

**The Commercial Origins of Democracy:  
Evidence from Seventeenth-century England**

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**ABSTRACT**

One of the key historical steps towards the emergence of democratic political institutions was the transfer of political power from hereditary monarchs to elected parliaments. Why institutions evolved in this “inclusive” direction is one of the central puzzles of political science and economic history. This paper tests an influential hypothesis in the case of seventeenth-century England: that rebellion against monarchy was encouraged by the spread of commerce, especially in agriculture. The argument is formalized with a model, where rebellion becomes an equilibrium once a sufficiently large share of landowners switches from customary to market income-earning activities subject to royal extraction. The implications of the model are supported with data on the 1640 elections to the Long Parliament – a referendum on the conflict between the monarchy and parliament in the run-up to the English civil war – linked to county-level indicators of agricultural commercialization.

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## **1. Introduction**

One of the key historical steps towards the emergence of democratic political institutions was the transfer of power from hereditary monarchs to elected parliaments (Dahl 1971). According to important work, this also represented the origins of modern economic growth, providing a credible commitment to the protection of property rights (North and Weingast 1989). Yet how and why institutions evolved in this “inclusive” direction is one of the central puzzles of political science and economic history (Stasavage 2016; Acemoglu and Robinson 2013).

An important argument, stated most directly by Barrington Moore (1966), argues that the spread of commerce, especially in agriculture, played a key role in these institutional changes. Moore’s argument built upon the prior work of historians, notably Tawney (1941), who focusing on the English case argued that the commercialization of agriculture was pivotal in transforming the feudal order, giving rise to new market-oriented interests that sided with parliament against the monarchy in the English civil war (1642-1651), culminating in the execution of King Charles I and laying the groundwork for institutional changes in the following decades that firmly situated political authority in the hands of parliament.

This paper returns to the English case to test this hypothesis. It focuses on the 1640 elections of MPs who formed the “Long Parliament” after King Charles’s dismissal of the so-called “Short Parliament” which refused to approve new taxes needed by the monarchy to finance its ongoing wars. These elections, voted on by landowners, were effectively referendum on the intensifying conflict between parliament and the monarchy, with differing voter preferences resulting in the election of MPs supportive of parliament in some counties and MPs supportive of the traditional

power of the monarchy in other. This referendum-like event provides a critical window into the geographical determinants of support for parliament in its conflict with the crown, which culminated in the English Civil War.

To guide analysis, this paper develops a simple game theoretical model where there are two types of landowners, those who earn a customary income based upon feudal practices and those who earn market income, which is subject to royal taxation. In the first stage of the game, landowners have an opportunity to signal their support for rebellion, and, after observing these signals, each chooses to rebel or not to rebel against the monarchy. Rebellion becomes an equilibrium once a critical mass of landowners switches from customary to market income-earning activities. The model illustrates how the spread of commercial agriculture, together with hyperinflation and foreign wars which prevented the monarchy from reducing taxes to forestall rebellion, created the conditions necessary for the English civil war. If the argument is correct, in the “signaling” stage of the game corresponding to the elections to the Long Parliament, counties with more commercialized agriculture should have been more likely to elect supporters of parliament against the crown.

To test the argument, this paper assembles multiple indicators from historical sources. First, to measure support for parliament, it utilizes biographical data from Keeler (1954), who for each MP elected to the Long Parliament provides a detailed biography, including whether they were supporters of Parliament or the monarchy. To measure agricultural commercialization, it uses three measures. First, it uses data tabulated by Savine (1909) from the *Valor Ecclesiasticus*, the survey of the value of monastic lands completed under Henry VIII in 1534, to estimate the value

monastic land in each county that was liquidated during the dissolution of the monasteries, which helped drive the commercialization of agriculture by creating a liquid market for land unencumbered by feudal restrictions (see Heldring, Robinson, and Vollmer 2021). Second, it uses geo-codes data on over 50,000 wills processed in the Provincial Court of Canterbury to estimate the size of “commercial” class (based on the reported occupation/social station of the decedent) in each county around the time of the English civil war. Third, it uses a measure of proximity to London as a proxy for exposure to structural transformation arising from the growth of the city as a commercial center. Finally, it uses an index comprised of all three measures with weights based on a principal components analysis. Using all four measures of agricultural commercialization, I provide evidence that more commercialized counties systematically tended to elect MPs to the Long Parliament that were opposed to the crown, compared to the MPs elected from less commercialized counties. A one standard deviation improvement in the commercialization index improved the chances of electing a pro-parliament/anti-crown MP by approximately 17 percentage points.

The findings of this paper lend empirical support to an influential hypothesis: that the transfer of political power from monarchies to parliaments was due to the spread of commerce, especially in agriculture. Though this view was once popular among historians (Hill 1940; Tawney 1941; Trevelyan 1966), it has subsequently lost favor due its perceived structuralism and economic determinism. This paper distils the economic argument with a model, highlighting how commercial agriculture changed the political incentives of landowners, and provides evidence that there is conservable empirical evidence for a theory of institutional change that places economic forces front and center.

The findings also relate to Barrington Moore's (1966) well-known thesis concerning the importance of the commercialization of agriculture for the path to democracy. Moore (1966) is often assigned in comparative politics field seminars in political science (Ziblatt 2013), yet his central thesis has not to date been subject to an empirical test. Though this paper does not have a strategy for causal identification, multiple measures of agricultural commercialization display a consistently positive relationship with support for Parliament against the monarchy in the case of seventeenth-century England, consistent with his argument. Future work could incorporate natural experimental designs to further test these relationships.

