THREE ESSAYS ON LEGAL INSTITUTIONS AND GROWTH IN MEDIEVAL AND EARLY MODERN EUROPE

By

Colin Quin Sharpe

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Approved:

William J. Collins, Ph.D.

Ariell Zimran, Ph.D.

Brian Beach, Ph.D.

William Caferro, Ph.D.

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CHAPTER 1

Introduction

British exceptionalism is an important theme in both the history of economic growth and in the development of economic history as a discipline. To put this exceptionalism into context, consider that the two most important economic changes in human history have been the Neolithic Revolution and the Industrial Revolution. While the Neolithic Revolution occurred independently across the globe, the Industrial Revolution is linked inextricably to one place and time: Britain in the 18th and 19th centuries. Understanding why this profound change in economic life happened when and where it did has been a central concern for economic historians.

An early explanation for European and particularly British success was the suitability 18th century European (and particularly British) culture and institutions for growth, advanced by Landes[1] (1969) and influentially articulated by North and Weingast (1989). North and Weingast focused on constraints on the executive, and linked these constraints to economic activity through stronger protection of property rights after the Glorious Revolution in England in 1688. This work, which in part was recognized by a Nobel Prize, has been influential among economic historians and development economists, but in some sense shifted the relevant question to why British institutions were perfectly poised to encourage industrialization while those in other regions of Europe or the world were not.

More recent explanations have a similar trade-off between answering questions about Britain's success and raising them. The induced innovation theory, associated with Allen (2009), suggests that Britain's favorable resource endowment of coal and relatively expensive wages made it the most profitable place to invest in labor-saving, capital-intensive inventions at the start of the Industrial Revolution. This explanation has been critiqued on theoretical and empirical grounds (see Mokyr 2009), but at a more fundamental level raises a similar issue as North and Weingast. Taking induced innovation at face value, one is still left to wonder why British wages were higher than their continental counterparts in the early 18th century. If the explanation relies on greater productivity, or features of labor market institutions such as guilds, then a full explanation of industrialization must account for these factors.

This is equally true of the most popular alternative explanation current in the economic history literature, the idea of the 'industrial enlightenment' advanced by Joel Mokyr. Mokyr (2009) argues that industrialization was the product of a scientific culture, exemplified by the British Enlightenment, working in combination with an endowment of skilled engineers and craftsmen to conceive of and actually construct useful inventions.

[1] Landes drew on earlier scholarship in his work, notably Deane and Cole (1962), and the desire to understand economic growth in the context of industrializing Britain can be traced back to contemporary economists such as Adam Smith.

In this narrative, the engagement of English and Scottish thinkers with Enlightenment ideas and norms of scientific inquiry spurred the development of new ideas, and the uniquely skilled group of mechanics, millwrights, and engineers in Britain were able to put these ideas to practical use. Again, this theory can be critiqued on more prosaic grounds (see Allen 2009), but taking it on its own terms, we are still left with questions about why Britain had more skilled workers, and why it was such an epicenter of the Enlightenment.

Clearly, no theory can explain the entirety of historical development, and it is unreasonable to criticize any of these explanations too severely for failing to answer questions that they were never intended to address. My purpose in raising these questions is not to reduce influential explanations of the Industrial Revolution to straw men (particularly when the works cited above have been integral to my research), but rather to focus attention on a gap in the literature. Recent empirical work has shown that the divergence between Britain and the rest of Europe occurred well before the Industrial Revolution. Wages (Humphries and Weisdorf 2019) and productivity (Bouscasse et al. 2021) began to rise in Britain in the early 1600s, before the Enlightenment, before the adoption of new labor-saving devices, and before the Glorious Revolution.[2] Without diminishing the importance of theories centered on the 18th century and industrialization, this evidence suggests that there were relevant aspects of the British experience that were already unique by 1600. Viewed in this light, the skills and wages of British workers, output of British intellectuals, and political change all appear to have been products of long-run historical trends as much as they were drivers of change.

This dissertation explores Britain's unique legal institutions as a potential explanation for some of the later observable differences between it and the rest of Europe. Between the 1066 and 1600, England diverged from other states in its political and legal framework. The English state was more centralized, and developed a system of common law that differed substantially from both the decentralized, feudal laws of its contemporaries, and the highly rationalized civil codes that replaced them. This centralized legal system fulfilled many of the roles played by local institutions elsewhere, and so the patchwork of manors, towns, and guilds that regulated trade and production throughout Europe was augmented by a single, shared framework for resolving disputes and enforcing regulations in England.

Many historians have argued for the importance of the singularity of English common law. A 19th century tradition centers the development of common law in an inevitable and uniquely British progress towards liberty and improvement (see Maitland and Pollock (1895) for an account that has been highly influential among both historians and legal scholars). While later historians generally reject this kind of normative evaluation of legal change, they have nonetheless linked the establishment of common law to modernization in land, credit, and labor markets (Palmer 1985, Campbell 2009), and to social change and the Rise of the

[2]This empirical literature departs from earlier estimates of early modern wage growth, notably those presented in Lindert and Williamson (1983).

Gentry (Tawney 1941). Theoretical work in economics further suggests that access to state courts is an important determinant of the structure of guilds, further influencing labor markets (De la Croix et al. 2018).

Medieval legal change has several attractive features as an explanation for future economic divergence. First, an enormous literature in economics, in the context of both historical growth and modern development, has found that laws and institutions matter in the real economy, making this a plausible explanation for observable differences. Second, the timing of legal change fits the historical record. From foundations broadly similar to the laws of France and Northern Europe, the legal system in Britain evolved over the Middle Ages, and by 1600 had resulted in very different markets for labor, capital, and land, potentially spurring productivity growth and the factors leading to industrialization.

Despite this, legal institutions have been comparatively understudied by economists in the context of understanding British development. One reason for this has been the difficulty of obtaining and working with relevant data. Though English record keeping prior to 1600 was remarkably extensive, in part precisely because of the effectiveness and ubiquity of common law, until recently many of the most useful sources – case summaries, tax records, property assessments – have been kept in their original forms, often delicate physical rolls written in Latin or French, and difficult to read or translate without specialized training. The work of historians in the UK and elsewhere in recent decades has somewhat reduced this burden, and indeed in each of the essays below, I rely on years of scholarship devoted to making historical legal and economic data more available. However, the challenges of working with medieval sources have created a barrier to incorporating the available data on legal institutions more fully into economic research.

A second challenge has been the difficulty in conducting causal analysis in the context of legal change. As discussed above, the evolution of the English legal system was unique. While this is precisely what makes it an attractive explanation for the equally unique experience of Britain in the Industrial Revolution, it makes it extremely difficult to disentangle the effects of legal change from other political and cultural processes unfolding in medieval England. This difficulty interacts with data limitations as well, in that to fully study the effects of law the researcher requires subnational microdata, which are even more difficult to find and to work with. To some extent, economists have worked to address these challenges in recent years, with a growing literature examining medieval institutions in Europe. Much of this work has been centered on Germany, where the recent digitization of the *Deutsches Städtebuch* and fragmented political structure create opportunities for empirical analysis (see Cantoni and Yuchtman 2014, Wahl 2018, and Becker et al. 2022 for examples). In England, there has been some move in this direction as well, with recent work on Medieval and Early Modern legislative change (Bogart and Richardson 2011), land law (Heldring et al. 2021), and town government (Angelucci et al. 2022), but the study of common law and its relationship to factor markets, social change, and the reorganization of the British economy at this pivotal moment in history has not yet

been undertaken.

The aim of this dissertation is to study the origins and effects of legal change in Medieval and Early Modern Britain, emphasizing the use of new data and leveraging quasiexperimental variation to address the challenges discussed above. I focus on the process of state building, particularly with respect to legal institutions, both within England and in a comparative framework, to understand how the early divergence between England and the rest of Europe in the structure of the law contributed to the later divergence in economic growth. The dissertation is organized into three essays, which build on this common theme but are otherwise separate with respect to subject and methodology.

The first chapter focuses on the effects of common law along the medieval English-Welsh border. This region, known as the March of Wales, presents a unique opportunity to observe how access to common law courts changed the structure of the British economy. The March of Wales was formed in the late 11th century on the border between Norman England and then-independent Wales. The purpose of the March was to create a military buffer zone, in which the nobility was charged with independently defending the border and taking territory from the Welsh in exchange for a bundle of privileges. These privileges included expanded military powers, such as the right to build castles, and judicial independence, meaning subjects in the March could not appeal a judgement of their local lord to the King. In the 11th century, this was simply a heightened version of lordship as it appeared outside of the March, since elsewhere appealing to the king was prohibitively difficult and costly. However, as common law developed in the 12th century, accessing royal justice became cheaper and more achievable outside of the March, but within the March the courts had no jurisdiction, and the area retained the older system of manorial law. This difference in legal institutions persisted even after Wales was incorporated into the English state in the 1280s, and lasted until the laws were homogenized in the 1530s.

The March serves as an excellent comparison with neighboring regions of England for two reasons. First, the difference in legal systems was precisely access to the common law system that distinguished Medieval England from its peers. Second, other institutions, cultural elements, and economic variables were similar across the border, limiting the risk of confounding that characterizes studies of modern common law (see Klerman et al. 2011 for a survey of this issue). The main challenge involved in leveraging this variation is data availability. A primary contribution of this chapter is the use of newly digitized data drawn from the Inquisitions Post Mortem, property surveys taken on both sides of the border. To locate estates, and provide controls for pre-common law characteristics, I link estates in the Inquisitions Post Mortem to the Domesday Book, a 1086 tax assessment with geographic data added by historians. Linking between these datasets allows me to confirm that estates within and outside common law jurisdiction were balanced in observable characteristics a century before the development of common law, and to control for these characteristics and geography in the empirical analysis.

I find that common law caused a shift in land contracts away from feudal, relationship-specific, and costly forms of ownership to contracts that were more modern, impersonal, and lower cost. Small landowners invested more under common law, reflecting an increased availability of credit, while large landowners invested less, possibly reflecting an increase in regulation. In the long run, common law areas were more likely to have rural markets, and more likely to have middle class farmers. In the context of the overall impact of common law, the results support the historical narrative that England's distinctive legal institutions made medieval factor markets more efficient, which allowed for the development of a larger middle class engaged in commercial agriculture. The ability to move resources easily from agriculture to an emerging industry, the supply of entrepreneurs drawn from the "middling sorts", and the demand for consumer goods like textiles from a robust rural gentry all supported early industrialization in Britain. This need not be in conflict with other explanations in the literature. A prosperous rural economy with efficient factor markets might well be reasons why British workers were more skilled and had higher wages than their counterparts, though of course additional research is needed to confirm this.

The second chapter focuses on a different Medieval institution – the craft guild. Craft guilds were associations of artisans that organized their members for a mixture of social, political, religious, and economic purposes throughout Medieval and Early Modern European cities. Guilds are important to study in the context of pre-industrial legal institutions because they were creatures of the law. Recent scholarship by Sheilagh Ogilvie (2019) has documented the reliance of guilds on public support to enforce their regulations and in particular to defend the mandate that all members of a trade join the guild, without which the guild has no power to regulate a trade. From an economic perspective, guilds were associated with some benefits, particularly mitigating problems of trust (Greif 1993), information asymmetry (Epstein 1998), and agency problems (de la Croix et al. 2018), but came at the cost of exercising market power for their own gain. At their root, the guild was an attempt to limit competition by placing restrictions on who can practice a trade. Whether the benefits outweighed the costs in aggregate is an active area of debate in economic history (see Ogilvie 2019 for a summary), but regardless of the answer to this question, previous work has suggested guilds that were politically weak tended to be more beneficial than guilds that wielded significant political power. However, it is an open question why some areas of Europe developed strong guilds and others did not.

This question touches on the larger themes of English law and English exceptionalism, because guilds in England were particularly weak. The literature on upper tail human capital and the industrial enlightenment has noted that the flexible apprenticeship system in Britain allowed apprentices to flow into growing industries, whereas a stronger guild system might have been able to bar these new entrants. Theoretical work has suggested that state institutions like courts might be substitutes for guilds in resolving market failures, which would suggest a role for the unusually centralized state and legal system in Britain discussed above.

However, measuring the centralization of the state is challenging, and a full treatment of this topic should also explain countries like the Netherlands that similarly had relatively weak guilds. To address these concerns, I turn to the state capacity literature, which has noted that the ability of the state to enact policy has often developed in response to conflict (Besley and Persson 2011, Dincecco 2015). I develop a model linking conflict to guild power that emphasizes the partnership between local governments, who often used guilds to raise revenue, and the guilds themselves, who relied on government enforcement to exist. The prediction of the model is that guilds represent an alternative to stronger state institutions for raising revenue, and that in weak or decentralized states conflict led to stronger guilds.

To test this prediction, I rely on a dataset of textile guild characteristics constructed from a mix of primary and second sources, notably the qualitative guild database made available by Sheilagh Ogilvie. I find that conflict exposure increased the strength of guilds at the level of towns across Europe, while exposure to trade weakened guilds. With respect to the central questions of this dissertation, the results suggest that as an island with relative internal unity, England was less exposed to external threats and therefore had less reason to rely on short term revenue raised from guilds, instead building up state capacity consistently over the Middle Ages.

The final chapter returns to a focus on English common law, examining the correlates of ideological change within the judiciary between 1500 and 1750. Motivating this question is the fact that in the early 1600s, the lawyers and judges of the common law courts tended to side with Parliament a the series of conflicts with the King that culminated in the Civil War (1642-49). This opposition to royal absolutism within the judiciary is striking because there were no formal guarantees of independence for judges, who served purely at the pleasure of the King. It therefore is something of a puzzle in the legal history of Great Britain (Klerman and Mahoney 2005), and one with important implications for our understanding of British institutional development in the critical centuries leading to the Industrial Revolution.

To narrow the scope of the investigation to something feasible and easily interpretable, I focus in this chapter on treason cases. Treason cases created a situation where judges must rule in favor either of the King in advancing a case against an accused traitor, or against him in limiting or obstructing a case, making it possible to measure the extent of support for the monarch. Moreover, treason cases were inherently political, and comprised issues of religious conflict, taxation, and the rights of the monarch, all of which fed into the Civil War and eventually the Glorious Revolution.

I measure the outcomes of treason cases using the English Reports, a digitized collection of common law cases covering the time period that has been used in recent economic history research (Grajzl and Murrell 2021b, 2021c). To explain shifts in the degree of support for the crown, I use information on judges drawn from the Oxford Dictionary of National Biography. I link treason cases from the English reports to the judges

that decided those cases and examine the background of those judges to look for correlates of opposition to the monarchy. I find that class background matters, with judges drawn from noble families being significantly more likely to support the King. In addition, it appears that professional norms and social dynamics within the judiciary have an effect. Support for the monarch is clustered within each Inn of Court, the institutions in London that trained lawyers and served as professional and social clubs for established attorneys and judges. Several of the Inns produced judges that were significantly more hostile to the King, suggesting an important role for peer-influences and norms arising out of social interactions. Further research is required to understand these interactions more explicitly, and to broaden the analysis to other dimensions of ideological change in the judiciary.

Taken together, the essays below provide some insights into the ways English law evolved from 1300 to 1750, and how these changes altered the path of British economic development. The centralization of the English state and provision of royal justice through the common law courts made it easier to buy and sell land, and to use land as collateral for credit, changing the structure of the rural economy. At the same time, the English were less dependent on guilds to support local governments, limiting the power of guilds to impose restrictions on labor markets that might have hindered the development of new industries. The depth and flexibility of English factor markets were critical supports to the next stage of economic growth. Furthermore, the common law system created a focal point for upwardly mobile commoners to have a political voice, changing the evolution of political institutions in response. My work should be seen as a starting point in answering the question of how British law contributed to British industrial leadership, rather than a definitive treatment of the subject, but my hope is that the use of new data and new methods in addressing this subject attracts further research in the years to come.

CHAPTER 2

Common Law, Legal Capacity, and Economic Growth: Evidence From The English-Welsh Border, 1292-1510

2.1 Introduction

The correlation between economic prosperity and well-functioning legal institutions is a striking empirical regularity. Nearly all currently wealthy countries have developed legal systems that provide justice and protect property rights in a reasonably predictable, rule-based manner, while many currently poor countries are burdened with law enforcement and courts that are ineffective, inaccessible, or corrupt. The role of institutions in promoting economic growth has been well established by numerous previous studies (North 1990; Besley and Persson 2011; Acemoglu et al. 2001; Cantoni and Yuchtman 2014). However, the role of the formal judiciary and the state in determining the strength of property rights and other institutions is less clear. The idea that the law enforcement and judicial functions of the state matter is intuitive, and there is a body of evidence supporting this argument (see Koyama (2022) for a survey). However, there is an opposing view that strong state institutions are the result of economic growth, rather than the fundamental driver of of growth (Geloso and Salter 2020). In this understanding of the law and development, state institutions are one expression of the underlying social and political relations that determine property rights and the rule of law, rather than a key determinant in and of themselves. Skeptics of the role of the state can note the ability of private institutions to substitute for the formal law in areas like contract enforcement and protection of property rights (Greif 1993).

The concept of state capacity provides a useful way to frame these issues. State capacity is the ability of the state to raise revenue, provide public goods, enact policy, and administer justice. Legal capacity, a particular facet of state capacity, is the ability of the state to enforce laws. Legal capacity is the result of investments in the courts, judges, law enforcement, and bureaucracy that make up a legal system. Theoretical work on legal capacity, following Besley and Persson (2011), suggests a causal relationship between state investment in judicial institutions and economic growth. However, estimating this relationship empirically is challenging, since legal institutions coevolve with political institutions and the broader economy. It is therefore difficult to assess how much of the rise of wealthy countries in Europe and North America can be attributed to the modernization of the state and formal legal institutions in these countries. The answer to this question could shape the understanding of long-run growth and institutional change as a historical phenomenon. Moreover, from the perspective of a modern developing nation, this remains a salient question,

since the expected economic returns to investment in legal capacity might guide the allocation of scarce public resources. This paper will address these issues in an important historical setting by looking at the development of common law in medieval England and Wales.

Common law, the English system of judge-made law, is the product of an unprecedented investment in legal capacity made as part of a broader effort to centralize the medieval English state under royal authority. Prior to the mid-12th century, law in England was administered primarily through manorial courts, where feudal overlords settled disputes between tenants according to local custom. Starting in the reign of Henry II (1154-1189), free English subjects had access to royal courts that administered a law common to all of England. The state created, maintained, and expanded this system through the creation of physical courts, improved record keeping, and paying personnel ranging from clerks to judges. These investments slowly shifted the main locus of legal action from decentralized private courts to a unified state system. In the context of medieval Europe, this represented an unparalleled expansion of state legal bureaucracy.

Economic historians have argued that the development of common law supported more modern factor markets within Great Britain, with more accessible legal remedies to defend property forming the basis of land and credit markets (Tawney 1912; Palmer 1985; Campbell 2009). Research on the 'Little Divergence' between Great Britain and the rest of Europe posits the efficiency of British factor markets as a critical component of British success (de Vries 1976), suggesting an important role for common law in the long-run growth of the British economy. In a separate body of research, modern economists have studied the effects of common law beyond the British Isles in the legal origins literature, following La Porta et al. (1997, 1998), and found that it is correlated with economic growth and various positive indicators of development in the modern world (Mahoney 2001; Djankov et al. 2003; Beck et al. 2005). Common law, therefore, provides an opportunity to examine the effects of expanding legal capacity over the very long run, in a context with important implications for understanding the emergence of the first industrial economy and the impact of legal institutions in modern developing countries.

However, studying the effects of common law on the real economy presents a number of difficulties. In the historical context, common law developed alongside English political institutions and the economy, and must be considered endogenous. Moreover, available data from the early days of common law are limited, compounding the challenge involved in producing a quantitative estimate of the changing law's effects. Recognizing this, the legal origins literature studied common law outside of the context in which it developed, using modern data (La Porta et al. 1997). However, since common law spread through British colonization, it is difficult to separate the effects of legal capacity as such from other legacies of the British Empire (Klerman et al. 2011).

In this paper, I address these issues by using quasi-random variation within medieval Britain in the juris-

diction of common law courts to identify the long-run effects of common law on the British economy. The variation I exploit comes from the special judicial status of the March of Wales, a border region straddling eastern Wales and western England which existed from the 11th to the early 16th centuries. While legal institutions were centralized under the common law system throughout most of England, the March retained the older manorial system because of the special privileges of local nobility in legal matters. I construct a novel dataset of estate-level information using from medieval property assessments to compare outcomes between places under common law and those under the decentralized feudal legal system. I link these data to pre-common law estate information found in the Domesday Book and geographic information, using this to show balance in observable characteristics between the treatment and control groups prior to the emergence of common law and controlling for these characteristics throughout.

The first result I find using these data is that common law hastened the transition away from land held through archaic and costly forms of tenure to more modern and efficient forms. Because of the complexity of medieval land law, some definition of terms is required. Free medieval landholders could hold their land either through service to their overlord (which I will refer to throughout as feudal tenure), or through a simpler tenure based on rent or unrestricted ownership (which I will refer to as modern tenure).[1] Land held through feudal tenure carried costly and uncertain burdens of fees and obligations, and was more strictly limited in how it could be transferred or subdivided. Estates under common law were significantly less likely to be held through feudal tenure, consistent with theory and historical narrative associating common law with decreased transaction costs and more robust factor markets. An implication of this result is that the centralization and expansion of English legal institutions contributed to a shift from land markets being tied to inflexible feudal relationships to a basis in impersonal commercial relationships.

Despite this effect observed in land markets, the effect on investment in physical capital is ambiguous. In the sample as a whole, there is no detectable effect on investment. Among landowners with holdings below the average size, common law had a small positive effect. Among larger landowners, investment was negatively affected by common law. One way to explain this finding is that common law has two distinct effects. First, access to common law courts likely increased the use of land as collateral, improving access to credit for landowners and increasing investment (Campbell 2009). However, common law courts also offered a degree of protection to tenants, reducing landowner bargaining power over the services owed by tenants, such as compulsory use of the lord's mills, reducing the profitability of capital assets (Langdon 2004). A

[1] More specifically, I will use feudal tenure to refer to military tenures (knight service, barony) and serjeanty, and modern tenure to refer to free socage. This is done to make the terminology more accessible to non-specialists and to emphasize the distinction between socage and service-based tenures in terms of feudal obligations and other archaic legal characteristics. Strictly speaking, referring to socage as modern tenure is an abuse of terminology, as socage coexisted with other forms of tenure within feudal England, and the law governing land ownership has evolved considerably since this period. That said, all freeholdings were converted into socage in 1660, and socage forms the basis of modern English land law (Pollock 1883), while the service-based tenures exhibit much of the spirit of feudal society, so the terminology used here is based in clear differences. See Maitland and Pollock (1895) for further discussion.

simple model of medieval investment suggests that the first effect would be larger among landowners who would have otherwise been more constrained by access to credit, while the latter effect would dominate among landowners who would have otherwise been in a more powerful bargaining position.

The legal distinctiveness of the March was eliminated in 1534, as part of a broader set of reforms continuing the centralization of law and administration under the Tudors, and it is unclear *a priori* whether the medieval differences in legal institutions between the March and the rest of England should have persistent effects. While previous studies have found that institutions can produce important effects long after they disappear or change (Acemoglu et al. 2001; Dell 2010; Cantoni and Yuchtman 2014; Dell and Olken 2020), it is not obvious that there would have been a mechanism perpetuating the differences initially created by variation in access to common law courts once that variation is eliminated.

To examine the degree of persistence in this context, I look at the presence of markets and gentry as proxies for commercialization in the late 17th century, 150 years after the March was dissolved and brought under the common law system. Cantoni and Yuchtman (2014) provide evidence that formal markets are correlated with commercial activity within medieval Europe, making the existence of markets within a parish a reasonable indicator for the degree of commercialization in local agricultural markets. The second measure of commercial activity is the presence of gentry, prosperous middle-class landowners that emerged in the 15th and 16th centuries as an important economic force in England and Wales. Tawney (1941) advances the thesis that the gentry were an important cause of the shift towards market-oriented agriculture, and Heldring et al. (2021) documents this relationship empirically. Using the presence of markets and the number of gentlemen in residence as proxies for the commercialization of agriculture in 1680, I find that common law areas are more likely to have both markets and the middle-class farmers that engage in commerce. However, they are no more likely to have hereditary nobility, a group which is not expected to be related to underlying agricultural productivity or commercialization. These results indicate that the effects of common law did in fact persist in important ways long after homogeneous law was imposed. I propose that the mechanisms behind this persistence are in part the cost and time required to change tenure arrangements within the courts, lending a stickiness to patterns of landholding, and in part the timing of the change in laws —the late 15th and early 16th centuries saw the 'Rise of the Gentry', and the state of law in this critical period would influence where members of the gentry would be able to buy land and build estates. Examining differences in agricultural productivity in 1840 shows subsequent convergence between the two regions, consistent with this explanation.

The results support an understanding of common law that stresses its importance in reducing transaction costs in land markets, allowing the emerging middle class of the gentry to enter landownership to a larger degree and contributing to the long-run commercialization of British agriculture. These are the first robust,

causal estimates of the effect of common law on long-run economic development. Consistent with previous work, Britain's unique legal institutions contributed to its modernizing factor markets prior to the 17th century, and this supported broader economic change subsequently. However, the immediate effects of changes in the legal system were mediated by the existing distribution of economic and political power.

