–7). Column 8 reports results with the conflict indicator assigned at the level of territorial histories. Columns 9 and 10 report 2SLS regressions of an indicator for guild representation on the city council on the cell-level conflict variable. The unit of observation is a city-decade and the sample consists of German cities from 1290 to 1710. The full sample includes all cities in all cells, whereas the first child sample includes cities which lie in a cell to which an instrument value has been assigned. Conflicts are instrumented by an indicator for whether the most connected noble in the cell had a female firstborn child in the previous decade. The most connected noble is identified as the person with the most links in the family network of the German and European nobility. All regressions include city and decade fixed effects and a city-level linear time trend. If included, the vector of controls consists of cities' article page length in the Keyser books, interacted with century fixed effects. Standard errors are clustered at the 1×1 degree cell level (specifications implementing Conley (1999) standard errors with cutoffs at 100, 200, 300, 400, and 500 kilometers are reported in Online Appendix Figure C6). Significance levels are denoted by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

conflict exposure and council size. Turning to our instrumental variables specification in column 3, we find a larger and statistically significant effect. Exogenous exposure to conflict increases the size of the council by approximately two members. Notice that, throughout, we include a city-specific linear time trend to account for the average tendency of councils to increase in size over time.

Results remain stable when we include a control for the presence of a council in column 4. By definition, council size is 0 when no council is present. Including this control attenuates the estimated effect slightly, but it remains significantly positive. This indicates that a substantial portion of the effect of conflict on council sizes is on the intensive margin (i.e., councils that already existed expanded as a result of conflict). Results are robust to excluding times of religious conflict (column 5) and controlling for cities' entry lengths in the *Städtebuch* (column 6).⁶⁰ Finally, results are robust to weighting regressions by the number of cities in each grid cell (column 7), and assigning conflict at the level of territorial histories (column 8).

In the theory of medieval constitutionalism advanced by Stasavage (2011, 2016), wars bring more inclusive political institutions because rulers grant their creditors power over future policy as a commitment device. These creditors would often be wealthy merchants or guild members. To test this hypothesis, we use data on guild representation on city councils. As detailed in Section 3 above, this information is available only for a subset of cities in Bairoch, Batou, and Chèvre (1988) and was originally collected by Wahl (2019). Results are reported with and without a control for the presence of a council in columns 9 and 10 of Table 7. We indeed find that, as predicted by the theory, conflict exposure increases the likelihood that guilds are represented on city councils, by approximately 13 percentage points. Recent scholarship has nuanced the view of guilds as efficient, inclusive institutions (see, e.g., Ogilvie 2004, 2019 and Wahl 2019), highlighting their potential for rent-seeking. Our finding in columns 9 and 10 should therefore be viewed as complementary to those on the impact on council elections and council size: wars shift political power away from cities' traditional elites.

4.3.4. Conflicts and Representativeness. We now turn to a composite measure of "representativeness", which captures jointly citizens' ability to choose their political representatives in city councils via elections and breadth of representation in these councils as proxied by their size. Specifically, we use the first principal component of these two variables. In Table 8, across OLS and instrumental variables specifications, we show the positive impact of conflict on this composite measure of representativeness. Results are highly robust to the same array of checks we applied to the individual election and council size results above (controlling for the existence of a council, excluding times of religious war, controlling for cities' entry length in our

60. In [Online Appendix Table A7](#), we add additional controls. Columns 1 and 2 reproduce columns 3 and 6 of Table 7, subsequent columns add additional controls one by one, and in the final column, all additional controls at once. Results remain robust.

TABLE 8. Conflicts and representativeness.

