Supplementary Content for "Design and Evolution in Institutional Development: The Insignificance of the English Bill of Rights", by Peter Murrell

This file of Supplementary Content contains four elements:

 An extended version of "Table 1: Precedent and Survival in the Clauses of the Bill of Rights "
 An extended version of "Table 2: Precedent and Survival in the Clauses of the Act of Settlement".

3. An extended version of "Table 3: Data series: definitions, sources and summary statistics"

4. The "Methodological Appendix: Estimating structural breaks in growth rates"

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"William and Marybe declared king and queen of England"	There was a Parliamentary role in the replacement of Monarchs in 1327, 1399, 1483, 1485, 1649/1660. ² The Divine Right of Kings had fallen with Charles I's head. ³ William was effectively King well before this measure was passed, as a result of successful invasion, popular support, and the flight of James II. Parliament's role in successions was already assumed by all, using the precedents of 1399 and 1660. ⁴	Act of Settlement, 1701, reaffirmed Parliamentary role in determining succession.	

Full Version of Table 1: Precedent and Survival in the Clauses of the Bill of Rights

³ McIlwain (1910, p.109, p.352)

¹ 'William and Mary, 1688: An Act declareing the Rights and Liberties of the Subject and Setleing the Succession of the Crowne. [Chapter II. Rot. Parl. pt. 3. nu. 1.]', Statutes of the Realm: volume 6: 1685-94 (1819), pp. 142-145. URL: http://www.british-history.ac.uk/report.aspx?compid=46322 Date accessed: 11 July 2009.

² 1327: Parliament forces Edward II to abdictate the throne; 1399: Richard II forced to resign by Henry IV and Parliament declares a vacancy and legislates on the successor; 1483: Parliament plays a role in declaring Edward V to be illegitimate and endorsing Richard III; 1485: Henry VII calls on Parliament to endorse his accession formally; 1649: Parliament removes Charles I; 1660: Parliament's role fundamental in the restoration.

⁴ Horwitz (1977, pp. 6-8). The precedent of 1399 was important in the parliamentary debates, since Richard II was viewed has having resigned the crown and government and thus allowed Parliament to declare a vacancy, in a situation with rough parallels to 1689. (Cherry 1956, p. 399)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"all and every person and persons that is, are or shall be reconciled to or shall hold communion with the see or Church of Rome, or shall profess the popish religion, or shall marry a papist, shall be excluded and be for ever incapable to inherit, possess or enjoy the crown and government of this realmthat every king and queen of this realm [shall] make, subscribe and audibly repeat the declaration mentioned in the statute made in [1678]"	Acts of 1673 and 1678 established this condition for Parliament and monarch's servants. ⁵ The Act of 1673 caused the resignation from government of James Duke of York, later James II, and so set precedent for this clause of the Bill of Rights, ⁶ which extended that Act to monarch. The declaration by the monarch was that he/she was not a Catholic and was to be understood (using the phrasing from the 1678 Act) in the "plain and ordinary sens of the wordsas they are commonly understood by English protestants" ⁷ This declaration originates in measures of the Long Parliament in 1643. ⁸	Act of Settlement, 1701, reinforced Parliament's right to use religion to set the line of succession. ⁹ This clause has survived until today, with attempts at change only arising in the twentieth century. ¹⁰ Repeal of marriage bar suggested in 2009. ¹¹	The most innovative of all the measures in the Bill. ¹² The converse of the doctrine of <i>cuius regio</i> , <i>eius religio</i> , ¹³ dominant in Europe until that time, but effectively not applicable in England by 1688. Three previous elections (1679- 1681) had each led to a Commons majority that favored such a law. ¹⁴ The act mentioned in this clause is "An Act for the more effectual preserving the king's person and government by disabling papists from sitting in either House of Parliament" of 1678. ¹⁵

⁸ Maer (2009, p. 9)

⁹ Maer (2009)

¹⁰ Maer (2008); Maer (2009)

¹³ Jones (1992, p. 29)

¹⁴ Miller (1992, p.60)

⁵ Test Acts (1673, 1678); Maer, (2009, p. 9).

⁶ Carruthers, (1996, p. 44)

⁷ Maer (2009, p. 4)

¹¹ See Royal Marriages and Succession of the Crown (Prevention of Discrimination) Bill, 2009-08

¹² Jones (1992, p.29); Horwitz,(1977); Morris (1998 p. 25)

¹⁵ Refers to Test Act of 1678; see Statutes of the Realm (1819b)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That the pretended power of suspending the laws or the execution of laws by regal authority without consent of Parliament is illegal."	As early as 1392, the Commons rejected Richard II's use of suspension. ¹⁶ Controversial uses in the Stuart period focused only on religious issues. Judges in 1662, 1673, and 1688 questioned the legality of the suspending power even in religious matters. ¹⁷ In 1673 Charles II accepted that he had no right to suspend laws affecting property, rights, or liberties. ¹⁸ In 1663 and 1673 the Commons asserted that statutes could only be suspended by statute, and Charles did not challenge this and did not try to suspend again after 1673. ¹⁹ At that time, Charles acknowledged that his attempt to suspend was illegal. ²⁰ James II did not claim that he had a right to the suspending power. ²¹	Unquestioned acceptance.	Suspending never viewed as above common law property rights; it could not be used in dispute between two citizens; it could not be used to raise revenues. ²² "neither Charles nor James revived the prerogative devices used by their father to raise money without Parliament's consent." ²³ By the time of the Restoration settlement, 1660, "The king could now raise money only in ways approved by Parliament and Englishmen would possess all the rights accorded by the common law." ²⁴ "Charles II and James II, in turn, repeatedly gave assurances that they would never invade their subjects' property." ²⁵

- ¹⁷ Kenyon (1966, p. 40, p. 402, p. 424), Edie (1985, p. 217, p. 222)
- ¹⁸ Jones (1992, p. 15); Kenyon (1966, p. 409)
- ¹⁹ Kenyon (1966, p. 402); Miller (2000, p. 165)
- ²⁰ Maitland (1931 p. 305).
- ²¹ Schwoerer (1981, p. 64) ; Miller (2000, p. 165)
- ²² Edie (1985, p.199), Maitland (1931 p. 180).
- ²³ Jones (1992, p. 15)
- ²⁴ Miller (1992, p. 56)
- ²⁵ Nenner (1992, p. 92).

¹⁶ Maitland (1931, p. 306).

