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Ancient and Medieval Growth

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September 2017

After the Neolithic Revolution

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- ▶ In the last Lecture we examined two approaches to thinking about the Neolithic Revolution. The first (Diamond) based on the exogenous availability of plant and animal species. The other (Acemoglu-Robinson) based on institutional changes: the development of political centralization, sedentism, and hierarchy.
- ▶ As I discussed in Lecture 1, living standards were largely unchanged between the Neolithic Revolution and the Industrial Revolution.
- ▶ This fact masks a lot of interesting dynamics that we will examine now.

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The Malthusian Model

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- ▶ The traditional theory about long-run stagnation stems from Thomas Malthus' book *An Essay on the Principle of Population* first published in 1798.
- ▶ In the simplest version of the model, deaths are a decreasing function of income, $D(y_t)$: $D' < 0$
- ▶ Births, B , are independent of income, and population dynamics are as follows

$$N_{t+1} = N_t + B - D(y_t)$$

- ▶ Income per-capita is decreasing in N (according to diminishing marginal product of labor) so there is a function $y_t = Af(N_t)$ with $f' < 0$. A is productivity.
- ▶ There is a unique attracting steady-state with $N_{t+1} = N_t$ where income per-capita y^* is defined by $B = D(y^*)$ and steady-state population $N^* = f^{-1}\left(\frac{y^*}{A}\right)$.

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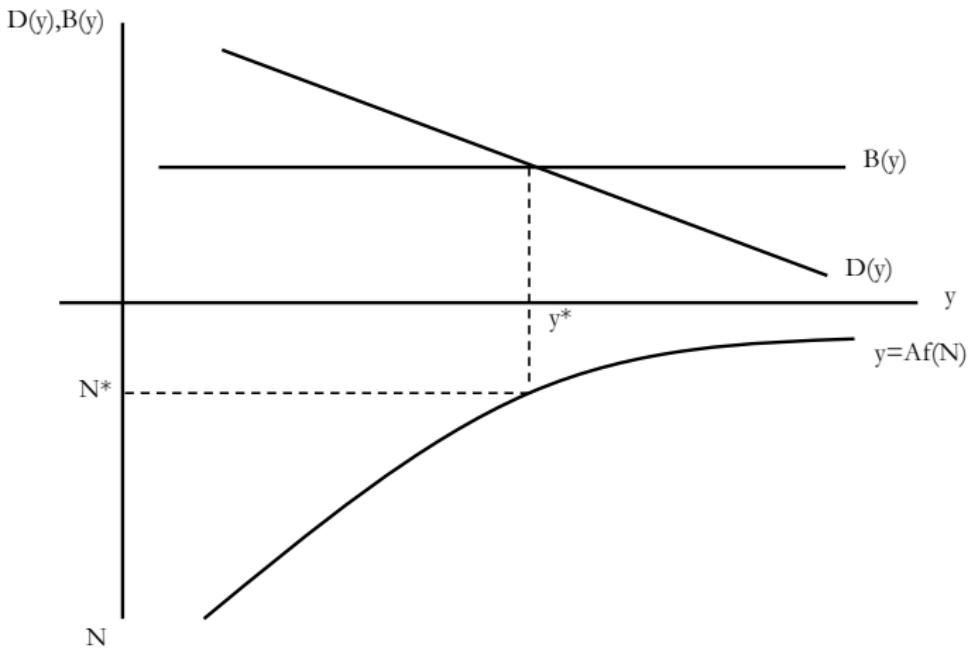
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Comparative Statics

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- ▶ Income per-capita always returns to the point where the birth rate equals the death rate. This is the unique attracting steady-state of the model.
- ▶ What happens if TFP improves from A to $A' > A$? This means more output for any level of population. The initial level of population N^* now produces an income level $y' > y^*$. This leads to higher incomes and an excess of births over deaths since $B > D(y')$. In consequence the population expands from N^* to N' until income per-capita is driven back down to where it was before.
- ▶ The same is true for other changes which have similar implications for the relationship between population and income, for instance good government.

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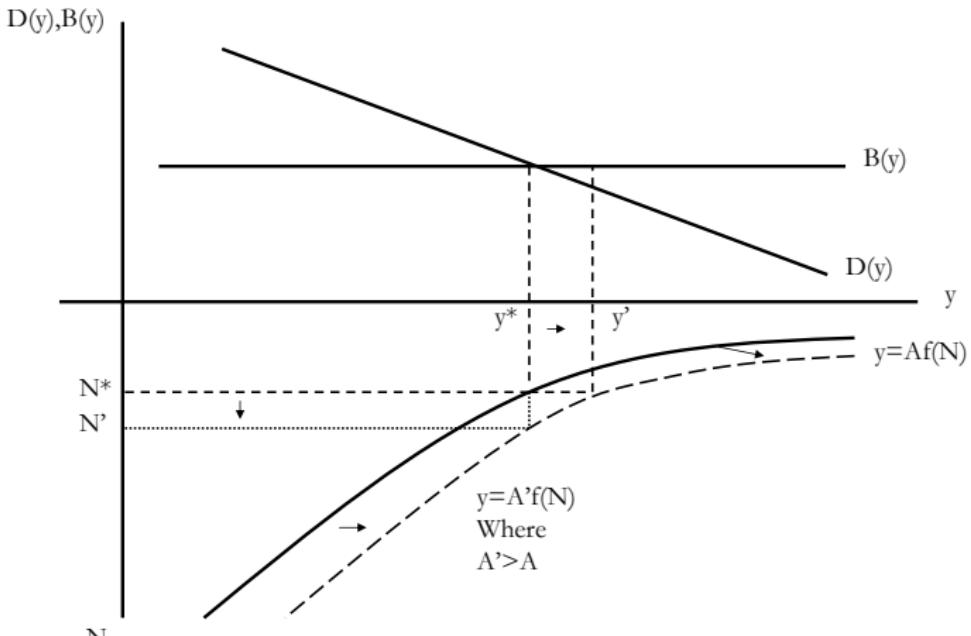
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Comparative Statics - Technological Innovation

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The Malthusian Model: Evidence

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- ▶ Malthusian model implies that even though the Spanish might have had better technology than the Inca, their income per-capita ought to have differed only according to their fertility and mortality schedules.
- ▶ But there are some problems with this view. Population density in the pre-modern era is positively correlated with proxies for per-capita income, such as urbanization or Maddison's income estimates.
- ▶ In addition, measures of good government, such as proxies for constraints on the executive, are correlated with urbanization in this period.
- ▶ For example, DeLong and Shleifer (1993) showed there was a strong correlation between form of government and urbanization in the pre-modern world

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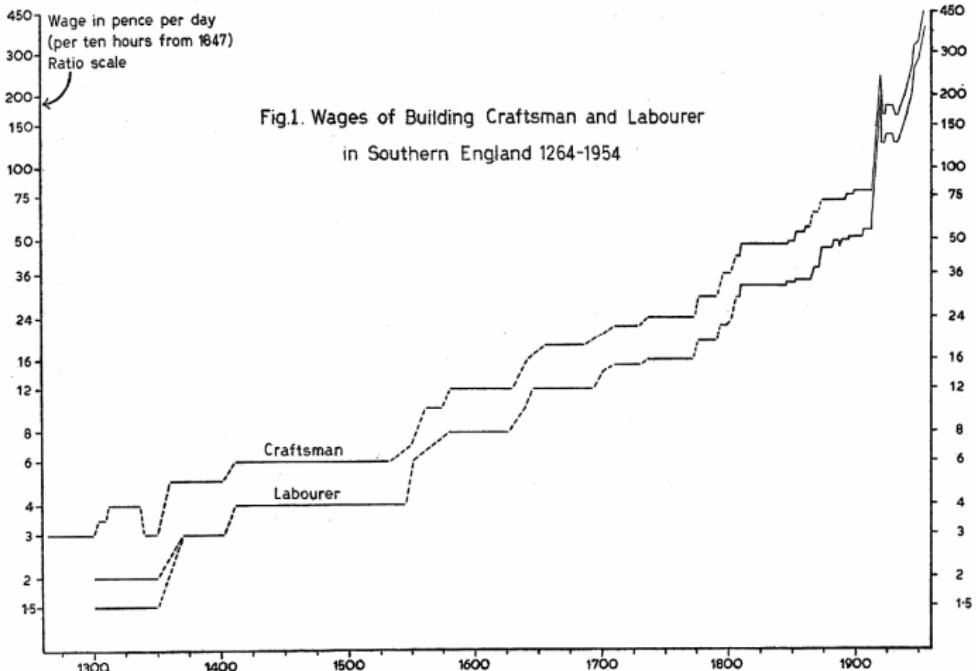
Evidence about the Malthusian Model: The Black Death

- ▶ A basic premise of the Malthusian model is that when population falls, incomes should rise. Is that true?
- ▶ One important event used to support the Malthusian model is the Black Death.
- ▶ As the data for Western Europe shows, after the population collapse, real wages eventually increased. However, the reality is more complex than is conveyed by the Malthusian model.
- ▶ After the Black Death, the government of Edward III tried to stop wages from rising by passing the Statute of Labourers.
- ▶ They were only partially able to enforce this, however, and after the Peasants Revolt of 1381, they mostly gave up.

Real Wages and the Black Death

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Source: E. H. Phelps Brown, E.H. and Sheila V. Hopkins (1955)
Seven Centuries of Building Wages," *Economica*, 22,195-206.

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- ▶ "Because a great part of the people and especially of the, workmen and servants has now died in that pestilence, some, seeing the straits of the masters and the scarcity of servants, are not willing to serve unless they receive excessive wages ... We, considering the grave inconveniences which might come from the lack especially of ploughmen and such labourers, have ... seen fit to ordain: that every man and woman of our kingdom of England ... shall be bound to serve him who has seen fit so to seek after him; and he shall take only the wages liveries, meed or salary which, in the places where he sought to serve, were accustomed to be paid in the twentieth year of our reign of England, or the five or six common years next preceding [1347]."
- ▶ Source: Rosemary Horrox ed. (1994) *The Black Death*, Manchester University Press.

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The Statute of Labourers 1351 - 'enticement'

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"And if a reaper or mower, or other workman or servant, of whatever standing or condition he be, who is retained in the service of any one, do depart from the said service before the end of the term agreed, without permission or reasonable cause, he shall undergo the penalty of imprisonment, and let no one ... moreover, pay or permit to be paid to any one more wages, livery, meed or salary than was customary as has been said."

