

# Defense Cutbacks

*Effects on California's  
Communities, Firms,  
and Workers—Executive  
Summary*

RAND

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## PREFACE

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This document contains the summaries of a three-part project that RAND undertook to investigate the effects of declining defense budgets on California's economy. The three parts of the project investigated the effects of

- military base closures on California communities (*The Effects of Military Base Closures on Local Communities: A Short-Term Perspective*)
- smaller Pentagon outlays on small California-based suppliers to the defense aerospace industry (*California's Shrinking Defense Contractors: Effects on Small Suppliers*)
- declining defense outlays on aerospace industry workers in California (*Life After Cutbacks: Tracking California's Aerospace Workers*).

The project was sponsored by the Office of the Undersecretary of Defense (Personnel and Readiness). It was carried out in the Forces and Resources Policy Center of the National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, and the defense agencies. This document and its companion pieces should interest anyone involved in the interactions between the defense department, its contractors and suppliers, and civilian communities.

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## **THE EFFECTS OF MILITARY BASE CLOSURES ON LOCAL COMMUNITIES: A SHORT-TERM PERSPECTIVE**

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Michael Dardia, Kevin F. McCarthy, Jesse Malkin, Georges Vernez  
RAND, February 1996 (MR-667-OSD)

### **THE PROBLEM**

Amid the decline in defense spending following the end of the Cold War, military base closures have prompted some of the most vocal public expressions of concern. Public expectations of the impact often verge on the apocalyptic, and economic forecasts of the local effects seem to bolster such fears. While many studies have been done on the closure and revitalization process, little new work has been done on the immediate economic impacts of base closures since the wave of closures after the Vietnam War. This study examined the experience of the communities surrounding three of the largest bases closed in California since 1988. The bases were selected due to their large presence in the local communities and because the communities were sufficiently isolated geographically that the effects could be expected to be both severe and measurable.

### **HOW WE STUDIED THE PROBLEM**

The study used a case study approach to examine the impact of three base closures on nearby communities:

- George Air Force Base, located in San Bernardino County, which closed in December 1992
- Fort Ord, located in Monterey County, which closed in September 1994
- Castle Air Force Base, located in Merced County, which was slated for closure in 1995 and which 65 percent of its uniformed personnel had vacated by October 1994.

To assess the impact of base closures on local communities, the study used nine measures—two centering on changes in population, four on changes in employment, and three on changes in the housing market. The study investigated how the closures affected the size of the total population in nearby communities and of their school enrollments. It looked at the size of neighboring communities' labor forces, their unemployment rates, their taxable retail sales, and their municipal revenues. And it explored the number of housing units in adjacent communities, their vacancy rates, and the average sale prices of owner-occupied housing. For each community, the study analyzed how each measure behaved before and after the closure of the selected bases.

The study compared these findings against three benchmarks: (1) the changes that various expert consultant studies had predicted would occur in each community, (2) the experience of a matched set of California bases that had not been scheduled for closure, and (3) the experience of other communities in each affected county.

## WHAT WE FOUND OUT ABOUT IT

While some of the communities did indeed suffer, the effects were

- not catastrophic
- not nearly as severe as forecasted.

This finding does not deny the very real costs of job loss borne by displaced workers and their families or the revenue losses suffered by local businesses. These effects underscore the point that the burden of defense cuts falls on the individual worker or firm rather than the community.

In addition to comparing the communities' actual and forecasted experiences, we also examined the experiences of the counties in which the communities are located and the experiences of communities surrounding a set of matched bases that remained open. Though the closures had noticeable effects, they were relatively localized and have been at least partly offset by other economic factors.

Generalizing from the experiences of three bases is problematic, but the results suggest that the effects of base closure on local communities are not nearly as straightforward as some might believe. The degree of integration between bases and local communities and the characteristics of base personnel and local communities can interact to compound or moderate the effects that base closings will have on local communities.

These findings highlight the importance of measuring changes in local communities as they occur to determine the actual effects of base closures. The alternatives are to rely either on long-term studies of the closure process, which lack the timeliness needed for effective mitigation, or on prior projections of the effects of closure, which sometimes lack credibility and are conducted before closure occurs in any case. Although there are many data problems that ongoing monitoring must confront, this study demonstrates that such problems can be overcome. Indeed, one of the major contributions of this study is that it provides a model for such monitoring efforts.

