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California's Neighborhood

In population, employment, and economic output, California dwarfs its neighbor states in the Twelfth District: Its 12 million jobs—over five times as many as Washington, the next largest District state—account for 61 percent of District employment. By its sheer size, California's employment movements tend to drive the District totals. (They also affect national statistics; without California's 9.0 percent unemployment rate, the national unemployment rate in August would stand at 6.4 percent instead of 6.7 percent.)

Beyond the statistical effects of California's weakness, the last three years of the state's recession also may have had spillover effects on its neighboring states. Because trade flows are significant between California and its neighbors, weakness in California could lower demand for its neighbors' goods and services. The question is: Are California's problems hurting its neighbors' economies, or are neighboring states benefiting from long-term structural change in the West?

This *Letter* presents some evidence on the linkage between California and its neighbor states and provides some measure of the impact of California's recession on its neighbors. These estimates, however, assume a stable structural relationship. Evidence on the flow of firms and population suggests that the relations of California with its neighbors are undergoing longer-term structural change. These changes provide new challenges for policymakers concerned with maintaining California's competitive position and dominant role in the West.

Measuring economic linkages

The most obvious economic linkages between California and its neighbors are trade flows. California consumers and firms are an important market for goods and services produced elsewhere—from lumber and wood products in Oregon, to aerospace and electronic supplies in Arizona, to entertainment and travel services in Nevada and Hawaii. Trade flows, of course, work both ways, as neighboring states consume Californian goods and services. The great size difference, however, suggests that California markets are more important to its neighbors than vice versa. Furthermore, in important manufacturing sectors such as elec-

tronics and aerospace, firms in neighbor states historically have tended to be suppliers to California firms that make the final products. Economic shocks to California could spill over to neighboring states' economies if they lower demand for those states' goods and services.

Flows of factors of production—labor, capital, and so forth—also forge linkages between California and its neighbors. The effects of negative shocks to California's economy through factor flows are less clear than they are for trade. For example, a negative shock that reduces demand for California products might make supply constraints in California's infrastructure (or environment) less binding and thereby reduce the incentives for firms to relocate. In recent years, however, analysts have argued that the costs of production in California have risen for reasons ranging from housing costs, to workers compensation, to regulation. Indeed the migration of California firms and workers has received significant attention in recent years. So, if anything, bad news to California has meant good news for its neighbors.

Negative developments in California therefore potentially have both good and bad effects on its neighbors. Which effects tend to dominate? In Cromwell (1992), an econometric model was estimated measuring the impact of employment developments in California on other states in the Twelfth District. Using a procedure known as vector autoregression, employment growth in these states was explained by national employment growth, California employment growth, and growth in each state's economy. Results from an update of this model estimated for 1948:Q1 to 1993:Q1 suggest that positive shocks to the California economy tend to have positive spillovers on its neighbor states, consistent with a model of trade flow linkages.

One measure of these spillovers is the impact of a typical shock to California on the contiguous states of Oregon, Arizona, and Nevada. A positive shock of 0.4 percent to quarterly growth in California results in higher growth in the contiguous states that peaks at 0.3 percent in the first quarter. The effect goes to 0 after five quarters.

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Monte Carlo simulations show the spillover is statistically significant through the third quarter.

To examine the effects of the current recession in California for its neighbors, we use the model (estimated through 1990.Q2) to make two out-of-sample forecasts of employment growth in neighboring states from the beginning of the most recent economic downturn, 1990.Q3, through 1993.Q1. The first forecast assumes that California followed a typical pattern during a recession as predicted by the model. The second forecast accounts for California's actual performance. The difference between them measures the impact of the unusual California recession on its neighbor states.

Figure 1 shows the results for Arizona. As shown, actual employment in Arizona slumped between 1990.Q3 through 1991.Q2, then began a gradual expansion that picked up in 1992. The estimates (dotted line) suggest that employment would have grown an average of 0.2 percent more each quarter; that is, employment by the end of the period would have been 33,000 higher, or 2.1 percent of total employment.

In a similar exercise for other states, we find cumulative job losses due to California's recession spillovers of 31,000 in Nevada, 11,000 in Hawaii, and 4,000 in Oregon. As a comparison, employment in California has fallen by almost 600,000 in the current recession. This suggests a loss of around 1 job in these neighbor states for every 7 that has been lost in California. (The esti-

mated spillovers in states that are geographically further from California are smaller and in many cases not statistically significant.)

Structural change in the West?

These estimates assume a stable structure of trade flows between California and its neighbors, so they would be consistent with explaining California's recession as "typical," but more severe than usual because of unlucky events, such as defense spending cuts, overbuilt commercial real estate, civil disturbances, and natural disasters.

Others, however, argue that California has become a high-cost state for doing business, and that it is losing its competitive ground to neighboring states and Mexico. Costs cited include high business and personal taxes, stringent environmental regulations, excessively long building permit processes, congested infrastructure, high housing costs, and a general perception that state and local governments are not "business friendly." Therefore, these costs lead firms and workers to leave the state.

How important are these effects? In a recent survey of firms relocating or expanding operations outside of California, a study commissioned by a consortium of California utilities estimated that between 1980 and 1992 over 1,000 California firms relocated or expanded operations elsewhere. Mexico was the destination of 26 percent of these firms, followed by Texas (9.4 percent), Nevada (9.2 percent), Arizona (6.1 percent), Colorado (3.6 percent), Oregon (3.5 percent) and Utah (3.1 percent). Almost 60 percent of the relocating firms were in fabricated metals (10.9 percent), computer equipment (14.0 percent), electronics (18.9 percent), transportation (6.2 percent) and instruments (7.9 percent).