This project contributes to three strands of economics literature. First, I provide a well-identified causal estimate of the effect of centralizing and expanding legal institutions over the long run. A number of papers have examined common law in this context as a relatively early example of state investment in legal capacity (Klerman and Mahoney 2007, North, Wallis, and Weingast 2009, Koyama 2016). The Besley-Persson (2011) model predicts a causal effect of legal capacity on GDP growth, which is consistent with the narrative history of common law. However, empirically the direction of causality and magnitude of the effects are unclear (Geloso and Salter 2020), and quantitative historical evidence on the importance of common law is limited (Koyama 2022). This paper contributes a plausibly identified causal estimate of the long-term effects of legal capacity on development, a rarity given the paucity of available evidence and extraordinarily complex interrelationships between legal infrastructure, political institutions, and growth. Equally important, it does this in the context of a historically important setting given England's precocious economic growth, early development of a strong central state (Dincecco 2016) and influence on political and legal institutions worldwide.

Second, there is a large body of work connecting common law and growth. This body of work extends back to Friedrich Hayek, who argued that common law promoted decentralization and individualism within British political culture, which in turn strengthened property rights (Hayek 1960), and to a law and economics literature, which developed theoretical arguments for how common law could lead to more efficient rules (see Rubin 1977 and Posner 1972). More recently, an empirical literature following La Porta, Lopez de Silanes, Shleifer, and Vishny (1997, 1998) has found correlations between common law and various measures of institutional quality and economic development using modern cross country data. The correlates of common law include robust financial markets (Levine et al. 2000), growth (Mahoney 2001), lower corruption (Glaeser and Shleifer 2002), efficient labor markets (Botero et al. 2004), and stronger political rights (Djankov et al. 2008). However, the limitations of modern data make it difficult to estimate the causal effect of common law in this context. This is because in the modern world, common law is effectively collinear with British colonization, and as such appears only in as part of a bundle of institutions associated with British settlement.[2] Distinguishing between the effects of common law and those of other factors correlated with British settlement is nearly impossible, particularly with country-level data drawn from the past 60 years, which has

[2]See Klerman et al. (2011) for a discussion of this issue, and Dupraz (2019) for a study of the growth effects of differences between English and French colonial education policies.

been the best available to study this issue.

This paper addresses these challenges by using subnational panel data and a quasi-experimental framework, allowing me to rule out many factors, such as culture, political institutions, and geography, that might otherwise confound the estimation. Furthermore, by using data drawn from over 200 years, I can examine how long-run exposure to common law affects outcomes dynamically, rather than relying on estimates from a single point in time. While the medieval setting limits the validity of extrapolation to modern cases, the advantage of a plausible causal identification strategy complements the existing literature and expands what is known about the relationship between common law and growth.

Finally, beyond law and economics and the literature on state capacity, this paper contributes more broadly to the understanding of the role of institutions in early modern British development. While a number of papers examine how legal and constitutional changes contributed to British growth and industrialization (see for instance North and Weingast (1989), Bogart and Richardson (2011), or North, Wallis, and Weingast (2009)), the bulk of these focus on factors emerging during and after the 17th century. Though these factors are unquestionably important, recent work has argued that British wages and productivity began to rise around 1600, before the Glorious Revolution, Civil War, or Enlightenment (Humphries and Weisdorf 2019, Bouscasse et al. 2021). By focusing on common law, I am able to examine an important institution unique to England and Wales that firmly predates modern growth, complementing recent work on late medieval and early modern institutional change in Britain such as Angelucci et al. (2022) and Heldring et al. (2021), and in Europe more broadly (Cantoni and Yuchtman 2014).

2.2 Background

2.2.1 Common Law

Common law is normally defined in the modern economics literature as 'judge-made law' —a judicial system in which precedent is binding, and thus when deciding a case a judge adds to the body of existing law. This is often contrasted with civil law, exemplified by Roman law or the Napoleonic Code, in which only the text of the law is binding. Civil law judges still interpret the law to decide cases, but these interpretations do not become a part of the law or directly affect future jurisprudence. While this definition holds in the medieval context, civil law in the modern sense was not practiced in most of Europe until the early 19th century. Instead, prior to the mid-12th century, England was governed primarily by customary law. Customary law, found throughout medieval Europe, is law based on local tradition.[3] Customary law was administered

[3]The preservation and understanding of tradition as it applied to the law was often informal, and customary law should be seen not as the exact survival of ancient practices, but rather as an elastic set of rules justified by an appeal to antiquity and constrained by local norms (Baker 2019).

through manorial courts, held by a local lord with jurisdiction over their tenants.[4] While manorial courts were constrained by social norms and the cost of disputes with tenants arising from perceived injustice, they were highly influenced by the interests of the local nobility and not subject to any shared institutional or ideological framework of jurisprudence. In this context, it is most useful to think of common law as a formalization and centralization of legal system, in which state investment in courts, judges, and clerks created and sustained a uniform body of law administered through central courts.

Common law emerged in England in the 12th century as a response to a crisis in governance. A succession dispute led to a period known as the Anarchy, during which royal authority nearly collapsed and violent local disputes proliferated. A chronicle written during this period described the law as being "as utterly uncertain as a game of dice".[5] Upon his accession to the throne after the Anarchy in 1154, King Henry II embarked on a series of judicial reforms to strengthen the crown relative to the nobility and improve the administration of justice. These reforms formed the core of common law. The first component of reform was the organization of new courts. Central courts based around London were created, supplemented by itinerant courts that traveled in predefined circuits over groups of counties to expand access to royal justice.[6] These courts had broad authority to hear cases and overrule judgments issuing from customary courts in cases with free litigants and matters where royal jurisdiction had been established. These matters initially encompassed serious crimes and land disputes, but over time the jurisdiction of the common law courts expanded relative to manorial courts.[7]

The second component of reform was the standardization of procedures to bring cases to court. Prior to reform, a costly personal audience with the king was required to obtain royal justice. New courts overseen by royal justices made the limited time and attention of the king less of a bottleneck, but for these courts to function there needed to be procedures for initiating cases, summoning parties and jurors, and enforcing judgments. These procedures were standardized by the late 13th century in a system of writs, royal commands issued by courts, which created templates for different kinds of legal action. This system required an extensive bureaucracy of legal clerks to write and file the writs and local officials scattered throughout the country to

[4] Anglo-Saxon England also had alongside the manorial courts a patchwork of municipal and ecclesiastical courts, characterized by restricted access (free citizens of the town or church officials, respectively) and overlapping jurisdictions. For the majority of this article, I will contrast common law courts to the manorial courts, as these were the most important alternative venues (particularly in the mainly rural region studied here). However, many of the same comparisons can be made to the other local courts, the key difference being that the municipal and ecclesiastical courts were more influenced by Roman law than the typical manor court, blending customary and civil law.

[5] This description comes from *Legis Henrici Primi*, as quoted in Baker (2019).

[6] This is the origin of the term circuit court used in many common law countries.

[7] By the 16th century even cases pertaining to land disputes with unfree tenants, formerly a bastion of manorial authority, were being heard by common law judges (Garrett-Goodyear 2013).

request writs and serve them.[8] The new courts and institutional support for those courts represented a massive expansion in the legal capacity of the English state. Rather than relying on the individual decisions of the king, issued in person and limited by his time and attention, the new system made it possible to enforce royal justice at a national scale, and evidence suggests English subjects made regular use of this justice. In an estimate from the end of the 16th century, roughly three-quarters of litigants came from lower-class backgrounds rather than the gentry or nobility (Sharpe 1988), reflecting the broad accessibility of the common law courts. The aim of the empirical analysis in this paper is to determine the effect of this expansion in legal capacity on the real economy.

To guide the empirical analysis, I will sketch out a framework of judicial action that focuses on how the law affects different property rights active in a tenant-landlord relationship based around agricultural production. I assume three factors of production, land, labor, and capital, and two agents, a landlord owning all land and a tenant owning all labor. The two parties sign a tenancy contract, wherein the tenant provides labor and the landlord provides land. The tenant sows the fields and then at harvest the two split the profit according to their contract. This can be structured in a number of ways. At one end of the spectrum, the landlord pays a fixed wage payment to the worker, retaining any residual profits. At the other, the tenant pays a fixed rent to the landlord and retains residuals. In between these, and often the default arrangement in the medieval context, is a feudal contract in which the tenant keeps some residuals but makes additional side payments to the landlord in the form of labor or services. In this setting, either party can invest in capital, but the incentive to do so varies based on the type of contract.

For the purposes of this paper, property rights are important in two ways. First, in any of these contractual arrangements, each party has obligations to the other. The tenant can variously owe rent, labor, or some combination thereof. The landowner can owe a wage, room and board, maintenance between harvests, upkeep of the property, or the guaranteed renewal of the contract. The law becomes important when either party fails in its obligations. A frequent and salient example was landlords evicting tenants or refusing to allow their heirs to take up the tenancy, in an attempt to change the structure of the contract from lease to wage labor or to eke out an additional portion of the profit. The prevalence of this type of action in the 12th century was one of the first issues addressed under common law, which provided emergency procedures for tenants to contest dispossession in royal courts (see the discussion of Novel Deseisin in Pollock (1884)). However, tenants could also be taken to court for failure to pay fines or render labor services owed.

[8] In addition to directly reducing some of the uncertainty associated with legal action, this had an important effect on the legal profession. Since parties using the common law courts did so using standard procedural steps, there was an economy of scale in the training of lawyers. Instead of having to learn the customs of every court in the country, or limit one's practice to an extremely local clientele, a lawyer could study the writs and customs of the royal courts and practice anywhere in the country. The emergence of nationwide legal profession under common law spread legal knowledge, further reducing the uncertainty and potential costs associated with legal action (Baker 2019).

Outside of common law, enforcement of contract terms could be pursued in manorial courts or extra-judicially. Importantly, the landowner was often the judge of the manorial court, and had advantages in violent conflict from superior equipment and experience, and so either option would tend to favor them. Common law could have improved the ability of tenants to recover damages from landlords who failed to adhere to the terms of the tenancy contract, represented in the model by an increased cost for the landlord to raising rents or demanding additional labor.[9] The predicted effect on growth is ambiguous. If increased security and reduced uncertainty improves the incentive of tenants to invest, or lowers the total amount of surplus spent on conflict, then this could have a net positive effect, consistent with a large development literature connecting more secure property rights to growth. However, the improved bargaining position of tenants could reduce the incentive of landlords to invest, because they will capture less of the increased profits over time. If landlords are responsible for most of the investment, this effect could dominate and the result could be a negative impact on growth.

The second type of property right affected by access to common law courts that I will consider here is the right of either party to transfer all or part of their contract. Since both tenant and landlord have claims to part of the profits of production through their participation in the tenancy contract, this contract has value as an asset. I assume here that agents are heterogeneous with respect to skill or patience. This means that different tenants and landlords will value the same contracts differently, based on what profit they can receive. In a perfectly functioning land market, landlords would be able to sell their lands to more patient landlords who invest more, and tenants would be able to sell their contracts to more skilled workers, who could earn more. Either action would increase aggregate growth through increasing allocative efficiency. However, medieval English land markets were extremely imperfect. Tenants were often tied to the land, and officially selling land was mostly illegal. Even before common law there were loopholes and conveyances to transfer land, but it was under common law that these became systematic, sophisticated, and widely used (see Pollock 1884 or Maitland and Pollock 1895). The predicted effect of a reduction in the cost of transferring land is to increase land productivity over time, as it broadens the choices available to the principal players without restricting them. That said, the magnitude of the effect depends on factors outside the law, including the availability of credit and the cultural norms surrounding land transactions, either of which could have limited the importance of effect of legal changes on land markets.

[9]This summary reduces the complexity of the legal situation and possible strategies available to the actors significantly. For example, by the 1600s, there are examples of landlords initiating action against their tenants in common law courts despite having access to their own manorial court (Garrett-Goodyear (2013)). To capture this phenomenon, a more elaborate model of enforcement costs would be needed.

2.2.2 The March of Wales

The common law system created a novel body of law shared across most of England, with consistent rules, dramatically lower access costs, and an emerging body of associated expertise. However, it was not universal within Britain. The jurisdiction of common law courts derived from the judicial authority of the king, which was limited. Most subjects of the king were obligated to respond to a royal writ, as a duty to their feudal overlord. These writs formed the basis of actions in the common law, so the pre-reform feudal system brought most subjects under the jurisdiction of common law. However, several large areas of England lay beyond the reach of the king's writs, meaning the judicial acts of the king could not be enforced. The most important of these regions was the March of Wales, a border region between England and Wales.[10]

When the Normans conquered England in 1066, Wales was a collection of independent kingdoms and principalities. Facing limited resources and rebellions from the newly conquered English, the Norman kings granted additional powers to the nobility on the frontier between England and Wales to enable the 'Marcher lords', as these nobles came to be known, to defend against Welsh incursion without royal aid. These initial Marcher lordships were formed in the 1070s and 1080s, with new lordships formed over the subsequent 150 years. The Marcher lords were given nearly complete independence to declare war against Welsh princes and to conclude peace treaties without consulting the king, they could build castles without prior royal approval, and they were the highest judicial authority within their own lands (Davies 1978; Lieberman 2010).[11] During the 11th and early 12th centuries, the judicial differences in practice between the March and the rest of England were minimal. Although free tenants had some right to appeal to the king in England outside of the March, the difficulty of this option meant that most cases were heard in manorial courts on either side of the border. However, as common law became more extensive and available, the judicial differences between the March and the rest of the kingdom became more pronounced.

Between 1070 and 1292, the March of Wales expanded unevenly westward as Marchers steadily gained (and occasionally lost) territory to the Welsh. It also expanded eastward into areas of counties Herefordshire, Shropshire, and Gloucestershire that had been part of England proper prior to the Norman conquest. This occurred through extra-legal encroachment by Marcher lords, applying their expansive powers within the

[10] In addition to the March of Wales, the Counties Palatine (Cheshire, Lancashire, and Durham) received judicial independence as a political settlement under the early Norman monarchy. The Counties Palatine were quasi-regal polities in the sense that their rulers had near complete independence of action conditional on personal loyalty to the King. This meant, for example, that they maintained their own parliaments and court system. Unfortunately, they do not make a suitable comparison group to the rest of England for the purpose of evaluating common law. Partly this is because the independence of the Counties Palatine went beyond judicial matters. In addition, lordship over Cheshire and Lancashire fell to the King by the 13th and 14th centuries, and though they were ruled as distinct jurisdictions, they were heavily influenced by the custom of the King's court in judicial matters. The lordship of Durham was held by the Catholic bishop of Durham, and the county was ruled as an Anglican prince-bishopric even after the Protestant Reformation. This meant that the type of law, patterns of landholding, and political position of Durham were substantially different from nearby parts of England.

[11] This bundle of powers was intimately entwined with the primary roles of the nobility in medieval Europe, waging war and providing justice (Tuchman 1978), and thus lordship in the early March can be seen as a heightened form of feudal lordship relative to that found elsewhere in England.

March in nearby lands held originally outside of the March. This normally occurred in periods of weak or contested central authority. Several accounts suggest that Marcher lords would claim that lands bordering the March were held on different legal authority than had previously been acknowledged.[12] This continued until 1292, when the remaining independent areas of Wales were conquered under Edward I. These areas were brought under direct royal control as the Principality of Wales. The subjugation of the Welsh removed the March's military purpose, and after the conquest the borders of the March were stable. However, the March remained in existence, and crucially Marcher lords retained their judicial independence until the Laws in Wales Act of 1536 homogenized laws in England and Wales and brought the region into the common law system that existed throughout the rest of the country.[13]

2.3 Data

The primary source of data are the Inquisitions Post Mortem (IPMs). The IPMs were property evaluations generated when a tenant-in-chief of the King died. A tenant-in-chief was a landowner who held their land directly from the King, rather than from an intermediate lord. The king had the right to collect a relief from their heir —a fee paid before the heir could assume the title of his predecessor for each manor they inherit.[14] The procedure for generating an IPM began when a landowner believed to be a tenant-in-chief died. A local royal official would send a request to the exchequer for a writ authorizing an inquisition. When this writ was returned, the local official would summon a jury drawn from local property owners to assess what was known about the estate. This process incorporated information from manorial documents and the jurors' own knowledge as neighbors of the deceased.[15] Heirs and widows could be called on to provide documents or information on assets. Once complete, the inquisition was returned to exchequer to determine the amount of the fee.

The information included in the IPMs varied, but generally inquiries would be made into the lands held, their value, how they were used, the subtenants and rent collected from the estate, and other assets that yield annual net revenue, including mills, dams, manorial courts, markets, fairs, and fees levied on the tenants. Information was also given on the tenure of the land, including who it was held from and on what basis (feudal service, money rent, etc.). Finally, there is information on the deceased (name, title, date of death),

[12]The claim was often made that Marchers held their land "by right of ancient conquest". In an expansion of March power into England, a charter or document would be produced referring to the manor being transferred as being held in this manner, even if it had been granted by the King and had no history of conquest. Alternatively, manors were claimed to be held through an honour or lordship in the March, extending the legal position of that lordship whether this was true or not.

[13]This act was intended to improve the justice system within the March, although the additional revenue from fines paid to royal courts and weakening of the politically powerful Marcher lords were factors as well.

[14]The standard fine varied somewhat with the rank of the tenant, but was generally fixed around one year's net income from the estate, up to a cap of £5 for a knight and £20 for a baron (Campbell and Bartley 2006).There is no evidence that the cap on the relief payment affects the assessed value. Many estates in my dataset have higher annual values than the cap, and there is no statistically significant heaping around the cap values.

[15]Medieval juries differed from modern juries in that they were "self-informing", meaning they were expected rather than forbidden to draw upon their own knowledge of events pertaining to the trial (Baker 2019).

their heir (name and age), the manor (name, county), and the jurors (names). Although the IPMs only applied in principle to land held from the King, many tenants-in-chief also held lands from members of the nobility. Since part of the purpose of the IPM was to determine which lands fell under the scope of the relief payment, many individual manors not held directly of the king are included in my dataset.

Each entry in the IPMs is the summary of the inquisition into the assets of the deceased. Entries further separate the information on assets by the county returning the inquisition and finally by individual manor. I take manors, at the time of the inquisition, to be the basic unit of observation. Since many manors are observed multiple times as each subsequent landowner dies, the structure of the final dataset is an unbalanced panel. The earliest IPMs date to 1236, and they continued to be generated until 1660. They cover all of England and Wales, although not all records survive. Critically, Marcher lords had to pay a relief through the same procedure as tenants-in-chief elsewhere, so the March is fully covered by the IPMs. When a Marcher lord died, a coroner was dispatched from the nearest English county.[16] To determine the boundaries of the March, I rely primarily on the map of the March created by Rees (1928), the standard work of historical geography in the region (Davies 1978).

The original texts of the IPMs are stored in the UK National Archives, under the Chancery and Exchequer rolls series. They have been organized and partially translated in the Calendars of the Inquisitions Post Mortem, created by the Public Records Office and digitized at British History Online. These partial translations form the basis of the dataset used here, but vary in detail according to when they were translated. Earlier translations were more focused on genealogical research than social or economic history, and as such often omit detailed descriptions of the assets on each estate.[17] To address this issue, I have encoded the publicly available summaries into a machine-readable format for this project, and supplemented these with my own translations of entries in the IPM Calendars lacking asset details.

While the IPMs are a rich source, they are limited in a number of ways. First, they include measurement errors from several sources. Least problematic, in the sense that they can be considered more or less classical in nature, are typographical mistakes made either by the initial scribe or the translator. Since the IPMs were written in Latin by French or English speaking clerks, and were then translated by modern researchers working with the (often decaying) documents, this is a nontrivial issue. This source of error is likely orthogonal to estate characteristics.

[16] Validating my choice of control counties (Gloucestershire, Herefordshire, and Shropshire), these counties and only these counties issue writs pertaining to estates in the March.

[17] This is particularly true of the Calendars of Inquisitions Post Mortem published prior to 1908, see Hicks et al. (2018) for a discussion of this issue and the publication history of the IPMs. A number of economic historians have used the IPMs in their research, indeed they are considered a key source in medieval British history. However, the difficulty in working with the IPMs has meant that most applications have been either limited to a narrow time frame or narrow regional focus regions, making it infeasible to adapt existing datasets for use in this project. See Campbell and Bartley (2006), and Heldring et al. (2021) for examples of the use of IPMs in recent scholarship.

Potentially more problematic are errors in the reported value and asset structure of the estates that are present in the original documents. One cause of this kind of error is variation in the effort and attentiveness of the inquisitors. Campbell and Bartley (2006) note that the IPMs become much more detailed in the 1300s relative to the early series because financial pressures on the crown led to increased monitoring of the IPM process as an important revenue source. As the IPMs waned in importance to royal income in the 16th and 17th centuries, so too did the detail given in the records. Many of the first order effects of this changing level of accuracy over time can be dealt with using period fixed effects, but still one is left with the fact that much of the detail from some periods is lost. Another potential issue is the incentive to under-report income. Since the fee levied on the heir was based on the annual net income of the estates, there is a clear incentive for heirs to understate the value of their assets. Hunnisett (1971) finds that for early records (1236-1327), the value of estates given in IPMs is as much as 30-50% less than that implied by surviving internal manorial documents. There are two factors limiting the severity of this issue. First, the crown's push to increase feudal revenue meant that later IPMs tended to be more accurate, though systematic data is difficult to find (Campbell and Bartley 2006). Although it is hard to quantify the severity of the problem, the present study is based on periods in which IPMs were likely to be most accurate. Second, IPMs could be used as evidence to establish claims to property in inheritance disputes (Pollock 1883). This means that, although there is an incentive to undervalue assets on one's estate, there is a countervailing incentive to report the existence of assets to prove title in the future. Because of this, the measures I use are categorical (whether a class of asset is reported or not) rather than based on the potentially problematic valuations given.

While the measurement errors in the IPMs increase the confidence intervals on estimates throughout the analysis, they primarily affect the outcome variables, and the key treatment variable is derived from other sources. The risk of bias in the estimates arising from this kind of measurement error is relatively low, because there is no reason to expect errors in the March and England to differ systematically, as in any given period they were conducted by the same set of officials and later translated by the same set of researchers, meaning that there should be no correlation between measurement error and the key treatment variable.

The outcomes that I consider in the baseline regressions are binary indicators of feudal tenure and the presence of physical capital assets. The tenure variable is equal to one if the estate is held by a military or other service-based tenure, and zero if is held freely or in exchange for a money rent. This variable is meant to measure the degree to which land markets were encumbered with additional transaction costs and risks. Service-based, feudal tenures carried significant additional costs for the landowner. First, landowners were formally restricted in how they could transfer land held via feudal tenure. This land could not be sold without approval from the feudal overlord (in this dataset, generally the king), nor could they be subdivided either by will or through creating feudal subtenancies. In practice, there were common techniques to evade these

restrictions (Pollock 1884), but this added an additional legal cost to transferring land. Second, land held by feudal tenure was subject to various feudal dues and fees, the most onerous of which was the practice of wardship. If the owner of a feudal estate died with a minor heir, the overlord would gain the right to the income of the estate until the heir came of age, and could make marriage arrangements on the heir's behalf. This represented a significant and uncertain cost from the perspective of the landholder. The alternative, a free tenure known as socage, made the landholder responsible for some feudal dues (including the payment of the relief fee associated with the Inquisitions Post Mortem), but carried fewer restrictions, and did not include obligations of wardship. While it is difficult to measure the effect that differences in tenure had on land markets[18], there is some evidence that landowners valued modern tenure, and that this value was important enough to alter purchasing decisions. Hurstfield (1949) notes that when disposing of monastic lands, the Tudors were obliged to offer modern tenures to generate sufficient demand. Earlier offers of the same land, at the same price, under feudal tenure were insufficiently attractive to potential buyers. This suggests that differences in tenure type were meaningful to contemporary landowners, consistent with their higher cost and validating to greatest extent possible the use of tenure type as a measure of encumbrance in the land market.

The indicator for physical capital assets is meant to proxy for investment. While the flow of new investment is unobserved, the stock of existing capital is noted in the IPMs, provided it generates a stream of annual revenue. The most common assets in the IPMs are mills, with dams, bridges, and mines all appearing with less frequency. As noted above, landowners had an incentive to reduce their assessed fee by undervaluing their assets in the IPM. To account for this, I use an indicator for whether an asset is mentioned at all, regardless of the value.

To compare the March and common law areas of England using the Inquisitions Post Mortem, manors appearing in the IPMs must be geographically located. This is done using several sources. First, manors that can be linked to corresponding entries in the Domesday Book can mapped using data from the Hull Domesday Project.[19] The Domesday Book was a 1086 tax assessment undertaken by the recently established Normans to accurately value and collect taxes. It covers nearly all of England at the level of individual manors, and contains information on estate land use (acres of arable land, pasture, woods, and waste), assets (mills, plows, livestock), and population (total population, slaves, villeins, priests). Summary statistics of variables appearing in the Doomsday Book within the area under study are given in Panel A of Table 2.1. To construct the dataset used in this paper, I have linked manors appearing in the IPMs to the Domesday book

[18]Partly, this is because the best available data on medieval land transactions comes from the Feet of Fines, which were effectively receipts of transfers produced by common law courts. Unfortunately, by construction, this source only covers the common law side of the border, and only covers estates held through modern tenure. While this in itself is suggestive of the supporting role common law courts played in land markets, it is nevertheless difficult to use this source quantitatively in this context.

[19]The Domesday Project at University of Hull has geocoded most entries and published these data via the Open Domesday Database.

by hand, with estate name and county as the linking variables. The chief advantage of linking estates to the Domesday book is that the Domesday Book reflects the economic geography of England and the March in the 11th century, 75 years before the earliest common law reforms. Including manor characteristics from the Domesday Book can help control for pre-common law differences between the March and England. There is a cost to this however, as only the areas of the March closest to England were under Anglo-Norman control at the time of the survey. While this restricts the sample to the most reasonable comparison group, which supports the identification strategy, it also reduces the sample size significantly. As an alternative, manors can be linked forward to matching entries in the Index Villaris, a 1680 survey of places in England and Wales (more on this below).