The remainder of the paper is organized as follows. I first provide historical background on the English case. I next provide a formal framework to think through the potential role of the commercialization of agriculture in encouraging rebellion against the monarchy. Next, I describe the data I use to test the argument, before reporting results and concluding.

## **2. Historical Context**

The English Civil War (1642-1651) was an armed conflict between parliamentary forces and King Charles I. The war culminated in the execution of Charles I and the temporary abolition of the monarchy. Though the monarchy was later re-established, Charles' execution set an important precedent, permanently weakened the power of the monarchy, and laid the groundwork for the transfer of political power from the crown to parliament during the Glorious Revolution of 1688, which institutionalized the principle of parliamentary sovereignty. The civil war therefore represents a critical juncture in the long-term processes of institutional change

associated with the decline of monarchical rule and the transfer of political power and authority to elected parliaments.

The civil war was preceded by several decades of rising tension between Parliament and the crown over issues related to constitutional principles, taxes, and religion. One of the main grievances against Charles I was his period of personal rule, during which he ruled without calling Parliament from 1629 to 1640. During this period, Charles needed money to fund his government, but without Parliament, he could not raise taxes. One controversial method he used was ship money, a levy traditionally imposed on coastal counties during times of naval threat, which in 1635 he extended to inland counties under the pretext of national defense. Another method was the sale of royal monopolies on common goods, such as soap, often resulting in high prices and inferior products. More broadly, Charles undertook a wide range of money-raising schemes to raise revenue while evading the requirement of parliamentary consent for new taxes, a strategy widely seen as constitutional overstep.

Religious tensions were a significant and divisive factor leading to the civil war. At the time, England was predominantly Protestant, but there were deep divisions between different wings, particularly between Puritans (who wanted further reforms in the Church of England) and Anglicans (who supported the traditional, hierarchical structure of the Church). In the run-up to the civil war, a personally devout Charles I in tandem with the conservative Archbishop Laud pursued several anti-Puritanical religious reforms which sought to reassert the role of ritual and episcopal authority, fueling rumors and fears throughout the country of Charles's potential "Papish sympathies" (Healey 2023).

In 1637, Charles tried to impose the Anglican Book of Common Prayer on Scotland, a Presbyterian country. This led to the Bishops' Wars (1639–1640) and a humiliating defeat for Charles. The wars drained his finances and forced him to call Parliament in 1640 to raise funds, but it was dissolved by the monarch after just three weeks – thereby earning the moniker of the “Short Parliament” – because it refused to grant him funds without first addressing simmering grievances related to the preceding decade’s personal rule, religious grievances, and taxes perceived to be illegal.

However, Charles still needed Parliament to authorize new taxes to finance ongoing conflicts. Later in the year, the Long Parliament was summoned, elections to which were held in November of 1640. The elections were highly polarized, with intense campaigns preceding the election on both sides to drum up support for their favored candidates (Kershaw 1923). The elections therefore represented a kind of referendum on the authority of the crown versus parliament, with the outcome of these elections often indicating the balance of local opinion among landowners, who held the right to vote.

As balloting concluded, it soon became clear that despite efforts to sway the elections through the influence of peers and patrons, the elections went badly for the monarchy, resulting in the election of a majority of MPs favorable to Parliament over the Crown. There were also clear geographical voting patterns, with the more economically developed regions of the country tending to elect MPs allied to the parliamentary cause and the relatively more remote and

backwards regions electing MPs favorable to the Crown: “The richest and populous part of the country (with the exception of Somerset) thus declared against the king. (Kershaw 1923, p. 508)”

Emboldened by the election results, in 1641 the Long Parliament issued the Grand Remonstrance, a list of grievances against Charles I’s policies, particularly focusing on his perceived attempts to impose authoritarian rule. The Remonstrance was a highly polarizing document that divided Parliament and the country into pro- and anti-royalist faction. In January 1642, Charles I attempted to arrest five leading MPs, including John Pym and John Hampden, whom he saw as ringleaders of the parliamentary opposition. This act was seen as a clear attempt to undermine parliamentary sovereignty, and it outraged many, accelerating the slide towards civil war.

In 1642, the situation devolved into outright civil war, with each side rallying money and financing for war from their respective zones of support. Charles I drew support from traditional power bases, including aristocrats, conservative Anglicans, and regions with stronger feudal loyalties. Parliamentarians gained support from Puritans, urban areas (such as London), and areas with more commercialized agriculture and a rising middle class (Hill 1940), though in any given county there was considerably infighting between supporters of Parliament, known as Roundheads, and supporters of the Crown, known as Cavaliers.

A critical advantage for parliament was the New Model Army, a professionalized army led by Oliver Cromwell, which proved crucial in winning the war. The civil war ended with the victory of the Parliamentarians and the trial and execution of Charles I in 1649. England briefly became



a secular dictatorship under Oliver Cromwell, and the monarchy was abolished. However, the monarchy was restored in 1660 under Charles II, though the political landscape had permanently changed. The civil war laid the groundwork for the future development of constitutional monarchy and parliamentary sovereignty in England.

### **3. Conceptual Framework**

Though the outbreak of the civil war appeared to be driven by multiple complex factors, not least several strategic blunders on the part of Charles I, scholars have noted that it also reflected a precipitation of several long-term structural changes in English society and economy. In political science, a version of the thesis found life in Barrington Moore's *Social Origins of Dictatorship and Democracy*, where he famously argued that the "commercialization of agriculture" played a key role in the English revolution and the British path to democracy.

