

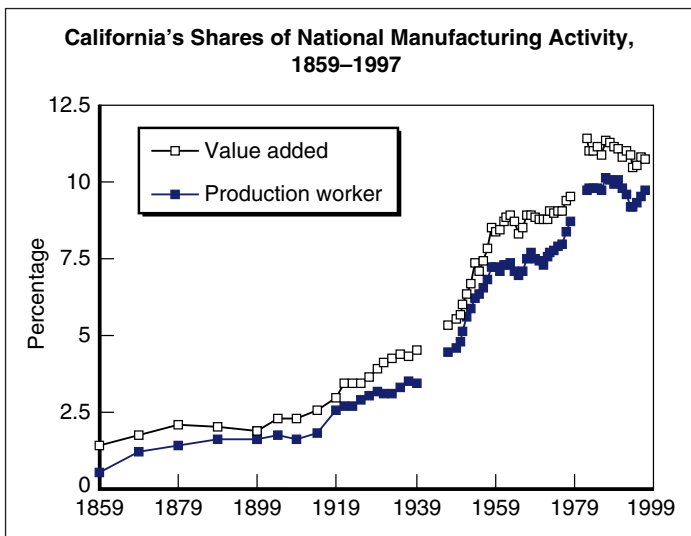
## *Manufacturing the Dream: How California Became the Leading Industrial State*

Over the last 150 years, California's economy has experienced a remarkable transformation. An isolated, relatively unpopulated outpost in 1840, California is now the leading industrial state with a gross domestic product that would earn it a place at the G-8 meetings of the world's largest economies. A simple "march of time" explanation does not do full justice to the scope or timing of this transformation. Rather, California's emergence as an industrial center is better seen as the result of complex interplay among regional, national, and international forces.

### *Resource-Based and Knowledge-Based Growth*

California's early industries relied heavily on the state's natural resource endowment. The Gold Rush was the first and most obvious example of this pattern, but canning, winemaking, lumber production, and petroleum refining were among the state's leading industries well into the 20th century. (Given the scarcity of coal in California, developing petroleum-based energy was a crucial adaptation to the state's resource endowment.) As late as 1935, resource processing accounted for over half of California's industrial activity.

California's knowledge-based industries began to gain prominence in the early decades of the 20th century. A decade after Donald Douglas established a local aircraft firm in 1920, Caltech emerged as a center for aeronautical research, and by the mid-1930s, eastern firms were relocating to California to tap the area's engineering talent and venture capital. The first aircraft successes came from planes built to serve the commercial aviation market in the West; later, the industry looked to export and military markets. By 1947, California aircraft and equipment industries were producing about half the nation's output. Its demand for new technology also boosted the state's fledgling electronics sector, which began to flourish in the 1950s and 1960s. By 1997, high technology accounted for one-quarter of California's manufacturing production workers and almost half of the state's value added.



In *The Evolution of California Manufacturing*, Paul Rhode uses a unique and comprehensive time series dataset to map the state's industrial development from the Gold Rush to 1997. Although manufacturing has never been as important to California as it has been to the nation as a whole, the expansion of this sector has been a key part of a balanced (if not always continuous) pattern of rapid economic growth within California. The study identifies six broad, long-run processes that help account for the state's emergence as an industrial leader.

### *Product Market Integration*

Falling transportation costs in the late 19th century left local manufacturers vulnerable to outside producers. Some local industries (for example, textiles, shoes, and tobacco) began to contract, but lower transportation costs allowed several signature industries—such as winemaking and canning—to pursue export markets more aggressively. Over

time, the state's manufacturing sector became more integrated with the national and global economies.

### *Labor Market Integration*

The 1882 Immigration Restriction Act cut off labor inflows from Asia, forcing California to recruit workers from the Midwest, where wages and education levels were high. As a result, California's manufacturing development was channeled along a high-wage path. More recently, immigration policies have led to large labor inflows from Latin America and East Asia. These changes have encouraged low-wage manufacturing in such industries as apparel and leather goods.

### *Home Market Growth and Economies of Scale*

California's population and manufacturing sector expanded together in a mutually reinforcing process. During the late 19th and early 20th centuries, California's relatively small home market constrained the development of large-scale manufacturing activity. As the state's population swelled after 1900, however, mass production industries such as automobiles and tires entered California to serve the western market. The size and scope of manufacturing activity increased as many emergent industries realized the benefits of economies of scale.

### *Recent Trends in California Manufacturing*

In addition to identifying long-run economic processes, the analysis highlights several recent trends.

- Beginning in the mid-1970s and continuing through the late 1990s, industries relying on low-wage workers experienced sustained growth for the first time in the 20th century. By many measures, California had lost its historical character as a high-wage, labor-scarce region during this period, and the state's productivity and labor earnings had converged to the national levels.
- High-technology sectors also expanded during the last part of the 20th century, but there was little growth in the middle range of the productivity spectrum.
- California's long-standing specialization in transportation disappeared following the aerospace cutbacks of the early 1990s.
- The state's manufacturers became more focused on export markets. In 1997, direct exports accounted for 16 percent of the value of the state's manufacturing shipments, four times their share in the late 1960s.
- California continues to maintain a vibrant small-plant culture. The prevalence of small enterprise in California, a cause of concern in earlier decades, has become a celebrated characteristic of the state's manufacturing sector.

The study concludes by noting that many economic shocks over the last decade—including energy shortages, military cutbacks, and employment volatility—have occurred periodically throughout California's history. Although the economic news of the 1990s seemed to be token unprecedented developments, the historical evidence indicates that this decade was not a period of especially rapid structural change. Rather, such transitions have been the one true constant in California's industrial history.

---

*This research brief summarizes a report by Paul W. Rhode, The Evolution of California Manufacturing (2001, 126 pp., \$12.00, ISBN 1-58213-038-8). The report may be ordered by phone at (800) 232-5343 [U.S. mainland] or (415) 291-4400 [Canada, Hawaii, overseas]. A copy of the full text is also available on the Internet (www.ppic.org). The Public Policy Institute of California is a private, nonprofit organization dedicated to independent, objective, nonpartisan research on economic, social, and political issues affecting California.*

---