Beyond the primary dataset consisting of variables from the IPMs and Doomsday Book, I have also incorporated information from the Index Villaris to assess the persistence of effects 150 years after the discontinuity in laws was eliminated. The key variables used from this survey are the presence of gentry in 1680, the existence of a market, and the presence of hereditary nobility. The first two variables are proxies for commercialization. Markets are a direct indication of commercial agricultural activity, while gentry tended to modernize their landholdings and make the most of commercial opportunities during this time period, and are associated with a more dynamic rural economy (Tawney 1941; Heldring et al. 2021). The presence of nobility is not generally associated with increased commerce, and is included as a placebo.

Baseline results are obtained using a dataset of 992 manors linked to the Domesday Book. Additional geographic data were used to control for variation in topography and access to waterways. These data are obtained from the CGIAR Consortium for Spatial Information. Panel B of Table 2.1 provides summary statistics for this sample.

Selection into the Inquisitions Post Mortem series is non-random because the set of tenants-in-chief, subject to the IPMs, is systematically different from other landholders. This includes the church and the crown (the largest landowners in England during the period), as well as secular landowners holding their estates only from other members of the nobility (who tended to be poorer than tenants-in-chief). This means that the results here should be seen as conditioned on being a member of the nobility towards the top of the wealth distribution. Since this group held a large portion of the land in England and Wales over this time period, this does not severely limit the results with respect to providing insight into the dynamics of the medieval economy, but should be borne in mind particularly when generalizing out of sample about the importance of legal institutions.

Since the crown and church held relatively few assets in the March at the beginning of this period, observed selection into linkage differs across the treatment and control groups. However, the estates in the IPMs are held by similar types of landlords on either side of the border, and are balanced in observable char-

Table 2.1: Summary Statistics

	Variable	Mean	S.D.
Panel A: Domesday Book Variables	Value (pounds) in 1086	7.581	18.545
	Mill (1086)	0.215	0.411
	Mill Value (1086)	0.560	0.607
	Geld (Assessed Tax) (1086)	5.922	9.481
	Total Ploughs (1086)	9.955	14.791
	Population (1086)	20.098	28.227
	% Slave (1086)	0.211	0.237
	% Small tenant (1086)	0.324	0.268
	% Clergy (1086)	0.008	0.030
	Longitude	-2.512	0.331
	Latitude	52.191	0.380
	Observations	2526	
Panel B: IPM Variables	March	0.163	0.370
	Annual Value in IPMs (Pence)	1521.961	2704.27
	Town	0.078	0.268
	Castle	0.04	0.196
	Mill (IPM)	0.032	0.175
	Physical Capital (IPM)	0.094	0.292
	Legal Assets (IPM)	0.141	0.349
	Feudal Tenure	0.765	0.425
	Money Rent	0.315	0.465
	Number of Manors held by Lord (IPMs)	9.203	8.964
	Observations	922	

Sources: Inquisitions Post Mortem (UK National Archives Series C133-142 and E149-151, accessed in person and via the Calendar of Inquisitions Post Mortem at https://www.british-history.ac.uk/inquis-post-mortem/) and Domesday Book (accessed at https://opendomesday.org/).

Table 2.2: Mean Differences Between March and England

Domesday Book Variable	Baseline Sample
1. Total Value	-3.822
	(2.329)
2. # Mills	0.00664
	(0.124)
3. Total Ploughs	-2.814
	(1.862)
4. Population	-3.524
	(3.512)
5. % Slave	-0.0623*
	(0.0332)
6. % Small Tenant	-0.00531
	(0.0377)
7. Geld (Assessed Tax)	-0.0262
	(1.191)
8. % Clergy	0.00273
	(0.00417)
9. Mill Value	-0.0593
	(0.191)
10. Churches	0.0476
	(0.084)
11. Longitude	-0.406***
	(0.0356)
12. Latitude	0.180***
	(0.0452)
N	922

Coefficients given are the results of simple regressions of the numbered variable on a dummy variable indicating common law jurisdiction. Standard errors in parentheses. Sources given in notes to Table 2.1.

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

acteristics in the Domesday Book (see Table 2.2), and so differences in selection appear to be driven by the exclusion of royal and ecclesiastic estates rather than unobserved differences in estates held by the nobility, limiting the potential for bias.

Table 2.2 presents the results of t-tests of the mean differences between the March and the comparison counties in Domesday Book and geographic characteristics in the baseline sample. Nearly all of the differences in pre-common law characteristics between the March and the control counties are statistically insignificant. The exceptions to this are the differences in latitude and longitude, which is to be expected as the treatment is spatially defined, and the percentage of the population held as slaves, which is marginally significant (also to be expected given the number of tests conducted). Comparison with Table 2.1 suggests that this is not primarily driven by underlying noise in the data, since the differences tend to be small relative to their means.

2.4 Empirical Strategy

I will use the variation in jurisdiction created by the March to identify the effects of common law on the medieval economy. To correctly identify the causal effect of interest, it must be the case that conditional on geographic and pre-common law characteristics, estates in the March and estates under common law would have developed in similar ways in the absence of common law. While this parallel trends assumption is not provable, it raises a number of questions that can be directly addressed to support the plausibility of the identification strategy.

First, the creation of the March through Anglo-Norman conquest could mean that the experience of oppression or foreign rule would have led to different outcomes in the March even with identical legal institutions. This is unlikely for several reasons. The first is that England itself was a conquered and foreign-occupied territory when the March was formed. The nobility were almost exclusively Norman, French-speaking, and alien to their new lands, speaking neither Welsh nor English (Lieberman 2010). Second, the timing of conquest was similar on both sides of the border, when looking at the sample of estates used in the estimation. England was conquered in 1066, while limiting March estates to those in the Domesday Book means they were conquered between 1066 and 1086. All outcomes are observed at least 200 years after 1086, limiting the scope of potential differences attributable to the maximum 20 year difference in time of conquest. Restricting the sample to post-1292[20] also ensures that differential experiences of violence are less likely to create differences between the two groups, since conquest of Wales removed the independent Welsh territories and made the military aspect of the March obsolete.

A related concern is that the types of lords who engaged in the conquest of the March, and became Marcher lords, were systematically different from those in England in ways that affected the long-run development of their estates. This would be the case if Marcher lords were more aggressive, or more proactive in their ability to take advantage of opportunities, and if that subsequently translated to a different managerial style then estates in the March might have experienced different trends over the following centuries. Certainly it is the case that the individual characteristics of the first Marcher lords helped determine their success and the overall shape of the March (Davies 1978). However, the concern this raises is mitigated by the length of time between the creation of the March and the observation of outcomes, combined with the tendency of demographic factors to permute the ownership of individual estates. Marriage alliances often shifted manors from one noble family to another, creating a measure of distance between a possibly exceptional initial lord of a manor and those managing the estate later. In addition, mortality among noble families was high due to disease and violence, and noble families were extinguished with relative frequency (Cummins 2017). Marcher

[20]The conquest itself ended in 1283, but many of the administrative settlements were not complete until the early 1290s, informing the choice of this cutoff (Walters 1981)

lords who died without heir could find their lands reverting to the crown, sometimes to grant to a new lord but occasionally to keep as crown lands (effectively removing from them from the March). These changes meant that the owners of estates over the period studied might have little to do with the generation of nobles that initially conquered the March.

Further reducing the risk of bias arising from differences in the nobility is the fact that many lords owned estates on both sides of the border. In addition to confirming the similarity between owners, this allows a formal test of the extent of this issue in a robustness check in which I condition on lord fixed effects. The results of this test, presented in Table 2.6, are similar in sign and magnitude compared to the baseline case, suggesting that differences in landlords are not driving the results.

A third concern is that the position of the border may not have been random with respect to growth potential. However, the qualitative historical record suggests that the exact border of the March in 1292 was largely shaped by exogenous factors. Partly, this is due to the origins of the March as a military frontier. Conflict in the region was waged by relatively small forces, and the individual skill of leaders could make a large difference in outcomes. This meant that Anglo-Norman lords were more successful in pressing into Wales along some parts of the border than others, for reasons attributable to stochastic factors determining the outcomes of individual battles (Davies 1978). Another factor shaping the border was the uncertain nature of expansion into England. There are examples of nobles successfully claiming their English manors as part of the March, and of nobles trying and failing to do so, or not trying at all. The political acumen, ambition, and audacity of individual landowners appear to be the decisive factors, and for the reasons discussed above it is not clear that these should be correlated with the economic characteristics of individual manors. Combined, these factors are enough to have made the border of the March distinct from the contemporary border between England and Wales, the modern border, or pre-Norman demarcations between English and Welsh territory. Nor does the March correspond to geographic features —though the land slopes upwards into the Welsh highlands as one moves west across the border, there is not a sharp discontinuity and along large sections of the border, particularly the Northern and Southern thirds, there is no difference in elevation at the border. As R. R. Davies, a prominent historian of the region, wrote: "the March is an area defined by accidents of history as much as or even more than it is shaped by geographical factors. As such its extent varied from one period to another according to the fortunes of war in the March and to success or failure of the Marcher barons in asserting their lordship in the region" (Davies 1978).

Differences in social organization or agricultural practices could also threaten the parallel trends assumption. Certainly, the March was less densely populated, more Welsh, and more focused on pastoralism and wool production than England as a whole. To account for these differences, I limit the comparison group to the three counties (Gloucestershire, Herefordshire, and Shropshire) that border the March. As noted in

Table 2.2, the March and common law estates are mostly balanced in observable pre-common law characteristics, confirming the historical narrative that selection into the March was exogenous and providing some reassurance that the treatment and control groups are well-chosen.

Finally, the March and the rest of England must have shared similar legal institutions prior to the establishment of common law, or else subsequent development paths may have been driven by other differences in the law. This appears to be true based on the historical record and extant court rolls from the March. Land in the March was held by English lords, and was organized into manors akin to the rest of England by 1086, the earliest observable time period.[21] Justice was dispensed on both sides through the manor courts (Davies 1978). While the formal judicial authority of the Marcher nobility was stronger, the cost and inaccessibility of royal justice prior to reform meant that for nearly all subjects on either side of the border, the local manor court was the only feasible forum for legal action (Baker 2019). Moreover, all of the Marcher lords were Anglo-Norman, and nearly all held land on both sides of the border, so the types of culture and custom informing justice were similar.[22] Intact court documents from the March are rare, but analysis of surviving records from the Marcher lordship of Dyffryn Clwd suggest the manor courts of the March operated in similar ways and using similar terminology compared to the manor courts outside of the March(Barrell et al. 1996).

To the extent that the treatment and control groups were selected exogenously, had similar pre-treatment legal institutions, did not have a substantively different history of external conquest, and were ruled by a comparable and in many cases identical set of the nobility, the empirical strategy should yield a causal effect of being under common law jurisdiction relative to the March. However, to identify this effect as being driven by access to common law courts, other institutions outside of the law cannot differ at the border. This is true, with one notable exception. Politically, the Marcher lords were subjects of the English king, participated in Parliament, and fought in external wars. Major Marchers signed Magna Carta (Davies 1978), and participated on both sides in the Wars of the Roses (1455-1487). Taken together, this means that many of Britain's internal political dynamics and the external pressures on the country affected both sides of the border.

The exception to this is taxation. Marcher lords paid indirect taxes such as feudal dues and customs fees, but were exempt from direct taxes (Lieberman 2010). The majority of English revenue during this period was from indirect taxation (Ormrod 1991), and taxes were low relative to the modern United Kingdom (Dincecco 2015), so the differences in after tax income would have been small in absolute terms. However, there is

[21] This observation is drawn from the Domesday Book, discussed further in the data section above.

[22] There is evidence that some Marcher lords respected Welsh customs in issuing judgments in their courts (Barrell et al. 1996). However, this is unlikely to seriously bias the results, for two reasons. First, surviving court rolls from the March suggest some convergence of procedures and outcomes between Welsh and English tenants in manorial courts, with rulings in cases with Welsh tenants coming to resemble those with English tenants. Though this only captures aspects of legal culture that enter into the formal record of the lord's court, it suggests a steady Anglicization of law by the 1300s. Second, nearly all of the results considered in the empirical analysis are based on English landowners, meaning differences in how the Welsh were treated across the border should not introduce bias in how the nobility made contract and investment decisions in their own estates.

insufficient evidence to say with certainty that this was not a meaningful difference and I will discuss the possible impact on the results in the next section.

The combination of similar pre-treatment legal systems, shared history, and locally exogenous treatment suggests a difference in differences-style estimation strategy. The baseline estimating equation is:

$$Y_{iklt} = \gamma CL_{ikl} + X_{iklt}\beta_1 + Z_{ikl}\beta_2 + W_{ikl}\beta_3 + \delta_k + \delta_t + \varepsilon_{iklt} \tag{2.1}$$

Here, i indexes manor, k county, l lord, and t time period. Y is one of the two outcomes above. CL is an indicator for whether a manor is under common law in 1292. X is a vector of controls for local conditions measured contemporaneously with the outcome, including the type of overlord (royal, noble, church), whether the manor is within a borough, and whether the manor is fortified. Z is a vector of controls from prior to the emergence of common law, including the total value, population, the percentage unfree residents, number of mills, and number of plows in 1086. W is a vector of geographic controls, including latitude and longitude (some specifications include squared terms) and elevation. All specifications include county and time period fixed effects, and some specifications include landlord fixed effects, though this reduces the usable variation considerably.

In principle, spillovers across the border could bias the estimated coefficient on common law. This could occur through cross-border economic interactions, such as marketing agricultural goods, or through the diffusion of legal ideas from common law courts to manorial courts in the March. Though there is evidence of both of these issues in the historical record (Barrell et al. 1996), mobility of people and goods was fairly limited, and the complete adoption of common law practices would have been against the interests of the Marcher lords[23], suggesting spillovers were relatively limited. Moreover, the bias arising from this issue would likely smooth differences across the border, attenuating the estimated effect of common law. I address this issue explicitly in a robustness check below by dropping estates closest to the border, and confirm that the likely bias from spillovers is small and attenuates the baseline results.

2.5 Results

2.5.1 Main Results

The results of the baseline estimation are presented in Table 2.3. Row 1 gives the results of simple regressions of the the outcomes (feudal tenure and physical capital) on common law. Common law estates were less likely to be held under feudal tenure, but there is no effect on the likelihood of having a revenue generating capital asset. This basic pattern is unchanged by adding controls for geographic features and characteristics

[23] See discussion of common law above.

drawn from the IPMs (Row 2) or by controlling for pre-common law estate characteristics drawn from the Domesday Book (Row 3). Inference is conducted here using Conley standard errors to account for potential spatial correlations in the errors (Conley 1999), though alternative approaches to inference are discussed in the robustness section below.

The estimates in Row 3, which include controls for geography, contemporary estate characteristics, and pre-common law characteristics, are the baseline results with which the remaining results will be compared. Manors subject to common law were 14.2 percentage points (roughly 20% of the mean) less likely to to be held through feudal tenure.

Since feudal landholding was difficult to transfer and burdened with additional costs, these baseline results establish the central finding that common law promoted lower transaction cost forms of land contract. Despite the differences in setting, this is consistent with findings on the effects of common law on transaction costs in modern settings (La Porta et al. 1998, Acemoglu and Johnson 2005). The mechanism underlying this is likely the availability through the common law courts of standardized procedures for transferring land and altering tenure arrangements. The specialization of common law lawyers in conveyencing land and the acceptance of their methods by judges meant that land could be moved from more restrictive to less restrictive tenures in common law courts. In manorial courts, the nobility often had an interest in maintaining feudal relationships, and the balkanized nature of the manorial courts made it more difficult for agents to develop the expertise needed to conduct land transactions while complying with the formal restrictions on the market.

The estimated effect on capital investment is small in magnitude and fairly stable around zero, and never approaches any conventional significance level. This is somewhat surprising given the effects on land tenure. One might expect that a better functioning land market would provide security for long-term investments, and improve the credit market through increased access to mortgages.[24] The results here do not support this prediction. However, as discussed above common law likely affected investment through channels outside of the credit market. A possibility, explored below, is that the small observed effect on investment in Table 2.3 masks multiple effects working in opposite directions.

2.5.2 Heterogeneity

To examine the effects in more detail, I split the sample into landowners holding more or less than the average number of estates and rerun the baseline specification. The results of this estimation are presented in Row 1 of Table 2.4.

Splitting the sample has no significant impact on the estimated effect of common law on tenure (Columns

[24] This would be consistent with the narrative history on the role of common law in the development of credit markets. See Palmer (1986) or Campbell (2009) for further exposition.

Table 2.3: Baseline Results

	(1) Feudal Tenure	(2) Feudal Tenure	(3) Feudal Tenure	(4) Capital Assets	(5) Capital Assets	(6) Capital Assets
Common Law	-0.159**			-0.0450		
	(0.0711)			(0.0478)		
		-0.196***			-0.00272	
		(0.0704)			(0.0394)	
			-0.142**			0.0184
			(0.0678)			(0.0443)
n	922	922	922	922	922	922
Period and County FEs	Yes	Yes	Yes	Yes	Yes	Yes
Geographic Controls	No	Yes	Yes	No	Yes	Yes
Contemporary Controls	No	Yes	Yes	No	Yes	Yes
Domesday Controls	No	No	Yes	No	No	Yes

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

Conley standard errors in parentheses are calculated to allow for arbitrary error correlations between estates within 15km apart. Estates are assigned to the county issuing the Inquisition Post Mortem, which include Gloucestershire, Herefordshire, and Shropshire. Time periods are 25 year blocks beginning in 1292. Geographic controls are latitude, longitude, elevation, and terrain ruggedness. Contemporary controls are whether an estate is located in a town, whether there is a castle on the estate, and the number of estates held by the lord in the sample. Domesday controls are the value of the estate in 1086, the presence of a mill in 1086, the number of ploughs in 1086, and the population in 1086. Sources as in Table 2.1.

Table 2.4: Heterogeneity by Size of Holdings

	(1) Feudal Tenure - Smallholders	(2) Feudal Tenure - Largeholders	(3) Capital Assets - Smallholders	(4) Capital Assets - Largeholders
Common Law	-0.153**	-0.221*	0.0826	-0.126*
	(0.0768)	(0.1321)	(0.0675)	(0.0745)
n	571	351	571	351
Geography	Yes	Yes	Yes	Yes
Contemporary	Yes	Yes	Yes	Yes
Domesday	Yes	Yes	Yes	Yes

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

Conley standard errors in parentheses are calculated to allow for arbitrary error correlations between estates within 15km apart. Estates are assigned to the county issuing the Inquisition Post Mortem, which include Gloucestershire, Herefordshire, and Shropshire. Time periods are 25 year blocks beginning in 1292. Geographic controls are latitude, longitude, elevation, and terrain ruggedness. Contemporary controls are whether an estate is located in a town, whether there is a castle on the estate, and the number of estates held by the lord in the sample. Domesday controls are the value of the estate in 1086, the presence of a mill in 1086, the number of ploughs in 1086, and the population in 1086. Smallholders are defined as having ≤ 10 estates in the IPMs, roughly the average number of holdings. Largeholders are defined as having > 0 estates. Sources as in Table 2.1.

1 and 2 of Table 2.4). The null hypothesis that the effects are equal across the two subsamples cannot be rejected at any conventional significance level. However, the effect on investment is substantially different between smallholders and largeholders. Larger landowners are less likely to have capital assets recorded under common law. The point estimate (12.6 percentage points) is large in this context. For comparison, in the sample as a whole, the difference between the smallest quartile of landowners (≤ 3 estates) and the largest quartile (≥ 15 estates) in the probability of observing physical capital assets is 7.1 percentage points. The effect is rather noisy, but is significant at the 10% level. In contrast, the point estimate of the effect of smaller landowners is positive, albeit smaller and not statistically significant. The difference between the two groups is large and significant at the 5% level.

This difference in how common law impacted smallholders and largeholders is consistent with a model in which common law affects invest in two ways: credit markets and tenant-landlord bargaining. First, common law encourages investment by expanding access to credit. Common law courts do this by providing a lower cost means for creditors to recover land used as collateral (Pollock 1883; Briggs and Zuijderduijn 2018). However, falling under common law jurisdiction could also have a chilling effect on investment by altering the relationship between landlords and their tenants. Control over the judicial process is complementary to investment through the exercise and enforcement of manorial power to coerce tenants into using the lord's mill and similar powers (Langdon 2004). By providing an alternative forum for tenants to address grievances outside of their lord's own court, common law shifted some bargaining power over these rights towards tenants. In this interpretation, smallholders may have benefited more from access to credit than they were hurt by the restriction of their power. This makes sense, since smaller landowners would have faced a more tightly binding credit constraint prior to common law, but would have fewer existing assets and legal powers to lose. The reverse is true of the large landowners.

These results are not sensitive to the choice in threshold between small and large landowners. Figure 2.1 plots the coefficients obtained by repeating the estimation in Table 2.4 with alternative thresholds. In each case, the coefficents for small and largeholders are very close to the baseline case and statistically different from each other.

2.5.3 Robustness

2.5.3.1 Alternative Approaches to Inference

The baseline estimates report Conley standard errors to account for the possibility of spatially correlated errors. The assumed structure of the covariance matrix between errors has been left as general as possible, and the results in the baseline case allow for arbitrary correlations of errors between estates within 15km of

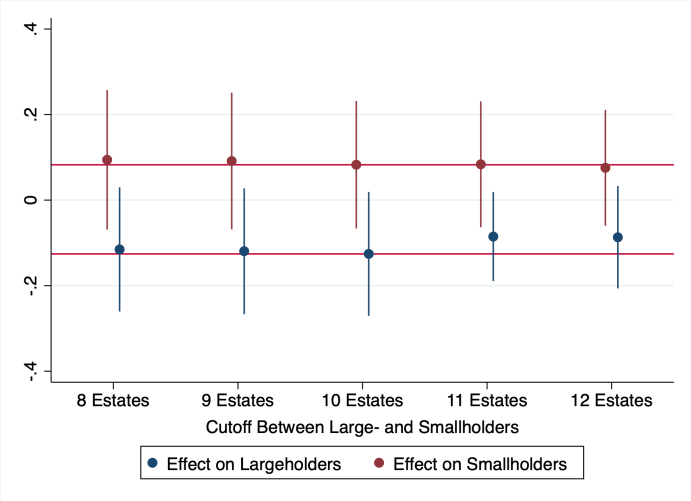

Figure 2.1: Sensitivity of Effect on Investment to Choice of Size Threshold

each other.[25] However, recent econometric work has demonstrated that Conley standard errors can overstate the statistical significance of the results when looking at long-run outcomes with an unknown spatial error covariance structure (Kelly 2019). I take several steps to account for this. The results of the diagnostic tests recommended by Kelly are mixed. In the baseline regression of Feudal Tenure on common law (Table 2.3, Column 3) for example, the p-value of the Moran's I statistic ranges from 0.029 when using an inverse-distance weighting method to 0.154 when using an equal weighting for all observations within a 0.5 degree longitude neighborhood. The regression of capital assets on common law (Table 2.3, Column 6) produces associated Moran's I statistics with p-values between 0.4 and 0.62, suggesting a weaker degree of spatial autocorrelation in that outcome. To be sure, relative to the literature surveyed in Kelly (2019), even the largest values of Moran's I statistic produced here suggest only a moderate degree of underlying autocorrelation. However, the sensitivity of the statistic and it's significance under some reasonable specifications suggests caution.

To minimize the possibility of spatial noise driving the results, I take several precautions. First, I include a polynomial in latitude and longitude in every regression, and vary the specification of the polynomial in Table 2.7, to flexibly account for spatial variation in the outcomes that is otherwise unaccounted for by the controls. Second, I reproduce the key results using alternative methods for accounting for spatial clustering in drawing inferences. Table 2.5 recreates the baseline results with standard errors clustered over a geographic grid of varying size. Errors in parentheses are clustered within each cell of a 10x10 grid covering the sample area. P-values in brackets are generated by splitting the sample area into a 5x5 grid and are estimated by wild-cluster bootstrap to account for the small number of clusters (Cameron et al. 2008). Estates are matched

[25]The results are not sensitive to this choice of threshold. Estimates with alternative distance cutoffs available upon request.

into gridcells using the latitude and longitude of the manor house, normally the focal point of the estate. The purpose of this exercise is to allow for the spatial autocorrelation of errors over a broader area than the baseline case, and to check that the results do not depend on functional form assumptions of the Conley standard errors.

The results are comparable to the baseline case. The effect of common law on feudal tenure is statistically significant (marginally, when using the bootstrapped p-value), and the effects on investment among small and large landowners are statistically significantly different from one another but insignificant at conventional levels.

Table 2.5: Alternative Approaches to Inference

	(1)	(2)	(3)
		Capital	Capital
	Feudal	Assets	Assets
	Tenure	$\leq$ 10 Estates	$>$ 10 Estates
Common Law	-0.142**	0.0826	-0.126
	(0.0638)	(0.0717)	(0.0954)
	[0.052]	[0.282]	[0.304]
n	922	571	351
Geography	Yes	Yes	Yes
Contemporary	Yes	Yes	Yes
Domesday	Yes	Yes	Yes

Standard errors in parentheses are clustered within the cells of an even 10x10 grid. P-values in brackets are estimated via wild-cluster bootstrap, with errors clustered within the cells of an even 5x5 grid. County and period effects, geographic controls, contemporary controls, and Domesday controls are all defined as in previous tables. Sources as in Table 2.1.