In making this argument, Moore drew prior work by historians, particularly Tawney's (1941) well-known but controversial "rise of the gentry" thesis, which posited that the English countryside had experienced a sea change in its social structure in the century preceding the civil war, as a new class of commercialized landowner emerged was not part of the traditional aristocracy but instead a capitalist entrepreneur "who steadily gathered into their hands estates slipping from the grasp of peasant, nobility, Church and Crown alike – such movements and their consequences were visible to all. (p. 5)"

This emergent commercial class in the countryside, according to Tawney, played a key role in the English civil war due to their dislike of accumulating royal restrictions and taxes, ranging

from monopolies to ship money to taxes on trade, increasingly perceived to be arbitrary. In a succinct statement, Tawney attributed the move towards civil war to reaction to the growing economic burden of such policies among commercial interests and a desire to replace extractive royal policies with a regime more friendly to commerce: “The more intimately an industry – agriculture or any other – depends on the market, the more closely is it affected by the policy of Governments, and the more determined do those engaged in it become to control policy.”<sup>2</sup> Similar arguments have been advanced by Hill (1940), who saw the English civil war essentially as a conflict between a feudal social order represented by the monarchy and a capitalist social order represented by Parliament.

The sources of an increasingly commercialized agricultural sector in England were multi-causal. One important shock was the “dissolution of the monasteries” under Henry VIII during the 1530s, who in order to raise revenue expropriated and subsequently auctioned off the assets held by the monasteries in England, which amounted to approximately one third of all land (Heldring, Robinson, and Vollmer 2021). The dissolution of the monasteries injected liquidity into land markets that were otherwise encumbered by complicated feudal restrictions on land, which often fixed rents and granted irrevocable, heritable tenure to peasants, making it difficult to consolidate land into large commercial estates. According to Tawney, the rising commercial gentry were key beneficiaries of the dissolution of the monasteries, often buying up large tracts of land previously owned by monasteries and turning them into commercial farms.

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<sup>2</sup> Tawney’s thesis was influential but controversial. In the “storm over the gentry” that ensued, several historians questioned many of Tawney’s claims, focusing mostly on debating whether or not the established aristocracy was really in crisis by the time of the English civil war (see e.g. Coleman 1966).

More generally, the economic position of the traditional landed aristocracy is widely argued to have eroded in the century preceding the English civil war, not least because of hyperinflation arising from the influx of silver into Europe from Spain's colonial possessions in the Americas. This tended to devalue the fixed rents from land upon which the traditional aristocracy relied, forcing them to sell portions of their estates to commercial farmers – notably the rising gentry and yeomanry – who either worked the land themselves in order to maximize profit (in the case of yeomanry) or operated farms like capitalist business enterprises, squeezing tenants, enclosing common fields, relying on wage labor, and employing new agricultural technologies like crop rotation systems (Allen 1992).

Finally, the rise of London as a commercial center and hub for Atlantic trade played a key role in structural transformation (Acemoglu, Johnson, and Robinson 2005), providing a crucial source of demand for agricultural products, ranging from perishable goods to commodities such as wool, which enabled farmers to prosper – especially in counties proximate to London and with relatively lower trade costs as a result. Though there is debate as to whether the increase in agricultural productivity in England beginning in the mid-1500s can be properly called an “agricultural revolution,” considerable data provides evidence that yields, profits, and technology tended to advance quickest in counties like Norfolk and Suffolk in relative proximity to London (Overton 1996).

## Model

Did these economic forces contributing to the commercialization of agriculture generate a civil war? I develop a simple game theoretical model of how commercialization can contribute to rebellion against monarchy. In the framework, there are two types of landowners, type C landowners who earn customary income of number  $N_C$  who earn a customary income  $C$ . There are also type M landowners who earn market income  $M$  which is taxed by the monarchy at a rate  $\tau$  and the total number of landowners is  $N = N_C + N_M$ .

In the game, there are two rounds. In the first round, each landowner sends a signal of whether they prefer rebellion or not:  $s_i \in \{Support (S), Oppose (O)\}$ . In the second round, after observing the signals, each landowner decides whether to rebel or not:  $a_i \in \{Rebel (R), Not Rebel (NR)\}$ . Strategies can be conditioned on the observed signals. This is important, since the probability that the rebellion is successful is a continuous, differentiable, and increasing function of the share of landowners who rebel:  $p(k)$  where  $p(0) = 0$  and  $p(1) = 1$ . For simplicity, assume:  $p(k) = k$ .

M type landowners earn market income  $M$  that is taxed at a rate  $\tau$  under monarchy. If a rebellion successfully occurs, they gain power, and this tax is eliminated. Participating in rebellion is costly,  $R$ . If a rebellion succeeds and an M type landowner does not participate, or if an M type landowner does participate but the rebellion is unsuccessful, they pay a penalty  $T$  for disloyalty imposed by the winning side. We assume that the penalty  $T$  is severe and  $T > R$ .

C type land owners earn customary income  $C$  under monarchy. If a rebellion occurs, this income is unaffected. Participating in rebellion is costly,  $R$ . If a rebellion succeeds and a C type landowner does not participate, or if a C type landowner does participate but the rebellion is unsuccessful, they pay a penalty  $T$  for disloyalty imposed by the winning side.