Factor Supplies and Wages in Mexico

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- ▶ Do real wages always increase after negative population shocks? Some other instances support this view. For example, after the Great Potato Famine in Ireland between 1846 and 1849, when probably 20% of the population died or left, real wages increased substantially afterwards.
- ▶ However, the evidence is less clear elsewhere. For instance, after the conquest of Mexico the indigenous population fell by around 90%.
- ▶ This ought to have led to a huge increase in real wages, but it did not.

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The Potato Famine in Ireland: Demographic Consequences

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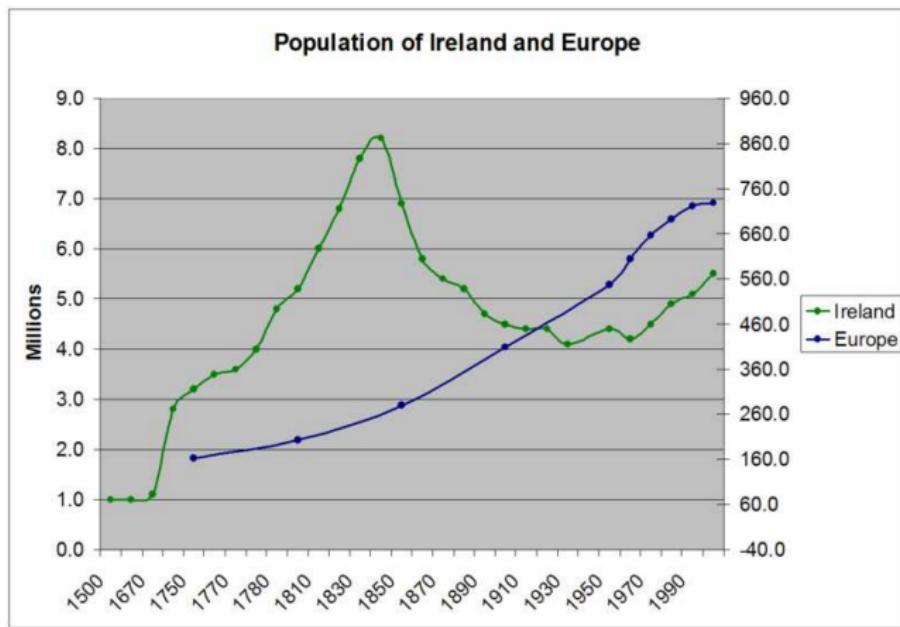
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Real Wages in Ireland: 1785-1870

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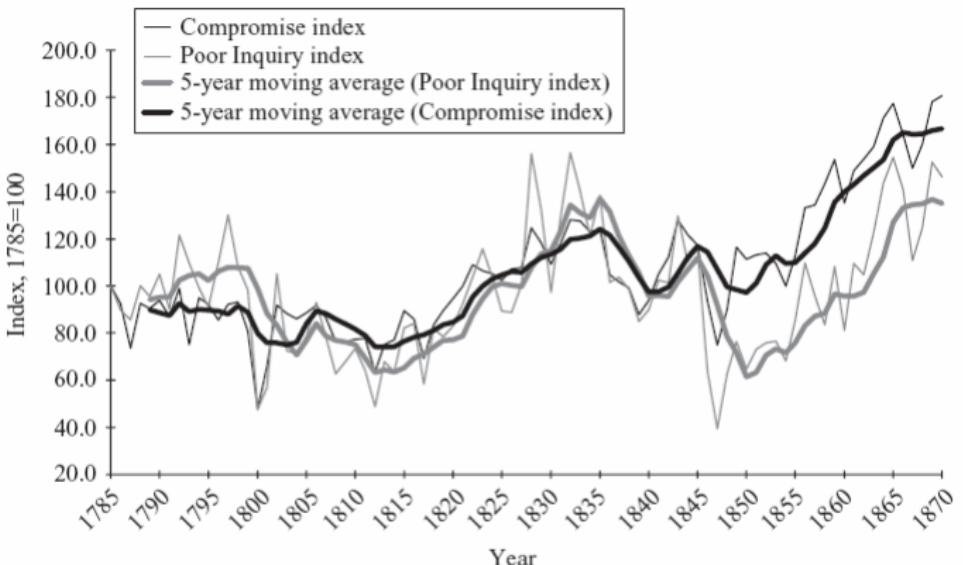


Figure 3. *Real earnings of Irish agricultural labourers assuming uniform employment, 1785-1870*

Source: app. IV

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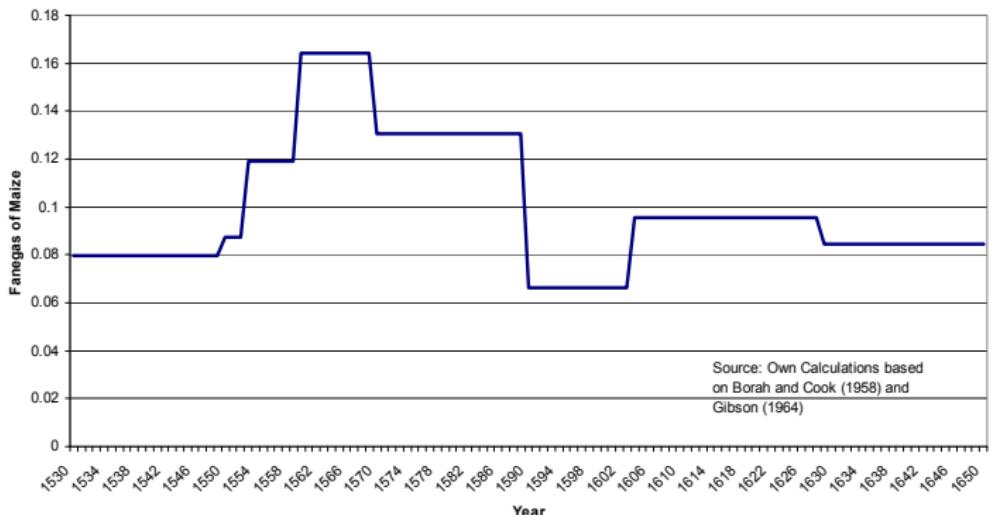
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Average Real Daily Wages for Unskilled Workers

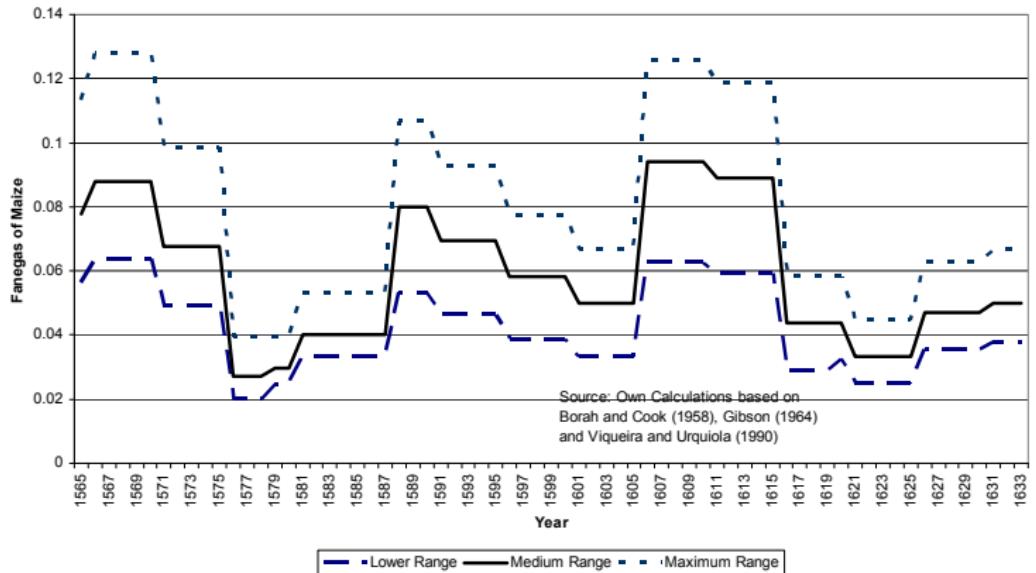


Source: Acemoglu, Daron, Pablo Querubín and James A. Robinson (2008) "Supply≠Demand: Population Decline and Real Wages in Mexico, 1530-1650," Work in Progress.

Average Real Daily Wages in Obrajes

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Why didn't Real Wages rise in Mexico?

- ▶ Data are from the *Repartimiento*, which was a system of central labor allocation. Spaniards who wanted labor had to petition the Viceroy who would allocate Amerindian workers and determine the nominal wage they would be paid. There are also data from labor contracts in textile *obreros*.
- ▶ In both cases, coercion was used to repress wages and at least in the case of the *repartimiento*, the centralized nature of the system possibly stopped the type of 'enticement' which undermined the intent of the Statute of Labourers in England.
- ▶ Meanwhile in South America, a massive forced labor system called the *mita* system was instituted.
- ▶ The relative advantage of the Spanish state was higher than that of the English state in the 14th century.

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Feudal Power and Mill Prices

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- ▶ What was it that allowed the Spanish settlers in Mexico to keep wages so low, when in England after the Black Death the state had been incapable of enforcing the Statue of Laborers and stopping wages from rising?
- ▶ The economic historian Bruce Campbell has proposed that this may have been because of the differential organization of landholdings in Britain, which increased competition between landowners for workers after the Black Death.
- ▶ The next figure shows the prices of Mills in different parts of England. These were owned by Lords and valued on their death.

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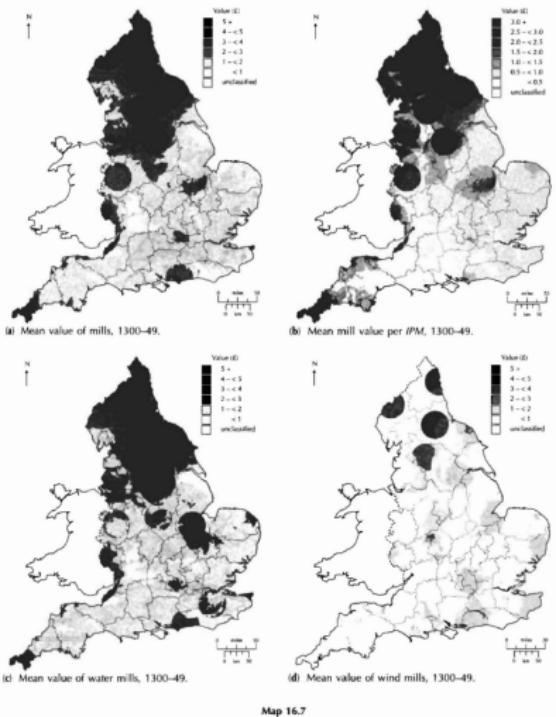
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Mills

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Mills 291



Mean value of Mills owned
by Lords as valued upon
their death 1300-1349

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Source: Campbell, Bruce and Ken Bartley
(2006) *England on the Eve of the
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Land and wealth, 1300-1349*,
Manchester University Press.

