

Parliament, Property Rights, and Public Goods in England: 1600 to 1815

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This Draft: August 2006

Abstract

A new database demonstrates that after 1689, Parliament passed increasing numbers of acts altering property rights and encouraging the provision of public goods. The acts enabled individuals to sell, mortgage, lease, and improve land previously bound by legal legacies; granted rights to organizations, such as turnpikes and canal companies, which supplied infrastructure and public services; and replaced traditional agricultural rights with enclosed fields and individual property. The depth and detail of the database enables us to document these trends and discuss their effects on English economic development and the Industrial Revolution.

We thank Stergios Skaperdas, Linda Cohen, Jean-Laurent Rosenthal, Joel Mokyr, John Wallis, Tim Leunig, Richard Sylla, Mauricio Drelichman, and Avner Greif for helpful comments on earlier drafts. We also thank seminar participants at the University of British Columbia, New York University, and Washington Area Economic History Seminar and conference participants at meetings of the Economic History Society, the All-UC Group in Economic History, and the International Economic History Congress. We thank Patricia Suzuki, Francesca Labordo, and Shaun Kumar for research assistance. We thank the House of Lords Record Office for assistance.

Theories concerning government's role in British economic development fall into two broad classes. A traditional school contends that government played little (or no) significant role in the onset of industrialization, which was directed by individual entrepreneurs, propelled by market imperatives, and financed by private capital. The government kept taxes low and regulations porous. The absence of politically imposed constraints allowed manufacturing and commerce to flourish. A revisionist school emphasizes the role of the state. Britain's military ascendance opened the seas to shipping and created colonial markets. Government borrowing formed the foundation for modern financial markets. Adherence to the rule of law increased the security of property rights, lowered transaction costs, and encouraged creativity.

Debate continues between these contending schools of thought.¹ A central issue is the impact of Parliament. After the Glorious Revolution, the number of acts passed by Parliament rose rapidly, from 30 per year during the seventeenth century to 400 per year in the late eighteenth century. Scholars have argued that Parliament's actions influenced the economy. However, what those actions were, when they occurred, and how they affected the economy remain unclear.

This essay addresses this lacuna in the literature by introducing a new database containing all the acts of Parliament from 1600 and 1815. The data demonstrate that the increasing volume of legislation consisted primarily of three types, which we refer to as estate, statutory authority, and enclosure acts. A common theme runs through all of these acts. They altered property rights and encouraged the provision of public goods.

Estate acts altered the rights of individuals and families. The system of landholding inhibited landholders from using and transferring property as they saw fit. Conditions of

¹ See Harris (2004) for a survey of the literature.

inheritance, such as strict settlements, often tied landowners' hands. Restrictions required landholders to dedicate property to particular tasks and to devote the proceeds to certain beneficiaries, such as charities and the support of extended families. Estate acts eliminated restrictions on the uses to which property could be put; authorized the improvement, sale, and leasing of land; and thus, enabled land to be shifted to higher value uses.

Acts establishing *statutory authorities* created new organizations that built, operated, and maintained infrastructure such as roads, bridges, docks, and canals. Statutory authorities also provided public services, such as policing, poor relief, and the enforcement of small debts. Statutory authorities received new rights, including the authority to charge user-fees, levy taxes, issue debt, issue shares, and purchase land. The new rights altered traditional arrangements, encouraging investment in infrastructure and the provision of public services.

Enclosure acts altered rights to agricultural land. Enclosure acts disbanded collectively-managed open-field villages. Individuals received rights to particular pieces of property, which they cultivated individually, and relinquished rights to shared assets. Enclosure acts also shifted agricultural land to new uses, particularly near growing towns and cities.

Our efforts to analyze the importance of legislation builds on the work of previous scholars, principally Julian Hoppit (1996), who counts all acts passed by Parliament between 1660 and 1800 in ten categories: personal, government, finance, law and order, religion, armed services, social issues, economy, communications, and miscellaneous. We extend his research in three ways: chronologically, by analyzing all acts passed from the early seventeenth century through the early nineteenth century; methodologically, by encoding the actions authorized by each act (such as authorizing the sale of property) and other details as a vector of variables

amenable to quantitative analysis; and topically, by focusing on acts that altered rights to property and facilitated the provision of public goods.

Our analysis has implications for the literature on English economic and institutional history. A debate exists about the consequences of the political events of the seventeenth century, particularly the Civil War and Glorious Revolution. Some scholars argue that Parliament's ascendance constrained government's behavior and increased the security of property rights (North and Weingast, 1989). Other scholars argue that Parliamentary ascendance led to an expansion of military spending and an increase in taxation (O'Brien, 1988). Our database demonstrates that after the Glorious Revolution, Parliament's behavior changed. Parliament passed an increasing volume of legislation that reformed individuals' and organizations' rights. These reforms loosened constraints on landowners, facilitated the reallocation of resources to higher-value uses, encouraged the improvement of infrastructure, and facilitated the provision of public services.

The remainder of this essay corroborates our observations and discusses their significance. Section 1 describes our sources, our methods for compiling the evidence into a database suitable for quantitative analysis, and issues important for judging empirical work based upon this unique source. Section 2 examines aggregate trends in legislation. Section 3 discusses estate, statutory authority, and enclosure acts in detail. Section 4 examines correlations between the timing of Parliamentary legislation, political events, and economic development in seventeenth and eighteenth century England. Section 5 discusses the implications of the evidence. Parliament's reform of property rights appears to have played a role in the process of development preceding the Industrial Revolution.

1. Data Sources and Methods

The House of Lords is the principal repository for historical information on acts of Parliament. The House of Lords' maintains a catalogue, *Portcullis*, which indicates the title, calendar year, regal year, and parliamentary session for all acts passed since the early sixteenth century.² For acts passed before 1798, *Portcullis* indicates whether the act was public or private; for acts passed after 1798, *Portcullis* indicates whether the act was public or local/personal.³

The titles contained within *Portcullis* were first published in two nineteenth century compilations of Parliamentary legislation, entitled the *Statutes of the Realm* (Great Britain, 1963) and the *Statutes at Large* (Great Britain, 1807). The titles were created by clerks of Parliament, during the passage of the original legislation, and written on the exterior of the roll of parchment containing the full text of the act. The title summarized the act, usually in a concise paragraph containing enough information for the clerks to identify the act amidst thousands of similar pieces of parchment, without opening the rolls to read the full acts.

We convert the title of every act into a vector of variables. The conversion's initial stage separates acts from the pre-1798 period according to their judicial characteristics (i.e. public or private) and acts from the post-1798 period according to their scope of application (i.e. public or local/personal). The second stage separates the acts into four groups: estate acts, enclosure acts, statutory authority acts, and all other acts. The third stage further separates these groups of acts

² <http://www.portcullis.parliament.uk>

³ The pre-1798 distinction between public acts and private acts referred to the type of documentation required in legal cases. Parties at law had to present to the court authorized copies of private acts in order to have the provisions of the act applied in the case. Public acts were considered to be part of the public record and applied in all cases without the need to submit them as evidence. The post-1798 distinction between public acts and personal or local acts pertained to the scope of the legislation. A public act created a law of general application throughout the jurisdiction in which it is proposed. A personal or local act affected only a single person, group, or locale, which is named within the act.

into sub-categories with similar structures and purposes. We identify eight sub-categories of estate acts and twelve subcategories of statutory authority acts.

Identifying acts in these classes is straightforward. Parliament standardized procedures for writing acts in the categories on which we focus. Clerks possessed templates from which they wrote the initial acts and standard procedures for converting final versions into summaries written on the exteriors of rolls. For example, the title for all acts that settled the property of an estate onto an individual began, “An act for settling the estate ...”.⁴ The title for all acts that authorized the sale of property from an estate began “An act for the sale of ...”, “An act for effecting the sale of ...”, or “An act for selling ...”.⁵ The title of all enclosure acts begins with phrases such as ‘an act for enclosing the common fields’ lying in a certain county, parish, and village.⁶

After separating acts into subcategories, algorithms are used to extract additional information. The initial stages of the algorithms determine the actions authorized by the acts and the persons and places acted upon. Later stages of the algorithms parse into separate variables the names and ranks of the individuals involved, identify relationships between these individuals (such as kinship), determine the location of property mentioned in the act, and ascertain the types of property involved in the transaction. The consistency of form and function within subcategories makes it relatively straightforward to extract the relevant information.

⁴ See for example, Parliamentary archive reference number HL/PO/PB/1/1707/6&7An26.

⁵ See for example HL/PO/PB/1/1710/9&10An47, HL/PO/PB/1/1809/49G3n399, and HL/PO/PB/1/1809/49G3n208. Note that in acts of all types, minor variations in the use of articles exists.

⁶ In these acts, as in all English writing of the time, the spelling of enclosure varies, often beginning with the letter i. The acts often also begin with statements about allotting and dividing, such as “An act for dividing, allotting, and inclosing ...”, which can be found at HL/PO/PB/1/1779/19G3n209.

