

Sonoma County Advanced Industry Evolution

Focus on Post-Recession Recovery

Q4 -2025 Update

Produced by

National Economic Education Delegation

July 13, 2026

Jon Haveman, Executive Director

415-336-5705 or Jon@NEEDEcon.org

Contents

1. Advanced Industry Employment Growth Since 1990	2
2. Overview of Employment Changes Since the Onset of the COVID Pandemic	4
3. Graphical Display of 4-digit Location Quotient Evolution by Industry	5
4. Descriptions and References	10



1. Advanced Industry Employment Growth Since 1990

Table1.1: Advanced Industry Employment Summary for Q4 -2025

	Share of Total Empl	Current Employment	Inc. Over Last Qtr (#)	Percent Growth Relative to:				
				Last Qtr	Last Year	.COM Peak*	Q4-07	Q1-10
Sonoma County	5.0	10,356	-255	-2.4	-6.7	-51.8	-26.0	-14.4
Bay Area	15.4	608,219	-1,502	-0.2	-1.7	-2.3	21.1	27.3
California	9.5	1,745,173	1,225	0.1	-1.0	1.5	3.8	17.1
United States	9.1	14,252,121	-34,110	-0.2	-0.6	6.7	11.0	23.3

Source: BLS, QCEW; Calculations by National Economic Education Delegation

* .COM Peak refers to the quarter of peak employment for Sonoma County during the Tech bubble.

Figure 1 - 1: Advanced Industry Employment Growth Comparison with California and U.S.