Landholdings in England

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- ▶ After invading England, William the Conqueror rewarded his army by providing them with feudal landholdings.
- ▶ In an effort to prevent these nobles from becoming powerful regional warlords who could challenge the king's power, each noble received landholdings scattered across the country
- ▶ The exception was along the Scottish border, where nobles were given large plots for defensive purposes

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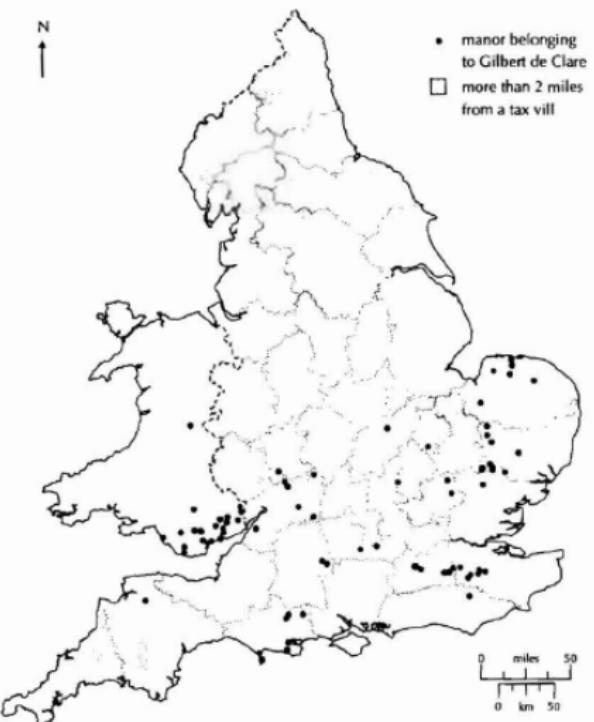
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The Manors of Lord Gilbert de Clare (1314)

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(a) Estate of Gilbert de Clare, earl of Gloucester and Hertford, 1314.

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Landholdings in England

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- ▶ This division of landholdings meant that in a given region, there were many landholders - and mill owners - in close proximity.
- ▶ This created intense competitive pressures for labor, particularly in the wake of the Black Death
- ▶ This contrasts to Mexico, where conquistadors were granted vast contiguous tracks of land called *encomiendas*
- ▶ We will return to land inequality when we discuss income divergence in the Americas

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The Malthusian Model: Summing Up

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- ▶ The simple Malthusian model may capture some realities. *If* labor markets are competitive, population growth may indeed induce a decline in wages. Or if there is a fixed amount of land and few opportunities for labor intensive cultivation systems, a population increase may lead to a decline in output per worker.
- ▶ However, the reality is typically more complex. How wages respond to changes in income will depend on institutions.
- ▶ This raises the possibility that institutional or cultural factors may have influenced pre-modern growth, rather than it simply being dictated by the relationship between births, deaths, and income, as suggested by Malthus.

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The Malthusian
Model: Theory

The Malthusian
Model: Evidence

An alternative
framework: Acemoglu
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Pre-Modern Economic Dynamics

Ancient and
Medieval Growth

Melissa Dell

- ▶ In Lecture 1, we saw evidence that there were no sustained changes in living standards prior to the Industrial Revolution in the 18th century.
- ▶ The Malthusian model could explain this: improvements in technology do not affect living standards because population expands in response, inexorably driving per-capita income back to the level which equates births and deaths. Certainly, global population did grow substantially between the Neolithic Revolution and the eve of the Industrial Revolution.
- ▶ However, the Malthusian model, which its fixation on births and deaths, misses a great deal of the interesting action prior to the industrial revolution.
- ▶ An alternative explanation for why there was no long-run trend in living standards is the theory of 'rise and decline' (Acemoglu and Robinson).

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Motivation: Ancient Greece

Ancient and
Medieval Growth

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- ▶ When the Greek city states emerged they did so with functional systems of governance which provided public goods, such as security for trade and investment.
- ▶ This initiated a period of sustained increases in living standards.

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Ancient Greece

Ancient and
Medieval Growth

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Table 1
Standard Periodization of Ancient Greek History

Name	Dates
Bronze Age	c. 3000–1200 BC
Late Bronze Age	c. 1600–1200 BC (also known as Mycenaean period)
Early Iron Age	c. 1200–700 BC (also known as Dark Age)
Archaic	c. 700–480 BC
Classical	480–323 BC
Hellenistic	323–30 BC
Early Empire	30 BC–AD 284
Late Empire	AD 284–526
Early Byzantine	AD 526–1081

Source: Morris, Ian (2004) "Economic Growth in Ancient Greece," Journal of Institutional And Theoretical Economics, 160, 709-742.

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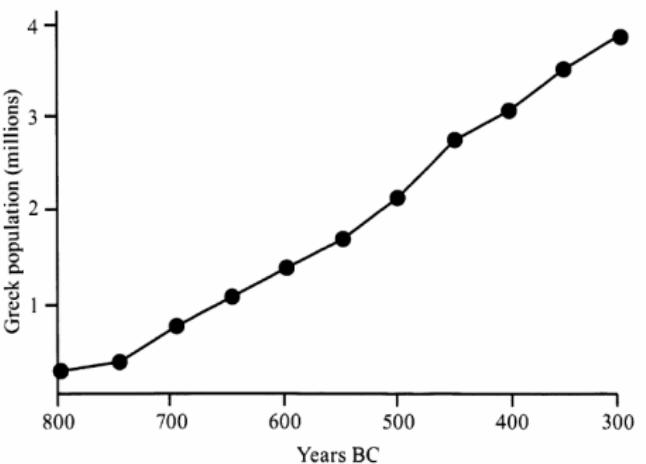
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Source: Morris, Ian (2004) "Economic Growth in Ancient Greece," *Journal of Institutional And Theoretical Economics*, 160, 709-742.

Population Went Up

Figure 10
The Estimated Population of the Greek World (including the Aegean and western Mediterranean), 800–300 BC



Source: Morris, Ian (2004) "Economic Growth in Ancient Greece," Journal of Institutional And Theoretical Economics, 160, 709-742.

Theories About Pre-Modern Economic Growth

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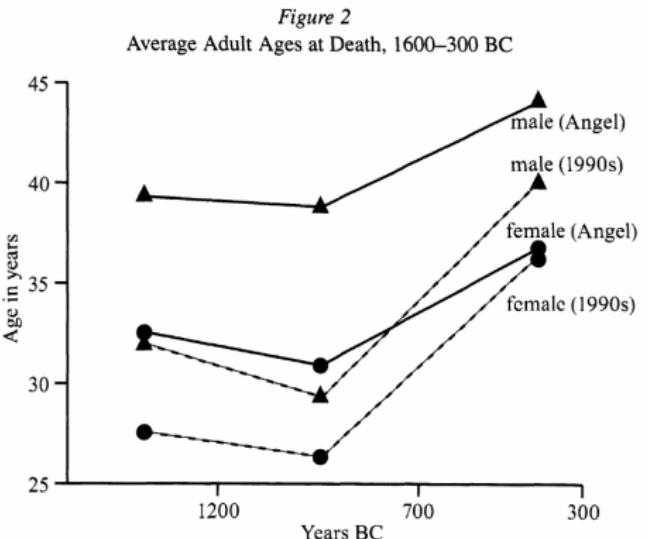
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Life Expectancy Increased



The solid lines represent Angel's results, collected in the 1930s–1970s ($n = 433$ females), and the broken lines results collected with new techniques in the (n = 357 males, 416 females).

Source: Morris, Ian (2004) "Economic Growth in Ancient Greece," Journal of Institutional And Theoretical Economics, 160, 709-742.

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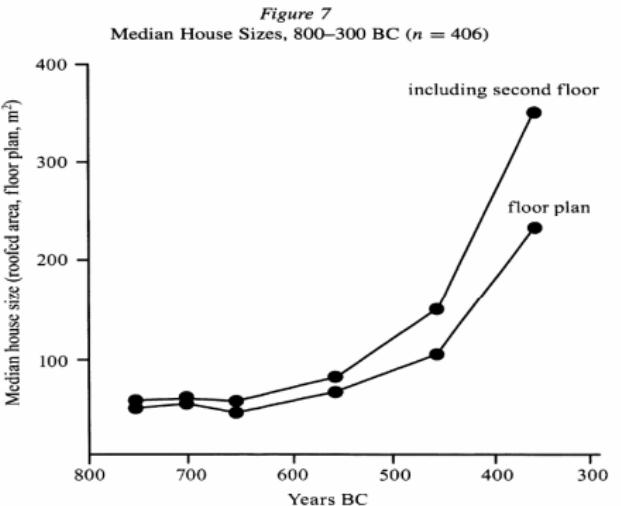
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Houses got Bigger



Note: The lower line shows roofed space in the ground-floor plan; the upper line shows estimated total roofed space, assuming 10% of houses have second floors in the eighth and seventh centuries, 25% in the sixth and fifth centuries, and 50% in the fourth century.

Source: Morris, Ian (2004) "Economic Growth in Ancient Greece," Journal of Institutional and Theoretical Economics, 160, 709-742.

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Ancient Greece

Ancient and
Medieval Growth

Melissa Dell

- ▶ While Ancient Greece did have a period of democracy, it was relative short (less than 200 years) compared to the duration of the polity and most citizens - slaves, poor citizens who couldn't afford their tax bill, women - could not participate.
- ▶ Greek institutions (rules according to which the society was organized) tended to be "extractive." For example, the economy was largely based upon slavery.
- ▶ Extractive political institutions concentrate political power in the hands of some group who can use that power to redistribute wealth and income to themselves. This resulting concentration of wealth tends to reinforce the initial set of political institutions.

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Growth and Extractive Institutions

Ancient and
Medieval Growth

Melissa Dell

- ▶ Acemoglu and Robinson hypothesize that growth was not sustained in ancient societies because their institutions were extractive, and extractive institutions are incompatible with sustaining growth in the long run.
- ▶ They argue that this is because extracting resources creates conflicts over who will control those resources, and it may also induce rebellion from below.
- ▶ In either case political instability can bring the government and economy down.
- ▶ We will examine two other examples of this, which are discussed in the Acemoglu and Robinson book: Rome and the Mayan city states.