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That the pretended power of dispensing with laws or the execution of laws by regal authority, as it hath been assumed and exercised of late, is illegal; [late additions to the Bill] no dispensation by <i>non obstante</i> of or to any statute or any part thereof shall be allowedexcept a dispensation be allowed of in such statute Provided that no charter or grant or pardon granted before the three and twentieth day of October in the year of our Lord one thousand six hundred eighty-nine shall be any ways impeached or invalidated by this Act"	Pragmatic tool developed to solve practical problems quickly when Parliaments met irregularly. 1584 case: King could not dispense Common Law. ²⁶ 1602 Case of Monopolies: dispensing could not negate intent of statute. ²⁷ 1662: Parliament refused to give Charles II general dispensing power, even on religious issues. ²⁸ In 1662, Parliament prevented dispensing by naming an act as a public nuisance in a statute, thus invoking old law, since a nuisance is a <i>malum in se</i> . ²⁹ 1674 case: Courts confirmed that Parliament can stop dispensing by declaring something a <i>malum in se</i> . ³⁰ 1674 case: courts confirmed that dispensing could not take away a private right. ³¹ 1686 case: dispensing power ruled legal for religious penal laws. ³² Widespread agreement that the King had right to dispense occasionally on religious matters. ³³	Some uncontroverial violations. A controversial one occurred in 1766, when George III dispensed a law while Parliament was out of session in order to lessen civil disorder over grain prices. When Parliament was next in session, it continued George's measures while declaring dispensing illegal. This was no more than a restatement of the Bill of Rights. ³⁴	Since the dispensing power only allowed the King to forgo penalties assigned in statutes specifically to the King's discretion, ³⁵ the dispensing power was not relevant to taxing, spending, and property rights. Common law property rights could not be dispensed. ³⁶ Dispensing could not be used in dispute between two citizens. ³⁷ King could not dispense statutes for the public good, and could not license activities specifically defined as harms by a statute. ³⁸ Charles II and James II used dispensing only to pardon punishments for religious acts. ³⁹ Notably, Parliament used its funding power to block attempts of Elizabeth I, James I, Charles I, and Charles II to dispense. ⁴⁰
²⁶ Edie (1985, p. 202)			
²⁷ Edie (1985, p.207)			
28 Kanyon (1066 n 402); Edia (1085 n 217)			

²⁸ Kenyon (1966, p. 402); Edie (1985, p. 217)

²⁹ Edie (1985, p. 218)

³⁰ Edie (1985, p. 225)

³¹ Edie (1985, p. 226)

³² Schwoerer (1981, p. 62 – 63); Edie (1985, p. 227)

³⁶ Schwoerer (1981, p. 60); Edie (1985, p. 199)

³⁷ Schwoerer (1981, p. 60)

³⁸ Edie (1985, p. 199)

³³ Kenyon (1966, p. 402)

³⁴ Lawson (1986, p. 33).

³⁵ Edie (1985, p. 199)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That the commission for erecting the late Court of Commissioners for Ecclesiastical Causes, and all other commissions and courts of like nature, are illegal and pernicious"	Clause refers to a Commission of James II, whose authority rested on statutes of 1559, 1641, and 1661. ⁴¹ There was no basis in previous law to stop the monarch from administering religious matters. In fact, this clause did not change the legal authority of the monarch. ⁴² Constraints on the authority of the Commissions were stated in an Act of 1641 and confirmed in an Act of 1661 and this clause did not change the constraints. ⁴³	The only effect of the clause was to stop the use of special commissions as constructed by James. The overall authority of the monarch in religious matters has lasted into modern times. ⁴⁴	James' Commission was purely relevant to religious issues and was not a "court." It issued only ecclesiastical penalties and acted within existing law, if not existing accepted practice. ⁴⁵
"That levying money for or to the use of the Crown by pretence of prerogative, without grant of Parliament, for longer time, or in other manner than the same is or shall be granted, is illegal"	Sovereignty over taxation was an undoubted ancient right of Parliament. ⁴⁶ Established for extra-ordinary taxation in 1297. ⁴⁷ "before the middle of the fourteenth century it was definitely illegal for the king to impose a direct tax without the consent of parliamentbefore the end of the fourteenth century the contest [on indirect taxation] was at an end." ⁴⁸ Neither Charles II or James II challenged this right of Parliament. ⁴⁹ In the reign of Charles II, the Commons jealously protected its sole powers by rejecting Lords' attempts to amend money bills. ⁵⁰	Unquestioned acceptance.	In debates on the Declaration of Rights, an argument against making the Declaration more ambitious was that Parliament could at a later date use its ultimate control over revenues to obtain what it needed. ⁵¹

³⁹ Schwoerer (1981, p 59)

⁴¹ Act of Supremacy (1559), Act Abolishing the Court of High Commission (1641), Ecclesiastical Commission Act (1661). See Stephenson and Marcham (1937).

⁴² Schwoerer (1981, p. 65)

⁴³ Stephenson and Marcham (1937).

⁴⁴ The pertinent elements of the Act of Supremacy are still in force. See UK Statute Law Database (2009a)

⁴⁵ Schwoerer (1981, p. 65)

⁴⁶ Prestwich, (1990, p. 5-6)

⁴⁷ Roseveare (1969, p. 30-31)

⁴⁸ Maitland (1931, p. 180)

⁴⁰ Schwoerer (1981, p. 61-62)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That it is the right of the subjects to petition the king, and all commitments and prosecutions for such petitioning are illegal"	A right that dated back to Magna Carta. ⁵² Petitioning was a major element of politics from the middle ages to Stuart times, and was encouraged by the monarch. ⁵³ Petitions were so common under Charles II that legislation was passed to organize the process. ⁵⁴ The pivotal Seven Bishops Trial of 1688 was partially concerned with the right to petition and that right was upheld. ⁵⁵	Unquestioned acceptance.	

⁴⁹ Schwoerer (1981, p. 66-69).

⁵⁰ Kenyon (1966, p. 413)

⁵¹ Horwitz (1977, p. 86)

⁵² Clause 61. Medievil Sourcebook (2009)

⁵³ Hoyle (2002). The UK National Archives (2009) retains images of 17,000 petitions presented between the reigns of Henry III and James I.

⁵⁴ Schwoerer (1981, p. 70)

⁵⁵ Schwoerer (1981, p. 69-70); Nenner (1992, p. 114)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That the raising or keeping a standing army within the kingdom in time of peace, unless it be with consent of Parliament, is against law"	Standing Army unknown until 1645. ⁵⁶ Charles II obtained limited permission early in the Restoration Parliament to keep a standing army—it had to be paid from his own resources. ⁵⁷ Nevertheless, one of the articles of impeachment of Clarendon in 1667 was that he counseled the raising of a standing army. ⁵⁸ During the late 1670's, Parliament objected even to Charles' small army and passed the Disbanding Act, which reduced it to a very small force, with a size determined by Parliament. ⁵⁹ Parliament exerted extremely detailed control over the disbanding process. ⁶⁰ James II built a larger standing army. Parliament refused James funding for his standing army, which led him to prorogue Parliament, which did not meet again in his reign. ⁶¹	This clause did not restrict armies outside the kingdom or in times of war. The monarch still had the right to declare war. ⁶² William had his own Dutch guard 1689-1699. ⁶³ In 1697, he defied a Parliament vote to reduce the army's size. ⁶⁴ In 1698 he defied parliament and kept many more troops than they had voted. ⁶⁵ The crisis of 1697-9 resulted in a standing army monitored by Parliament. ⁶⁶	In the crisis of 1697-9, William could have vetoed a bill for disbanding the army, could have dissolved parliament, or could have enlisted the support of the Lords to defeat the bill. ⁶⁷ It was Commons control over the purse that was the critical factor in enforcing this provision, not the legal position created by the Bill of Rights, <i>per se.</i> ⁶⁸ "It should be noted that what hampered the King's subterfuge was his inability to pay." ⁶⁹ The mechanism of controlling the size of the army was, therefore, exactly the same as under Charles II and James II, notwithstanding this clause.
⁵⁶ Schwoerer (1974, p. 2)			
⁵⁷ Miller (1992, p. 57); Schwoerer (1974, p. 72)			
⁵⁸ Hallam (1827, p. 441)			
⁵⁹ Schwoerer (1974, p. 121-132)			
⁶⁰ Kenyon (1986, p. 363)			
⁶¹ Schwoerer (1974, p. 143-45); Horwitz (1977, p.	4)		
⁶² Horwitz (1977, p. 87)			
⁶³ Schwoerer (1966, p. 91-3)			
⁶⁴ Schwoerer (1966, p. 86-7)			

⁶⁵ Schwoerer (1966, p. 87)

⁶⁶ Dickinson (2002, p.473-474)

⁶⁷ Jones (1992, p. 33)

⁶⁸ Macaulay (1915. p. 287-9) "No good would have been done by rejecting the bill for disbanding the troops, unless the King could have been furnished with the means of maintaining them; and with such means he could be furnished only by the House of Commons."

