

Top 20 Facts About Manufacturing



1. **In the most recent data, manufacturers contributed \$2.17 trillion to the U.S. economy.** This figure has risen since the second quarter of 2009, when manufacturers contributed \$1.70 trillion. Over that same time frame, value-added output from durable goods manufacturing grew from \$0.86 trillion to \$1.17 trillion, with nondurable goods output up from \$0.84 trillion to \$0.99 trillion.
2. **For every \$1.00 spent in manufacturing, another \$1.40 is added to the economy.** That is the highest multiplier effect of any economic sector.
3. **The vast majority of manufacturing firms in the United States are quite small.** In the most recent data, there were 256,363 firms in the manufacturing sector, with all but 3,626 firms considered to be small (e.g., having fewer than 500 employees). In fact, three-quarters of these firms have fewer than 20 employees.
4. **Almost two-thirds of manufacturers are organized as pass-through entities.** Looking just at manufacturing corporations and partnerships in the most recent data, 65.6 percent are either S-corporations or partnerships. The remainder are C-corporations. Note that this does not include sole proprietorships. If they were included, the percentage of pass-through entities rises to 83.4 percent.
5. **There are 12.33 million manufacturing workers in the United States, accounting for 9 percent of the workforce.** In addition, manufacturing supports an estimated 18.5 million jobs in the United States—about one in six private-sector jobs.
6. **In 2014, the average manufacturing worker in the United States earned \$79,553 annually, including pay and benefits.** The average worker in all industries earned \$64,204. Looking specifically at wages, the average manufacturing worker earned \$25.19 per hour, according to the latest figures, not including benefits.
7. **Manufacturers have one of the highest percentages of workers who are eligible for health benefits provided by their employer.** Indeed, 92 percent of manufacturing employees were eligible for health insurance benefits in 2015, according to the Kaiser Family Foundation. This is significantly higher than the 79 percent average for all firms. Of those who are eligible, 84 percent participate in their employer's plans (i.e., the take-up rate). There are only two other sectors—government (91 percent) and trade, communications and utilities (85 percent)—that have higher take-up rates.

8. **Manufacturers have experienced tremendous growth over the past few decades, making them more “lean” and helping them become more competitive globally.** Output per hour for all workers in the manufacturing sector has increased by more than 2.5 times since 1987. In contrast, productivity is roughly 1.7 times greater for all nonfarm businesses. Note that durable goods manufacturers have seen even greater growth, almost tripling their labor productivity over that time frame.

To help illustrate the impact to the bottom line of this growth, unit labor costs in the manufacturing sector have fallen 12.3 percent since the end of the Great Recession, with even larger declines for durable goods firms.

9. **Over the next decade, nearly 3.5 million manufacturing jobs will likely be needed, and 2 million are expected to go unfilled due to the skills gap.** Moreover, according to a recent report, 80 percent of manufacturers report a moderate or serious shortage of qualified applicants for skilled and highly skilled production positions.
10. **Exports support higher-paying jobs for an increasingly educated and diverse workforce.** Jobs supported by exports pay, on average, 18 percent more than other jobs. Employees in the most trade-intensive industries earn an average compensation of nearly \$94,000, or more than 56 percent more than those in manufacturing companies that were less engaged in trade.
11. **Over the past 25 years, U.S.-manufactured goods exports more than quadrupled.** In 1990, for example, manufacturers in the United States exported \$329.5 billion in goods. By 2000, that number had more than doubled to \$708.0 billion. In 2014, it reached an all-time high, for the fifth consecutive year, of \$1.403 trillion, despite slowing global growth. However, a number of economic headwinds have dampened export demand so far in 2015, with manufactured goods exports down 4.2 percent year-to-date through the first two quarters of the year.
12. **Manufactured goods exports have grown substantially to our largest trading partners since 1990, including to Canada, Mexico and even China.** Moreover, free trade agreements (FTAs) are an important tool for opening new markets, with 52 percent of manufactured goods exports flowing to our FTA partners in 2014. The United States enjoys a \$55.0 billion manufacturing trade surplus with its trade agreement partners, compared with a \$579.2 billion deficit with other countries.
13. **Nearly half of all manufactured goods exports went to nations with which the United States has FTAs.** In 2014, manufacturers in the United States exported \$674.9 billion in goods to FTA countries, or 48.1 percent of the total.
14. **World trade in manufactured goods has more than doubled between 2000 and 2013—from \$4.8 trillion to \$12.2 trillion.** World trade in manufactured goods greatly exceeds that of the U.S. market for those same goods. U.S. consumption of manufactured goods (domestic shipments and imports) equaled \$4.1 trillion in 2014, equaling about 34 percent of global trade in manufactured goods.

