

# Factors Influencing Community Bank Performance in California

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*Community bank performance in California lagged well behind the industry and larger banks in the state during the first half of the 1990s. This paper identifies several factors that influenced the performance of these banks, which have less than \$300 million in assets and typically operate in only one region of California, during the period from 1990 to 1994. The results suggest that regional conditions within California were an important factor in community bank performance. Management decisions, especially regarding loan portfolio concentration, also were a contributing factor. Community banks' increased reliance on real estate loans, and especially higher-risk commercial real estate and construction loans over the 1984 to 1994 period, played a significant role in lowering asset quality over the period studied.*

The California banking industry began to rebound in 1992, well before the state's slow economic recovery took hold. Yet as late as 1994, many of the state's small or community banks still struggled with poor asset quality and weak earnings or losses—indeed, 22.5 percent of the state's 333 community banks lost money; in sharp contrast, country-wide less than 4 percent of small banks recorded losses in 1994, and outside of the West no other group of banks, whether compiled according to size or region, reported losses at more than 6 percent of banks.

This paper examines several factors that may have influenced community bank performance in California, factors that may explain why their asset quality and returns remained weak three years after the national economy began its recovery from the 1990–1991 recession and long after the banking industry had rebounded at the state and national levels.

The first of these factors is the dependence of community bank performance on local or regional economic conditions. Although the California economy is large and well-diversified, with a population of over 32 million in 1995, most community banks are small and typically operate within a limited local or regional market.

Second, in the 1990s the economic performance of several key regions of California differed significantly, as the state endured one of its longest and most severe downturns of the postwar era. Most of the sizeable decline in employment in the state following the 1990–1991 national recession occurred in Southern California, and some of the most severe real estate market problems also took place in that part of the state.

Third, California banks became much more active in real estate lending over the 1984–1994 period. Community banks nearly doubled their ratio of real estate loans to total loans, thus increasing their exposure to a real estate downturn. By 1994 nearly two-thirds of all their loans were secured by real estate, and they had the highest ratio of real estate loans to total loans of all bank size groups.

Finally, over the 1984–1994 period California banks increased their financing of relatively high-risk types of real estate lending. Community banks more than doubled their ratio of commercial real estate loans to total loans, to more than 45 percent in 1994, the highest ratio of all bank size groups in the state. Furthermore, at their peak in 1990, com-

munity banks had nearly 18 percent of their loans in the construction category, far above the ratio for either U.S. or California banks.

The first two factors are conditions related to geographic location: Community banks operate in regional markets, and there may be significant variations in regional economic conditions. The last two factors reflect a bank management's portfolio decisions, specifically, the appropriate concentration of assets in real estate lending and the appropriate mix of real estate loans between residential and commercial real estate lending.

The study is organized as follows. Section I describes community banks and presents aggregate indicators of community bank performance for the three major regions of the state—Southern California, Northern California, and the Central Valley. Aggregated regional community bank data can be used to analyze community bank performance relative to (a) the California banking industry, (b) community banks in other regions of the state, and (c) local economic conditions. Section II describes regional economic conditions in California during the 1990s. Section III tracks trends over the 1984–1994 period, both in the aggregate and by region, for community bank lending, noting especially the shift by community banks into real estate lending, and in particular into high-risk commercial real estate and construction lending. Section IV examines the performance of California community banks on a regional basis and relative to economic conditions as well as community banks' increased concentration in real estate lending. Section V presents a simple regression model to evaluate the significance over the 1990–1994 period of such factors as regional economic conditions and banks' real estate loan concentration on the performance of individual community banks in California. Section VI concludes with some observations on the importance of economic conditions and real estate loan concentration on California's community banks.

## I. COMMUNITY BANKS

In this study, community banks in California are defined as smaller banks, that is, banks with under \$300 million in assets. Table 1 presents data on assets and liabilities for all banks in California and compares them to data on small banks in the state in the aggregate and by major region—Northern California, Southern California, the Central Valley, and the remainder of the state ("Other"). While community banks account for over 80 percent of the state's banks, their share of assets is less than 10 percent of domestic assets at all California banks. These banks typically generate funds from retail deposits, including checking, savings, money market deposit accounts, and small cer-

tificates of deposit. These funds generally are used to make loans to small businesses and households in their local or regional market.

Table 2 presents the differences in certain loan and asset ratios between community banks and other banks in California. Community banks in the state rely more heavily on deposits for funding than do larger banks that have a higher share of nondeposit borrowings: The mean deposits-to-assets ratio for all banks in the state was 84.8 percent, for community banks the ratio was 3.1 percent above the statewide mean, and the difference was statistically significant. Community banks also have a higher ratio of loans to assets than the average bank in the state: The mean loans-to-assets ratio for all banks statewide was 55.9 percent, the ratio for community banks was 5.3 percent higher, and the difference was statistically significant.

Community banks' loan portfolio composition also differs from the mean for banks statewide. Nearly two-thirds of community bank loans are secured by real estate, a ratio about 5.4 percent higher than the mean for the state. Community banks have a significantly higher ratio of their loans in commercial real estate (5.5 percent more) than do other banks, mainly as a result of a higher ratio of construction lending (2.9 percent more). In contrast, community banks' ratio of business loans to total loans is almost 4.5 percentage points below that of larger banks in the state. These ratios indicate that community banks have a loan portfolio that is significantly more concentrated in real estate lending, i.e., that community banks' portfolios are less well-diversified by loan type than are portfolios at banks statewide.<sup>1</sup>

Community banks have fewer opportunities than banks operating statewide to diversify their geographic lending risk through direct lending beyond their local communities.<sup>2</sup> Furthermore, most community banks in California do not operate branches outside their regional market area,

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1. See Shaffer (1989) on some of the pitfalls small banks face by focusing on a narrow line of business that may be unsustainable in an economic downturn. Gup and Walter (1989) supports this perspective, noting that local or regional conditions, specifically agricultural and oil, have played an important role in small bank performance. Kao and Kallberg (1994) also discuss the need for small banks to address risks associated with a concentration of assets. Levonian (1994) shows how banks might potentially reduce their risk by diversifying, in this case by combining with a bank from another western state where banking performance is either negatively correlated or not correlated with their home state.