⁶⁹ Schwoerer (1966, pp. 88)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That the subjects which are Protestants may have arms for their defence suitable to their conditions and as allowed by law" ⁷⁰	Essentially restates existing law as a right, but in restricting to Protestants, lessened existing rights. The wording "as allowed by law" connects the measure to previous legislation. ⁷¹ For example, "suitable to their conditions" implies a restriction to certain classes, as embodied in the Game Act of 1671. ⁷²	In debates on the Game Act of 1693, Parliament decisively rejected a clause that would have allowed all Protestants to keep muskets. ⁷³ Blackstone interprets the right as only existing when law fails to control an oppressive government. ⁷⁴ Protests throughout the 18 th century on restrictions on guns make it clear that the right was not general. ⁷⁵	
"That election of members of Parliament ought to be free"	The Statute of Westminster of 1275 stated "because elections ought to be free, the King commandeththat no Manshall disturb any to make free Election." ⁷⁶ 1604 case: Commons was in charge of its own elections. ⁷⁷ Held as an undoubted right in the reign of Charles II. ⁷⁸	The Statute of Westminster is still in force. ⁷⁹	
⁷⁰ Schwoerer (1981, p. 74)			
⁷¹ Schwoerer (1981, p.74)			
⁷² Schwoerer (1981, p.78)			
⁷³ Schwoerer (1981, p.78)			
⁷⁴ Blackstone (1769, Book 1 Chapter 1)			
⁷⁵ Schwoerer (2000, p. 51-55)			
⁷⁶ Statute of Westminster, The First (1275). UK St	atute Law Database (2009d)		
⁷⁷ Fritze and Robison (p. 212-213)			
⁷⁸ Jones (1992, p.14), Schwoerer (1981, p.79-82)			

⁷⁹ Statute of Westminster, The First (1275). UK Statute Law Database (2009d)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That the freedom of speech and debates or proceedings in Parliament ought not to be impeached or questioned in any court or place out of Parliament"	Right recognized by Henry VI in 1455. ⁸⁰ Legislated in 1512, including immunity against suit and protection against punishment. ⁸¹ Fully recognized in Elizabethan times and confirmed by James I. ⁸² Reaffirmed by Parliament in 1661 and the courts in 1668, the latter pronouncing that "words spoken in Parliament cannot be dealt with out of Parliament". ⁸³	1512 act still in force. ⁸⁴ "In 1624 James I had permitted the House of Commons free speech on all subjects. Since then every attempt at direct interference had failed." ⁸⁵	
"That excessive bail ought not to be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted"	"Excessive bail" fills gaps left by the Habeas Corpus Act of 1679, ⁸⁶ which itself reflected elements of Magna Carta. ⁸⁷ Right to bail historically established, but left to judges' discretion. ⁸⁸ Restrictions on punishment date from time of Magna Carta and were embodied in statutes in 1553 and 1641. ⁸⁹ Culmination of centuries of legal developments. Best viewed as correcting defects in existing law	Bills of Attainder still possible. Suspension of Habeas Corpus only one month after the adoption of the Declaration of Right. ⁹⁰ Suspended again twice in 1689, and then in 1696, 1708, 1715, 1722, 1745, 1794, 1798-1801, and 1817. ⁹¹	

⁸⁰ See Stephenson and Marcham (1937) on the petition of Thomas Young.

⁸⁶ The full text of the Habeas Corpus Act of 1679 can be found online at Statutes of the Realm (1819a)

⁸⁸ Schwoerer (1981, p. 88)

⁸⁹ Schwoerer (1981, p. 91-92)

⁸¹ Privilege of Parliament Act 1512. UK Statute Law Database (2009b)

⁸² Elton (1989) pp 341-342; Hulme (1956, p. 853).

⁸³ The Act referred to is the Treason and Seditious Practices Act (Schwoerer, 1981, p. 82-83). Mummery (1978 p. 281)

⁸⁴ Privilege of Parliament Act 1512. UK Statute Law Database (2009b)

⁸⁵ Hulme (1956, p. 853).

⁸⁷ Schwoerer (1981, pp. 87-92), Clauses 36, 38, 39, and 40 of the Magna Carta are relevant for Habeas Corpus. Clause 36: Nothing in future shall be given or taken for a writ of inquisition of life or limbs, but freely it shall be granted, and never denied. Clause 38. No bailiff for the future shall, upon his own unsupported complaint, put any one to his "law," without credible witnesses brought for this purpose. Clause 39. No freeman shall be taken or imprisoned or disseised or exiled or in any way destroyed, nor will we go upon him nor send upon him, except by the lawful judgment of his peers or by the law of the land. Clause 40. To no one will we sell, to no one will we refuse or delay, right or justice. Medievil Sourcebook (2009)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That jurors ought to be duly impanelled and returned, and jurors which pass upon men in trials for high treason ought to be freeholders"	Only element that was not an ancient right was the insistence on freeholder juries for treason cases. ⁹²	Unquestioned acceptance.	The Treason Act of 1695 was vastly more important in constraining the government's use of treason trials.
"That all grants and promises of fines and forfeitures of particular persons before conviction are illegal and void"	Such grants and promises were " condemned by medieval statutes and denounced as illegal by distinguished lawyers." ⁹³ A restatement of existing law, settled in the early seventeenth century, although there had been violations. ⁹⁴	Did not prevent the monarch (or his agents) from seizing property before conviction. At best, made seizures less efficient and less attractive.	Issue was solely whether the King could grant the pre-conviction seizure right in treason cases to others. Outlawed 'farming' of pre-trial property seizures.
"And that for redress of all grievances, and for the amending, strengthening and preserving of the laws, Parliaments ought to be held frequently."	Ordinances of 1311 said that Parliament should meet yearly. ⁹⁵ Yearly parliaments legislated in 1330—legislation that has never been repealed, meaning that yearly meetings of parliaments were in fact legally required. ⁹⁶ The Triennial Act of 1642 dictated parliaments meet every three years. Re-affirmed by Triennial Parliaments Act of 1664. ⁹⁷ (Violated by Charles II in 1684 and James II in 1688.)	Parliaments have met every year since 1689, more often than envisaged by Parliament in 1689. ⁹⁸ With the Septennial Act of 1715, a recently elected parliament extended its life to seven years. ⁹⁹ Reduced to five years in 1911. ¹⁰⁰	"Frequently" makes this more vague than the Triennial Parliaments Act of 1664, which was superseded by the Triennial Act of 1694.