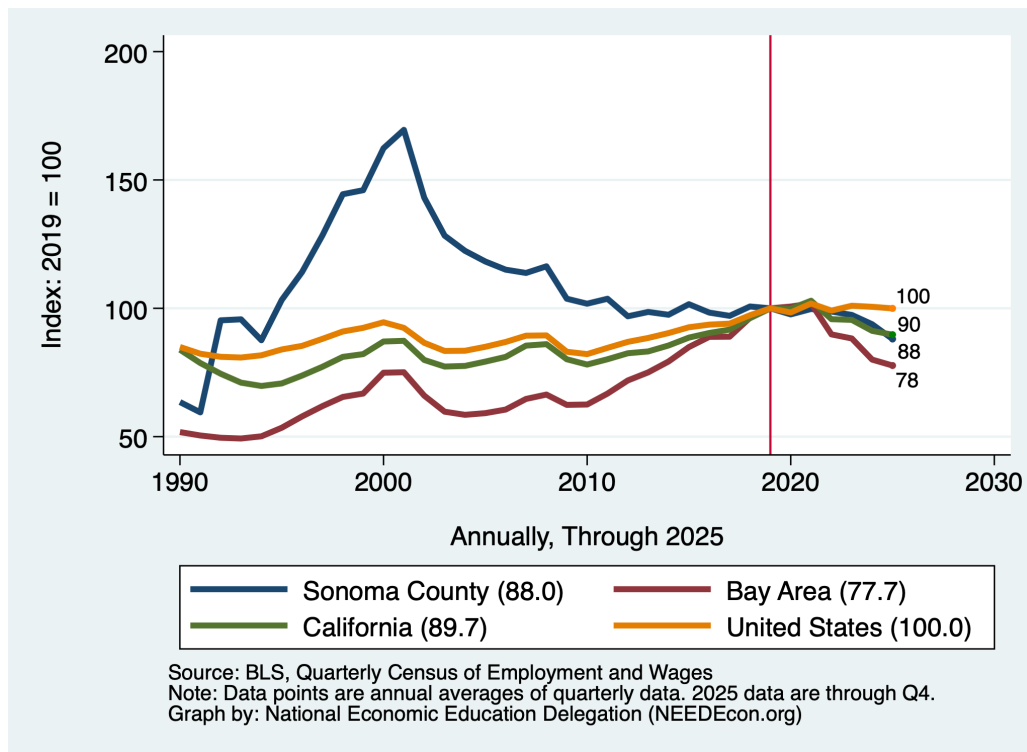


Figure 1 - 2: Employment Growth

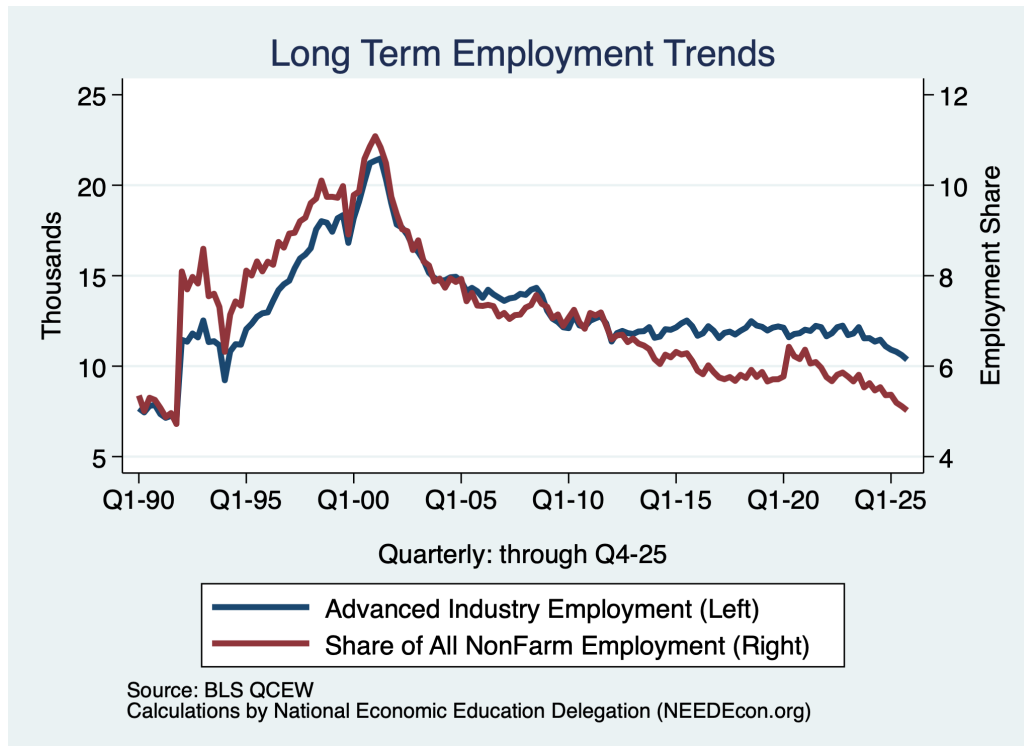