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

Finally, I conduct placebo tests using a randomization inference procedure. In Figure 2.2, I randomize treatment within cells of a 10x10 grid covering the sample area, with the observed fraction treated within the cell used as the probability of treatment in each random draw for estates in that cell. This means that estates can only change treatment assignment in the placebo draws if the border intersects their cell, restricting the randomization to estates near the border. Motivating this procedure is its consistency with historical accounts of how estates near the border were or were not brought into the March according to the plausibly exogenous abilities and fortunes of their lords. Randomization inference has several advantages relative to classical inference procedures. First, it compares the observed effects of common law to reasonable counterfactual outcomes in which the shape of the March was slightly different, allowing for more robust causal inference. Second, since the placebo distributions preserve the underlying spatial autocorrelation in the data, this procedure limits the risk of overrejecting the null due to spatially autocorrelated noise.[26]

The RI tests yield results that are somewhat stronger, though qualitatively similar, to the baseline case.

[26] See Dell and Olken (2020) for a recent application of randomization inference in economic history research.

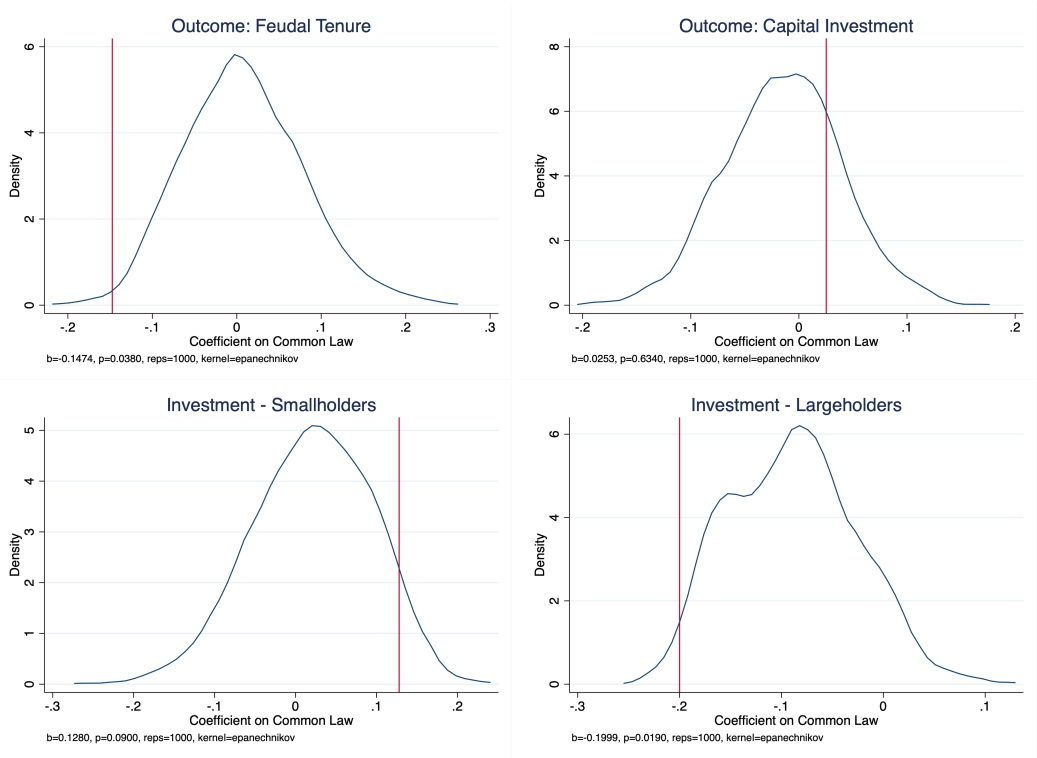

Figure 2.2: Randomization Inference - Random Treatment Near Border

The effect on overall capital investment remains statistically insignificant, but the other outcomes each have smaller empirical p-values than those obtained through asymptotic inference. Taken together, the diagnostic tests suggest only moderate risk of inflated significance levels driven by spatial noise, while the consistency of the conclusions across the addition controls for spatial variables and alternative inference schemes is reassuring that this is not a major threat to the arguments presented here.

2.5.3.2 Alternative Specifications

While all results include county fixed effects, this is a fairly large unit of aggregation relative to the sample. We might be concerned about unobserved heterogeneity at a more local level. To account for this, I add other levels of fixed effects to the baseline specification. The results of these robustness checks are presented in Table 2.6. Row 1 gives the results of including lord fixed effects. This is important if there are significant differences in the kinds of land owner between the March and common law areas, and leverages the fact that many land owners hold estates on both sides of the border. These estimates are generated using only the variation between estates held by the same lord. Qualitatively, the results are similar to the baseline in sign and rough magnitude, but are noisier and consequently only the estimated effect on largeholders has a (marginally) statistically significant effect. It is worth noting that smaller land owners are much less likely to

hold land on both sides of the border, so those results should be treated cautiously. Conversely, it is relatively common for larger landlords to hold estates on both sides, so it is reassuring that the effect is most consistent when looking at this group.

Table 2.6: Additional Fixed Effects

	Outcomes		
	(1)	(2)	(3)
		Capital	Capital
	Feudal	Assets	Assets
Treatment Variable: Common Law	Tenure	$\leq$ 10 Estates	$>$ 10 Estates
Panel A:	-0.187**	0.113	-0.173*
Latitude Band Fixed Effects	(0.0738)	(0.0793)	(0.0892)
Panel B:	-0.237**	0.110	-0.144
Grid Fixed Effects	(0.0978)	(0.0743)	(0.0883)
Panel C:	-0.0997	0.0113	-0.136*
Lord Fixed Effects	(0.0826)	(0.1396)	(0.0703)
n	922	571	351
Geography	Yes	Yes	Yes
Contemporary	Yes	Yes	Yes
Domesday	Yes	Yes	Yes

Conley standard errors in parentheses are calculated to allow for arbitrary error correlations between estates within 15km apart. County and period effects are defined as in Table 2.3. Geographic controls are latitude, longitude, elevation, and terrain ruggedness. Contemporary controls are town, castle, and the number of estates held by the lord, all from the IPMs. Domesday controls are the value of the estate in 1086, the presence of a mill in 1086, the number of ploughs in 1086, and the population in 1086. Lord fixed effects are defined using the name of the landowner in the IPMs. Latitude bands are created by splitting the sample range into 10 equal bins. Grid fixed effects are defined using the same procedure as the standard errors. Sources as in Table 2.1.

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

An additional concern is that there is unobserved spatial variation that is not accounted for by either county fixed effects or a polynomial in longitude and latitude. I address this concern here in two ways. First, Row 2 of Table 2.6 shows the results of grouping the estates into bins by latitude and then including fixed effects for each bin. Second, Row 3 shows the results of dividing the estate into a 5x5 grid and including fixed effects for each cell. The estimates in each of these tests are similar to the baseline in terms of sign, magnitude, and statistical significance.

The central findings are also robust to reasonable changes in the functional form of key controls. Table 2.7 presents the results of several such changes. Row 1 shows the results of including quadratic terms in latitude and longitude in addition to linear terms. This is done to account for the possibility that the underlying spatial

variation is nonlinear in empirically meaningful ways. Similarly, Row 2 replaces the polynomial in latitude and longitude with a quadratic polynomial in distance to the border, in case this is the more relevant dimension for spatial variation. Finally, Row 3 shows the estimates obtained by replacing the time period fixed effects with a quadratic in years. If within-period time variation is critical for the outcomes, this specification should do a better job flexibly controlling for this.

Table 2.7: Alternative Specifications

		Outcomes	
	(1)	(2)	(3)
		Capital	Capital
	Feudal	Assets	Assets
Treatment Variable: Common Law	Tenure	$\leq$ 10 Estates	$>$ 10 Estates
Panel A:	-0.169**	0.114	-0.163*
Polynomial In Years	(0.0740)	(0.0717)	(0.0954)
Panel B:	-0.170**	0.102	-0.132
Quadratic in Longitude	(0.0747)	(0.0679)	(0.0958)
and Latitude			
Panel C:	-0.147*	0.0866	-0.166**
Polynomial in Distance	(0.0775)	(0.0670)	(0.0744)
From Border			
n	922	571	351
Geography	Yes	Yes	Yes
Contemporary	Yes	Yes	Yes
Domesday	Yes	Yes	Yes

Conley standard errors in parentheses are calculated to allow for arbitrary error correlations between estates within 15km apart. County and period effects, geographic controls, contemporary controls, and Domesday controls are all defined as in previous tables. Sources as in Table 2.1.

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

The results in each of these specifications are qualitatively unchanged relative to the baseline case. The signs, magnitudes, and significance levels are all comparable, and the pattern of results is consistent across specifications. This suggests that potentially arbitrary choices in the specification of functional forms for spatial and temporal variation are not driving the results in any meaningful way.

2.5.3.3 Alternative Samples

We might still be concerned that the results might be driven by underlying spatial variation not adequately captured by the strategies above. One way this could be the case is if estates very near the border behave differently in ways that bias the analysis. This could be the case if there are additional costs associated with bordering a March estate for common law estates, or vise versa. For example, there is anecdotal evidence of criminals attempting to evade warrants by entering the March (Lieberman 2010). This could effectively

raise the cost of crime on the March side, or the cost of enforcement on the Common Law side, or both. To address this concern, I adopt a donut strategy, dropping estates within 5 miles of the border and reestimating the baseline specification.

Alternatively, we might be concerned that the results are being driven by estates farthest from the border within the sample. Although the area under consideration is small relative to Great Britain as a whole, one would expect the areas deepest in the March to be more dissimilar culturally and economically from the common law areas farthest from Wales. If these estates are critical to the results, this could mean that differences other than law are driving the variation in tenure and investment. To address this, I rerun the baseline specification dropping estates more than 20 miles from the border.

The results of these tests are presented in Table 2.8. Row 1 contains the results of the donut estimation. The magnitude of the estimates is larger than the baseline case, suggesting there maybe some local spillovers at the border biasing the estimates downward in the full sample. However, the pattern is the same in terms of sign, and the differences in magnitude should be interpreted cautiously given the larger standard errors in the restricted sample (one cannot reject the hypothesis that the coefficients here are the same as the baseline).

Row 2 contains the estimates obtained by dropping the farthest estates. These are unchanged relative to the baseline in terms of magnitude or sign, though somewhat reduced in significance level due to the increased standard errors. Overall, the pattern of results is mostly robust to changes in the sample used in estimation, with the main differences being seen in increased standard errors, likely attributable to the smaller sample sizes.

The broad consistency of the results across different methods for drawing inferences, different levels of fixed effects, alternative functional forms, and trimming the sample spatially, is reassuring that they are not the artifact of arbitrary modeling choices. Instead, their robustness suggests consistent, meaningful differences between areas with access to common law and those without. To understand these differences better, I will next look at the dynamics of the effects and how they change once common law is imposed on the March.

2.5.4 Dynamics and Persistence

An advantage of studying common law historically is that we can explicitly study how its effect has changed over time. Using the IPM data, I will look at how the effect of common law evolved over the 14th and 15th centuries. Following this, I will use data from the 17th and 19th centuries to study the degree to which the medieval difference in access to common law had persistent effects after legal institutions were harmonized across the border of the March.

Table 2.8: Alternative Samples

	Outcomes		
	(1)	(2)	(3)
		Capital	Capital
	Feudal	Assets	Assets
Treatment Variable: Common Law	Tenure	$\leq$ 10 Estates	$>$ 10 Estates
Panel A:	–0.195*	0.155***	-0.383**
Drop $<$ 5 mi. From Border	(0.1086)	(0.0527)	(0.1920)
n	673	458	215
Panel B:	-0.157*	0.0985*	-0.159
Drop $>$ 20 mi. From Border	(0.0850)	(0.0561)	(0.0933)
n	778	474	304
Geography	Yes	Yes	Yes
Contemporary	Yes	Yes	Yes
Domesday	Yes	Yes	Yes

Conley standard errors in parentheses are calculated to allow for arbitrary error correlations between estates within 15km apart. County and period effects, geographic controls, contemporary controls, and Domesday controls are all defined as in previous tables. The choices of 5 and 20 miles correspond roughly to the 25th (4.2 mi) and 75th (21.3 mi) percentiles. Sources as in Table 2.1.

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

2.5.4.1 Trends 1290-1510

Table 2.9 presents the results of reestimating the baseline case with the sample split into an early group (1292-1345) and a late group (1350-1510).[27] This is a useful division because it coincides with the first emergence of the Black Death, which radically changed the labor and land markets and transformed feudal society. However, there are relatively few observations between 1345 and 1400, so this division more closely captures the long-run differences between early 14th century and the late 15th, rather than necessarily reflecting the immediate impact of the plague.

The estimates are noisier than the baseline case, and we cannot reject the hypothesis of unchanging effects over time for any outcome except investment by largeholders. With this caveat in mind, it appears to be the case that the effect of common law on investment becomes less negative over time, becoming close to zero or possibly flipping signs, and that nearly all of this change is driven by the effect on large landowners. To the extent that the negative impact on large landowners is driven by reduction in the authority of lords over tenants, the change over time here is intuitive. The plague significantly reduced the ability of lords to control their tenants, because the scarcity of labor put agricultural workers in a much stronger bargaining position. This reduces the downside of common law for large landowners, the loss of bargaining power, since there is

[27] Ending the first period at 1345 and beginning the next at 1350 is purely rhetorical, to make it clear that the period of the the Black Death itself is not included. This is not binding, however, because I have no observations from that 5 year period in the baseline sample.

Table 2.9: Changing Effects of Common Law Over Time

	(1)	(2)	(3)	(4)
	Feudal Tenure	Capital Assets	Capital Assets $\leq$ 10 Estates	Capital Assets $>$ 10 Estates
Common Law	-0.211*	-0.210**	0.226*	-0.504***
Pre-1345	(0.1222)	(0.1001)	(0.1374)	(0.1642)
n	240	240	111	129
Common Law	-0.124**	0.0406	0.0689	-0.0861
Post-1350	(0.0587)	(0.0533)	(0.0717)	(0.1007)
n	682	682	471	211
Geography	Yes	Yes	Yes	Yes
Contemporary	Yes	Yes	Yes	Yes
Domesday	Yes	Yes	Yes	Yes

Conley standard errors in parentheses are calculated to allow for arbitrary error correlations between estates within 15km apart. County and period effects, geographic controls, contemporary controls, and Domesday controls are all defined as in previous tables. Sources as in Table 2.1.

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

less to lose. The results, though imprecise, suggest the impact of common law became increasingly positive over the period that the March was separate.

2.5.4.2 Commercialization in 1680

Before discussing persistent effects of differential access to common law, it is worth considering why we might expect there to be any persistence at all. In the absence of a specific mechanism perpetuating differences between the March and the rest of England, one would expect the two regions to converge after the law becomes uniform in 1535.[28] However, there are several possible barriers to rapid convergence in this context. The first is that tenure was sticky in the short term. Land markets were thin by modern standards, and even in common law courts cases could last for years or even decades. The process, therefore, of changing tenure arrangements from service based to socage would have taken decades.

Against this backdrop, we must consider the possibilities for path dependence. In the case of investment, in principle it might be easier to invest in places that already have more physical capital. This is less likely given that the differences between the two regions were minimal in terms of capital assets by 1510. However, there is an alternative channel. The 15th and 16th centuries were critical periods for new entry into the land market in England. The reasons for this are debated, although in part this was a result of the long period of inflation in the 16th century and stagnation in real land values after the Black Death, which forced many

[28] In the abstract, the ideal natural experiment might be to look at outcomes before and after 1535 on either side of the border, leveraging the unexpected shock to legal institutions for identification. This is unfeasible for two reasons. First, the Inquisitions Post Mortem are significantly less detailed post-1535. Second, and more critically, the 1535 Laws In Wales Act was part of a bundle of Tudor reforms to government, coinciding with the English Reformation and dissolution of the Monasteries. The simultaneity of these shocks would make isolating the effect of the legal changes difficult.

members of the nobility to sell parts of their land to the rising middle-class gentry. This period coincides with the last years of the March and the early aftermath of legal unification, during which it is unlikely for the distribution of tenure arrangements to have converged across the former border.

Table 2.10: Commerce in 1680

	(1) Gentry	(2) Market	(3) Nobility
Common Law	0.181*	0.109**	0.0101
	(0.0876)	(0.0374)	(0.0510)
n	307	307	307

Conley standard errors in parentheses are calculated to allow for arbitrary error correlations between estates within 15km apart. County and period effects, geographic controls, contemporary controls, and Domesday controls are all defined as in previous tables. Gentry, Market, and Nobility variables are all binary variables indicating at least one of each category within the parish in 1680. These variables are obtained from the Index Villaris, as digitized by Gadd and Litvine (2021). Sources for IPM and Domesday Book variables as in Table 2.1.

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

In Table 2.10, we see that in 1680, common law parishes were more likely to be market towns, and were more likely to have gentry living on an estate in the parish. The effect on markets is significant at a 1% level, while the effect on gentry is noisier (significant at a 10% level). Both effects are large relative to their distribution. Common law areas are 18 percentage points more likely to have a gentleman, relative to a mean of 81%, and 10 percentage points more likely to have a market relative to a mean of 13% (the standard deviation is 0.347, so the magnitude of this effect is not large beyond belief). These results suggest that common law areas were more commercialized in general. R.H. Tawney's famous thesis was that the English gentry became increasingly powerful during the 16th and 17th centuries, and as a result pushed English society further from the medieval social order dominated by feudal obligation and hereditary nobility, and towards a more market oriented system of production. Heldring et al. (2021) find evidence that areas where the gentry were located were more productive throughout the early modern period.

The finding that common law hastened the rise of the gentry is indicative of its role in the broader commercialization of Post-medieval English society. This is reinforced by the effect on markets, a direct proxy for commercial activity. [29] At the same time, there is no discernible effect on the probability of nobility living in the parish. Unlike the gentry, the nobility had an ambiguous relationship with the shift towards commercial agriculture. As major landowners, some nobles were able to change with the times and remained very wealthy. However, many depended on the older feudal system for their social status, and were unable

[29] See Cantoni and Yuchtman (2014) for other research on legal change and commercialization that uses the distribution of markets as an outcome.

to adapt. As such, there is not a strong historical connection between the nobility and Britain's early modern economic transformation (Tawney 1941). The fact that common law increases the likelihood of gentry and markets, but not that of nobility, suggests that the primary relationship is indeed between common law and commercialization, rather than a correlation between common law areas and social importance more broadly.

2.5.4.3 Productivity in 1840

We can further examine the persistence of the medieval variation in laws by looking at land productivity in the 19th century, using tithe data collected by Kain and Prince (1985). These data cover agricultural yields and rents at the level of tithing districts, normally coinciding with parishes or towns. The match rate between the tithe data and the IPMs is fairly low, leading to smaller sample sizes. To prevent further loss of power, the control variables taken from the IPMs are omitted, as they are missing for some observations. Table 2.11 presents the results of these tests.

Table 2.11: Agricultural Productivity in 1840

	(1) Wheat Yield	(2) Barley Yield	(3) Rent Per Acre
Common Law	0.0378	0.0377	0.0332
	(0.0557)	(0.0442)	(0.0810)
n	82	82	82
Geography	Yes	Yes	Yes
Contemporary	No	No	No
Domesday	Yes	Yes	Yes

Conley standard errors in parentheses are calculated to allow for arbitrary error correlations between estates within 15km apart. County and period effects, geographic controls, contemporary controls, and Domesday controls are all defined as in previous tables. Wheat and barley yields are the natural logarithm of bushels per acre. Rent is the natural logarithm of shillings per acre. These variables are obtained from 1840 District Tithe Records, as digitized by Kain and Prince (1985). Sources for IPM and Domesday Book variables as in Table 2.1.

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

The results show convergence between the former March and the rest of England relative to earlier periods. Each of the outcomes has a positive point estimate showing 3-4% higher productivity in former common law areas, but this is fairly small and not statistically significant. With the caveat that the smaller sample makes these estimates noisier, there is no clear evidence of differences in agricultural land value or physical production by 1840. This is consistent with a long but finite period of adjustment after common law was introduced in the March.

2.6 Conclusion

Common law was an important factor in the modernization of the British economy. Access to common law courts, dramatically increased by state investment, was diffused broadly across English society, with

roughly 75% of litigants in the 1500s coming from lower-class backgrounds (Sharpe 1988). This meant that tenants and smallholders, as well as larger landowners, gained access to a predictable and consistent justice system. In the empirical analysis, access to common law courts made an estate 20% more likely to be held freely or through money rent, making the land in medieval England easier to transfer or reorganize. Though this did not translate into immediate changes in physical capital investment, over time flexible land markets were increasingly important in allowing new, middle-class entrants into agricultural production, and in the reorganization of agriculture into a more efficient, and more commercialized sector over the 16th and 17th centuries.

This result is important for our understanding of the influence of changing legal institutions on the path of development in Western Europe. First, the causal identification of the relationship between access to common law courts, the restructuring of land ownership through changing tenure arrangements, and the commercialization of agriculture confirm both theoretical work on state capacity (Besley and Persson 2011) and the historical narrative of the role of common law in British development (Palmer 1985). Legal capacity did appear to have an impact on how factor markets evolve, which in turn shaped the potential for economic development. In the 17th and 18th centuries, immediately following the period studied here, flexible land and labor markets distinguished the increasingly productive areas of Northwest Europe from the rest of the continent (de Vries 1976). Given this context, the emergence of common law might have been one of the most significant aspects of the pre-modern British state.

Second, examining the causes and effects of common law highlights some of the important interactions between the evolution of the legal system and political power. One of the goals in establishing the common law system was to assert royal authority over regional magnates, and this is reflected in the impact of widespread access to the system. Investment by larger landowners declined somewhat under common law, while investment by smallholders increased, suggestive of the impact that wider access to the justice system had on inequality and the distribution of power in Britain. On one hand, the decline in investment by elites and undetectable aggregate effect is indicative of the fact that the impact of legal change is mediated by the existing distribution of economic power. On the other, the connection of common law to the rise of the gentry suggests that the legal system is itself a key determinant in the evolution of power. These conclusions are particularly tentative, and invite further study, but the wealth of case law, manorial records, and parliamentary activity in Britain since 1300 provide a number of opportunities for investigation.

Finally, studying the impact of common law in medieval Britain can shed light on the causal mechanisms linking law and growth more generally. The modern literature on common law has established the correlation between common law and growth, but has not coalesced around a single theoretical explanation. Instead, explanations tend to highlight one of two aspects of common law, its predictability or its decentralization, that

distinguish it from civil law (Cross 2007). In the historical context studied in this paper, common law was relatively stable and predictable, establishing standardized procedures and a shared body of jurisprudence to guide decisions. However, relative to customary law, the common law system was more centralized and less responsive to local differences. The fact that the long-run effects are positive suggests that the relationships between the legal system, local information, and political culture (proposed advantages of a decentralized system) are less quantitatively important than the provision of fair and predictable justice in fostering growth.[30] As a case study of a successful investment in legal capacity at critical point in history, and the results suggest that the centralization of legal administration might be beneficial in the context of weak states, particular when done in a way that limits the influence of local elites.

[30]Reinforcing this conclusion, one might compare the results here to le Bris (2019), which studied the growth impact of civil law in France. Le Bris also found that centralization of legal administration in the context of premodern Europe had a positive, or at least not negative, growth impact.

CHAPTER 3

The Determinants of Guild Power in Medieval and Early Modern Europe

3.1 Introduction

A growing consensus view of the Industrial Revolution highlights the importance of upper-tail human capital in early industrialization. Skilled workers were needed to build the mills, engines, and machines that revolutionized the production of goods in 18th and 19th century Europe. Joel Mokyr, the key proponent of this view, argues that British leadership in the Industrial Revolution can be attributed to Britain's favorable endowment of skilled labor (Mokyr 2009), and while this view has been contested (Allen 2009), a number of recent empirical studies have confirmed that the supply of skilled workers is related to city growth (Squicciarini and Voigtländer 2015), early mechanization (Kelly, Mokyr, and O Gráda 2020), and textile manufacturing (Mokyr, Sarid, and van der Beek 2022). Less well understood is why some parts of Europe were more favorable to upper tail human capital formation than others. Ben Zeev, Mokyr, and van der Beek (2017) connect the supply of skilled workers to the flexibility of apprenticeship institutions within Britain, and argue that Britain's relatively open labor market explains some of its early success. However, this explanation has not been explored in a comparative framework looking outside of the British Isles.

Guilds were an essential feature of European labor markets prior to the industrial revolution. Between 1200 and 1800 across the continent, and in many places through the mid-19th century, skilled urban workers were organized into guilds. Understanding the comparative development, efficiency, and flexibility of skilled labor markets across Europe therefore requires an understanding of guilds and their relationship to the broader economy.

However, guilds are somewhat controversial in the economic history literature. A tradition dating back to Adam Smith has held that guilds were essentially rent-seeking, inefficient cartels which stifled competition and resisted technological progress. Contemporary reformers considered guilds the epitome of the Ancien Regime, medieval institutions that elevated a privileged few to the detriment of society as a whole. One of signature acts of the French Revolution was the abolition of the guild system, a policy exported to much of Europe by force in the Napoleonic Era. Since the decline of guilds largely preceded the Industrial Revolution, and since the guild system declined earliest in Great Britain, it was frequently taken for granted that the classical economists were right about the negative effects of guilds on growth.

This consensus has dissolved over the past four decades. In that time, a revisionist literature has arisen emphasizing the adaptability of guilds, and their importance in solving market failures that otherwise charac-

terized pre-modern economies. This has given rise to a debate over the nature of guilds, with the revisionist view that guilds were useful adaptations given weak institutions and the difficulty enforcing contracts frequently pitted against the still common classical view of guilds as limiting the growth of skilled trades and contributing to the weak institutional environment. This debate is still not resolved. Recent surveys of the literature and analyses of the role of guilds reach starkly different conclusions about whether guilds ultimately aided or hindered European growth.

