

China – The Empire that “did not bark”
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Prime research question

- Why didn't China have an energy revolution and a transition to modern economic growth while England did?
- Why is this relevant – what are the profiles of modern economic growth?
- Macroeconomic “shocks” versus institutions: some thoughts on comparative capitalism

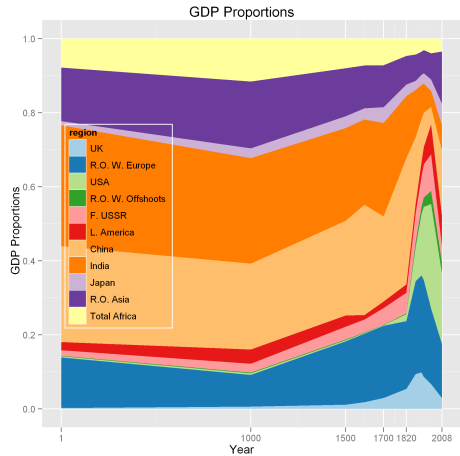


Figure : Angus Maddison: population and GDP proportions CE 1 – recent

Context – Comparative growth 1500 – current

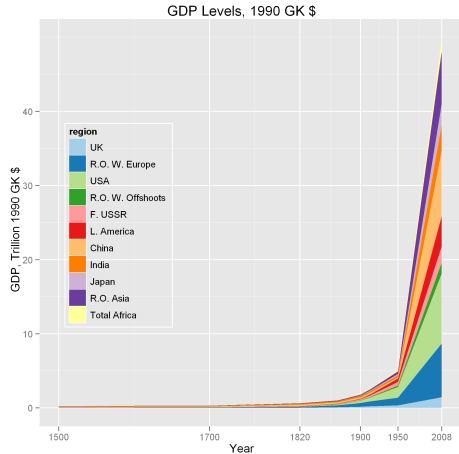
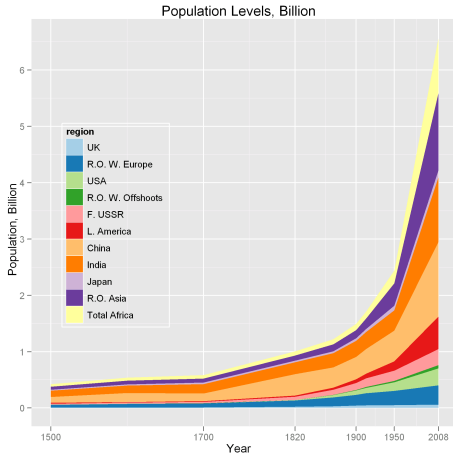


Figure : Angus Maddison: population and GDP levels 1500 through recent

The institutional case: China's sufficiency (Peer Vries)

- “Qing China was not a poor and static society but enjoyed a standard of living that was comparable to Europe’s right through the early 1800s.”
- “Chinese markets were both ‘much larger’ and ‘closer to Smith’s model of perfect competition than markets in Britain’.”
- “China’s foreign trade was ‘immense’.”
- “Far from being “despotic,” the Chinese Qing state was even less intrusive than Britain’s: not only was the Chinese army ‘comparatively small’ but Britain had ‘more than 30 times as many public servants per head of the population,’ plus Chinese taxes seem to have been lower.” just as little, an ‘open society’ as Britain was’.” ²

²Vries, Peer. “Is California the Measure of All Things Global? A Rejoinder to Ricardo Duchesne, ‘Peer Vries, the Great Divergence, and the California School: Who’s in and Who’s Out.’” *World History Connected* 2, no. 2 (May 2005). <http://worldhistoryconnected.press.illinois.edu/2.2/vries.html>.

The institutional case: China's sufficiency (Peer Vries)

- “China in the eighteenth and nineteenth centuries, in terms of social mobility, ‘was just as much, or if you prefer,
- “Weber was wrong: Chinese ‘rationality, work ethos, business acumen, and love of profit’ were just as vivid as in Britain.”
- “As late as the end of the eighteenth century, China’s agriculture per hectare still was much more productive than Britain’s agriculture; in terms of productivity per labourer the differences between both countries or their core regions were minimal.”
- “BUT . . . China’s economy was not moving away from the Malthusian limitations of the old regime, and was not as ready to industrialize as England.”
- Pomeranz and Wong (and others) support this point of view – essentially saying that Europe had no sufficiently special institutions to explain history.