⁹⁰ Horwitz (1977, p. 21); Crawford, (1915)

91 Crawford (1915, p. 615). Emsley (1985, p. 825)

- ⁹² Schwoerer (1981, p. 94)
- ⁹³ Miller (1992, p. 82)
- ⁹⁴ Schwoerer (1981, p. 96)
- ⁹⁵ McIlwain (1910)

⁹⁶ Maitland (1931, p. 177-8)

- ⁹⁷ Kenyon (1966, p. 361)
- ⁹⁸Horwitz (1977, p. 88)

⁹⁹ UK Statute Law Database (2009c)

¹⁰⁰ UK Statute Law Database (2009c)

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o<u>http://www.statutelaw.gov.uk/content.aspx?LegType=All+Legislation&title=Privilege+of+Parliament+Act&searchEnacted=0&exten</u> <u>tMatchOnly=0&confersPower=0&blanketAmendment=0&sortAlpha=0&TYPE=QS&PageNumber=1&NavFrom=0&parentActiveTe</u> <u>xtDocId=1517759&ActiveTextDocId=1517759&filesize=17141</u> (Accessed July 11, 2009) UK Statute Law Database (2009c) "Septennial Act 1715 (c.38)"

http://www.statutelaw.gov.uk/content.aspx?LegType=All+Legislation&searchEnacted=0&extentMatchOnly=0&confersPower=0&bla nketAmendment=0&sortAlpha=0&PageNumber=0&NavFrom=0&activeTextDocId=1516478&parentActiveTextDocId=1516478&sh owAllAttributes=1&showProsp=0&suppressWarning=0&hideCommentary=1 (Accessed July 7 2009)

UK Statute Law Database (2009d). "Statute of Westminster, The First (1275) (c.5)"

http://www.statutelaw.gov.uk/content.aspx?LegType=Act+(Old+English+Parliament)&Year=1275&searchEnacted=0&extentMatchO nly=0&confersPower=0&blanketAmendment=0&sortAlpha=0&TYPE=QS&PageNumber=1&NavFrom=0&parentActiveTextDocId= 1517436&ActiveTextDocId=1517436&filesize=6634 (Accessed July 11, 2009)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"Princess Sophia, Electress and Duchess Dowager of Hanover,is hereby declared to be the next in successionafter His Majesty, and the Princess Anne of Denmark, and in default of issue of the said Princess Anne, and of His Majesty respectively[and then to] the heirs of her body, being Protestants"	Reinforced Parliament's use of religious criteria to set the line of succession.	Sophia's son became George I in 1714, from whom all subsequent English monarchs are descended.	

Full Version of Table 2: Precedent and Survival in the Clauses of the Act of Settlement

¹ The official name of the act is "An Act for the further Limitation of the Crown and better securing the Rights and Liberties of the Subject" Source for clauses is the Statutes of the Realm: Volume 7, 1695-1701 (1820) <u>http://www.british-history.ac.uk/report.aspx?compid=46986</u>, Date accessed: 09 July 2009

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That whosoever shall hereafter come to the possession of this Crown, shall join in communion with the Church of England, as by law established"	A further increment in the exclusion of Catholics from power. The Bill of Rights of 1689 extended to the monarchy previous legislation that had excluded Catholics from office, but the Bill did not mention communion, which had been a stipulation for all office holders in the Test Act of 1673. ² This clause extends that provision of that Test Act to the monarchy. The Coronation Oath Act 1688 had already stipulated that all future monarchs should swear an oath to "maintaine the laws of God the true profession of the Gospell and the Protestant reformed religion established by law". ³	William was a dissenter, and George I had not been raised as an Anglican. ⁴ Effective in 1714; implementation not certain until then. ⁵	

⁴ Morris (1998, p. 105)

² Maer (2009 p. 8)

³ Maer and Gay (2008 p. 3). See 'William and Mary, 1688: An Act for Establishing the Coronation Oath. [Chapter VI. Rot. Parl. pt. 5. nu. 3.]', *Statutes of the Realm: volume 6: 1685-94* (1819), pp. 56-57. URL: <u>http://www.british-history.ac.uk/report.aspx?compid=46292&strquery=Coronation</u> Oath Act 1688 Date accessed: 09 July 2009.

⁵ Applies to most clauses of the Act of Settlement, which states that a limitation of many aspects of its application is "after the death of His Majesty and the Princess Anne of Denmark, and in default of issue of the body of the said Princess, and of His Majesty respectively", which ex post meant 1714, but at the time was uncertain.

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That in case the Crownshall hereafter come to any person, not being a native of this Kingdom of England, this nation be not obliged to engage in any war for the defence of any dominions or territories which do not belong to the Crown of England, without the consent of Parliament."	A reaction to William's European wars in protection of the Dutch nation. ⁶ The Commons used the precedent of the Act for the Marriage of Queen Mary to Philip of Spain of 1554. ⁷	Effective in 1714; implementation not certain until then. Relevant only from 1714 to 1760. ⁸ By defending their own interests in Hanover, George I and George II were widely considered to be acting unconstitutionally, especially during 1717-18 and 1742-45. ⁹	Power over taxation was the way in which Parliaments could enforce this clause. This was needed because it was simply not clear what was a breach of this clause. ¹⁰
"That no person who shall hereafter come to the possession of this Crown, shall go out of the dominions of England, Scotland, or Ireland, without the consent of Parliament"	A reaction to William's absences. A similar clause was in the Ordinances of 1311, which were repealed in 1322. ¹¹	Effective in 1714; implementation not certain until then. Repealed in 1716. ¹²	George I requested repeal and then abused the freedom that it gave him, being absent for half of 1716, and again in 1719, 1720, 1723, 1725–6, and 1727. ¹³

⁶ Tarkow (1943 p. 546); Horwitz (1977 p. 283)

⁷ Horwitz (1977 p. 283); for the relevant portion of the Act, see Adams and Stephens (1916 p. 287).

⁸ George III and all subsequent monarchs were born in Britain.

