1688 and All That:

Property Rights, the Glorious Revolution and the Rise of British Capitalism

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ABSTRACT

Douglass North and Barry Weingast (1989) argued that by making the monarch more answerable to Parliament, the Glorious Revolution of 1688 helped to secure property rights in England and stimulate the rise of capitalism. Similarly, Daron Acemoglu, Simon Johnson and James Robinson (2005a) wrote that in the English Middle Ages there was a 'lack of property rights for landowners, merchants and proto-industrialists' and the 'strengthening' of property rights in the late seventeenth century 'spurred a process of financial and commercial expansion.' There are several problems with these arguments. First, property rights in England were relatively secure from the thirteenth century. A major developmental problem was not the security of rights but their feudal nature, including widespread 'entails' and 'strict settlements'. Second, 1688 had no obvious direct effect on property rights. Given these criticisms, what changes could instead have promoted the rise of capitalism? A more plausible answer is found by addressing the subsequent Financial and Administrative Revolutions, which were pressured by the needs of war and Britain's expanding global role. By the 1750s, these developments stimulated reforms to landed property rights, the growth of collateralizable property and saleable debt, and the technological innovations of the Industrial Revolution.

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Douglass North and Barry Weingast (1989) argued that by making the monarch more answerable to Parliament, the Glorious Revolution of 1688 helped to secure property rights in England and stimulate the rise of capitalism. Similarly, Daron Acemoglu, Simon Johnson and James Robinson (2005a) wrote that in the English Middle Ages there was a 'lack of property rights for landowners, merchants and proto-industrialists' and the 'strengthening' of property rights in the late seventeenth century 'spurred a process of financial and commercial expansion.' There are several problems with these arguments. First, property rights in England were relatively secure from the thirteenth century. A major developmental problem was not the security of rights but their feudal nature, including widespread 'entails' and 'strict settlements'. Second, 1688 had no obvious direct effect on property rights. Given these criticisms, what changes could instead have promoted the rise of capitalism? A more plausible answer is found by addressing the subsequent Financial and Administrative Revolutions, which were pressured by the needs of war and Britain's expanding global role. By the 1750s, these developments stimulated reforms to landed property rights, the growth of collateralizable property and saleable debt, and the technological innovations of the Industrial Revolution.

A key problem for economic historians is to explain the innovations, rises in productivity and increases in the average standard of living that became evident in Great Britain by the nineteenth century and spread to other countries in the world.[1] In the first seventeen hundred years after the birth of Christ, world GDP per capita slightly more than tripled (Maddison 2007). But sometime after 1700, GDP per capita began to take off in Europe, and accelerated further upwards. Western European GDP per capita was about twenty times larger in 2003 than it was in 1700. World GDP per capita in 2003 was about eleven times larger than it was in 1700.

As a result of developments in medicine and the improved average standard of living, between 1800 and 2000 life expectancy at birth rose from a global average of about thirty

[1] This essay extends some arguments in Hodgson (2015a). The author thanks Goncalo Fonseca, Anne Murphy and Mehrdad Vahabi for very helpful comments and suggestions.

years to sixty-seven years, and to more than seventy-five years in several developed countries (Riley 2001, Fogel 2004, Deaton 2013).

What happened to cause this unprecedented rise in production, innovation, and human longevity? This question was a major concern of the late Douglass C. North, among others, who stressed the importance of the Glorious Revolution of 1688. But North's account of the institutional changes it triggered has been subject to criticism. In particular, as several historians have pointed out, 1688 did not lead to major changes in property rights. It did mean a change in the *de facto* balance of power between the monarch and Parliament, but the evidence shows that important legislation concerning property rights came much later.

The alternative account here stresses how 1688 ruptured England's preceding international alliances and thrust the country into a series of wide-ranging wars against France and Spain, with a climax in the global Seven Years' War of 1755-1763. Building on the foundation of the 1689 accord between King and Parliament, these wars prompted the Financial and Administrative Revolutions. The need to protect and maintain a growing trading empire pressured the British state to reform its finances, gather more taxes, and purchase industrial, agricultural and service outputs destined for its army and navy.[2]

Section 1 outlines the arguments of North and others concerning the alleged impact of the Glorious Revolution on the security of property rights. As a number of historians have pointed out, this revolution was essentially protective and conservative, and it involved few major legal changes.

Section 2 considers the evolution of property rights in England. Property rights, particularly in land, were relatively secure from the thirteenth century. A major problem for capitalist development was the feudal nature of those rights. But the most rapid progress in the reform of landed property began in the 1750s, when much land became usable as collateral to finance loans for other projects. Similarly, a marked rise in patents – and important type of intellectual property (albeit imperfectly) signalling industrial innovation – did not occur until the 1760s. Furthermore, the shift in the balance of power in favour of Parliament made some property rights insecure, such as legislation to abolish heritable jurisdictions in the early 1700s.

Section 3 examines economic growth in the seventeenth and eighteenth centuries and changing occupational patterns. Economic growth picked up around 1650 (long before 1688) but it remained steady and did not accelerate further until about 1760 (long after 1688). Evidence on the growth of social strata involved in industry and commerce shows that their percentage contribution to national income rose only slightly from 1688 to 1759. Hence there is no evidence of a strong shift of the balance of class power or of a substantial growth of the bourgeoisie in this period.

Section 4 looks at the Financial and Administrative Revolutions lasting from 1689 to the early decades of the eighteenth century. By contrast to aforementioned indicators, immediately after 1689 there is clear evidence of a growing state administration, increased taxation, and major developments in financial institutions. These changes were pressured by the growing needs of defence and war. In turn, these Financial and Administrative Revolutions laid the foundation for a capitalist system based on collateralizable property, negotiable debt, global trade, and state power. Section 5 summarizes the argument – with its

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[2] From 1603, England, Wales and Scotland were ruled by the same monarch. Hence the invasion and accession of William of Orange in 1688 affected all three nations of Great Britain. But Scotland retained a partially separate legal system, even after the Act of Union of 1707 that created a single British parliament.

different account of a chain of events connecting 1688 and the Industrial Revolution – and concludes the essay.

1. 1688, the balance of power and property rights

North and others argued that the development of Britain's modern economy depended on 'secure property rights' and the 'elimination of confiscatory government' (North and Weingast 1989, Olson 1993, 2000, Acemoglu et al. 2005a, Acemoglu and Robinson 2012). The Glorious Revolution was allegedly crucial in this process, including the constitutional settlement of 1689 between the Crown and Parliament, where the Declaration of Right made the king subject to Parliament on matters of legislation and taxation.

Hence 'reducing the arbitrary powers of the Crown resulted not only in more secure economic liberties and property rights, but in political liberties and rights as well' (North and Weingast 1989, p. 816). Accordingly, 'the credible commitment by the government to honor its financial agreements was part of a larger commitment to secure private rights' (North and Weingast 1989, p. 824).

North and Weingast (1989, pp. 825-28) pointed to a number of subsequent changes in the financial system, including the formation of the Bank of England in 1694, reductions in interest rates, rising trade in stocks and in securities, and the growth and development of banks. They cited these financial developments as the major confirmation of their claim that the settlement of 1689 helped to secure property rights and laid the foundations of eighteenth-century economic growth.

This argument has influenced others. For example, Daron Acemoglu, Simon Johnson and James Robinson (2005a, p. 393) suggested that in the English Middle Ages there was a 'lack of property rights for landowners, merchants and proto-industrialists' and that their 'development' first occurred in the late seventeenth century, when 'strengthening the property rights of both land and capital owners … spurred a process of financial and commercial expansion.' They highlighted the settlement of 1689, which limited the power of the monarch and facilitated 'the development of property rights'.

But crucial elements in this argument have been criticised by historians. Many leading scholars have played down the extent of the constitutional settlement of 1689 by stressing its 'conservative' nature: it was aimed at the restoration of established rights, it salvaged previous constitutional arrangements after the turmoil of the Civil War and the Stuarts, and it was 'defensive' rather than innovative (Western 1972, Scott 1991, Jones 1992, Morrill 1992, Trevor-Roper 1992, Nenner 1997, Pincus 2009).

The settlement of 1689 ostensibly reinforced the *de facto* power of Parliament against the monarchy, but there was little rewriting of the rules. Although Parliament met more regularly after the Glorious Revolution, the Declaration of Right of 1689 was vague on this matter, and other legislation calling for frequent parliaments had been passed as early as the fourteenth century (Pincus and Robinson 2014, p. 197).[3] 'There was also no new legislation enjoining the supremacy of the common law' after the Glorious Revolution (Pincus and Robinson 2014, p. 198). Steven Pincus and James Robinson (2014, p. 198) argued that legislation immediately following the Glorious Revolution was hardly innovative, and was preceded in 1624, 1644

[3] But note the effects of new measures such as the Mutiny Act of 1689 in making Parliament indispensable for the monarch. See section 4 below.

and 1677 by other legislation attempting parliamentary oversight of state finances. Pincus and Robinson (2014, p. 201) summed up their critique:

> While North and Weingast were right to insist on a radical change in English political behaviour after 1688 … the mechanisms they have highlighted cannot have been the cause. Nothing in the Declaration of Rights or in the Revolution Settlement of 1689 specified that Parliament meet every year, created a new method for Parliament to audit royal spending, provided new guarantees for the supremacy of common law courts, or provided new credible threats of removal against miscreant rulers. Nor did the settlement instantiate more stable or predictable governments. The causes of England's revolutionary transformation must be sought elsewhere.

To add to the problems with the North-Weingast thesis, some scholars have pointed out that property rights were already relatively secure before 1688, by 1600 or even earlier (Clark 1996, 2007, Sussman and Yafeh 2006). Other historians have suggested that the effects of 1688-89 on the security of public and private financial activity were neither obvious nor immediate. Anne Murphy (2009, p. 5) pointed out that 'the financial promises of the post-Glorious Revolution were no more credible than those of previous Stuart monarchs.' Murphy (2013) also argued that post-1689 'credible commitment' to protect property was demanded from below by financial investors, and it was not offered from above.

Explicitly against North and others, Julian Hoppit (2011) argued that property was no more secure *after* the Glorious Revolution: the very fact that Parliament met more often posed greater legislative risks to property. The 1833 abolition of property in slaves is a dramatic later example of property made insecure.[4]

Whatever the chain of causation, Britain's industrial development gathered pace much later. As Gregory Clark (1996, p. 588) put it: 'Institutionalists were stretching a point when forging the link between the institutional changes of 1688 and the Industrial Revolution beginning in 1760.' Robert Allen (2009) opined similarly that if the outcome of the Glorious Revolution was so crucial for property and business, then why did England have to wait the major part of a century for the surges in innovation and productivity in the Industrial Revolution?[5]

The evidence challenges to the accounts offered by North and other institutional economists, concerning both the nature of the Glorious Revolution and, more broadly, the principal mechanisms leading to the economic take-off and the Industrial Revolution. Questions are raised concerning both facts and analysis.

Economic history depends on the use and interpretation of empirical data. But the questions asked by economic historians, and the types and interpretations of the data employed, depend crucial on judgements informed by economic and social theory. Much of the discussion concerning the economic consequences of the Glorious Revolution has been guided by an unsatisfactory notion of property rights and views of monetary and financial institutions that underplay their conjunction with collateralizable property and debt.

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[4] British slave-owners, however, did receive compensation. Much of this capital was invested in the railway boom of the 1840s. Another example of a nineteenth-century legislative attack on property rights is the abolition of the right of a husband to the property of his wife, by the Acts of 1870 and 1882 (Hodgson 2015a, pp. 121-20).

[5] These apparent deficiencies in the timing and substance of institutional explanations led Deirdre McCloskey (2010, 2016) to emphasize instead the role of ideas in Britain's take-off from the late eighteenth century.

This essay does not challenge the importance of property rights in economic development, but focuses on their deeper substance and their evolving, multi-faceted nature. Because, surprisingly, the very notion of 'property rights' is undeveloped in much institutional economics, these important nuances and changes have been often overlooked in debates about the role of property rights in development (De Soto 2000, Cole and Grossman 2002, Steiger 2008, Heinsohn and Steiger 2013, Hodgson 2014, 2015a, 2015b, 2015c, Cole 2015).

In England, property rights (of a kind) existed and were relatively secure long before 1688. Slowly the nature of those rights changed, enlarging possibilities for the use of land and other property as collateral to finance business ventures. This does not necessarily diminish the politico-economic importance of the Glorious Revolution, but it shifts the analytical emphasis. It establishes a stronger connection between the growing use of property as collateral and the development of financial institutions, particularly in the Financial Revolution of the early 1700s. Developments concerning property and finance are intimately conjoined. North and Weingast claimed that 1688 secured property rights led to the rise of finance; instead it is stressed here that the rise of finance stimulated the greater use of property as collateral for borrowing and financing investment.

The establishment of the Bank of England in1694 was prompted by the need to finance a major war that broke out in 1688, as a result of the Glorious Revolution and England's new foreign alliances. It was part of a chain of institutional events that led to the development of a modern financial system in Britain, with the crucial role of the state in gathering taxes, issuing loans, buttressing private banks, and acting as lender of last resort. Hence it is important to understand the nature of modern financial systems (Mitchell Inness 1914, Keynes 1930, Moore 1988, Ingham 2004, 2008, Wray 2012, Hodgson 2015a).

Unfortunately, there is a paucity of data in the period concerning the extent to which property was used as collateral, the scale of loans and investment, and the growth in the market for debt. By contrast, key legislative steps concerning changes to property rights and finance are known. The argument here must be considered as a hypothesis, awaiting further empirical confirmation.

2. Bad timing: the evolution of property rights in England

Were property rights insecure in medieval times? European countries were not uniform in this regard. We should not overlook the relatively advanced legal developments in England, compared to most other European countries.

Acemoglu et al. (2005a, p. 394) cited John M. Veitch (1986) to assert that there were 'numerous financial defaults by medieval kings.' Veitch (1986, p. 31) himself wrote: 'Property confiscation and debt repudiation were common in medieval Europe.' From this, Acemoglu and his colleagues infer that such insecurity was rife in England as well. But Veitch gave only four examples of property confiscation or debt default applying to medieval England. In particular, he noted that Edward I expelled the Jews and confiscated their property, and that Edward I, Edward II and Edward III all defaulted on Italian debts. These events occurred from 1290 to 1340 and did not target the overwhelming majority of inhabitants of England.

There were some confiscations after the medieval period. Henry VIII seized monastic lands in 1536-41; in 1638 Charles I appropriated £200,000 in coin and bullion from the London Mint to finance a war against Scotland; and Charles II defaulted on his debts in 1672. As North and Weingast (1989, pp. 819-20) pointed out, from 1604 to 1628 James I and Charles I

extracted a number of forced loans from English lenders. Of course, if a landowner committed treason then he would likely forfeit his lands. Otherwise, English kings sometimes seized property or defaulted on contracts, but, in contrast with much of Continental Europe, these were relatively isolated events.

In the twelfth and thirteenth centuries, new legal systems were developed in England, and to some extent in other parts of Northern Europe, under the influence of the new canon law of the church, and the discovery of Justinian Roman law (Berman 1983, 2003). The reforms of the legal system by Henry II in the twelfth century were of massive importance, including his transformation of common law. Consequently, with its long-established system of property, contract and criminal law, property rights for the wealthy were quite well entrenched in England, at least since the thirteenth century.

Well before 1688, there were major works on English law that have remained influential. The earliest treatise on English laws was by Ranulf de Glanvill in the twelfth century. In the following century, Henry de Bracton further developed English jurisprudence. Thomas de Littleton's 1480 *Treatise on Tenures* extensively codified legal rules concerning land, many of which dated back to the twelfth century or even earlier. The sixteenth century saw the rise of leading jurists such as Edward Coke and Francis Bacon, who also set about interpreting the long-existing body of English law.

Of course, justice was much less accessible by the poor and the legal system was often subject to corruption and gross inefficiencies. The many surviving letters of the Paston family – who were rising landed gentry in Norfolk in the fifteenth century – illustrate the tedious complications and corruptions of laws concerning the ownership of land (Castor 2006). But the main problem for them was not the threat of confiscation by a powerful monarch.

The standard focus by North and others on 'secure property rights' points to events that are too early and too late. Property rights in England were relatively secure for the minority by the thirteenth century, but legal rights for the majority were insecure even during the Industrial Revolution. In addition, this standard view fails to distinguish between multiple types of property right, including the differences between rights to use, rights to sell, and rights to use as collateral (Honoré 1961).

Before the Industrial Revolution, by far the most important type of wealth was in land. A foremost obstacle to the development of commerce was not the insecurity of property rights, but the feudal nature of landed rights. Long-standing and well-defined rights often carried feudal obligations that limited the use of this wealth for investment and constrained the growth of markets, finance and capitalism.

In particular, there were numerous restrictions on landed property, known as entails. Many entails enforced primogeniture, ensuring that a landed estate passed from one generation to another through the eldest son. This limitation on a right for the living owner of the estate became an enhanced right for his future heirs. But even when the courts limited the scope of entails in 1614, these were replaced by voluntary and widespread 'strict settlements' that had similar effects, and prevailed until the nineteenth century (English and Saville 1983; North, Wallis and Weingast 2009, pp. 89-9; Allen 2012, p. 65).

Entails and strict settlements 'restricted the uses to which land could be put. … Holders could seldom sell, swap, or mortgage property under their control. Holders could not alter property, even if they considered the alterations to be an improvement, without risking legal suits … [and] conducting transactions and enforcing contracts on settled land could be costly,

uncertain, and insecure' (Bogart and Richardson 2011, p. 245). It required much ongoing legislation to remove entails and strict settlements.

These feudal arrangements stubbornly endured, largely because the wealthy elite endorsed them. Owners were disinclined to sell or mortgage buildings or land that had been in their family for generations. Loss of land meant loss of status, influence, titles and privileges.

Much other land was set aside as commons, for the shared use of villagers. It has been estimated that at the beginning of the eighteenth century about one-quarter of arable land in England was held as commons, where villagers shared rights to the use of pastures, water sources, or woods (Bogart and Richardson 2011, p. 247). In this state, this land could not be sold or mortgaged.

These restrictions on the saleability of property were important not simply because they held back the development of English agriculture, which could release labour for growing industry once agricultural productivity increased. Because land was by far the most important component of English wealth, commons, entails and strict settlements greatly inhibited the use of land as collateral for loans, which could be invested in mercantile, industrial and infrastructural ventures.

The potential role of property as collateral is neglected in much of 'the economics of property rights' (Alchian 1965, Barzel 1989), which often focuses on the matter of *de facto* control, rather than on the importance of *de jure* legal title (Cole and Grossman 2002, Hodgson 2015a, 2015b, 2015c).

These barriers to the commodification of land and its use as collateral did not disappear spontaneously or easily, despite the political convulsions of the fifteenth, sixteenth and seventeenth centuries. They were defended by strong and enduring vested interests. It took numerous varied Acts of Parliament to remove them, lasting well into the nineteenth century.

Every enclosure of common lands meant the appointment of commissioners, surveying and recording, the holding of village meetings, and adjudication in cases of dispute. Enclosures of common land in England date back to the thirteenth century, but these were countered by anti-enclosure acts in 1489 and 1516. Enclosures accelerated thereafter, sometimes provoking rural revolts. Some enclosures were imposed arbitrarily and not reversed, some were agreed voluntarily and some were imposed by Acts of Parliament. We have reliable data for Acts of Parliament only.[6]

Estate acts undid strict settlements and statutory authority acts were used to develop infrastructure, including improvements to roads, rivers and the construction of canals (and later railways). Estate, statutory authority and enclosure acts all had a common theme: they relaxed constraints on the use of land and resources. Procedures for passing these acts were standardized in the early eighteenth century and operated with minor adjustments through the nineteenth century (Bogart and Richardson 2011, p. 248).

Dan Bogart and Gary Richardson (2011, pp. 249-50) gathered parliamentary data on the numbers of estate, statutory authority and enclosure acts from 1700 to 1830. Figure 1 depicts the key trends. The clear conclusion from these data is that legislative reform of landed

[6] It is unnecessary for the purposes of this argument to assess whether enclosures improved agricultural productivity or not. This has been a matter of some dispute and empirical investigation (Turner 1986). Ostrom (1990) showed that collective arrangements remained viable in many diverse circumstances. The more important point here is that enclosures made land saleable and usable as collateral.

property rights was sluggish until about 1750 and then took off dramatically, with the strongest growth trends coming from enclosure and statutory authority acts. The all-important erosion of entails and strict settlements was a slow and steady process, lasting well into the nineteenth century.

Overall, the release of land for sale or collateralization, through the combined effects of estate and enclosure acts, was a process that extended well into the era of industrialization after 1760. The removal of feudal elements in property law was a long process, beginning before 1688 and continuing long afterwards.

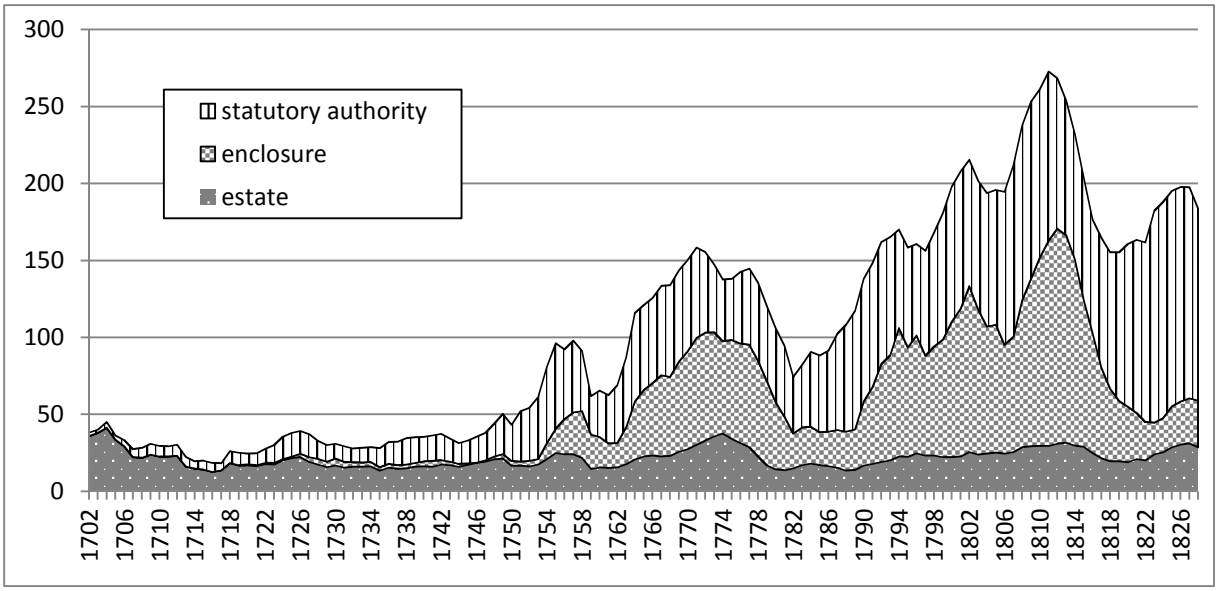

Figure 1:
Parliamentary Acts Reorganizing Landed Property Rights, 1700-1830.

Source: Five-year moving averages, in a vertically cumulative presentation, using annual data from Bogart and Richardson (2011, p. 250).

The possibility of compulsory transformations of property rights creates another form of insecurity. Here the threat is not the whim of a sovereign, but parliamentary legislation that changes or even removes property rights. In regard to landed property, as Hoppit (2011, p. 100) reported, 'between 1750 and 1830, not only redistributed some property rights, but redefined or clarified the meaning of others in ways which many villagers disputed. Over 5,200 acts were passed, involving up to 6.8 million acres, some 21 per cent of England's surface area.'

Hoppit (2011, p. 108) noted other forms of property that became more insecure after 1688: 'Heritable jurisdictions were courts and offices granted by the Crown to individuals and effectively owned as freeholds to be passed on by inheritance, gift or sale as they chose.' Although jealously guarded as sources of revenue and prestige, heritable jurisdictions began

to be phased out in the early eighteenth century, leaving such offices to be filled by salaried appointments.

North and others claimed that the *de facto* limitations in the power of the sovereign in favour of Parliament in 1689 led to greater security of property. But this overlooks enforced changes in the types of rights that were held over property. Immediately following 1689, there was no legislation that made existing property rights more secure or less vulnerable to enforced sequestration or transformation.

Bogart and Richardson (2011, p. 270) argued that the 1689 Declaration of Right and subsequent more regular meetings of Parliament 'encouraged the expansion of legislative activity'. But the dismantling of entails and strict settlements, and the enclosures of common lands, met significant enduring resistance from higher and lower strata of society. The 1689 settlement may have *enabled* such legislation, but it did not specifically *incentivize* or *explain* it. The Glorious Revolution does not explain when or why the changes came about. It may have facilitated them, but it does not itself constitute their motivation.[7]

Patents are an important form of intellectual property and indicators of industrial innovation. Although they are highly imperfect indicators of overall innovation, unlike unregistered innovations they constitute saleable and collateralizable property, and are important to consider, at least for that reason.

As shown in Figure 2, data on the number of patents awarded also took off around the middle of the eighteenth century, but no earlier. Patents gradually evolved from seventeenth-century instruments of royal patronage into the intellectual property of the inventors and manufacturers of the Industrial Revolution (MacLeod 2002). The British patent system was systematized and became more accessible during the reign of Queen Anne (1702-14). But the annual number of patents awarded remained low, until a marked rise in about 1760, with an acceleration thereafter (Dutton 1984, Sullivan 1989).

[7] Pincus and Robertson (2014, p. 203) and Bogart (2011) pointed out that the immediate effects of post-1688 statutory authority acts led to surges in investment in road and river improvements from about 1690 to 1730. But Bogart's (2005) own data show clearly that this early upturn of activity was minor compared with the much larger expenditures on infrastructural developments after 1730. Expenditure on turnpike roads alone tripled from 1730 to 1760, and grew impressively thereafter. Overall, while there were some infrastructural developments from 1690 to 1730, much more remarkable progress was made in subsequent years.

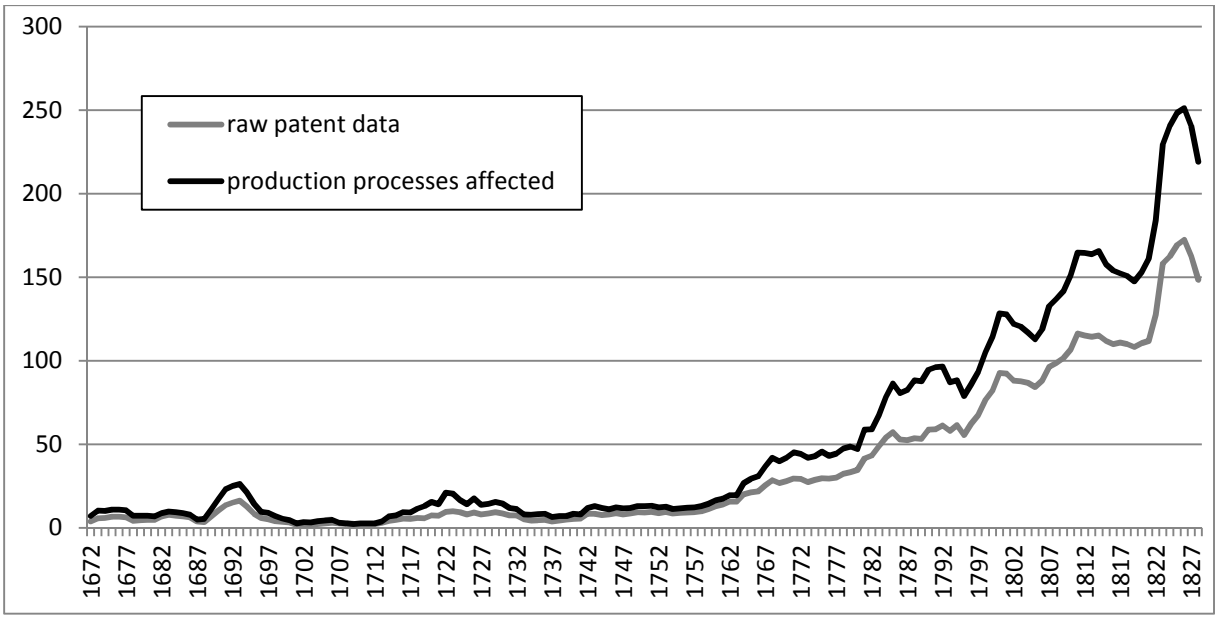

Figure 2:
Patents Issued in England and Number of Production Processes Affected, 1670-1830.

Source: Five-year moving averages using annual data from Sullivan (1989, pp. 448-9).

In summary, the North-inspired 'secure property rights' argument has four major flaws – historical, analytical, motivational and distributional. Historically, property rights were mostly secure in England for the landed nobility from the thirteenth century, with relatively few debt defaults or confiscations of wealth by monarchs in the medieval period. Furthermore, particular kinds of property right were made less secure by increasing parliamentary powers, including the enforced removal of entails, and, as late as the nineteenth century, the abolition of slavery and a husband's monopoly of marital property.

Analytically, from the point of view of the rise of capitalism, a major problem with older property rights was not their insecurity, but their entangled, feudal nature. In particular, the property rights of an heir to his father's estate prevented the sale of such property or its use as collateral for loans. In a sense, the problem was not that there were too few property rights, but too many.[8]

Motivationally, it is overlooked that strong vested interests protected the feudal nature of landed property rights. The nobility enjoyed huge wealth and power. Much of the nobility and landed gentry resisted the reforms to landed property rights including the removal of entails and strict settlements. These vested interests were not immediately diminished by the events of 1688-89. Major institutional changes were required to provide incentives for the commercialization of land and to enhance a money-making culture, over and above matters of status based on landed property. These changes did not occur until sometime after 1689.

[8] Thickets of property claims were the feudal version of the 'anti-commons' problem of multiple entangled rights in modern capitalism (Heller 2008).

Distributionally, the full flowering of capitalism required the extension of real and enforceable legal rights, from a narrow elite to a much bigger slice of the population. Such extensions often compromised the rights of existing property owners, and were often resisted for that reason. Nineteenth-century examples of ending property rights for some, in favour of the rights of many others, included the abolition of slavery and the extension of the right to own property to married women (Hoppit 2011a, Hodgson 2015a pp. 120-22).

Some accounts concerning the role of 'secure property rights' suggest that, once these were in place, institutions would largely be ready to support investment and entrepreneurship. This is mistaken. At least in the English case, a major problem was to reform well-established and secure property rights, not to establish them. Furthermore, the evidence suggests that the more dramatic changes in the nature of property rights came after 1750.

3. Economic growth and the balance of class power

The change in the balance of power between the sovereign and parliament, and the increased frequency of parliaments, may help explain the increased *possibilities* for the development of commercial institutions; it does not explain the rise and empowerment of vested interests that could lobby for these changes and *make them real*. Crucial were the development of the bourgeois class, engaged in business and manufacturing, and a commercially-minded landed gentry, oriented more to trade and profit than to feudal power and status.[9] It was in the interests of these groups to support financial, administrative and property reforms, which helped expanding business and trade. When did these classes begin to exert greater economic weight and potential influence?

Acemoglu et al. (2005b) argued that economic development in Britain and elsewhere was partly stimulated by rising Atlantic Trade from the sixteenth century. This strengthened the political power of the bourgeoisie and stimulated a cumulative process of institutional reform. Earlier arguments along similar lines are found in works by Carlo Cipolla (1965), and Fernand Braudel (1984). This type of argument points to positive feedbacks and processes of cumulative causation, leading to rises in bourgeois power.

Britain's involvement in global trade increased hugely in the second half of the seventeenth century. Between 1640 and 1700 its exports roughly doubled. By 1688 Britain had the largest merchant marine fleet in Europe, which had increased from 2 million tonnes in 1660 to 3.4 million in 1686 (O'Gorman 1997, ch. 1). The slave trade expanded massively. The numbers of slaves transported by British traders from Africa across the Atlantic to the Caribbean and North America increased from 243,300 in 1676-1700, to 380,900 in 1701-1725, to 490,500 in 1726-1750 and to 859,100 in 1751-1775 (Eltis 2001, p. 43). But all these figures suggest that global involvement was expanding before 1688 and continued to do so thereafter: the Glorious Revolution itself did not lead to a big jump in trade.

[9] Marx (1976, pp. 875-6) argued that the development of wage labour employed by a bourgeois class was the 'starting point' of capitalism. He saw this development as taking hold in the sixteenth century. In fact, wage labour was prominent in England by the fifteenth century (Hodgson 2015a).

Period	Basis	Country	Average annual real GDP per capita growth
1600-1659	decadal	England	0.41%
1650-1700	decadal	England	0.74%
1700-1760	annual	Great Britain	0.67%
1760-1780	annual	Great Britain	0.85%
1780-1801	annual	Great Britain	1.46%
1801-1830	annual	Great Britain	1.64%

Table 1: Average Annual Growth Rates in GDP per capita, 1600-1830.

Source: Broadberry at al. (2015, p. 199).

Internally, economic growth had picked up substantially before 1688, in particular after the end of the Civil War in 1649. Table 1 reports output-based data on the growth of GDP per capita, calculated by Stephen Broadberry at al. (2015, p. 199). Because of the Civil War and other disturbances, English GDP per capita grew slowly in the first half of the seventeenth century. But from 1650 to 1688, economic growth was positive. Broadberry (2015, p. 406) noted that after 1660:

> GDP per head registered its first sustained improvement since the second half of the fourteenth century … The pace of industrial change was quickening and by 1700 industry and services were employing over 60 per cent of the labour-force and the urban share of the population had expanded to 17 per cent of the total.

But growth in GDP per capita slowed slightly from 1700 to 1760. Hence there is no evidence of an increase of GDP per capita growth in the decades immediately following 1688. It was not until 1760 that growth again began to accelerate, as Britain industrialized.

We need also to examine shifts in the economic gravity of rising strata of financiers, merchants, manufacturers, and commercial farmers. Consider evidence concerning changes in the relative importance of different occupations and social classes in the seventeenth and eighteenth centuries. Peter Lindert and Jeffrey Williamson (1982, p. 393-401) reported data from three pioneering social surveys, namely the surveys by Gregory King in 1688, Joseph Massie in 1759 and Patrick Colquhoun in 1801-1803.

Using the data assembled and adjusted by Lindert and Williamson (1982), Table 2 shows the proportion of families in two important groups of socio-economic classes, and the contributions to national income by each of these groups, from 1688 to 1803. The landowning group consisted of the lords, nobility and gentry. The data suggest that their social presence and proportion of income did not change greatly in this period, except for a small decline in

their proportion of income from 1759 to 1803. We may conclude that the politico-economic influence of these landowning social classes remained high, long after 1688.[10]

The second group reported here consisted of those classes engaged in mercantile, trading, manufacturing, building and mining activity. It includes employers, employees and self-employed engaged in these activities. It indicates the social weight and revenues of the commercial and industrial sectors.

