

8 Institutions

Give a man the secure possession of a bleak rock, and he will turn it into a garden.....The magic of PROPERTY turns sand to gold (Arthur Young, 1787)¹⁸⁸

Introduction

The popular misconception of the pre-industrial world is of a cowering mass of peasants ruled over by a small, violent and very stupid upper class that extracted all surplus from them beyond subsistence, and so gave no incentives for trade, investment, or improvement in technique. These exclusive and moronic ruling classes were aided in their suppression of all enterprise and innovation by organized religions of stultifying orthodoxy, which punished all deviation from established practices as heretical. The trial and condemnation of Galileo Galilei by the Holy Inquisition in 1633, for defending the Copernican view that the earth revolved around the sun, seems an exemplar of the reign of superstition and prejudice that created the long Malthusian night.

There may have been societies before 1800 that fit this popular stereotype. There were frequent attempts by religious authorities to impose fallacious dogmas about the natural world. But we shall see that, as an explanation of the slow technological advance of the world as a whole before 1800, the prevailing view makes no sense. It is maintained only by a contemporary variety of dogmatism, that of modern economics and its priestly cast.

The central vision of modern economics, the key message of Adam Smith in 1776, and of his followers, is that people are the

¹⁸⁸Young, 1969, July 30, 1787 and November 7, 1787.



Figure 8.1 The Trial of Galileo, 1633

same everywhere in their material preferences and aspirations. They behave differently only because of differences in incentives. Given the right incentives – low tax rates on earnings, security of property and of the person, free markets in goods and labor – growth is guaranteed. The long Malthusian night persisted because of the inability of all societies before 1800 to create such institutions.

This vision of progress permeates the potted history of the pre-industrial world contained in the *Wealth of Nations* of 1776. Smith repeatedly explains the poor economic performance of the pre-industrial world as a consequence of institutions that offered poor incentives. Smith's vision permeates contemporary economics, from the practical councils of the IMF and World Bank, to the theorists of University economics departments. The *Washington Consensus* of the 1990s on the institutional pre-requisites for

growth in underdeveloped economies is an elaboration of the Smithian program, an elaboration that could have been penned by the master himself.

In economic history also, the Smithian vision is the dominant intellectual tradition. Indeed much of modern quantitative economic history has been a search for empirical confirmation of his vision of growth. These empirical studies of past societies, however, rather than confirming the Smith's hypothesis, systematically find that many early societies had all the pre-requisites for economic growth, but no technological advance, and hence no growth. While all societies before 1800 displayed slow rates of technological advance, some had institutions as favorable to economic growth as any the current World Bank could wish for.

Economic historians thus inhabit a strange nether world. Their days are devoted to proving a vision of progress that all serious empirical studies in the field contradict. Trapped in this ever tightening intellectual death spiral, it is possible to maintain the vision only through a strange intellectual dissonance. More and more elaborate conceptions of how early institutions could unwittingly have provided poor incentives are appealed to.¹⁸⁹

We shall see below that private property institutions do play an important role in the escape from the Malthusian Trap, but only in a much more long-run and indirect fashion. But first we must clarify that there were pre-industrial societies that had most, if not all, of the institutional pre-requisites for growth hundreds, and probably thousands, of years before the Industrial Revolution.

¹⁸⁹ See, for example, Greif, 2006.

Medieval England as an Incentivized Society

Medieval England in the years 1200-1500 experienced little or no overall technological advance, as we saw.¹⁹⁰ Yet medieval England had extraordinary institutional stability. Most individuals enjoyed great security both of their persons and their property. Markets for goods, labor, capital, and even land were generally free. Indeed if we were to score medieval England compared to modern England using the criteria typically applied by the IMF and World Bank now, it would rank amongst the most approved regimes. On an objective evaluation it would rank much better than all modern high income economies on the strength of economic incentives.

Table 8.1, for example, gives a rough scoring of England on these criteria in 1300 and 2000, the details of which are supplied below. In respect of five of the 12 criteria, the medieval economy had better institutions than the modern. In respect of another five they were equivalent. There were only two out of 11 criteria by which the medieval economy may have been worst.

Taxation

Pre-industrial societies were generally low tax societies. England, in particular, was an extremely lightly taxed society. Figure 8.2 shows, for example all government expenditures, both central and local, by year as a function of GNP from 1285 to 2000.¹⁹¹

¹⁹⁰See figure 7.2.

¹⁹¹Expenditures, rather than taxes, are used since the government in the years 1720-1815 resorted to large scale issue of debt to fund itself. But debt is just deferred taxes, and should have the same disincentive effect.