Applying these algorithms is a time-consuming process.⁷ We apply the initial stages to all acts. We apply the later stages only to a random sample of estate, enclosure, and statutory authority acts. The samples for estate and statutory authorities exclude small numbers of unique or miscellaneous acts. Our sampling procedure ensures that for each act, the probability of entering the sample is 20%. The randomness and density of the sample ensure that our inferences reflect patterns for the entire population. As our research progresses, the sample size will expand. Eventually, we plan to encode all acts.

Examples should clarify our procedures. Consider an act that falls within our random sample. We begin with two pieces of information.

- 1) A reference number from the House of Lords Record Office:
“HL/PO/PB/1/1741/15G2n48.”
- 2) A descriptive clerical summary: “An Act to empower Henry Earl of Carlisle to make Leases of Coal Mines and Coal Works, lying within his settled Estates in the County of Northumberland, for any Term not exceeding ninety nine Years.”

In addition to indicating where the documents can be found in Parliament’s archives, the reference number reveals that the document was a *private act*, originally written by the clerks in the House of Lords, passed by Parliament during the fifteenth year of the reign of George II (1741). Our encoding procedures use this information to determine the era of the act (pre-1798), the judicial status of the act (private), the general type of the act (estate), and the specific subcategory of the act (empower). We then apply an algorithm specifically designed to decipher clerical descriptions of empowering acts. The algorithm determines who was empowered (Henry

⁷ The following details give a sense of the time and effort involved. The principal investigators for this project corroborate when creating these algorithms. One takes the lead creating an algorithm for a subcategory. They test the algorithm by encoding dozens of acts to determine if it accurately extracts the desired information. Then, the other investigator examines the algorithm to ensure that it works as intended. Then, the investigators write detailed descriptions of the algorithm and teach student research assistants in their application. The investigators (cont.)

Earl of Carlisle), his social position (Earl), the action that he was empowered to take (make leases for any term not exceeding ninety-nine years), the property over which this new power extended (coal mines and coal works lying within his settled estates), and the location of that property (Northumberland). We enter all of this information into a series of cells on a row of a spreadsheet. Each row of the spreadsheet pertains to a single act of parliament. The columns of the spreadsheet contain the same type of information for every act.

If the previous act did not fall within our 20% random sample, our procedures would describe the act in less detail. Our database would indicate that this was a private act, passed in 1741, that empowered someone to change something about a settled estate.

Our algorithms extract similar information for statutory authorities. In addition, we distinguish between acts that created new infrastructure and acts that reauthorized or amended previous acts. In 1794, for example, Parliament passed

An Act for making and maintaining a Navigable Canal from and out of the Canal Navigation from Manchester to or near Ashton under Lyne and Oldham in the County Palatine of Lancaster, at the intended Aqueduct Bridge in Dukinfield in the County of Chester, at or near to Chapel Milton in the County of Derby; and a Communication by Rail Ways or Stone Roads from thence to Load's Knowl, within Peak Forest in the said County of Derby; and a Branch from and out of the said intended Canal to Whaley Bridge in the said County of Chester.⁸

In 1800, Parliament passed

An Act for altering and amending an Act passed in the thirty fourth Year of the Reign of His present Majesty, for making and maintaining the Peak Forest Canal; and for granting to the Company of Proprietors of the said Canal further and other Powers.⁹

and assistants work together, applying the algorithms, clarifying the written instructions, devising new procedures to handle unexpected cases, and double-checking each others work.

⁸ HL/PO/PU/1/1794/34G3n27

⁹ HL/PO/PB/1/1800/39&40G3n114.

The first Act authorized the construction of a navigable canal. The second Act amended the previous act, providing “further and other powers” to the proprietors.

While completely encoding all legislation passed by Parliament will take a considerable period of time, our initial encoding of all acts and our detailed encoding of 20% of all estate and statutory acts reveals trends of interest to historians and social scientists. We illuminate these patterns by reporting the annual number of acts that changed rights to property and/or authorized the provision of new infrastructure and public services. These time series could, of course, conceal as much as they reveal, particularly if the scope, scale, and nature of the legislation changed over time.

For this reason, we visited the House of Lords Record Office and examined samples of original acts from the beginning (1610s), middle (1700s, 1740s, and 1780s), and end (1800s) of our sample period. Our examination revealed that the estate, enclosure, and statutory authority acts passed by Parliament during this period possessed salutary statistical properties. For example, estate acts were standardized in form and content. They described the property that was affected, the individuals involved, and the rights that were changed. The effects were localized in time and space. Similarly, a statutory authority act created an organization and endowed it with rights to be used to improve a particular piece of infrastructure or a particular public service. These properties ensure that counting the number of acts passed annually reveals broad trends in the amount of property being affected by the acts; the types of rights being created, altered, or annulled by the acts; and the effort that Parliament put into passing the acts.¹⁰

¹⁰ We recognize there is heterogeneity in the details of the acts, such as the lengths of leases, terms of sale, and governance structure of statutory authorities. However, we focus on general features of the legislation, for which our methods are efficacious.

Our study focuses on the years between 1600 and 1815 for several reasons.¹¹ The seventeenth century encompasses a series of political transformations – the reign of Stuart monarchs and their policy of centralizing power in the hands of the King, the Civil War, the Interregnum, the return of the Stuarts, and the Glorious Revolution of 1688-89 – which, according to many scholars, set the stage for the economic transformations of the eighteenth century. The eighteenth century experienced tremendous growth in the number of acts passed by Parliament. The last decades of our period experienced the peak in the annual number of acts. The Great Reform Act of 1832 dramatically changed the structure and functioning of Parliament. Thereafter, the quantity of legislation declined for several decades and then fluctuated around a level roughly 15% below the peak. Finally, our period covers two centuries during which England’s economy underwent a series of transformations – increasing international trade, rising agricultural productivity, growing urban population, expanding manufacturing sector – that preceded the Industrial Revolution. The long-run goal of our project is to illuminate the links between legislation and these economic, social, and political transformations.

2. Growing Volume of Legislation

Scholars have long recognized that the eighteenth century witnessed a rapid rise in the volume of legislation. Our database confirms that Parliament passed increasing numbers of acts during this period. Figure 1 illuminates the trend. The figure plots two series. The first, ‘acts per session,’ indicates the number of acts passed in years when Parliament met. The series has no values in years when Parliament was not in session. The second series, ‘annual number of acts,’

¹¹ Our coverage of the time period is complete with one exception. Our database does not include legislation passed during the interregnum following the regicide of Charles I in 1649 and lasting until the restoration of Charles II in 1660. We have begun collecting and encoding legislation passed those eleven years, which (cont.)

is an eleven-year moving average of acts per year. From 1500 to 1640, the latter lies below the former, because in many years, Parliament was not in session, and no acts were passed.¹² The figure shows that the annual number of acts passed by Parliament rose after 1688, peaked in the early 1800s, and fluctuated at a high level thereafter. What types of acts drove this growth in legislation?

Table 1 answers this question. Between 1600 and 1815, one-quarter of all acts were statutory authorities. One-sixth were estate acts. One-sixth were enclosure acts. More than one-half of all acts fell into these three categories.

Figure 2 shows trends in statutory authority, estate, and enclosure acts over this period. From 1600 to 1688, Parliament passed few estate, statutory authority, and enclosure acts. Most of what Parliament did pass was ‘other’ types of legislation. These other acts dealt with a wide array of issues, such as government finance, regulation, foreign trade, and colonies. From 1688 to 1720, the number of estate acts rose as did their share, 43%, of all legislation. Statutory authority acts also rose in numbers. The share of other legislation declined, but remained over 30% of all acts throughout the eighteenth century. A sizeable share of this other legislation consisted of private acts affecting individuals, such as naturalizations, divorces, and name changes. From 1720 to 1750, the number of estate acts declined slightly, as did their share of all legislation, but Parliament continued to pass significant numbers of estate acts for the next two centuries. The number of statutory authorities increased as did their share of all legislation. The number of enclosure acts remained small. After 1750, the number of statutory authorities rose

encompass the Commonwealth and the Protectorate of Oliver Cromwell. Our preliminary examination of this evidence indicates that it is consistent with the arguments advanced in this essay.

¹² Modern scholars have many options when plotting moving-averages of time series. An array of kernel-smoothing techniques allows scholars to specify tradeoffs between variance and trend, to determine optimal bandwidths, and to derive a variety of moving averages. We examined a wide array of smoothed series. All of (cont.)

rapidly as did their share of all legislation. Statutory authorities accounted for 27% of all legislation during the decades of initial industrialization. The number and share of enclosure acts also grew rapidly. Their growth was the largest among all types of legislation.

3. Acts Affecting Property Rights and Public Goods

This section delves into the details of estate, statutory authority, and enclosures acts. These categories encompassed over half of all legislation passed between 1688 and 1815. These categories possessed a common theme. All affected individuals' and organizations' rights. Some created new rights. Others altered or annulled old rights. Some created new organizations, such as turnpike trusts. Others disbanded existing organizations, in many cases, ancient entities, such as village councils and manorial courts.