2. See Nakamura (1994) for a discussion of small bank diversification and Laderman, Schmidt, and Zimmerman (1991) for a discussion of how laws limiting branch locations result in rural banks specializing in more agricultural lending and urban banks in nonagricultural lending.

TABLE 1

## ASSETS AND LIABILITIES AS A PERCENT OF ASSETS—DECEMBER 31, 1994

(NOT SEASONALLY ADJUSTED, PRELIMINARY DATA)

|                       |                        | ALL BANKS  |        | SMALL BANKS |          |         |       |
|-----------------------|------------------------|------------|--------|-------------|----------|---------|-------|
|                       |                        | California | All    | Southern    | Northern | Central | Other |
| ASSETS                | Total (dollar amounts) | 345,178    | 31,406 | 15,715      | 6,865    | 2,655   | 6,171 |
|                       | Foreign                | 12         | 0      | 0           | 0        | 0       | 0     |
|                       | Domestic               | 88         | 100    | 100         | 100      | 100     | 100   |
| LOANS                 | Total                  | 67         | 63     | 62          | 64       | 62      | 65    |
|                       | Foreign                | 9          | 0      | 0           | 0        | 0       | 0     |
|                       | Domestic               | 58         | 63     | 62          | 64       | 62      | 65    |
|                       | Real Estate            | 34         | 41     | 43          | 41       | 38      | 40    |
|                       | Commerical             | 11         | 14     | 14          | 15       | 16      | 12    |
|                       | Consumer               | 6          | 6      | 4           | 6        | 4       | 8     |
|                       | Agricultural           | 1          | 1      | 0           | 1        | 3       | 4     |
|                       | Other Loans            | 5          | 1      | 1           | 1        | 0       | 1     |
| INVESTMENT SECURITIES | Total                  | 14         | 20     | 19          | 21       | 20      | 20    |
|                       | U.S. Treasuries        | 4          | 8      | 8           | 9        | 5       | 8     |
|                       | U.S. Agencies, Total   | 4          | 7      | 7           | 6        | 9       | 6     |
|                       | U.S. Agencies, MBS     | 3          | 1      | 1           | 1        | 1       | 1     |
|                       | Other MBS              | 1          | 0      | 0           | 0        | 0       | 0     |
|                       | Other Securities       | 5          | 5      | 5           | 6        | 6       | 7     |
| LIABILITIES           | Total                  | 92         | 90     | 91          | 90       | 91      | 90    |
|                       | Domestic               | 80         | 90     | 90          | 90       | 91      | 90    |
| DEPOSITS              | Total                  | 80         | 88     | 89          | 88       | 89      | 88    |
|                       | Foreign                | 12         | 0      | 0           | 1        | 0       | 0     |
|                       | Domestic               | 68         | 88     | 88          | 87       | 89      | 88    |
|                       | Demand                 | 20         | 19     | 21          | 18       | 20      | 17    |
|                       | Now                    | 7          | 10     | 9           | 10       | 11      | 11    |
|                       | MMDA & Savings         | 25         | 29     | 28          | 30       | 30      | 30    |
|                       | Small Time             | 11         | 19     | 19          | 18       | 17      | 20    |
|                       | Large Time             | 6          | 10     | 10          | 12       | 11      | 9     |
|                       | Other                  | 0          | 0      | 0           | 0        | 1       | 0     |
| OTHER BORROWINGS      |                        | 4          | 1      | 1           | 1        | 1       | 1     |
| EQUITY CAPITAL        |                        | 8          | 10     | 9           | 10       | 9       | 10    |
| LOAN LOSS RESERVE     |                        | 2          | 1      | 2           | 1        | 1       | 1     |
| LOAN COMMITMENTS      |                        | 34         | 14     | 10          | 22       | 15      | 18    |

so they are more likely to be dependent on the health of a much smaller local or regional market area than would a bank with operations across a larger region or with a state-wide branching system.<sup>3</sup>

3. The California regions cover large geographic areas, and most community banks operate in only one region, so that their performance will be directly tied to economic conditions in that region. In addition, for the limited number of community banks that operate in more than one

### *Regional Community Bank Performance Indicators*

The dependence of community banks on their local or regional market suggests looking at aggregate measures of community bank performance *by region*. This is done by

region, typically two-thirds of their deposits were located in branches in the region where they maintained their head office, so that their performance also will be closely tied to regional economic conditions.