Table 8.1 The Incentives of Medieval versus Modern England

Economic Desiderata	England, 1300	England, 2000
Low tax rates	YES	NO
Modest social transfers	YES	NO
Stable money	YES	NO
Low public debt	YES	NO
Security of Property	YES	YES
Security of the Person	?	YES
Social mobility	YES	YES
Free goods markets	YES	YES
Free labor markets	YES	YES
Free capital markets	YES	YES
Free land markets	YES	NO
Rewards for knowledge creation	?	YES

Before the Glorious Revolution of 1688-9, which established the modern constitutional democracy of Britain, government expenditures of all types were extremely modest. In the years 1600-1688 these averaged just 2.2 percent of national income. Before the sixteenth centuries these expenditures were typically less than 1.5 percent of national income.

Before 1689, attempts to increase the take by the king were vigorously resisted. Thus the Poll Tax of 1381, which triggered a brief but widespread rebellion in which the rebels captured London, and killed the Archbishop of Canterbury and the king's Chancellor, was a temporary war tax on all adult males in England, equivalent to 1 percent of a laborer's annual earnings.¹⁹² After this

¹⁹² The tax was 5d., less than double a farm laborer's day wage.

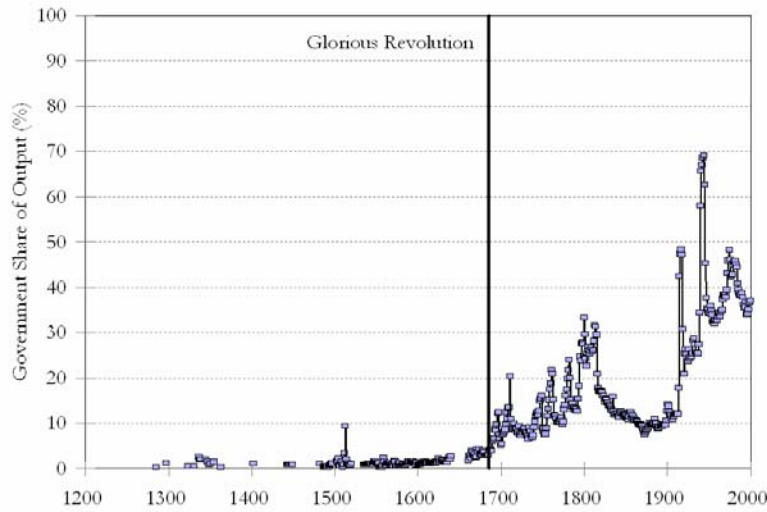


Figure 8.2 Government Command of Output as a percent of GNP, England 1285-2000¹⁹³

reaction no English government attempted a Poll Tax again, until the similarly ill-fated venture of Prime Minister Margaret Thatcher in the 1980s.

The Glorious Revolution had an immediate bad effect in raising Government taxes and expenditures. Expenditures quickly rose to be more than 10 percent of output, a level they have exceeded ever since. This spending was almost all for warfare. The share of government expenditures in national income has continued, with fluctuations, to rise to the present day. By the 1990s government expenditures constituted 36 percent of UK national income.

¹⁹³ Clark, 2007b.

Yet the UK is modestly taxed relative to other modern, high income economies. A measure of the tax burden that is more directly geared to the disincentives to work implied in the tax system is the marginal total tax rate, counting all forms of taxation including employers' contributions and sales taxes, the share of the last dollar in wages taken by the government. Table 8.2 shows this rate for the average wage earner in a selection of economies in 2000, arranged in decreasing order of the take. This tax rate varied from 66 percent in Belgium to 32 percent in Japan.

Most of the money collected in taxes is used either to provide goods and services available to all, regardless of their income, or for transfers to those with low earnings.¹⁹⁴ The publicly provided common goods include some or all of highways, law and order, defense, child care, education, health care, and the component of old age pensions not indexed to earnings. The third column of table 8.2 shows such social spending as a share of GDP in these same economies in 1995.

A system of high taxes on economic activity, combined with generous provision of income and services independent of effort, is precisely what the Washington Consensus would fear as a barrier to effort and initiative. The rational, self-interested individuals of the Smithian conception, facing these high marginal tax rates, should have produced significant declines in work hours. Indeed, on the Smithian conception, it is not clear why economic activity has not completely ground to a halt. The taxing systems of pre-industrial economies like medieval England, that typically returned none of the income collected to consumers in the form of social services or transfers, should discourage individual initiative much less than modern tax and transfer schemes.

¹⁹⁴ Some of the taxes on wages do fund pensions that are dependent in size on the earnings of the person, but this is a minority.

Table 8.2 Taxes and Government Spending by Country¹⁹⁵

Country	Marginal tax rate (% , 2000)	Social Spending/GNP (% , 1995)	Hours of market employment per adult, 2000
Belgium	66	32	954
Germany	65	29	1,010
France	56	33	1,003
Italy	53	28	1,139
Ireland	53	23	1,240
Netherlands	51	30	1,037
Sweden	49	40	1,189
Denmark	49	37	1,220
Spain	46	25	1,146
UK	41	27	1,245
USA	34	19	1,364
Japan	32	16	1,312

These data thus suggest two things. The first is that if incentives are the key to growth, then some pre-industrial societies like England had better incentives than modern high income economies. The second is that incentives may be much less important to explaining the level of output in economies than the Smithian vision assumes.

The last column of table 8.2 shows hours worked per person aged 20-64 in the same economies. Figure 8.3 shows how this correlates with the marginal tax rate for a larger group of OECD

¹⁹⁵ Marginal tax rates from the OECD Tax Database. Hours worked, and population 20-64 from OECD Main Economic Indicators. Social Spending from Lindert, 2004, 177-8, 236-7.

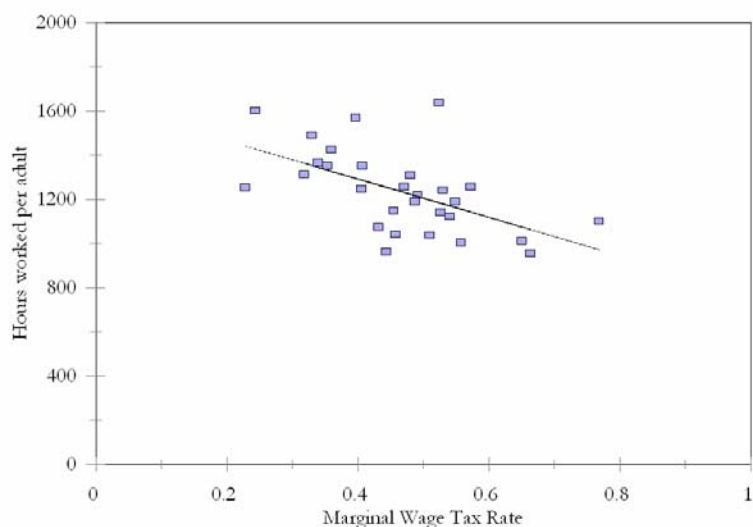


Figure 8.3 Hours worked per person 20-64 versus the marginal wage tax rate¹⁹⁶

economies, where now reported marginal tax rates vary between 20 and nearly 80 percent. There is a negative correlation of hours and tax rates, but the effect is surprisingly modest. Average hours per adult are about 1,400 at a marginal tax rate of 20 percent on wages, and 1,000 at a marginal tax rate of 70 percent.¹⁹⁷ Also the effect on actual hours worked may be much less than on reported hours. High marginal tax rates have the effect of pushing workers into the undocumented “black” economy. The correlation between documented hours and tax rates may just reflect this substitution.¹⁹⁸ Thus if for this same group of economies we

¹⁹⁶Sources as for table 8.2

¹⁹⁷Edward Prescott, looking at changes over time in hours worked and tax rates finds a much more significant effect. Prescott, 2004.

¹⁹⁸ A recent survey estimated that such economic activity now constitutes as much as 18 percent of output in high tax European economies. 24-30 percent

graph marginal tax rates against income per adult, as is done in figure 8.4, we find actually a positive correlation. This has been dubbed by Peter Lindert the “free lunch paradox.”¹⁹⁹ Surprisingly, there is no evidence that the heavy taxes and transfers of modern states have any effect on output.

The expenditure shares for England before 1837 in figure 8.2 reports just the activities of governments at various levels. In the pre-industrial period in Europe the church was another important extorter of income, in the form of the tithe.

The tithe was theoretically ten percent of gross output. If collected in full the church would have received as much as 15 percent of income in the years before 1800, since some of the gross output had to be used as seed for the next year. However, evidence from the charity lands in pre-industrial England suggests that the difficulties of collecting tithe in kind, particularly on pastoral products, led to tithe owners collecting at a much lower rate. Tithe collections before 1800 averaged only 11 percent of land rents, or 4.4 percent of farm output. So tithe income in pre-industrial England was likely less than 4 percent of national income.²⁰⁰

Thus even allowing for the additional taxing power of the church, all taxes collected in pre-industrial England before the Glorious Revolution were typically less than 6 percent of income.