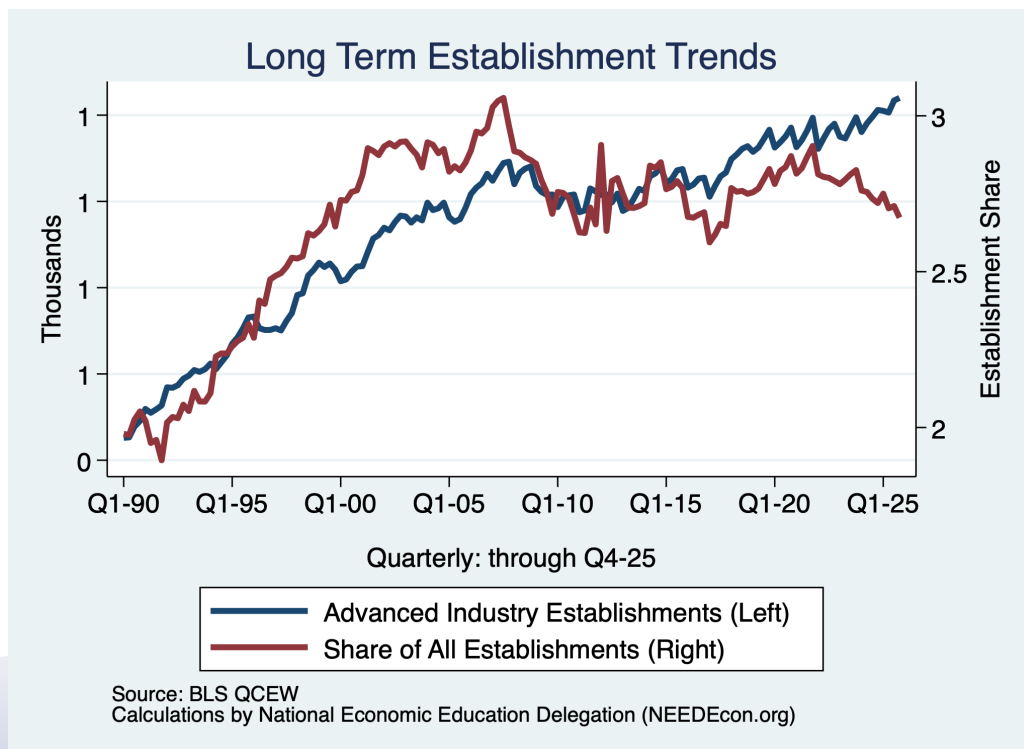
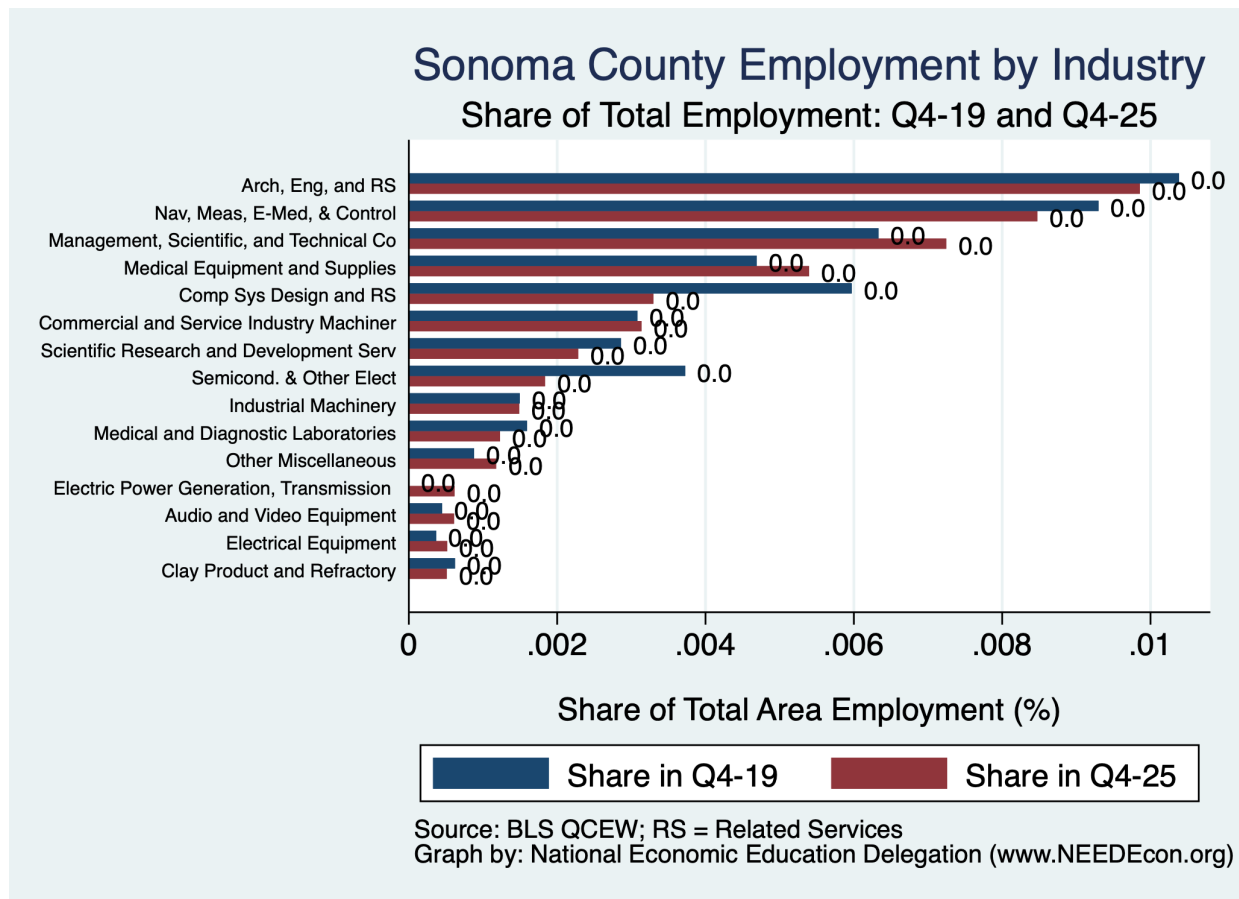