⁹ Harris (2007)

¹⁰ Harris (2007)

¹¹ Prestwich (2005 p.178-184)

¹² Harris (2007 p. 203)

¹³ Hatton (1978 p. 158)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"all matters and things relating to the well governing of this Kingdom, which are properly cognizable in the Privy Council by the laws and customs of this Realm, shall be translated there, and all resolutions taken thereupon shall be signed by such of the Privy Council as shall advise and consent to the same"	Parliament's attempt to exert greater control over the King's ministers. ¹⁴	To be effective in 1714, but repealed in 1705, before it became effective. ¹⁵ Had this provision not been repealed the development of government in England would have been radically different, given the implied inhibitions on Cabinet government. ¹⁶	A failed attempt to solve a problem, which was solved later through a Hayekian process. "A later age discovered a remedy for these evils, through transferring to Parliament, by a very circuitous process, the nomination of Ministers. This remedy was brought about by indirect means, and through a combination of circumstances which no wisdom could have foreseen." ¹⁷

¹⁶ Dicey (1877 p. 138)

¹⁷ Dicey (1877 p. 138)

¹⁴ Tarkow (1943 p. 547-551)

¹⁵ Townsend (1877 p. 12)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"no person born out of the Kingdoms of England, Scotland, or Ireland (although he be naturalized or made a denizen, except such as are born of English parents) shall be capable to be of the Privy Council, or a member of either House of Parliament, or to enjoy any office or place of trust, either civil or military, or to have any grant of lands, tenements or hereditaments from the Crown, to himself or to any other or	A reaction against William's Dutch advisers and of his land grants in Ireland to his followers. The Commons used the precedent of the Act for the Marriage of Queen Mary to Philip of Spain of 1554. ¹⁸ Some restrictions on aliens already in Common Law. This clause broadened restrictions and removed the possibility that these restrictions could be circumvented by naturalization. ¹⁹	Effective in 1714; implementation not certain until then. Clause strengthened in 1714 by a law specifying that naturalization had to be accompanied with a condition that the new citizen could not sit in Parliament. ²⁰	Restricted property rights of non-citizens.

others in trust for him"

¹⁸ Horwitz (1977 p. 283); for the relevant portion of the Act, see Adams and Stephens (1916 p. 286).

¹⁹ Tarkow (1943 p. 551-553)

²⁰ Tarkow (1943 p. 553)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That no person who has an office or place of profit under the King, or receives a pension from the Crown, shall be capable of serving as a member of the House of Commons"	Commons' reaction against William's attempts to heavily influence the workings of the House. ²¹	Greatly weakened by statute in 1705-1707, so that the crown had ample scope to give appointments to those in the Commons. ²² Holders of offices created before 1705 could resign from Parliament and then be re-elected. ²³ Later, some holders of newly created offices were exempted from this provision. ²⁴ The re- election stipulation was removed in 1926. ²⁵	By the nineteenth century, relevant rules were spread over 116 statutes. ²⁶ "Had [this clause] ever come into play it must have altered the whole history of the House of Commons; no minister of the king would ever have been able to sit there." ²⁷

²¹ Horwitz (1977 p. 283)

²² Townsend (1877 p. 12)

²³ Pugh (2002 p. 351)

²⁴ Maitland (1931 p. 292)

²⁵ Rosevare (1969) p. 73; Pugh (2002 p. 352)

²⁶ Townsend (1877 p. 12)

²⁷ Maitland (1931 p. 292)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"judges commissions be made quamdiu se bene gesserint [during good behavior], and their salaries ascertained and established; but upon the address of both Houses of Parliament it may be lawful to remove them"	James I dismissed only one judge, Coke, for political reasons. ²⁸ Charles I accepted <i>quamdiu se bene gesserint</i> in 1641 and abided by it. ²⁹ Cromwell accepted all sitting judges and appointed judges <i>quamdiu se bene gesserint.</i> ³⁰ Charles II accepted <i>quamdiu se bene gesserint</i> from 1660-1672. ³¹ James II did not. A stronger version of this clause was omitted from the Bill of Rights even though it was in the first draft of the Declaration of Rights, ³² but William abided by <i>quamdiu se bene gesserint</i> . William vetoed a bill in 1692 to establish mandatory <i>quamdiu se bene gesserint</i> because the bill charged the judges' salaries to his hereditary revenues. ³³ An act of 1696 made all appointments last for six months while a new monarch replaced an old one. ³⁴	Effective in 1714; implementation not certain until then. Appointments could be ended on accession of a new monarch until 1761. ³⁵ On death of William III, all judges resigned, all but two being reappointed. ³⁶ Judicial appointments were also terminated in 1714 (3), and 1727 (1). ³⁷ Monarch paid part of the salaries of judges until 1761. ³⁸ After 1714, judges still receive much pay from litigants. ³⁹ Clause interpreted as applying to superior court judges and not to lower level courts. ⁴⁰ Clause not applicable to Lord Chancellor, the minister in charge of the legal system.	Most significant clause of the Act that directly relates to property rights, government finance, and religion. Clause not applicable to Lord Chancellor, who was the chief judge of the Chancery Court, which handled a majority of property cases. Since the Lords had a veto over the removal of judges, the disciplining effect of the Commons on judges was constrained.
²⁸ Johnson (1837 p. 334)			
²⁹ Haynes (1944 p. 63)			

³⁰ Black (1976). Firth and Rait (1911 pp. 1226-1227)

³¹ McIlwain (1913 p. 223); Haynes (1944 p. 72)

³² Horwitz (1977 p. 366-7)

³³ Horwitz (1977 p. 75-76), Prest (1991 p. 85)

³⁵ Prest (1991 p. 82)

³⁶ Jay (1997 p. 20-21); Klerman and Mahoney (2005 p. 11)

³⁴ McIlwain (1913 p. 224) ; 7 & 8 W.III. c. 27. § 20

³⁷ Klerman and Mahoney (2005 p. 11-12); Haynes (1944 p. 79)

³⁸ May (1896 p. 243)

³⁹ Prest (1991 p. 87)

⁴⁰ Jennings (1933 p. 216-217)

Clause ¹	Inheritance or novelty?	Selection? Repealed, limited, or in force unconditionally?	General comments, including on the relevance to property rights and government finance or to religion and foreign policy.
"That no pardon under the Great Seal of England be pleadable to an impeachment by the Commons in Parliament."	Impeachment of the King's ministers occurred many times in the seventeenth century without intervention by the monarch. ⁴¹ In 1678, the Commons voted to impeach Danby, a minister of Charles II. Charles dissolved Parliament in order to save Danby from the trial. The new Parliament resumed the case and after Charles issued a pardon to stop the trial the Commons declared in April 1679 "that there was no precedent that ever any pardon was granted to any person impeached by the commons of high treason, or other high crimes, depending the impeachment" ⁴² a claim that seems to have been valid. ⁴³ Charles dismissed Danby, but this did not appease Parliament: Danby was eventually imprisoned. ⁴⁴ This clause was included in the first draft, but not the final version, of the Declaration of Rights. ⁴⁵ On 6 June 1689, the Commons restated their previous claim: "that a pardon is not pleadable in bar of an impeachment." ⁴⁶ William III did not attempt to pardon any impeachments. ⁴⁷ Before 1701 there was no claim that a king was prevented from issuing a pardon after the trial in the Lords. ⁴⁸	Some later debate over whether the restriction was solely during the impeachment process. George I issued pardons after an impeachment in 1715, ⁴⁹ which Whigs thought inconsistent with his powers under their interpretation of this clause of the Act. Blackstone provides an interpretation inconsistent with that of the Whigs and consistent with pre- 1701 practice. ⁵⁰	

⁴¹ For example Mompesson, Michell and Bacon (1621), Middlesex (1624), Buckingham (1626), Strafford (1641), Laud (1645), and Clarendon (1667). See Tarkow (1943 p. 559).

⁴² Blackstone (1769 p. 392)

⁴³ Harris (2006 p. 177)

⁴⁴ Lodge (1910 p 158-160), Tarkow (1943 p. 559-560)

⁴⁵ Horwitz (1977 p. 366-7)

⁴⁶ Blackstone (1769 p.392)

⁴⁷ Horwitz (1977) passim.

