



A rags riches

New England Cloth Production (thousand of yards)

1826	37,072
1856	774,588

Source: "The New England Textile Industry, 1825-60: Trends and Fluctuations," Lance E. Davis and H. Louis Stettler III. Included in *Output, Employment, and Productivity in the United States After 1800*, National Bureau of Economic Research, Studies in Income and Wealth, Vol. 30, 1966.

to Sale: tale:

Thanks to higher productivity, you don't have to wear the same clothes all week

HIGHER PRODUCTIVITY U.S. Textile Mills

Output per Worker per Year
(yards of cotton cloth)

1820	2,000
1859	9,410

Output per Spindle per Year
(yards of cotton cloth)

1820	142
1859	219

Source: "The New England Textile Industry, 1825-60: Trends and Fluctuations," Lance E. Davis and H. Louis Stettler III. Included in *Output, Employment, and Productivity in the United States After 1800*, National Bureau of Economic Research, Studies in Income and Wealth, Vol. 30, 1966.

The name "Abraham Charles" probably doesn't ring a bell. There's really no reason it should. Mr. Charles came into the world in 1716, spent most of his years working the land in central Massachusetts, and died in 1804.

The world he left behind was not so very different from the one he had entered 88 years earlier. Early 19th century New England was still a mostly rural place where change came slowly, and tending to the basic necessities of life took all the time and strength a body could muster.

Two things set Mr. Charles apart from most of his neighbors: He survived to the age of 88, and he attained a modest level of prosperity.

But prosperity is a relative condition. Like almost everyone else in the early 1800s, Abraham Charles led an austere existence.

The inventory of his estate reads like a list of yard sale remainders: "3 junk bottles," "1 Iron ring," and a "half pint tin cup." The adjective "old" — as in 1 old hand saw, 1 old brass kettle, 6 old chairs, and 15 old casks — appears often.

But the most instructive part of the inventory is the section that catalogs his wardrobe.¹ Here it is — complete with archaic spelling and a monetary value for each item:

4 pair stockins	1.00
wollin shirt	.50
Great Coat	4.00
Coat & wescoat	1.00
2 pair of Breeches	.59
old coat	.25
Coat and wescoat	1.67
2 silk Handkercheefs	1.00
1 pair of shirts	.59
1 Gown	1.25
1 Gown	1.42
two aprons	.60
one cloak	.75
5 old Handkercheefs	.83
2 old Handkercheefs	.25
two aprons	.83

Total Value: \$16.53

In terms of quantity and selection, the word "meager" comes to mind. And if you think \$16.53 was a lot of money in 1804, well . . . think again. It had roughly the same purchasing power that \$250 has today.

Quick Change

The paradox of pre-industrial life — in New England and elsewhere — was that people toiled endlessly but seldom had much to show for their efforts. Intense physical exertion yielded relatively little output. Basic hand tools and muscle power defined the limits of production.

Clothing provides a good example. Anyone who's ever tried to make clothes knows how time-consuming the process can be. Today it's more often a labor of love than a matter of economic necessity.

¹The inventory of Abraham Charles' estate is used courtesy of Jack Larkin, Director of Research, Collections, and Library at Old Sturbridge Village. And be sure to check out *Ask Jack* <http://www.osv.org/kids/askjack.htm>, which features Jack Larkin's answers to questions about New England village life in the early 1800s. Although it's intended mainly for kids, we're sure adults will enjoy it, too.

LOWER PRICES

Wholesale Price of Cotton Sheetting

(per yard)

1814	\$22.68
1834	8.53
1854	.08

Wholesale Price Index for Textile Products

(1910-14 = 100)

1814	300
1834	161
1854	124

Source: U.S. Census Bureau, *Historical Statistics of the United States, Colonial Times to 1970*.

But in the early 1800s, cash was scarce and store-bought goods were expensive, so if you wanted clothes, you almost always had to make them yourself. Not only would you have to stitch them by hand — sewing machines weren't commercially available until the 1850s — you'd often have to weave the fabric as well.

Even in good years, when there was enough extra cash to spend on clothes, shopping options were limited. You could:

- wait for a traveling peddler to stop at your door,
- buy clothes from a neighbor who could make them better and faster than you could, or
- inch your way to town on roads that ranged from poor to impassable.

But no matter which option you chose, the drawbacks were the same: high prices and a small selection.

Then came the Industrial Revolution, and within a generation, life changed forever.

What exactly was the Industrial Revolution? Short answer: a series of events and improvements that led to an extraordinary change in the way people produced things. It started in Europe during the mid- to late-1700s and spread to North America

in the early 1790s with the opening of Slater Mill, a Rhode Island textile mill that used water-powered machinery to spin cotton into yarn in quantities unmatched by individual spinners working at home or in small workshops.