Figure 1 - 3: Establishment Growth



2. Overview of Employment Changes Since the Onset of the COVID Pandemic

Figure 2 - 1: 4-Digit Advanced Industry Sector Shares



3. Graphical Display of 4-digit Location Quotient Evolution by Industry

Graphs present only Q4 data for each year for the 10 4-digit NAICS sectors with the largest share of total employment.

Figure 3 - 1: 5413: Arch, Eng, and RS

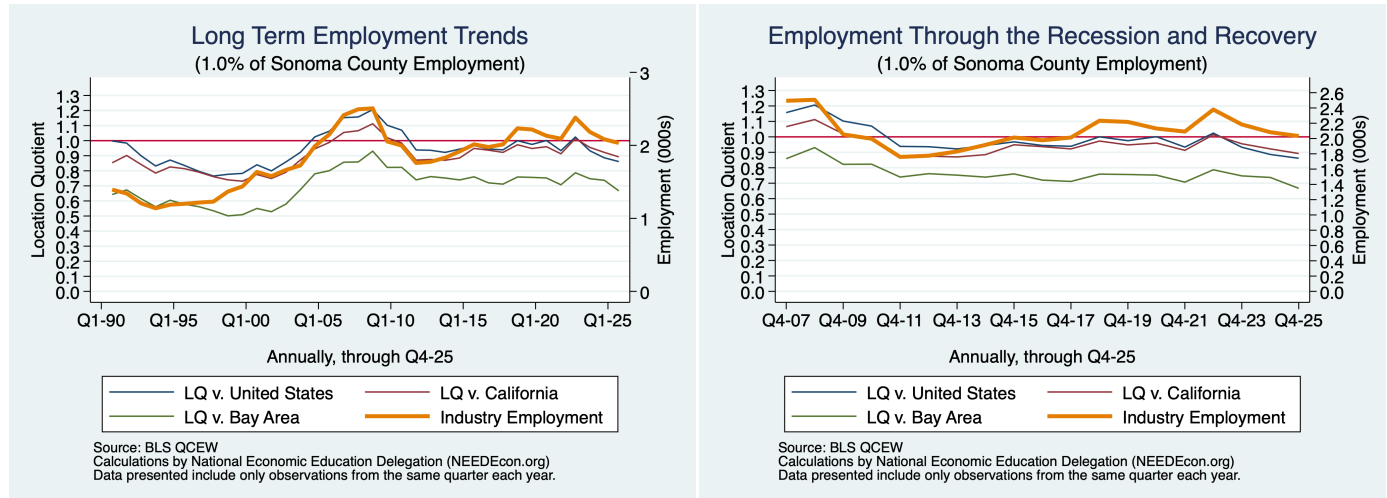


Figure 3 - 2: 3345: Nav, Meas, E-Med, & Control

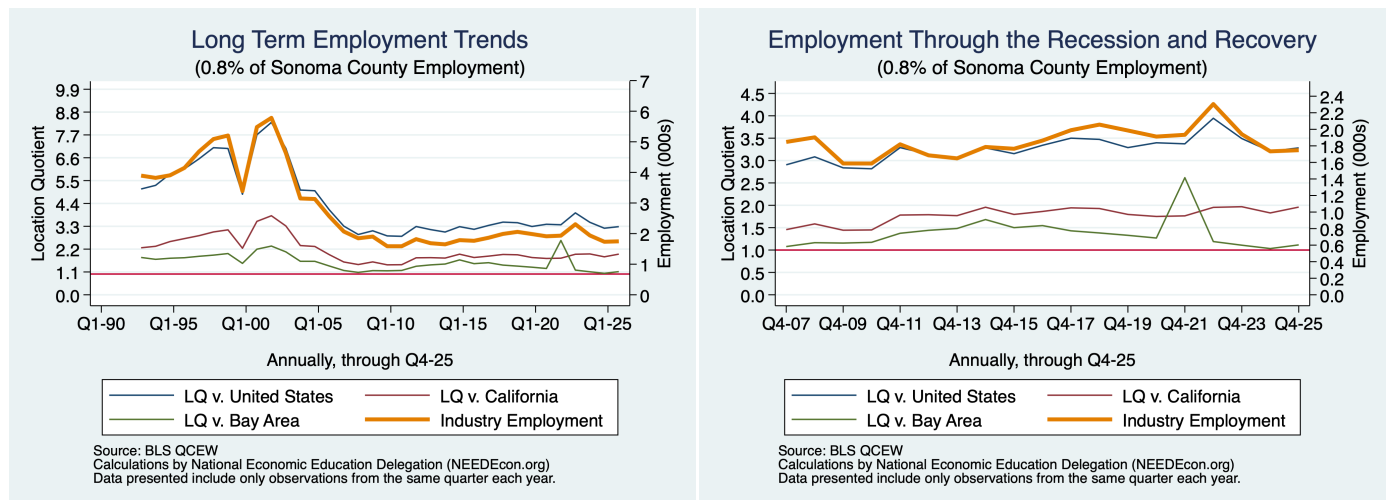


Figure 3 - 3: 5416: Management, Scientific, and Technical Consulting Services