England is typical of other pre-industrial societies where we can estimate the share of taxes in all income. As table 8.3 shows, estimates for late Imperial China, and for the Ottoman Empire suggest similarly low tax rates.

of Italian GDP is estimated to be produced in this way in 1990-3. Schneider and Enste, 2000, 80.

¹⁹⁹ Lindert, 2004.

²⁰⁰ Clark, 2002.

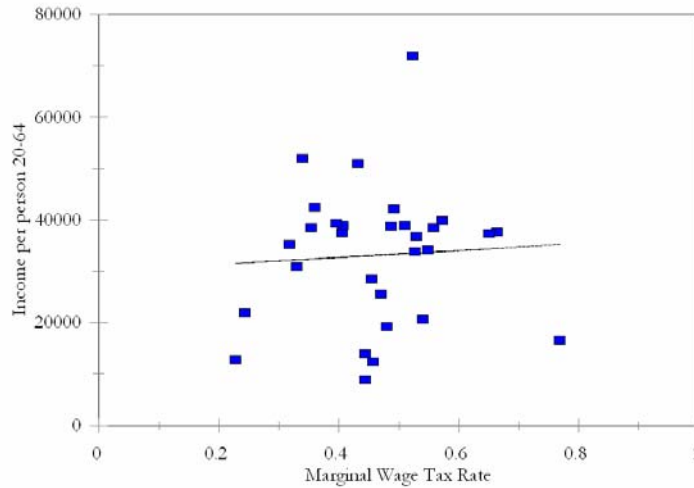


Figure 8.4 Income per person 20-64 versus marginal wage taxes²⁰¹

One reason why taxes were so light in pre-industrial agrarian societies was that the ruling class had a rich source of income without resorting to taxation, which was land ownership. As figure 7.4 showed for England land rents were about 20 percent of income. In England by 1300 most of the land owned by this ruling class was either leased out to tenants on a commercial basis, or was held by tenants on fixed rent leases with hereditary right.

²⁰¹ Income is GDP given in 2000 \$ in the Penn World Tables.

Table 8.3 The Share of Pre-Industrial Income Collected in Taxes²⁰²

Country	Period	All taxes (including church) %
England ^a	1285-1688	6
England ^a	1689-1800	14
Ming China ^b	c. 1550	6-8
Qing China ^b	c. 1650	4-8
Qing China ^b	c. 1750	8
Ottoman Empire ^d	1500-99	3.5
Ottoman Empire ^d	1600-99	3.5
Ottoman Empire ^d	1700-99	4.5

Price Stability

Money, the use of tokens that carry value, is an institution of great value to any society. The percentage cost of holding a given stock of money per year is the the nominal interest rate plus the inflation rate. If you hold an average of \$100 in your wallet, the interest rate is 3 percent, and the inflation rate 2 percent, then the annual cost of holding money is \$5. This cost leads people to economize on how large a cash balance they hold, and reduces the value of money in facilitating transactions and storing value. As

²⁰² ^aAuthor's calculations. ^b Feuerwerker, 1984. ^cOECD. ^dPamuk, 2005, graph 1 (central government only).

the inflation rate gets higher the cost of holding money as cash gets larger and so the size of real cash balances declines.

Since token monies cost little to create, the optimal inflation rate from a social perspective is always 0 or less. That is when money has its maximum value as a medium of exchange and store of value. However, by printing more money governments can extract an inflation tax from the economy. Thus from a revenue perspective the government would favor a relatively high level of inflation, to the cost of society as a whole.²⁰³ Figure 8.5 shows the disjuncture between a revenue-maximizing government's incentives and the social maximum.

Portrayed is the demand curve for cash balances as a function of the annual cost of holding money. The *inflation tax* is the area of the rectangle. When the revenue from this tax is maximized there is substantial inflation. This would create a significant social cost, called the deadweight loss, from all the uses of money that now are abandoned because of its cost.

Weak modern governments make substantial recourse to the inflation tax, and many poor countries have been subjected to high inflation rates in recent decades. They have also been high in some periods even in the richest economies over the last 50 years. However, in pre-industrial England, and indeed in many pre-industrial economies, inflation rates were low by modern standards. Figure 8.6 shows the English inflation rate from 1200-2000 over successive centered 40 year intervals. Before 1914 inflation rates rarely exceeded 2 percent per year, even in the period known

²⁰³ If the government maintains an inflation rate of π , and r is the real interest rate, then the issue of fiat money generates a revenue for the government per year of $(r + \pi) \cdot M$, where M is the real (constant value) money stock. rM is what it would cost per year for the government to borrow an amount M . But when $\pi > 0$, the public also has to acquire πM units of new cash each year to maintain their real cash balances.