Let us assume that  $N$  is large so that any given landowners' decision to participate or not to participate in rebellion makes only a tiny difference to the probability of its success and in the individual decision-making calculus can be effectively ignored relative to concerns about the cost of rebellion or punishment for disloyalty. In this case, for a given probability of success  $p$ , the expected value to rebelling for an M type landowner is:

$$p(M - R) + (1 - p)(\tau M - R - T)$$

And the expected value to not rebelling is:

$$p(M - T) + (1 - p)(\tau M - T)$$

Using these two expressions, M type landowners prefer to rebel if  $p > \frac{R}{T}$ . The exact same condition holds for C type landowners. In other words, for a given probability of a successful rebellion, landowners prefer to rebel as long as the costs of rebelling relative to the punishment for disloyalty are not too large. For example, if the probability of rebellion succeeding is high due to high anticipated participation, it would require a large cost to deter participation; this reflects band-wagging or tipping point dynamics.

Let us assume the punishment for disloyalty  $T$  is large enough that it is not beneficial for any landowner to unilaterally deviate from an equilibrium where all landowners choose to rebel or where no landowners choose to rebel i.e. there are two equilibria, one where all landowners rebel and one where none do. Furthermore, let us assume a world where the cost of rebelling relative to the burden of taxes is small enough that M type landowners prefer a coordinated rebellion to one with no rebellion:  $M - R > \tau M$ . By construction, type C landowners prefer the equilibrium where no landowners choose to rebel to that where all rebel, since they receive the same customary income  $C$  in both scenarios, but avoid paying the costs of rebelling in the former.

In this case, there is a Perfect Bayesian equilibrium where:

1. Type C landowners signal oppose and type M landowners signal support
2. If the share of landowners signaling support (share of type M landowners in the population) is greater than  $\frac{R}{T}$ , then all choose to rebel. Otherwise, all choose not to rebel.

Proof: Holding every other player's strategy fixed, it is weakly dominant for a type M landowner to signal Support (S) for rebellion and for a type C landowner to signal Oppose (O), since this cannot hurt the chances of achieving their preferred outcome. Assuming every other landowner is committed to a threshold strategy where they choose to rebel if the share of signaling support is greater than  $\frac{R}{T}$ , then no landowner has an incentive to unilaterally deviate from adopting this strategy. There is therefore no incentive to deviate at either stage of the game and landowners act optimally at each stage, given their beliefs and the observed signals.

This framework is useful for two reasons. First, it helps us think through the dynamics leading to civil war in England. First, it reveals how the spread of commercial agriculture, conceptualized as an increase in the share of landowners engaged in market-based economic activity, can generate “tipping point” dynamics which result in rebellion against monarchy motivated by eliminating burdensome royal policies (parameterized in the model as a royal tax). Rebellion becomes an equilibrium once a sufficiently large share of landowners switches from customary to market income-earning activities subject to royal taxes.

A natural question is why a rational monarch would not simply lower taxes to avoid a rebellion, as would be the case in the model if this parameter were endogenized. One reason, in the English case, is that because of hyperinflation and foreign wars, Charles I simply could not because he required the revenue. In other words, the tax rate was exogenously fixed due to external constraints. Trevelyan (1966) reaches a similar conclusion: “The gradual but constant rise in prices, largely due to the flow of silver from the Spanish-American mines into Europe, made it impossible for James and Charles I ‘live on their own revenues’, and their parliaments were unwilling to make good the deficiency except on religious and political conditions which the Stuart kinds were unwilling to accept. (p. 163)”

Second, the model helps guide empirical analysis. In particular, we can see the elections to the Long Parliament of November 1640 as a “signaling” stage of the game, where landowners (those who had the right to vote) took sides with the monarchy or with parliament by casting ballots in order to make a rebellion more less likely. Indeed, the election of a pro-Parliament majority appeared to have an emboldening effect in the conflict between Parliament and the monarchy,

strengthening the slide towards civil war, even among moderates who felt compelled to join. If the model provides an accurate depiction of the dynamics leading to civil war, then this yields a testable implication: we should observe more support for pro-parliamentary MPs in constituencies characterized by greater agricultural commercialization. I turn to testing this implication of the argument in the following section of the paper.

### **3. Data and Empirics**

Empirically, this paper focuses on elections to the “Long Parliament” held in November 1640, which, as discussed, effectively represented a referendum on the monarchy after Charles’s dismissal of the so-called “Short Parliament” which refused to approve new taxes needed by the monarchy to finance its ongoing wars. I investigate whether areas with more commercialized agriculture were more likely to elect supporters of Parliament in these critical elections, in which land and property owners could vote.

In these elections, there were county and borough constituencies (a given county typically had multiple county and borough constituencies). In each constituency, two MPs were returned on the basis of the which two received the most votes. In counties, the right to vote was generally limited to freeholders (those who owned freehold land) whose land was worth at least 40 shillings per year. As a result, the franchise was essentially restricted to relatively wealthy landowners. The franchise varied significantly across boroughs. In some boroughs, the right to vote was held by freemen of the borough, in others by burgesses or members of guilds. Some boroughs restricted voting to the corporation members (a small group of officials), while others had a more open franchise.