These relocations involved around 200,000 jobs. This number may not seem that big when spread over a decade. In particular, if California manufacturing overall performs well, the effect of these lost jobs may appear minor. In an expanding manufacturing sector, workers who do not wish to relocate can find employment with other firms. In the context of a declining manufacturing sector, however, the loss of these jobs becomes more important—particularly given their relatively high wages and good benefits. Unemployed manufacturing workers then face the prospect of relocating or shifting to lower-income sectors.

Figure 2 shows the performance of the overall California manufacturing sector versus other District states. In general, California has registered the worst performance of all. After peaking in 1989, California's manufacturing employment declined 15 percent, representing a loss of 315,000

Figure 1
Arizona Employment: Actual and Hypothetical

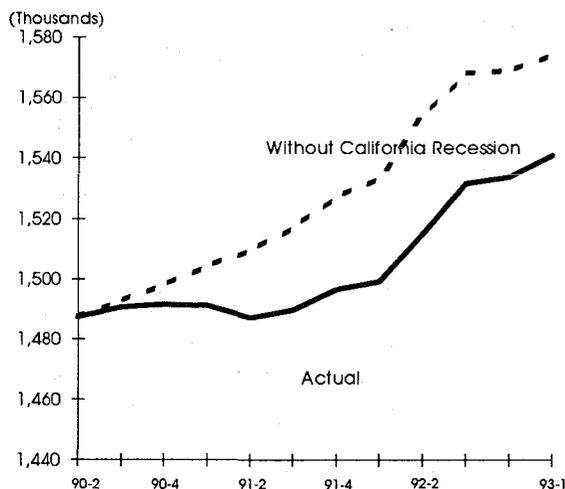
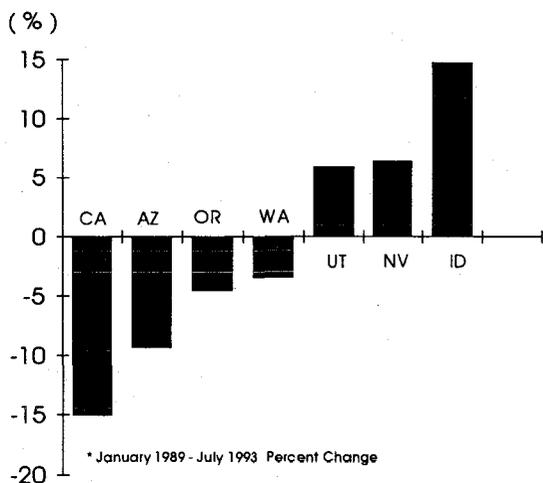


Figure 2
Manufacturing Employment Performance*



jobs. In contrast, the manufacturing sectors of other states held steady or expanded, with the best performance registered by Idaho, which expanded by 15 percent.

While part of California's performance can be explained by its reliance on aerospace, which has been hurt by defense cuts, the decline is also evident in several other industries, including fabricated metals, electronics, and instruments (of course, some of these sectors are also defense-related). For example, while California's fabricated metals industry has declined by 19 percent, Arizona's has risen 24 percent. And while the electronics industry employment has fallen 21 percent in California, it has risen 36 percent in Oregon. Even within aerospace and defense, important firms have decided to consolidate production outside of California. Indeed, one of the District's strongest construction and real estate markets is in Tucson, Arizona where such a consolidation is taking place.

Finally, workers appear to be following the jobs leaving the state. For example, in Fiscal Year 1992-1993, the California Department of Motor Vehicles recorded a net loss of 13,888 drivers licenses to Arizona, 19,499 to Nevada, 6,298 to Utah, 16,915 to Oregon, and 7,522 to Idaho.

California and neighbors in perspective

California's current economic stress represents a mixture of both cyclical and longer-run structural

changes. Both are having important effects on its neighbors. According to historical relationships, the dominant spillover effect of California's economic weakness tends to be negative. California firms and consumers are purchasing fewer goods and services from neighboring states, which serves to weaken their economies.

At the same time, California's competitiveness as a manufacturing center apparently has slipped relative to its neighbor states. Firms (and workers) are voting with their feet by locating in lower cost areas. In this sense, California's woes are benefiting its neighbors.

California's industrial base is too large and diverse for this structural shift to be an immediate threat to its economic dominance. At the same time, these trends have important implications for California's long-run growth and future prosperity. The loss of just half a percent growth per year in manufacturing implies a 5.1 percent lower industrial base in a decade—and 10.5 percent lower base in 20 years. The current attention policymakers are giving to improving California's business climate is therefore encouraging.

Empirical research on firm locations suggests that high taxes in and of themselves do not necessarily drive business away. For example, Minnesota (a relatively high tax state) has been successful in attracting firms, while low-tax Mississippi has not. If the cost of taxation significantly outweighs the benefits of public services they purchase, however, firms will consider relocating to states that offer a better package of taxes and public services. A similar argument holds for environmental and other regulations: If the costs exceed the benefits, firms may be tempted to vote with their feet. This competition among states, however, imposes discipline on policymakers to provide rational economic policy. The current attention of California's policymakers to its competitiveness with its neighbors is evidence of the power of this mechanism.

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Reference

Cromwell, Brian A. 1992. "Does California Drive the West? An Econometric Investigation of Regional Spillovers." Federal Reserve Bank of San Francisco *Economic Review* 2, pp. 15-30.

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