Though this debate is unresolved, authors on both sides agree on an essential issue. The effect of guilds on growth depends on their political and market power.[1] Powerful guilds could use their influence to block new entrants and obtain a larger rent, reducing output and introducing frictions in labor markets that slowed human capital accumulation. Weak guilds, on the other hand, could fulfill many of the positive roles played by guilds in reducing the costs of information asymmetry over quality in goods markets, or commitment problems in apprenticeship contracts, without creating large countervailing negative externalities. Epstein argues that the advantage of the English guild system can be attributed to "the relative decline in [guilds'] political links with the state and with merchant corporations after the English Civil War, at the same time that such links were being either maintained or strengthened on the Continent (Epstein 1998 p.57)". Ogilvie, with a radically different view of guilds and their relationship to industrialization and development, writes "European societies with relatively weak guilds saw comparatively rapid economic growth from the late medieval period onwards (Ogilvie 2019 p. 562)".

De la Croix, Doepke and Mokyr (2018) formalize this idea. In their model, the guild system can raise or lower growth rates relative to premodern alternative institutions, and the key parameter determining the direction of the effect is the market power of the guild. However, this parameter is determined outside of the model, and this raises a more general problem. To the extent that economic historians both sympathetic and critical of guilds agree that the negative effect of guilds on growth is increasing in the power of the guilds, the debate over the aggregate impact of guilds has continued because relatively little is known about the variation in guild power across Europe over the medieval and early modern periods. Two exceptions to this are Prak et al. (2020) and Ogilvie (2019). Prak et al. analyze guild membership at a city level to try to determine the proportion of local trades dominated by insiders, and find that guilds as a whole were more open than previously thought, suggesting guild power was not a significant driver of variation in growth, though this discussion is limited to a particular facet of guild power. Ogilvie, by contrast, discusses evidence on many dimensions of guild strength across Europe, and tentatively links guild strength to reduced growth. However, the evidence she presents is aggregated to a country level, making it more difficult to assess explanations for why some guilds are stronger or weaker.

[1] The relationship between political power and market power for guilds will be discussed in the model below.

Although these studies are essential to the broad understanding of guilds, neither attempts to explain the causes of variation in guild strength empirically, and indeed both are limited by the existing data. Guilds were, in nearly all cases, local institutions, and the breadth of the geographic range and time period over which guilds were active means there is an overwhelming variety of forms which they could take, in countless professions and industries. This makes broad comparisons difficult. Moreover, the variegated nature of guilds has resulted in the relevant records being scattered across different archives, in different languages, and using different terminology for different activities, making collating and organizing what is known about guilds a herculean task. Second, even with suitable data, the measurement of guild power is not straightforward. Some of the existing measures used by historians, such as the fraction of guild members that are "insiders", are determined simultaneously by guilds' power to restrict new entry by outsiders on the one hand and the demand for new entry on the other. A guild's power over labor supply is what is of primary interest, but the labor market outcome in equilibrium will not give reliable estimates.

In this paper, I provide the beginnings of an answer to the question of guilds' overall impact on growth by examining the determinants of guild power using a new panel of city-level data on different aspects of the economic and political power of textile guilds in Europe from 1200-1850. Formalizing the interactions between guilds and state actors using a model, I predict a causal relationship between conflict and guild power driven by the financial needs of the state, and find that the empirical evidence supports this model. Cities that experienced conflict in the preceding century were more likely to have powerful guilds.

A problem potentially limiting the ability of a two-way fixed effects model to identify a causal effect in this context is the fact that cities may endogenously choose to engage in conflict. For example, a city that modernizes its tax system may be more aggressive in dealing with its neighbors, and less likely to need guilds to raise money, biasing the estimated effects downwards. To account for this, I use a measure of exposure to conflict driven by a city's neighbors, weighted by distance and excluding a city's own direct involvement. This exercise confirms the main result. In addition, to address econometric issues arising from two-way fixed effects in a dynamic panel context, I use a new difference-in-differences estimator developed by de Chaisemartin and d'Haultfoeuille (2022).

In addition to the primary results on the relationship between conflict and guild power, I also examine the effect of exposure to external competition. Using the same panel data, I find that cities with higher potential for trade, as measured by the distance weighted population of other cities in the panel, have weaker guilds, consistent with the idea that competitive pressure reduced the market power of guilds.

I make three primary contributions to the literature on medieval and early modern labor markets. First, the results suggest conflict and trade were important determinants of guild power. In the context of early modern Europe, this could explain the relative openness and weakness of guilds in England, which was

internally united and relatively peaceful, or the Netherlands, which was highly dependent on trade. Similarly, the strength of guilds in Germany and central Europe can be partly attributable to the fractured political environment and regional increase in conflict after 1500.

Second, the dataset itself is an important contribution. A key limitation to the understanding of guilds has been the lack of widely available, easily comparable data. As such, prior studies have often had a restricted temporal or geographic scope that makes it difficult to assess large differences across space and time. Finally, the model of guild power that I develop in the theoretical section links a model of state capacity created by Besley and Persson (2011) to labor market outcomes and guild monopoly power. A generalization of this model could be used to analyze the impact of state development on labor markets, barriers to entry, and monopolies in other contexts.

The remainder of the paper will be organized as follows. Section 2 will cover some of the historical background on European craft guilds, providing an overview of how I will define and think about guilds, and provide stylized facts to be explained by the model. Section 3 will set up and solve a formal model of guild power, and highlight the predictions to be tested in the empirical section. Section 4 will discuss the data sources, and the measures of guild power that I construct. Section 5 will give an overview of the empirical methodology, Section 6 will provide the results, and the final section will conclude.

3.2 Historical Background

Analogues of guilds can be found as early as Ancient Greece and Rome, and similar institutions existed outside of Europe. However, the cluster of economic, social, and religious roles played by European guilds on the eve of the Industrial Revolution is rooted in the history of medieval and early modern Europe. After the fall of the Roman Empire, urban life in Western and Central Europe diminished greatly, and rebounded only slowly. However, towns began to take on a more significant role as centers of trade and production around the year 1000, and it is in this context that guilds emerge. Politically, medieval towns tended to have a degree of autonomy from larger political units, either through existence as an independent city state, as in Northern Italy, formal grants of political franchises and liberties, as in Germany, the Low Countries, and England, or informal norms of self-government that emerged across the continent. Internally, cities tended to be dominated by an elite of merchants and bankers, who alternatively were in conflict with the more numerous urban artisans and laborers over political and economic rights, or cooperated with these groups to assert the town's independence from the central state or feudal authorities.

I define guilds as associations of members of a given trade which aim to improve the economic position of their members. This definition can be further refined into mercantile guilds, which organized groups of merchants to monopolize markets and facilitate long-distance trade, and craft guilds, which organized skilled

producers, normally within a single trade in a single city. While many guilds also had important religious and social functions, I will be considering these only to the extent that they affected the core economic purpose of the guilds. This approach is consistent with much of the recent scholarship on guilds by economic historians (see for instance Ogilvie 2019 or Prak et al. 2006), but it is important to note a parallel historical literature that places the social functions of guilds squarely in the foreground (see Rosser 2015, for example). For the remainder of the paper, I will focus on craft guilds rather than mercantile guilds, as they are a primary locus connecting labor markets, technology, and institutions.

Craft guilds could regulate trade in several key ways. First, guilds often controlled the system of apprenticeship that trained new members of the trade. While previous authors have identified this role as solving market failures arising in apprenticeship contracts (Epstein and Prak 2008, De la Croix et al. 2018), restricting the availability of apprenticeships was also used as a way to raise prices, by limiting the supply of skilled labor. Restrictions on who could join a guild could be based on religion, gender, skin color, national background, or citizenship, or could be based on high fees or quantity restrictions, depending on the context. Second, guilds could regulate the production process, specifying quality standards or methods that must be used by guild members. As with guild interventions in the apprenticeship market, these restrictions could address market failures arising from information asymmetries about quality, but could also be used to increase market power. For example, a common guild restriction was to limit or ban working at night. The ostensible reason for this was to ensure quality control in an era before artificial lighting, but an additional effect was to limit the production of guild members and reduce the supply on the market. Finally, guilds could intervene directly into markets as monopolists, fixing prices on final goods, or monopsonists, collectively agree on prices to pay merchants for key inputs.

The enforcement of these rules varied widely across time and space. The primary methods of enforcement were likely informal. Guilds served social and religious as well as economic functions, and members who flouted guild rules could face pressure or ostracization from their peers. In some cases, this informal pressure could escalate to violence. For example, the dyer's guild of 14th century Coventry hired armed men to ensure members did not deviate from the agreed minimum prices, and the fishmongers of Douane severely beat a guild member in 1274 for selling below the agreed upon price (Mickwitz 1936).

Many guilds relied on town governments to enforce rules as well. Producers violating guild rules could face fines or imprisonment from local authorities. Ogilvie (2019) argues that official support was critical to guilds maintaining their market power in medieval and early modern Europe. For example, tanners in 17th century Reval used the town militia to close a non-guilded tanning mill (Ogilvie 2019 p.161). In this manner, guilds can be seen as a blend of private and public institutions, organizing privately but engaging with local politics and government to enact and enforce rules furthering their market power. The theoretical model,

described below, aims to analyze the incentives of the state to protect guilds or not, and to understand the conditions under which guilds might have more or less influence.

3.3 Model

3.3.1 Setting

The model I develop has two main components. In the first section, guilds choose labor market barriers to maximize the rent of the average member. Guilds desire maximum levels of restrictions, but depend on state support for enforcement. In the second section, the state determines the optimal level of support to give guilds, balancing the immediate share of the rents generated by guilds with lower long-run growth. The model has two time periods, $s \in \{1,2\}$. The state is modeled as a monarchy, in which the King has sole decision-making authority subject to the constraints discussed below. While this is an oversimplification, explicitly modelling internal state politics is outside the scope of the model, and the majority of the countries in my sample are monarchies for all or nearly all of the time period being studied. Production is modeled as having two sectors, with barriers to labor mobility created by guilds analogous to the barriers in a classic Lewis model (Lewis 1954). I will discuss the production side first, deriving the total rent to guild members generated by restricting entry, and then I will use this in the model of the state's decision to support guild privileges.

3.3.2 Production

The two sectors in the economy are agriculture and craft production. Guilds are active only in the craft sector. In both sectors, labor (L) is the only input, with:

$$L_s = L_s^A + L_s^C \tag{3.1}$$

Here I am assuming zero population growth for simplicity, so that $L_1 = L_2 = L = 1$. The following will mostly be concerned with the relative allocation of labor between the two sectors, rather than the absolute allocation, so population growth could be incorporated without changing anything critical. The agricultural production function is:

$$X_s^A = G_s^A h(L_s^A) \tag{3.2}$$

Where $h(.)$ is concave and smoothly differentiable, and G_s^A is a scalar productivity shifter accounting for changes in the agricultural production technology. The craft production technology is defined analogously as:

$$X_s^C = G_s^C f(L_s^C) \tag{3.3}$$

Both sectors experience exogenous productivity growth between periods 1 and 2, with:

$$\frac{G_2^C}{G_1^C} = 1 + g_C \tag{3.4}$$

$$\frac{G_2^A}{G_1^A} = 1 + g_A \tag{3.5}$$

I assume $g_C > g_A$, i.e. productivity growth grows faster in the craft sector than in the agricultural sector. This assumption is supported in part by evidence collected by Epstein (1998) documenting technological improvements in sectors dominated by guilds in the medieval and early modern periods relative to agriculture, and the theoretical arguments of De La Croix et al. (2018), suggesting the apprenticeship institution maintained by craft guilds fostered faster productivity growth than learning from extended kinship networks, as was common in rural agricultural production. In the absence of guilds or other institutions regulating the mobility of labor, the equilibrium condition for the allocation of labor between each sector is that the value of the marginal product of labor is equal across sectors in each time period:

$$G_s^A h'(L_s^A) = pG_s^C f'(L_s^C) \tag{3.6}$$

Where prices are normalized in terms of the agricultural good so that $P^A = 1$ and $P^C = p$. For now, I assume that the ratio of prices is constant across time periods. The reason for this is mostly practical - to model how prices change in response to technology shifts I would need to specify demand explicitly, which would add length and complexity and not yield much in terms of useful insight. However, this comes at the cost of some realism. Broadly speaking, the assumption that prices are not much affected by technological changes within a given city or state is closer to reality for industries specializing in easily transportable goods exported to the rest of Europe, where one city's production is a relatively small part of the overall market. In the context of the industries most relevant to early industrialization, this could include textiles or watchmaking. This assumption is less realistic when applied to smiths, millwrights, or other occupations producing goods that are location specific or difficult to transport. In the empirical section, I will focus on textile guilds, hopefully limiting any distortion created by this assumption.

With these assumptions, we have:

$$\frac{h'(L_1^A)}{f'(L_1^C)} = \frac{pG_1^C}{G_1^A} < \frac{pG_2^C}{G_2^A} = \frac{h'(L_2^A)}{f'(L_2^C)} \tag{3.7}$$

Equation 7 and the concavity of $h()$ and $f()$ imply:

$$L_1^A > L_2^A \tag{3.8}$$

and

$$L_1^C < L_2^C \tag{3.9}$$

This means the proportion of labor employed in crafts is growing in equilibrium when labor is mobile. Define n^* as $L_2^C - L_1^C > 0$. This is the fraction of the labor force (since we have normalized $L = 1$) that would move from agricultural production to craft production under perfect mobility. The role of the guild in this context is to raise wages in the craft sector by restricting entry, creating a Lewis-style model in which limited factor mobility reduces growth (Lewis 1954, see Gollin 2014 for a recent discussion). Although the traditional Lewis two sector model has a number of shortcomings as a tool to analyze modern developing economies, the model has several attributes that make it suitable to an analysis of medieval and early modern guilds. First, many scholars have noted that guilds did in fact restrict entry to craft professions, and that the purpose of these restrictions was to protect economic rents created by guild monopolies (Ogilvie 2019, Prak 2006). Second, economic historians have argued the importance of the reallocation of labor from agriculture to manufacturing in the early industrial revolution (Crafts 1983, Humphries 2006), suggesting factor mobility as a channel connecting guilds, labor markets, and growth. Third, the model is well known among economists and analytically convenient, making the salient points of the model more easily communicated.

To make the role of guilds more concrete, suppose guilds have the ability to block $n \in [0, n^*]$ workers from entering the craft field in the second period. The benefit to each craft worker is:

$$p[G_2^C f'(L_2^C - n) - G_2^C f'(L_2^C)] \tag{3.10}$$

This yields a total rent to the period 1 craft workers of:

$$\Pi(n) = pL_1^C[G_2^C f'(L_2^C - n) - G_2^C f'(L_2^C)] \tag{3.11}$$

Here, $\Pi(n)$ is the value to the guild members (all period 1 craft workers) of excluding n potential en-

trants. The concavity of $f()$ implies $\Pi()$ is increasing in n, with a maximum at the corner solution $\Pi(n^*) = pL_1^C[G_2^C f'(L_1^C) - G_2^C f'(L_2^C)]$, where there is no new entry to the craft sector.

3.3.3 Guilds and the State

Guild restrictions on entry are enforced by the state in the model. Historically, the rent generated by guilds was partly extracted by the state, in the form of licensing fees, taxes, and other arrangements. Guild privileges were not typically traded on an open market, and the degree to which the state was able to capture the rent generated by guild entry restrictions depended on a number of factors, including the cost of enforcement, the balance of political power between guild masters, merchants, nobles, and the central state; the social status and relative mobility of guild members, and the bargaining skill of the various agents involved. To simplify the model, I will abstract away from these factors and collapse everything that affects the relative bargaining strength of guilds into a single parameter $\Gamma \in (0,1)$, where guilds' share of the rent generated by restricted entry is:

$$\Gamma\Pi(n) \tag{3.12}$$

Correspondingly, the state's share of the rent is $(1-\Gamma)\Pi(n)$. For now, I will treat Γ as exogenous with respect to other political institutions, though I hope to relax this assumption in the future. The key elements of this bargaining process for now are: 1. No restrictions on entry are tenable without state enforcement, making n a choice variable for the state, and 2. Regardless of the choice of Γ, the rent accruing to the state is increasing in n. Also note that there is no direct cost to the state associated with enforcing guild restrictions, such as court costs. Instead, I assume that the main cost to the state comes in the form of reduced growth. For the remainder of this document, I will treat aggregate income as a function of n:

$$w_s = w(n_s) \tag{3.13}$$

If more structure were put on production and consumption, $w(.)$ could be derived explicitly, but all we need for the subsequent analysis are the following conditions:

1. $w'(n) < 0, w''(n) < 0 \forall n$
2. $|w'(n)| > \Pi'(n) \forall n$

Condition 1 states that income is decreasing in the restrictiveness of entry barriers, which is straightforward, and that the marginal cost of guild privileges is increasing, which is mostly an analytic convenience and likely untestable, but is at least plausible. Condition 2 states that the marginal cost to the economy of increasing

guild privileges is larger than the marginal increase in the rent generated by the privileges. This is also fairly straightforward, and can be thought of as reflecting dead weight losses from barriers to labor mobility.

3.3.4 State Behavior

3.3.4.1 Setup

Now I will discuss the how the fiscal infrastructure and political institutions governing taxation affect the state's choice of the optimal restrictiveness of guilds. The section of the model is inspired largely by Besley and Persson's (2011) model of state capacity, and adapted to the context of pre-modern Europe. As above, there are two time periods. The king maximizes the following utility function in each period:

$$U_s = c_s^k + \alpha_s V(g_s) \tag{3.14}$$

Where c_s^k is the king's consumption in period s, and g_s is spending on public goods. $V()$, the value of public good spending, is concave with $V(0) = 0$. α_s is a scalar shifter in the value of public goods, taking on either a high or low value in each time period, i.e. $\alpha_s \in \{\alpha_L, \alpha_H\}$. For the remainder of this document, I will treat α_s as deterministic, but it can be made stochastic without substantially changing the results. To make matters concrete, we can think of g_s as spending on defense. In this case, α_s might correspond to the likelihood of external conflict, with α_L associated with a low threat of invasion and α_H associated with a high threat of invasion. For the purpose of this model, c_s^k could encompass the king's spending on household goods, luxuries, and entertainment, but could also include public vanity projects such as offensive wars.

One key component of the state's decision is level of investment in fiscal capacity. Fiscal capacity is the ability of the state to levy and collect taxes. This can be thought of as the cost of paying bureaucrats and tax collectors, the cost of prosecuting and punishing noncompliance, etc. Following Besley & Persson, the effective tax rate is constrained by the fiscal capacity of the state:

$$t_s \leq \tau_s \tag{3.15}$$

Where t_s is the actual tax rate paid by citizens and τ_s is fiscal capacity. Investment in fiscal capacity is governed by the following motion equation:

$$m_s = \begin{cases} \mathscr{F}(\tau_2 - (1-d)\tau_1 & if \quad s = 1 \\ 0 & if \quad s = 2 \end{cases} \tag{3.16}$$

Here, τ_1 is the initial level of fiscal capacity, which is subject to depreciation at rate d (this is not critical,

d could easily be set to 1 or 0 without seriously affecting the results). New investment in fiscal capacity is given by $\tau_2 - (1-d)\tau_1$, and is constrained to be non-negative (so fiscal capacity can erode over time with depreciation but cannot be actively destroyed and sold). The cost of investment, m_s, is determined by a convex function $\mathscr{F}(.)$, with $\mathscr{F}(0) = 0$.

The king faces two budget constraints, one limiting state spending to public revenue, and the second limiting his consumption to his private income. This division is somewhat arbitrary, but does reflect the common divide between state and royal household finances that emerged over the medieval period (a permeable division both historically and in the model below). The public budget constraint is:

$$g_s + m_s + r_s^k + r_s^p = (1-\Gamma)\Pi(n_{s+1}) + t_s w(n_s) \tag{3.17}$$

As above, g_s is spending on public goods, m_s is investment in fiscal capacity, t_s is the tax rate, and $(1-\Gamma)\Pi(n_{s+1})$ is the revenue extracted from guilds in exchange for enforcement of restrictions on n_{s+1} new entrants into crafts. The timing of this exchange, in which the revenue is obtained in one period and the economic effects occur in the following period, is meant to reflect the fact that while the economic impact was likely to unfold over a medium to long run, the main ways these rents were monetized for the crown (levying taxes, accepting lobbying fees, "gifts" and bribes, various fees) could be collected in the short run. The terms $r_s^i, i \in \{k, p\}$ are transfer payments. The transfer payment to the king, r_s^k, represents the flow of public revenue to the king's household budget, while r_s^p represents patronage transfers, typically gifts, privileges, or lands given out to royal favorites or powerful families.

The king's private budget constraint is:

$$c_s^k \leq (1-t_s)\Omega w(n_s) + r_s^k \tag{3.18}$$

Here, $w(n_s)$ is aggregate income in period s, which depends on the restrictiveness of guilds on labor mobility. Ω is the share of private wealth held by the crown, which in the time period under consideration could be considerable. The results will depend in part on a restriction, discussed below, that Ω is not too large, though I do not believe this will be a major limitation in practice. Note that in this set up, the king pays taxes on the land he owns privately. This is included to capture the fact that the most common form of taxation were consumption taxes such as import duties, and the king would bear some of the incidence of these taxes even if he was formally exempt from taxation, which generally he was. I will discuss the extent to which this assumption changes the results below, but the main points will not be affected.

3.3.4.2 Political Institutions

Political institutions shape the king's behavior in several ways. First, the transfer payment to the king relative to patronage transfers is limited by the institutional structure of the state:

$$r_s^p \geq \sigma r_s^k, \sigma \in [0,1] \tag{3.19}$$

Often it will be useful to refer instead to the transformation, θ, which following Besley & Persson I will refer to as cohesiveness:

$$\theta = \frac{\sigma}{1+\sigma} \in [0, \frac{1}{2}] \tag{3.20}$$

While cohesiveness has a slightly different flavor in a medieval/early modern context relative to Besley & Persson's original use, the main idea is fairly similar. The ability of the king to arbitrarily redistribute wealth depends on the relative political power of the nobility and other powerful agents within the state, as well as on the body of norms and precedents governing agents' behavior. Cohesiveness can encompass de jure limits on the king, such as English laws requiring parliamentary approval of taxes, or de facto limits associated with powerful and independent agents outside of the state's control, such as the quasi independent region of Burgundy reducing the French crown's real authority throughout the middle ages. One way to interpret cohesiveness is as the cost to the crown of extracting revenue for personal use. In a highly cohesive political environment, the ruler must either limit themselves to spending on public goods or build support for personal spending through an expensive patronage network.

A second important aspect of institutions in the model is political instability. The King loses power between periods 1 and 2 according to an instability parameter γ, where:

$$\gamma \in [0,1] = Pr(\text{king loses power}) \tag{3.21}$$

This parameter captures the threat of internal conflict and dynastic change, which were fairly common occurrences throughout the time period.

3.3.4.3 Timing

The timing of the model is as follows:

1. (τ_1, n_1) are given. α_1 is realized.
2. The king chooses $\{n_2, t_1, g_1, r_1^K, r_1^p\}$, determining m_1.

3. The king remains in power with probability $1-\gamma$, α_2 is realized.

4. The king chooses $\{t_2, g_2, r_2^K, r_2^p\}$.

3.3.4.4 Solution

To solve this model, I will start with the period 2 decision problem and then work backwards. The problem facing the king in period 2 is:

$$\max_{\{g_2, t_2, r_2^k, r_2^p, c_2^k\}} \alpha_2 V(g_2) + c_2^k \tag{3.22}$$

s.t.

$$t_2 \leq \tau_2$$

$$c_2^k \leq (1-t_2)\Omega w(n_2) + r_2^k$$

$$g_2 + r_2^k + r_2^p \leq t_2 w(n_2)$$

$$r_2^p \geq \sigma r_2^k$$

First, note that the two budget constraints will be exactly binding in equilibrium. We can use this to substitute $(1-t_2)\Omega w(n_2) + r_2^k$ for c_2^k in the objective equation. The cohesiveness constraint will bind as well, since the monarch will want to pay as little in patronage as possible, leaving $r_2^p = \sigma r_2^k$. Substituting this into the public budget constraint and rearranging, we have:

$$r_2^k = (1-\theta)[t_2 w(n_2) - g_2] \tag{3.23}$$

To solve for the optimal tax rate, we need to impose an additional condition on the value of public funds. Specifically, we will have $t_s^* = \tau_s$ in equilibrium as long as:

$$\Omega \leq max\{1-\theta, \alpha_s V'(\tau_s w(n_s))\} \tag{3.24}$$

What this condition states is that the marginal cost to the crown of an additional unit of tax revenue, Ω, is less than the marginal benefit of an additional unit of revenue, spent either on transfer payments with $MB = 1-\theta$ or the corner solution where all revenue is spent on public goods. This condition is not very restrictive - in the most cohesive state possible, with the lowest possible value of public goods, the only restriction is that the monarch owns less than half of the economy. Note too that this depends on the monarch paying some of the tax burden from crown property. If the ruler does not pay taxes, there is no marginal cost to taxation and

$t_s = \tau_s$ is always optimal.

Assuming this condition holds, we have:

$$r_2^{k*} = (1-\theta)[\tau_2 w(n_2) - g_2] \tag{3.25}$$

We now need to solve for spending on public goods. Define a new function $\hat{g}(\alpha, x)$ s.t.

$$\alpha V'(\hat{g}(\alpha, x)) = x \tag{3.26}$$

Note that the concavity of $V()$ implies $\hat{g}()$ is decreasing in x and increasing in α. The marginal benefit of using public revenue for transfers is $1-\theta$. So, the optimal level of public spending, $g^*(\alpha_s, \tau_s)$, is given by:

$$g^*(\alpha_2, \tau_2) = \begin{cases} 0 & \text{if} \quad \alpha_2 V'(0) < 1-\theta \\ \tau_2 w(n_2) & \text{if} \quad \alpha_2 V'(\tau_2 w(n_2)) > 1-\theta \\ \hat{g}(\alpha_2, 1-\theta) & \text{otw} \end{cases} \tag{3.27}$$

For the remainder of this document, I will assume an interior solution. Following Besley and Persson, the existence of corner solutions should not substantially change any of the model's key predictions, and I do not work through this possibility here. One area where this does matter is that changes in the value of public goods, α_2, only end up affecting investment when the change causes a move on or off of a corner solution, which is unrealistic but does not otherwise affect the predictions of the model in any key way.