To measure support for parliament, we use data on the allegiance of MPs elected to the Long Parliament in November of 1640. We use data from Keeler (1954), who provides biographies including information about whether each MP was a royalist or pro-parliamentarian, which was generally clear to contemporaries. In these elections, members of both the “court” and “parliamentary” parties actively campaigned to have their allied elected as MPs to secure a favorable House of Commons, which would vote on critical legislation in the conflict between the Crown and Parliament. For instance, the monarchy had a list of favored candidates in the elections (Kershaw 1923). Though there were cases of electoral fraud and vote-buying, the elections were on the whole held fairly and judged to reflect the overall balance of public opinion among those with the right to vote.

To compute our dependent variable, I use two county-level measures – first, a measure of the share of pro-parliament MPs elected across both county and borough constituencies in a given county, and, second, a measure of the share of pro-parliament MPs elected from just county constituencies, where landowners comprise the voting population. The latter measure arguably relates more directly to the potential effects of agricultural commercialization. In Figure 1, I provide a plot of counties in England and Wales shaded according to the share of MPs in each county elected to the Long Parliament who were pro-parliament/anti-monarchy according to the Keeler biographies.

[FIGURE 1 ABOUT HERE]

To measure commercialization, we utilize four different measures of agricultural commercialization. The first is the value of monastic lands dissolved under Henry the VIII; this comes from Savine's (1909) tabulation of data from the *Valor Ecclesiasticus*, a comprehensive survey of the finances of the Church of England, ordered by King Henry VIII in 1535. The *Valor* contains information on over 550 and monasteries together with estimates of the income generated from both "spiritual" (religious) and "temporal" (physical assets such as farmland) sources. As discussed, the dissolution of the monasteries contributed to the injection of a large amount of liquidity in land markets in England, which was often purchased by entrepreneurial landowners, playing a key role in the commercialization of agriculture. Generally speaking, larger monasteries with more land generated more income, and as the measure of exposure to monastery dissolution I simply compute at the county level the total income generated from monasteries as recorded in the *Valor Ecclesiasticus*.

The second measure is the share of the population engaged in "commercial" activities as opposed to earning income from customary sources. This is computed from wills deposited at the Provincial Court of Canterbury, a key ecclesiastical court. These wills were stored and are today digitized at the National Archives at Kew Gardens. Crucially, the library records of each deposited will contains index information generally including the county and title/occupation of the decedent, which was indicative of their social class/occupation, as well as the county in which they resided. From this, we are able to compute a measure of the share of wealth-holders belonging to "commercial" classes as opposed to traditional "feudal" classes as well as geo-code this information to the county level.

Historically, the PCC handled the probate of wills from people who owned significant property across multiple dioceses or who had property valued at a higher threshold (usually more than £5). The PCC's jurisdiction covered the southern part of England, whereas the Prerogative Court of York (PCY) handled wills in the northern province of York. This means estimates from this data are normally regional and highly selective, as opposed to representative. However, crucially, between 1653 and 1660 – during the commonwealth period following Charles I's execution – the government centralized the probate system. From 1653 to 1660, the PCC in the form of a civil court had sole testamentary jurisdiction over all of England and Wales. During the Commonwealth period, all wills across England and Wales had to be proved centrally at the Court of Civil Commission (effectively the PCC) in London, rather than in local ecclesiastical or secular courts.

To compute a variable representing an estimate of the size of the “commercial” class in a given county, I focus only on wills deposited between 1653 and 1660 (over 50,000), and identify all reported occupations in the will indices. I identified a total of over 200 occupations in these records, each of which was assigned to one of ten categories: Agriculture (“Yeoman”, “Shepherd”), Trade and handicraft (e.g. “Wax Chandler”, “Weaver”), Gentry (“Gentleman”), Church (e.g. “Vicar”, “Rector”), Mercantile (e.g. “Stockfishmonger”, “Mercer”), Laborer and servant (e.g. “Maiden Servant”, “Groom”), Professional (e.g. “Writer”, “Treasurer”), Government and military (e.g. “Clerk”, “Commander”), Nobility (e.g. “Countess”, “Viscount”). To measure the size of the commercial classes, I compute the share of wills in a county deposited between 1653 and 1660 falling in the categories of Agriculture, Trade and handicraft, Gentry, Mercantile.

The third measure of agricultural commercialization I utilize is proximity to London, computed simply as a variable that takes 0 as its maximum and decreases in the geodesic distance of a county centroid to the coordinates of London “as the crow flies”. As discussed, London was a fast-growing commercial center, and provided an important market for agricultural products such as wool that were often exported abroad. Consistent with a “gravity model” of trade, counties with lower trade costs with London as a result of physical proximity tended to benefit more from the rise of London. Notably, some of England’s most agriculturally advanced counties, such as Norfolk (famous for pioneering the Norfolk crop rotation system) were those in relative proximity to London (Overton 1996).

The fourth measure I utilize is an agricultural commercialization index, which is a combination of the three preceding items: value of monasteries, size of the commercial class, and proximity to London. To compute weights, I utilize a principal components approach, where each variable is standardized, and the factor loadings of each standardized variable are used to compute an index based on the weighted sum of the variables. The four different measures of agricultural commercialization are depicted in Figure 2.