TABLE 2

DIFFERENCES IN VARIOUS LOAN AND ASSET RATIOS  
BETWEEN COMMUNITY BANKS AND CALIFORNIA BANKS, 1994.Q4

|  | PARAMETER ESTIMATES        |                    |   |
|--|----------------------------|--------------------|---|
|  | Sample Mean<br>(Intercept) | Number of Branches | Difference from Sample Mean<br>(Community Bank Dummy) |
| DEPENDENT VARIABLE<br>(as a percent of total loans)  |                            |                    |   |
| Total Real Estate Loans                              | 58.501***                  | -0.002             | 5.398**   |
| Commercial Real Estate<br>Loans—Total                | 36.677***                  | -0.035*            | 5.499**   |
| Construction Loans                                   | 5.714***                   | -0.006             | 2.922***  |
| Other Commercial Real Estate Loans                   | 30.962***                  | -0.029             | 2.577   |
| Single-Family<br>Residential Real Estate Loans       | 17.901***                  | 0.035**            | -0.180  |
| Business Loans                                       | 28.178***                  | -0.020             | -4.452**  |
| Consumer Loans                                       | 8.831***                   | 0.014              | -0.271  |
| DEPENDENT VARIABLE<br>(as a percent of total assets) |                            |                    |   |
| Total Loans  | 55.900***                  | 0.025              | 5.266***  |
| Total Deposits                                       | 84.773***                  | -0.016             | 3.085***  |

NOTE: The data are based on 358 observations, except for Total Loans and Total Deposits, which are based on 360 observations.

\*\*\* Significant at the 1% level.

\*\* Significant at the 5% level.

\* Significant at the 10% level.

aggregating individual community bank data for key regions of the state, for example, Southern California, Northern California, and the Central Valley.<sup>4</sup> Thus, regional community bank data can then be compared against data from the aggregate state banking figures, all community bank totals, or the other regions.

4. Individual bank data are collected quarterly by the banking regulatory agencies. The aggregated community bank performance measures—earnings, returns, asset quality—can then be used to analyze bank per-

In this paper two community bank performance indicators, return on assets (ROA) and the ratio of problem real estate loans to total loans, are evaluated for the three major regions. These indicators represent the earnings and assets

formance for a specific region of the state, something that is not possible otherwise because all banks, including the large branch banks, report state-wide totals, not regional data. California has a large enough number of community banks in each region that the regional community bank performance measures may provide a useful tool for analyzing bank performance by region. See Zimmerman (1996).

components of the CAMEL ratings (Capital, Assets, Management, Earnings, Liquidity) that regulators give banks after examining them. ROA provides an overall measure of bank earnings per dollar of assets that can be used to compare bank and industry performance over time. Asset quality is measured by the ratio of loans of a particular category (total loans, real estate loans, etc.) that are past due at least 30 days or that have fallen into nonaccrual status (loans no longer paying interest) to total loans of that type.

These regional community bank indicators can be compared with regional employment and economic performance figures to evaluate the effects of regional economic conditions on community bank performance. In addition, the relationship between community banks' concentration in real estate lending and their performance also can be examined.

## II. CALIFORNIA RECESSION

The 1990–1991 national recession hit California much harder than it did most of the rest of the country. California employment growth, a measure used to track the state's growth, turned negative along with the national economy in mid-1990.<sup>5</sup> By the second quarter of 1991 the national economy began to make a slow recovery; in California, however, that recovery would be long delayed. Employment continued to decline into 1993 in key industries like defense and aerospace and in large sectors like manufacturing, trade, and government.<sup>6</sup> Nonagricultural employment did not hit bottom until spring 1993, two full years after the national recovery began. Moreover, the recovery in California remained weak, with only 1 percent growth in employment for 1994.

### *Regional Disparity*

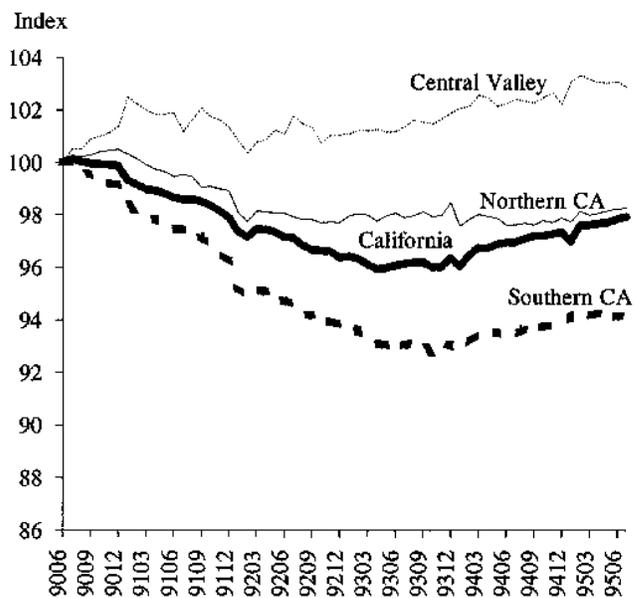
The recession in California was much more severe and much longer than most had anticipated when it began in 1990. It hit Southern California the hardest (Figure 1).<sup>7</sup> This region, with a population of over 18 million, accounts for almost 57 percent of the state's population, but it suffered

5. See Webb and Whelpley (1989) for a discussion of employment indicators.

6. See Sherwood-Call (1993).

7. Statewide civilian employment fell by 533,300 during the period from third quarter 1990 to the second quarter of 1993. The decline in Southern California was 514,700. Northern California reported employment losses of just over 90,000 over the same period, while the Central Valley reported losses of nearly 24,000. The remainder of the state recorded increases in employment. See Sherwood-Call (1992) for a discussion of California's economic woes.

FIGURE 1  
CALIFORNIA EMPLOYMENT



over 90 percent of the net jobs lost statewide during the downturn.<sup>8</sup> Job losses continued there until late 1993, long after employment had turned up in the Central Valley (early 1992) and Northern California (mid-1993).

The metropolitan Bay Area of San Francisco–Oakland–San Jose and the counties surrounding the San Francisco Bay make up the Northern California region.<sup>9</sup> This region, with a population approaching 6.5 million, represents about 20 percent of the state's population. Like Southern California, it also suffered job losses and a weakened real estate market, although the downturn was less severe.