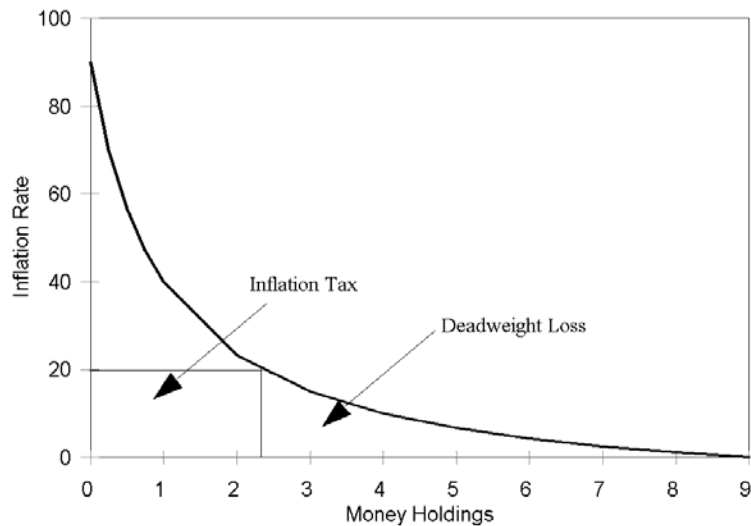


Figure 8.5 The Demand for Money and the Social Costs of Inflation

as the *Price Revolution* when the influx of silver from the new world helped drive up prices. In a country such as England, which had a highly regarded currency in the pre-industrial era, the crown did not avail itself of the inflation tax, despite the close restrictions parliament placed on its other tax revenues. Only in the twentieth century did significant inflation appear in England. By the late twentieth century annual inflation averaged 4-8 percent per year. Thus there has been a decline, not an improvement, in the quality of monetary management in England since the Industrial Revolution.

Even though there were periods of substantial inflation in some other pre-industrial societies, there are also those that achieved very long run price stability. Thus in Roman Egypt wheat prices roughly doubled between the beginning of the first

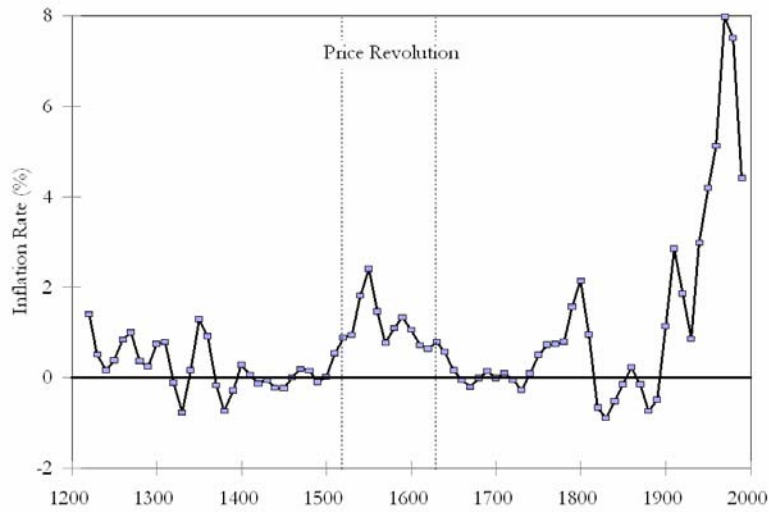


Figure 8.6 Inflation rates by 40 year periods, England 1200-2000

century AD and the middle of the third.²⁰⁴ But that reflects an inflation rate of less than 0.3 percent per year.

Public Debt

Another macroeconomic success forced on pre-industrial economies by their low tax bases was the general avoidance of much public debt. Before the Glorious Revolution English public debt, for example, was miniscule since the government could service with current revenues only a debt of, at maximum, less than 10 percent of GDP.

²⁰⁴ Duncan-Jones, 1990, 145-155.

An immediate consequence of the greater taxing power of the government after 1689, however, was an increase in public debt. Figure 8.7 shows the ratio of public debt to GNP for England for from 1688 to 2000. The fiscal stresses of the “Second Hundred Years War” with the French saw debt rise to record levels by the 1820s of nearly 2.5 times GNP. Peace and economic growth reduced the debt relative to GNP by 1914. But the stresses of the wars of the early twentieth century inflated the debt again to 2.5 times GNP by 1950. Since then the debt has declined. But at more than 0.4 times GNP it is still substantially exceeds that of England before the Glorious Revolution.