Now, we can define a value function giving the indirect utility of fiscal capacity and guild restrictions going into period 2:

$$U_2(n_2, \tau_2) = \alpha_2 V(g_2^*(\alpha_2, \tau_2)) + (1-\tau_2)\Omega w(n_2) + (1-\theta)[\tau_2 w(n_2) - g_2^*(\alpha_2, \tau_2)] \tag{3.28}$$

Here, α_2 is deterministic. If I were to allow for the value of public goods to vary randomly, the value function above would be an expected utility over the distribution of α_2, which complicates the algebra moderately but can be done. Now, the period 1 problem becomes:

$$\max_{\{g_1, t_1, r_1^k, r_1^p, c_1^k, n_2, m_1\}} \alpha_1 V(g_1) + c_1^k + (1-\gamma) U_2(n_2, \tau_2) \tag{3.29}$$

s.t.

Using arguments analogous to those used for the period 2 problem, we can rewrite the objective function as:

$$\max_{\{g_1,c_1^k,n_2,\tau_2\}} \alpha_1 V(g_1)+(1-\tau_1)\Omega w(n_1)+(1-\theta)[\tau_1 w(n_1)+(1-\Gamma)\Pi(n_2)-g_1-\mathscr{F}(\tau_2-(1-d)\tau_1)]+(1-\gamma)U_2(n_2,\tau_2) \tag{3.30}$$

Assuming an interior solution for spending on public goods, the first order condition for τ_2 is:

$$-(1-\theta)\mathscr{F}'(m_1^*)+(1-\gamma)(1-\theta-\Omega)w(n_2^*)=0 \tag{3.31}$$

Rearranging, we get:

$$\mathscr{F}'(m_1^*)=\frac{(1-\gamma)(1-\theta-\Omega)w(n_2^*)}{(1-\theta)} \tag{3.32}$$

The first order condition for n_2 is:

$$(1-\theta)(1-\Gamma)\Pi'(n_2^*)+(1-\gamma)(1-\theta-\Omega)\tau_2^* w'(n_2^*)=0 \tag{3.33}$$

$$\Rightarrow \frac{w'(n_2^*)}{\Pi'(n_2^*)}=\frac{-(1-\theta)(1-\Gamma)}{(1-\theta-\Omega)\tau_2^*(1-\gamma)} \tag{3.34}$$

Examining equations 32 and 34, and using $\mathscr{F}''>0$, $w''<0$, and the dead weight loss condition expressed above, we get the following comparative statics results:

1. Investment in fiscal capacity is increasing in expected future income, and decreasing in instability and the share of the economy controlled by the king.

2. Support for guild privileges is increasing in instability and the share of the economy controlled by the king.

3. Investment in fiscal capacity and support for guild privileges are strategic substitutes[2]. This means that increases in investment in fiscal capacity will lower the optimal support for guilds, and vice versa.

[2]This result relies in part on the property of supermodularity, see Milgrom & Shannon (1994) for details.

3.3.5 Guild Power and Conflict

The results above are fairly intuitive, but worth discussing. First, as instability increases, the trade off between present and future income shifts, making support for guild privileges relatively more attractive and investment in fiscal capacity to raise future taxes relatively less attractive. We would expect states characterized by internal conflict to develop stronger guilds and weaker tax systems, and the reverse in more stable states. Historically, this does match the broad experiences of certain states in Western Europe. Ancien Regime France and the Holy Roman Empire had weak central authorities, with the ruler frequently challenged by powerful subjects, and developed strong guilds lasting through the early modern era, while failing to develop effective tax bureaucracies. Conversely, England had a (relatively) stable monarchy from 1066 onward, and was precocious in its development of a strong central tax authority, while its guilds lost most of their political power by the early 17th century. Empirically, the link between stability, fiscal capacity, and guilds can be tested by exploiting regencies and succession crises, in which the unexpected death of a king without an adult heir creates a plausibly exogenous shock to instability.

Second, investment in fiscal capacity and guild privileges should have an inverse relationship. This means that areas with relatively well developed tax bureaucracies should have weaker guilds at the outset of the industrial revolution. This is consistent with historical evidence, discussed briefly in the introduction, and initial empirical results support this.

3.3.6 Guild Power, Competition, and Technological Change

The main purpose of the foregoing model was to clarify the relationship between the state's demand for resources and the ability of guilds to protect a rent using the law to enforce market restrictions. However, the competitive environment faced by guild members will be determined only in part by their ability to use the law to coordinate production among skilled urban workers. Even guilds operating in cities that strongly enforce restrictions on trade historically faced competition from unskilled labor locally and imported goods produced in other cities. Therefore, the competitiveness of textiles markets within a given city will be shaped by the state of technology and density of trade networks at a given time and place, in addition to the political and legal influence of the guild.

Competition from unskilled labor is determined by the available production technology. Beginning in the 1100s, technological development in textiles tended to be skill biased, in that the looms and mills in use made workers more productive, but were complicated to use and required significant human capital investment to learn. Starting in the 1600s and accelerating in the 17-1800s, new methods of production emerged that allowed more competitive use of unskilled labor, through organizational innovations (the putting out system) and technological developments (simpler machines). The available historical evidence suggests that this was

a critical factor in weakening guilds. In the empirical section, I will leverage the fact that different parts of the textile industry experienced technological change at different times to examine the impact these changes had on guilds.

Competition from external producers is determined by the costs of long distance trade. This is determined in part by explicit trade barriers, such as tariffs, and in part by geography, including distance between cities, the accessibility of a city via navigable waterways, and the topography of the region. Fixed geographic characteristics such as water access and terrain ruggedness can be controlled for using city fixed effects, but to explore the time-varying impact of trade I will examine the effects of the distance weighted population of other cities on guild power. This variable captures the effect of the size and proximity of markets outside of the guild's control.

3.4 Data

A major difficulty in studying guild market power empirically has been the paucity of sources with broad coverage across Europe over long periods of time. Partly this is due to the generally local and fragmented nature of guilds - for most of the medieval and early modern periods, craft guilds were usually limited to a single location, and were not regulated by any nationwide body. This means that records of guild activity tend to be non-uniform in format and content, and are often spread out among many local and regional archives (Ogilvie 2019). Compounding this is the fact that guilds were active in many spheres of urban society, undertaking various social, religious, and cultural roles in addition to their essential economic and political functions. The result has been that the scholarship on guilds, though extensive, has emphasized case studies of the variety of ways these different roles interact with and complicate one another, rather than emphasizing the consistent measurement and analysis of any single guild activity. To some extent, these challenges have been addressed by Sheilagh Ogilvie (2019), whose recently published quantitative and qualitative databases gather and standardize the findings of many previous researchers, about which more will be said below.

To limit the scope of the problem of comparing radically disparate institutions, I have chosen to focus on textile guilds.[3] Limiting the inquiry to a single industry minimizes problems arising from comparing guilds with fundamentally different modes of production or relationships to the economy as a whole. Moreover, the textile industry was the largest pre-industrial manufacturing sector, was geographically widespread, and was a significant driver of early industrialization, making it an important and reasonably representative industry to study. Textile guilds can be subdivided by type of material (wool, linen, silk, or cotton) and part of the production process (weavers, spinners, fullers, dyers, tailors, drapers, or seamstresses), which information can be used to assess the impact of changes to a technology used in a particular stage of production.

[3]Textile guilds are identified as guilds of weavers, spinners, fullers, dyers, tailors, drapers, or seamstresses.

Even after limiting comparisons to guilds within the textile industry, it is not immediately obvious how guild power can or should be measured. One observable measure of a guild's political influence is whether guild representatives had formal representation in local government. In many towns across Europe, town charters would institutionalize guild power through guaranteed seats on a town council, a reserved proportion of elected officials, or participation of guild officials in the legislative process. Several recent studies use guild representation in local government in German towns as a measure of guild power. Wahl (2018), finds that while towns with representative governments grew faster in Germany 1300-1800, guild participation in town government negated this advantage. This suggests an economic disadvantage to guild representation in the long run, consistent with the idea that guilds use political power to secure market power and obtain rents. Becker et al. (2020) find that guild representation in town government increases in response to conflict, consistent with the model described above. The emphasis on Germany in these papers is primarily a result of data availability. The political and economic characteristics of medieval and early modern German towns are described in detail in the *Deutches Stadtbuch*, a source compiled by German historians over several decades and recently digitized by Davide Cantoni.

There are disadvantages to using political representation as a proxy for power over entry into labor markets. The primary issue is that formal political representation is neither a necessary nor a sufficient condition for exercising market power. Instead, representation in local governments was one strategy used by guilds to achieve and protect market power, and it is market power of guild that would have effects on economic growth. Lis and Soly (2006) find that although guilds in the Netherlands often participated in state government, they tended to relatively open to new entrants and relatively weak, operating more as a regulatory arm of the state than as a powerful monopoly. Conversely, guilds in Württemberg, Germany, were strong in many dimensions, but were not formally represented within the Ducal government of the region (Ogilvie 1997). The theory above focuses on the political incentives to allow guilds to create rents through barriers to entry, and this can be achieved through power wielded by guilds formally or informally.

The second issue with focusing on formal representation is that the coverage of towns across Europe is very uneven. Partly this is because charters or constitutions that grant autonomous government to towns are unevenly distributed across Europe (Bosker et al. 2013). This means that conclusions drawn from a study of the determinants of representation in chartered town government will potentially be subject to selection bias, and have relatively little to say about variation in informal guild power in areas without formally autonomous town government, which could be equally important in determining future human capital levels. An additional concern here is that even among towns with charters and some autonomy, there is enormous variation in the character of urban politics and structure of local government. For example, although chartered towns in England had some autonomy, they competed with seignorial, county, and royal institutions for authority, and

were ultimately closely integrated into Parliament and the central state, while in Germany, chartered imperial towns were virtually independent states.

That said, guilds' formal role in government is of some intrinsic interest, in that it measures one common strategy used by guilds to achieve market power, and the relationship between this measure and guild power as it was actually realized in pre-industrial labor markets is likely to be cleaner than some alternatives. To measure guild participation in government, I use several historical sources. For areas within Germany's 1937 borders (covering a number of smaller polities within the Holy Roman Empire, but excluding Austria and Bohemia), I use information from the *Deutches Stadtbuch*, following previous authors. For information on English town government, I use the collected British Borough Charters Vol. 1-4, covering charters of government within England from 1034-1660. Finally, for cities in the Netherlands, I will use the data collected by De Munck et al. (2006) based on two late 18th century censuses. These databases will be supplemented by data from Ogilvie (2019). The primary dependent variable is an indicator for whether the guild has a role in town government enumerated in the town charter or constitution.

An alternative approach is to try to measure guild market power directly. Following the work of Robert Hall (1988), the market power of modern firms is often measured using markups - the gap between the cost of manufacturing a product and its sale price (see De Loecker And Warzynski (2012) and Heo (2023) for recent examples and theoretical work on this). However, this approach relies on access to detailed data on prices of inputs and final goods, which are not widely available in the relevant time frame. Instead, economic historians have relied on alternative measures of market power when discussing guilds. The simplest measure is the wage premium associated with guild membership, typically the ratio of daily or annual wages between guild masters and the average worker in a given city and time period (Ogilvie 2019). Since the profits of a workshop are primarily paid to the master in wages, these wages can act as a proxy for profit, and should be increasing in the market power of guild members. Scaling by the daily wage of an unskilled worker can account for variation in the cost of living and price level. However, the wage of a guild master is determined by a number of other factors that complicate this as a measure of guild market power. Most importantly, this measure does not take into account variations in skill which might lead to some masters being paid more even in a competitive setting. If this were unrelated to market power, this would be a source of measurement error but would not necessarily introduce bias into the empirical analysis. Unfortunately, there is no reason to believe this is the case. In the framework of De la Croix et al. (2018), the openness of a guild to new entrants is an important determinant of long-run productivity growth, meaning market power should be negatively related to average skill level in any given industry. If one could reliably observe skill, or a reasonable proxy thereof, it would be possible to disentangle these separate determinants of wages, but this is difficult in practice.

A second potential measure of guild power, used by Prak et al. (2020), is the share of guild members that are "insiders", defined alternatively as born in the city where the guild is located or as the son of a guild member. The logic to this is that if guilds erect barriers to entry, it should be easier for insiders to become members than for outsiders. Therefore, the gap in membership between insiders and outsiders should give some idea of barriers to entry, which in turn should be positively related to power over labor markets. This has the advantage of being focused on guild behavior rather than attributes of masters as such, and should be less affected by unobserved variation in skill. However, the use of this measure still introduces a potential endogeneity problem, because the rate at which outsiders join a guild is not solely determined by barriers to entry, restricting the supply of guild memberships, but also on the demand for these memberships, which would likely differ between insiders and outsiders. For example, Prak and coauthors find using this kind of measure that the differences in guild restrictiveness between England and continental Europe are much smaller than has been conventionally argued in economic history. For example, they find that London guilds in the 18th century have among the highest ratios of insiders to outsiders relative to other early modern cities across France, Spain, Germany, and the Low Countries (Prak et al. 2020). This would suggest that English guilds were just as restrictive as their continental counterparts at the beginning of the industrial revolution. However, previous historical research has found that the majority of London tradesmen did not bother to join the relevant guild in this time period, suggesting that the economic advantage of guild membership, and corresponding demand for guild entry, was relatively low. In this scenario, one can imagine insiders joining at higher rates either because of the relatively low cost or because of a higher value on the social functions of the guild. In either case, the high proportion of insiders would be an indication of the irrelevance of the guild to the labor market, rather than its power. This approach would also tend to overstate the power of guilds in small or stagnant towns, where in-migration is limited and the population as a whole has more insiders, again a failure to account for variation in demand. The use of instrumental variables to identify the supply and demand functions are of course well understood, but the unavailability of an appropriate IV given the data limitations makes this approach unviable.

To overcome these issues, I have created two new measures of textile guild market power using a mixture of secondary and primary sources, described in Table 3.1. The first is an index of the severity of labor market restrictions within the textile industry associated with guilds. This is an ordinal variable, with the levels defined using qualitative information about guild activities. The four levels are defined as follows: A 0 indicates no guild, or a guild with noncompulsory membership (meaning non-guild members may practice the trade without restriction), and thus no barriers to entry. A 1 indicates a guild with compulsory membership, but with low entry fees and few formal restrictions on who may become a master. A 2 indicates a guild with identity-based restrictions, with full membership open only to town citizens, or in some cases restrictions

Table 3.1: Sources for Measures of Guild Power

Source	Description	Coverage
Ogilvie (2019)	Quantitative and Qualitative databases supporting monograph	11 Countries, City-level, 1000-1850, Many kinds of guilds and many characteristics
De Munck et al. (2006)	Survey of Guilds in Low Countries	3 Countries, City-level, 1300-1800, many kinds of guilds, guild existence and involvement in politics
Prak et al. (2006)	Guilds and politics in Low Countries	3 Countries, City-level, 1300-1800, many kinds of guilds, qualitative descriptions
Wahl (2018)	Data on Town Governments from the *Deutches Stadtbuch*	German speaking regions, City Level, 1300-1800, Guild political representation
Epstein and Prak (2008)	Monograph on guilds and innovation, collection of case studies	France, Italy, and Low Countries, 1100-1800, qualitative information

based on religion or skin tone.[4] Finally, a 3 indicates high barriers to enter the guild even for 'insiders' - normally based on very high entry fees or a fixed number of masters.

The second measure I use is an index of the severity of product market restrictions, to measure the actual power of guilds in final goods markets. Here, a 0 indicates no guild, while a 1 indicates a guild that coordinates the social or religious activities of members and thus plausibly serves to help coordinate production, but which places no formal restrictions on goods markets. A 2 indicates that the guild places quality standards on goods, or places restrictions on the types of production process members may use. These strategies were often justified as protecting the reputation of the guild or serving the public good, but were frequently used to restrict competition (Ogilvie 2019). Finally, a 3 indicates that the guild placed explicit price or quantity restrictions on members. I have classified this type of open monopolistic behavior as indicating the strongest guilds because these kinds of market restrictions tended to be fairly unpopular, were more difficult to justify as being in the public interest, and therefore required a more entrenched guild to maintain.

In one sense, the measures of guild power I use are hierarchical. If guilds' central concern was profit maximization, than exercising market power in final goods markets would be their primary objective. Labor market barriers can be seen as instrumental to this goal inasmuch as they reduce competition and ease coordination costs so that the guild can operate as a cartel, rather than a separate goal. Government representation, meanwhile, can be seen as primarily a strategy to expand and preserve the first two dimensions of power. In this way, these measures can be ordered with respect to how close the power they represent is to the ultimate goal of maximizing profits. That said, guilds did have social and political concerns beyond profit, and it is probably more reasonable to view these three measures as related but partially representative

[4]From this definition I am excluding restrictions on women and Jews, simply because of how pervasive these types of restrictions were. A guild not mentioning a formal restriction of this type is more likely to indicate that it was taken for granted rather than that it did not exist. See Ogilvie (2019) for a discussion.

Table 3.2: Correlations Between Measures of Guild Power

	Representation	Market Power	Barriers
Representation	1	-	-
Market Power	0.45	1	-
Barriers	0.41	0.87	1

of separate interests of guilds. Table 3.2 presents the correlations between the 3 measures of guild strength I will use throughout the remainder of the paper, representation of guilds in local government, the index of market power, and the index of barriers to entry. As expected, the three measures are positively correlated with one another, suggesting that they are indeed picking up different aspects of a common phenomenon.

The main sources used to measure the incidence of violent conflict are Brecke (2012) and Clodfelter (2002). From these sources, I obtain the location of conflicts where at least 30 people were killed, the belligerents involved, the scale of the conflict in terms of lives lost, and the type of conflict (siege of a city vs battle). From this source, I construct various measures of conflict exposure. In the main specifications, the measures I will use are the total number of conflicts within 50, 100, or 150 km of a given town in the century preceding an observation. Various alternatives that I will use as robustness checks include a dummy variable for any conflict with 150 km (this is the definition of conflict exposure used by Dincecco and Onorato 2016), the number of conflicts weighted by severity to capture heterogeneity in the intensity of exposure to violence, and conflicts disaggregated into total nearby battles and total nearby sieges, to capture potential differential effects of conflicts that do or do not directly involve town defense. To address the potential endogeneity of conflict participation, I will use proximity to conflicts which did not include a given town's polity as a robustness check (more on this below).

Other variables included as controls are town population, the degree of town independence, a set of geographic controls (elevation, ruggedness, proximity to a coast or river, soil quality), the presence of a bishop, religious confession (Protestant or Catholic), whether a city was at the hub of roman roads, the urban potential of a town as measured by the population of all other towns in the sample weighted by the distance to the town in question. The sources for each of these variables are given in Table 3.3.

3.5 Empirical Strategy

The empirical analysis has two goals. First, I aim to describe the relationships between guild power and potential explanatory variables, in particular measures of conflict and trade competition. To do this, I use a combination of OLS and panel methods. The estimating equation used in OLS specification is:

Table 3.3: Sources of Other Variables

Variables	Source
Population	Bairoch et al. 1988
Geography	Dincecco and Onorato 2016
Bishop	Dincecco and Onorato 2016
Religion	Dincecco and Onorato 2016
University	Dincecco and Onorato 2016
Roman Roads	Dincecco and Onorato 2016
Urban Potential	Bosker et al. 2013
Self-Government	Bosker et al. 2013

$$Y_{it} = \beta_0 + \beta_1 C_{it} + \beta_2 TP_{it} + X_{it}\beta + \delta_t + e_{it} \tag{3.35}$$

Where Y_{it} is a measure of textile guild power,C_{it} is an indicator of exposure to conflict in the previous century, TP_{it} is a measure of exposure to trade (here the distance weighted urban population of Europe), X_{it} is a vector of controls (not necessarily time-varying), and δ_t are controls for the century of the observation. In the baseline regressions, I look at conflict and trade exposure separately, because the causal relationships between the two are unclear. In particular, one channel through which conflict could have increased the power of local guilds was an increase in local tariffs, decreasing trade. Similarly, exposure to trade might have impacted guilds through a change in the risk of conflict. Controlling for these simultaneously might then yield results that are difficult to interpret. However, I do run regressions with both variables to confirm that the effects are not being driven by the omission of either one.

An advantage of using OLS here is that it allows me to examine the correlations between guild power and static features of a city, such as geographic features. However, the estimates obtained are almost certainly confounded by unobserved city-level heterogeneity. To address this, I leverage the panel structure of the data to reestimate the equation with two-way fixed effects. In panel specifications, the identification is being driven by cities whose exposure to conflict changes between centuries. This is fairly common, as the borders of states changed century to century, shifting the frontier of potential warfare, and the motivation for conflict shifted, particularly after the Protestant Reformation during the 16th and 17th centuries. The identifying assumption here is that the change in exposure to conflict is uncorrelated with unobserved time-varying factors that might affect guild power. I am able to relax this assumption, discussed below, but as a first order of approximation this is plausible. City growth, country-level trends, and changes in the structure of town government can all be observed, and beyond this there is no obvious factor that drives guild power.

When looking at trade exposure, this panel estimation is as far as I can go towards identification. However,

with respect to the relationship between conflict and guilds, the second goal of the empirical analysis is to identify the causal effect of conflict exposure. To do this, I use the distance weighted exposure of nearby cities, excluding conflicts in which a city was a direct participant in, as an exogenous proxy for a city's own conflict exposure. I use this measure as a proxy, rather than as an instrument for city conflict, because nearby conflicts may have a direct influence on town government behavior by raising the perceived likelihood of future conflict, in addition to indicating a locally high risk of direct involvement. The estimating equation for this specification is the same as above, with the proxy measure replacing the direct measure of conflict exposure.

3.6 Results

3.6.1 Guilds and Conflict

First, I will test the relationship between conflict and guild power predicted by the model. Specifically, I will look at whether places that experienced higher levels of conflict in the preceding century have stronger guilds. Table 3.4 shows the results of OLS regressions of different measures of guild power on conflict in the previous century, controlling only for time period. The results are inconclusive, in that conflict appears to be positively correlated with representation of guilds in local government, but not with the degree of market power or severity of barriers to entry.

Table 3.4: OLS Results - No Controls

	(1) Market Power	(2) Barriers to Entry	(3) Local Representation
Conflict	-0.00747	0.0248	0.107**
	(0.0701)	(0.0835)	(0.0425)
N	897	395	487

Robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

This analysis is incomplete, however, because exposure to conflict is likely to be correlated with other factors that affect guilds. As a first attempt to deal with this issue, I include controls for social and geographic characteristics in the OLS regressions. These results are presented in Table 3.5. the coefficient on conflict takes on the expected sign in each of the regressions, and is statistically significant at the 10% level. The magnitudes here are fairly small relative to the distributions of each measure of guild power (exposure to conflict increases guild power by between one fifth and one sixth of a standard deviation in each case), but comparable to other variables that are likely to be important, including whether the town is governed as an independent commune or has river access. Table 3.6 adds country effects to the controls used in Table 3.5. Here again, the coefficients on conflict are each the expected positive sign, and similar in magnitudes to the

previous regression, suggesting that the analysis is picking up more than unobserved differences between countries or regions.

Table 3.5: OLS Results - With Controls

	(1) Market Power	(2) Barriers to Entry	(3) Local Representation
Conflict	0.130*	0.159*	0.0866*
	(0.0751)	(0.0864)	(0.0482)
Population	0.0268	0.145***	0.0488*
	(0.0464)	(0.0521)	(0.0278)
Ruggedness	0.00169**	-0.00268**	0.000624
	(0.000787)	(0.00107)	(0.000698)
Elevation	0.000427**	0.000806**	-0.000109
	(0.000197)	(0.000316)	(0.000212)
River	0.254**	0.0882	0.0949
	(0.117)	(0.146)	(0.0582)
Roman Roads	-0.0222	0.0246	-0.0329
	(0.0903)	(0.105)	(0.0585)
Bishop	-0.0279	0.0411	-0.0960*
	(0.0787)	(0.112)	(0.0553)
Capital	-0.0114	-0.240**	-0.00904
	(0.1148)	(0.1157)	(0.0865)
Commune	0.0221	0.354***	0.152**
	(0.0921)	(0.122)	(0.0649)
N	765	343	422

Robust standard errors in parentheses. Additional controls included in the regression but omitted from the table include time period dummies, soil quality, Atlantic or Mediterranean access, potato suitability, latitude, longitude, and whether the town had a university.