3.1 Estate Acts

Estate acts affected individual and family estates. Estate acts arose from an English system of inheritance that solidified around the Civil War of the 1640s and prevailed for several centuries: the strict settlement. During this period, most of the great landowners held most of their land under settlement. Lesser gentry and yeoman families also employed the legal device, even on single family farms. While estimates vary, at the peak, at least one-quarter and as much as three-fourths of land in England was strictly settled (English and Saville, 1983, pp. 11-12, 30. See also Habakkuk 1994).

A settlement was a generic name for a property transaction and for the documents created in its consummation. The goal of a settlement was to preserve a family's estate for future generations. Settlement deeds contained six common elements. The *premises* listed the names,

them portray the same basic pattern. So, we decided to present data averaged by with the most transparent approach.

occupations, and ranks of the parties involved, including the trustees. The *recitals* and *testatum* described the property to be settled and the purpose of the settlement. The *habendum* contained the trusts imposed upon the property, such as jointures (payments to widows) and portions (payments to younger children). Then *entails* set out the order of succession, established life-estates for living heirs, and established a series of fee tail estates for unborn heirs. The *powers* described what the life tenants and trustees could do with the estate (English and Saville, 1983, pp. 19-21).

Three features of settlements generated a need for Parliamentary involvement in personal and family estates. First, without an act of Parliament, no part of a settlement could be changed until a person named in the entail as tenant in tail came of age; only then, joining his father or other life tenant, could the entail be ended by the legal process of common recovery, and only then could the settlement be rewritten. This fact meant that a settlement could be changed only infrequently, at intervals of decades or longer, as a family waited for an heir to come of age (i.e. reach 21) before his father passed away, and the father and son had to reach an agreement on restructuring the estate. With life expectancies in the low forties, families usually waited generations for this confluence of events.

Second, settlements restricted the uses to which land could be put. The reason for these restrictions was protecting the rights of future heirs. The holder of a settled estate (who was just a life tenant) could not grant leases lasting beyond his life and could not grant leases from which he benefited at the expense of his successors (such as leases in which tenants paid lump sums up front in return for concessions). If he did, he committed fraud, and the leases would be void. The holder of a settled estate could not sell, exchange, or mortgage the property. If he completed such transactions, he could be held liable for damages to the estate, and the transaction could be

voided, because he had no power to transfer title. Similarly, the holder of an estate could not alter the property, even if he considered the alterations to be an improvement. The removal of trees, hedges, and buildings, the opening of new mines, quarries, and peat bogs, and the conversion of arable lands into pasture (or vice versa) could be considered waste. All those who benefited from such actions could be liable for damages, if upon inheriting an estate, the successor claimed to have been harmed by the acts. Sales, exchanges, mortgages, improvements, and long-term leases could only be undertaken if the *powers* section of a settlement contained specific clauses authorizing such actions. Settlements written in the seventeenth and early eighteenth centuries seldom provided such powers. As the eighteenth century progressed, settlements became increasingly sophisticated, and tended to provide broader powers to estate holders.

Three, conducting transactions and enforcing contracts on settled land could be costly, uncertain, and insecure. Settlements were long, complex documents, traditionally unpunctuated, and full of repetition.¹³ Interpreting settlements required experience, skill, detailed knowledge of the document, and a large library of property laws, precedents, and legal texts estimated at 674 volumes in 1826 (English and Saville, 1983, p. 18). Settlements were not part of the public record. Copies of the deeds were usually held by the settlers, trustees, and lawyers. Settlements had to be consulted before taking out mortgages, drawing up leases, or completing sales, because if the settlement did not specifically authorize a transaction, the transaction could be voided. Ambiguities in settlements often deterred individuals from acting on estates; for fear that the transactions would be disputed by successors.

As the number of strict settlements rose during the second half of the seventeenth century, an increasing number of petitioners approached Parliament. Private acts could remedy

almost any difficulty arising in the management of a settled estate. During the last decade of the seventeenth century, Parliament standardized procedures for processing these bills. Estate bills were introduced in the House of Lords and refereed by two peers. Those deemed beneficial to the parties involved were publicly read three times, sent to a committee, passed through both houses, and then sent for royal assent. The procedure was rapid. A bill could pass in a matter of weeks. The process was quicker, cheaper, and more certain than the alternative, a suit in Chancery Court (English and Saville, 1983, p. 50).

The procedures for processing estate bills employed templates for standard types of transactions. Our research identifies the eight most common forms. Table 2 lists the names that we give to these forms, the number passed by Parliament during the centuries that we study, and their relative frequency among estate acts.

The typical *vesting act* contained five elements. It granted (i) some property, right, or benefit, which had been a portion of (ii) someone's settled estate, (iii) to someone else, (iv) for some reason, and in some circumstances (v) in exchange for some property or asset. In about half of all cases, the person vested was a trustee. For example, an act from 1702 vested "certain lands and tenements of Montague Earl of Abingdon, in trustees, to be sold" and the proceeds employed in the purchase "of other lands of equal value" to be employed "to the same uses, as the lands to be sold are limited."¹⁴

The typical *enabling act* contained three elements. Parliament enabled (i) someone, (ii) to do something, (iii) for some reason. An example from 1725 enabled "Charles Lowndes Gentleman and the persons in remainder after him to make contracts for getting brick earth in,

¹³ The fact that until the Conveyancing Act of 1881, solicitors were paid for conveyances by the word (1s for every 72 words in 1862), did not encourage conciseness (England and Seville, 1983, p. 18).

¹⁴ HL/PO/PB/1/1702/13&14W3&1As1n33

and grant building leases of the house and ground called Spring Garden, and other the ground called Great Spittlefield and Little Spittlefield.”¹⁵ An act in 1788 enabled Charles Earl Camden to grant “building leases of the prebendal lands at Kentish Town, in the County of Middlesex.”¹⁶

The typical *act authorizing sale* contained four elements. Parliament authorized the sale (i) of something (usually land or a portion of an estate), (ii) by someone, (iii) for some reason, (iv) if certain conditions were met. For example, an act in 1725 permitted the “sale of several estates of Henry Grey Esquire, in the County of Southampton, and for settling other estates of equal value in the counties of Berk[shire] and Wilts[hire] to the same uses.”¹⁷ An act in 1773 authorized the sale of “certain charity estates” and the application of the proceeds to “the building of a town hall and shambles in the town of Newark upon Trent and in the purchasing of lands and hereditaments for enlarging the Church.”¹⁸

The remaining types of estate acts also had specific forms and functions. A *confirming act* legalized a transaction that had already taken place. *Acts for settling* resembled acts for vesting, although the acts for settling pertained almost exclusively to property which entered into a strict settlement. An *empowering act* authorized the holders of settled estates to engage in a wide variety of transactions including sales and leasing of land, the improvement of property, and the marketing of natural resources. An *act authorizing an exchange of property* authorized property within a settled estate to be exchanged for some other property, deemed equally able to fulfill the functions of the settlement. A *discharging act* discharged something (usually property or an estate), from a restriction, and often substituted something equivalent in its place.

¹⁵ HL/PO/PB/1/1725/12G1n35

¹⁶ HL/PO/PB/1/1788/28G3n132

¹⁷ HL/PO/PB/1/1725/12G1n66

¹⁸ HL/PO/PB/1/1773/13G3n179. A “shambles” is a slaughter-house or meat market.

In general, estate acts allowed the holders of settled estates – either a life tenant or trustees – to take some action that was restricted by the settlement. Estate acts authorized a wide variety of transactions including sales and long-term leasing of land, mortgaging of property, settling jointures upon spouses, cutting of old-growth timber, and sales of ores and minerals.

Our detail-coded 20% random sample enables us to estimate the number of estate acts that authorized property sales. The number exceeds the number for the subcategory ‘acts authorizing sales,’ because all types of acts could (and often did) enable the holders of settled estates to sell property. A ‘vesting act,’ for example, might vest in trustees the authority to sell land. A ‘confirming act’ might confirm a previously consummated sale. We construct our estimate by recognizing that whether or not an act in our sample authorized a sale is a binomial variable. An act either did or did not do so. Then, we group the acts into time periods in which we presume the share of acts authorizing sales was constant.

Table 3 presents the results of this exercise. Column (1) indicates the percentage of estate acts authorizing sales. Column (2) indicates the standard error of this estimate. The implication is that roughly half of all estate acts authorized sales. Selling property, in other words, was a principal reason for obtaining an estate act. Column (3) indicates the number of acts authorizing sales each year. Column (4) indicates the standard error of the estimate. The results show that before the system of strict settlement solidified in the middle of the seventeenth century, Parliament passed few acts authorizing property sales. The number rose rapidly after 1688, peaked during the opening quarter of the eighteenth century, and returned to this peak in the opening decades of the nineteenth century.

Our random sample also enables us to estimate the number of acts that authorized the leasing of land. Holders of settled estates could lease land for short periods of time, but leases

usually died with the life of the holder of the land. Authorization of leases for terms longer than life required specific permission in the deed of settlement or an act of Parliament. Table 4 presents our estimates, which are constructed using the same procedures as the previous table. Before 1688, the number and percentage of acts authorizing leases was statistically indistinguishable from zero. After 1689, the number of acts rose, peaking at three per year in the middle of the eighteenth century. The percentage remained roughly constant for the following century.