[FIGURE 2 ABOUT HERE]

#### **4. Empirical Strategy and Results**

To analyze this data, I utilize a simple OLS regression where the dependent variable is the share of MPs in a county elected to the Long Parliament who were pro-parliament, and the explanatory

variable is a given measure of agricultural commercialization. To adjust estimates of uncertainty for spatially correlated errors, I estimate Conley standard errors adjust for clustering within a 100-kilometer radius of any given county.

$$Parliament_i = \alpha + \beta Commercialization_i + \varepsilon_i$$

The results of the statistical analysis are reported in Table 1. Note that all coefficients are standardized to facilitate ease of comparison across regressions with explanatory variables measured on different scales. Column (1) suggests a robust relationship between the size of commercial classes among wealth holders as measured in wills data and support for Parliament; a one standard deviation improvement in the size of the commercial class was associated with an 11-percentage point decline in the share of pro-parliament MPs elected to the Long Parliament. Column (2) indicates that a one standard deviation improvement in proximity to London improved the share of pro-parliament MPs elected by 16 percentage points. Column (3) indicates that a one standard deviation improvement in the total value of monasteries in a country dissolved under Henry VIII was associated with an 11.4 percentage point increase in the share of pro-parliament MPs elected. The coefficient in column (4) indicates that a one standard deviation improvement in the overall commercialization index is associated with a 17 percentage point increase in the share of pro-parliament MPs elected to the Long Parliament. Very similar results are found in columns (5)-(8), where the dependent variable is the share of pro-parliament MPs elected from county constituencies, where landowners specifically held the right to vote.

## 5. Conclusion

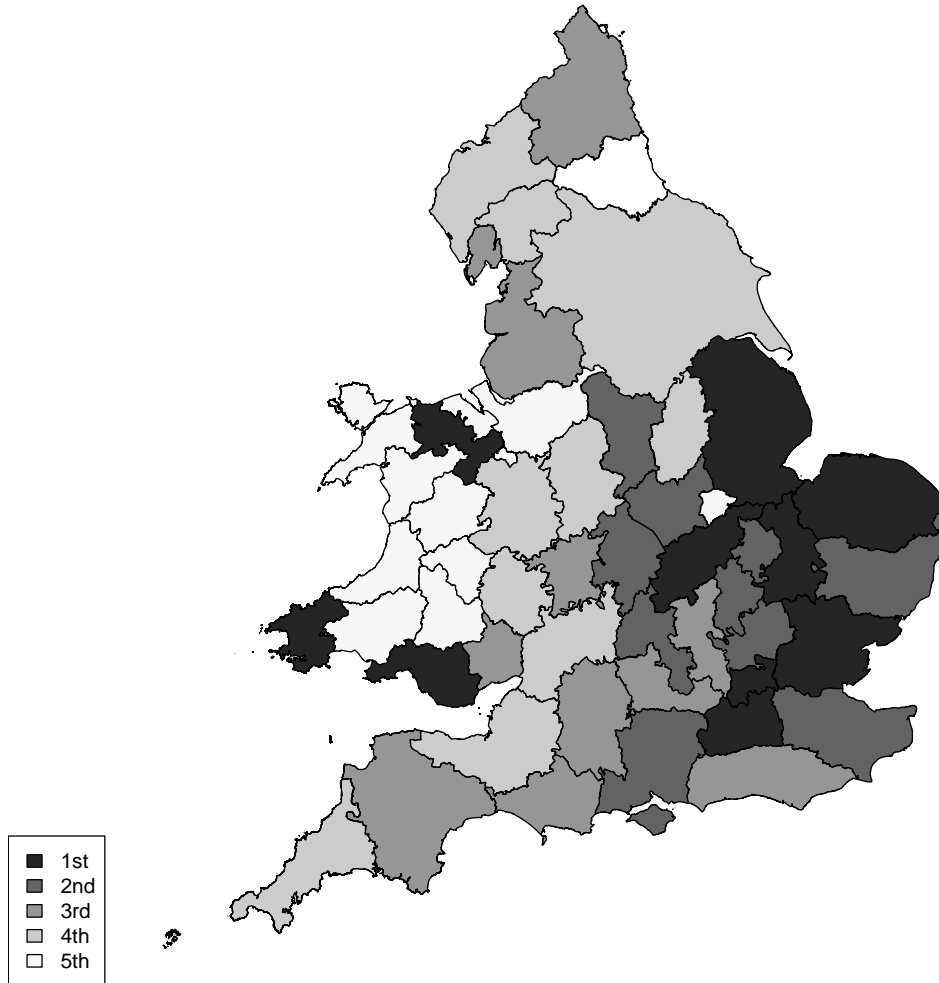
This paper has sought to better understand the origins of one of the institutional changes at the heart of the emergence of modern democracy – the transfer of power from hereditary monarchs to elected parliaments. It formalizes an influential hypothesis in the case of 17<sup>th</sup>-century England: that rebellion against monarchy was induced by the spread of commercial agriculture. The argument is developed with a model, where rebellion becomes an equilibrium once a sufficiently large share of landowners switches from customary to market income-earning activities.

The implications of the model are supported with geographical data on support for parliament against the crown in the run-up to the English civil war linked to multiple indicators of agricultural commercialization. Though we do not have a source of causal identification, multiple independent measures of agricultural commercialization are associated with support for Parliament against the monarchy at a critical juncture in the evolution of English political institutions towards a weakened monarchy and strengthened legislature, a key transition in the pathway to democracy as well as modern economic growth.

