

Why manufacturing matters

Made in the USA: The Rise and Retreat of American Manufacturing. By Vaclav Smil. Cambridge MA: MIT Press, 2013, 277 pp., \$27.95 cloth.

Made in the USA, written in 2013, is a relevant, well-documented, yet compact commentary on the contribution of the manufacturing sector to the modern American economy. Author and distinguished Professor Emeritus Vaclav Smil, of the University of Manitoba, describes the development of several stages of our economy as they relate to manufacturing. The growth of the manufacturing sector played a key role in taking the economy from the late 19th century into the 20th century. The steps involved, says the author, prove the importance of manufacturing in the reward Americans earned for their hard work. There was a turning point, however, and we are now at a different point in our history, with fewer manufacturing jobs and a more service-oriented economy.

A central effort of the book is to discuss problems that the nation has experienced. Both the problems themselves and Smil's discussion of them are based on different phases of economic growth, especially in manufacturing. The author adds insightful commentary on the current status of manufacturing in the economy. Toward these ends, his most important ideas combine two themes: that manufacturing is a major component of a modern economy and that people dismiss this massive sector of U.S. and world economic output too readily. Smil provides a condensed step-by-step history of the ascent of manufacturing in the United States, from Colonial America to the Civil War, after which the nation became an economic powerhouse. He then leads the reader into the prosperous 1920s, the Great Depression, World War II, and the subsequent years of prosperity and economic expansion spearheaded by the auto and construction industries and showcased by the mass production of consumer goods. After describing the ascent of manufacturing from 1948 until the energy crisis of the 1970s, he



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identifies an era of decline in American manufacturing: from its peak in the mid-1970s to the present day, the output of goods-producing industries has been decreasing steadily.

Smil's purpose in writing the book is to promote the favorable image he has of the economic importance of manufacturing. He says that those economists who believe that a declining manufacturing sector is normal and to be expected—and is even healthy—in an era of a stronger, more natural, and more relevant services-oriented economy hold a distorted view. One example is Romanian-American mathematician, statistician, and economist Nicholas Georgescu-Roegen, who recommends an economic outlook based on physics' second law of thermodynamics, also known as the law of entropy. According to Georgescu-Roegen's "entropic" viewpoint, throughput should be minimized in the production process. When that happens, consumption increases—which sounds as if it should be a good thing. However, the increase in consumption is at the expense of the goods-producing sector, says Smil: producers can then sell almost any product they create, obsolescence becomes "built in," and innovation is stifled. As a result, manufacturing industries decline. In that case, the "ideological pursuit of unlimited free trade, an excessive dependence on imports, and the systematic outsourcing of entire industries will eventually weaken the strongest economies." In other words, efficiency at all costs, or the natural law of entropy, must not completely replace equity in the United States.

Arguing against Georgescu-Roegen's viewpoint, Smil maintains that we must forgo the growth-at-all-cost imperative and instead direct the economy down a less wasteful and more sustainable path to producing consumer goods. Along the way, we must identify the distortions we have as to the cause of the decline of the manufacturing sector. In sum, a nation must support growth in the manufacturing sector because growth raises the economic performance of the overall economy; yet, we must agree that various problems will arise when we seek growth at all costs.

I recommend *Made in the USA*, not just for the step-by-step approach Smil uses to combine historical problems with documented examples in the chapters titled "Ascent" and "Retreat," but also for the problems he identifies in the first chapter, "Why Manufacturing Matters." These problems are stated in that chapter by Nobel Laureate Robert M. Solow, who observes that improvements in technology are a fundamental driver of innovation—the key to keeping the economy, and especially its manufacturing sector, vibrant and growing. Also, we must be clear that "no single variable which we can manipulate is going to shift the economy into a prosperous era" of satisfactory employment and set us in a desirable direction. Indeed, says Solow, if current problems in the manufacturing sector continue, decline will prevail. In that case, the entire economy will be haunted by its own growing shadow.