According to these data, by 1688 over a quarter of families were occupied in commerce and industry and they generated over a third of national income. Consistent with the growth data in Table 1, the data in Table 2 show that these developing social strata were on the rise long before 1688. The bourgeoisie was already of economic significance in 1688, even if it had less power and influence than the nobility. Subsequently, from 1688 to 1759, the number of families involved in commerce and industry increased, but their percentage contribution to the national income swelled only slightly. Their contribution to national income increased more substantially after 1759.[11]

These social surveys show that while the bourgeoisie were already of economic significance in 1688, their economic presence did not increase greatly for the next 70 years, but they became more important thereafter. Again the data point to decisive changes occurring in the 1750s or after.

	Landowners		Traders and Manufacturers	
	Lords, esquires and gentlemen		Merchants, tradesmen, manufacturers, builders and miners	
Survey date	Per cent of families	Per cent of national income	Per cent of families	Per cent of national income
1688	1.4%	16.2%	27.7%	37.6%
1759	1.2%	17.6%	36.8%	38.5%
1801-1803	1.2%	13.9%	34.0%	45.5%

Table 2:
Landowners versus Traders and Manufacturers:
Percentages of Families and National Income from 1688 to 1803.

Source: Lindert and Williamson's (1982, p. 393-401) data for England and Wales.

[10] Note that before the Reform Act of 1832, the franchise for parliamentary elections was confined to male property owners only – estimated at about 400,000 men (about 10 per cent of the adult male population) in England and Wales (Phillips and Wetherell 1995, p. 413).

[11] As Lindert and Williamson (1982) point out, the three surveys differed in their methodologies and rigour. Hence comparisons should be treated with caution, particularly when the reported differences are small.

If the security of property rights was a major problem for commerce and industry before 1688, and that problem was alleviated by the political settlement of 1689, then we should expect a big increase in the proportion of the economy devoted to commerce and industry in the years that immediately followed. The data from these social surveys do not tally with this. Furthermore, if the insecurity of property rights was a major impediment to economic growth before the Glorious Revolution, then how do we explain the substantial weight, growth and economic importance of commerce and industry before 1688?

By this point the reader may be persuaded that the evidence undermines the claims of North and others concerning the economic consequences of the Glorious Revolution. But this would be a step too far. The remainder of this article shows how 1688 triggered a series of events that prepared the ground for the take-off after 1760.

We must examine events from the 1690s to the 1750s. We need to identify a chain of causation that connects the already-emergent bourgeoisie of 1688 with several later changes around the 1750s, including a marked quickening of economic growth, an increasing pace of reform of landed property rights, and a big increases in the pace of innovation. Such a causal chain would link 1688 to the Industrial Revolution that began around 1760.

4. The Financial and Administrative Revolutions

In the seventeenth century, the Netherlands developed a relatively sophisticated system of public and private finance. The state was able to raise a steady supply of funds through taxation, on the basis of which the government was able to borrow. The Dutch developed a range of innovative institutional devices for investment in trade, industry and infrastructure. Among these were public bonds, issued by governments on national, provincial, and municipal levels, and shares in publicly traded companies such as the Dutch East India Company. Financial markets, including the Amsterdam stock exchange, facilitated investment. Stock markets permitted smaller fractional shareholdings in mercantile and manufacturing enterprises. During the seventeenth century, about half of all ocean-going vessels worldwide were from the Netherlands. This tiny country dominated the international capital market, until successive political crises led to the collapse of the Dutch Republic in 1795 (Israel 1989, de Vries and van der Woude 1997).

Britain's Glorious Revolution of 1688 was in fact a Dutch invasion, albeit preceded by an invitation from a bishop and six members of the aristocracy. It had a religious motivation: James II was suspected of trying to restore Catholicism. The invading army of William of Orange involved 500 ships, 20,000 trained soldiers, and 20,000 mariners and support staff; it was similar in scale to the ill-fated Spanish Armada of a century earlier. Once victory was certain, it received widespread support from a predominantly Protestant population.

This invasion shifted English allegiances from France to the Netherlands and led to an influx of Dutch merchants and financiers, as well as artists and scientists (Jardine 2008). Dutch businessmen brought knowledge of Dutch financial institutions and helped establish London as the world's leading financial centre (Dickson 1967). Among Dutch innovations in public finance was the systematic dedication of revenues to the service and amortization of the public debt. Although Britain did not slavishly follow the Dutch, and it made institutional innovations of its own (Murphy 2009), the impact of the invasion on financial institutions was dramatic. Consequently, in the decades after 1688, the institutional infrastructure of British finance was revolutionized.

North and Weingast (1989) argued that the diminished risks of debt default by the monarch lowered risk premiums and put downward pressure on rates of interest. By contrast, Clark (1996, 2007) argued that the evidence of falling interest rates is less clear. In any case, interest rates are determined by many factors, in addition to political risk, including the supply and demand for funds. These in turn are affected by institutionally-backed opportunities for the collateralization of wealth and expectations of profit from investment. We may concur with Pincus and Robinson (2014, p. 205) that a narrow empirical focus on interest rates is 'a red herring'.

Stephen R. Epstein (2000, p. 211) argued that the constitutional restrictions on the power of the monarch in 1689 were less significant than England's 'belated catch up' with continental Europe's most developed financial systems: 'the result of the country's financial revolution rather than a revolution in political freedom and rights.' The new financial practices transplanted from the Netherlands were crucial (Powell 1915, Bagehot 1919, Dickson 1967, Kindleberger 1984, Neal 1990, Roseveare 1991, Wennerlind 2011).

A boom in demand for stocks was underway in the 1690s, even before the Bank of England was formed in 1694 (Murphy 2009). Financed by London merchants, the Bank of England issued loans to the royal treasury at 8 percent interest, the payments of which were in turn funded by taxes and custom duties. For the Bank of England these royal debts were its monetary assets, which in turn were buttressed by a renewed public faith in sovereign integrity. These assets became the basis of a further massive loan issue by the bank.

Market information became more available. By 1698, stock price quotes were regularly published in London (Morgan and Thomas 1962). Also after 1688 'came a flurry of joint-stock company formations … By 1695 100 new companies had been formed with a capital of £4.5 million in all' (Kindleberger 1984, p. 196). The Bank of England was followed by the establishment of several other London banks, about 25 in number by the 1720s and 50 in 1770. Numerous banks began to appear in the provinces after 1750 (North and Weingast 1989, p. 826).

Stephen Quinn's (2001, p. 613) study of the accounts of a prominent London banker showed how from 1680 to 1705 'the mechanics of private debt were transformed by the dual revolutions in England's systems of constitutional power and public finance. Bankers and their customers began to use the improved financial instruments of the government to facilitate private lending.'

Much of the impetus for the heavy involvement of the state in the development of the British financial system in the eighteenth century was the need to finance wars abroad (Mann 1986, pp. 485-6; Bowen 1995, p. 5). Because of its new international alliances and enemies, England was plunged into a long period of war, requiring major reform of its fiscal and administrative arrangements. The Nine Years' War (1688-97) was quickly followed by the long War of Spanish Succession (1701-13). The overthrow of the Stuarts in 1688 led within Britain to the Jacobite Rebellions of 1715 and 1745. There was the War of the Quadruple Alliance (1718-1720), the Anglo-Spanish War (1727-1729), the War of the Austrian Succession (1740-1748) and the global Seven Years' War of (1756-1763). Britain was involved in war, with at least one other major power, in 45 of the 76 years from 1688 to 1763 inclusive.