⁴⁸ Hallam (1827 p. 466-7). Blackstone (1769 p.392)

⁴⁹ Blackstone (1769 p.392)

⁵⁰ Blackstone (1769 p. 392-393)

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Fuller version of Table 3: Data series: definitions, sources and summary statistics

Variable	Description	Source	Years	Obs.	Mean	Std. Dev.
Property offenses as % of all crime*	Percentage of all crimes reported in The Proceedings of the Old Bailey that fall in the area of property (arson, fraud, forgery, theft, burglary, embezzlement, game offences, housebreaking, larceny, receiving stolen goods, shoplifting, robbery and piracy.)	Old Bailey Proceedings Online (2009)	1674- 1726	50	0.699	0.114
Severity of punishment for property offenses*	Percentage of punishments for property crimes that include death, transportation, and imprisonment.	Old Bailey Proceedings Online (2009)	1674- 1726	49	0.443	0.200
Level of consumer prices (Schumpeter)	An index of the prices of cereals, animal products, beverages and condiments, candles and coal, and clothing. $1701 = 100$	Schumpeter (1938)	1661- 1740	80	105.8	13.14
Growth of consumer prices (Schumpeter)	Percentage growth of above index	Schumpeter (1938)	1662- 1740	79	-0.1	6.7
Level of producer prices (Schumpeter)	An index of the prices of bricks, coal, copper, glue, hemp, lead, leather backs, lime, pan-tiles, plain tiles, tallow and train oil. 1701=100	Schumpeter (1938)	1661- 1740	80	95.58	9.483
Growth of producer prices (Schumpeter)	Percentage growth of above index	Schumpeter (1938)	1662- 1740	79	-0.2	4.6
Level of bread prices (Mitchell)	Average price of wheaten or household bread in London in pence per pound	Mitchell (1988), ch. 14, table 22	1640- 1757	118	5.659	1.250
Growth of bread prices (Mitchell)	Percentage growth of above index	Mitchell (1988)	1641- 1757	117	0.015	0.171

Variable	Description	Source	Years	Obs.	Mean	Std. Dev.
Level of Wheat Prices (Mitchell)	Average of the price of wheat in Exeter, Eton, and Winchester Colleges in shillings per Winchester quarter	Mitchell (1988), ch. 14, table 16	1640- 1760	121	35.82	9.769
Growth of wheat prices (Mitchell)	Percentage growth of above index	Mitchell (1988)	1641- 1760	120	2.5	24.3
Level of beer production	Volume of beer charged with duty in England and Wales. Average of strong beer and small beer.	Mitchell (1988), ch. 8, table 3a	1684- 1726	43	2979	342
Growth of beer production	Percentage growth of above index	Mitchell (1988), ch. 8, table 3a	1685- 1726	42	-0.1	4.9
Level of spirits production	Volume of home produced spirits charged with duty for consumption in England and Wales.	Mitchell (1988), ch. 8 table 5	1684- 1726	43	1692	1010
Growth of spirits production	Percentage growth of above index	Mitchell (1988), ch. 8 table 5	1685- 1726	42	0.058	0.134
% unfunded government debt (Mitchell)	Unfunded debt as a percentage of total debt. Funded debt is that for which Parliament has specified a particular revenue stream for debt service.	Mitchell (1988), ch. 11 table 7	1691- 1726	36	49.6	32.2
% unfunded government debt (Quinn)	Mitchell's series amended to include stocks and irredeemable annuities.	Quinn (2006)	1691- 1726	36	0.392	0.278
Works in 'Early English Prose Fiction'	Number of works in each year included in <i>Early</i> <i>English Prose Fiction</i> , a 'balanced and representative survey of fictional prose in English from the period 1500–1700, comprising more than 200 works.'	Early English Prose Fiction (2009)	1660- 1700	41	1.683	1.650

Variable	Description	Source	Years	Obs.	Mean	Std. Dev.
English publications in British Library	Number of English publications each year included in the English Short Title Catalogue of the British library.	English Short Title Catalogue (2009)	1640- 1760	121	1615	540.8
English publications in EEBO	Number of English publications in each year included in Early English Books Online.	Early English Books Online (2009)	1660- 1700	41	1146	477.2
Exchange rate, Hamburg, schilling/£*	Average of monthly exchange rate data, expressed in schillings per pound sterling	Mitchell(1988), ch. 12, table 22	1640- 1760	99	34.19	1.257
Exchange rate, Paris, ecu/£ *	Average of monthly exchange data, in ecu per pound sterling.	Mitchell (1988), ch. 12, table 22	1640- 1760	97	0.025	0.008
Real GDP	Index of real GDP, using data constructed from the output side. 1700= 100.	Broadberry and van Leeuwen (2010); Apostilides et al. (2008)	1640- 1760	121	98.92	14.57
Growth in real GDP	Percentage growth in the above index.	as above	1640- 1760	121	0.6	5.1
Number of estate acts **	Number of acts passed by Parliament that restructured rights to real and equitable estates for years when Parliament in session	Bogart and Richardson (2010)	1640- 1760	107	13.05	10.71
Level of arable prices (Clark)	Index of prices of wheat, rye, barley, oats, peas, beans, potatoes, hops, straw, mustard seed, and saffron.	Clark (2003)	1640- 1760	121	57.70	10.34
Growth of arable prices (Clark)	Percentage growth of arable prices, as defined above.	Clark (2003)	1640- 1760	121	0.8	13.8
Level of pasture prices (Clark)	Index of prices of hay, cheese, butter, milk, beef, mutton, pork, bacon, tallow, wool, and eggs.	Clark (2003)	1640- 1760	121	48.55	4.446

Variable	Description	Source	Years	Obs.	Mean	Std. Dev.
Growth of pasture prices (Clark)	Percentage growth of pasture prices, as defined above.	Clark (2003)	1640- 1760	121	0.1	6.8
Level of wood prices (Clark)	Index of prices of firewood and timber,	Clark (2003)	1640- 1760	121	88.26	8.435
Growth of wood prices (Clark)	Percentage growth in the above index.	Clark (2003)	1640- 1760	121	4.49	10.5
Level of farm prices (Clark)	Index of prices of farm output, which include arable, pasture, wood, and cider/honey prices.	Clark (2003)	1640- 1760	121	54.53	6.902
Growth of farm prices (Clark)	Percentage growth in the above index.	Clark (2003)	1640- 1760	121	0.3	8.9
Nominal farm wages (Clark)	Wages for all farm work carried out between October and May, and for regular farm operations carried out in the summer months.	Clark (2001)	1670- 1730	61	10.30	0.437
Growth of nominal farm wages (Clark)	Percentage growth in the above index	Clark (2001)	1671- 1730	60	0.2	5.0
Real agricultural output (Clark)**	Index of real output estimated from capital employed in farming per acre, adjusted using a price index.	Clark(2002)	1600- 1800	21	54.83	5.955
Growth of real agricultural output (Clark)**	Percentage growth in the above index.	Clark(2002)	1610- 1800	20	1.3	7.3
Real agricultural output per farm worker (Clark)**	Above real output index divided by number of males involved in farming.	Clark(2002)	1600- 1800	21	77.45	7.23