But Slater Mill was only a first step. Most finished cloth still had to be woven on household hand looms — a painstaking process that yielded relatively little output.

The next major advance came in 1814 when a group of investors opened America's first integrated textile mill in Waltham, Massachusetts — a mill that had the capacity to spin yarn *and* weave cloth. Seven years later, in 1821, another large-scale mill began operation in Lowell, Massachusetts, and by mid-century the New England textile industry was producing cloth in quantities that would have seemed unimaginable 50 years earlier. (See table: NEW ENGLAND CLOTH PRODUCTION, page 8.)

But increased production isn't the same as increased *productivity*. It's possible to boost production without raising productivity. Take the example of a textile mill owner who hopes to produce more cloth by hiring more workers. With the right tools and efficient organization, the additional workers might help to increase the mill's total output, but labor costs would go up, too, and the money to pay for those added worker-hours would have to come from somebody's pocket, either the mill owner's or the consumer's. The mill's productivity won't improve unless the increase in cloth production is more than enough to offset the rise in labor costs.

What mill owners really want is to produce more cloth per worker-hour; more cloth for each hour of labor they're paying for. That helps to reduce the mill's *per-unit costs* — the cost of producing a yard of cloth — and lower per-unit costs create the potential for more good things to happen: 1) higher profits, which can be shared with workers in the form of higher wages or reinvested in the mill, and 2) lower prices for consumers.

And that, more or less, is what happened during and after the Industrial Revolution. Productivity soared, and prices fell. (See tables: HIGHER PRODUCTIVITY and LOWER PRICES, pages 9 and 10.)

What Is Real?

The dollar amount on a paycheck — also known as the **nominal wage** or **money wage** — doesn't always reflect a person's actual buying power. That's why economists often focus on the **"real"** wage, which more accurately gauges the level of goods and services a paycheck will buy.

During the second half of the 19th century, most American workers saw their average money wage decline. The average "money wage" for American workers was lower in 1900 than it was in 1865. But thanks to increased productivity and the resulting drop in prices, many workers experienced an increase in real wages.

Average Annual Earnings for Nonfarm Employees

	Money Wage	Real Wage
1865	\$512	\$328
1900	\$483	\$573

Source: U.S. Census Bureau, *Historical Statistics of the United States, Colonial Times to 1970*.

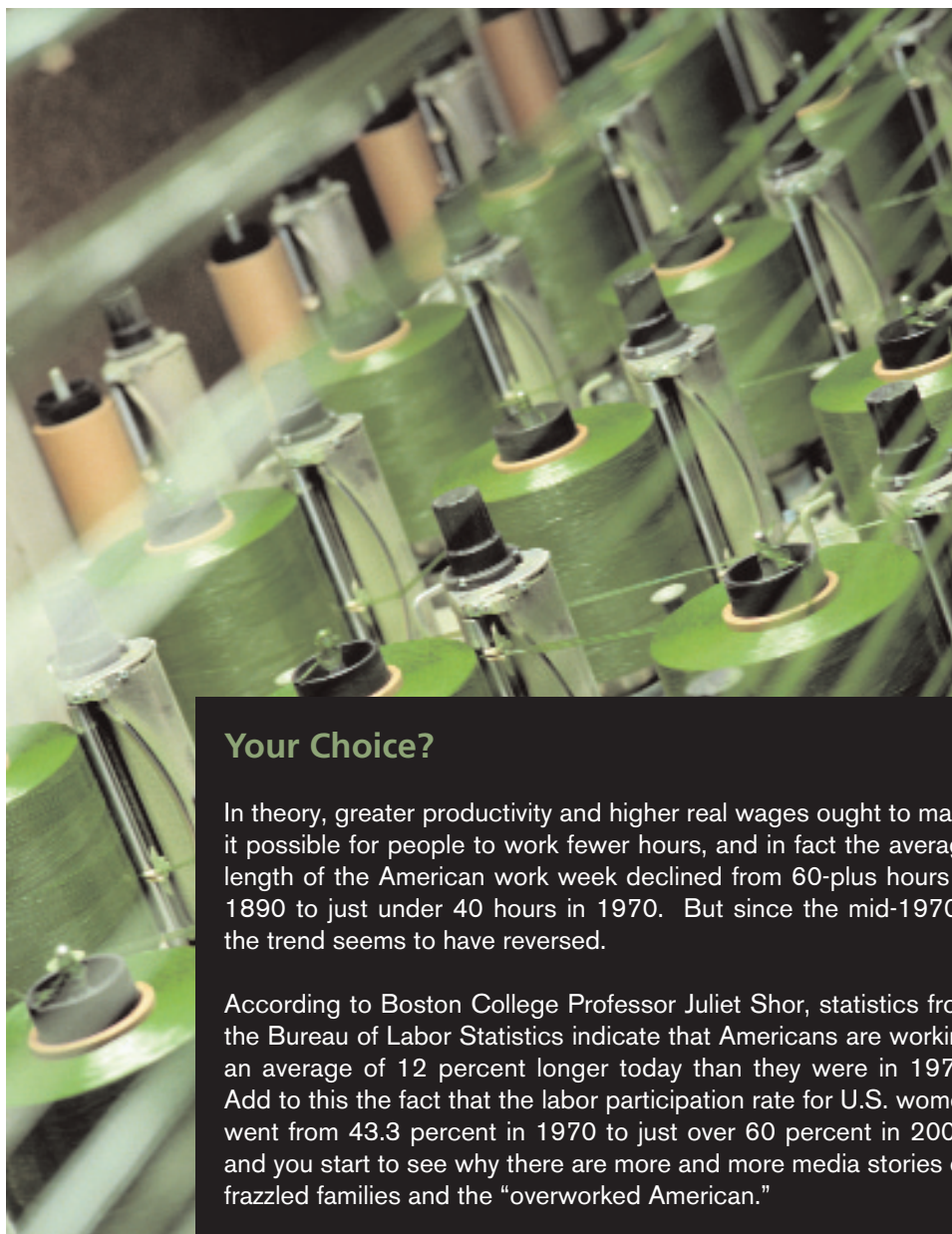
More cloth at lower prices ultimately translated into more clothes at lower prices. At first, that meant more and better *homemade clothes*, especially after home sewing machines became more widely available. But by the early 1900s, American factories were doing their best to meet a growing demand for ready-made clothing. Department stores offered city dwellers a dizzying selection. And the Sears Catalog enticed farm families with page after page of fabrics and fashions — everything from denim overalls to silk underwear.