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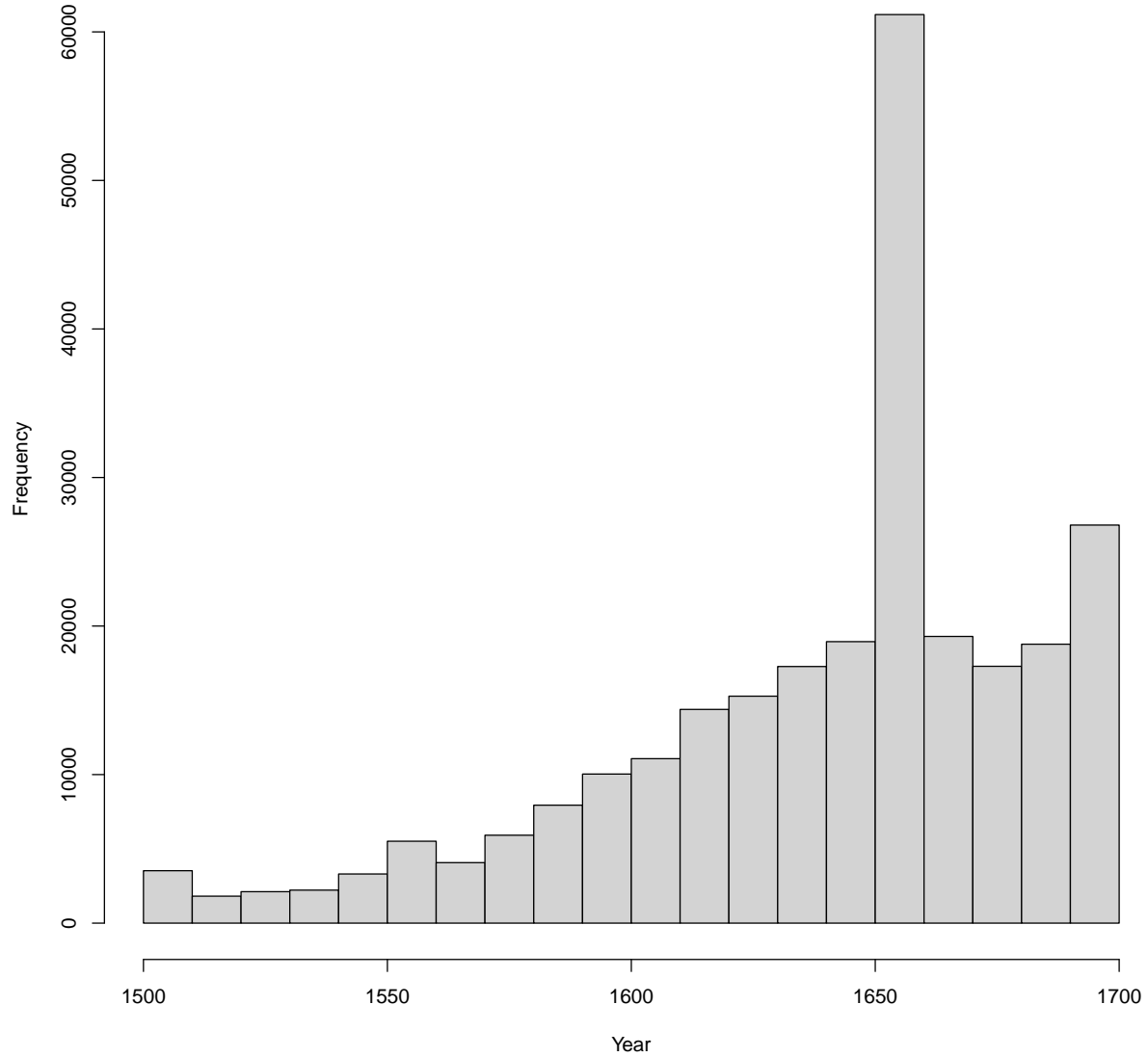
FIGURE 1. Share of MPs Elected Supportive of Parliament



*Notes:* Map represents county-wise share of MPs elected to Long Parliament in October 1640 who were pro-Parliament according to biographies in Keeler (1954). Variable depicted in map is share of MPs elected from both county and borough constituencies in a given county that were pro-parliament/anti-monarchy.