Employment growth in the inland Central Valley region, which includes the metropolitan areas of Sacramento, Stockton, Fresno, and Bakersfield, and many agricultural communities, fell slightly in 1991.<sup>10</sup> This region, which accounts for about 11 percent of the state's population, has a population of 3.6 million. By 1992 employment already had begun to expand, although it did so at a slower pace than before the recession.

8. The Southern California region includes greater Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties.

9. The Northern California region includes San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma, Mendocino, and Marin counties.

10. The Central Valley region includes Sacramento, San Joaquin, Merced, Tulare, Fresno, and Kern Counties.

### California Real Estate Markets

By the early 1990s many California commercial real estate markets had been beset by high vacancy rates, reduced rents, and lower prices. Vacancy rates for commercial office space in most metropolitan areas of Southern California exceeded the national average and reached over 26 percent in downtown Los Angeles in 1994. Higher vacancy rates and reduced rental income have made it more difficult for owners to continue to meet their mortgage obligations. Households also were hurt by falling housing prices as the residential real estate market deteriorated, especially in Southern California.<sup>11</sup>

The growing weakness in the real estate markets translated first into deterioration in the quality of banks' expanded construction and commercial real estate loan portfolios and then later into restructurings and defaults. While there was some deterioration in single-family residential loan quality over the period, it was much less severe.

The downturn in the real estate market was consistent with the weakness in the employment statistics for Southern California. From 1990–1994 the region reported the highest vacancy rate for commercial property across the three regions and one of the highest in the country, according to *CB Commercial* data (Figure 2). Vacancy rates rose in Southern California from 1989 to 1991, before reaching a peak of over 20.6 percent in 1991. This measure of conditions in the commercial real estate market, together with data on housing prices noted above, all indicate that the recession had a more severe impact on Southern California real estate markets than it did in those markets in the other two major regions of the state.<sup>12</sup>

### III. SHIFT TO REAL ESTATE LENDING

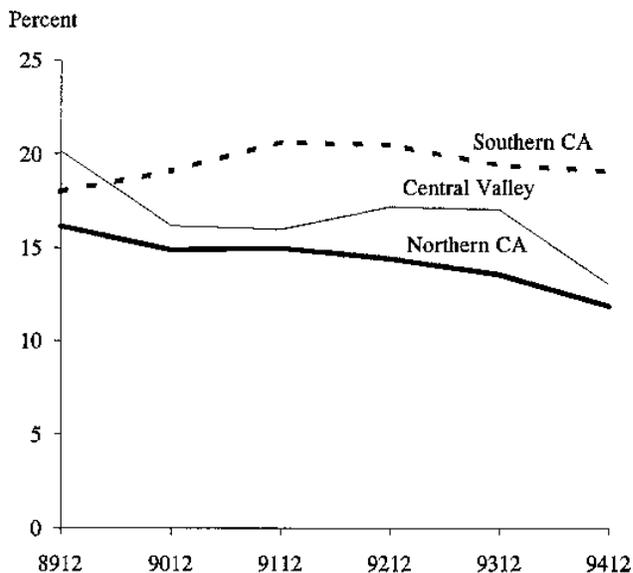
The 1980s real estate boom also had a profound impact on the concentration of real estate loans in banks' loan portfolios. (Concentration in this paper is measured as the ratio of real estate loans to total loans.) Over the 1984–1994 period, banks became much more active in real estate lend-

11. Based on data on median single-family housing prices for selected markets from the California Association of Realtors, it would appear that the deterioration was most severe in Southern California, where home prices fell by 13.3 percent between 1989 and 1994. In Northern California and the Central Valley the median home price actually increased over the same period (0.6 and 11.3 percent, respectively), although both regions experienced declines during the period.

12. The regional vacancy rate data are constructed by averaging *CB Commercial* vacancy rates for metropolitan areas within a region weighted by the population for each metropolitan area within the region. This method gives a larger weight to the larger metropolitan areas within a region.

FIGURE 2

#### VACANCY RATES FOR CALIFORNIA OFFICE BUILDINGS



ing, both by originating and holding loans and by purchasing mortgage-backed securities. In the following discussion the focus is on the trend for banks to have a higher concentration of real estate loans in their loan portfolio.<sup>13</sup>

Nationally, outstanding real estate loans at commercial banks finally surpassed commercial and industrial loans as banks' largest loan category in the third quarter of 1987, the culmination of a trend that had been going on at least since the early 1970s (FDIC 1987). In the 1980s, the trend accelerated as over time banks had lost many of their best-quality borrowers to the financial markets and other non-bank competitors.<sup>14</sup>

Traditionally, real estate lending has been even more important to banks in California than to banks elsewhere in the nation. In California, real estate lending has accounted

13. Weiland (1993) and Lyons (1994) provide nontechnical discussions of the importance of managing the risks associated with over-concentration in a bank's loan portfolio.

14. More and more large corporations found that they could get lower rates and better terms by borrowing in the open markets, typically by issuing commercial paper or debt, rather than by relying on bank financing. Competition from expanded access to the commercial paper market, finance companies, and foreign banks all have resulted in the loss of many high-quality corporate loans from commercial bank balance sheets.

for a larger share of bank loan portfolios than business lending since early 1977. California banks were especially active as the industry helped finance the state's booming real estate markets in the 1980s. This trend for California banks is evident in Figure 3, which shows the strong upward trend in real estate lending as a share of total loans nationally as well as for all California banks and all community banks in the state.<sup>15</sup> By the end of 1994, real estate loans at community banks accounted for 66.1 percent of total loans, versus 59.1 percent for all banks in the state. On a regional basis, community banks in Southern California reported the largest concentration in real estate lending, 69.4 percent, followed by Northern California at 64.6 percent, and the Central Valley at 61.3 percent.