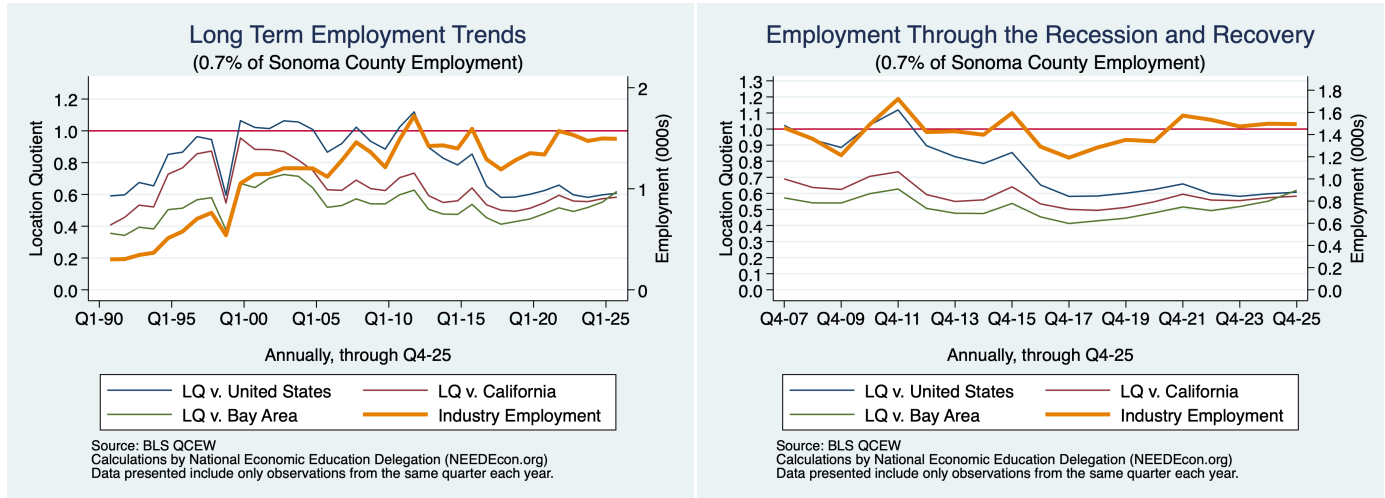


Figure 3 - 4: 3391: Medical Equipment and Supplies

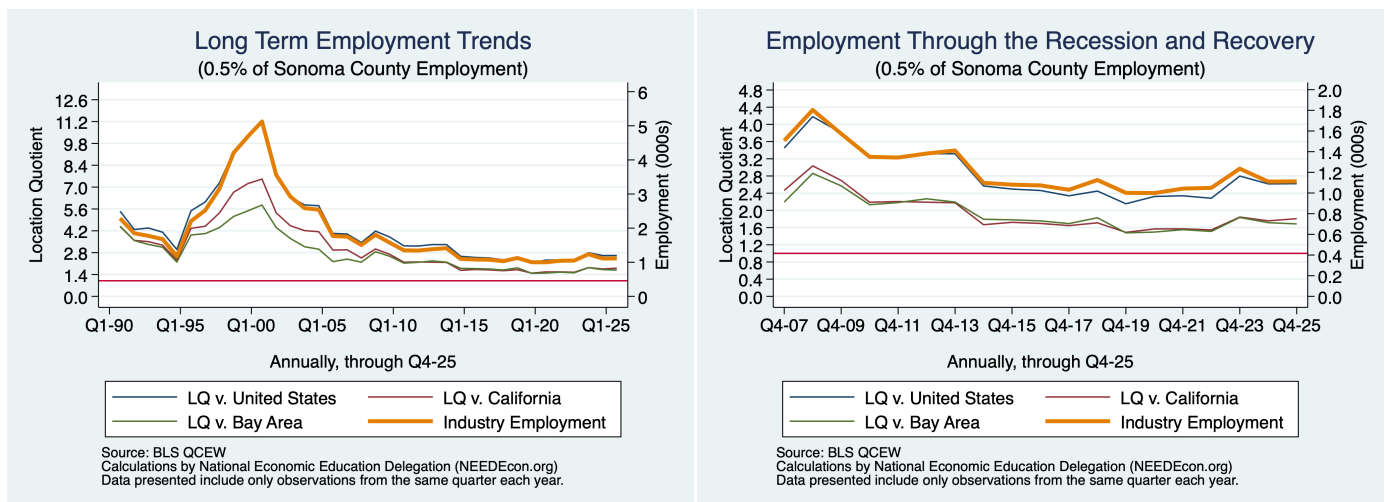


Figure 3 - 5: 5415: Comp Sys Design and RS

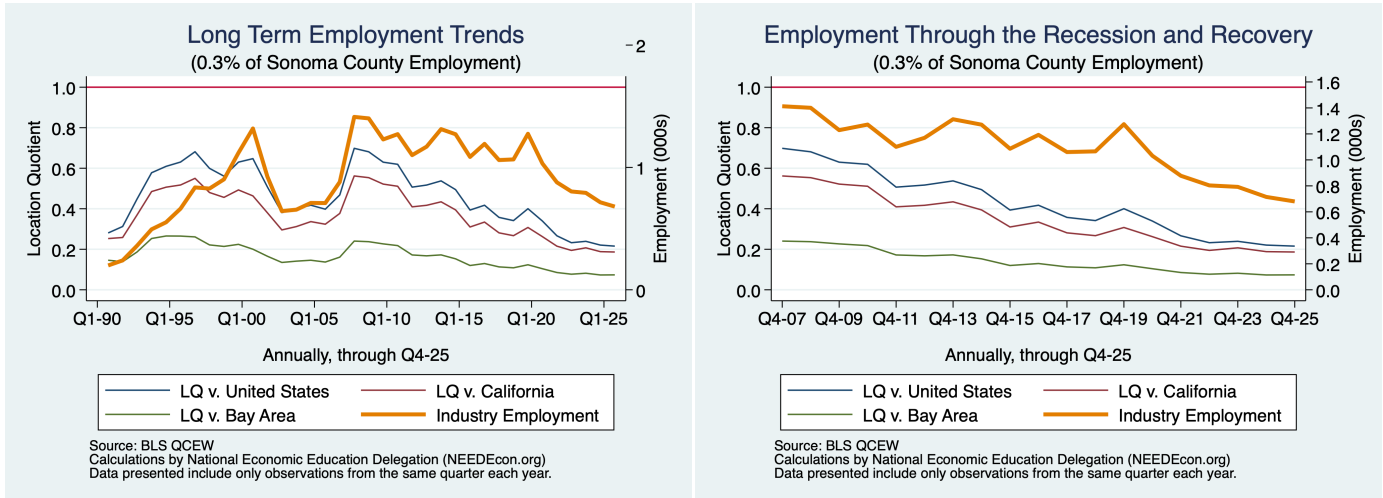


Figure 3 - 6: 3333: Commercial and Service Industry Machinery

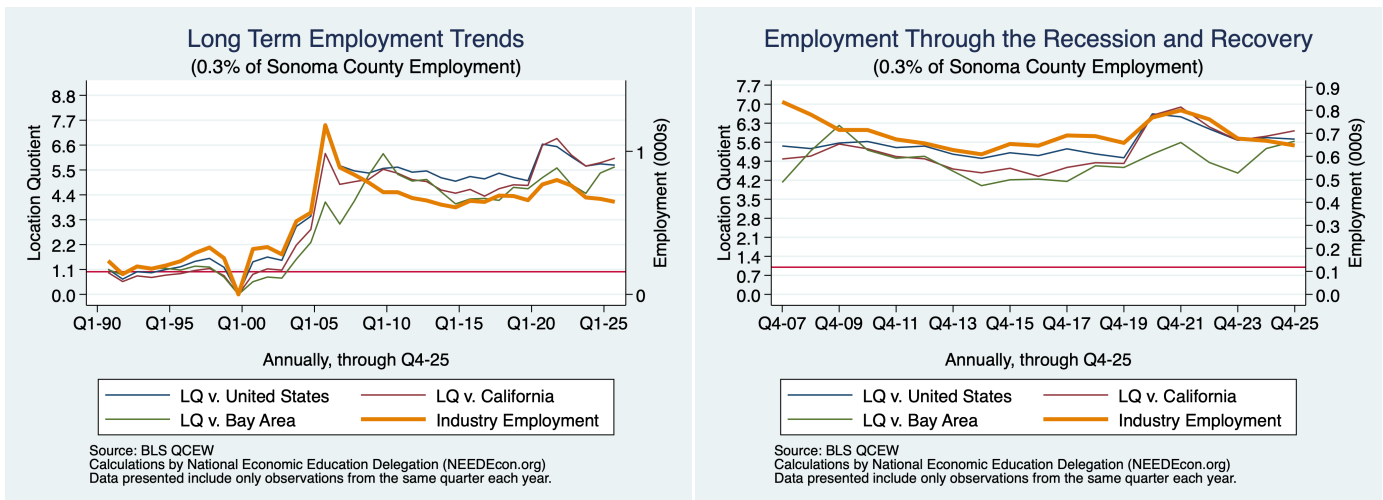