It seems clear that acts authorizing sales and leases had salutary economic effects. Freeing land from a restrictive property rights regime enhanced efficiency and encouraged investment. Freeing land from the shackles of the past enabled owners to exploit resources and embark on new projects. Estate acts loosened constraints on landowners, lowered transaction costs, and facilitated the reallocation of physical and financial assets to new and lucrative uses. The lowering of such barriers has long been considered a principal force propelling European economic progress (North, 1981).

The benefits of estate acts extended beyond the persons and property involved. Estate acts established precedents. Knowledge of what Parliament would decide when confronted with a case helped to resolve disputes within families, to safeguard the interests of investors, to determine the distribution of rents within ongoing business arrangements, and to prevent the holding-up of new projects by those seeking an inordinate share of the profits. The development of institutions solving such problems has long been considered to be one of the principal institutional innovations underlying modern capitalist economies (Williamson, 1981).

3.2 Statutory Authority Acts

Statutory authority acts facilitated the creation of new and the improvement of existing infrastructure and public services. Table 5 groups subcategories of statutory authorities by the issues addressed. One group of acts – road, canal, port, river navigation, bridge, and railway acts – facilitated the construction, improvement, and maintenance of transportation infrastructure. A second group of acts addressed the needs of Britain’s growing cities and towns. Urban improvement acts provided for street paving, water supply, marketplaces, and public squares as well as local police forces (i.e. street watch) and garbage collection (i.e. removal of nuisances and annoyances). Poor relief acts provided for the assistance to the poor and construction of workhouses. Court of small request acts established courts that dealt with credit contracts valued at less than 40 shillings. Government building acts created (or improved) jails (i.e. gaols), debtors’ prisons, courthouses, and county administrative offices (shire halls). A third group of acts addressed a wide array of issues. Drainage acts provided infrastructure, such as embankments, channels, and dams, needed to drain wetlands. Church acts funded the reconstruction and maintenance of churches and cemeteries.

Statutory authority acts created organizations to undertake these tasks.¹⁹ In most cases, these organizations were private, non-profit entities. For example, road, bridge, river, poor relief, drainage, port, court of small request, and church acts created trusts. Trusts were organizations without owners whose directors were enjoined to serve the public interests enshrined in the act. The board of trustees consisted of local landowners and merchants, who served without direct compensation. In some cases, the new organizations were for-profit entities. For example, canal

¹⁹ See Webb and Webb, 1963, for descriptions of the organizations established by statutory authority acts.

and railway acts created joint stock companies or corporations. Their directors were local landowners and merchants who owned shares of the organization.

Statutory authority acts granted rights to these new organizations. One of the most important was the right to levy user-fees or raise other types of revenue. Road acts (a.k.a. turnpike acts) gave trustees the right to levy tolls on road-users and claim labor (or the equivalent in taxes) from inhabitants along the road. The tolls marked a significant departure from the existing system, in which parishes paid for road improvements with local labor and property taxes, and in which individuals possessed the right of free passage, enshrined in most town charters and confirmed by the Magna Carta. Canal, river, port, bridge, and railway acts also introduced fees, and in some cases, replaced property taxes levied by municipalities and counties. Urban, drainage, poor relief, and church acts authorized the collection of taxes from groups of individuals and business, either in specific places or spanning multiple jurisdictions. Lighthouse acts authorized corporations which constructed lighthouses on particular plots of land to collect tolls from all ships which passed. The customs bureau collected the tolls. When ships docked in harbor, the captains completed forms indicating their ports of origin and arrival. The information revealed which lighthouses the captains had passed. A customs officer collected the lighthouse fees, and forwarded them to the appropriate organization.

Trustees or commissioners also received the right to issue debt and equity. In road, bridge, river, and port acts, the bonds could be secured by the tolls. If interest payments were not met, the bondholders had the right to seize the toll revenues. Canal and railway acts authorized both bonds and shares. Church acts authorized the issuance of annuities, some similar to tontines. All of these securities could be traded in secondary markets.

Statutory authority acts gave organizations the right to purchase land and defined procedures for doing so. The act authorized the authority to negotiate with landowners. If the parties could not agree on a price, the organization could appeal to a body of commissioners named in the act who could compel the landowners to sell. These procedures provided the legal origin for modern laws concerning eminent domain.

Statutory authority acts also placed limits on the powers of trustees and directors. For example, transportation infrastructure acts defined maximum schedules of tolls. The schedules distinguished different types of traffic and goods, which paid different rates. Similar schedules regulated the issuance of debt, the quantity of equity, and terms of interest.

Statutory authority acts could be amended or renewed by subsequent acts which clarified the rights and responsibilities of the organization. Canal acts were often amended in order to add branch lines or to increase the authorized capital. Road acts had to be renewed, since they expired after 21 years. These renewal acts often expanded the authority of trustees, by allowing them to manage roads over a broader area or altering the schedule of tolls.

Table 6 uses our detail-coded 20% sample to distinguish between new and follow-up acts. The tables' bottom row indicates that 58% of all statutory authority acts authorized the construction of new infrastructure, the improvement of existing infrastructure, the provision of new services, or the improvement of existing services. For example, 60% of all canal acts called for the construction of a navigable waterway where one did not exist before. Thirty-seven percent of all port acts authorized repairs and improvements to harbors, most of which had existed in some form since the Middle Ages. Twenty-seven percent of all urban improvement acts authorized the creation of a street watch, a local policing force combining the characteristics of a modern neighborhood watch and private security firm. Eighty-three percent of acts

concerning courts of small request established new venues for hearing small-debt suits among private citizens.

Table 6 shows that 42% of all statutory authority acts renewed or amended previous acts. A fraction of these acts simply extended the term of a previous act. Many, however, played a role in regulating statutory authorities. For example, acts renewing turnpikes often revised the schedule of tolls. A renewal act might require the turnpike trust to reduce tolls, encouraging the expansion of traffic. Alternatively, after the inflation of the early nineteenth century lowered the real value of tolls fixed in nominal terms, turnpike renewals increased the fees that turnpike trustees could charge, enabling them to service their debt and spend more on maintenance.

Figure 3 plots these patterns over time. The black line indicates the total number of statutory authority acts passed annually from 1600 to 1815. The gray line indicates the number of those acts that authorized the creation of new infrastructure, the improvement of existing infrastructure, the provision of new services, or the improvement of existing services. The difference between the two lines is the number of renewal and amendment acts in each year. The figure shows that before 1690, few acts authorized the creation or infrastructure. Between 1690 and 1750, the number of acts grew gradually. After 1750, the growth accelerated. Rapid growth continued until 1815, with some variation around the trend. Trends in renewal acts followed trends in initial acts by 21 years, largely reflecting the sunset clause included in turnpike charters.

This surge in statutory authorities coincided with two transcendent developments: urbanization and commercialization. Statutory authorities established the infrastructural and organizational prerequisites for these processes. Statutory authorities provided fresh water, garbage removal, aid to the indigent, forums for dispute resolution, and local police forces to

urban areas experiencing unprecedented expansion. Statutory authorities propelled the transport revolution underlying the expansion of domestic and international commerce. Canal companies enabled coal to reach expanding manufacturing centers, like Manchester, Liverpool, Birmingham, and Leeds. Turnpike trusts reduced freight charges and passenger travel times by widening, resurfacing, and maintaining major thoroughfares (Bogart, 2005). Harbor authorities increased the number and size of ships which could arrive in port, facilitating the expansion of international trade.

Statutory authorities also played a key role in capital formation during the early stages of the Industrial Revolution. In 1810, the value of capital raised by statutory authorities for canals, rivers, turnpikes, water works, docks, and gas lighting equaled 41 million pounds, or nearly 6.5% of the total capital stock, or nearly three times the combined value of England's three largest corporations, the East India Company, the Bank of England, and the South Sea Company (Harris 2000, p. 195).

3.3 Enclosure Acts

Enclosure acts changed rights to property, often in open-field agricultural villages. At the beginning of the eighteenth century, approximately one-quarter of the arable land in England lay in such villages, where residents shared rights to communal assets, such as water, pasture, and woods. Villagers also shared rights in the large open fields, which served as common pasture during fallow periods and as cropland during the growing season. The cropland was divided among the residents, who possessed the right to grow grain on acre-sized plots scattered throughout the fields and intermingled with those of their neighbors. Villagers managed these collective assets, such as the open arable fields, through village institutions, including customary laws and manorial courts.

Enclosure acts reorganized rights to property in open field villages, replaced collective ownership of common resources with individual ownership of particular plots of land, and replaced collective management through village institutions by individual management of personal estates. To obtain an enclosure act, a sufficient group (typically over four-fifths) of individuals possessing rights to land in a village drafted a petition giving notice of their intentions. The petition formed the basis for a bill of enclosure, which advocates submitted to Parliament. After public debate, Parliamentary approval, and royal assent, the bill became an enclosure act.²⁰

An enclosure act appointed a commission, usually consisting of three to twelve members, depending on the amount of land involved, to implement the terms of the act. The commission employed surveyors to draw a map of the village with its open fields and strips, tofts and crofts, waste and pasture, and other physical features. The surveyors recorded the holders of rights to all of these assets. At a series of public meetings, landholders advanced claims as to what they should receive under the new arrangements. The commissioners decided on the validity of these claims. After they made their decisions, the surveyors created a map of the new village, displaying the new features, such as fields, roads, fences, and irrigation channels, and the owners of each.