	First principal component of council elections and council size							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Conflict	0.006 (0.005)	0.072*** (0.022)	0.209** (0.079)	0.176** (0.073)	0.243*** (0.067)	0.208** (0.078)	0.201** (0.077)	
Has council				0.551*** (0.080)				
Conflict (territory)								0.666** (0.254)
City FE	yes	yes	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes	yes	yes
City linear trend	yes	yes	yes	yes	yes	yes	yes	yes
Excluding religious wars					yes			
Controls						yes		
Weighted							yes	
Sample	full	1st child	1st child	1st child	1st child	1st child	1st child	1st child
Estimator	OLS	OLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
Observations	61,077	5,091	5,091	5,091	3,713	5,091	5,091	5,085
Cells	89	56	56	56	46	56	56	56
K-P F-Stat			14.775	14.798	10.868	14.949	16.947	7.906

Note: OLS and 2SLS regressions of representativeness (the first principal component of council elections and council size) on an indicator for whether a conflict occurred in the city's 1×1 degree cell in a given decade (columns 1–7). Column 8 reports results with the conflict indicator assigned at the level of territorial histories. The unit of observation is a city-decade and the sample consists of German cities from 1290 to 1710. The full sample includes all cities in all cells whereas the first child sample includes cities, which lie in a cell to which an instrument value has been assigned. Conflicts are instrumented by an indicator for whether the most connected noble in the cell had a female firstborn child in the previous decade. The most connected noble is identified as the person with the most links in the family network of the German and European nobility. All regressions include city and decade fixed effects and a city-level linear time trend. If included, the vector of controls consists of cities' article page length in the Keyser books, interacted with century fixed effects. Standard errors are clustered at the 1×1 degree cell level. Significance levels are denoted by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

main data source, weighting by the number of cities in each grid cell, and assigning conflicts at the level of territorial histories rather than grid cells).

4.3.5. Pre-Trends and Persistence. Having constructed a composite measure of representative city councils, we explore the dynamic effects of conflict on representativeness. Did conflict lead to persistent institutional change? Or did rulers simply make concessions during times of war, which were subsequently rolled back once the threat subsided? In Figure 5, we explore such dynamic effects by analyzing the impact of conflicts on a time window that comprises one generation before and one generation after the war. First, we perform a placebo exercise in which we regress the representativeness measure in $t - 20$ and $t - 10$ on conflict in t (i.e., the outcome is

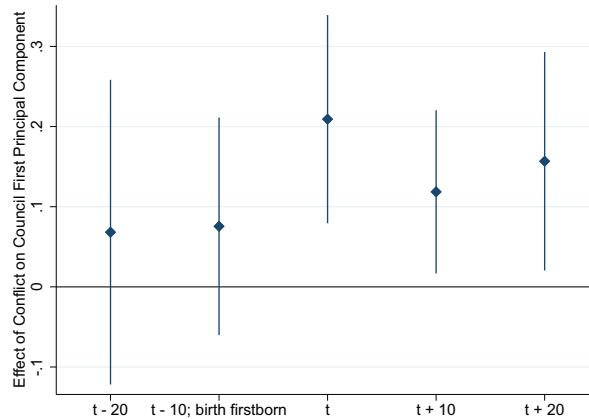


FIGURE 5. Conflict and representativeness—Dynamic effects. 2SLS regressions of representativeness (the first principal component of council elections and council size) on an indicator for whether a conflict occurred in the city’s 1×1 degree cell in a given decade. Each coefficient corresponds to a separate regression for a given timing of the outcome variable, whereas conflict and instrument are always measured in t and $t - 10$, respectively. The sample includes cities which lie in a cell to which an instrument value has been assigned. Conflicts are instrumented by an indicator for whether the most connected noble in the cell had a female firstborn child in the previous decade. The most connected noble is identified as the person with the most links in the family network of the German and European nobility. All regressions include city and decade fixed-effects and a city-level linear time trend. Error bars show 90% confidence intervals and standard errors are clustered at the 1×1 degree cell level.

measured 20 or 10 years before treatment).⁶¹ Reassuringly, there is no effect of future conflict on council representativeness. The contemporaneous effect in t is positive and highly statistically significant.⁶² The remaining coefficients in Figure 5 show that representativeness remains well above trend in the following two decades, $t + 10$ and $t + 20$ (recall that we include a city-specific linear time trend in these specifications).⁶³ These results indicate that conflict brought about a lasting improvement in cities’ local political institutions, by strengthening the representation of citizens several decades after exposure to conflict.⁶⁴

61. Notice that measuring the outcome in $t - 10$ does not constitute a pure placebo, since our instrument—the gender of the most important noble’s firstborn—is measured in $t - 10$. We nevertheless report this coefficient for completeness.

62. This coefficient corresponds to the specification reported in Table 8, column 3.

63. We obtain a very similar pattern when assigning conflict at the level of territorial histories. Results are reported in [Online Appendix Figure A12](#).

64. Results are very similar when using the two components of representativeness individually. [Online Appendix Tables A8](#) and [A9](#) report estimates for council elections (assigning conflict at the grid cell and territorial levels, respectively). [Tables A10](#) and [A11](#) report those for council size.

4.3.6. Reduced-Form Event-Study Analysis. An alternative methodology to study the dynamic effects of conflicts on local political institutions is to include all lags and leads in a single regression, focusing on the reduced-form relationship. We estimate specifications of the form

$$y_{ict} = \psi_i + \kappa_t + \sum_{\tau=t-1}^{t+3} \xi_{\tau} \text{Daughter}_{c,\tau} + X'_{ict} \theta + u_{ct}. \quad (3)$$

City and decade fixed-effects and controls X_{ict} are as before. This estimation amounts to comparing the evolution of political outcomes in cities whose local noble had a female firstborn to those where the local noble's firstborn was male, in an event window that covers the period from one decade before to three decades after the birth. The sequence of coefficients of the $\text{Daughter}_{c,\tau}$ variable, ξ_{τ} , captures this differential evolution. As a city enters the lottery of the gender of the firstborn several times, we can estimate the entire sequence of estimates ξ_{τ} : there is no omitted decade as in a usual event study specification. Notice that the event window that we consider is the same as in the 2SLS estimation (recall that in the 2SLS estimation, the exogenous shock to conflict was the gender of the firstborn in the *previous* decade). We disregard all those events (births of firstborn children) that have an event window overlapping with other events. This dictates the size of the event window: if we were to extend it from five to six decades, we would lose more than a third of our sample.

The results of this exercise are plotted in Figure 6, with the composite representativeness measure as the outcome variable (the first principal component of council elections and council size). In the decade immediately preceding the birth of the firstborn, there are no differences in political outcomes between cities that were to witness noble first births of different genders. In the the first decade following the first births, however, patterns begin to diverge: having a daughter rather than a son is associated with higher representativeness. This effect remains significantly positive in the following two decades. Realizations of the lottery of nobles' firstborn children therefore had long-lasting impacts on cities' subsequent institutional development. Increased likelihood of conflict in the case of a daughter, as we have argued above, was the key link in this chain.

4.3.7. Additional Checks. We conduct a number of additional checks to explore the heterogeneity and robustness of our results. These are reported in [Appendix C](#).

5. The Long Shadow of Medieval Constitutionalism

In the previous section, we documented that European wars in the Middle Ages were the fundamental drivers behind the spread of representative assemblies in German cities. This section is an attempt to understand specific mechanisms and long-term consequences. In terms of mechanisms, the historical narrative is that representative assemblies were a tool to raise taxes and the credit necessary to finance these conflicts.