15. **Taken alone, manufacturing in the United States would be the ninth-largest economy in the world.** With \$2.1 trillion in value added from manufacturing in 2014, only eight other nations (including the United States) would rank higher in terms of their GDP.
16. **Foreign direct investment in manufacturing exceeded \$1 trillion for the first time ever in 2014.** Across the past decade, foreign direct investment has more than doubled, up from \$499.9 billion in 2005 to \$1,045.5 billion in 2014. Moreover, that figure is likely to continue growing, especially considering the number of announced ventures that have yet to come online.
17. **U.S. affiliates of foreign multinational enterprises employ more than 2 million manufacturing workers in the United States, or almost one-sixth of total employment in the sector.** In 2012, the most recent year with data, manufacturing sectors with the largest employment from foreign multinationals included motor vehicles and parts (322,600), chemicals (319,700), machinery (222,200), food (216,200), primary and fabricated metal products (176,800), computer and electronic products (154,300) and plastics and rubber products (151,200). Given the increases in foreign direct investment since 2012, these figures are likely to be higher now.
18. **Manufacturers in the United States perform more than three-quarters of all private-sector research and development (R&D) in the nation, driving more innovation than any other sector.** R&D in the manufacturing sector has risen from \$126.2 billion in 2000 to \$229.9 billion in 2014. In the most recent data, pharmaceuticals accounted for nearly one-third of all manufacturing R&D, spending \$74.9 billion in 2014. Aerospace, chemicals, computers, electronics and motor vehicles and parts were also significant contributors to R&D spending in that year.
19. **Manufacturers consume more than 30 percent of the nation's energy consumption.** Industrial users consumed 31.5 quadrillion British thermal units of energy in 2014, or 32 percent of the total.
20. **The cost of federal regulations falls disproportionately on manufacturers, particularly those that are smaller.** Manufacturers pay \$19,564 per employee per year on average to comply with federal regulations, or nearly double the \$9,991 per employee per year borne by all firms as a whole. In addition, small manufacturers with fewer than 50 employees spend 2.5 times the amount of large manufacturers. Environmental regulations account for 90 percent of the difference in compliance costs between manufacturers and the average firm.

See more at: <http://www.nam.org/newsroom/facts-about-manufacturing/#sthash.PWbszpVP.dpuf>



The local section conducts regular activities spanning the continuing education, professional development, pre-college outreach, public policy, college student and technical functional areas. Activities range from technical skills development classes, lectures, and industry and history tours to networking, public policy and Science, Technology, Engineering and Math (STEM) outreach events. The section supports STEM scholarships, science fair and engineering design competitions. Greater Huntsville organizes and conducts Engineers Week activities as well as local and national public policy events to promote the aerospace industry and engineering profession.

https://info.aiaa.org/Regions/SE/HSV_AIAA/default.aspx



Learn more about what an advanced manufacturing career is, how to prepare for it, manufacturing facts and about the people and the companies involved in manufacturing.

<http://www.careerme.org/>



The National Association of Manufacturers (NAM) is the nation's largest industrial trade association representing small and large manufacturers in every industrial sector and in all 50 states. Manufacturing employs nearly 12 million workers, contributes more than \$1.6 trillion to the U.S. economy annually, is the largest driver of economic growth in the nation and accounts for the lion's share of private sector research and development. This site provides employment information, facts about manufacturing, manufacturing news and much more!

<http://www.nam.org/>

Weld-Ed

This American Welding Society and National Center for Welding Education & Training (Weld-Ed) web portal provides avenues for educators, welding professionals and students to explore! "No way!" That's what you'll say when you hear about the amazing variety of welding jobs that are out there and how much they pay. Do you like the idea of working outdoors? Traveling? Getting new skills and moving up in the world? There's a welding job for you. Check out the opportunities on this interactive site!

<http://www.careersinwelding.com/>



The SME Education Foundation seeks to introduce curious and creative young people to the world of modern manufacturing and the high-paying careers it offers. This expanded and enhanced site uses popular culture for entertainment value and the respected resources of some very smart people to deliver its message. Check out how engineers figured out how to make a frozen pizza that would turn out perfect for you at home every time!

<http://www.sme.org/mfgis-fun/>



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<http://www.nutsandboltsfoundation.org/>



Discover the engineer in you on this website. Sometimes the best way to understand what engineers do is to try your hand at it! This site provides links to several engineering games on the internet to give you a first-hand try at the problem solving skills engineers employ every day!

<http://tryengineering.org/>



NCME is devoted to improving the state of manufacturing and engineering technology education nationwide. They serve as a source of materials, supports services and professional development opportunities for educators and industry professionals.

<http://www.ncmeresource.org/>



The National Science Foundation STEM Guitar Project provides innovative professional development to high school and community college faculty. Faculty teams will take part in an intense five day guitar design/build project. Each faculty member will build his/her own custom electric guitar and will engage in student centered learning activities that relate the guitar design to specific math, science and engineering topics. Participants will leave this week-long experience with their custom-made guitars, curriculum modules with short term assessments that can be immediately integrated into the faculty teams school curriculum, and much more.

<http://www.guitarbuilding.org/>



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<http://asmartplace.com/>