Our preliminary examination of enclosure acts indicates that commissioners were authorized to undertake a combination of three typical tasks: allotting, dividing, and enclosing. Our 20% random sample shows that these actions were authorized in 24%, 67%, and 95% of enclosure acts respectively. The authority to divide appears to be the power to draw the boundaries of fields on the new village map. The authority to allot appears to be the power to

²⁰ In 1801, the first General Enclosure Act simplified the administration of enclosure bills by providing guidelines (cont.)

determine which of the villagers received which of the new parcels. The authority to enclose appears to be the authority to ensure that villagers contributed to the construction of the infrastructure, such as fencing, paths, roads, and water channels, required by the reorganization of the village.²¹

The effects of enclosures have been studied by many scholars. Some consider enclosure to be a catalyst for increasing agricultural productivity. Enclosures enabled farmers to introduce new crops, to improve livestock, to react flexibly to market opportunities, and to reduce overgrazing of the commons (Mark Overton, 1998). Other scholars, such as Robert Allen (1992) and Gregory Clark (1998), find the effects of enclosure limited. After enclosure, new crops, like turnips and clover, were often introduced, but these innovations had little measurable impact on agricultural productivity. Land rents increased, but only to a limited extent, particularly after considering the costs of enclosure.

Our examination of the evidence finds that enclosure acts permanently reorganized rights to property in agricultural villages, as previous scholars argued. Enclosure acts, however, had additional functions which have received less scholarly attention. Some enclosure acts authorized the irrigation of arable land. Other acts authorized the embanking and drainage of wastes and fens. Many enclosures acts brought new land into cultivation. Others transferred crop-land to new uses. An example is the transfer of arable and pasture land to urban and industrial uses, particularly within and on the outskirts of rapidly growing towns and cities.

4. Legislation, Politics, and Growth

for those drafting enclosure bills and parameters for permissible outcomes.

²¹ In the previous paragraph, we have been careful to include the caveat *appears* because the terminology changes over time. The procedures for processing enclosure acts evolved rapidly during the second half of the eighteenth century. (cont.)

In this section, we examine the links between legislation and political changes, as well as the connections between legislation and economic growth. The surge in legislative activity that began in the 1690s followed some of the most dramatic events in British political history: the Restoration of 1660 and the Glorious Revolution of 1689. In the early 1600s, the Stuart monarchs, King James I and King Charles I, attempted to overturn English political tradition, and impose an absolute monarchy which ruled by divine right, rather than a kingship which ruled with the consent of the aristocracy, as enshrined in the Magna Carta. James I and Charles I argued with Parliament over taxation, religion, foreign policy, the prerogatives of the monarch, and the limits of their powers. As part of their strategy to weaken their opponents, James I and Charles I seldom called Parliament into session.

This attempt at personal rule ended when Parliamentary forces defeated the Stuarts during the Civil War. In the conflict, King Charles I lost his head, and a republican government temporarily reigned. The Protectorate of Cromwell did not last. In 1660, the rule of the Stuarts was restored, and Charles II became king. Instability reemerged during the 1670s and 1680s. In 1685, the accession of James II destabilized the nation because many believed that he would make England a Catholic and Absolutist country, like France and Spain. His reign ended with the Glorious Revolution of 1688, when William of Orange invaded England. James II fled, and Parliament agreed that William & Mary would become the new king and queen. As part of the deal, William agreed to the Declaration of Rights, which gave Parliament the right to convene each year and determine the length of its sessions, and required the monarch to consult Parliament on legislative matters. The reign of King William and Queen Mary lasted from 1689

The General Enclosure Act of 1801 standardized terminology, but variation reoccurs quickly, which may be one reason Parliament passed a second General Enclosure Act in 1836 and a third in 1845.

to 1714. This period served as a transition between the struggles of the Stuart era (1603-1688), and the stability of the early Hanoverian era (1714-1760).²²

The long-run effects of the Restoration and the Glorious Revolution have been extensively debated by historians and social scientists, but there has been little study of the impact of these political events on legislation pertaining to property rights, estates, infrastructure, and public goods.²³ Figure 4 illustrates the relationship between these events and the number of acts passed by Parliament. Parliament passed few acts during Parliament's struggles with the Stuarts from 1601 and 1640. After the Restoration, legislative activity increased, but the expansion did not last. During the 1670s, the number of acts fell sharply. After the Glorious Revolution, the number of acts rose rapidly, particularly the number of estate and statutory authority acts. The number of acts continued to rise throughout the following century. In sum, the Glorious Revolution coincided with a major change in legislation concerning property rights and public goods.

The growth in the number of acts after the Glorious Revolution stemmed from two sources: Parliament met for more days each year, and Parliament passed more acts per day. Table 7 shows the average annual days in session and the number of acts passed per day of session during the reign of each between 1603 and 1800. During the reign of William & Mary, the average annual number days in session was 121, at least three times large as during the reigns of James I, Charles I, Charles, and James II. The principle reason for the increase was that prior to the Glorious Revolution, Parliament sat at the Crown's request. The King decided when a

²² See Hoppit (2000) for an analysis of this transitional period in British political history.

²³ See North and Weingast (1989) and O'Brien (1994) for a discussion of the Glorious Revolution and British economic growth.

session of Parliament began and when the session ended. The Stuarts called Parliament infrequently and for short periods. This made it difficult to pass acts.

Table 7 also indicates that legislative productivity increased after the Glorious Revolution. The number of acts passed per day in session increased from an average of 0.32 under the Stuarts, to 0.55 under William & Mary, to 1.24 under the Hanoverians. The increasing productivity of Parliament could be due to several factors, including procedural developments, changing views on the nature of legislative authority, the political enlightenment, the emergence of political parties, the preponderance of the landed and mercantile interests, less interference by the Crown, and changes in popular views about government. In future work, we plan to investigate these factors.

Is there any evidence that the rise in legislative activity affected economic development in this period? A correlation exists between the passage of acts affecting property rights and public goods and many measures of economic progress. Figure 9 plots one of these correlations. It shows an eleven-year moving average of the number of acts authorizing sales, leases, new infrastructure, and new public services and an eleven-year moving average of the growth rate of the Crafts-Harley index of industrial production (1992). The two series are correlated. Both accelerate over time. After 1750, the growth in acts seems to lead the growth in industrial production by approximately 10 years. The correlation is consistent with our view that by reducing transaction costs, removing constraints on factor markets, increasing investment in infrastructure, and encouraging the provision of public services, legislation reforming property rights contributed to economic growth.

5. Conclusion

The expansion of Parliamentary legislation after 1689 consisted largely of acts with a common theme. The acts affected individuals' and organizations' rights. Some created new organizations, such as transportation authorities. Others disbanded old organizations, such as open-field villages. The preponderance of these acts loosened constraints on the use of resources, expanded the range of contracts that could be written, facilitated investment in infrastructure, and expanded the provision of public services.

Antecedents existed to this legislation. Before 1688, Parliament passed laws related to estates, enclosures, infrastructure, and public services. Parliament attempted to reform the landholding system. But, these acts were rare. After 1689, passing legislation pertaining to these topics became one of Parliament's principal tasks. Parliament's clerks and members spent as much time and effort on acts reforming property rights as all other types of legislation combined. The novelty of this legislation was not the idea of addressing these issues, but the scope, scale, and effectiveness of Parliament's endeavors.

This finding suggests a new interpretation of governments' role in English economic development. After the political turmoil of the seventeenth century, Parliament became a forum for changing property rights in ways which encouraged economic growth. Parliament's efforts provided the flexibility needed to react to economic opportunities arising from the opening of the Americas, the expansion of trade, and technological progress. Parliaments' role was unique among European legislatures. No other nation possessed such a forum, with the exception of the Dutch Republic, whose estates operated at the provincial, rather than the national, level. No other nation pursued such a sustained campaign of reform. In most other nations – including all of those with which Britain competed for European hegemony during the seventeenth and

eighteenth centuries – the process of transforming the medieval into the modern system of landholding was long delayed and tore the country apart. Examples include the French and Russian Revolutions. In sum, Parliament’s reforms of property rights may have been one reason behind British economic ascendance.

What general lessons can be drawn from this study? Ronald Coase argues that in the presence of transaction costs, attaining economic efficiency requires the proper definition and allocation of property rights. “The Problem of Social Cost” argues that in the nineteenth century, English common and statutory law recognized these principles and allocated property rights to encourage efficiency (Coase, 1960). “The Lighthouse in Economics” argues that Parliament’s creation of statutory authorities and the introduction of user-fees was an effective way of structuring property rights to encourage the provision public goods (Coase, 1974). Our research shows that Parliament began to operate in the way that Coase described in the early eighteenth century. Our research will enable us to go beyond the concepts introduced by Coase and to understand the economic, political, and social forces that led Britain to develop institutions that promoted efficiency.

