Economic history

Did living standards improve during the Industrial Revolution?

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As we showed in a previous blog post (http://www.economist.com/blogs/freeexchange/2013/08/economic-history-1), Europe went through a period of astonishing growth after about 1760. The level of income that Europe has today could not have been reached without the Industrial Revolution.

In fact, people often refer to two revolutions (though historians bicker about terminology). The First Industrial Revolution was about the introduction of machines, often powered with water or steam. It lasted from roughly 1760 to 1850. The Second Industrial Revolution used more advanced technologies, such as the internal combustion engine and electricity. It lasted from roughly 1850 to 1910.

We know that the Industrial Revolution made Europe rich. But what was it like to live through it? Britain has the most complete historical records when it comes to this kind of thing, so this post will focus on that country.

The question boils down to how you measure living standards. Historians are divided over what happened to wages during the Industrial Revolution. Everyone agrees that they did increase; the question is, when.

Research focuses on real wages—wages that are adjusted for inflation. Getting data on wages is tricky. But accounting for inflation is even harder. (For example, workers often paid rent informally, meaning that there are few records around).

And so it is unsurprising that researchers differ in their estimations of real wages. Some, such as Peter Lindert and Jeffrey Williamson, suggest that full-time earnings for British common labourers, adjusted for inflation, more than doubled in the seventy years after 1780. But Charles Feinstein argued that over the same period, British real wages only increased by around 30%. It’s a bit of an academic mess.
Most people agree that after about 1840, real wages did better. Nicholas Crafts and Terence Mills show that from 1840 to 1910, real wages more than doubled. Their findings are mirrored by other researchers (see below right). Improvements may be due to technological innovation, which led to big increases in labour productivity and hence higher wages. Others reckon it is because the cost of living did not increase so fast. And the massive economic impact of the Napoleonic Wars—where, due to naval warfare, exporters suffered and imports were more expensive—gradually wore off.

So, while the

**Real wages in Britain**

1860=100

![Graph showing real wages in Britain from 1850 to 1900.](source: Clark, 2005)

Industrial Revolution ultimately led to big increases in wealth, progress was unsteady. For much of the period, the average person was not reaping the benefits of economic change.

So much for wages. Other measures of standard of living should be considered.

There is increased enthusiasm for biological measures of standard of living, such as people’s height. Height is a useful measure for a number of reasons. It indicates how well someone is nourished. And people who do less manual labour, or who are less afflicted by disease, are likely to be taller. A person’s height is not perfectly correlated with their standard of living—after all, Bill Gates is not a physical giant. But 20-40% of the difference in height between individuals is determined by environmental factors. And so at an aggregate level, height data are pretty
Researchers find height data from different places, including army archives; it is common practice to measure the stature of new recruits. Data can also be found in school records. Academics have even consulted records of people transported from England to penal colonies in Australia.

Some research presents a rather alarming picture. Below is a graph which shows the height of English soldiers from 1730 to 1850—a period which captures the First Industrial Revolution.

There are many different explanations for height declines during this period. Some people reckon that diseases in cities exploded. Other people think that unsteady economic growth led to increases in the frequency of unemployment, which had an impact on nutrition. And growth of agriculture may have lagged behind economic growth—which meant that the relative price of nutrients increased at a time when transportation was poor and food preservation was primitive.

Other research has shown that city dwellers tended to be shorter than rural folk, even though the urbanites were generally richer. Access to food was easier for those living in rural areas, and so they were better insulated from the effects of harvest failure.
Another paper suggests that it was only in the latter part of the 19th century that growth in heights took off. Wages rose and advances were made in food safety and public health. And for the last 150 years, Britain has been on a steady upward path (see below).

You can tell a similar story about life expectancy. The “expectation of life at birth” (its official name) is calculated by looking at death registrars. If you know the distribution of ages at which people die, you can work out the most likely age to which people will live.

Once again, the picture is not rosy. For instance, in almost all British cities, mortality conditions in the 1860s were no better—and were often worse—than in the 1850s. In Liverpool in the 1860s, the life expectancy fell to an astonishing 25 years. It was not until the two subsequent decades that rises in life expectancy were found (see below right).

Economic history now has very advanced ways of measuring quality of life. But quantitative wizardry does not capture the experience of living through such rapid change. Less maths-y history is needed too. EP Thompson, an English historian, was not a great fan of numbers. He was more interested in getting inside people’s minds. One of his most famous papers, published in 1967, tries to understand what it was like for people living through rapid economic change. As Britain shifted to fully-fledged capitalism, Thompson reckons that people felt under more
pressure to work hard:

Time is now currency: it is not passed but spent.

The English worker in the throes of industrial capitalism was marked by

his regularity, his methodical paying-out of energy, and perhaps also...a repression, not of enjoyments, but of the capacity to relax in the old, uninhibited ways.

Hard-nosed economic historians (sometimes known as cliometricians) sneer at Thompson’s style of history. For them, using poems as source material, and writing lyrical sentences—as Thompson is prone to do—is not good scholarship.

But we need both the number-crunchers and the artsy types if we want to understand the consequences of economic growth. That is as true today as it was during the industrial revolution. Wages might be rising, but other social indicators might be doing awfully. This was highlighted in a recent book (http://www.economist.com/news/books-and-arts/21580124-why-worlds-biggest-democracy-still-fails-too-many-its-people-beyond-bootstraps), written by Amartya Sen and Jean Drèze, which looks at India. Economic history is not just about hard economics, but also about how people experience economic change.
Suggested reading list:


