THE BIOPHARMACEUTICAL INDUSTRY: FUELING THE ECONOMY AND GLOBAL COMPETITIVENESS

THE ECONOMIC REACH OF THE U.S. BIOPHARMACEUTICAL INDUSTRY

Every biopharmaceutical sector job supports a total of five jobs across the economy.

811,000 Direct Jobs
1,422,000 Indirect Jobs
1,806,000 Induced Jobs

4,039,000 TOTAL JOBS

Source: TEConomy Partners

The United States is recognized as the global leader of biopharmaceutical innovation. That global leadership is built upon a robust research and development (R&D) ecosystem featuring biopharmaceutical companies that perform and support advanced R&D. This results in innovative treatments and cures. But beyond the value medicines deliver to patients is the profound impact the biopharmaceutical sector has on our local, state and national economies.

The economic impact of the biopharmaceutical industry and its closely integrated supply chain translate into high-wage jobs, substantial tax revenue and growing economic output in our local communities. In fact, the combined effects of biopharmaceutical direct jobs, supply chain and wages and benefits resulted in more than $1 trillion in economic output and more than 4 million jobs in 2017.[i] And every job in the biopharmaceutical industry supported a total of five jobs across the economy, resulting from the broader impacts of its supply chain and the personal spending of its workforce.[ii]

One reason for the broad geographic reach of the industry's economic impact is the sheer number of clinical trials sponsored by the industry. In 2017, biopharmaceutical companies sponsored more than 4,500 clinical trials in the United States alone, with trials in all 50 states, the District of Columbia and Puerto Rico. These trials involved close to one million participants and accounted for nearly $43 billion in economic activity.[iii]

The industry's U.S. manufacturing footprint is also extensive, with more than 1,100 facilities across 45 states currently manufacturing FDA-approved medicines and related products.[vi] The industry's advanced manufacturing presence is key to maintaining U.S. leadership in innovation. As the complexity of drug development evolves, manufacturing process innovations have become as important as product innovations themselves. Biopharmaceutical manufacturers are constantly researching, developing, and adopting new technologies and processes—such as continuous manufacturing, high-volume cell processing, and advanced purification, preservation and distribution modes—which will be essential for manufacturing the next generation of treatments, such as cell and gene therapies.[v]

AMERICA'S BIOPHARMACEUTICAL INDUSTRY IS THE MOST RESEARCH INTENSIVE

The tremendous investments America's biopharmaceutical companies make to research and develop new medicines are what drive the far-reaching impacts of the industry. The biopharmaceutical industry is the global leader in R&D and its research intensity is unparalleled in the U.S. economy.[vi] Relative to other manufacturing industries, the biopharmaceutical industry invests 12 times more in R&D per employee and employs the largest share of all manufacturing R&D workers in the United States.[vii, viii] The industry also invests more in R&D relative to sales than all but one other manufacturing industry—over 20%, more than six times the average for the manufacturing sector as a whole.[ix]

As a result, U.S. based biopharmaceutical companies invested $97 billion in R&D in 2017,[x] with most of these investments made directly in the United States. In fact, according to the National Science Foundation, the sector accounts for the single largest share of all U.S. business R&D, representing 1 out of every 6 dollars (17%) spent on domestic R&D by U.S. businesses.[xi] The biopharmaceutical industry is the single largest funder of medical and health R&D in the United States, accounting for half of all such research in the United States – far more than the National Institutes of Health, other private industries or other sources.[xii]

THE U.S. BIOPHARMACEUTICAL INDUSTRY IS THE GLOBAL LEADER IN BIOMEDICAL INNOVATION

America's robust R&D enterprise is the envy of the world. Not only does the United States lead in both overall clinical trial activity and early stage clinical research, but it also claims the intellectual property of nearly 60% of all new medicines.[xiii] Likewise, it is not surprising that almost three-quarters of worldwide venture capital investments in biopharmaceutical startups are made in the United States, where the biopharmaceutical R&D enterprise thrives.[xiv]