Hernando de Soto (2000) asks why capitalism triumphs in the west and fails everywhere else. He concludes that in developing and former communist nations, the property-rights system prevents citizens from converting assets, which they hold in abundance, into capital, the medium of the modern market economy. At some point in the past, de Soto conjectures, Western nations adopted property-rights systems that unleashed the productive power of capital. Much about that process has been forgotten. Because it contains lessons for improving the lives of billions living in societies lacking capital, “that history must be recovered (De Soto, 2000, p. 8).” In that history, our essay illuminates a crucial event. After 1689,

Parliament operated as a forum for modernizing property-rights. The modernization was voluntary, effective, peaceful, and permanent. The process possessed the properties of the politically practicable mechanism for creating capital that De Soto seeks. The history of the property-rights revolution in Britain may, therefore, contain important lessons for modern times.

Table 1: Principal Categories of Acts, 1600-1815

	Number of Acts	Percentage of Total
Statutory Authority	4,856	23.4
Estate	3,335	16.1
Enclosure	3,682	17.8
Other	8,839	42.7

Source: Database of Acts of Parliament.

Table 2: Subcategories of Estate Acts, 1600-1815

	Number of Acts	Percentage of Estate Acts
Vest	989	30.2
Enable	808	24.7
Sale	391	11.9
Confirm	220	6.7
Empower	129	3.9
Settle	109	3.3
Exchange	101	3.1
Discharge	53	1.7
Other	475	14.5

Source: Database of Acts of Parliament.

Table 3
Acts Authorizing Property Sales

	Share of Estate Acts Authorizing Sales		Number of Acts Authorizing Sales, Annual Average	
	E(%) (1)	SE(%) (2)	E(sales) (3)	SE(sales) (4)
1601 to 1640	0.33	0.14	0.50	0.20
1660 to 1688	0.59	0.09	3.28	0.48
1689 to 1700	0.45	0.08	8.33	0.63
1701 to 1725	0.56	0.05	10.80	0.54
1726 to 1750	0.52	0.06	7.60	0.44
1751 to 1775	0.42	0.05	8.40	0.41
1776 to 1800	0.47	0.05	8.00	0.43
1801 to 1815	0.48	0.06	11.33	0.67

Source: Database of Acts of Parliament, 20% random sample.

Notes: E(%) indicates our estimate of the share of estate acts authorizing sales. SE(%) is the standard error of that estimate. E(sales) indicates our estimate of the average annual number of estate acts authorizing sales. SE(sales) is the standard error of that estimate.

Table 4
Acts Authorizing Property Leases

	Share of Estate Acts Authorizing Leases		Number of Acts Authorizing Leases, Annual Average	
	E(%) (1)	SE(%) (2)	E(lease) (3)	SE(leases) (4)
1601 to 1640	0.00	0.00	0.00	0.00
1660 to 1688	0.03	0.03	0.17	0.17
1689 to 1700	0.18	0.06	1.38	0.44
1701 to 1725	0.08	0.03	1.38	0.47
1726 to 1750	0.12	0.04	1.55	0.48
1751 to 1775	0.18	0.04	3.10	0.66
1776 to 1800	0.19	0.04	2.76	0.62
1801 to 1815	0.15	0.04	1.90	0.53

Source: Database of Acts of Parliament, 20% random sample.

Notes: E(%) indicates our estimate of the share of estate acts authorizing leases. SE(%) is the standard error of that estimate. E(sales) indicates our estimate of the average annual number of estate acts authorizing leases. SE(sales) is the standard error of that estimate.

Table 5: Subcategories of Statutory Authority Acts, 1600-1815

	Subcategories	Number of Act	Percentage of Stat. Auth. Acts
Transportation	Road	2,692	55.5
	Canal	255	5.3
	Port	248	5.1
	River Navigation	188	3.9
	Bridge	168	3.5
	Railway	24	0.5
	Subtotal Transportation	3,575	73.8
Cities and Towns	Urban Improvements	553	11.4
	Poor Relief	153	3.2
	Courts of Small Request	83	1.7
	Government Buildings	57	1.2
	Subtotal Towns and Cities	846	17.5
Other	Drainage	123	2.5
	Churches	198	4.1
	Miscellaneous	114	2.3
	Subtotal Other	435	8.9
Total		4,856	100

Source: Database of Acts of Parliament.

Note: Percentages may not sum due to rounding.

Table 6: Statutory Authority Acts Authorizing New or Improved Infrastructure and Services, 1600-1815

Subcategory	Action of Act	Number of Acts	Percent of Subcategory	
<u>Transportation</u>				
1	Road	Create or improve roadways	1,373	51
1.1		Construct new road	242	9
1.2		Repair and resurface road	1,184	44
1.3		Widen road	592	22
1.4		Turn or Alter road	81	3
2	Canal	Construct canal	153	60
3	Port	Construct or improve ports	124	50
3.1		Build or repair harbor	92	37
3.2		Build or repair pier	52	21
3.3		Build or repair docks	37	15
4	River Navigation	Improve navigability of waterways	117	62
5	Bridge	Construct or improve bridges	97	58
<u>Cities and Towns</u>				
6	Urban Improvements	Create/improve urban infrastructure or services	426	77
6.1		Cleanse, water, light, or pave streets	337	61
6.2		Street watch	149	27
6.3		Remove nuisances and annoyances	160	29
6.4		Supply fresh water	50	9
6.5		Move or construct marketplace	39	7
7	Poor Relief	Improve poor relief	89	58
7.1		Build Workhouse	41	27
7.2		Better Relief of Poor	64	42
8	Courts	Create court of small requests	69	83
9	Government Buildings	Construct or improve government infrastructure	43	75
9.1		Build or Repair Gaol or Debtors Prison	38	66
9.2		Build or Repair Shire Hall or Court House	19	33
<u>Other</u>				
10	Drainage	Drain wetlands and protect against inundation.	84	68
10.1		Draining land	37	65
10.2		Embanking land	9	16
Overall percentage of acts creating or improving infrastructure or public services.			58	

Source: Database of Acts of Parliament, 20% random sample.

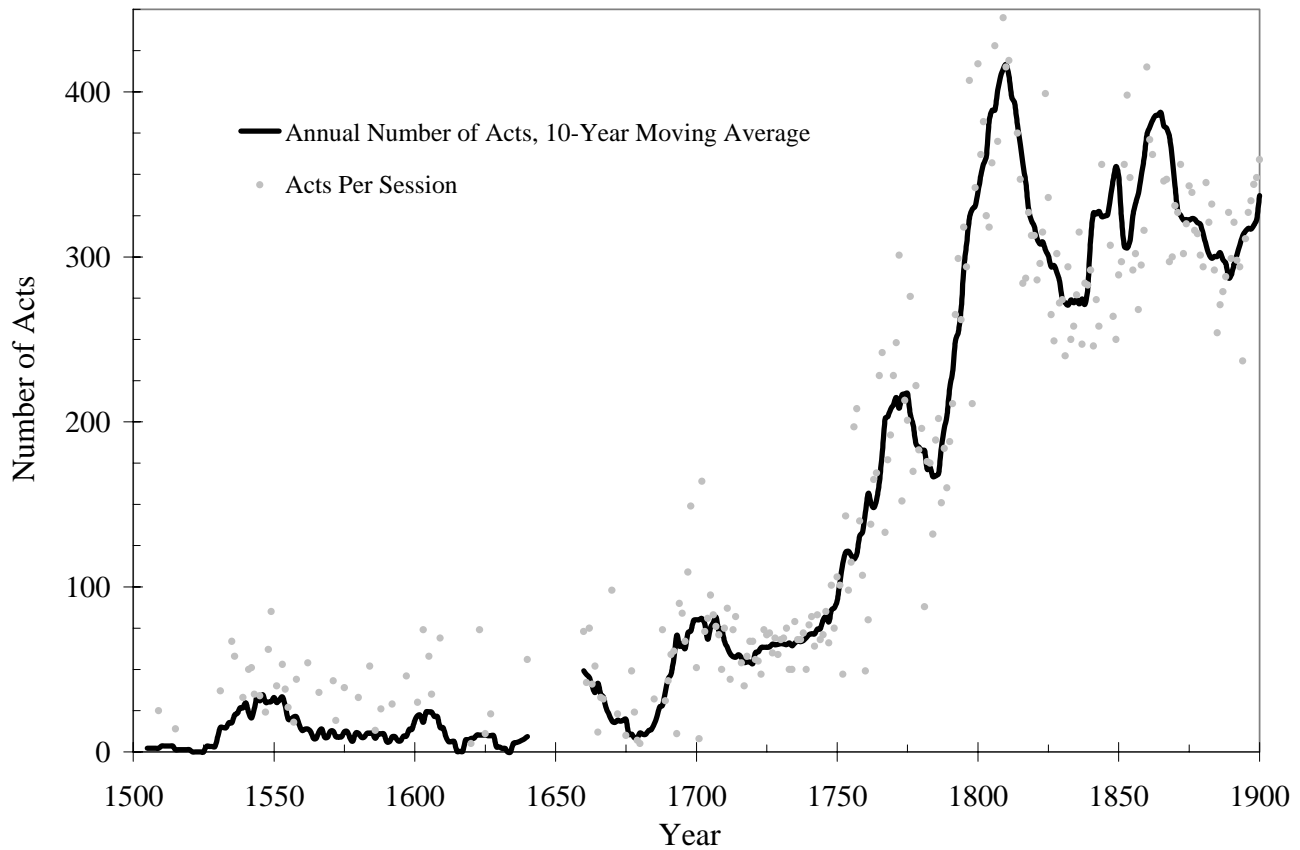
Table 7: Session Length and Parliamentary Productivity, 1603-1800