Contrary to the claim of North and Weingast (1989) that the political settlement of 1689 made government more stable and predictable, Pincus and Robinson (2014, p. 199) wrote: 'Far from making government more predictable, the Revolution of 1688 instantiated one of

the most intensely polarized and unstable periods in English and British history.' The litany of war and revolt from 1688 to 1763 underlines this.

Of course, there were many wars before 1688. For example, in the years from the Restoration in 1600 to 1687, there was the Second (1665-1667) and Third (1672-1674) Anglo-Dutch Wars. But the sovereign often had difficulty raising money to finance these ventures. What changed in 1689 was the practical accord between the sovereign and Parliament, which locked them together in common cause, especially when dealing with enemies abroad. It secured the compliance of both in meeting the needs of war. North and Weingast (1989) were right about the importance of 1689, but for the wrong reasons. It had little immediate effect on the security of property rights.

By accident or design, some measures indirectly made regular parliaments more likely, especially in the context of war. The 1689 Declaration of Right required that no standing army may be maintained during peacetime without the consent of Parliament. In the same year, the Mutiny Act was passed to deal with some rebellious Scottish troops who had remained loyal to James II. This Act allowed the sovereign to maintain a standing army in war or peace, for one year, but no longer. Consequently, if the country were to be kept on a war footing, parliament had to meet and renew the Mutiny Act each year (Winthrop 1920, pp. 19-20). A new Mutiny Act was passed each year until 1879. In addition, the financial settlement of 1690 put time-limits on funds for the monarch, which had previously been granted for life (Roberts 1977). Again this reinforced the sovereign's dependence of regular parliaments. Military and financial needs ensured that Parliament was empowered to keep the monarch under control.

The state continued to play an important role in stimulating corporate activity overseas. The Crown organized groups of creditors into companies, including the New East India Company (1698), the United East India Company (1708), and the South Sea Company (1708). The South Sea Bubble of 1720 led to a severe crash, but the financial system as a whole recovered.

This period saw expansion of the British Empire. Before 1688 England had major colonies in North America, the Caribbean and West Africa. By 1763 Britain had gained more territory in India and North America and established a strategic Mediterranean base in Gibraltar. The growth of slavery was another part of Britain's increased trading activity from the 1690s to the 1760s. More broadly, as Patrick O'Brien (2006, p. 14) pointed out: 'Already by the close of the Seven Years' War, something like half of the nation's workforce (de-linked from agriculture) depended directly and indirectly on markets overseas for its livelihood.'

The needs of war and the combined pressures of global and domestic commerce were major forces behind the development and reform of financial institutions and state administration (O'Brien 2011). The invasion of 1688 and subsequent international conflicts led to major transformations of the state apparatus, including the Act of Union with Scotland in 1707. As Henry G. Roseveare (1991, p. 4) pointed out, accompanying the political and fiscal changes after 1688 there was 'an administrative revolution – or, at least, a striking growth in the power and effectiveness of the state which manifested itself not merely in war but in the subtler tasks of peace.'

The immediate needs of war stimulated both industry and the development of state administration (O'Brien 2011). From 1687 to 1703 the number of workers employed in naval yards more than quadrupled. Daniel Defoe remarked at the time that 'in some respects the navy is largest industry in the country' (Hill 1961, p. 230). More people were required to administer the growing war machine and to raise taxes to finance it.

Figure 3 shows the growth of the number of full-time employees involved in the fiscal bureaucracy, including those in customs, excise, the post office and the Treasury. It shows a remarkable rise from 1690 to the 1720s, when the bureaucracy more than doubled in size.

Figure 3: Full-Time Employees in the State Fiscal Bureaucracy, 1690-1783.

Source: Data from Brewer (1988, p. 66).

The state administration established a stronger fiscal base and empowered a growth in tax revenues, particularly to finance wars. The settlement of 1689 strengthened the political consensus, creating the foundation of an effective fiscal state (Roseveare 1991). In 1692 Parliament introduced a national land tax. A window tax was introduced in 1696. But the major part of state revenue was through customs and excise charges, which increased with the growth of Britain's power and trade abroad (Mathias 1983, p. 428).

Figure 4 shows the total tax revenue as a proportion of national income from 1670 to 1810. There is a marked rise from 1680 to 1690, and thereafter to 1700. Consequently, impelled by the outbreak of war in 1688, and as a result of the settlement of 1689, the government was able to ramp up tax revenues substantially, more than doubling the tax-take as a percentage of national income. Ironically, the most obvious and immediate effects of 1688 were not a growth in free enterprise, but a considerable expansion in state bureaucracy and tax revenue.

The Financial Revolution was a protracted affair, lasting decades. It involved several legislative steps and the development of new organizational structures and business habits. Above all, it enlarged possibilities for borrowing and investment, by establishing a modern banking system. These institutional changes bore fruit in the Industrial Revolution.

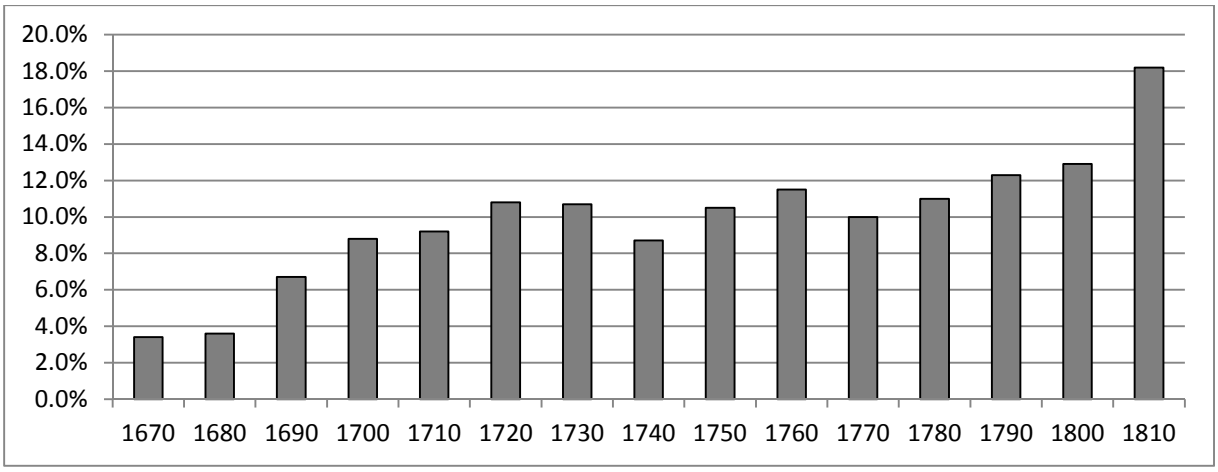

Figure 4: Total Tax Revenue as a Proportion of National Income, 1670-1810.

Source: Data from O'Brien (1988, p. 3). See also O'Brien (2011, p. 428).

Addressing the evolution of finance in Italy, the Netherlands and Britain, Geoffrey Ingham (2008, p. 70) concluded that 'the capitalist monetary system developed from the integration of private networks of mercantile trade credit-money with public currency – that is, state money.' For Ingham (p. 74) and others, crucial to this system was the role of debt: 'Capitalism is distinctive in that it contains a social mechanism by which privately contracted debtor-creditor relations … are routinely monetized.'