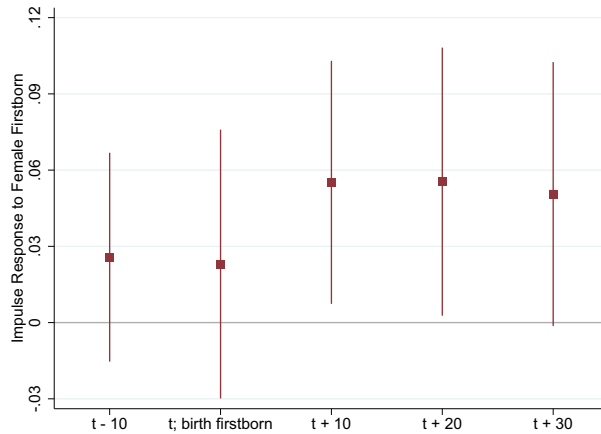


FIGURE 6. Reduced-form impulse response to female versus male firstborn children. Impulse response regressions of representativeness (the first principal component of council elections and council size) on an indicator for whether the most connected noble in the 1×1 degree cell had a female firstborn child in decade t . The unit of observation is a city-decade and the sample consists of German cities from 1290 to 1710 whose local most connected noble had a firstborn child in decade t . The most connected noble is identified as the person with the most links in the family network of the German and European nobility. All regressions include city and decade fixed-effects and a city-level linear time trend, and control for cities' article page length in the Keyser books, interacted with century fixed effects. Error bars show 90% confidence intervals and standard errors are clustered at the 1×1 degree cell level.

Specifically, Section 5.1 illustrates how conflicts changed cities' tax systems, leading eventually to the development of more sophisticated fiscal tools. Finally, Section 5.2 documents how these fiscal blueprints affected the state consolidation process in the early modern period.

5.1. Medieval Constitutionalism and Local Fiscal Capacity

Fiscal capacity is central to theories of the link between conflict and the development of medieval constitutionalism. Naturally, the immediate fiscal need of a local ruler in the context of a conflict is for military expenditure. While we do not have information on expenditure on soldiers' pay or provision for troops, what we do have is data on expenditure on military buildings. In Table 9, we show that conflict has an immediate impact on the construction of military buildings, such as defensive walls and other fortifications. We regress an indicator for whether each of three broad types of construction (military, secular, and religious) are present in a given city-decade. As expected, we find that conflict triggers immediate investment in military infrastructure. Conflict induced by the birth of a firstborn daughter makes the presence of military buildings 3.5 percentage points more likely. We do not find similar patterns for secular or religious buildings. If anything, the impact on secular buildings is negative

TABLE 9. Conflicts and types of public buildings.

	Pr(Building Type Present) = 1		
	Military (1)	Secular (2)	Religious (3)
Conflict	0.035* (0.020)	-0.048 (0.041)	0.003 (0.020)
City FE	yes	yes	yes
Decade FE	yes	yes	yes
City linear trend	yes	yes	yes
Sample	1st child	1st child	1st child
Estimator	2SLS	2SLS	2SLS
Observations	5,091	5,091	5,091
Cells	56	56	56
Outcome mean	0.623	0.614	0.849
K-P F-Stat	14.775	14.775	14.775

Note: 2SLS regressions of an indicator for whether different types of public buildings are present on an indicator for whether a conflict occurred in the city's 1×1 degree cell in a given decade. The unit of observation is a city-decade and the sample consists of German cities from 1290 to 1710. The first child sample includes cities which lie in a cell to which an instrument value has been assigned. Conflicts are instrumented by an indicator for whether the most connected noble in the cell had a female firstborn child in the previous decade. The most connected noble is identified as the person with the most links in the family network of the German and European nobility. All regressions include city and decade fixed-effects and a city-level linear time trend. Standard errors are clustered at the 1×1 degree cell level. Significance levels are denoted by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

(though not statistically significant).⁶⁵ This suggests that in periods of war, local spending went directly to the war effort, with no short-term spillovers into other public goods.

These military expenses had to be financed. The theory presented in Section 2 suggests that, in times of war, rulers had to extend a series of political rights to citizens to be able to either borrow or increase the fiscal revenues from cities. The emphasis of Stasavage (2011, 2016) on the role of credit introduces interesting dynamics to this relationship. More precisely, since rulers financed wars by relying significantly on credit, conflict shaped future taxation levied to repay creditors.