Monarch	Dates	Average Annual Days in Session	Acts Passed Per Day in Session	Acts Passed Per Year
James I	1603-1624	28	0.51	14
Charles I	1624-1641	42	0.12	5
Charles II	1660-1685	43	0.35	15
James II	1685-1688	13	0.59	8
William & Mary	1689-1714	122	0.55	67
George I and II ^(a)	1714-1760	106	0.73	77
George III ^(b)	1760-1800	107	1.95	209
Stuart Dynasty ^(c)	1603-1688	36	0.32	12
Post-Stuart Reigns ^(d)	1689-1800	110	1.08	119

Sources: Database of Acts of Parliament, Journals of the House of Commons, and Hoppit (1997).

Notes: (a) Our source reports these figures for the combined reigns of George I and George II. (b) George III's reign lasted until 1820. Our sources contain data only up to the year 1800. (c) The Stuart Dynasty included the reigns of James I, Charles I, Charles II, and James II. (d) The post-Stuart reigns included those of William and Mary and the Hanoverian monarchs, George I, George II, and George III.

Figure 1
Acts Passed by Parliament, 1500 to 1900

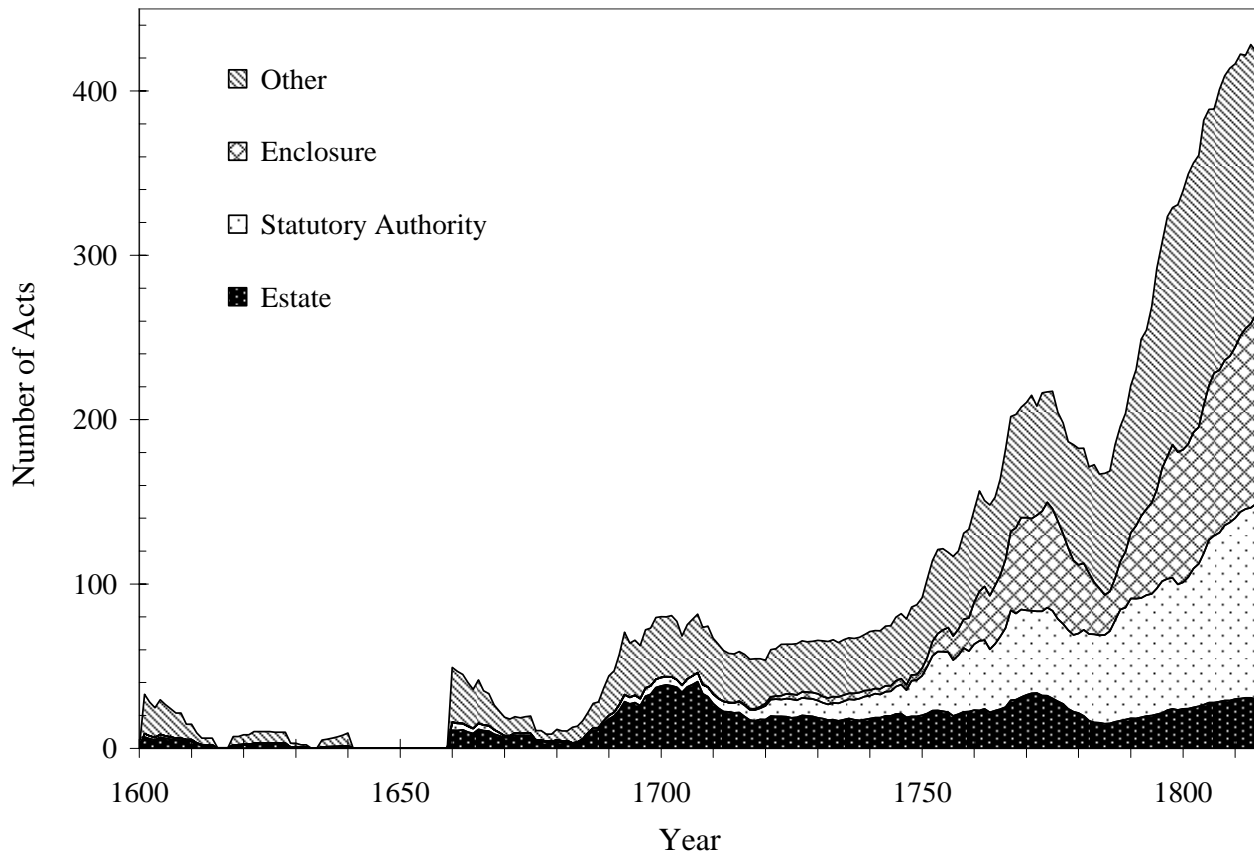


Sources: See text.

Notes: Denote as A_t the number of acts passed in year t . The series 'acts per session' equals A_t if $A_t > 0$. The series 'annual number of acts' is an eleven-year moving average. The formula for the moving average is:

$$\bar{A}_t = \left(\sum_{i=-5}^5 A_{t+i} \right) / 11.$$

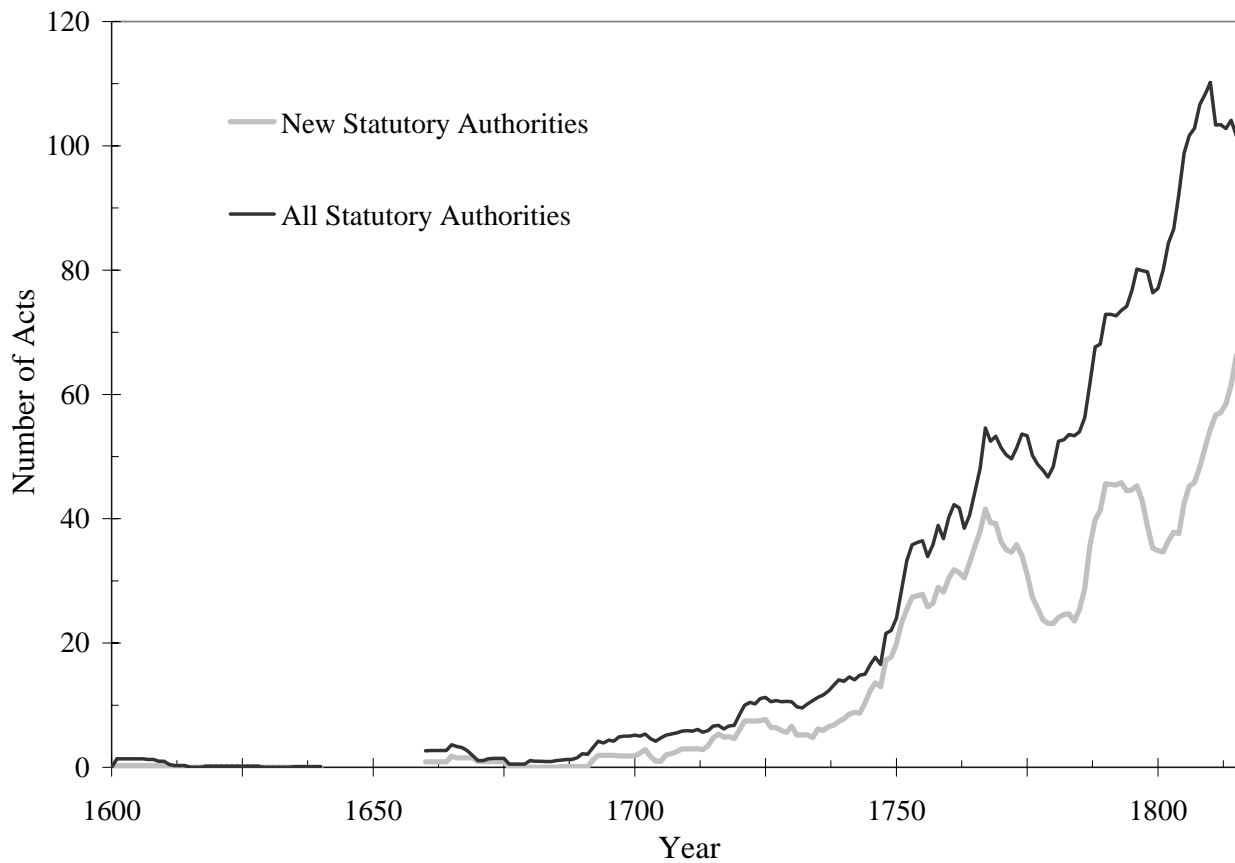
Figure 2
Four Categories of Legislation, 1600 to 1815



Source: Database of Acts of Parliament.

