



The following section is for those of you who prefer to receive information in bite-size portions rather than feast on a full-length narrative.

How Productivity Affects Standard of Living

At least since the time of Adam Smith, economists have recognized that enhancing living standards is as easy as P.I.E.: combine productivity, innovation, and education. Productivity growth is the critical factor that determines future living standards. Such growth, in turn, depends on the birth of new ideas — innovation and invention — and our ability to turn such ideas into usable technology — that is, technology transfer. Both, in turn, depend on education.

— William Poole, President,
Federal Reserve Bank of St. Louis

http://stlouisfed.org/news/speeches/2002/04_25_02.html

Productivity is seen as a key to rising living standards “because if workers produce more per hour, companies can sell more, boost profits and raise wages at the same time without raising prices. If productivity falters, pressures for higher wages could force companies to raise prices, worsening inflation.”

— *CNN/Money*, 11/07/01

productivity: shorts

What took a worker in 1890 an hour to produce takes a worker in a leading economy today [2000] only about seven minutes to produce. . . .

As far as the ability to produce material goods is concerned, in the twentieth century the human race has passed through and left the realm of necessity — where providing basic food, clothing, and shelter took up the lion’s share of economic productive potential. . . . Our collective production is no longer made up largely of the necessities of survival but of conveniences and luxuries.

— J. Bradford DeLong, “*The Shape of Twentieth Century Economic History*,” National Bureau of Economic Research, Working Paper 7569

<http://www.nber.org/papers/w7569>

An Example of How Higher Productivity Can Lead to Lower Prices

“I’m going to democratize the automobile.” declared Henry Ford in 1909. “When I’m through, everybody will be able to afford one, and about everybody will have one.”

That car turned out to be the Model T — a dependable, no-frills vehicle that helped put the middle class on wheels. The key to its success? Increased productivity.

And while you probably know that Ford used moving assembly lines to build cars faster and cheaper, here are some numbers to show just how dramatic the productivity gains were:

- “In 1914, 13,000 workers at Ford made 260,720 cars. By comparison, in the rest of the industry, it took 66,350 workers to make 286,770.”

Source: <http://www.wiley.com/legacy/products/subject/business/forbes/ford.html>

- Between 1908 and 1916, annual production of the Ford Model T jumped from less than 6,000 to nearly 600,000. The price dropped from \$950 to \$360.

Source: *FROM THE AMERICAN SYSTEM TO MASS PRODUCTION*, DAVID HOUNSHELL.

- Time required to assemble a Ford Model T chassis (rounded to nearest half-hour):

January 1913

No assembly line:
12.5 worker hours

August 1913

Rope-driven assembly line:
6.0 worker hours

December 1913

Continuous chain-driven assembly line:
1.5 worker hours

Source: *FROM THE AMERICAN SYSTEM TO MASS PRODUCTION*, DAVID HOUNSHELL.

Productivity and Wages

Productivity growth allows real wages to increase by lowering prices, thus leading to real improvements in our standard of living.

— Bank of Canada web site

<http://www.bankofcanada.ca/en/backgrounders/bg-p4.htm>

If labor productivity remained unchanged, then rising wages would increase the cost of producing a given quantity of output. If this occurred across the economy, then prices would rise, even under competitive conditions, undermining any real gain in worker purchasing power. On the other hand, if labor productivity is rising, then nominal wage growth is expected to outpace inflation, implying rising wages and purchasing power.

— South-Western EconData

<http://www.swcollege.com/bef/economics.html>

Productivity and Service Industries

There has been tremendous productivity growth in the computer industry. You see spectacular reduction in price. That represents costs reduction and productivity increases, but it’s not clear that this improvement has spread to sectors using computers. Some 80 percent of IT hardware is sold to the service sector, but it’s not showing major increases in productivity. It could be we don’t measure productivity in service industries correctly, but I doubt this is the whole story.

— Robert Solow

Nobel Laureate in Economics

[W]e see the computer age everywhere but in the productivity statistics.

— Robert Solow, 1987

It took a while for businesses to learn not only how to use information technology, but how they needed to organize themselves.

— Robert Solow, quoted in *The Wall Street Journal*, November 7, 2003

Productivity on the Farm

The average American farm in 1790 was 100 acres. This figure more than doubled over the next 60 years. By 1910, 500 acre wheat farms were not uncommon. . . . With the use of new equipment and fertilizers, wheat yields increased seven times between 1850 and 1900.

— *The Draft Horse in America*

<http://www.imh.org/imh/draft/dri.html>

The story of U.S. agriculture is a story of productivity growth: fewer workers producing more food and fiber from the same amount of land with more capital and other purchased inputs. Between 1960 and 1994, the quantity of farm output doubled, while farm employment shrank by 57 percent.

— *Rural Migration News*

April 2002

An International Perspective

Americans like Japanese products: high-quality cars, innovative electronics, eye-popping video games. What's not to like?

And because Japan's largest companies are so good at turning out products that combine quality and value, you might be tempted to believe that the Japanese economy provides a productivity model for others to follow. But that's not exactly the case. The following excerpts, from an article by Jim Frederick in the December 9, 2002 issue of *Time* ("Going Nowhere Fast"), help explain why.

"If you want a look at what's really ailing the Japanese economy, just drive over on any given weekend to the Ito-Yokado shopping center parking lot . . . [T]here are four guards at the intersection directing traffic. Another man is on hand to make sure you don't miss the turn that leads to the garage. Five meters down the path, an attendant removes the ticket that the machine just generated and hands it to you. Head up the slope to the first floor and a woman will wave you on, just in case you missed the brightly lit No Vacancy sign over her head. (Every floor, whether full or not, gets its own guard.) When

you exit, you get the same treatment in reverse. . . . By the end of your visit, at least 20 employees have provided you with a service of nearly zero value that could easily have been — and was clearly designed to be — completely automated.

"Japan's labor force is one of the most unproductive in the industrialized world. And not by a little. According to the Japan Productivity Center for Socio-Economic Development, a government-affiliated research center, Japanese laborers are 40% less efficient than Americans, 20% less efficient than the French, and 11% less efficient than the Germans.

"Although the country's showcase export industries such as automobiles and electronics have redefined competitiveness and economic advantage worldwide, the country's far, far-larger domestic sectors — construction, retailing, agriculture, health care and financial services, among others — have languished. Shielded from competition, by a tangle of government subsidies, tariffs and protectionist policies, the nation's domestic manufacturers and services have hardly changed — let alone improved — for decades."

Japanese export industries are "20% more productive than the worldwide benchmark. . . . [But] together, they make up only 10% percent of Japan's workforce and 10% of its GDP."

In Japan, mom-and-pop businesses "are the rule, not the exception, making up 55% of the retail labor force.

"The result of all that inefficiency? Layers of increased costs are passed on to Japanese consumers, who face one of the world's highest costs of living.

"Americans, for example, consume 63% more clothes, spend more than twice as much at restaurants and hotels, and about 2.5 to 3 times as much on books and cars.

"Many Japanese commentators claim that high unemployment is unacceptable because the nation does not have a well-developed social-welfare system — not seeming to realize that allowing an estimated 17 million surplus workers to remain on the nation's payrolls is a much more expensive version of the same thing."