Variable	Description	Source	Years	Obs.	Mean	Std. Dev.
Growth of real agricultural output per farm worker (Clark)**	Percentage growth in the above index.	Clark(2002)	1610- 1800	20	0.2	8.0
Real wages of laborers	Average wage of building laborers in London, deflated using the consumer price index defined below	Allen (2001)	1640- 1760	121	7.28	0.96
Growth of real wages of laborers	Percentage growth in the above index	Allen (2001)	1640- 1760	121	0.6	9.1
Real wages of craftsmen	Average wage of craftsmen in London deflated using the consumer price index defined below	Allen (2001)	1640- 1760	121	10.7	1.41
Growth of real wages of craftsmen	Percentage growth in the above index.	Allen (2001)	1640- 1760	121	0.4	8.9
Level of real wages (Allen)	Level of wages deflated using the consumer price index defined below.	Allen (1992)	1640- 1760	121	13.76	1.32
Growth of real wages (Allen)	Percentage growth in the above index.	Allen (1992)	1640- 1760	121	0.2	4.1
Level of consumer prices (Allen)	An index of the prices of goods consumed by those at the poverty line.	Allen (1992)	1640- 1760	121	0.880	0.087
Growth of consumer prices (Allen)	Percentage growth in the above index.	Allen (1992)	1640- 1760	121	0.049	4.7
Level of real rent per acre	Average per acre of land rents in shillings	Allen(1992)	1640- 1760	121	11.14	2.110
Growth of real rent per acre	Percentage growth in rent per acre	Allen(1992)	1640- 1760	121	0.5	4.7

Variable	Description	Source	Years	Obs.	Mean	Std. Dev.
Number of Patents	Number of patents issued in a given year	Sullivan (1989)	1661- 1740	80	5.550	4.48
Growth of Number of Patents*	Percentage growth in number of patents issued	Sullivan (1989)	1662- 1740	75	22.5	112.2
Number of Patents, Weighted by Significance	Index of economic significance of number of patents issued by weighting each patent by number of industries to which it might be applied.	Sullivan (1989)	1661- 1740	80	9.400	8.32
Growth of Number of Patents, Weighted by Significance*	Percentage growth in the above index.	Sullivan (1989)	1662- 1740	75	4.61	185.8
Level of direct tax revenues	Total collected from direct taxes (thousands of \pounds sterling in constant prices)	O'Brien and Hunt (1993)	1655- 1745	90	1225	680.1
Growth of direct tax revenues	Percentage growth of total collections of direct taxes	O'Brien and Hunt (1993)	1656- 1745	89	15.0	75.6
Level of indirect tax revenues	Total revenues from indirect taxes (thousands of £ sterling in constant prices)	O'Brien and Hunt (1993)	1655- 1745	90	2623	1531
Growth of indirect tax revenues	Percentage growth of total collections of indirect taxes	O'Brien and Hunt (1993)	1656- 1745	89	4.1	21.6
Level of government revenues	Total government revenues from all sources (thousands of \pounds sterling in constant prices)	O'Brien and Hunt (1993)	1655- 1745	90	3997	1995
Growth of government revenues	Percentage growth of total government revenues from all sources	O'Brien and Hunt (1993)	1656- 1745	89	4.2	24.2

Notes: *Some years missing in the data series; **observations are decadal, not yearly

Methodological Appendix: Estimating structural breaks in growth rates

A change in growth rates is the most likely scenario for the beginning of development. However, seventeenth and eighteenth century English growth-rate data are very noisy and lead to tests of low power. Given close-to-zero growth either before or after structural breaks and given levels that change slowly and are therefore much less noisy, analysis of levels could provide valuable information. This appendix reflects upon the information content of estimated breaks in levels when the data generating process is one of a break in growth rates.

Several theoretical papers have relevance. If there is a non-zero growth rate and levels variables are integrated of degree one, the theory of Andrews (1993), Bai (1997), and Bai and Perron (1998) does not necessarily apply to estimates of breaks in levels. This does not mean that estimates following their methods are meaningless, but rather that the only theoretical underpinning is by analogy with the case where the theoretical results do apply. Nunes, Kuan, and Newbold (1995) suggest that an estimate of a break in a process that is integrated of degree one is biased toward the middle of the sample. Bai (1998) provides a proof of this observation. Hence, some of this paper's results could reflect biases that make estimated breaks closer to 1700, which is usually the midpoint of the data. Since the design hypothesis predicts structural breaks that cluster close to 1700 and the evolution hypothesis does not, there is a bias toward supporting the former. This bias merely serves to strengthen the conclusion that this paper ultimately draws.

To explore this issue further, simulations were conducted. The simulations use Section 4's model to generate artificial data, but assume that the design hypothesis is correct:

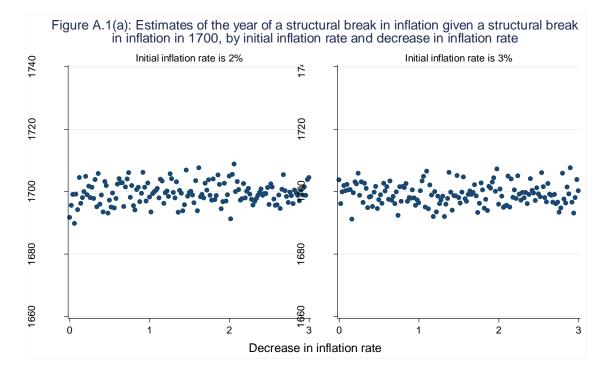
 $y_t = \alpha_1 + \varepsilon_t \quad t = 1640, 1641, \dots, 1699$ $y_t = \alpha_2 + \varepsilon_t \quad t = 1700, 1701, \dots, 1760, \ \alpha_2 > \alpha_1.$

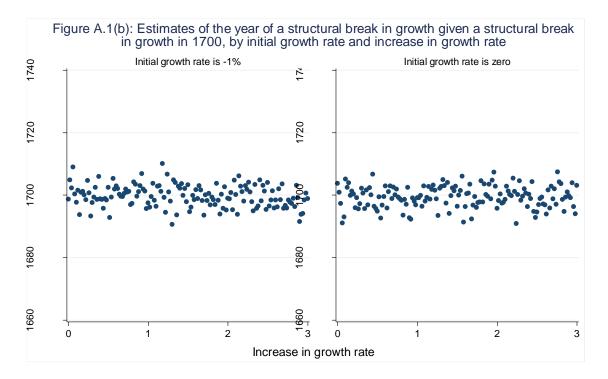
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with y_t a growth rate. The objective is to examine whether there is a bias against acceptance of the design hypothesis when using levels data generated by a process reflecting that hypothesis.

Two separate simulations reflect the properties of the two types of economic data that are predominant in Section 4—production and price variables. A typical scenario for inflation during 1640-1760 has rates of 2% or 3% before the break and declines in inflation of 0 to 3 percentage points thereafter. Similarly, real growth has rates of -1% or 0% before the break and increases in growth of 0 to 3 percentage points after. The standard deviation of the error term is chosen to correspond to the typical scenario, equal to 10 percentage points. Each data point in the figures below reflects a mean of 100 simulations.

Figures A.1(a) and A.1(b) present estimates of breakdates assuming an unknown break in growth rates. Estimates are close to 1700, as expected. As in Section 4, very few of the estimates are significant at conventional levels.