Not only did community banks have a higher concentration of real estate lending than did banks statewide, but community banks also recorded the largest increase in real estate lending concentration over the 1984–1994 period. Community banks nearly doubled their real estate loan concentration, adding 32.1 percentage points to their ratio of real estate loans to total loans over the same period. For all banks in the state, the comparable increase was just 20.2 percentage points.

Southern California community banks more than doubled their ratio of real estate loans to total loans, as they recorded a 37.6 percentage point increase from 1984 to 1994. Northern California and the Central Valley also recorded sizeable increases, at 28.5 and 21.4 percentage points respectively.

Figures 4a and 4b show that the 1984–1994 expansion in real estate lending at small banks was primarily in loans secured by relatively higher-risk commercial real estate rather than lower-risk residential properties.<sup>16</sup> Figure 4a shows that, in the aggregate, community banks in the state have had a much higher concentration of loans in commercial real estate (including construction loans) than either all U.S. banks or all California banks. In 1994 banks nationally reported 16.1 percent of their total loans were made for commercial real estate purposes; in California that figure was 20.9 percent. Yet, community banks in the state held 44.5 percent of their loans in commercial real estate, more than twice the ratio for all banks in the state and nearly three times the U.S. ratio; furthermore, unlike larger banks in California or banks nationally, California community banks were not able to reduce their commercial real estate exposure following the downturn in the real estate market.

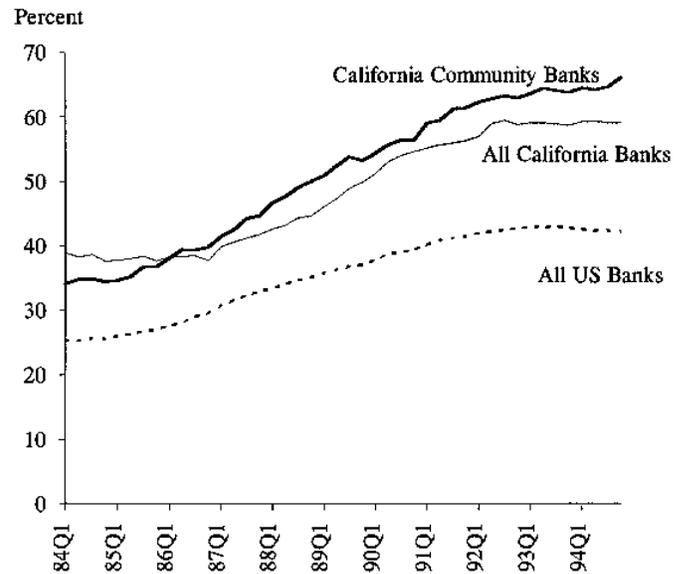
In Southern California the concentration in commercial real estate lending was 46.9 percent, which was even

15. Community bank real estate lending grew from \$4.4 billion in 1984 to \$13.0 billion in 1994.

16. See Weiland (1993), p. 21.

FIGURE 3

### REAL ESTATE LOANS AS A PERCENT OF TOTAL LOANS



greater than in the other regions. The higher concentration in Southern California is the result of a 30.8 percentage point increase over the 1984–1994 period. Northern California recorded the next highest concentration in commercial real estate lending, 44.8 percent, and the next largest increase over the 1984–1994 period, 29.5 percentage points. In the late 1980s, community banks as a group also added dramatically to their concentration of construction loans (Figure 4b). Although community bank concentration in construction loans has fallen by more than half from its peak of 18 percent in 1990, it still remains about double that for the state as a whole or for U.S. banks.

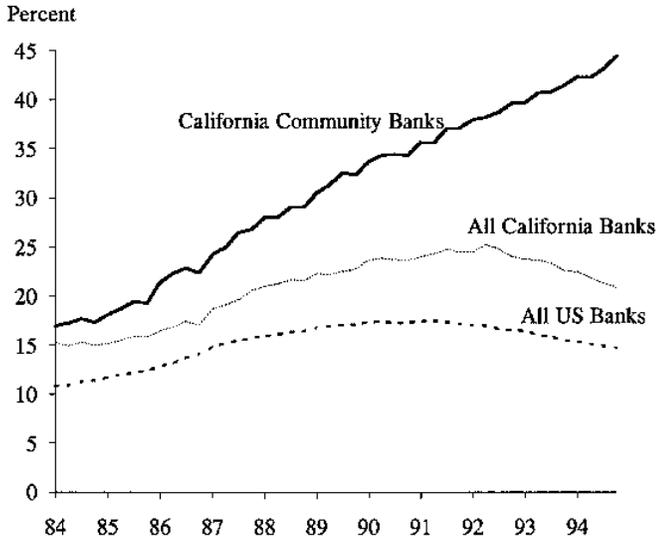
Figure 5 illustrates why commercial real estate loans and construction loans are considered risky. These two types of real estate loans had the highest net charge-offs both during and after the 1990–1991 recession. The history of higher charge-offs on these categories of real estate loans is one reason that regulators give them a weight of 100 percent in determining risk-based capital requirements. In contrast, performing loans secured by single-family or multifamily residential property have only a 50 percent weight for risk-based capital requirements.<sup>17</sup>

Thus, not only did community banks increase their concentration in real estate lending over the period from 1984

17. O'Keefe (1993) Appendix B.

FIGURE 4A

COMMERCIAL REAL ESTATE LOANS AS A PERCENT OF TOTAL LOANS\*



\* Includes commercial real estate and construction loans.

