

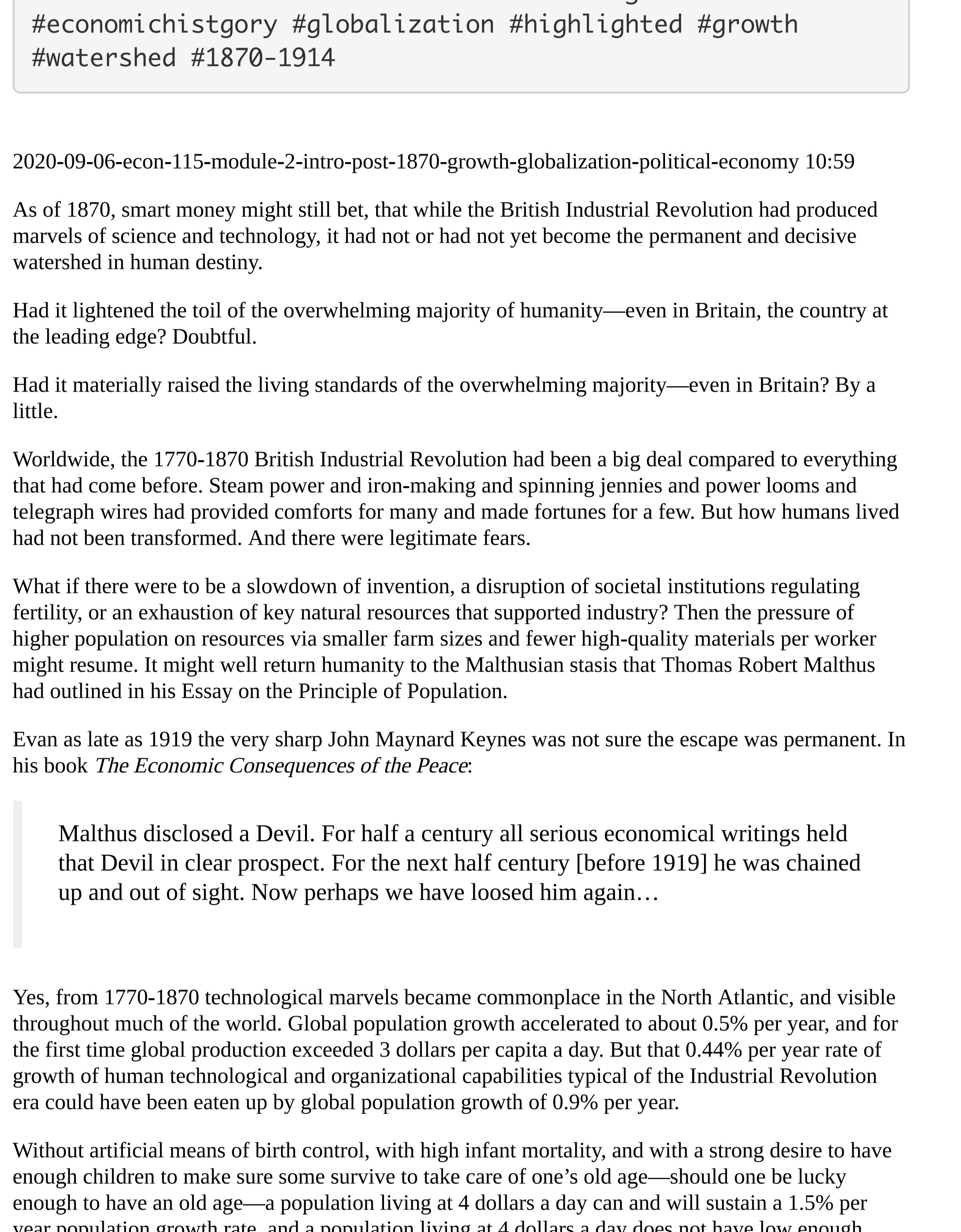
# Grasping Reality with Both Hands

The weblog  
of Brad DeLong. Since 1999.  
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## Growth, Globalization, & Political Economy in the North Atlantic, 1870-1914—Lecture



<https://www.youtube.com/watch?v=g5oOUsPuOKo>

#acceleration #democratization #economicgrowth  
#economichistory #globalization #highlighted #growth  
#watershed #1870-1914

2020-09-06-econ-115-module-2-intro-post-1870-growth-globalization-political-economy 10:59

As of 1870, smart money might still bet, that while the British Industrial Revolution had produced marvels of science and technology, it had not or had not yet become the permanent and decisive watershed in human destiny.

Had it lightened the toil of the overwhelming majority of humanity—even in Britain, the country at the leading edge? Doubtful.

Had it materially raised the living standards of the overwhelming majority—even in Britain? By a little.

Worldwide, the 1770-1870 British Industrial Revolution had been a big deal compared to everything that had come before. Steam power and iron-making and spinning jennies and power looms and telegraph wires had provided comforts for many and made fortunes for a few. But how humans lived had not been transformed. And there were legitimate fears.

What if there were to be a slowdown of invention, a disruption of societal institutions regulating fertility, or an exhaustion of key natural resources that supported industry? Then the pressure of higher population on resources via smaller farm sizes and fewer high-quality materials per worker might resume. It might well return humanity to the Malthusian stasis that Thomas Robert Malthus had outlined in his *Essay on the Principle of Population*.