We documented above that conflict led to the development of inclusive political institutions. Did the emergence of more sophisticated systems of taxation follow, as predicted by the theory? We now turn to this question. To capture the dynamic impact of conflict on taxes, we consider the effect of conflicts on forms of taxation not only in t but also in the following two decades when estimating equation (1). We again use the gender of nobles' firstborn children as an instrument for conflict in a first stage given by equation (2).

When looking at taxes, dynamic effects are of particular interest for a variety of reasons. First, in the short run, rulers may raise war taxes to satisfy the immediate

65. Similar patterns are obtained if we exclude religious wars (see Table A12 in the Online Appendix).

TABLE 10. Conflicts and complex taxes—dynamic effects.

	Outcome: Number of complex taxes			
	$t-20$	t	$t+10$	$t+20$
Conflict	0.004 (0.030)	0.012 (0.055)	0.007 (0.036)	0.080* (0.044)
City FE	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes
City linear trend	yes	yes	yes	yes
Sample	1st child	1st child	1st child	1st child
Estimator	2SLS	2SLS	2SLS	2SLS
Observations	5,065	5,091	5,091	5,091
Cells	56	56	56	56
Outcome mean	0.241	0.256	0.271	0.269
K-P F-Stat	14.900	14.775	14.775	14.775

Note: 2SLS regressions of the number of complex taxes on an indicator for whether a conflict occurred in the city's 1×1 degree cell in a given decade. Each column is a separate regression for a given timing of the outcome variable whereas conflict and instrument are always measured in t and $t - 10$, respectively. The unit of observation is a city-decade and the sample consists of German cities from 1290 to 1710. The first child sample includes cities which lie in a cell to which an instrument value has been assigned. Conflicts are instrumented by an indicator for whether the most connected noble in the cell had a female firstborn child in the previous decade. The most connected noble is identified as the person with the most links in the family network of the German and European nobility. All regressions include city and decade fixed-effects and a city-level linear time trend. Standard errors are clustered at the 1×1 degree cell level. Significance levels are denoted by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

need for liquidity. Even if all wars were tax-financed, increased taxation combined with increased participation may lead to a new equilibrium of higher taxation whereby, even when a conflict is over and war taxes stop, other forms of taxation replace them on a more permanent basis as fiscal capacity is built. Second, to the extent that rulers also borrow from creditors (as war taxes alone do not raise sufficient funds in the short run), those credits need to be paid back via taxes raised from citizens. While we have no direct evidence, in our data, about credit-financed wars, both reasons just stated suggest that complex taxes replacing war taxes are likely to kick in with some delay.

To test this, we now consider the effect of conflicts on the number of complex taxes levied in city i in decade t and in the following two decades. As described in Section 3, complex taxes are those which require a registry to collect. The ability to raise complex taxes is indicative of considerable sophistication of the tax system, since these require both the enumeration of the subjects to be taxed, as well as additional information to calculate the amount owed or the value of the quantity that is to be taxed (such as land, wealth or inheritances). We report results on the impact of conflict on complex taxes using our instrumental variables strategy in Table 10.

Conflicts that are triggered by the birth of a firstborn daughter cause a larger number of complex taxes to be raised in a city, but the effect is not immediate. Instead, it takes around two decades after the conflict for these taxes to be

established. This is unsurprising, since the disruption caused by war makes large-scale, sophisticated tax reforms difficult during its duration and immediate aftermath.⁶⁶ In terms of magnitudes, the number of complex taxes increases by 0.08 (relative to a city-by-decade average of 0.26 in the 2SLS sample) in the second decade after the conflict, thus substantially increasing relative to baseline. As a placebo exercise, we additionally report the impact of conflict in t on complex taxes levied in $t - 20$. Reassuringly, complex taxes in the past are not predicted by future conflict.