Productivity gains also had an effect on wages, but in a less straightforward way. During the second half of the 19th century, the average “money wage” for American workers actually fell. (See box: WHAT IS REAL?) But in “real” terms, workers had more buying power. They were able to buy more with the money they earned — more food, more clothes, more consumer goods.

Why did real wages go up? In large part, because productivity increased. Labor-saving machinery, standardized parts, better organization, improved transportation, and more efficient capital markets all made it possible for factories and farms to reduce their per-unit costs.

Farmers were able to produce more bushels of wheat per acre at a lower cost per bushel and more bales of cotton at a lower cost per bale. Mills and factories were able to produce more cloth at a lower cost per yard and more stockings and pants at a lower cost per pair.

By the end of the 20th century, Americans had reached the point where clothing accounted for less than five percent of personal consumption expenditures, yet the quantity and selection of clothes in most closets was greater than ever. In fact, if Abraham Charles had died in 2003 instead of 1804, the inventory of his wardrobe would have been at least two pages long and his surviving family members probably would have been scratching their heads, wondering what to do with all his clothes.



Your Choice?

In theory, greater productivity and higher real wages ought to make it possible for people to work fewer hours, and in fact the average length of the American work week declined from 60-plus hours in 1890 to just under 40 hours in 1970. But since the mid-1970s, the trend seems to have reversed.

According to Boston College Professor Juliet Shor, statistics from the Bureau of Labor Statistics indicate that Americans are working an average of 12 percent longer today than they were in 1973. Add to this the fact that the labor participation rate for U.S. women went from 43.3 percent in 1970 to just over 60 percent in 2000, and you start to see why there are more and more media stories on frazzled families and the “overworked American.”

There have been suggestions that, when it comes to work and leisure, Americans should try to be more like Europeans. An article on the CNNMoney web site — *Should America Be France?*, October 9, 2003 — noted that “Americans, on average, work 350 hours more each year than Europeans.” The article went on to point out that French law “guarantees workers 11 public holidays, a minimum of five weeks paid vacation, and a 35-hour work week.”

Sounds pretty good. But don’t hold your breath waiting for it to happen in the U.S. Despite what we say about feeling pressed for time, Americans seem inclined to take their productivity gains in the form of more stuff rather than more leisure time. Given the choice, they’ll tend to work more and spend more, rather than work less and spend less.

The one exception: If you’re among the legion of low-wage American workers who put in long hours for short money, you don’t really have a choice. You just work, and work, and work . . . and hope you don’t fall too far behind.