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Outline

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Definition of Feudalism (Marc Bloch, p. 466 of *Feudal Society*)

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A subject peasantry; widespread use of the service tenement (i.e. the fief) instead of a salary . . . ; the supremacy of a class of specialized warriors; ties of obedience and protection which bind man to man and, within the warrior class, assume the distinctive form called vassalage; fragmentation of authority — leading inevitably to disorder; and, in the midst of all this, the survival of other forms of association, family and State . . .²²

The Medieval ‘Boom’ in Europe

Ancient and
Medieval Growth

Melissa Dell

- ▶ The decline of central authority plausibly led to feudalism, which was a very decentralized system of governance.
- ▶ Nevertheless, by the late Middle Ages feudalism was a stable system, and in the context of this relative stability, trade expanded.
- ▶ We can measure this in various ways. There is scattered data on the size of cities from which economic historians have constructed urbanization numbers. These show the number of cities increasing and also urbanization increasing. More monasteries were built and more books were written/produced (copied).
- ▶ Less systematic data suggests that trade expanded.
- ▶ If urbanization is a good proxy for income per-capita, we would expect that this increased as well.

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Urbanization Rates

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Country	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Scandinavia	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,5	1,7	3,6	4,6
Great Britain	0,0	0,8	3,6	3,4	2,9	3,2	2,7	2,1	5,9	11,3	23,1
Ireland	0,0	0,0	5,0	0,0	0,0	3,0	2,5	0,0	0,4	3,8	8,8
Low Countries	0,0	0,0	3,4	3,4	10,0	12,3	23,4	19,6	21,2	27,3	19,7
France	3,0	2,6	3,8	4,4	5,8	6,1	6,3	6,2	7,0	8,7	9,0
Germany	3,2	3,7	5,7	5,2	4,8	4,6	5,5	4,7	5,2	4,8	7,6
Austria/Switzerland	0,0	0,0	0,0	0,0	0,7	0,7	1,6	1,5	2,2	4,9	8,3
Italy	3,8	4,7	8,3	8,6	10,6	13,5	12,9	12,8	17,5	15,7	17,3
Iberia	5,8	8,2	13,1	10,4	8,9	8,8	9,9	10,1	12,3	10,6	14,4
Poland	0,0	0,0	0,0	0,0	0,4	0,6	2,2	3,3	4,6	3,1	3,1
Czech Rep.	0,0	0,0	0,8	0,7	0,5	1,7	3,8	3,1	2,2	2,0	1,8
Hungary/Slovakia	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,9	0,7	1,0	3,1
Yugoslavia/Albania	0,0	1,8	2,8	0,9	1,1	3,0	3,9	4,1	7,6	5,6	5,4
Bulgaria/Rumania	2,3	4,1	4,4	3,7	4,9	6,0	5,3	6,0	5,0	5,9	5,9
Greece	2,5	6,7	5,5	4,8	4,2	6,0	8,6	2,9	5,5	3,5	3,6
Turkey	7,4	8,2	7,9	10,1	7,9	4,5	5,8	7,4	10,1	12,2	9,2
Lebanon/Israel	6,3	11,5	15,0	15,8	12,9	14,6	10,3	10,0	6,9	7,5	7,5
Syria	8,0	9,8	11,2	12,4	13,5	12,3	13,7	12,6	11,0	12,8	12,8
Iraq	26,0	30,7	21,5	19,4	19,3	19,0	16,5	9,5	5,2	6,5	11,5
Egypt	5,1	7,2	7,2	9,6	9,9	11,5	13,0	11,3	4,4	4,1	5,3
North Africa	2,0	2,4	3,0	5,3	5,7	5,4	6,9	7,1	5,3	7,4	4,7
Latin-West	3,0	3,5	5,8	5,3	5,8	6,5	7,2	6,9	8,6	9,1	11,2
Balkan	1,0	2,7	2,9	1,9	2,1	2,9	3,1	3,2	3,8	3,5	4,5
ME-NA	8,1	9,2	8,1	9,8	9,2	7,9	9,0	8,8	7,2	9,0	7,6
Total	4,9	5,8	6,4	6,3	6,3	6,4	7,2	6,9	7,8	8,5	9,8

Source: Bosker, Maarten, Eltjo Buringh and Jan Luiten van Zandem (2007) "From Baghdad to London: The Dynamics of Urban Growth in Europe and the Arab World", Unpublished.

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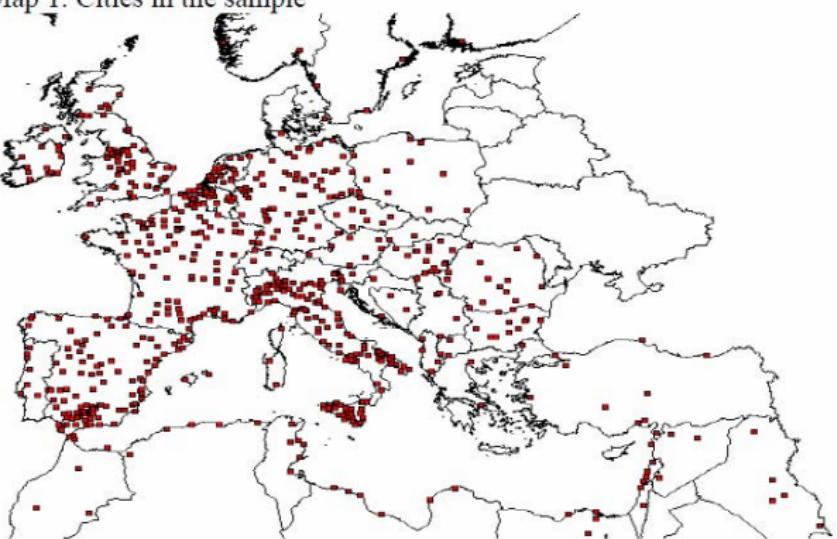
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Major Cities

Ancient and
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Map 1. Cities in the sample



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Major Cities

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nr. cities >=10000 inhabitants												
Country		800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Scandinavia	-	-	-	-	-	-	-	-	-	2	6	
Great Britain	-	1	4	4	4	6	4	4	8	12	65	
Ireland	-	-	1	-	-	2	1	-	-	3	12	
Low Countries	-	-	2	2	7	13	9	21	28	32	37	
France	10	10	17	18	30	34	27	34	43	64	91	
Germany	6	6	10	9	13	24	22	25	33	29	58	
Austria/Switzerland	-	-	-	-	1	1	2	3	3	5	10	
Italy	5	9	18	19	31	47	28	44	77	68	128	
Iberia	9	15	21	19	22	24	21	34	55	35	85	
Poland	-	-	-	-	1	2	4	6	9	8	8	
Czech Rep.	-	-	1	1	1	3	1	3	1	4	3	
Hungary/Slovakia	-	-	-	-	-	-	-	3	3	4	18	
Yugoslavia/Albania	-	1	2	2	1	4	4	3	6	6	15	
Bulgaria/Rumania	1	1	3	3	4	8	5	8	9	10	22	
Greece	1	2	2	2	2	2	2	2	2	2	2	
Turkey	6	8	9	9	8	10	9	9	9	6	7	
Lebanon/Israel	2	4	4	5	3	4	2	2	1	1	1	
Syria	3	3	3	3	4	3	2	2	2	2	2	
Iraq	4	4	5	4	5	5	5	3	3	3	3	
Egypt	2	4	4	4	4	3	3	3	2	2	1	
North Africa	4	5	6	8	7	9	8	7	7	8	10	
Latin-West	30	41	74	72	110	156	119	178	261	267	522	
Balkan	2	4	7	7	7	14	11	16	20	22	57	
ME-NA	21	28	31	33	31	34	29	26	24	22	24	
Total	53	73	112	112	148	204	159	220	305	311	603	

Source: Bosker, Maarten, Eltjo Buringh and Jan Luiten van Zandem (2007) "From Baghdad to London: The Dynamics of Urban Growth in Europe and the Arab World", Unpublished.

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Table 7. Estimated numbers of monasteries in the Western Europe (sixth to fifteenth centuries).

	6	7	8	9	10	11	12	13	14	15
CentrE	0	0	0	0	16	79	458	718	695	690
Boh	0	0	0	0	17	32	113	119	107	113
Brit	236	460	463	437	437	526	1,325	1,530	1,447	1,333
Fran	586	988	1,240	1,636	2,091	5,051	8,104	8,564	8,189	7,554
Belg	0	53	68	70	88	175	313	364	361	335
Neth	0	2	4	7	13	20	68	189	336	679
Germ	0	138	622	824	1,129	1,652	2,873	3,110	2,967	2,752
Switz	10	19	37	71	104	144	247	321	337	333
Austr	12	11	70	99	113	186	344	406	413	372
Italy	291	306	495	704	995	2,072	2,990	3,405	3,416	3,333
Iberia	58	117	170	537	1,340	2,549	3,290	3,223	3,003	2,876
<hr/>										
Western										
Europe	1,193	2,094	3,168	4,385	6,343	12,485	20,125	21,948	21,370	20,369
New										
foundati										
ons	(1,193)	1,021	1,284	1,533	2,397	6,776	8,888	3,836	1,516	1,226

Source: Eltjo Buringh and Jan Luiten van Zanden (2005) "Charting the "rise of the West". Manuscript and printed books in Europe, a long-term perspective from the sixth through eighteenth century"

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Book Manuscript Production

Ancient and
Medieval Growth

Melissa Dell

Table 1. Manuscript production in absolute numbers per century (sixth to fifteenth centuries)

	6 th	7 th	8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th
CentrE	0	0	0	0	0	3,983	27,530	120,987	301,833	376,650
Boh	0	0	0	0	0	657	1,136	5,377	42,066	45,363
Brit	81	1,026	5,474	7,926	9,793	20,360	81,044	200,654	155,513	208,729
Fran	1,682	2,441	15,920	74,190	12,752	45,061	197,831	510,828	564,624	1,195,783
Belg	0	127	1,111	3,029	1,555	8,529	43,219	119,588	106,148	572,124
Neth	0	26	60	82	58	354	1,731	2,066	13,179	171,974
Germ	0	0	7,503	59,771	45,703	49,548	166,876	270,392	293,814	515,116
Switz	0	30	594	5,330	1,799	1,090	2,355	3,821	6,349	10,652
Austr	0	0	2,735	9,414	0	2,808	37,370	37,408	39,777	88,623
Italy	10,194	4,478	6,536	20,307	15,215	38,768	95,207	253,013	879,364	1,423,668
Iberia	1,594	2,512	3,770	21,693	48,763	40,871	114,422	237,818	344,284	390,478
Western										
Europe	13,552	10,639	43,702	201,742	135,637	212,030	768,721	1,761,951	2,746,951	4,999,161
Increase										

Source: Eltjo Buringh and Jan Luiten van Zanden (2005) "Charting the "rise of the West". Manuscript and printed books in Europe, a long-term perspective from the sixth through eighteenth century"

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The Population of England

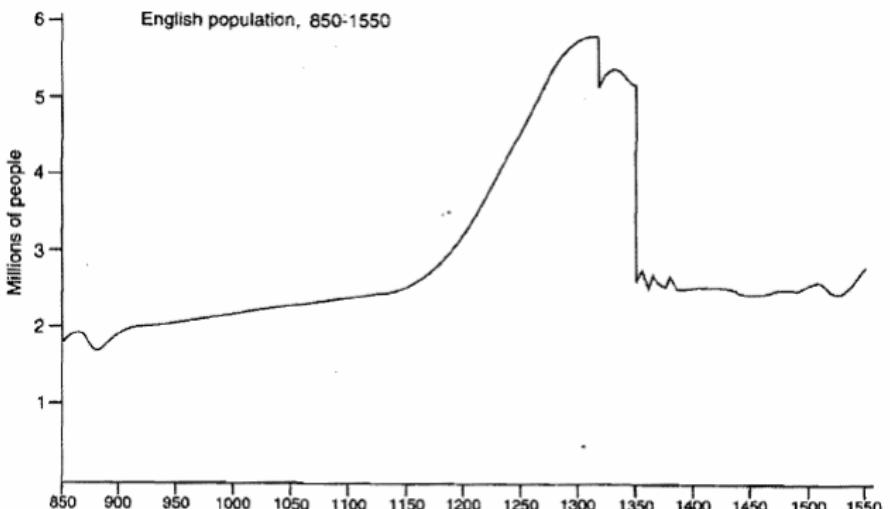


Figure 2. English population, 850–1550. A speculative reconstruction. The figures from 850 to 1086 are pure speculation. The subsequent figures are based on Domesday (1086), the Poll Tax (1377), the subsidies (1524–5) and the military survey (1522), and by extrapolation from manorial records of tenant deaths and payments of headpennies and common fines.

Sources: J. Hatcher, *Plague, Population and the English Economy, 1348–1530* (1977); R. M. Smith, 'Human Resources', in G. Astill and A. Grant (eds), *The Countryside of Medieval England* (Oxford, 1988); E. A. Wrigley and R. S. Schofield, *The Population History of England*,

Source: Dyer, Christopher (2002) *Making a Living in the Middle Ages*, Yale University Press. p. 235.

English Wool and Cloth Exports

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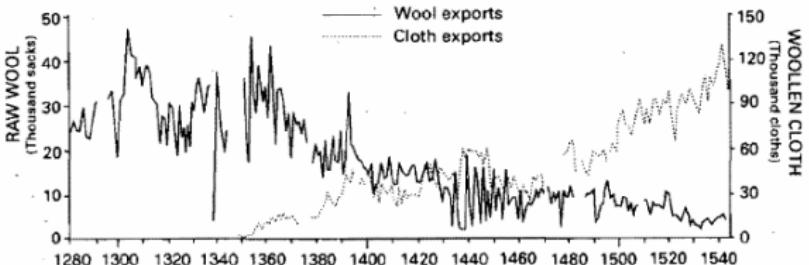


Figure 4. English exports of wool and cloth, 1279–1544 (cloth exports are only consistently recorded from the mid-fourteenth century).

Sources: E. M. Carus-Wilson and O. Coleman, *England's Export Trade 1275–1547* (Oxford, 1963); E. M. Carus-Wilson, *Medieval Merchant Venturers* (1954).

Source: Dyer, Christopher (2002) *Making a Living in the Middle Ages*, Yale University Press. p. 244.

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The Medieval Boom and the Black Death

- ▶ Acemoglu and Robinson argue that in Western Europe, feudalism and the Medieval Boom collapsed with the Black Death, ultimately leading to a new set of institutions that sustained economic growth.
- ▶ The collapse of institutions in Western Europe came with a great deal of disorganization and chaos - for instance the 100 Years War between 1337 and 1453 between England and France.
- ▶ We saw that Jongmans' idea about the collapse of the Roman Empire was that the Antonine Plague tipped institutions in a direction that emphasized labor coercion. The Black Death did that in Eastern Europe. In Western Europe, it did not. However, a new political model needed to develop before the economic benefits of the decline of feudalism could be experienced.

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- ▶ We will now consider the Middle Ages in Europe, and why different societies emerged from it very differently.
- ▶ Again, political institutions - particularly as they relate to labor coercion - will be important.

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Returning to the Black Death

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- ▶ Some time around the middle of 1346 the bubonic plague reached the city of Tana at the mouth of the River Don on the Black Sea. It traveled from China brought by traders along the Silk Road.
- ▶ The plague was transmitted by fleas that lived on rats.
- ▶ Tana was a port and the rats were soon spreading the fleas and devastation around the Mediterranean through Genoese ships.
- ▶ By early 1347 it had reached Constantinople.
- ▶ In the spring of 1348 it spread through France and North Africa and up the boot of Italy.

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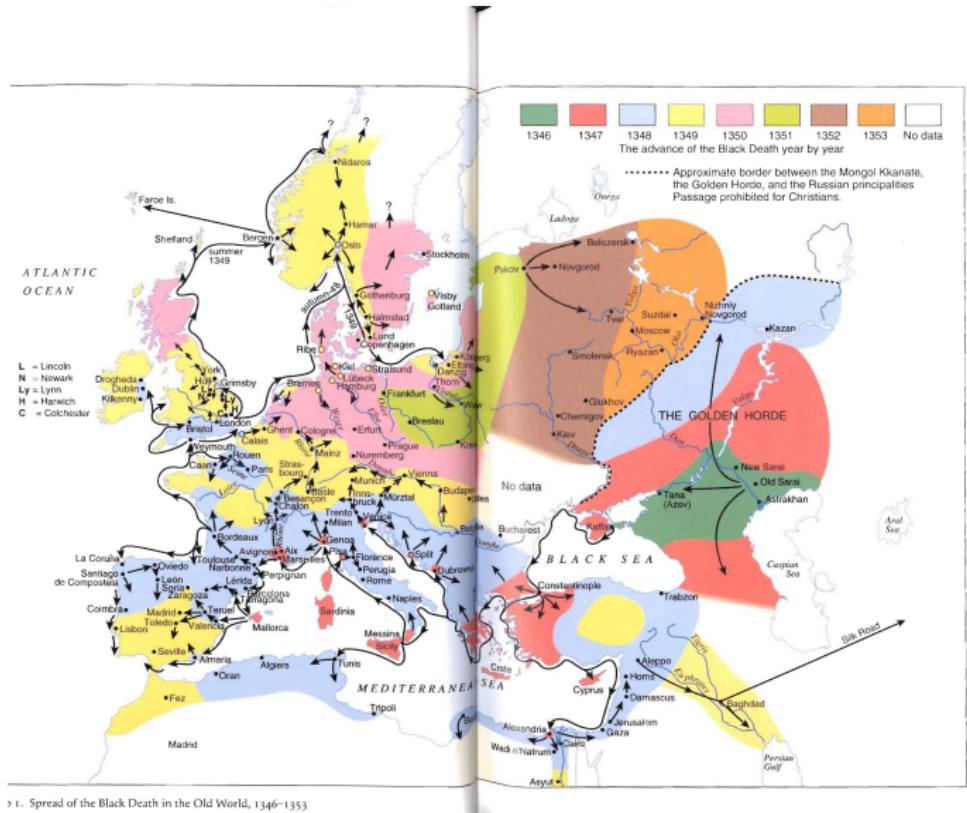
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1. Spread of the Black Death in the Old World, 1346–1353

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The Plague in Florence

- ▶ The plague wiped out around half of the population of any area it hit. Its arrival in the Italian city of Florence was witnessed first hand by the Italian writer Giovanni Boccaccio. He later recalled

"In the face of its onrush, all the wisdom and ingenuity of man were unavailing .. the plague began, in a terrifying and extraordinary manner, to make its disastrous effects apparent. It did not take the form it had assumed in the East, where if anyone bled from the nose it was an obvious portent of certain death. On the contrary, its earliest symptom ... was the appearance of certain swellings in the groin or armpit, some of which were egg-shaped whilst others were roughly the size of a common apple .. Later on the symptoms of the disease changed, and many people began to find dark blotches and bruises on their arms, thighs and other parts of their bodies ... Against these maladies .. all the advice of physicians and all the power of medicine were profitless and unavailing .. and in most cases death occurred within three days from the appearance of the symptoms we have described."

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The Black Death in Eastern Europe

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- ▶ The plague seems to have hit most of Europe, and the percentage of people killed was similar across space.
- ▶ After the plague, landlords in Eastern Europe started to take over large tracts of land and expand their holdings, which were already larger than those in Western Europe.
- ▶ Towns were weaker and less populous and rather than becoming freer, workers began to see their already existing freedoms encroached on: the Domar hypothesis at work.
- ▶ This contrasts with the English case, which we discussed last lecture, and with Western Europe more generally.

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The Second Serfdom

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- ▶ This phenomenon is known as the Second Serfdom, to distinguish it from the original serfdom which had happened in the early Middle Ages.
- ▶ The effects became especially pronounced after 1500, when Western Europe began to demand the agricultural goods which the East produced such as wheat, rye and livestock.
- ▶ 80 percent of the imports of rye into Amsterdam came east from the Elbe, Vistula and Oder river valleys. Soon half of the Netherlands' booming trade was with Eastern Europe.
- ▶ Eastern landlords ratcheted up their control over the labor force to expand their production.

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- ▶ The historical literature emphasizes that the Second Serfdom was distinct and more intense than the original
- ▶ Lords increased the taxes they levied on their tenants. In Mecklenberg in Eastern Germany in 1500, peasants owed only a few days unpaid labor services a year to landowners. By 1550 this was one day a week and by 1600 three days per week. Workers' children had to work for the lord for free for several years.
- ▶ In Hungary, landlords legislated one day a week of unpaid labor services for each worker. In 1550 this was raised to 2 days per week. By the end of the century it was 3 days. Serfs subject to these rules made up 90% of the rural population by this time.