Vital to the development of a modern banking system was the emergence of institutions making debt itself saleable or 'negotiable.' A promise to pay could then be sold to another, who would then take on the legal obligation of payment. A key problem is effective legal enforceability. For general negotiability, the transfer of obligations also had to be recognized and enforced by the legal system. Contracts ordinarily involve legal obligations to deliver goods or services in exchange for money. Exchanges of promissory notes involve instead the purchase of a promise, and originally this was not recognized as a valid contract in law: the selling of debt was not sanctioned by legal recognition of the transfer of the obligation to its purchaser. Major legislative changes were necessary to make this possible.

In the seventeenth century, commercial cases shifted from the law merchant courts to common law courts (Baker 1979, Berman 1983). But the 'blundering attempts' by common law courts (Beutel 1938, p. 840) to deal with the negotiability of debt led businessmen to press Parliament for robust legislation. John R. Commons (1934, p. 392) wrote: 'It required the entire Seventeenth Century for lawyers to complete the invention of the negotiability of debts.' In fact it took several more years to complete. In 1704, during the reign of William's successor Queen Anne, Parliament passed 'An Act for giving like Remedy upon Promissory Notes, as is now used upon Bills of Exchange, and for the better Payment of Inland Bills of Exchange.' Significant further legislation, including another Act as late as 1758, was required to consolidate negotiability (Beutel 1938, Lawrence 2002). Once negotiability was established, the capitalist genie was out of the bottle. As Henry Dunning MacLeod (1872, p. 481) wrote:

> If we were asked – Who made the discovery which has most deeply affected the fortunes of the human race? We think, after full consideration, we might safely answer – The man who first discovered that a Debt is a Saleable Commodity.[12]

The use of this 'discovery' required firm legal foundations and consolidation through more than one Act of Parliament. But eventually, through these means, the emerging capitalist financial system empowered economic development on a massive scale.

Capitalist finance involves a complex web of contractual obligations. Commercial banks since the fourteenth century operated increasingly by keeping only a fraction of their deposits in reserve as cash or gold. Fractional-reserve banking has a cumulative effect on money creation by commercial banks as it expands the money supply beyond the scale of the deposits alone. Any debt is funded by current assets, or by claims owed by a third party. The purchaser of debt receives the right to an asset that itself can be used as collateral to borrow (Veblen 1904, pp. 113, 149). Credit money thus feeds on itself: commercial bank money is created endogenously (Moore 1988). But this all depends on a legal structure of enforceability, a fractional reserve system backed by private and state assurances, and sufficient confidence that debt can be redeemed. Once legal institutions supporting collateralizable property, credit money, and the sale of debt were in place, a new dynamic was unleashed.

The evolution of the financial system in the first half of the eighteenth century facilitated more and more industrial and infrastructural projects based on large-scale borrowing. They triggered another process of cumulative causation and positive feedback, which became evident by the 1750s. As the profitability of larger-scale investments was demonstrated, wealthy landowners and other investors were enticed by further commercial ventures. Growing opportunities for profit eroded longstanding, sentimental, family commitments to their estates. This impelled the removal of entails and strict settlements, so that land could be used as collateral for loans. Hence the major reforms to property rights in land followed rather than preceded the Financial Revolution.

Consequently, institutional changes in the eighteenth century increased the stock of property that was usable as collateral, creating the opportunity for increased loans. The growth of incentives and opportunities for borrowing, alongside the development of post-1694 arrangements in a debt-based monetary system based on negotiable paper, enlarged the market for debt, fuelling further speculation and investment. A modern financial system developed, which rested on the pillars of collateralizable property, negotiable debt, global trade, and state power.

5. Conclusion: from critique to reconstruction

The Glorious Revolution rewrote laws concerning neither property nor the role of Parliament. It did not increase the security of property rights, and it did not lead to an immediate acceleration in the pace of economic growth or of a growth in the economic weight of the bourgeoisie. But it did have two major portentous effects.

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[12] MacLeod (1858, pp. 476-8) coined the term 'Gresham's Law.' Mitchell Innes (1914, p. 9) credited him as the originator of the state theory of money. Commons (1934, p. 394) described him as 'the first lawyer-economist.' Schumpeter (1954, p. 718) judged him the only contemporary of Marx to make a systematic advance towards a credit theory of money.

First, as evidenced by the nature and pace of legislation after 1689, there was a shift in the *de facto* balance of power between the sovereign and Parliament. As North and others emphasized, this countervailing power placed important checks on the powers of the monarch. Nevertheless, this shift is insufficient to account for the reforms to property and finance that were necessary to sustain a rising capitalist economy. The power and motivation of a rising bourgeois class were necessary to overcome the vested interests in existing, semi-feudal landed property rights. This did not happen until long after 1688.

Second, 1688 meant a major shift in foreign alliances and prompted a number of major wars, up to the Seven Years' War of 1755-1763. Facilitated by the enhanced *de facto* role of Parliament, international conflict forced reform upon the British state, and required it to raise funds to finance war. The Financial and Administrative Revolutions of the early eighteenth century were the most immediate outcomes of 1688. Hence it was the financial and military needs of the state, more than the rising bourgeoisie, which provided the impetus for change from 1688 to 1750.

But institutional changes, combined with the demands of war upon industrial production, eventually facilitated a rise in the weight and influence of the industrial and commercial classes, which in turn benefitted from expanding British trade and Empire. These changes were discernible by around 1760.

As the industrial take-off gathered pace after 1760, it increased the pressure to reform property rights in land, so that it could be used as collateral for industrial and commercial investments. New pecuniary opportunities overcame the resistance to reform by conservative landowners. Financial institutions were required to facilitate the use of property as collateral. Necessary were banks and other financial institutions that made it possible to use land as collateral to invest in agricultural improvements, mercantile ventures, industry and infrastructural projects.

This account puts the growth of finance at the centre in the explanation of the rise of capitalism. Neither the establishment of secure property rights (North), nor the rise of a capitalist class employing waged labour (Marx), characterize the period from 1688 to 1750. While secure property rights, trade and wage labour may be taken as necessary features of capitalism, they are insufficient to define that system. At the core of capitalism – as it emerged in the eighteenth century – is a set of financial institutions based on collateralizable property and credit creation. These institutions and the monetary system are typically buttressed by the state (Hodgson 2015a).

As Joseph Schumpeter (1939, p. 223) pointed out, 'capitalism is that form of private property economy in which innovations are carried out by means of borrowed money, which in general … implies credit creation.' Money is borrowed on the basis of collateral. Yet this aspect of property is neglected in much of the 'economics of property rights', which concentrates instead on property in terms of control. Schumpeter (1954, p. 78 n.) also emphasized 'the importance of the financial complement of capitalist production and trade'. Hence 'the development of the law and the practice of negotiable paper and of "created" deposits afford perhaps the best indication we have for dating the rise of capitalism.'

This article has located key developments in financial institutions in the opening decades of the eighteenth century. These institutional changes, tied up with reformed financial and administrative functions for the state, provide the missing causal links between the Glorious Revolution of 1688, the rise of capitalist financial institutions, and the beginnings of the Industrial Revolution around 1760.

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