The sector's global leadership is also evidenced by the tremendous medical advances that it generates. Since 2000, the U.S. Food and Drug Administration (FDA) has approved nearly 900 new medicines, including the first immunotherapies, the first cell and gene therapies, cures for all forms of Hepatitis C and many first-time and transformative treatments for rare and chronic conditions.[xv, xvi, xvii] Seventy-one of the new medicines approved by the FDA in 2018 were approved in the United States before receiving approval in any other country.[xviii] Currently there are more than 8,000 medicines in development globally, holding tremendous promise in further transforming current treatment paradigms.[xix]

While the United States is currently the world leader in biopharmaceutical innovation, the industry faces mounting competition, not just from developed countries, but also from emerging nations.[xx] As the Information Technology and Innovation Foundation observed, "The United States' lead in the life sciences is being challenged. Other countries have aggressively courted life-sciences companies with lower tax rates…improved intellectual property protections and streamlined approval processes."[xxi] Continued U.S. global leadership depends on having the right public policies to support biopharmaceutical R&D and manufacturing. Strong intellectual property protections, including patents and data protection, a science-based regulatory system, and coverage and payment policies that recognize the value of medical innovation are critical.

[i] TEConomy Partners; for PhRMA. The Economic Impact of the US Biopharmaceutical Industry 2017: National and State Estimates. In press.

[ii] TEConomy Partners; for PhRMA. The Economic Impact of the US Biopharmaceutical Industry 2017: National and State Estimates. In press.

[iii] TEConomy Partners; for PhRMA. Biopharmaceutical Industry-Sponsored Clinical Trials. April 2019.

[iv] TEConomy Partners; for PhRMA. Biopharmaceutical Manufacturing in the U.S.: Making Cutting-Edge Medicines Today and Leading the Way on Medicines of Tomorrow. March 2019.

[v] TEConomy Partners; for PhRMA. Biopharmaceutical Manufacturing in the U.S.: Making Cutting-Edge Medicines Today and Leading the Way on Medicines of Tomorrow. March 2019.

[vi] M Muro et al. America's advances industries: New trends. Brookings Institute. August 2016.

[vii] NDP Analytics. IP-intensive manufacturing industries: driving US economic growth.

[viii] NSF, National Center for Science and Engineering Statistics. Table 50: worldwide, domestic, and foreign total and R&D employment, by industry and company size: 2015. August 30, 2018.

[ix] NDP Analytics. IP-Intensive Manufacturing Industries: Driving US Economic Growth. Washington, DC: NDP Analytics. September 2017.

[x] Research!America, U.S. Investments in Medical and Health Research and Development, 2013-2017, Arlington, VA, Fall 2018.

[xi] Wolfe RM; National Science Foundation, National Center for Science and Engineering Statistics. Businesses spent $375 billion on R&D performance in the United States in 2016. InfoBriefs. NSF 18-312.. Published September 2018.

[xii] Research!America, U.S. Investments in Medical and Health Research and Development, 2013-2017, Fall 2018.

[xiii] NSF, National Science Board. Science and Engineering Indicators 2018. Chapter 8 Appendix Table 8-13: USPTO patents granted in pharmaceuticals, by region, country, or economy: 2000–16.

[xiv] TEConomy; for PhRMA. Analysis of Pitchbook data. April 2019.

[xv] US FDA. Summary of NDA approvals and receipts, 1938 to the present..

[xvi] US FDA. Center for Drug Evaluation and Research (CDER) Advancing Health through Innovation, 2018 New Drug Therapy Approvals.

[xvii] US FDA. Center for Biologics Evaluation and Research. Biological Approvals by Year.

[xviii] US FDA, CDER. Advancing Health through Innovation, 2018 New Drug Therapy Approvals

[xix] Adis R&D Insight Database. Accessed June 2018.

[xx] TEConomy Partners; for PhRMA. Closing the Gap: Increasing Global Competition To Attract And Grow The Biopharmaceutical Sector. June 2017.

[xxi] ITIF. How to Ensure that America's Life-Sciences Sector Remains Globally Competitive. March 2018.