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The Incentive to Enslave - The Domar Hypothesis

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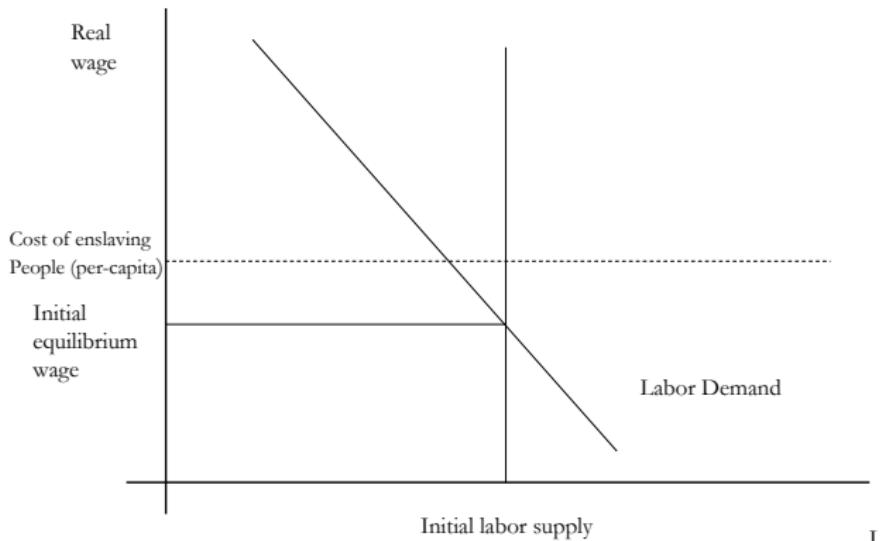
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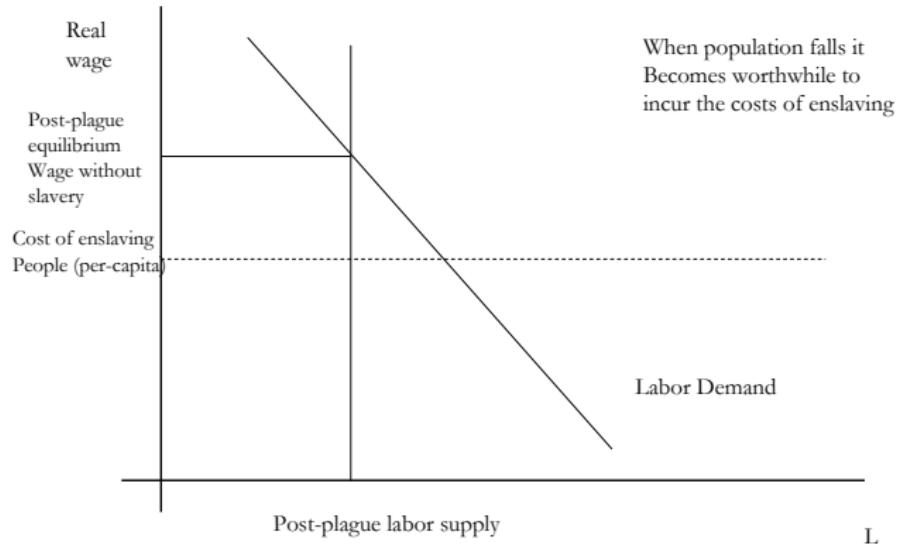
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Consequences of a Plague

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The Second Serfdom

- ▶ Jongmans explicitly compares the decline of Rome to the Second Serfdom.
- ▶ His argument is that the most important potential impact of population collapse is on institutions. His argument is that the Antonine plague pushed economic institutions into a much more extractive mode and this is why the Empire collapsed.
- ▶ An obvious mechanism is that extractive institutions create conflict and instability, as we saw with the Mayans.
- ▶ But this is outside the scope of the Domar model. Clearly, the model needs not just to be amended by introducing power but also the fact that when the labor market 'power' of workers is high this can not only avoid slavery or serfdom but can induce other institutional changes in society.

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Recall Our Discussion of Mill Prices in England

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- ▶ What was it that allowed landlords in Eastern Europe to intensify serfdom, when in England after the Black Death the state was incapable of enforcing the Statue of Laborers and stopping wages from rising?
- ▶ The economic historian Bruce Campbell has proposed that this may have been because of the differential organization of landholdings in Britain, which increased competition between landowners for workers after the Black Death.
- ▶ He uses data on the prices of mills in different parts of England. These were owned by Lords and valued on their death.

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Landholdings in England

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- ▶ After invading England, William the Conqueror rewarded his army by providing them with feudal landholdings.
- ▶ In an effort to prevent these nobles from becoming powerful regional warlords who could challenge the king's power, each noble received landholdings scattered across the country
- ▶ The exception was along the Scottish border, where nobles were given large plots for defensive purposes

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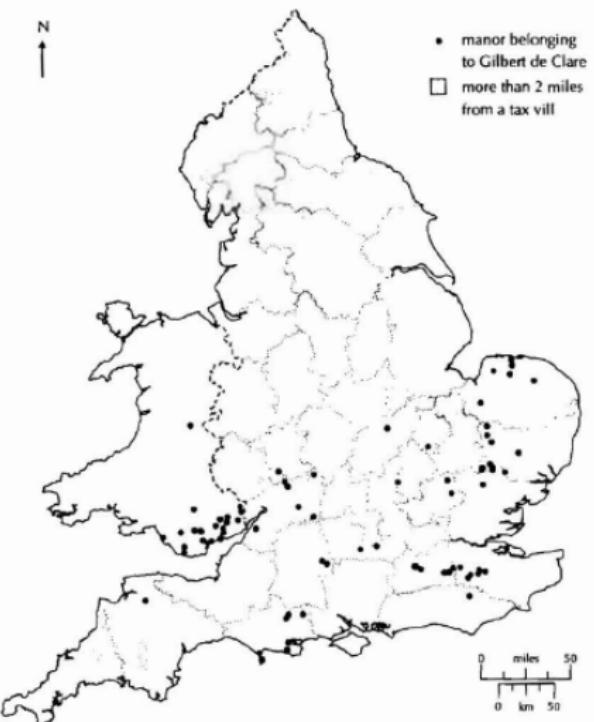
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The Manors of Lord Gilbert de Clare (1314)

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(a) Estate of Gilbert de Clare, earl of Gloucester and Hertford, 1314.

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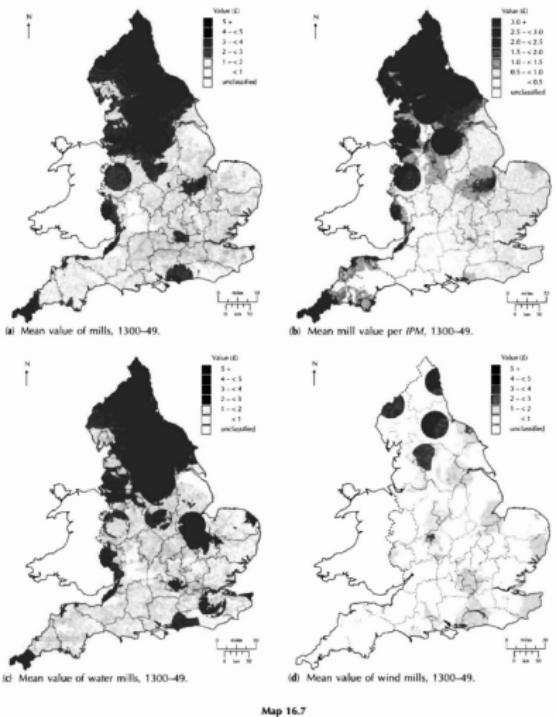
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Mills 291



Map 16.7

Mean value of Mills owned by Lords as valued upon their death 1300-1349

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Source: Campbell, Bruce and Ken Bartley (2006) *England on the Eve of the Black Death: An Atlas of Lay Lordship, Land and wealth, 1300-1349*, Manchester University Press.

Landholdings in England

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- ▶ This division of landholdings meant that in a given region, there were many landholders - and mill owners - in close proximity.
- ▶ This created intense competitive pressures for labor, particularly in the wake of the Black Death
- ▶ This contrasts to Eastern Europe

The Plague in Western versus Eastern Europe

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- ▶ The direction in which institutions move can differ dramatically depending on the initial conditions.
- ▶ In the 1340s in Eastern Europe the Grand Duchy of Lithuania (founded by Mindaugas in 1253) was expanding East and South.
- ▶ Hungary was ruled by Charles I, from the House of Anjou in France. Another line of this family ruled England until the present day - the House of Plantagenet, Lancashire, York, Tudor ... were all descendants of the Angevins.
- ▶ European states all ruled over a rural economy using similar technology and with similar institutions, but certain differences - like landholding patterns - may have been critical.

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Eastern versus Western Europe

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- ▶ A famous analysis of the divergence between Eastern and Western Europe at the end of the Middle Ages is by the Marxist historian Robert Brenner. Brenner's goal is to explain what led to 'capitalism' in Western Europe.
- ▶ By capitalism, Brenner means an interlocking set of institutions that emerged from feudalism: private ownership of land and assets, free markets for goods and services, and people motivated by profit and self-interest maximization.
- ▶ Brenner argues that the emergence of capitalistic institutions and values are what created the industrial revolution.

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What drove the ‘Transition to Capitalism’ from feudalism?

- ▶ Brenner is interested in what drove this change. He wants to criticize two views of the emergence of capitalism which he regards as wrong: (1) the Commercialization Model, (2) the Demographic Model.
- ▶ Brenner himself puts forward what he calls the Class Conflict Model (which of course originates with Marx).

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The Commercialization Model: Evidence in Favor

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- ▶ The Commercialization view argues that it was expanding trade and the spread of what M.M. Postan called the 'money economy' - during the Medieval Boom - that gradually eroded the feudal 'non-market' economy, inevitably leading to capitalism.
- ▶ In the Medieval period the market certainly expanded. By 1330 most of England's wool production was sold in markets, and about 1/3 of grain production was sold in markets (John Hatcher and Mark Bailey, *Modelling the Middle Ages* p. 144).

The Commercialization Model

Ancient and
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- ▶ The situation was very different 500 years previously. In the wake of the collapse of the Western Roman Empire, money even stopped being used. Trade contracted, as we saw from the shipwreck evidence.
- ▶ Significant that early commercial successes were in places practically exempt from traditional feudal institutions - Venice and the Netherlands.

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Market and Society

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- ▶ What is the impact of the rise of the market on social norms? Could the spread of the market have created a different culture that in turn promoted modernization?
- ▶ People are not simply self-interested but sometimes behave altruistically and comply with norms of behavior that cannot be explained simply by the anticipation that if they do not follow these norms they will be punished.
- ▶ Some economists go further and argue that legal systems are imperfect ways of contract enforcement and that without such norms, it is impossible to have a functioning market economy.