Figures A.2(a) and A.2(b) show estimates of breakdates assuming an unknown break in levels. (That is, the data has a growth-break, but the estimating procedures assume a levels break.) For inflation, all estimates are after or close to 1700. There is no bias whatsoever toward rejection of design and acceptance of evolution. For real growth, two-thirds of estimates are after or close to 1700. Notably, all estimates that reflect an assumed positive growth rate after 1700—the very essence of development—are close to or after 1700. Again, there is no suggestion of a bias toward rejection of the timing hypothesized by the design approach.

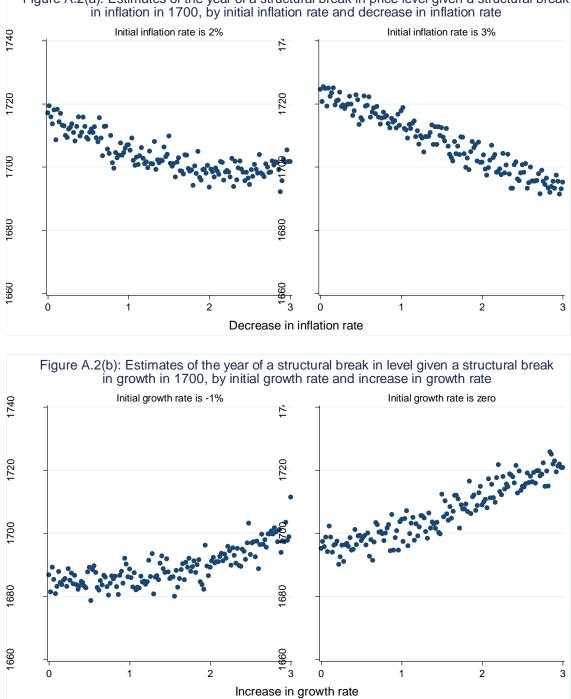
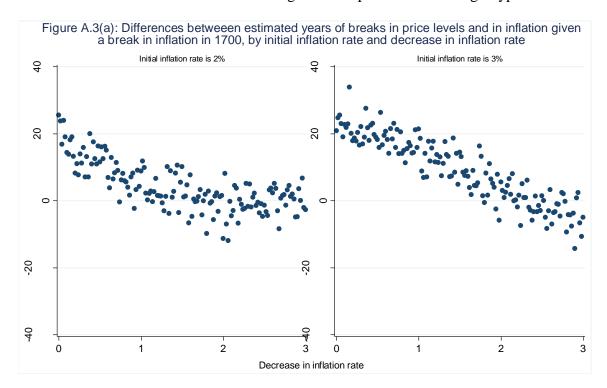
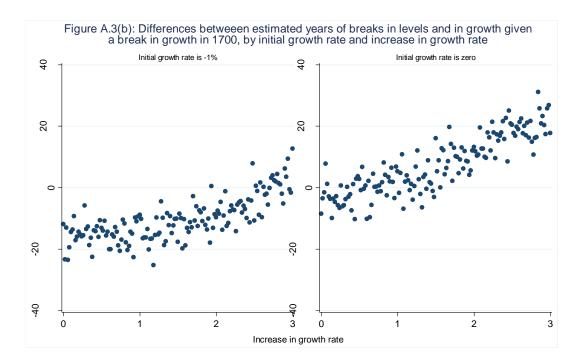


Figure A.2(a): Estimates of the year of a structural break in price level given a structural break in inflation in 1700, by initial inflation rate and decrease in inflation rate

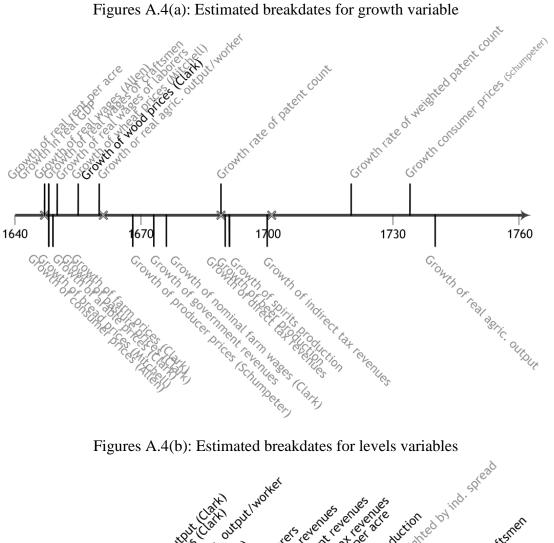
Notably, as in Section 4, most estimates of structural breaks in Figures A.2(a) and A.2(b) are statistically significant at conventional levels. This suggests that the scenario captured in the simulations matches the reality of the seventeenth century as reflected in the data of Section 4.

Figures A.3(a) and A.3(b) show the differences between the two sets of estimates of structural breaks. Although A.3(a) and A.3(b) simply reflect the previous two sets of Figures, they exhibit a crucial point. Estimates of growth breakdates, which are unbiased, are earlier in time than the corresponding estimates of levels breaks in over 75% of cases. This is similar to the patterns appearing in estimates presented in the text, suggesting, again, that the results from the levels variables in the text are not biased against acceptance of the design hypothesis.





To show this in a straightforward way, Figures A.4(a)-A.4(b) separate the results reported in the text into those for growth and those for levels. These figures clearly show that if the process is one of an increase in growth, estimations of breakdates using data on levels biases the findings toward later estimates of change. Of the 24 series for which both levels and growth rates are examined, 16 have the break in growth appearing before the break in the level with the mean values of both series changing in the same direction. This pattern is the one to be expected when a slowly growing economy undergoes change, as the above clearly shows. Of those 16 cases, 8 are measures of production, factor returns, or inventive activity and 7 increase after the breaks. (The exception is beer production, which decreases in the 1690's probably due to the imposition of a new tax). Eight are price measures, 7 of which decrease. (The exception is for wood, a commodity in inelastic supply whose relative price would increase if there were general improvements in economic activity.)



Figures A.4(a): Estimated breakdates for growth variable

elot spirits production red by ind. spiead team output worker Level of spirits production evel of ever the entreet teres Real Wages of clatternen wages (Allen) Realwage evelot U Level of of producer of farm original prices Clarks (Allen, 14) 1760 1640 1670 1730 17 I lever of states bittees Level of wheat Drices (Mitchell) Schundeter neter,

This exercise, an examination of biases in estimates of levels breakdates when there is a break in the growth process, serves to validate the empirical approach of Section 4 and support the interpretation of the results given there. Estimates of growth breakdates are unbiased. Estimates of levels breakdates are generally biased upwards (i.e., later in time than they should be), that is biased toward acceptance of the design hypothesis and against acceptance of the evolution hypothesis. Growth estimates are usually insignificant, reflecting noise in the data, while levels estimates are significant, reflecting the lower amount of noise in levels. These patterns of results in the simulations match the patterns of results in the empirical exercises of Section 4.

References to works cited in this Methodological Appendix but not cited in the text of "Design and Evolution"

Bai, Jushan. (1998). "A Note On Spurious Break." *Econometric Theory*, 14, 663-669.
Nunes, Luis, Chung-Ming Kuan, and Paul Newbold. 1995. "Spurious Break" *Econometric Theory*, 11, 736-749.