Notes: The plotted series are eleven-year moving averages of the raw data.

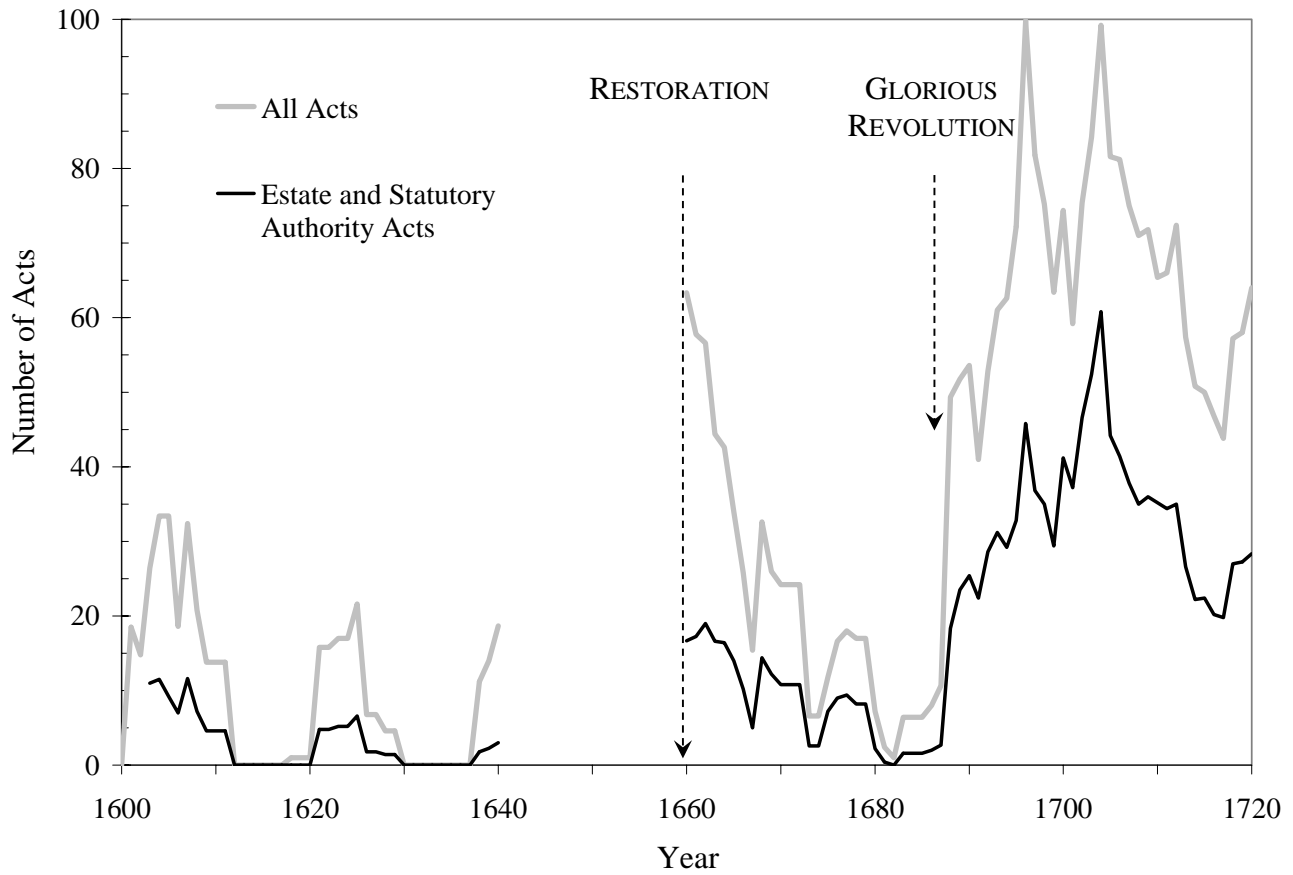
Figure 3
New and Continuing Statutory Authority Acts, 1600 to 1815



Source: Database of Acts of Parliament.

Note: The plotted series for 'all statutory authorities' is an eleven-year moving average of the total number of statutory authority acts. The plotted series for 'new statutory authorities' is an eleven-year moving average of our annual estimate of the number of new statutory authorities, based on our 20% detail coded sample.

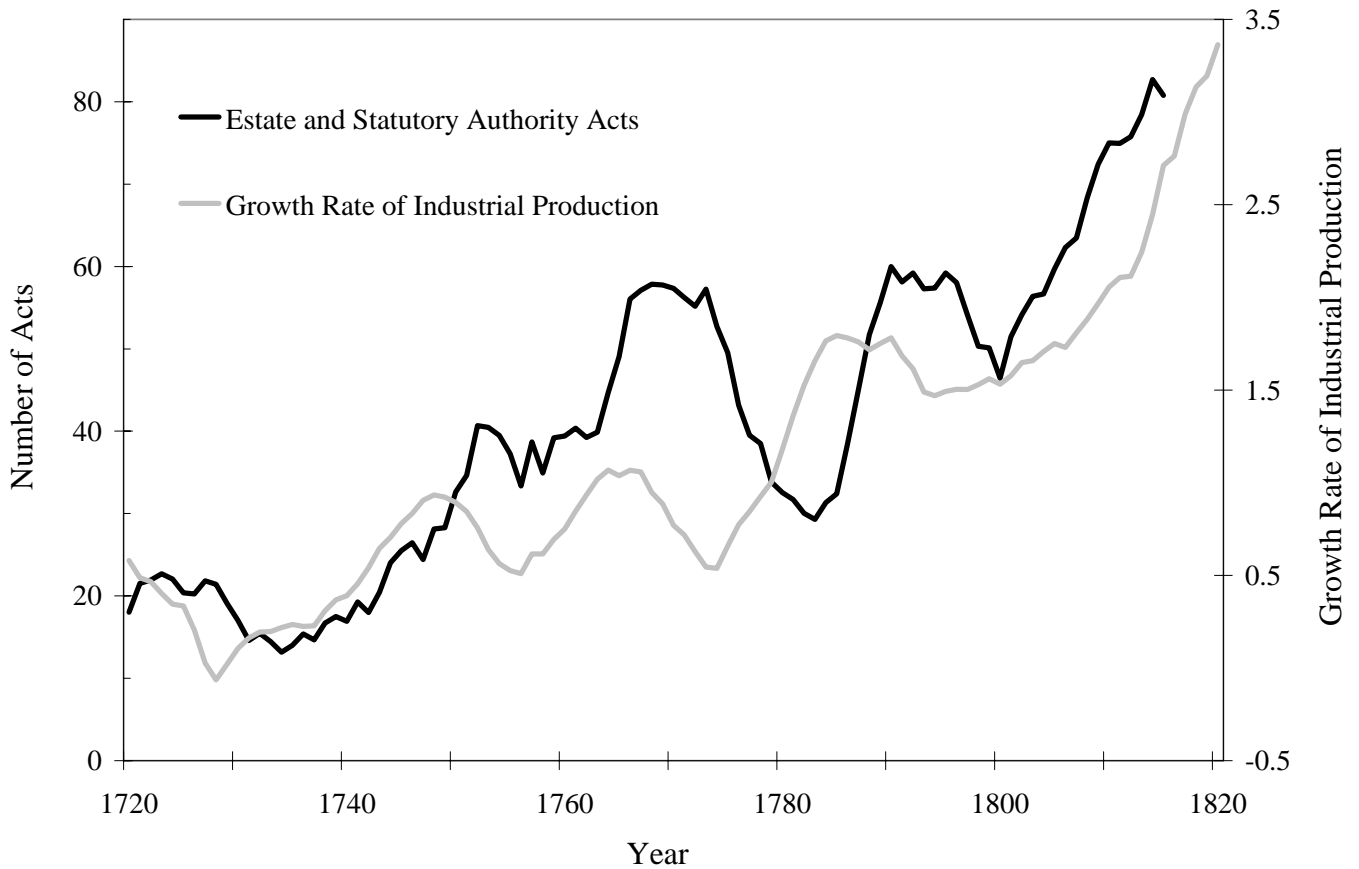
Figure 4
 Acts of Parliament and Political Events, 1600 to 1720



Sources: Database of Acts of Parliament.

Notes: The series above are 5-year moving averages of the raw data over three periods: 1600 to 1640, 1660 to 1687, and 1688 to 1720.

Figure 5
 Acts of Parliament and Economic Growth, 1720 to 1820



Sources: Database of Acts of Parliament and Crafts and Harley (1992).

Notes: The series 'estate and statutory authorities' is an 11-year moving average of the sum of our estimates of the number of statutory authority acts authorizing the construction of new infrastructure and the provision of new services plus the number of estate acts authorizing sales plus the number of estate acts authorizing leases. The series 'growth rate of industrial production' is an 11-year moving average of growth rates of the smoothed Crafts-Harley index beginning in 1720.

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