FIGURE 4B

CONSTRUCTION REAL ESTATE LOANS AS A PERCENT OF TOTAL LOANS

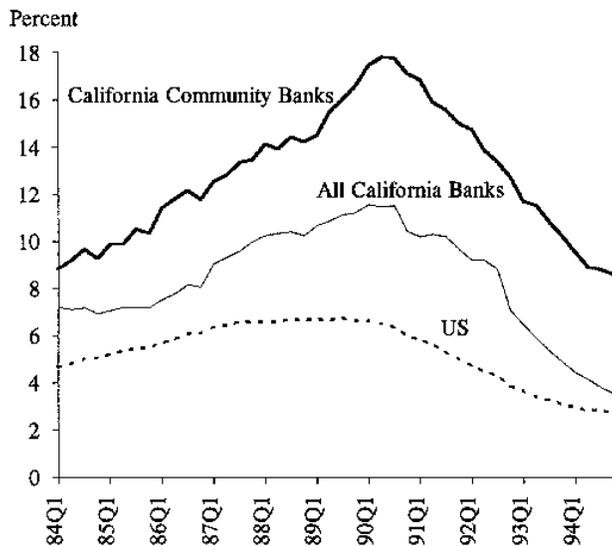
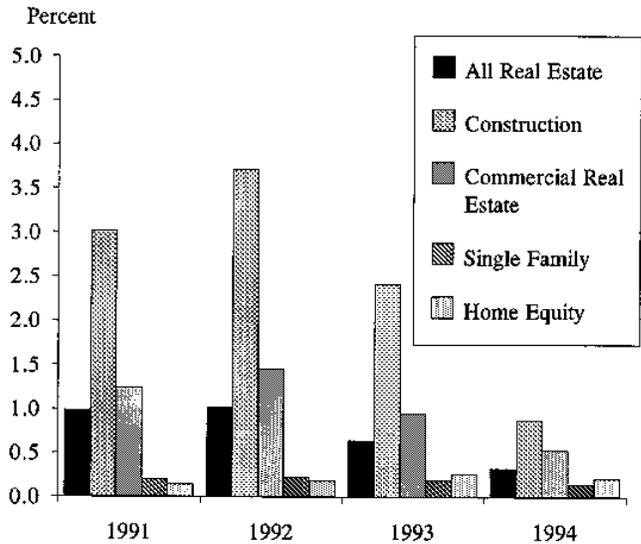


FIGURE 5

NET REAL ESTATE LOANS CHARGED OFF FOR ALL U.S. COMMERCIAL BANKS



to 1994, but they also dramatically shifted their emphasis from a portfolio mix balanced between residential and commercial real estate loans towards a mix containing more high-risk types of commercial real estate lending, like construction.

#### IV. AGGREGATE COMMUNITY BANK PERFORMANCE

In this section, two regional community bank indicators of performance, asset quality and return on assets, are examined to see if their behavior is consistent with data on regional economic conditions and/or community banks' concentration in real estate lending.<sup>18</sup>

##### *Problem Loans*

Overall asset quality, measured here by the ratio of total problem loans (past due 30 days or more and nonaccrual loans) to total loans for community banks, shows a pattern

18. See English and Reid (1995) for their use of similarly defined measures of bank returns and problem or delinquent loans.

of deterioration consistent with the recession and the slow recovery across the key regions of the state (Figure 6). Problem loan ratios for each of the regions tend to move in the same direction, reflecting overall conditions of the state economy, although the levels vary considerably across regions. The largest divergence occurs after 1990 in Southern California, when problem loan ratios over the 1991–1993 period are nearly double those of the other regions.<sup>19</sup>

A similar pattern showing the most severe deterioration of community bank asset quality in Southern California is evident from key real estate asset quality measures as well (Figure 7). Problem real estate loans at California community banks actually began rising in Southern California in 1989. By 1990 the increases in both Southern and Northern California were quite steep. Problem loan ratios in the southern region of the state did not fall off until 1994.

Data on problem real estate loans by type of loan first were collected for the March 31, 1991, Call and Income Report. These asset quality measures make it much easier to evaluate the trouble spots in banks' real estate loan portfolios, and they are useful for making comparisons of asset quality across regions of the state. The problem loan ratio for combined commercial real estate and construction loans for community banks is shown in Figure 8a. Between mid-year 1991 and early 1994, problem loan ratios for Southern California community banks were nearly double those for banks in the other regions. Furthermore, similar patterns were reported for both commercial real estate loans and construction loans, although the problem loan ratios were much higher for construction lending, as can be seen from Figure 8b.

Southern California community banks also report higher problem loan ratios for single family residential lending (Figure 9), although the differential between Southern California and the other regions is not nearly so pronounced as with commercial and construction lending.

Evidence from the aggregate regional community bank asset quality data are consistent with the regional economic conditions. Deterioration in both the economy and community bank asset quality was generally most severe in Southern California. More moderate deterioration occurred in the northern sector of the state, while the impact on the Central Valley appears to have been the least severe.

19. Central Valley banks tended to report relatively high problem loan ratios for most of the period from 1985 until 1989, a period when this region's dependence on the agricultural industry probably weakened bank performance. The variability in this series also may be related to its relatively small sample size, 30 banks, as of December 1994, which also makes the series more susceptible to variations arising from adding or deleting banks from the community bank group.