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Market and Society

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- ▶ Very little evidence remains about the attitudes and beliefs of common people during the late Middle Ages. To the extent we know anything, it is mostly about the most elite members of society.
- ▶ However, researchers have pointed to modern evidence about the relationship between markets and social norms to support the commercialization hypothesis.
- ▶ Consider the large comparative interdisciplinary project on the “Foundations of Human Sociality.”
- ▶ This project has collected experimental data from different societies around the world in an attempt to explain variation in behavior in simple games: the ultimatum game and the dictator game.

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The Ultimatum and Dictator Games

- ▶ In the ultimatum game two players play each other. One is chosen as the proposer and proposes a split of some given amount of money - how much for him and how much for the other player.
- ▶ After the proposer proposes, the other (the responder) says yes or no. If yes then the money is split according to the division proposed by the proposer. If the responder says no then neither player gets anything.
- ▶ The dictator game is the same but without {reject;accept}.
- ▶ They also play a game where players are given money and can decide how much to contribute to a pool. The pool is increased by 50% and then distributed equally to the players. This creates a classic free rider problem where it would be advantageous for all the players to contribute to the pool but each individual has the incentive to let others contribute to this public good.

Locations of Study

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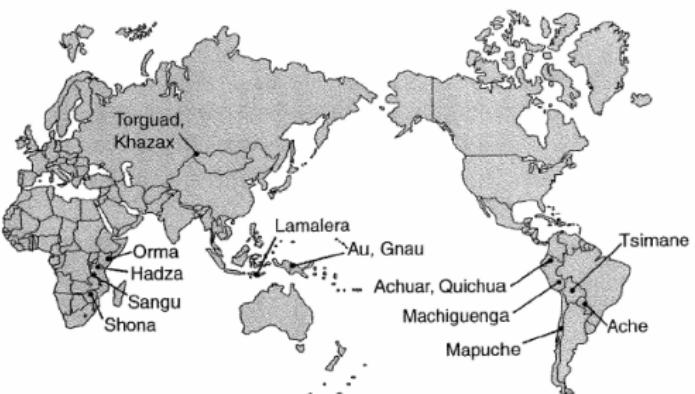


FIG. 2.1. Locations of the societies mentioned in the text

Source: Henrich, Joe et al. (2004) "Overview and synthesis," in *Foundations of Human Sociality*, Oxford University Press. P. 13

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TABLE 2.1. Ethnographic summary of societies

Group	Language family	Environment	Economic base	Residence	Complexity	Researcher	Settlement Size	Payoffs to Cooperation	Anonymity	Market Integration
Machiguenga	Arawakan	Tropical forest	Horticulture	Bilocal semi-nomadic	Family	Henrich, Smith	250	1	5	4
Quichua	Quichua	Tropical forest	Horticulture	Sedentary/ Semi-nomadic	Family	Patton	187	1	1	2
Achuar	Jivaroan	Tropical forest	Horticulture	Sedentary/ Semi-nomadic	Family plus extended ties	Patton	187	1	1	2
Hadza	Khoisan/Isolate	Savanna-woodlands	Foraging	Nomadic	Band	Marlowe	75	4	1	1
Ache	Tupi-Guarani	Semi-tropical woodlands	Horticulture/ Foraging	Sedentary/nomadic	Band	Hill, Gurven	300	6	3	4
Tsimane	Macro-panoan Isolate	Tropical forest	Horticulture	Semi-nomadic	Family	Gurven	93	1	4	3
Au	Torricelli/Wapei	Mountainous tropical forest	Foraging/ Horticulture	Sedentary	Village	Tracer	300	3	2	5
Gnau	Torricelli/Wapei	Mountainous tropical forest	Foraging/ Horticulture	Sedentary	Village	Tracer	300	3	2	5
Mapuche	Isolate	Temperate plains	Small scale farming	Sedentary	Family plus extended ties	Henrich	80	2	6	6
Torguuds	Mongolian	High latitude desert, seasonally-flooded grassland	Pastoralism	Transhumance	Clan	Gil-White	1000	2	9	8
Kazakhs	Turkic	High-latitude desert, seasonally-flooded grassland	Pastoralism	Transhumance	Clan	Gil-White	1000	2	9	8
Sengu	Bantu	Savanna-woodlands, Agro-seasonally-flooded grassland	Pastoralists	Sedentary or Nomadic	Clan-Chieftdom	McElreath	250	5	6	8
Orma	Cushitic	Savanna-woodlands	Pastoralism	Sedentary or Nomadic	Multi-Clan Chieftdom	Enslinger	500	2	10	9
Lamalera	Malayo-Polynesian	Island tropical coast	Foraging-Trade	Sedentary	Village	Alvard	1219	7	8	7
Shona	Niger-Congo	Savanna-woodlands	Farming	Sedentary	Village	Barr	480	5	10	8

Ultimatum Game Offers

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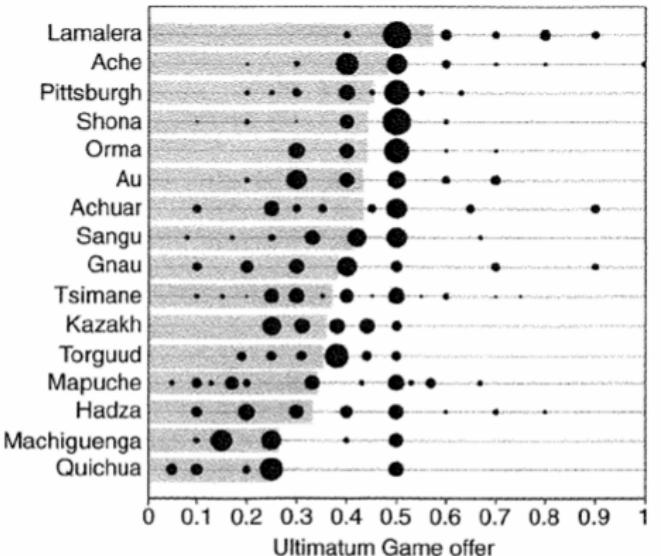


FIG. 2.2. A Bubble Plot showing the distribution of Ultimatum Game offers for each group

Notes: The diameter of the bubble at each location along each row represents the proportion of the sample that made a particular offer. The right edge of the lightly shaded horizontal gray bar is the mean offer for that group. Looking across the Machiguenga row, for example, the mode is 0.15, the secondary mode is 0.25, and the mean is 0.26.

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Understanding Variation

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- ▶ What explains different play in these games?
- ▶ They looked at various features of the societies such as payoffs to cooperation. For instance Lamalera society depends on whale hunting which requires a lot of cooperation.
- ▶ Market integration – how often do people engage in market activity?
- ▶ Settlement size, sociopolitical complexity.
- ▶ **Main conclusion:** Market integration is positively correlated with ‘pro-social behavior’, for example equal shares in the ultimatum game.

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TABLE 2.4. Correlation matrix among predictor variables

	PC	AN	MI	PR	SS
SC	0.242	0.778	0.913	0.374	0.670
PC	—	-0.063	0.039	-0.320	0.165
AN		—	0.934	0.743	0.664
MI			—	0.644	0.731
PR				—	0.328
SS					—

TABLE 2.5. Regression coefficients and statistics

	Unstandardized beta coefficients		Standardized beta coefficients	t- statistic	Sig.
	β	Std. error	β		
(Constant)	0.261	0.036		7.323	0.000
PC	0.021	0.007	0.528	2.922	0.011
AMI	0.012	0.005	0.448	2.479	0.027

SC = Socio-Political Complexity; PC = Payoffs to Cooperation; AN = Anonymity; PR = Privacy; SS = Settlement Size; MI = Market Integration; AMI = Aggregate Market Integration

The dependent variable in Table 2.5 is the group mean offer in the ultimatum game

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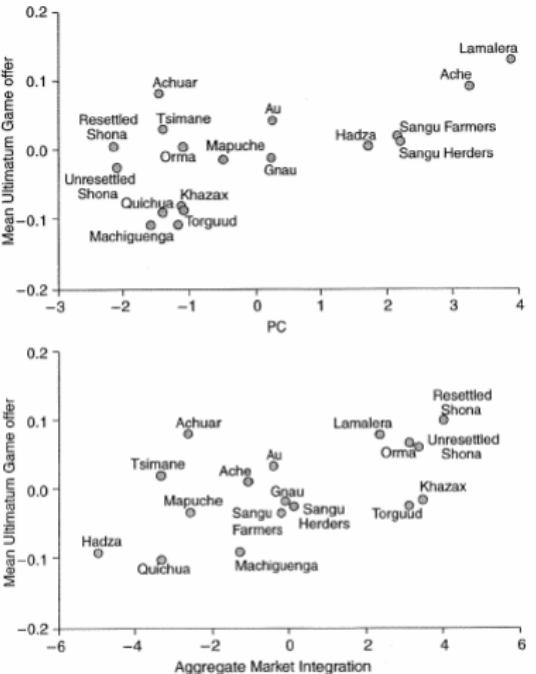


FIG. 2.5. Partial regression plots of mean Ultimatum Game offer as a function of indexes of Payoffs to Cooperation and Market Integration

Notes: The vertical and horizontal axes are in units of standard deviation of the sample. Because Aggregate Market Integration and Payoffs to Cooperation are not strongly correlated, these univariate plots give a good picture of the effect of the factors captured by these indexes on the Ultimatum Game behavior.

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The Commercialization Model: Brenner's Attack

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- ▶ After the Black Death there seems to have been a collapse in international trade, but this is exactly at the point where feudal institutions declined most rapidly.
- ▶ We saw the expansion of grain exports and market exchange from Eastern Europe to Western Europe spurred the Second Serfdom in the East. So commerce is perfectly consistent with feudal economic institutions and labor coercion, indeed it may encourage it (i.e. the later Atlantic slave trade).
- ▶ Brenner argued that there was no simple relationship between expanding trade and the development of institutions, particularly capitalism. In response to an increase in commercialization, what happened to institutions depended on the 'balance of class power'.

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The Demographic Model

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- ▶ This proposes that it was the demographic collapse of the Black Death which undermined the institutions of feudalism and allowed the creation of capitalism.
- ▶ This was originally proposed by Postan, who critiqued the Commercialization Model during the 1940s.
- ▶ Brenner's attack on this is obvious: both Western and Eastern Europe experienced the same demographic shock but while feudalism led to capitalism in the West, feudalism intensified in the East.
- ▶ We've already seen other examples like this.