Figure 3 - 7: 5417: Scientific Research and Development Services

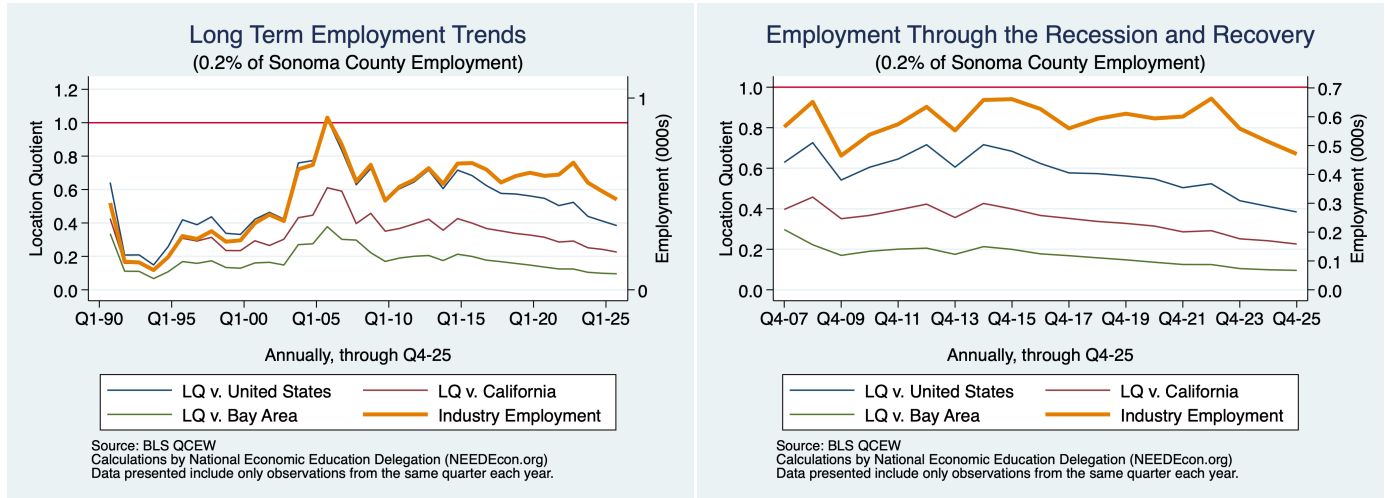


Figure 3 - 8: 3344: Semicond. & Other Elect

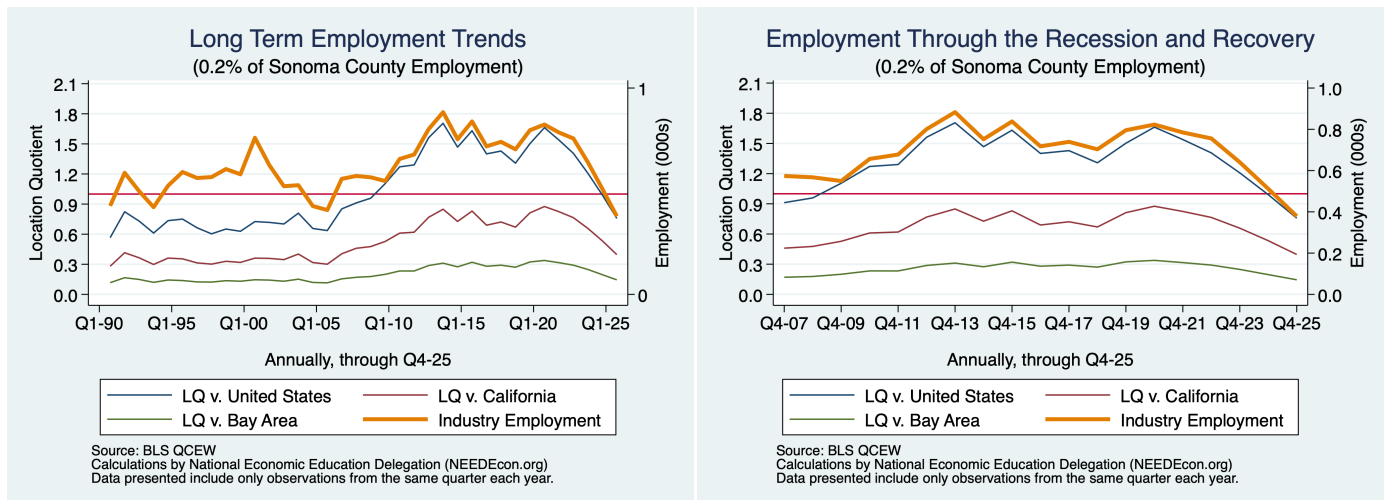


Figure 3 - 9: 3332: Industrial Machinery

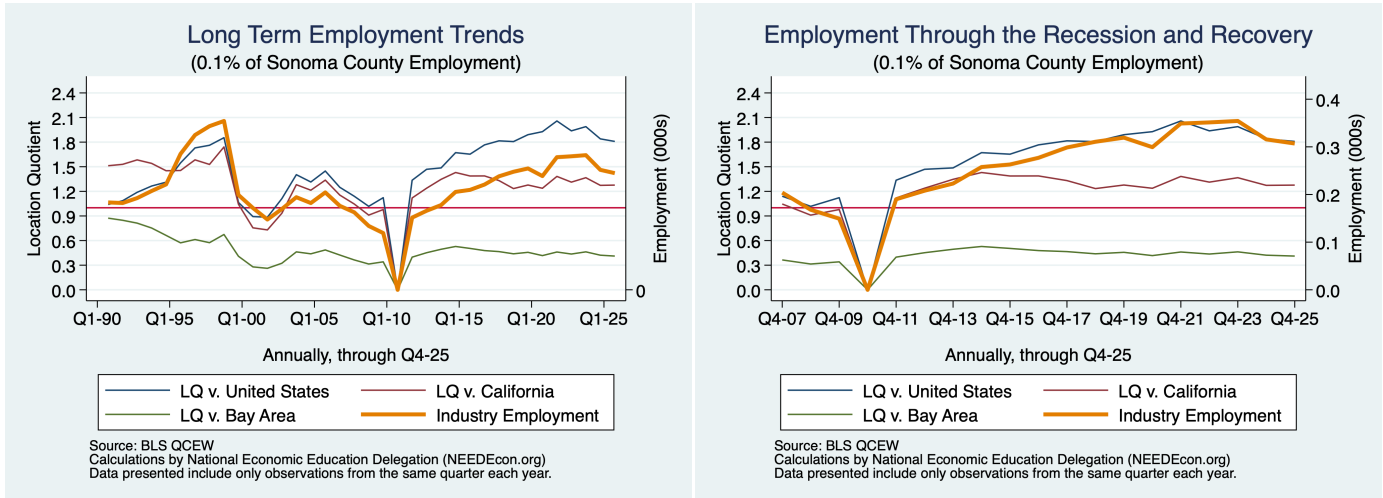
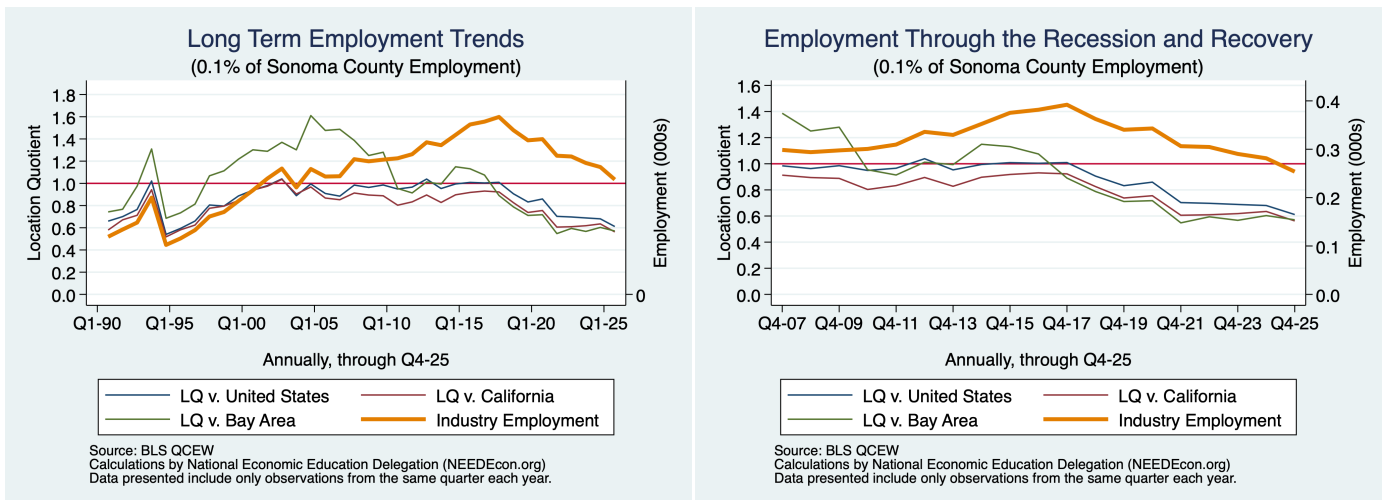