Assuming the public has a limited perception of the level and significance of public debt, it will crowd out private investment, reducing the capital stock, and thus reduce the overall output of societies. Such a public will not respond when governments finance current expenses with debt, as it would if aware and rational, by increasing its savings by the amount of the debt in anticipation of a future greater tax burden. Thus public debt will drive up interest rates, and drive out private investments. Jeffrey Williamson, for example, argues the huge accumulated debt of the French Wars period in Britain was a major economic policy disaster that substantially slowed Industrial Revolution growth.²⁰⁵

The average OECD economy now has a public debt of 0.5-0.6 of GNP. Thus modern growth has been associated again with poorer macroeconomic performance.

²⁰⁵ Williamson, 1984. Since the capital output ratio was typically 4 in the nineteenth century, if the debt of the 1820s reduced private capital on a 1:1 basis, then the capital stock in England would have been half its level in the absence of the public debt.

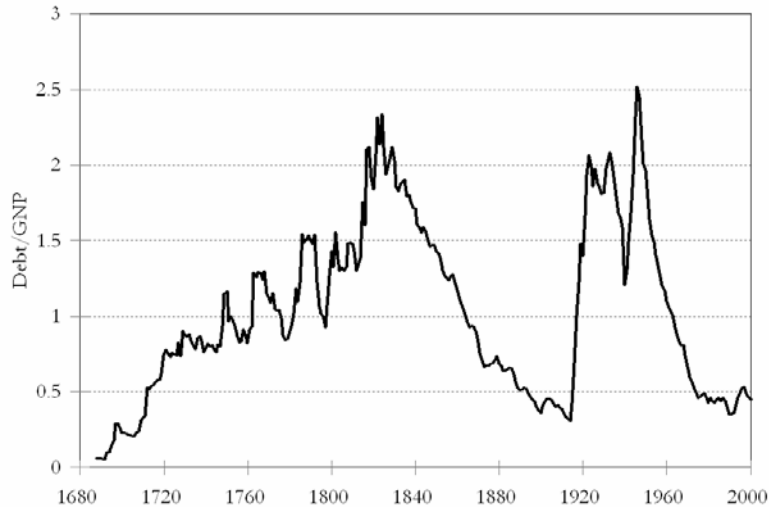


Figure 8.7 Ratio of Debt to GNP, England/UK

Security of Property

A sign of the security of property in medieval England, and the general stability of institutions, are the modest fluctuations in property values over time. Figure 8.8 shows the average real price of farmland per acre in England by decade from 1200 to 1349 relative, the price relative to that of farm output.²⁰⁶ There is remarkably little variation in the real price by decade. Medieval farm land was an asset with little price risk. This implies few periods of disruption and uncertainty within the economy. Such disruption typically leaves its mark on the prices of assets such as land and housing.

²⁰⁶The property sales are recorded in the chartularies of religious foundations and private families.

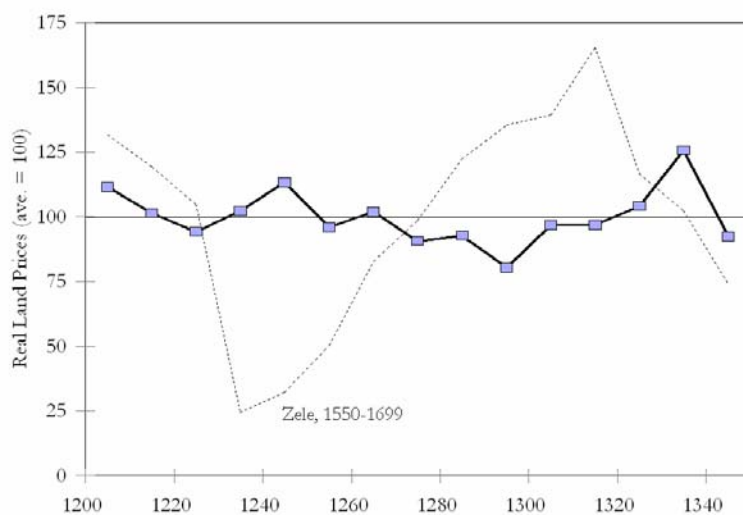


Figure 8.8 Real Land Prices, England 1200-1349²⁰⁷

In comparison the figure shows also the decadal average of the real price of arable land in the district of Zele, near Ghent, in Flanders from the 1550s to the 1690s, which shows dramatically greater variation. The reason for this is easy to infer from the narrative history of Flanders. In 1581-92 Flanders was the setting for the fight over Dutch independence. Ghent was recaptured from the rebels in 1584 after fierce fighting. Flanders from then was mostly Spanish, but the Dutch continued to raid the countryside until 1607. The fighting shows in the huge depreciation in land values in Zele: they were less than 20 percent of their level in the 1550s by the 1580s. There was also warfare in Flanders in 1672-97 during the wars of the Dutch and the Habsburgs against Louis XIV. Land values then also declined sharply relative to the peaceful years of the 1660s.

