



MILKEN INSTITUTE



Manufacturing 2.0

A More Prosperous California

Executive Summary

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Ross C. DeVol, Perry Wong, Armen Bedroussian, Candice Flor Hynek and David Rice



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Introduction

A robust manufacturing industry is an indicator of a nation's ability to foster innovation and drive broad, sustained economic growth, and no state has been more important to U.S. manufacturing competitiveness than California. In 2002, the Milken Institute's report *Manufacturing Matters: California's Performance and Prospects* sounded the alarm bells on the decline of the state's manufacturing competitiveness and the impending economic implications. Seven years later, this report quantifies the damage resulting from a failure to address those concerns.

For the past hundred years, California's economy has been built on the success of the manufacturing industry. From the development of mechanized agronomy at the end of the 19th century, to the role of aerospace and the dominance of computers and software in the 20th, to the emergence of biotechnology at the beginning of the 21st, California's manufacturers have been pioneers in creating not only businesses and jobs but also whole new industries.

Our research shows that manufacturing—both traditional and high-tech—still drives California's economy in many ways, but the state is losing ground to other states and nations because of its regulatory climate, tax burden, and reputation as a difficult and costly place to do business.

The Need for Action

As a critical engine of economic growth and a catalyst for innovation, the manufacturing industry is a canary in the coal mine for the California economy. Some trials are due to global conditions beyond the state or even the country's control, but California can turn many of the challenges into opportunities, including creating a clean energy industry and next-generation production processes that establish industrywide standards for efficiency and sustainability.

Based on the flow of venture capital funding and amount of research and development spending, California has great capacity to innovate but isn't living up to its potential. One key to bridging this gap is a new partnership between manufacturers and the public sector. This cooperative undertaking should include the following initiatives:

- Streamlining the regulatory procedure for manufacturers, increasing transparency and accountability in the regulatory process, and encouraging long-term investment through new policy tools—all of which can be achieved without relaxing or changing a single regulatory standard.
- Enhancing public incentives for manufacturers through better planning, coordination across government agencies, and partnering with the private sector.
- Launching an industry-led campaign to encourage Californians to pursue careers in manufacturing, highlighting the attributes of modern manufacturing, its importance to the economy, its record of environmental stewardship, and its high wages.



- Creating a network of education, training, research, and business incubation centers around the state to develop a highly qualified manufacturing work force, to invent and commercialize advanced manufacturing techniques, and to assist start-up businesses.
- Creating a public-private initiative to conduct research, develop new technologies and processes, and commercialize more efficient and environmentally sustainable manufacturing practices with incentives to facilitate adoption of new standards.

Current State of Manufacturing

Our recommendations for incentives, training, and other ideas for making the state more attractive are rooted in research that shows how manufacturing's effects ripple silently through the economy. For every job created in manufacturing, 2.5 jobs are created in other sectors. At the upper bounds, electronic computer manufacturing has a multiplier effect of 16 jobs. Yes, 15 other jobs are dependent on one job created in that industry. The bottom line is this: Losing manufacturing jobs not only adversely affects the industry but also California's overall economic vitality.

Despite the great importance of manufacturing in the state, California faces two broad, yet distinct, competitive disadvantages: the state's regulatory climate and its tax burden. California consistently ranks among the most restrictive states in which to start a business, according to several research institutions' objective metrics as well as our own. As evidence, they cite the amount of time required and degree of difficulty in selecting a site, navigating regulations across jurisdictions, acquiring permits, conducting impact studies, identifying and preparing a work force, and making infrastructure improvements.

California has been progressively losing more of its manufacturing employment, particularly high-value-added manufacturing, to other states such as Oregon, Texas, Minnesota, and Washington. To analyze California's comparative manufacturing competitiveness, case studies using data from 2000 through 2007 were conducted on California and seven other "peer manufacturing" states. Together, these seven states were home to 2.7 million manufacturing jobs compared with California's 1.5 million manufacturing jobs in 2007. The peer states added more than 62,000 manufacturing jobs since 2003, while California lost 79,000 manufacturing jobs during the same period. In short, the case studies reveal that:

1. California is losing a larger share of manufacturing employment overall, in high-tech in particular, and at a faster rate compared to these other states;
2. California has a wide gap between its capacity for ingenuity and entrepreneurship and its ability to efficiently commercialize innovation in manufacturing;
3. This gap continues to widen in part due to the burden of an onerous regulatory climate and some of the highest taxes in the United States;
4. California has a reputation for being a state that is unfriendly to business, which harms its overall competitiveness; and
5. Peer states are using targeted incentives to keep and lure manufacturers away from California.



In comparing tax burdens, as of 2007, California's total taxes paid per capita were \$4,993—the highest among the peer states (Arizona, Indiana, Kansas, Minnesota, Oregon, Texas, and Washington) with an average of \$3,803 and much higher than the national average of \$4,223. California also has the second-highest corporate income tax rate among the peer states and the twelfth highest in the nation. At \$6,390 per capita, California spent more on government programs and services than any other peer state, and that amount increased nearly 50 percent from 2000 to 2007—a higher percentage increase than the other seven states. California, in addition to having the highest per capita rate in taxes paid, also has one of the highest growth rates in government borrowing.

Economic Impact of Lost Jobs

To illustrate the impact of lost manufacturing jobs, we conducted a simulation that assumed California manufacturers in 2007 still employed the same share of state workers as in 2000. The simulation found that if manufacturing had maintained its 12.8 percent share, 476,000 jobs would have been preserved—nearly 33 percent of the 2007 manufacturing base. If wages and output levels had been maintained, the industry would have preserved \$27.3 billion in wages and \$46.9 billion in output, or about 28 percent of 2007 totals. The ripple effect means the 476,000 jobs that would have been retained would have generated 1.17 million more jobs, for a total impact of 1.65 million positions. Similarly, the preserved wages and output would have generated \$47.8 billion and \$54.3 billion, respectively, after rippling through other sectors.

Manufacturing is an industry that creates wealth for its workers and drives broad upward social mobility. In 2007, the California manufacturing industry paid an average wage of \$66,200, well above the national average and substantially more than health care and social assistance services—California's fastest-growing job sectors. Workers in California's five best-paying manufacturing industries—three of them in high-tech manufacturing—earned more than \$100,000 annually on average.

The steady loss of total employment in U.S. manufacturing is not unexpected as the labor-intensive manufacturing processes flow to lower-cost emerging markets. But some of these nations are setting their sights on high-tech, high-value manufacturing that to date has remained in the United States because of its highly skilled work force. Industrial policy changes in developing nations and global economic forces will continue to transform the world's manufacturing landscape.

To remain competitive and expand into new markets, companies must develop increasingly sophisticated supply chains and production models with suppliers and partners overseas. And although the United States may disagree with the monetary policies of its trading partners, particularly with regard to exchange rates, efforts also should focus on solving challenges to manufacturing competitiveness that can be addressed locally. These include the regulatory environment, tax burden, and business climate, as well as inadequate investment in innovation, infrastructure, and human capital.

Note: The data used throughout our report is from the years 2000 through 2007.

Online: For an interactive look at the statistics, visit www.milkeninstitute.org/manufacturing.