In the [Online Appendix](#), we show that these results on the evolution of complex forms of taxation following conflict are robust to assigning conflicts at the territory level, rather than at the level of the grid cell (Table A13), and when considering only non-religious wars (Table A14). Patterns are very similar. If anything, results are stronger than in our baseline specification.

5.2. *The Rise of Modern States*

The Military Revolution in the 17th century marked the onset of a process of consolidation and centralization that eventually transformed diffuse polities into modern European states. Figure A13 in the [Online Appendix](#) documents this trend; from the early 1600s on, average territory sizes grew as expanding states absorbed more and more cities. This figure is in line with similar findings in Cantoni, Mohr, and Weigand (2024), whose focus is on the process of fiscal centralization in the German lands between the 16th and the 18th century. They show that territories where rulers implemented permanent seats of professional bureaucrats to centralize fiscal administration were more likely to begin a process of state consolidation. This process meant that territories had a higher survival rate, grew in size, but also shifted local power to the sovereigns—another reason why we end our sample before this process of state consolidation was in full swing.

In the previous section, we documented that—starting in an earlier period during the zenith of medieval constitutionalism—the near-constant conflict experienced by cities in the German lands gave rise to the development of a series of administrative and institutional innovations. Our results suggest that rulers trade-off political power to their subjects to raise the funds needed to finance warfare. New representative institutions were coupled with the adoption of complex forms of taxation, allowing cities to develop substantial local fiscal and spending capacity.

Were cities and territories that were early to adopt the high fiscal capacity paradigm more likely to come out on top in the consolidation process that followed? Figure 7 provides an answer in the affirmative. Here, we split our sample of territories into those of above- and below-median tax capacity in the 16th century, before the onset of the

66. Note that we exclude explicit “war taxes” from our count of complex taxes, which were often levied on a per head basis to raise emergency funds in a state of war.

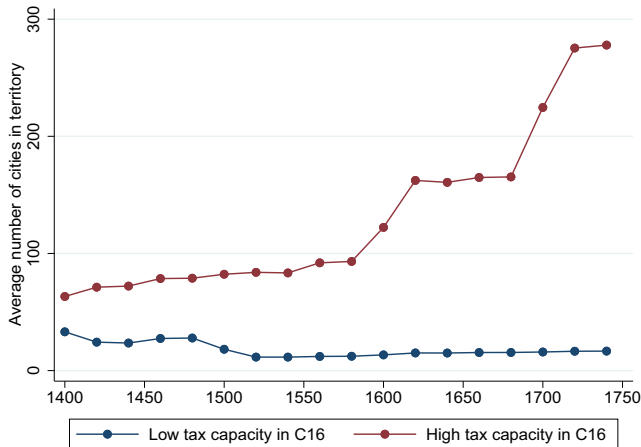


FIGURE 7. Tax capacity before the military revolution and subsequent territory growth. Plots of the average number of cities in territories over time, separately for subgroups of territories which had high and low (above- and below-median) tax capacity in the 17th century, before the Military Revolution. Tax capacity is measured as the sum of all complex taxes levied in cities in the territory, in this case over the course of the period 1500–1590.

Military Revolution proper. The stark divergence between the two curves from the early 17th century onward indicates that the territories which had developed greater tax potential during the heyday of medieval constitutionalism were at a prime position to subsequently springboard into a rapid process of consolidation.

What role did wars play in the relationship between tax capacity and territorial expansion? To explore this dimension, we conduct an exercise in the spirit of Gennaioli and Voth (2015). We identify all instances where a city switches from one territory to another following a period of war. We then calculate the difference in tax capacity between the gaining territory and the losing territory, as measured by the difference in the number of complex taxes levied in the two territories. Positive differences therefore indicate that a city switches from a lower to a higher tax capacity territory. In Figure 8, we plot the average of these differences over time. The pattern that emerges goes some way toward explaining the divergence in centralization we see from the 17th century on. Consistently throughout the centuries, as a rule, higher tax capacity territories conquer cities from territories with lower tax capacity. But before the Military Revolution these differences were modest. From the year 1600 onwards, however, there is a pronounced increase in the tax advantage of conquerors over the conquered. That is, following the Military Revolution, having superior taxation infrastructure in place becomes a strong predictor of wartime success.⁶⁷