²⁰⁷Prices in Zele from Clark, 1996.

Thus the sometimes turbulent nature of high politics in England in the medieval period - there were armed conflicts between the King and the Barons in the periods 1215-19, 1233, 1258-65 and much of 1312-1326 - had no impact on the average person. At the local level property rights were stable and secure.

Personal Security

A second aspect of the security and stability of medieval England was the comparatively low threat from physical violence, illustrated in chapter 5. From the thirteenth century on the typical Englishman died in his bed. This was no Hobbesian world of plundered, burning villages strewn with the unburied dead.

In day to day life violence rates in the medieval period were high by comparison to modern England, but were still not such as we would think would interfere with the operation of economic incentives. Even at their worst in the thirteenth century homicide rates for males, at 0.21 per 1,000, still implied that the average male over their lifetime had only about a 0.8 percent chance of being murdered. These rates are at the high end for the modern world. But most travelers would not fear to visit modern societies with similar or higher male homicide rates now: Thailand (0.13), Latvia (0.17), Trinidad and Tobago (0.17), Estonia (0.23), Bahamas (0.26), Philippines (0.26), Mexico (0.30), Puerto Rico (0.38), Brazil (0.42).²⁰⁸ Also most of the decline in homicide rates towards modern levels occurred by 1500, long before the onset of modern economic growth.

²⁰⁸ World Health Organization, 2002, table A.8. Rates for latest available year in the 1990s.

Social Mobility

Property and person might be secure, the objection will be voiced, but in a society where there was a strict division between the noble class at the top and a mass of undifferentiated servile peasantry at the bottom, this stability and security was that of a stultified social order, not that of a economy pregnant with the possibilities of progress. However, this is another caricature of the pre-industrial world. Case after case, study after study, shows that even medieval England was a highly fluid society where people lived at every type of economic condition, from landless wage laborers to wealthy, and where movement between conditions was frequent.

Taxation records and manorial court rolls reveal from the earliest years enormous income and wealth disparities. Records of the 1297 Subsidy (a tax on movables), for example, suggest huge variations in wealth, even above the minimum value of possessions, about a quarter of the annual wage of a laborer, that made households liable to the tax.²⁰⁹

Even at the lowest level, the laborers and peasants, there was an active land market from early in the thirteenth century at least that transferred even land notionally held by unfree tenants to unrelated individuals. Thus peasants, or even laborers, who were energetic and frugal could accumulate land and move up the rural social hierarchy. This shows up, even from the earliest years, in great inequalities in land holdings. A survey of the royal manor of Havering in 1251, for example, reveals that while 4 tenants held more than 200 acres of land each, 41 held less than an acre, and 46 between 1 and 3 acres.²¹⁰

²⁰⁹Biddick, 1987.

²¹⁰MacIntosh, 1980.

Another factor causing great social mobility and fluidity in Malthusian societies like medieval England was the accidents of demography. Figure 8.9 shows the distribution of the numbers of surviving children for male testators in England both outside London, and in London itself, from the wills discussed above. The distributions shown here would have been characteristic for the whole Malthusian era. Outside London one third of males leaving wills had no surviving son, while 11 percent had four or more. Few fathers had just one son to which all their property and position devolved. Instead collateral inheritance was frequent, as were cases where to retain their social position sons of larger families would have to accumulate property on their own. This meant that accidents of birth and inheritance were constantly moving people up and down the social ladder.

The data also illustrates the well known fact that in the pre-industrial era cities such as London were deadly places where the population could not reproduce itself and had to be constantly replenished by rural migrants. Nearly 60 percent of London testators left no son. Thus the craft, merchant, legal and administrative classes of London were constantly restocked by socially mobile recruits from the countryside.

Medieval England may have been a static society economically. But the overall stasis should not blind us to the churning dynamism of the social fabric, with individuals headed up and down the social scale, sometimes by extraordinary amounts. A substantial fraction of the landed aristocracy of England, even in the medieval period, actually had its foundation not in long aristocratic lineage or in military success, but in successful merchants and lawyers who from the twelfth century on were using their profits to buy land and enter the aristocracy.²¹¹ High

²¹¹Wasson, 1998.