Figure 3 - 10: 6215: Medical and Diagnostic Laboratories



4. Descriptions and References

The contents of this report illustrate the evolution of Sonoma County advanced industry employment patterns over time. A particular focus of this report is on the post-Pandemic recovery. This is accomplished by comparing the most recent quarter of data to the same quarter in 2019, the last non-recessionary year for most of California and the United States.

There are several types of data presented. They include:

Employment Levels: Employment levels indicate the number of non-farm payroll employees in each industry.

Employment Shares: Employment shares indicate the proportion of the region's employment that is accounted for by each industry.

Location Quotients: Location quotients are ratios of employment shares. When indicating a location quotient versus the California, it is the region's employment share divided by the employment share in California. Therefore, values greater than one indicate a higher concentration of employment in the industry in question and values less than one indicate a lower concentration. Location quotients are presented versus the Bay Area, California, and the United States, separately.

The data underlying this report are from the Bureau of Labor Statistics: Quarterly Census of Employment and Wages (QCEW). These data are available on a quarterly basis, generally with a 5 month lag from the end of the quarter to the release of the data.

QCEW: The Quarterly Census of Employment and Wages (QCEW) program publishes a quarterly count of employment and wages reported by employers covering 98 percent of U.S. jobs, available at the county, MSA, state and national levels by industry. <http://www.bls.gov/cew/home.htm>

Time Period: The data extend from Q1-1990 through Q4 -2025

Seasonality: There is a significant seasonal component to many industries. The QCEW data are not seasonally adjusted. Rather than seasonally adjusting the data, most comparisons in this report are between the same quarter in different years. The data presented are therefore the actual employment levels compared across years.

Advanced Industry Definition: The 4-digit NAICS codes included in the definition of the High Tech sector are listed in the table below. This list is taken from a recent study by the Brookings Institution: *America's Advanced Industries: What They Are, Where They Are, and Why They Matter*¹ These NAICS sectors were determined as having above the national proportion of employment in STEM occupations (above 21% of all workers) and the

¹<http://www.brookings.edu/research/reports2/2015/02/03-advanced-industries#/M10420>

industry's R&D spending per worker must fall in the 80th percentile of industries or higher (exceeding \$450 per worker).

Table 4.1: 4-Digit NAICS Industries Included in Advanced Industry Sector Definition

NAICS	Description
2111	Oil and Gas Extraction
2122	Metal Ore Mining
2211	Electric Power Generation, Transmission and Distribution
3241	Petroleum and Coal Products Manufacturing
3251	Basic Chemical Manufacturing
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing
3254	Pharmaceutical and Medicine Manufacturing
3259	Other Chemical Product and Preparation Manufacturing
3271	Clay Product and Refractory Manufacturing
3279	Other Nonmetallic Mineral Product Manufacturing
3311	Iron and Steel Mills and Ferroalloy Manufacturing
3313	Alumina and Aluminum Production and Processing
3315	Foundries
3331	Agriculture, Construction, and Mining Machinery Manufacturing
3332	Industrial Machinery Manufacturing
3333	Commercial and Service Industry Machinery Manufacturing
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing
3339	Other General Purpose Machinery Manufacturing
3341	Computer and Peripheral Equipment Manufacturing
3342	Communications Equipment Manufacturing
3343	Audio and Video Equipment Manufacturing
3344	Semiconductor and Other Electronic Component Manufacturing
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing
3346	Manufacturing and Reproducing Magnetic and Optical Media
3351	Electric Lighting Equipment Manufacturing
3352	Household Appliance Manufacturing
3353	Electrical Equipment Manufacturing
3359	Other Electrical Equipment and Component Manufacturing
3361	Motor Vehicle Manufacturing
3362	Motor Vehicle Body and Trailer Manufacturing
3363	Motor Vehicle Parts Manufacturing
3364	Aerospace Product and Parts Manufacturing
3365	Railroad Rolling Stock Manufacturing
3366	Ship and Boat Building
3369	Other Transportation Equipment Manufacturing
3391	Medical Equipment and Supplies Manufacturing
3399	Other Miscellaneous Manufacturing
5112	Software Publishers
5152	Cable and Other Subscription Programming
5172	Wireless Telecommunications Carriers (except Satellite)
5174	Satellite Telecommunications
5179	Other Telecommunications
5182	Data Processing, Hosting, and Related Services
5191	Other Information Services
5413	Architectural, Engineering, and Related Services
5415	Computer Systems Design and Related Services
5416	Management, Scientific, and Technical Consulting Services
5417	Scientific Research and Development Services
6215	Medical and Diagnostic Laboratories

Source: Brookings Institution - *America's Advanced Industries: What They Are, Where They Are, and Why They Matter*