Evan as late as 1919 the very sharp John Maynard Keynes was not sure the escape was permanent. In his book *The Economic Consequences of the Peace*:

Malthus disclosed a Devil. For half a century all serious economical writings held that Devil in clear prospect. For the next half century [before 1919] he was chained up and out of sight. Now perhaps we have loosed him again...

Yes, from 1770-1870 technological marvels became commonplace in the North Atlantic, and visible throughout much of the world. Global population growth accelerated to about 0.5% per year, and for the first time global production exceeded 3 dollars per capita a day. But that 0.44% per year rate of growth of human technological and organizational capabilities typical of the Industrial Revolution era could have been eaten up by global population growth of 0.9% per year.

Without artificial means of birth control, with high infant mortality, and with a strong desire to have enough children to make sure some survive to take care of one's old age—should one be lucky enough to have an old age—a population living at 4 dollars a day can and will sustain a 1.5% per year population growth rate, and a population living at 4 dollars a day does not have low enough infant mortality for large-scale fertility restriction to appear to be the desirable option.

And in the mid-nineteenth century population growth was accelerating.

Without a further acceleration—a bigger than Industrial Revolution acceleration of the underlying drivers of economic growth, today's world might indeed be a Steampunk World. It might have a global population of our current 7.5 billion, but living at little more than the same global standard of living as 1800, with global technology and organization at about the level of 1910. We might have not 9% but rather more like 50% of the world living at or below 2 and 90% living below 5 of today's dollars per day, with average farm sizes one-sixth of what they had been in 1800. And only the uppermost of upper classes would have what we regard as a Global-North middle-class standard of living.

we did get that extra post-1870 innovation growth acceleration.

Around 1870 the proportional rate of growth of humanity's technological and organizational capabilities took a further fourfold upward leap, from perhaps 0.44% per year to our current 2.06% per year or so. Thereafter technology far outran population growth. And thereafter population growth in the richest economies began to decline: humans became rich enough and long-lived enough that limiting fertility became a desirable option. Each year over 1870-1914 John Stuart Mill's belief that the progress of science and technology, of industry and enterprise had not lightened the day's toil of any human being or effected great changes in human destiny became less and less true. By 1914 it had become more-or-less completely false.

1870-1914 was, in the perspective of all previous eras—as John Maynard Keynes looking back from 1919 wrote—"economic Eldorado... economic Utopia... the earlier economist would have deemed it... an unprecedented situation... an extraordinary episode in the economic progress of [hu]man[ity]". Globally real wages of unskilled workers in 1914 look like they stood more than half again above their levels of 1870 or so—a world-wide escape from Malthus never before seen.

The resulting world as of 1914 was an odd mix of modernity and antiquity. Britain burned 194 million tons of coal in 1914. The total coal-equivalent energy consumption of Britain today is only 2.5 times that. Yet 1870 still saw close to half of Americans working outside the home at work at work in agriculture. And all European countries with the exception of Belgium and Britain were behind America in their distribution of the labor force between town and country, and among farming, manufacturing, and other sectors. U.S. railroads carried passengers some 350 miles per citizen in 1913. Today U.S. airlines carry passengers 3000 miles per citizen. Yet all of Europe save France still saw the powerful political and social dominance of agrarian landlords, who still mostly saw themselves as descendants of knights who had fought for their kings with their swords.

Why does each year since 1870 see as much technological and organizational progress of four years over 1770-1870, of twelve over 1500-1770, and of 60 over the years before 1500? And how did what was originally a geographically concentrated surge become global, albeit unevenly global?

We can gesture to five changes:

1. Surely most important, the development of the industrial research laboratory. This meant that inventors like Thomas Edison and Nikola Tesla could be inventors. They did not have to fulfill the ten other roles that their predecessors had had to fill, from impresario to HR manager, before. This made a huge difference: inventions could be professionally developed and then rapidly and thoroughly deployed at scale, in the form first of the mass production multidivisional corporation, and now of the looser organizations that are our global value chains.
2. Closely following in importance, the coming of the modern corporation. Only knowledge diffused was knowledge useful. And the corporation was the way the knowledge got out of the industrial research lab and down to the production line.
3. The globalization of transport, in the form of the iron-hulled screw-propelled ocean-going steamship linked to the railroad network—and subsequent follow-on developments.
4. The globalization of communication, in the form of the global submarine.
5. The lack of barriers. The most important lack, perhaps, was open borders for migration—with the very important caveat that the poorest from China, India, and elsewhere were not allowed into the temperate settlements: those were reserved for Europeans (and, sometimes, Middle Easterners). One in fourteen humans changed their continent between 1870-1914. But also important in were the lack of government blockages to trade and investment and communication. People could and did move. And finance, machines, railroads, steamships, and the telegraph nerves of production and distribution networks could follow, chasing abundant natural physical and biological resources.

And then there is perhaps the most important consequence. For reasons we do not well understand, the richer economies of 1870-1914 became ones in which mass politics was no longer an occasional outlier but instead the rule: elites found that maintaining old hierarchies of political domination and exclusion from power were no longer viable, and that they must, instead, either educate their new populist masters to the practices of self-government—or bamboozle them.

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