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

The OLS results suggest a positive relationship between exposure to conflict and guild strength, as expected. However, these results cannot be interpreted causally, due to the unobservable heterogeneity between cities in areas that might affect guilds and conflict, including town government structure, trade relationships, or alliances and the relationship between the town and larger political entities. To mitigate these factors, I redo the analysis and leverage the panel structure of the data in Table 3.7. Panel A presents the results estimated using two-way fixed effects and time varying controls. While this is a common practice in empirical work, a recent econometric literature has found that two-way fixed effects can create an unpredictable bias in the coefficient of interest if there is variation in treatment timing and heterogeneity in the treatment effect (Goodman-Bacon 2021, Callaway Sant'Anna and 2021). In the context of the present paper, both of these

Table 3.6: OLS Results With Country Fixed Effects

	(1) Market Power	(2) Barriers to Entry	(3) Local Representation
Conflict	0.139*	0.205**	0.0740*
	(0.0747)	(0.0902)	(0.0448)
Population	-0.00552	0.156***	0.0301
	(0.0481)	(0.0534)	(0.0260)
Ruggedness	0.00265***	-0.00286**	-0.000326
	(0.000847)	(0.00115)	(0.000808)
River	0.181	0.0412	0.0452
	(0.127)	(0.139)	(0.0588)
Roman Roads	0.0803	0.0987	0.0737
	(0.0983)	(0.115)	(0.0609)
Elevation	0.000466**	-0.0000378	-0.000385
	(0.000208)	(0.000341)	(0.000297)
Bishop	0.00714	0.0475	-0.135**
	(0.0845)	(0.110)	(0.0544)
University	0.116	-0.180*	-0.0348
	(0.0940)	(0.0942)	(0.0644)
Capital	0.0665	-0.158	0.0615
	(0.120)	(0.120)	(0.0916)
Commune	-0.0125	0.315***	0.158**
	(0.0928)	(0.120)	(0.0650)
N	765	343	422

Standard errors in parentheses clustered by city. Additional controls included in the regression but omitted from the table include country dummies, time period dummies, soil quality, Atlantic or Mediterranean access, potato suitability, latitude, longitude, and whether the town had a university.

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

conditions apply, since towns are exposed to conflict at different points throughout their histories, and conflict is likely to have a range of effects on guilds. To address this, Panel B of Table 3.7 presents estimates of the effect of conflict using the procedure described by de Chaisemartin and D'Haultfœuille (2021) to correct for the bias created by two-way fixed effects.[5]

Table 3.7: Panel Results

	Two-Way Fixed Effects			de Chaisemartin and D'Haultfœuille Correction		
	(1) Market Power	(2) Barriers to Entry	(3) Local Representation	(4) Market Power	(5) Barriers to Entry	(6) Local Representation
Conflict	0.222***	0.231**	-0.001	0.252	0.285	-0.059
	(0.0753)	(0.110)	(0.0432)	(0.1632)	(0.2494)	(0.0705)
Population	-0.0376	0.174**	-0.0195	-	-	-
	(0.0566)	(0.0841)	(0.0260)			
Capital	-0.0724	0.213	0.258***	-	-	-
	(0.155)	(0.198)	(0.0908)			
Bishop	-0.0919	-0.405*	-0.467***	-	-	-
	(0.155)	(0.219)	(0.127)			
University	0.201	-0.174	-0.0835	-	-	-
	(0.136)	(0.180)	(0.0776)			
Commune	-0.329***	-0.0179	0.0817	-	-	-
	(0.118)	(0.215)	(0.0811)			
N	765	343	422	765	343	422

Standard errors in parentheses clustered by city. Time-varying controls are included in the de Chaisemartin and D'Haultfœuille corrections, but coefficients of these are not separately estimated. The estimates in columns 4-6 are robust to dynamic changes in the treatment effect, the coefficients presented are the average treatment effect over 3 periods post-treatment.

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

The results of the panel estimation confirm the OLS findings. Conflict is positively and significantly correlated with guild market power and with barriers to entry. Moreover, these results are larger in magnitude and at a higher significance level, suggesting a downward bias in the OLS estimates. The correlation between conflict and local representation disappears completely in the panel, which is possibly an indication that the relationship between conflict and formal political power is mediated through fairly stable characteristics of towns, such as culture or relationships with larger polities. That said, this could also reflect a false negative arising from testing many hypotheses. The de Chaisemartin and D'Haultfœuille corrections do not significantly change the point estimates of the effects of conflict, although the larger standard errors reduce the significance level of the results.

[5] In effect, this procedure limits comparisons between treated cities and not yet treated cities. Consult de Chaisemartin and D'Haultfœuille (2021) for further details.

Finally, there is still a concern that unobserved time-varying factors might be driving the results. For example, if a city state began to reform its tax system, it might be more able to engage in conflict, and less dependent on guilds for revenue, biasing the estimated relationship between conflict and guilds towards zero. To try to purge the estimates of endogeneity arising from decisions made by the town, I construct an alternative measure of conflict that uses nearby towns' exposure to conflict but excludes conflicts in which a town was directly involved. Specifically, I use the distance weighted sum of exposures to conflict, leaving out a town's own exposure. This measure should capture decisions made by a local government in response to an increased risk of conflict without being driven by conflicts arising endogenously from town actions. The results of this test are presented in Table 3.8.

Table 3.8: Panel Results - Interpolated Conflict Exposure

	(1) Market Power	(2) Barriers to Entry	(3) Local Representation
Conflict	0.3734	0.5308	0.0191
	(0.4400)	(0.5792)	(0.2050)
Population	-0.0336	0.1832**	-0.0195
	(0.0661)	(0.0858)	(0.0396)
Capital	-0.0330	0.2401	0.2559***
	(0.1559)	(0.2005)	(0.0903)
Bishop	-0.0792	-0.4086*	-0.4689***
	(0.1659)	(0.2385)	(0.1613)
University	0.2177*	-0.1345	-0.0836
	(0.1293)	(0.1761)	(0.1182)
Commune	-0.3212**	-0.0075	0.0810
	(0.1342)	(0.2160)	(0.0968)
N	765	343	422

Standard errors in parentheses clustered by city. Additional controls included in the regression but omitted from the table include country dummies, time period dummies, soil quality, Atlantic or Mediterranean access, potato suitability, latitude, longitude, and whether the town had a university.

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

Replacing the true exposure to conflict with the distance-weighted interpolated exposure drastically increases the standard errors, making it difficult to identify the effect of conflict with any confidence. However, the pattern of results is qualitatively similar to the baseline panel, in that we see relatively large, positive effects of conflict on market power and barriers to entry, and a negligible effect on representation in government. Though not dispositive, these results do not provide any contradictory evidence relative to the overall pattern of findings.

3.6.2 Guilds and Trade

Another potential determinant of guild power is exposure to trade competition. I will examine this relationship by regressing measure of guild power on the distance-weighted population of nearby towns. I present the results in a similar manner as above, beginning with the results of an OLS regression controlling only for century in Table 3.9. Trade potential has a negative relationship with guild market power, as expected, and no relationship with either of the other measures.

Table 3.9: OLS Results, No Controls

	(1) Market Power	(2) Barriers to Entry	(3) Local Representation
Trade Potential	-0.0369***	-0.0140	0.00825
	(0.0129)	(0.0122)	(0.00552)
N	791	347	423

Robust Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Adding controls in Table 3.10, we can see that the expected negative relationship appears as a point estimate in each of the regressions, although it is statistically significant only in the regression of labor market barriers on trade exposure. In Table 3.11, adding country fixed effects preserves the negative point estimates, although the significance level of the estimates changes.

Finally, I adopt a two-way fixed effects approach to address potential confounding from city-level time-invariant heterogeneity. Since trade potential is a continuous treatment variable, I am unable to use the de Chaisemartin and D'Haultfœuille correction.[6] These results are presented in Table 3.12. As in the OLS results, the strongest relationship is between trade potential and market power, with trade potential having a statistically and qualitatively insignificant effect on the other outcomes.

We can further compare the effects of conflict and trade, by including measures of each in the same regression. The results of this exercise are presented in Table 3.13. These results are qualitatively unchanged relative to examining the two variables separately, with conflict having a positive and significant effect on market power and barriers to entry, and potential trade exposure having a negative and significant effect on market power.

3.7 Conclusion

Though irrefutable identification is impossible in this context, the theory and empirical results present a consistent picture of the determinants of guild strength. Guilds were stronger in towns that were more threatened

[6]Technically, their estimator does allow for continuous treatment variables. However, the method requires a sufficient density of observations within each level band of the treatment variable, which is lacking here. See de Chaisemartin and D'Haultfœuille (2021) for more details.

Table 3.10: OLS Results With Controls

	(1) Market Power	(2) Barriers to Entry	(3) Local Representation
Trade Potential	-0.0227	-0.0312***	-0.000299
	(0.0138)	(0.0119)	(0.00625)
Population	0.0397	0.168***	0.0495*
	(0.0471)	(0.0525)	(0.0283)
Capital	-0.00163	-0.228**	0.0124
	(0.115)	(0.113)	(0.0861)
Ruggedness	0.00164**	-0.00248**	0.000687
	(0.000791)	(0.00108)	(0.000700)
River	0.229**	0.0540	0.0833
	(0.116)	(0.144)	(0.0573)
Roman Roads	-0.0304	-0.0120	-0.0351
	(0.0893)	(0.107)	(0.0589)
Elevation	0.000334*	0.000621*	-0.000108
	(0.000197)	(0.000323)	(0.000220)
Bishop	-0.0413	0.0242	-0.100*
	(0.0780)	(0.110)	(0.0559)
University	0.0633	-0.149	-0.0320
	(0.0944)	(0.0927)	(0.0704)
Commune	0.0472	0.384***	0.162**
	(0.0913)	(0.121)	(0.0658)
N	765	343	422

Standard errors in parentheses clustered by city. Additional controls included in the regression but omitted from the table include time period dummies, soil quality, Atlantic or Mediterranean access, potato suitability, latitude, longitude, and whether the town had a university.

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

Table 3.11: OLS Results With Country Fixed Effects

	(1) Market Power	(2) Barriers to Entry	(3) Local Representation
Trade Potential	-0.0494***	-0.0192	-0.00243
	(0.0166)	(0.0153)	(0.00702)
Population	0.0141	0.167***	0.0303
	(0.0477)	(0.0540)	(0.0266)
Capital	0.0558	-0.136	0.0792
	(0.120)	(0.122)	(0.0910)
Ruggedness	0.00270***	-0.00260**	-0.000299
	(0.000843)	(0.00118)	(0.000814)
River	0.130	-0.0254	0.0334
	(0.126)	(0.139)	(0.0588)
Roman Roads	0.0896	0.123	0.0748
	(0.0970)	(0.117)	(0.0609)
Elevation	0.000481**	0.0000571	-0.000338
	(0.000201)	(0.000341)	(0.000300)
Bishop	-0.0168	0.0396	-0.137**
	(0.0834)	(0.110)	(0.0544)
University	0.0922	-0.158*	-0.0325
	(0.0934)	(0.0947)	(0.0643)
Commune	0.0180	0.335***	0.168**
	(0.0921)	(0.120)	(0.0661)
N	765	343	422

Standard errors in parentheses clustered by city. Additional controls included in the regression but omitted from the table include country dummies, time period dummies, soil quality, Atlantic or Mediterranean access, potato suitability, latitude, longitude, and whether the town had a university.

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

Table 3.12: Panel Results

	(1) Market Power	(2) Barriers to Entry	(3) Local Representation
Trade Potential	-0.0559***	-0.00714	-0.00147
	(0.0215)	(0.0267)	(0.00799)
Population	-0.00420	0.185**	-0.0186
	(0.0587)	(0.0859)	(0.0272)
Capital	0.0157	0.284	0.257***
	(0.152)	(0.195)	(0.0870)
Bishop	-0.0251	-0.328	-0.466***
	(0.149)	(0.215)	(0.125)
University	0.184	-0.122	-0.0840
	(0.137)	(0.177)	(0.0774)
Commune	-0.252**	0.0278	0.0830
	(0.119)	(0.219)	(0.0825)
N	765	343	422

Standard errors in parentheses clustered by city.

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

Table 3.13: Panel Results

	(1) Market Power	(2) Barriers to Entry	(3) Local Representation
Trade Potential	-0.0652***	-0.0105	-0.00147
	(0.0213)	(0.0264)	(0.00809)
Conflict	0.266***	0.234**	0.0000594
	(0.0747)	(0.110)	(0.0437)
Population	-0.00703	0.181**	-0.0186
	(0.0583)	(0.0847)	(0.0273)
Capital	-0.0586	0.217	0.257***
	(0.153)	(0.198)	(0.0914)
Bishop	-0.0646	-0.392*	-0.466***
	(0.149)	(0.216)	(0.127)
University	0.162	-0.179	-0.0840
	(0.138)	(0.180)	(0.0776)
Commune	-0.271**	-0.00468	0.0830
	(0.120)	(0.216)	(0.0826)
N	765	343	422

Standard errors in parentheses clustered by city.

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

by conflict, and weaker in towns that were more exposed to external trade and competition. The former channel, as I argue using the theoretical model, likely reflects the increased need for financial and political support from non-state organizations like guilds when the threat of conflict is high. The stability of coefficients when both channels are examined suggests that the two causes operated independently, that is, that exposure to conflict likely increases guild strength through the political channel, rather than through disrupting trade relationships.

In the context of the broader literature on guilds, these results help explain why authors who agree on the harmful effects of powerful guilds can disagree so profoundly about the aggregate impact of guilds. Research focused on the conflict-stricken German-speaking lands of early modern Europe, tends to highlight the potential for harm that the relatively strong German guilds could do. By contrast, authors focusing on relatively peaceful areas, such as early modern England and the Low Countries (after independence), or places deeply embedded in long distance trade networks, such as these countries and the late medieval Italian city-states, tend to find guilds that coordinate apprenticeships and address information asymmetries but exercise little real power otherwise. The role of conflict and political institutions in mediating the development of 'private order' institutions on a continent-wide scale suggests that the frontier of research into human capital formation and the origins of industrialization should include research on state development and political dynamics in the broader story of European economic change.

CHAPTER 4

The Determinants of Ideological Change in the English Judiciary, 1500-1750

4.1 Introduction

British legal and political institutions underwent a profound change between the 16th and 18th centuries. England transitioned from a monarchy to a parliamentary democracy, and from a decentralized feudal state to a modern, bureaucratic state. These changes have been studied extensively by economic historians. North and Weingast (1989) argued for the importance of the 1689 Glorious Revolution in establishing parliamentary supremacy and securing property rights in the build up to the Industrial Revolution, and much of the modern economic literature on the importance of institutions in development builds on this work, making early modern Britain the model case for the relationship between contracting institutions, property rights, and economic performance. Subsequent work has emphasized the importance of the English Civil War in establishing property rights (Jha 2015), the medieval Magna Carta and the deep roots of English exceptionalism (Glaeser and Shleifer 2002), and the legal changes enacted by Parliament during the Industrial Revolution to secure property rights and ease transaction costs in factor markets (Bogart and Richardson 2011).

Analysis of institutional change within England during this period has primarily focused on the actions and relative power of the King and Parliament. However, legal historians have noted equally dramatic changes in the common law judiciary throughout this same period. English common law diverged from its continental counterparts beginning in the late 12th century (Klerman and Mahoney 2005), and in the 16th, 17th, and 18th centuries England experienced profound shifts in the nature of property law, criminal and civil procedure, contract law, and the legal regulation of trade (Grajzl and Murrell 2021c, 2023). Not only did each of these areas have important implications for commercial activity before and during the Industrial Revolution, but changes in the common law system influenced institutional changes in other aspects of British politics. After centuries of serving as part of the central royal administration, the common law judges and lawyers emerged during the Civil War as one of the interest groups most vocally in support of the Parliamentary cause and restrictions on the monarchy.

The reasons for these shifts are not well-understood. On the political question, the judiciary had very little formal independence from the monarchy until the late 1700s, more than a century after the Civil War. This was despite royal control over the most prestigious and lucrative appointments in the legal world at the time. Opposing the king could be ruinous for a judge's career, and indeed the removal of high profile judges from office, such as Edward Coke, for repeated refusing to side with the king made this threat more than a

theoretical concern. Klerman and Mahoney (2005) discuss the movement of the English judiciary towards independence as a "mystery", while narrative accounts suggest factors such as class interest (Vincent 1993), religion (Priest 1986), and professionalization of the law (Ibbetson 1988), but thus far no explanation has been tested empirically.

The shifts in economic and commercial law are equally unexplained. Common law jurisprudence emphasized precedent and historicity as sources of authority, and these ideas were often rhetorically important even during periods of legal change (Baker 2019). This can make it difficult to assess the timing and magnitude of changes without analyzing the corpus of case law. However, the volume of material and its complexity has made this difficult until fairly recently. Grajzl and Murrell (2021b, 2021c) process and analyze the English Reports, a collection of roughly 50,000 influential cases in common law courts, and document areas of both continuity and change in English law. However, beyond the broad arguments relating legal change to class conflict, the Renaissance, and the Reformation, there has been little work attempting to explain these changes.

In this paper, I attempt to explain long-run changes in the political support for the monarchy within the English judiciary. To measure the degree of support for the monarch, I focus on treason cases, in which there is a clear preference for one outcome by the state, limiting the potential for errors introduced by mismeasurement and modeling choices. Treason cases are also useful in that they are inherently political, and the prosecution of traitors is explicitly an attempt to eliminate enemies of the king. As such, accusations of treason appear alongside the great social and political changes of the early modern period, including the Reformation, Civil War, and Glorious Revolution.

I link cases to the judges that decided them, and then use biographical details of the judges to assess how changes in the composition of the judiciary affected legal outcomes, focusing on social background, legal culture, and education. I find that class background is correlated with attitudes towards the monarchy, with judges drawn from the minor nobility being significantly more likely to support the king relative to commoners and gentry. Legal culture also appears to matter, although only in certain ways. Having a father trained as a lawyer, or coming from a legal family, was quite common, but does not appear to be correlated with decision-making as a judge. However, judicial behavior is clustered within the different Inns of Court, the system of legal education and training at the time. This suggests that although being brought up around the law does not necessarily shape a judge's outlook on the role of the king in the common law system, the attitudes of one's teachers and peers might.

This work contributes to several active areas in economic history and law and economics. First, I offer preliminary answers to the puzzle of the English judiciary's ideological opposition to royal absolutism between 1500 and 1750, filling in gaps in the legal history of Great Britain. This work complements recent work on quantifying legal change in England, notably a set of papers by Grajzl and Murrell (2021a, 2021b,

2021c, 2023), and on papers looking more broadly at contemporaneous ideological changes in parliament (Jha 2015, Fouka and Figueroa 2023).

Second, as the common law courts were central in determining the nature and extent of property rights, contract enforcement, and constraints on the executive, change within the judiciary was a critical component of the institutional changes in England in the two centuries prior to the Industrial Revolution. By studying the causes of ideological change among judges, I am able to connect the evolution of common law to the broader narrative of political and economic change in early modern England. In this respect, the paper follows work by North and Weingast (1989), Bogart and Richardson (2011), and Heldring and Robinson (2022). Finally, measuring ideology among judges and other actors within the judicial system is an increasingly important topic in law and economics. Recent work on this topic includes new measures of judicial ideology (Bonica and Sen 2021, Helland 2019) and the application of text analysis to ideologically charged legal cases (Ash et al. 2021). The present paper complements these studies by offering a look at changes in ideology over the very long run, and providing some empirical explanations for these changes.

The remainder of this paper will be organized as follows. Section 2 will provide an overview of the evolution of judicial ideology in early modern England. Section 3 will motivate the empirical analysis by examining a case study of prominent judges and the factors that influenced their ideological development. Section 4 will describe the data, section 5 will present the empirical analysis, and the final section will conclude.

4.2 Historical Background

The common law system has its roots in 12th century England. In Norman England (1066-1138), the law was administered by landowners through the existing feudal hierarchy. Disputes between commoners and tenants were typically adjudicated in manorial courts by the local nobility, and disputes between nobles were settled in the courts of higher feudal overlords. At the apex of this system was the King, who held judicial authority over all subjects. Subjects who could not obtain justice from a lower lord could appeal to the King, who could set aside judgments of lesser lords, and hear complaints from the highest members of society. To receive the King's justice, a supplicant would have to travel to the physical court of the King, which moved frequently and somewhat unpredictably, and then gain access to the court, which was extremely limited by the King's time and attention (Baker 2019). As such, although the King was theoretically the font of justice within the Kingdom, only the richest subjects with the most access had any meaningful interaction with the central judiciary.

This system broke down during a period of diminished central authority and lawlessness known as the Anarchy (1138-1153). A violent conflict over the royal succession prompted a devolution of state institutions

into factionalism and civil war, removing the (admittedly limited) oversight that had previously checked the worst abuses of feudal law. In this context, widespread problems, particularly unlawful dispossession of land by local lords, threatened the legitimacy of the English state. As a response to this, the English monarchy under Henry II initiated a series of reforms in the 1150s that created the core of modern common law. The reforms had three main components. First, royal judicial authority was delegated to a set of high courts (the Court of Common Pleas, the King's Bench, and the Exchequer) permanently located in Westminster. These courts were staffed by full-time judges, who ruled on behalf of the King, and clerks who processed the business of the court. Second, judges were sent out across the country on regular circuits to hear complaints from subjects that could not come to London. Finally, a series of writs and procedures regularized the process of initiating a case and bringing it to court.

The impact of these reforms was profound. First, they dramatically lowered the cost of accessing royal justice. This increased the importance and power of the central state relative to the local nobility, and increased the use of the legal system overall. This increase in use created a strong demand for lawyers, particularly in London but throughout the country as a whole as well. The centralization of the legal system and increased demand for legal services also led to a professionalization of the law. Over the 12th, 13th, and 14th centuries, judges and advocates became increasingly specialized, shifting over time from generally educated advisors, often clergymen, to career lawyers. By the middle of the 14th century, lawyers had emerged as an important profession in England, with internal organization, norms, and specialized education provided at the Inns of Court, a group of four guild-like organizations in London that trained and housed lawyers, and provided some hierarchy and cohesion for the profession.

From the 1300s through the 1500s, the common law evolved but retained the same essential institutional structure of central courts in Westminster supported by circuit courts throughout the country and lawyers educated in the Inns. Legal change over this period focused primarily on changing property law. Demand for land transactions fueled a steady erosion of feudal restrictions, with lawyers and judges playing a significant role by designing and enforcing conveyances and trusts that evaded formal barriers to transferring or restructuring real property. At the same time, it is possible to trace some early philosophical shifts among influential lawyers and judges. Legal scholars like John Fortescue begin to conceive of 'natural law', the idea that the common law represents not just the accepted customs and practices of representatives with the King's delegated authority, but rather was the survival of an ancient and divine order, separate from and possibly superior to the authority of the King (Kekewich 2018). Culturally too, the centrality of London to the profession meant that lawyers were more exposed to trade and continental ideas than the typical Englishmen, suggesting a possible influence of the classical and humanistic ideas of the Renaissance. Moreover, after the Reformation began in England, lawyers were overwhelmingly Protestant and Calvinist relative to the population, as

was London as a whole.

Finally, the administrative structure of the law changed over this period as the equity court system emerged, centered around the Chancery. In the 13th and 14th centuries, the Chancery handled pleas and petitions for justice addressed to the King, and over time a bureaucracy developed around handling these pleas. By the end of the Medieval period, the Chancery had developed into a parallel court system, with judges generally trained in the common law, but with cases decided on the basis of equitable principles rather than precedent, effectively giving judges more freedom in deciding cases. The freedom from the perceived rigidity and complexity of common law led to the chancery court's rise in popularity as a legal remedy over the 16th century, particularly in areas of property law and inheritance. However, the equity courts, and later creations outside of the common law system such as the Court of the Star Chamber, were criticized by lawyers and members of parliament as being too easily influenced by Royal demands - the lack of rigidity increased the range of ambiguity that could be decided in favor of a powerful actor.

By 1600, the common law judiciary had changed significantly in terms of background, education, and philosophical orientation. Common lawyers of the early 17th century were much more numerous than at any point previously, reflecting a steady increase in the demand for their services. They were trained as apprentices at the Inns of Court for around 7 years, after which point the majority returned to their home region to work as attorneys for the local gentry, while an elite core became barristers associated with the Inns, advocated at the central courts, and competed for judicial appointments. The relative openness of the Inns to anyone who could support themselves during their education made the law an attractive target for upwardly mobile commoners and minor gentry, and the second sons of minor nobility, and these classes comprised the majority of lawyers and judges. This is a stark contrast to the clergymen and trusted noble advisors who served as judges in the early days of the common law. The typical lawyer spent a considerable amount of time in London, was more likely to be exposed to the new learning of the renaissance, and was more likely to be strongly Calvinist in religious orientation (Eusden 1958).

This history serves as the backdrop to the ideological changes within the common law judiciary in the 16th, 17th, and 18th centuries. Prior to the early 1600s, the judicial system has been seen by modern historians as primarily supporting royal power at the expense of the nobility. As noted above, this was in part by design – one motivation for the creation of the common law system was to restrain predatory local lords. This orientation can be seen in the steady encroachment of common law courts into areas traditionally reserved for manor courts, such as the treatment of customary tenants (Garrett-Goodyear 2013).

The royalist character of the courts changed in the decades leading to the English Civil War (1642-1652). The early Stuart monarchs, James I and especially Charles I, clashed with their judiciary frequency over the extent of their rights, their reluctance to call Parliament, and attempts to bypass traditional legal channels

using courts outside of the common law system. Some prominent cases included the ruling against the crown to limit the use of forced loans in 1626, a narrow ruling in the Case of the Five Knights in 1627 that restricted the king's ability to make arrests, and a dissent in Hampton's case (1638) over the raising of revenue without parliament.

Opposition to the King in the legal community was not limited to judges. An early historical tradition emphasizing the commitment of the legal profession to the rule of law and opposition to absolutism (see Eusden 1958, for example) has been somewhat complicated by more recent work suggesting conflicting political ideas among lawyers (Prest 1986). However, where quantitative evidence is available, there is support for the idea that lawyers were more likely than average to side with Parliament. Among the 128 benchers of the Inns of Court (the pool of high-ranking lawyers normally considered for judgeships) at the outbreak of the Civil War, 95 have been identified as publicly supporting either Parliament or the King, and of these about two-thirds (61) supported parliament (Jones 1971). Moreover, members of Parliament with legal training were more likely to vote against granting tax increases to the King in the early 17th century (Clendenin 1975).