FIGURE 6  
PROBLEM LOANS AS A PERCENT OF TOTAL LOANS

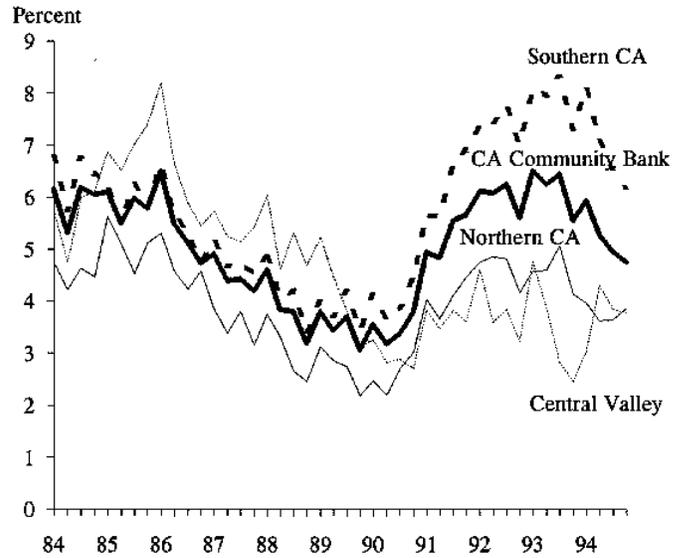


FIGURE 7  
PROBLEM REAL ESTATE LOANS  
AS A PERCENT OF TOTAL REAL ESTATE LOANS

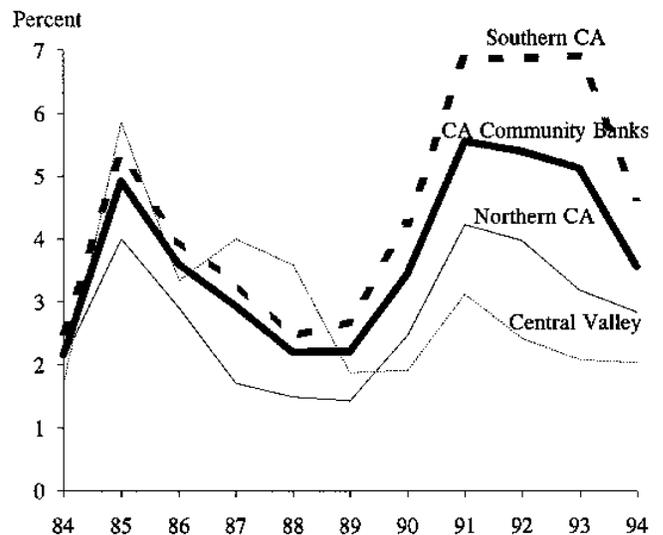
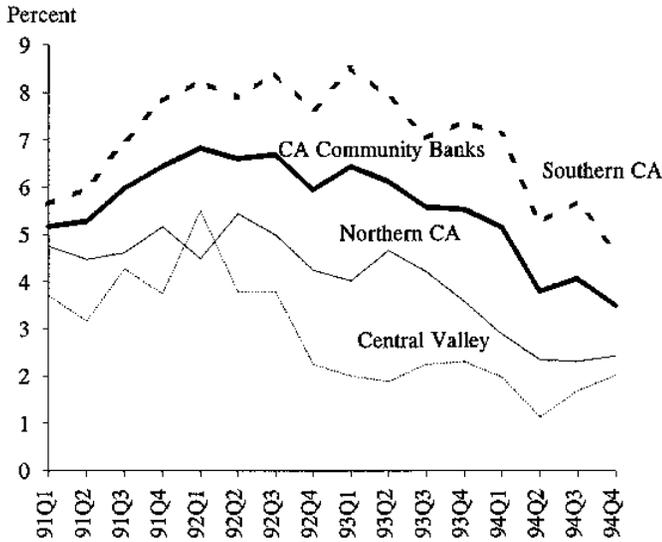


FIGURE 8A

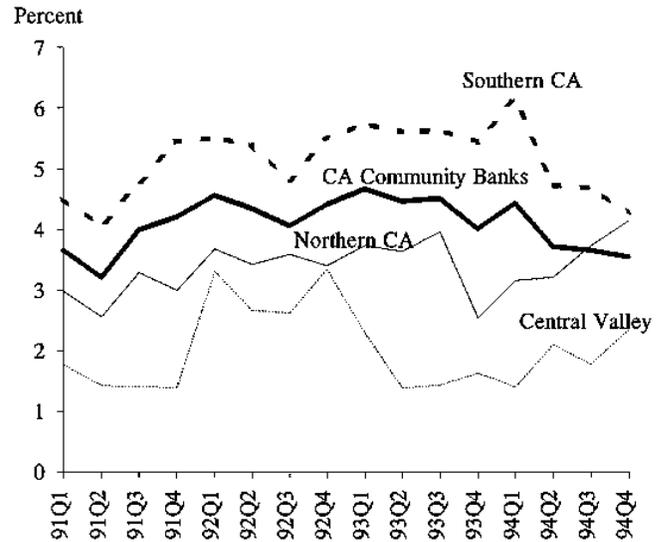
PROBLEM COMMERCIAL REAL ESTATE LOANS AS A PERCENT OF TOTAL COMMERCIAL REAL ESTATE LOANS\*



\* Includes commercial real estate and construction loans.

FIGURE 9

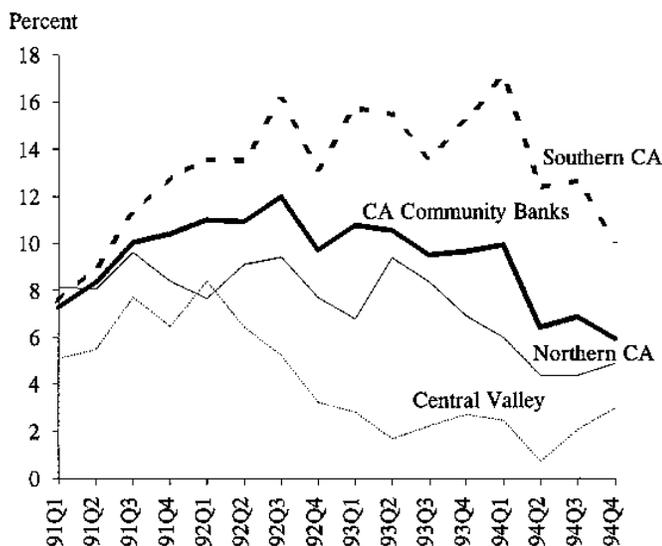
PROBLEM SINGLE-FAMILY REAL ESTATE LOANS AS A PERCENT OF TOTAL SINGLE-FAMILY REAL ESTATE LOANS\*



\* Includes single-family and home equity loans and lines of credit.