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## **CALIFORNIA'S SHRINKING DEFENSE CONTRACTORS: EFFECTS ON SMALL SUPPLIERS**

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Georges Vernez, Michael Dardia, Kevin McCarthy,  
Jesse Malkin, Robert Nordyke  
RAND, February 1996 (MR-687-OSD)

### **THE PROBLEM**

This study investigated how small, California-based suppliers in the defense aerospace industry weathered the Pentagon's budget downturn of the early 1990s.

Aerospace companies have reeled in the wake of a 20-percent drop in the amount that the Pentagon budgeted for research and development and for procurement between 1989 and 1994. Nationwide, the U.S. aerospace industry job base shrank by 25 percent during that period.

The impact has been even more dramatic in California. Home to one in four of the country's aerospace employees in 1989, California has seen its aerospace industry employment rolls fall by 40 percent. Much of the decline has been in Los Angeles County, where 10 percent of the nation's aerospace employees worked in 1989. In 1994, some 121,000 people worked in the aerospace industry in the county, half the number employed in that sector five years earlier.

Small suppliers (those with 500 or fewer employees) may be particularly sensitive to Pentagon budget cuts. Unlike large defense contractors with broad mixes of products and manufacturing procedures, small suppliers typically concentrate on making one or a handful of products. They account for the bulk of firms in the aerospace business even though they receive only 10 percent of defense dollars going to contractors. They make up a crucial segment of the aerospace industry, one that would be difficult to replace should defense cuts force many of them out of military contracting.

This study investigated how small suppliers were affected by defense procurement cuts, how they responded to the cuts, and how effective government programs were in blunting the cuts' impacts. The study traced the experience that small suppliers have had with producing for both defense and commercial customers. Additionally, the study investigated how defense downsizing may influence the ability of small aerospace suppliers to make crucial defense products in the future.

### **HOW WE STUDIED THE PROBLEM**

We used case studies of 25 small defense aerospace suppliers in southern California, chosen from a list of firms that supplied products to three of the largest military aircraft programs in the 1988–1990 period. Typical of small suppliers, these firms' median employment was 68 workers. Case studies allowed us to conduct in-depth interviews with executives to obtain information on their responses to defense downsizing.

### **WHAT WE FOUND OUT ABOUT IT**

All case study firms felt the impact of defense spending declines, although not necessarily in the same proportions. To date, most suppliers have survived the reductions by shaving their work forces, increasing their productivity, or expanding into commercial markets, or by some combination of those tactics.

For the case study firms, annual defense revenues fell by an average of 43 percent between 1990 and 1994. However, total revenues did not fall so dramatically, declining on average only 15 percent. Employment declined proportionally.

Firms had varied success in compensating for lost defense revenues, depending on their product lines. The 11 electronics firms and materials firms we studied were generally more successful in expanding their commercial revenue basis. A majority increased total revenues significantly, mostly from sales to nonaerospace commercial customers. These firms already had a foothold in the commercial non-aerospace market prior to 1990 and were facing a growing market for the type of products they manufacture.

In contrast, the 14 machine shops and aircraft parts firms we studied were less successful in finding additional commercial revenues, replacing only one of five lost defense revenue dollars. New revenues came mostly from additional sales to commercial aerospace customers. These firms' manufacturing processes were designed for narrow tolerances and low volumes and have not been readily transferable to high-volume/cost-competitive, nonaerospace commercial applications. In addition, these firms have lacked the knowledge and marketing experience to enter nonaerospace markets. As a result, few have been able to make the transition; most abandoned the effort, perceiving it as simply not feasible.

In producing for commercial markets, firms used the same production lines and processes that they used in defense manufacturing. They did not physically segregate any parts of their operations or set up a separate data management system to do business with prime contractors.

Although most firms downsized or otherwise changed to accommodate the new business environment, most did so in ways that did not weaken their capabilities. Most firms with an engineering staff generally protected that staff. They also cut costs and increased productivity. Most case study firms indicated they could increase production to previous peak levels within four to six months, should the need arise. And most indicated they had no plans to move away from California, which offers access to customers, suppliers, and a skilled labor force.

Only one firm took advantage of available federal defense conversion programs, including the Defense Technology Reinvestment Projects. By and large, the focus and structure of federal programs are not designed for the needs and capabilities of small supplying firms. The general perception among the case study firms was that any benefits were outweighed by the costs of application and of meeting the stringent program requirements. In contrast, 25 percent of the firms received funds from California to train or retrain their workers.

Our study of 25 firms drew three conclusions that require further research on a larger representative sample of small suppliers:

- Machine shops and aircraft parts suppliers remain almost entirely dependent on the aerospace industry. Further reductions

in demand for military or civilian aerospace products may push many of them out of business.