Though this tendency to support parliament against the crown in the 17th century has long been part of the historiography of the period, in many respects, this tendency is puzzling. 17th century judges had no formal mechanisms supporting independence. They served at the pleasure of the King, as their medieval predecessors had, and could be dismissed at will. This was not an idle threat. The most prominent judge of the era, Edward Coke, was removed as the Chief Justice of the King's Bench in 1616 after a series of disputes with the King, and the Chief Justice of the Common Pleas, Ranulph Crewe, was removed for his opposition to Charles I's forced loan program in 1626. Lawyers hoping for promotion to the bench, meanwhile, would have a clear career incentive to support the King, yet there is no evidence that they did so. In classic economic models of judicial behavior, such as Posner (1993), judges balance career goals, such as lifetime income, with ideological goals, and these models suggest a strong enough set of ideological preferences could motivate judges and ambitious lawyers to act against their immediate financial interests. However, this merely shifts the question to how a set of anti-royalist preferences became prevalent among judicial actors. Economic historians studying the common law have described this phenomenon as a mystery (Klerman and Mahoney 2005), but to date this question has not been addressed empirically.

4.3 Case Studies

To motivate the empirical analysis, it is useful to consider some of the factors associated with ideological differences in the lives of individual judges. As a case study, I will examine two particularly influential judges, Edward Coke and Francis Bacon, focusing on similarities and differences in their backgrounds, education,

and career paths, and tracing the possible influences these had on their behavior as a judge.[1] The two most influential jurists of their era, Coke and Bacon are an excellent starting point because of their influence on contemporary and future legal scholarship, and the wealth of material about their lives and philosophy (see Grajzl and Murrell 2021a for a recent example). They also make a particularly satisfying comparison because they detested one another, an animosity that played itself out in romantic rivalries,[2] professional competition, and interpretation of the law.

Edward Coke (1552-1634) was born in Norfolk, the eldest son of a successful barrister. His family can be traced back to the 13th century, and historically were the sort of upwardly mobile commoners that contributed so many lawyers over the period (Grajzl and Murrell 2021a). Coke was educated first at Cambridge, then at an Inn of Chancery, which in this period provided a basic legal education that often prepared students for the Inns of Court, and finally at the Inner Temple, one of the four Inns. He quickly rose to prominence as an attorney in Norfolk, and was elected to Parliament during the reign of Elizabeth I. As a member of Parliament, and later as Speaker of the House of Commons, Coke was (surprisingly given his later reputation) relatively amenable to working with the Queen, helping her raise money and defeat bills proposing Puritan reforms. Through a combination of this perceived tractability and his distinguished legal career, he was given the position of attorney general by Elizabeth. Coke was chosen for this role over Francis Bacon, who the Queen described as the second best choice. As attorney general, Coke was known for being capable and firm in his defense of the crown's rights, and his service continued under James I.

After years of service, Coke was elevated to sit on the Court of Common Pleas, and it is here that he embarked upon a program of limiting the legal rights of the King. In his first year, he began to challenge rulings of the prerogative courts – special royal courts outside of the normal common law system – arguing that their scope was overbroad, and that their conduct was limited by common law. As Chief Justice, he frequently clashed with the King over the limits of royal legal authority, the scope of the prerogative courts, the granting of monopolies, and the principle of judicial review. On the advice of Francis Bacon, who was influential in the Stuart court, Coke was transferred to the King's Bench, where it was believed he could do less harm. Instead, he shifted his attention from the procedural and economic issues dominated by the Common Pleas to issues of royal authority in criminal matters handled by the King's Bench. In 1613, Coke opposed the crown's wishes and argued against convicting a priest of treason in Peachem's Case. The case, which was argued at the court by Francis Bacon during his stint as Attorney General, ultimately resulted in other judges on the bench overruling Coke and convicting Peachem (Hart 2003). Tensions between Coke and

[1]The subsequent discussion relies heavily on the Oxford Dictionary of National Biography, in addition to sources cited below.

[2]In 1598, the two lawyers each pursued the hand of the wealthy widow Elizabeth Hatton, who eventually married Coke. Their marriage was an unhappy one, and Hatton later supported Coke's opponents at court, remarking at his funeral "We shall never see the like of him again, thank god" (Boyer 2003).

King James rose steadily until 1616, when the justices of the King's Bench wrote a letter to the king arguing that the law limited his ability to use the appointment of bishops as a form of patronage. Facing the fury of the King, each of the justices except Coke recanted, and Coke was forced to resign.[3] After his judicial career ended, Coke served as a member of parliament, continuing to pressure the King to accept limits placed on him by parliament and the law until parliament was dissolved in 1629, dying soon thereafter in 1634.

Coke's personal and professional rival was Sir Francis Bacon (1561-1626), who, in addition to his well-known philosophical and scientific works, was a practicing lawyer in the late 16th and early 17th centuries. His father, Sir Nicholas Bacon, was a minor nobleman and courtier, holding the office of Lord Keeper of the Great Seal under Elizabeth I. As a younger son, Francis Bacon pursued a career in the law, studying first at Cambridge and then entering Gray's Inn, one of the four main Inns of Court. Already a man of wide intellectual interests, he applied for a position as a scholar in the court of Elizabeth I, but was unsuccessful. Instead, he began practicing law as a barrister in 1582, and was elected to parliament in 1584. Over the next two decades, he continued his political and legal work, and began writing works of philosophy and legal analysis. His earliest surviving writing is a defense of Puritan clergymen, and over time his ideas on government became refined and brought him to the attention of the Queen. By 1600, he was a legal advisor to the Queen and her Privy Council, a respected lawyer and MP, and was becoming well-known as a reformer and intellectual.

Bacon's legal career prospered under James I. He was awarded a clerkship in the Court of the Star Chamber in 1608, elevated to Attorney General in 1613, and finally made Lord Chancellor, the highest judge of equity courts, in 1618. Bacon's judicial career, and the legal philosophy expressed in his writings, reflect several key concerns. The first was an emphasis on the laws of the state reflecting natural law. Bacon believed that the world followed a divinely inspired, logical order, and that in the same way one could uncover the laws governing the physical world, the legal community should strive to understand the analogous set of laws governing society. Bacon believed that the King, as the head of society, was naturally the source of legal authority, and thus the King's role was to interpret and enforce natural law. As a practical consequence of this idea, Bacon consistently pushed against Coke and parliament to expand the role of equity courts, and reduce the power of the common law judiciary, and frequently ruled in favor of the king. Certainly in this, Bacon was drawing a bridge between his legal career and his more well-known works on natural philosophy and the scientific method. A more cynical observer might note that Bacon spent the last half of his life deeply in debt, and was thus dependent on royal patronage. His interpretation of natural law in a manner favorable to the king was savvy politics as much as it was consistent philosophy.

Comparing Coke and Bacon is suggestive of the different currents of ideology in the legal community

[3]The letter to Coke forcing his resignation was drafted by Bacon (Grajzl and Murrell 2021a).

in the early 17th century, and some possible explanations for how the beliefs of a judge might evolve. First, there are a number of similarities between the two. Both conceived of the law as a body of knowledge to be discovered and organized, rather than a set of rules to be modified as needed. In this, they both reflect the influence of the Renaissance idea of natural law, particularly in the writings of Francis Bacon. They have similar religious sympathies as well – both men acted from the bench to protect the rights of puritan dissenters. Moreover, recent work using text analysis to compare their respective bodies of work indicate that they mainly discussed similar topics professionally, although it is difficult to glean an ideological stance from this sort of analysis (Grajzl and Murrell 2021b). As 17th century judges, Coke and Bacon were influenced by the Renaissance and Reformation, and were actively in conversation with each other and the legal community, and these influences are detectable in their writing.

The differences between the two men are equally illuminating. Coke emerged from the period as a committed parliamentarian, an opponent of the King, and an early champion of the supremacy of the rule of law as it was practiced and understood within the judiciary. Bacon, through interested in reforms to improve the performance of the law, ultimately believed that the responsibility to interpret and enforce it lay with the King. Consequently, in his writing and in his judicial actions, he strove for the sort of benevolent, rational, and powerful monarchy that would become such an influential template during the Enlightenment. A materialist explanation for this key difference would emphasize the influence of class background (Vincent 1993). Coke was a commoner, the son of lawyer, and the sort of upwardly mobile professional that saw their interests best represented by parliament. Bacon was part of the nobility, a fixture at court for three decades, and the son of a courtier, all characteristics of an aristocracy that preferred the monarchy to the rule of their social inferiors. Certainly this explanation is attractive, and likely contains some elements of truth. However, the evidence from across their careers suggests a more complex relationship between class and ideological choice. Coke, though remembered as a fiery opponent to the crown while he was a judge, was well-known during his tenure as attorney-general for being a zealous and effective advocate for royal prerogatives. His observable ideology evolves over time and reflects his understanding of his duty in his current position, rather than simply mechanically deriving from class background. Bacon too, although he is primarily remembered as a royalist in the context of his legal career, spent much of his early career in parliament in conflict with the crown, perhaps limiting his influence with Elizabeth I as a result. It is not until he is acting as a royal advisor, attorney-general, and finally Lord Chancellor that he begins to emphasize the rights of the King and the need for a strong monarch at the center of the law. These caveats do not necessarily mean that social background plays no role. Though both men show that ideology could change over time and in particular were responsive to the needs of their current jobs, the availability of these jobs was not random. The positions held by Bacon in court and in the Chancery were in close physical proximity to the monarch, and they were

correspondingly more open to someone with a suitably refined aristocratic background. Coke's positions in the Court of Common Pleas and the King's Bench were a step removed, and traditionally drawn from the ranks of prominent lawyers, who were less likely to have a connection to the King.

Beyond this, there is evidence for the importance of idiosyncratic factors such as personality and social interactions in shaping ideological development. Coke and Bacon's ideological divergence can possibly be explained in part by their antipathy for one another. Coke's strongest actions against the crown were taken while Bacon was the King's primary legal representative in court, and the King retaliated while Bacon was an influential advisor. At the same time, each man's relationship with the monarch seems to have influenced their actions. Coke and Elizabeth I had a mutual respect, and in the Elizabethan Era Coke's legal philosophy is less confrontational and more royalist. Bacon was initially excluded from the center of the Elizabethan court, and his early writings are more hostile to the crown. Over time, Bacon drew closer to first the Queen and then particularly to James I, and his work became increasingly pro-royal, while Coke became more distant and more strident in his critiques. Finally, though the two moved in the same circles professionally, they were educated in different Inns of Court. To the extent that teachers and peers influenced their views on the law, they would have been exposed to slightly different cohorts at the outset of their careers. None of the evidence presented in these case studies is dispositive with respect to understanding the underlying causal mechanisms. Each possible explanation – class and religious background, education, career path, exposure to the Reformation and Renaissance, peer effects, and interpersonal interactions – is characterized by endogeneity and the possibility of causality running in multiple directions. However, by identifying the threads that seem important in shaping the outlook of important judges, we can guide the empirical analysis, discussed in the next section.

4.4 Data

To evaluate the explanations for ideological change highlighted by the case studies, I rely on two primary data sources, one covering the universe of judges on the English high courts, and the other covering treason cases from 1490-1750. Data on judges is drawn from the Oxford Dictionary of National Biography (ODNB). The ODNB is an ongoing project to compile short biographies of important people in British history, including judges.[4]

ODNB entries vary in length according to the impact of the individual and the available material about their life, but at a minimum most entries include approximate birth and death dates and locations, which can indicate exposure to new ideas over time and through proximity to London, some information about the parents of the subject, which can indicate social class, and an account of their education and career prior to

[4]For a recent use of ODNB data on prominent engineers, see Hanlon (2022).

Table 4.1: Judge-Level Summary Statistics

Variable	Mean
Commoner	0.492
Gentry	0.415
Noble	0.085
Lawyer Father	0.303
Middle Temple	0.284
Inner Temple	0.271
Lincoln's Inn	0.225
Gray's Inn	0.199
Observations	286

Sources: Oxford Dictionary of National Biography (accessed at https://www.oxforddnb.com/).

becoming a judge. A list of independent variables taken from the ODNB and their summary statistics is given in Table 4.1.

The judges considered for this project are judges serving either as justices on the high courts of the common law system (Common Pleas, The King's Bench, and the Exchequer) or as Lord Chancellors, the highest official in the equity courts. In the period under consideration, there are 286 unique judges serving in these courts, of which 238 (83.2%) have entries in the ODNB.

The second major data source for this paper are the English Reports. The English Reports are a collection of case reports in common law courts. The reports were compiled by individual lawyers and clerks who were interested in collecting and publishing cases to aid the study of the law. A typical entry includes a title for the case, the year and venue in which it was heard, a summary of the arguments, and the decision of the judges. Some reports, especially later ones, include verbatim reproductions of the discussions between judges and lawyers in the cases, while many less detailed entries simply list the outcome. Though they do not represent the complete universe of cases, the English Reports have two features to recommend them for the purpose of the present study. First, these were the cases selected and studied by contemporary lawyers. As such, though they likely skew towards more interesting cases, for centuries students at the Inns of Court treated the available case reports as a comprehensive body of knowledge about common law, suggesting that they were intended to be at least somewhat representative. Second, the English Reports have been the subject of a recent literature in economic history, making it easier to contextualize the results presented here (See Grajzl and Murrell 2021a, 2021b).

From the earliest reports in the 1220s to 1750, there are around 50,000 cases in the English Reports. In this chapter, I use a subset of the reports that cover treason cases. Treason cases provide a simple way to measure the degree to which the courts protect the monarchy politically. The cases are normally brought by the King

against a subject, with one outcome (conviction) preferred by the crown with little ambiguity. This creates an observable binary outcome (conviction or not) in which a judge's action can be used to measure the degree to which they support the interests of the crown. One potential objection to interpreting a vote to convict a defendant of treason as ideological support for the crown is that treason is a crime, and judges may apply the law based on their interpretation of that crime rather than based on their political beliefs. This objection can be addressed in two ways. First, as discussed above, there is a large body of evidence that ideology matters in judicial behavior, suggesting that attitudes towards the rights of the monarch should influence the decisions of judges about whether to convict or not, at least at the margin. Second, the nature of treason as a crime makes it inherently political – opposition to the king in any number of dimensions could be interpreted as treasonous. In particular, the English monarchy pursued treason cases against religious nonconformists after the Reformation, for resisting the monarch in their capacity as head of the church, and against those who refused to pay taxes not approved by parliament in the 17th century during the personal rule of Charles I. In that sense, treason cases shaped the boundaries of the most significant political conflicts in early modern England.

I divide treason cases into three types – criminal, procedural, and derivative. Criminal cases are cases where the outcome itself is a conviction on the grounds of treason or not. Generally, it is a jury that delivers a verdict in any criminal case, including treason. However, judge behavior is influential in two respects. First, they are responsible for conducting the trial and giving instructions to the jury, and there is evidence that judges' conduct matters in determining the outcome (Culver 2017). Second, a major subset of these cases deal with issues involving the applicability of the definition of treason to a particular instance. A judge might determine whether a defendant's actions are potentially treasonous, or would be better described as a different crime. An example of this comes from George Leak's Case in 1607 (English Reports, 12 Co. Rep. 17), in which the defendant was accused of treason by counterfeiting.[5] The facts of the case, agreed to by both sides, were that George Leak, a clerk in the Chancery, glued a piece of parchment with a fake patent, written by himself, to an authentic patent that had been affixed with the seal of the King, thus passing off his fake as genuine. A jury convicted him of this action, but the question of whether this fell under the definition of counterfeiting was brought to the King's Bench. The Attorney General argued for the King that the action fell under the intent of the counterfeiting statute, which was meant to prevent the use of the King's authority in furthering a falsehood. The defense argued that although the action was certainly a misdemeanor and a type of fraud, the seal itself was never forged, and so the statute did not apply. The justices sided with the defense, ruling that the crime committed was not treasonous.

I define procedural cases as those covering the initiation of a treason case, the arrest and detention of the

[5]Counterfeiting the seal of the the King was considered treasonous in England since the reign of Edward III in the 14th century.

accused, and the progress of the case through different legal venues. An example of this type of case would be *Rex V. The Earl of Salisbury*. Here, a defendant had been held without bail for several months before formal charges of treason were brought. The justices issued a writ of habeas corpus ordering the immediate release of the defendant on bail, arguing that the state violated the rights of the accused in not bringing a trial in a timely fashion. In these types of cases, judges often have the most influence, as they can be settled via prerogative writs issued by the court rather than determined by a jury.

The final category of cases, which I refer to as derivative cases, involve disputes arising in the aftermath of a treason case. The most common issues raised in this type of case are those surrounding property and inheritance. In England, a person convicted of treason was normally attainted, which meant that their property was forfeited to the crown. This raised a number of issues under common law, including the fate of jointly held marital property, property held by the convicted in trust, and the recovery of forfeited property if a conviction was reversed. These decisions often hinged on the court's interpretation and application of precedent, and therefore we can see the outcomes as in part reflecting the ideological preferences of the justices. In addition, the crown normally had a stake in keeping forfeited property, either to hold or to disperse as patronage, meaning that there normally are clearly interpretable pro- and anti- royal outcomes. An example of this kind of case is *Horton v. Kirton* in 1709. Joshua Horton was convicted of treason for possessing tools to counterfeit coins, and was attainted. His estate, which had been jointly held by him and his wife, was confiscated and granted by the King to another landowner, Kirton. However, Horton's widow argued that the statute classifying counterfeiting as treason did not allow for the confiscation of marital property, and should be treated differently from cases where the convicted traitor took up arms against the King. If successful, she would have reclaimed her property, and the crown would be forced to return the price of the estate to Kirton. However, the justices of the Exchequer ruled against her, and the property remained with Kirton.

To create a dataset of treason cases using the English Reports, I followed the procedure below. First, I queried the digital collection of the English Reports published by the Commonwealth Legal Information Institute[6] for any mention of the term treason through the year 1750, yielding 1402 results. I then cleaned this collection, removing unrelated cases (for example, where treason was used as a hypothetical more serious crime that would warrant different treatment to the actual case being dealt with) and cases not written in English[7]. After this process, 187 cases remained. These were manually entered into a dataset that includes information on the date of the case, the court in which it was heard, the type of case, and the outcome. Summary statistics for these variables are presented in Table 4.2. Cases were generally heard by a panel of three judges who sat on the relevant court at the time, and therefore cases are assigned the average characteristics

[6]http://www.commonlii.org/uk/cases/EngR/

[7]The alternative being Law French, a form of archaic French mixed liberally with Latin and English that had traditionally been used in the courts after the Norman Conquest, see Baker (2019).

Table 4.2: Case-Level Summary Statistics

Variable	Mean
Outcome (1 = Support for King)	0.581
Criminal	0.219
Derivative	0.371
Procedural	0.410
Chancery	0.083
Exchequer	0.138
King's Bench	0.409
Common Pleas	0.370
Observations	187

Sources: The English Reports (accessed at http://www.commonlii.org/uk/cases/EngR/).

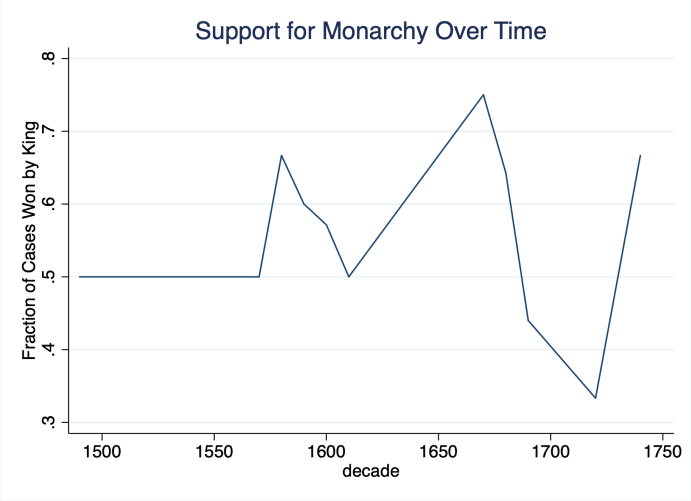

Figure 4.1: Support for Monarchy Over Time

of the judges who heard them.

4.5 Empirical Analysis

The primary empirical evidence presented here is correlational, and is intended as much to guide future study as to illuminate the correlates of opposition to the crown. First, changes in support over time can be seen in Figure 4.1. Support for the crown in the early 17th century is actually not unusually low, relative to the period as a whole. This is somewhat surprising given the historical narrative. However, it is noteworthy that support for the King in between 1600 and 1640 is lower than the preceding several decades, perhaps contributing to a contemporary view that the lawyers were particularly hostile to the Stuart monarchy.

The high point of support is seen in the 1660s and 1670s, after the restoration of the monarchy, a period in which opponents of the King during the Civil War were purged, and many were tried for treason. This

gives way to a low point of support in the 1680s through the early 1700s, consistent with a sweeping change in governance and reduction in the power of the monarchy following the Glorious Revolution of 1688 (North and Weingast 1989).

Second, the venue of the case matters, as seen in Table 4.3. Cases that were heard in the Chancery Court, an equity court in which the King could have more direct influence, were the most likely to deliver an outcome favourable to royal interests (75%), while cases in the Court of Common Pleas were least likely (40% in favor of the crown). This difference, which is statistically significant at a 10% level, is consistent with the political conflict over royal prerogative courts in the 16th and 17th centuries. In principle, this could be due to the different courts hearing different types of cases, and indeed there are differences between the fraction of royal success in criminal trials (65.2%), property cases (58.9%), and procedural cases (53.5%). However, controlling for these differences actually widens the gap between the most and least favorable venue.

Table 4.3: Support by Venue

	(1) No Controls	(2) With Controls
King's Bench	0.179	0.223
	(0.216)	(0.185)
Exchequer	0.236	0.245
	(0.168)	(0.219)
Chancery	0.350*	0.385*
	(0.192)	(0.201)
n	187	

Robust standard errors in parentheses. Coefficients given are relative to the Common Pleas. Sources given in the text.

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

In the context of early modern judicial change, the large difference in how the common law and equity courts handle royal interests is significant. In part, this is because the increasing reliance on prerogative courts, such as the Court of the Star Chamber, that were outside of the common law system, was a major contributing factor to the conflict that led to the Civil War. However, framed another way, it also shows that the common law courts were able to resist royal demands, despite the absence of formal independence.

To examine this further, I examine the associations between royal support, the educational and class background of judges, and whether or not the judge's father was a lawyer. The results of OLS regressions of the outcomes of cases on these variables, controlling for year, venue, and type of case, are presented in Table 4.4. Class background does appear to be correlated with the decision in a case. A case heard by all nobles would be 33.7% more likely to be decided in favor of the king than a case heard by all gentry (there is no significant difference between gentlemen and non-gentry commoners). This is consistent with the evidence from the case study, and suggests a link between the opening of the law as a path for upward mobility for

the middle classes and subsequent political empowerment of groups with less personal and social ties to the monarch.

Table 4.4: Support by Judge Characteristics

	(1)
Noble	0.337*
	(0.251)
Gentry	-0.015
	(0.204)
Lawyer Father	0.104
	(0.222)
Inner Temple	-0.006
	(0.255)
Lincoln's	-0.316
	(0.292)
Gray's	-0.343**
	(0.172)
n	187

Robust standard errors in parentheses. Coefficients given are relative to the Common Pleas. Sources given in the text.

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

Having a lawyer as a father does not seem to influence judicial behavior. The point estimate is that judges from legal families are about 10% less likely to support the king, but the estimate is not statistically significant. To the extent that we can be confident that this reflects a true null rather than a noisy sample, we can rule out the influence of legal culture as it is transmitted intergenerationally.

The same cannot be said of legal culture more broadly. When looking at the role of education, graduates of two of the Inns of Court (Gray's and Lincoln's) are more than 30 percentage points more likely to oppose the king in a treason case relative to the other two Inns (the Inner and Middle Temples). While only the coefficient on Gray's is statistically significant, the differences are large enough to suggest the importance of peer effects – interacting with one Inn's cohort and alumni more often if correlated with observable differences in judicial behavior. While growing up in a legal family is not likely to influence ideology, the peers and teachers a lawyer interacts with professionally appears to be an important factor.

4.6 Conclusion

To some extent, the empirical analysis supports a narrative of ideological change rooted in class conflict. The few judges from noble families were significantly more likely to support the king from the bench in the Early Modern period. One possible implication of this finding is that some of the rise in anti-royal sentiment over time among the judiciary may be related to the long-run shift of judges as royal advisors drawn from important families to judges as successful members of the legal profession, drawn from upwardly mobile

commoners and gentry.

In many ways, however, the results suggest that this narrative is oversimplified in several ways. Support for the King waxes and wanes over time, and the independence of the judiciary in the early 17th century (pre-Civil War) or after the Glorious Revolution is interrupted by a period of high royal support, and preceded by an unusually compliant group of judges in the late 16th century. It does not appear that these rapid shifts reflect wholesale changes in the class interests of individual judges.

Instead, the significance of which Inn of Court a judge was associated with suggests an alternative view, in which the personality of a judge, the influence of their peers, and the professional norms they acquire all shape the ideological content of their decisions. Examination of judge biographies suggests that many judges choose a particular Inn because of a social connection – a father, neighbor, or cousin who went into the field at that Inn before them. In that case, and given the likelihood that people would have stronger social ties to others of a similar background, there is still a chance that the clustering of opinion by Inn reflects some class or social differences. If so, however, they are mediated through the existing professional and educational institutions of the time, and potentially more malleable than class alone would suggest.

The preceding analysis suggests new directions for research on ideological change among common law judges. One possible next step for research in this area is to broaden the scope of cases under consideration. Though there are challenges to doing so, particularly in measuring support or opposition to royal interests in a richer context, it would allow for a much larger sample, allowing more precise estimates of the effects of a larger set of judge characteristics. In addition, to fully gauge the impact of legal change on the political and economic development of England, it would be fruitful to examine changes across dimensions beyond support for or opposition to the king, including attitudes towards the regulation of labor, legality of monopolies, or rights of corporate bodies.

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