Why England did it – why China did not

The microeconomics of energy source substitution

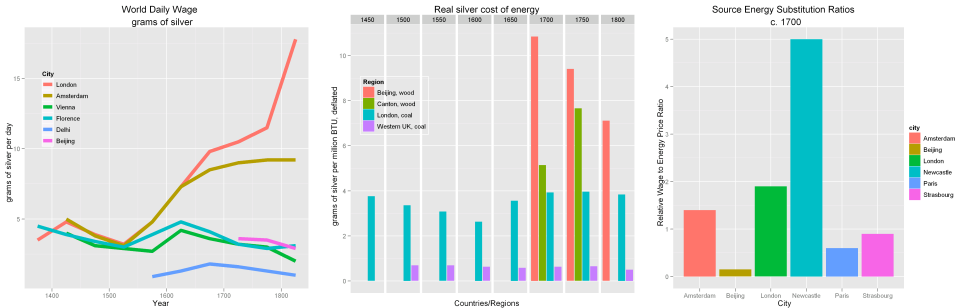


Figure : Robert Allen, world wage and energy costs

Input substitution incentive facing inventors, entrepreneurs, Capitalists in, say, joules

$$\left(\frac{\text{Marginal Revenue Product}}{\text{Price}} \right)_{\text{organic}} = \left(\frac{\text{Marginal Revenue Product}}{\text{Price}} \right)_{\text{mineral}}$$

Modern economic growth – emergent macro-level properties

Energy consumption and modern economic growth

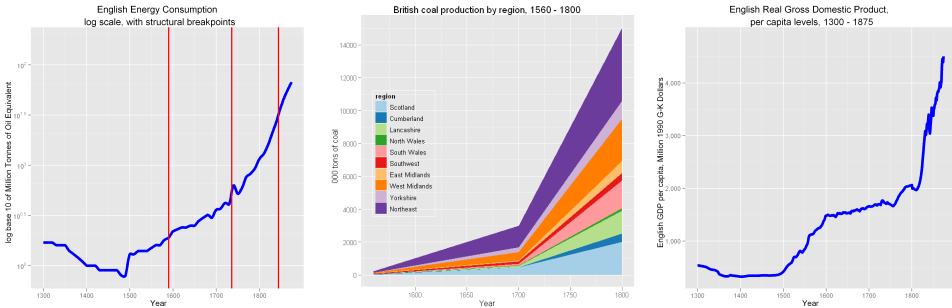


Figure : Roger Fouquet, energy; Allen, coal, GDP/capita constructed

Year	England	China	Netherlands	India
1650 ^a			0.63	
1820	0.61			
1840 ^a			0.33	
1870	2.21			
1970 ^a			8.07	0.33
1973		0.48		
1998 ^b	6.56	1.18		
2008 ^b	5.99	2.56	9.86	

Table : Per Capita Primary Energy Consumption, annual Tonnes of Oil Equivalent. *Source:* Angus Maddison, ^ade Zeeuw, ^bUS DOE EIA

Macro outcome and importance of the mineral energy revolution

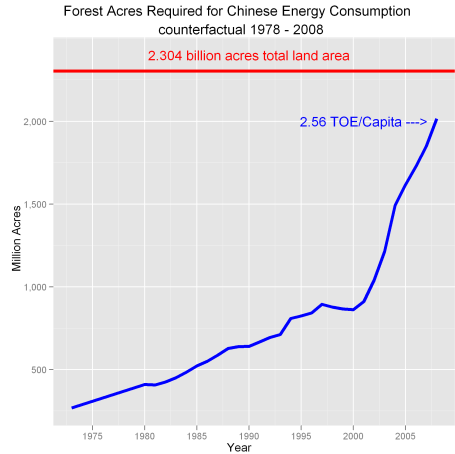
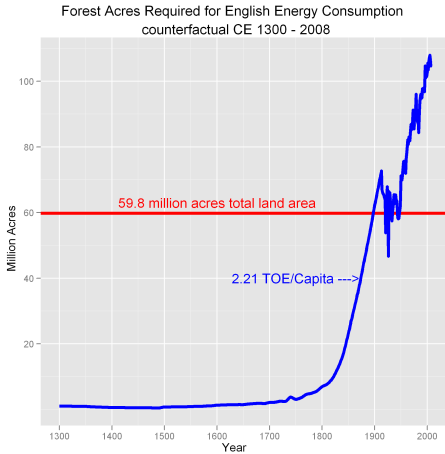


Figure : data: Fouquet, DOE, author's calculations

- England, with great geographical and geological luck, had sufficient microeconomic incentives to create an energy revolution that resulted in a “virtuous” macroeconomic feedback cycle – the Industrial Revolution.
- China had no comparable incentives – had insufficient microeconomic incentives – hence had no modern economic growth.
- The institutions we notice, including Industrial Capitalism, appear to be induced by the economics, as usual.