67. We also estimate this relationship formally using a regression framework and report the results in Table A15 in the Online Appendix. The same pattern emerges: the differences in tax capacity between

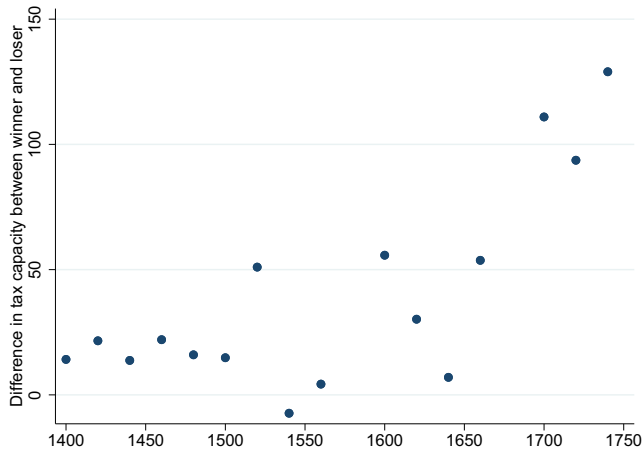


FIGURE 8. Differences in tax capacity and city conquest. Plot of the average difference in tax capacity between territories when cities switch from one territory to another during times of war. Positive differences indicate that a city switched from the territory with lower tax capacity in the decade before conflict (as measured by the number of complex taxes levied in the territory) to the territory with higher tax capacity.

6. Conclusion

What explains the rise of medieval constitutionalism in Western Europe? A prominent theoretical hypothesis finds the origin of this institutional development in the fragmentation of the European polities in the medieval and early modern periods. Weak rulers were constantly at war with each other. Within this context, representation and consent were fundamental tools for these rulers to raise taxes, credit, and militias necessary to fight these conflicts.

In this paper, we provide causal evidence for this hypothesis by turning to Germany between 1290 and 1710. We introduce a novel panel dataset for the universe of German cities, with information on cities' local political institutions, systems of taxation, and expenditure on new public buildings. Combining this data with information on cities' involvement in conflict and on the firstborn children of prominent nobles in the European network of nobility, we implement an instrumental variables strategy to isolate exogenous variation in conflict exposure. In a first stage, we show that cities in areas in which the most prominent noble has a firstborn daughter (as opposed to a firstborn son) are more likely to see conflict. Exploiting this quasi-random variation in conflict exposure, we document a direct causal link between violent conflicts and the rise of representative political institutions. In line with theoretical predictions from

gainers and losers of cities during wartime becomes significantly positive only from the half-century 1600–1649 onwards (column 1). This finding is robust to excluding religious wars (column 2), including territory fixed effects (column 3), and both at the same time (column 4). Further, we arrive at a similar result (columns 5–8) using the number of complex taxes levied in the city with the most complex tax system as our measure of tax capacity (i.e., a maximum over all cities in a territory, rather than a sum). This finding is also robust to excluding religious wars and including territory fixed effects.

the literature, cities exogenously exposed to conflict developed councils which were more likely to be elected by the local citizenry, of larger size, and with greater guild participation.

The conflict-induced rise in political representation is accompanied by an increased sophistication of the local tax system. In the decades following conflict, affected cities introduce more complex taxes requiring substantial administrative architecture, both to calculate the amounts owed and to ultimately collect the levied taxes. We lastly present evidence that this increased sophistication of the tax system—developed within the institutional framework of medieval constitutionalism—casts a long shadow on subsequent territorial consolidation. Taken together, these findings underscore the role played by wars in the emergence of crucial elements of the blueprints for modern states.

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Supplementary Material

Supplementary data are available at [JEEA](#) online.