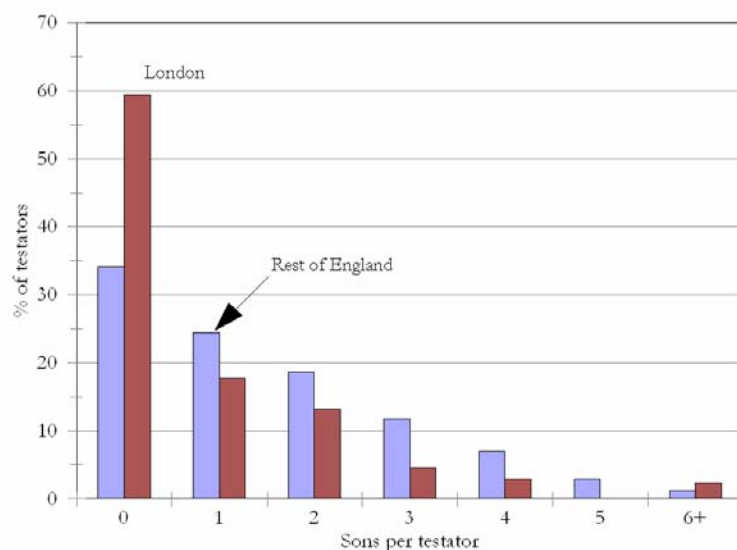


Figure 8.9 Sons per Male Testator, England c. 1620

church positions were even more open to the lower orders. In the medieval period only 27 percent of English bishops, the clerical aristocracy, came from the nobility. The rest were the sons of lesser gentry, or farmers, or of merchants and tradesmen.²¹²

The social fluidity of medieval England was probably more the norm, rather than an exception, for the Malthusian era. Thus in Ming and Ching China, all the way from 1371 to 1904 commoners were typically 40 percent or more of those recruited by way of examination into the highest levels of the Imperial bureaucracy. But also in China those with money, at least from the 1450s on, could alternatively buy official ranks and titles.²¹³ In *ancien Regime* France the ranks of the nobility were similarly

²¹²Chibi, 1998, Table 1.

²¹³Ho, 1959.

stocked from financially successful merchants and government officers from earlier generations.²¹⁴

Markets

Markets in medieval England were relatively complete and competitive.

Labor, for example, was not immobile and fixed to the land or traditional occupations. Medieval Europe in general had a surprising degree of geographic mobility. Given the low reproductive success of the city population there had to be a constant flow of labor from the country to the city. Thus the records of a 1292 tax levied by Philip the Fair on the commoners households of Paris show 6.1 percent were foreigners: 2.1 percent English, 1.4 percent Italian, 0.8 percent German, 0.7 percent Flemish, 0.6 percent Jewish, and 0.4 percent Scottish.²¹⁵ A poll tax levied on aliens in England in 1440 revealed about 1,400-1,500 unnaturalized alien males in London at a time when the total adult male population of the city would be only about 15,000: nearly 10 percent of the population.²¹⁶

Goods markets were similarly open. The grain trade in medieval London was so well developed that private granary space was available for hire by the week.²¹⁷ From 1211 on local yields had no effects on the prices at which manors sold wheat. The

²¹⁴ Japan's Samurai class, however, in the Tokugawa era, 1603-1868, does seem to have been a closed elite. Morse, 1970.

²¹⁵ Sussman, 2005, 18, 20.

²¹⁶ Thrupp, 1957, 271. This assumes a total population for London of 50,000. The tax lists show few merchants, suggesting it was designed for artisans and laborers only.

²¹⁷ Campbell et al., 1993, 101-3.

national price was the only thing that mattered in predicting local prices.²¹⁸

The earliest surviving records of transactions in property from the twelfth century show already an active land and house market. Manorial court records, which survive in quantity from the 1260s, also reveal very active land market among the peasantry, trading small pieces of farmland back and forth between families.²¹⁹

Conclusion

As long as we can find examples of Malthusian societies, like medieval England, which were fully *incentivized* yet witnessed only the glacial slow pre-industrial pace of technological advance, then formal institutions cannot be the cause of the long Malthusian era in the simple way that most economists routinely imagine. If formal institutions are the key it must be because somehow Malthusian economies provided little or no incentive specifically for technological advance. But we shall see below when we come to study the Industrial Revolution itself that while innovation lay at its core, the transition to higher rates of efficiency advance was accomplished before there was any significant improvement in incentives to innovate. Alternatively there must have been informal, self-reinforcing social norms in all pre-industrial societies that discouraged innovation.

²¹⁸ Clark, 2001.

²¹⁹ This is one of the reasons Alan Macfarlane, 1978, famously argued that by the middle ages England was no longer a peasant society.