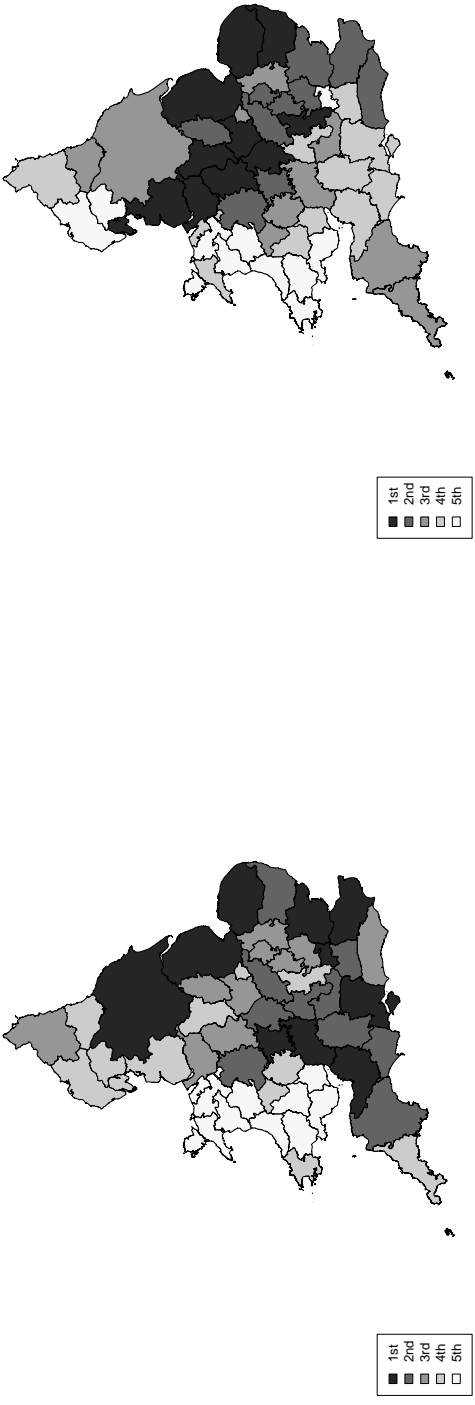


FIGURE 2. Wills Deposited in PCC Over Time



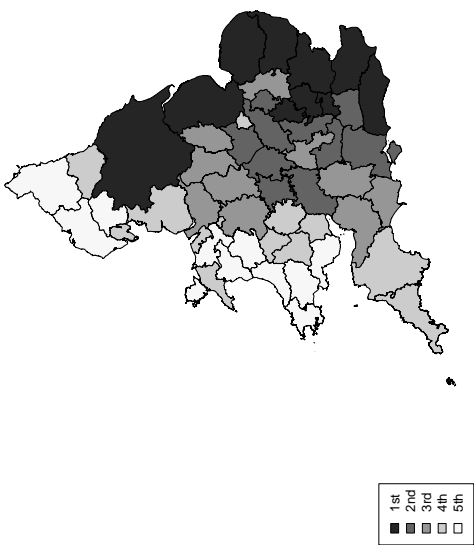
*Notes:* Histogram represents year distribution over time of wills deposited at the Provincial Court of Centerbury. The noticeable spike corresponds to the period 1653 to 1660, when the PCC in the form of a civil court had sole testamentary jurisdiction over all of England and Wales.

FIGURE 3. Indicators of Agricultural Commercialization

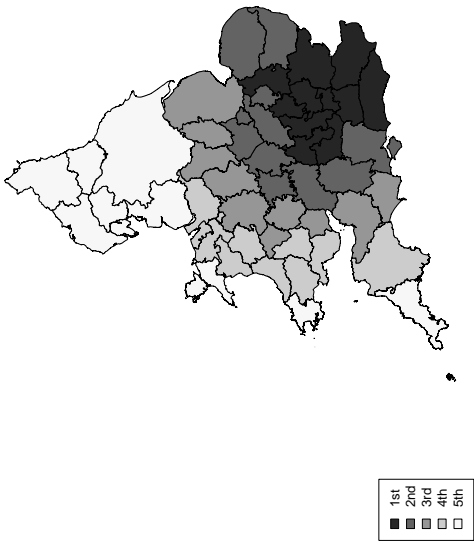


(a) Value of Dissolved Monasteries

(b) Size of Commercial Class



(c) Proximity to London



(d) Commercialization Index

Notes: Maps represent different indicators of agricultural commercialization. Panel A represents the approximate total value in pounds of monastic properties liquidated under Henry VIII, based on Savine's (1909) tabulation of data from the Valor Ecclesiasticus. Panel B represents the share of individuals leaving PCC wills between 1652 and 1660 in a county belonging to "commercial" classes (see text for details). Panel C represents proximity to London in kilometers. Panel D represents principal components index of the three measures of agricultural commercialization.

TABLE 1. Descriptive Statistics

	N	SD	Mean	5th	25th	50th	75th	95th
Parliament Support	51	0.51	0.32	0.00	0.26	0.56	0.75	1.00
Monasteries Value	52	3315	3684	0.00	0.00	2568	4778	9725
Commercial Classes	52	0.56	0.08	0.42	0.52	0.57	0.63	0.66
London Proximity	52	-196.76	107.74	-370.60	-281.55	-193.19	-101.79	-46.52
Commercialization Index	52	-0.00	1.34	-2.26	-1.17	0.44	1.08	1.53

*Notes:* Unit of analysis is the county. Parliament support is share of MPs elected to Long Parliament who were pro-Parliament. Monasteries Value is the approximate total value in pounds of monastic properties liquidated under Henry VIII, based on Savine's (1909) tabulation of data from the Valor Ecclesiastus. Commercial classes is the share of individuals leaving PCC wills between 1652 and 1660 in a county belonging to "commercial" classes (see text for details). London proximity is proximity to london in kilometers. Commercialization Index is index of the three measures of agricultural commercialization with weights based on a principal components analysis.

TABLE 2. Agricultural Commercialization and Support for Parliament Against the Monarchy

	<i>Dependent variable: Share Pro-Parliament MPs Elected to Long Parliament</i>							
	All Constituencies				County Constituencies			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Commercial Classes	0.111** (0.045)				0.113** (0.050)			
London Proximity		0.165*** (0.038)				0.168*** (0.049)		
Monasteries Value			0.114* (0.061)				0.137** (0.051)	
Commercialization Index				0.167*** (0.041)				0.177*** (0.051)
Constant	0.506*** (0.050)	0.500*** (0.041)	0.505*** (0.052)	0.503*** (0.037)	0.502*** (0.058)	0.500*** (0.051)	0.498*** (0.056)	0.500*** (0.047)

*Notes:* Unit of analysis is the county. Dependent variable is share of pro-Parliament MPs elected to Long Parliament (all constituencies in columns (1)-(4) and in county constituencies in columns (5)-(8)). All explanatory variables standardized. Analysis estimated by OLS, with Conley standard errors adjusted for spatial correlation within a 100km radius. \* p<0.05; \*\* p<0.01; \*\*\* p<0.001.