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The Class-Conflict Model

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- ▶ Brenner instead argues that class conflict was key.
- ▶ For instance, wages in England were falling and rents rising 1050-1340. Changes in the Common Law in the late 12th century led to the exclusion of the unfree from the protection of the Royal courts and large increase in the extent of villeinage (about 3/5ths of all rural people were unfree by the late 13th century England, Hatcher and Bailey, p. 99).
- ▶ Mixed evidence on the extent of conflict before Black Death. However, intense conflict in England after the Black Death and leading up to the Peasants Revolt in 1381 followed by rapid decline of feudal institutions very consistent with the notion that the emergence from the Middle Ages was driven by conflict.

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From Feudalism to Absolutism

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- ▶ Following the collapse of feudalism in Western Europe, political power re-centralized.
- ▶ The decline of serfdom and feudalism weakened the lords relative to the king, who centralized power.
- ▶ In England this happened significantly during the Tudor Dynasty, which came to power in 1485 after a long civil war called the Wars of the Roses. This was a conflict between the House of York and the House of Lancaster. It was elites fighting over who was going to extract rents from the population.
- ▶ Soon the nature of political conflict began to change in England.

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Construction of a Modern State in England

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- ▶ The first two Tudor Kings Henry VII and Henry VIII made fundamental changes to the state.
- ▶ Henry VIII via Thomas Cromwell, his chief minister between 1532 and 1540, engineered what Geoffrey Elton called the 'Tudor Revolution of Government.'
- ▶ Until the early 16th Century there was little distinction between the King's household and the executive, between the King's resources and that of the state. Cromwell gave the King's household specific well defined tasks and separated key departments which became nascent bureaucratic institutions. He formed the key Privy Council, the members of which were members of a national institution, not personal companions of the reigning monarch.

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Dissolution of the Monasteries

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- ▶ Henry VIII broke with the Roman Catholic Church and expropriated the land of the Church.
- ▶ This made the state stronger and it had a fundamental impact on the social structure.

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Landownership in England

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Table v *Distribution of landownership in England: percentages of cultivated land owned*

	Mid 15th century (1436)	Late 17th century (1688)
Aristocracy and gentry	Great magnates	15–20
	Middling and lesser gentry	25
Yeomen, family farmers and other small owners		20
Church		25–35
Crown		5–10

Sources: Mingay, 1976, p. 59. Cooper, 1967.

Taken from Christopher Clay (1984) *Economic Expansion and Social Change: England 1500-1700*, Volume 1. p. 143.

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English Social Hierarchy

Ancient and
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The English Social Hierarchy in 1688 according to Gregory King,
take from D.C. Coleman (1977) *The Economy of England 1450-1750*, OUP.

TABLE I
Gregory King's estimate of population and wealth, England and Wales,
1688

Number of families	Ranks, Degrees, Titles, and Qualifications	Heads per family	Number of persons	Yearly income per family
160	Temporal Lords	40	6400	2800
26	Spiritual Lords	20	520	1300
800	Baronets	16	12 800	880
600	Knights	13	7800	650
3000	Esquires	10	30 000	450
12 000	Gentlemen	8	96 000	280
5000	Persons in Offices	8	40 000	240
5000	Persons in Offices	6	30 000	120
2000	Merchants and Traders by Sea	8	16 000	400
8000	Merchants and Traders by Sea*	6	48 000	200
10 000	Persons in the Law	7	70 000	140
2000	Clergymen	6	12 000	60
8000	Clergymen	5	40 000	45
40 000	Freeholders	7	280 000	84
140 000	Freeholders	5	700 000	50
150 000	Farmers	5	750 000	44
16 000	Persons in Sciences and Liberal Arts	5	80 000	60
40 000	Shopkeepers and Tradesmen	4½	180 000	45
60 000	Artisans and Handicrafts	4	240 000	40
5000	Naval Officers	4	20 000	80
4000	Military Officers	4	16 000	60
511 586		5½	2 675 520	67
50 000	Common Seamen	3	150 000	20
364 000	Labouring People and Out Servants	3½	1 275 000	15
400 000	Cottagers and Paupers	3½	1 300 000	6·5
35 000	Common Soldiers	2	70 000	14
849 000		3½	2 795 000	10·5
	Vagrants		30 000	
849 000		3½	2 825 000	10·5
511 586	Increasing the Wealth of the Kingdom	5½	2 675 520	67
849 000	Decreasing the Wealth of the Kingdom	3½	2 825 000	10·5
1 360 586			5 500 520	

Source: *Two Tracts by Gregory King*, ed. G. E. Barnett (Baltimore, 1936).

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Establishing a Monopoly of Violence

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- ▶ The War of the Roses, a civil war between the House of York and the House of Lancaster, ended when King Richard III was defeated and killed at the Battle of Bosworth 22 August, 1485.
- ▶ Henry Tudor was crowned Henry VII.
- ▶ Richard's army: The Duke of Norfolk had around 3,000 spearmen and archers on the right flank, protecting the cannon. Richard's group, comprising 3,000 infantry, formed the centre. The Earl of Northumberland's 4,000 men guarded the left flank. The Stanleys 6,000 men were on Dadlington Hill.
- ▶ What happened?

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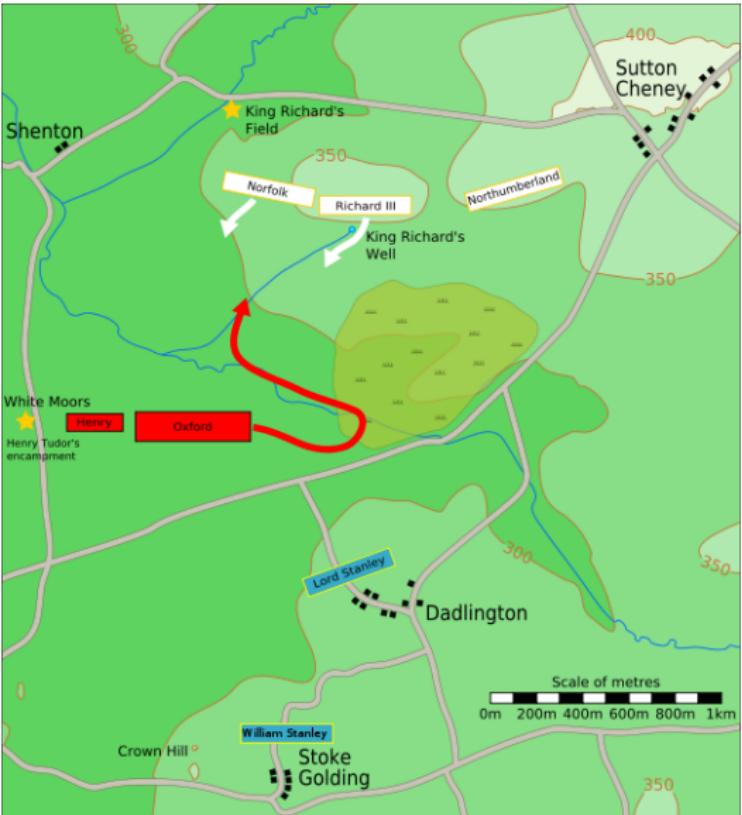
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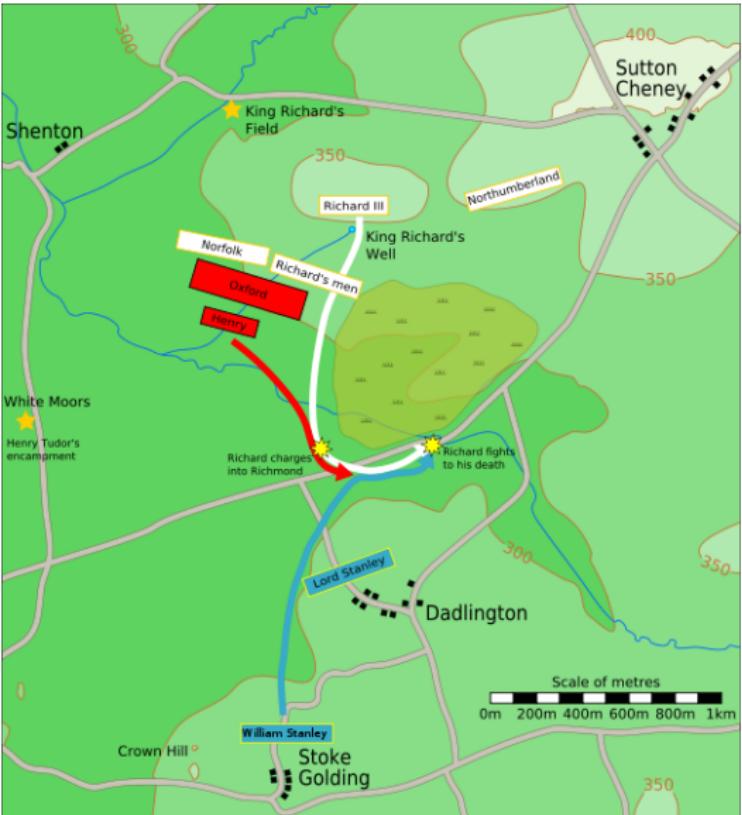
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The Implications

- ▶ **Conclusion:** Richard III did not have a monopoly of violence.
- ▶ In fact the War of the Roses came at the end of a long period of 'bastard feudalism' which had seen the central state become weaker while the armed lords became more powerful.

"Government at the center relinquished the reins, and the institutions of law and order fell under the sway of overly-powerful individuals with armed men at their backs. The famous evils of this time were all the result of this. Livery (the equipping of armed retainers with their lords' uniform and badge to signify their sole allegiance), maintenance (the lord's support for his followers in courts of law) ... embracery (the corruption and intimidation of judges)." (Elton (1991, p. 6)

Establishing the Monopoly

Ancient and
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- ▶ The project to eliminate 'liveried retainers' was not new. Henry IV and Edward IV had passed legislation to restrict the distribution of livery and the retaining of followers but these measures were not enforced.
- ▶ Henry VII's strategy was more subtle. Rather than initially banning livery, a statute of 1504 stated that it had to be licensed by the king. Henry wanted to first gain control over armed retainers, indeed he had relied on them to keep order and his throne early in his reign.
- ▶ Nevertheless, he set a path towards a much stronger monopoly on violence and by 1558 liveried retainers were incorporated into the local militias under the control of the centrally appointed lord lieutenants.
- ▶ This was a critical phase in the establishment of a monopoly of violence by the central state.

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