- Small defense aerospace suppliers are not making cutting-edge products for commercial customers.
- Small defense aerospace suppliers in southern California may suffer from increasing shortages of two types of skilled employees: (1) engineers with experience in programming software for electronic warfare systems and for product design and testing and (2) experienced machinists with problem-solving skills.

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## **LIFE AFTER CUTBACKS: TRACKING CALIFORNIA'S AEROSPACE WORKERS**

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Robert F. Schoeni, Michael Dardia, Kevin F. McCarthy,  
Georges Vernez  
RAND, February 1996 (MR-688-OSD)

### **THE PROBLEM**

This study looked at aerospace workers in California between 1989 and 1994 to determine whether they suffered disproportionate hardships during the defense budget downturn of the late 1980s and early 1990s.

The end of the Cold War has brought profound changes to the U.S. military and to sectors of the civilian economy that have been linked closely to the armed services. The new political and economic environment of the 1990s is defined by leaner Pentagon budgets, fewer uniformed personnel, and growing closure lists of bases, shipyards, and other facilities.

The aerospace industry has been at the vortex of these contractions. As the Pentagon has become smaller over the past eight or nine years, its need for sophisticated aerospace products has lessened significantly. And for some companies heavily dependent on defense business, minor changes in the Pentagon's budget outlays translate into major dislocations on the factory floor. Nationwide, the aerospace industry's job base shrank by 25 percent between 1989 and 1994.

Nowhere have those changes been more apparent than in California and the Los Angeles basin. The state in 1989 was home to one in four U.S. aerospace jobs. In Los Angeles County alone, aerospace jobs accounted for 10 percent of the national total.

Since then, the aerospace industry in California has become a shadow of its former self. The state's aerospace employment rolls are down 40 percent compared with 1989, while in Los Angeles

County the industry's job base is only 50 percent of its size five years ago.

The federal government responded to this industry downturn by setting up programs to assist displaced aerospace workers. While different in scope and focus, these programs all were based on a common assumption that aerospace workers had suffered unique hardships that were directly linked to their industry's defense dependence.

This study tested that broad assumption. It tried to (1) define in quantitative terms aerospace workers' employment experience during the downturn, (2) explore whether that experience differed from that of workers in comparable nonaerospace manufacturing operations, and (3) identify which worker groups were most affected by the downturn.

## HOW WE STUDIED THE PROBLEM

We created a unique data source using statistics drawn from two sources: wage files and unemployment income files provided by California's Employment Development Department. These statistics allowed us to track wage, employment, and demographic characteristics of *each individual aerospace worker* who was employed in California in 1989, a group that totaled 517,000 individuals. The statistics also allowed us to create the same data for some 315,000 people who were employed in similar durable goods manufacturing jobs in nonaerospace industries in California. We used these data to follow the two sets of workers for the six years during which the state suffered the brunt of the defense downturn.

## WHAT WE FOUND OUT ABOUT IT

In general, we found that the labor dislocations that aerospace workers suffered in California were not appreciably different from those of nonaerospace durable goods workers. We found that

- on average, 1989 aerospace workers who were employed at the end of 1994 earned inflation-adjusted wages in 1994 that were slightly higher than their earnings before the defense downturn

- the wage gap between 1989 workers in aerospace versus non-aerospace durable goods manufacturing held steady through 1994
- aerospace workers were slightly less likely to use the unemployment insurance (UI) system; however, aerospace workers who drew benefits were on the system slightly longer, on average, than were nonaerospace workers.

Among the 1989 California aerospace workers who were working in 1994, two-thirds remained employed in the industry in 1994. Another nine percent of these workers moved on to other manufacturing jobs in nonaerospace industries. Wages for these two groups of workers, who constituted the vast majority of our initial study pool of aerospace employees who were working in 1994, grew an average of five percent during the period.

Another 14 percent of 1989 California aerospace workers who were employed in 1994 had moved to service industry jobs by the end of 1994. These workers' wages dropped significantly, but—perhaps because of differences in age and education—they still earned more than other manufacturing workers who also moved into the service sector.

Overall, aerospace workers endured the defense budget downturn with less hardship than popular press reports have suggested, particularly when compared to other durable goods manufacturing workers. But a significant share of aerospace workers nevertheless experienced turbulence in the labor market. A quarter of the 1989 pool of aerospace workers who were employed at the end of 1994 saw their wages fall 15 percent or more during the period. In addition, some aerospace workers experienced long periods of unemployment. In most cases, however, labor market turbulence was no greater for aerospace workers than for workers who were employed in other durable goods manufacturing sectors.