FIGURE 8B

PROBLEM CONSTRUCTION LOANS AS A PERCENT OF TOTAL CONSTRUCTION LOANS



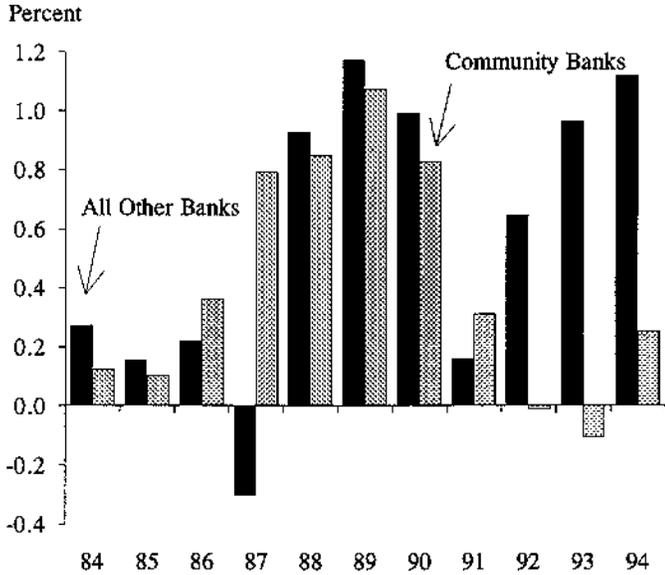
The behavior of community bank asset quality measures across regions of the state following the recession also was consistent with the shift toward higher-risk real estate loans. Again, the region with the highest concentration in both real estate lending and commercial real estate lending, Southern California, reported the most severe deterioration in asset quality, and the Central Valley region, with the lowest concentration and the smallest increase, reported the least deterioration in asset quality.

*Return on Assets*

In terms of the broader measure of bank performance, ROA, California's community banks clearly lagged those of the statewide industry in the 1990s (Figure 10). All banks in the state also lagged behind industry performance nationally. In the aggregate, community banks reported actual losses in both 1992 and 1993 and, although earnings turned positive in 1994, they were poor.

As Figure 11 shows, community banks' ROA figures are consistent with regional economic conditions. Small banks in Southern California suffered the most severe loan quality problems and reported the weakest ROA of the major geographic regions within the state; as a group they did not

**FIGURE 10**  
**ROA FOR CALIFORNIA:**  
**COMMUNITY BANKS AND ALL OTHER BANKS**

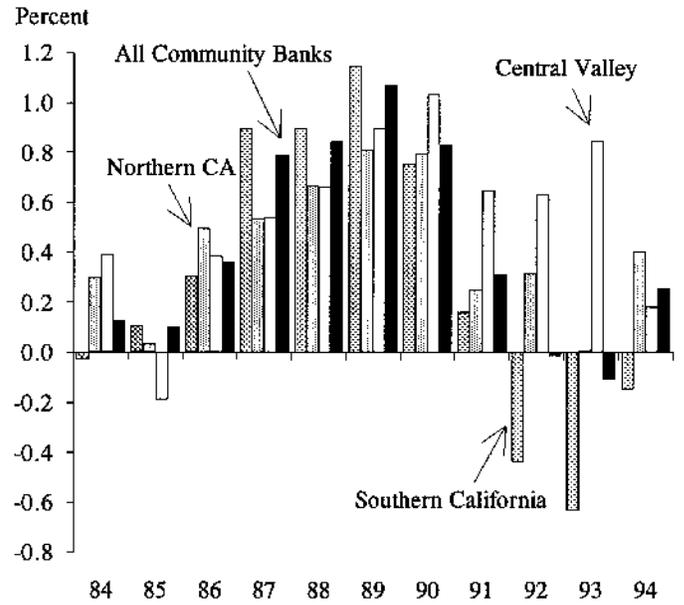


earn a positive return in 1992, 1993, or 1994. Northern California community bank earnings rebounded to a weak level in 1994, following a break-even year in 1993. And while other areas, like the Central Valley, may have experienced a softening in the economy, it was not enough to dampen severely community bank ROA during the sample period; in fact, although ROA dipped in 1991 and 1992, it remained above the national average.<sup>20</sup>

The ROA performance of community banks aggregated by region also is consistent with their relative exposure to real estate lending and with their relative concentration in higher-risk commercial real estate lending. At the regional level, Southern California suffered the most severe economic downturn and had the weakest real estate markets, and its community banks also have suffered the most severe problems. It also was the region where community banks had the largest exposure to both real estate and commercial real estate lending. Northern California community bank performance also deteriorated noticeably, just as

20. Aggregate earnings for this region weakened substantially in 1994 as community banks began reporting an increase in problem commercial and residential real estate loans. Preliminary 1995 earnings have deteriorated even more.

**FIGURE 11**  
**COMMUNITY BANK ROA BY REGION**



the region’s economy weakened and as banks in the region increased their real estate exposure.

Because both the regional economic conditions and the portfolio decisions are highly correlated, it is difficult to tell whether both are significant factors in bank performance, and if they are, what their relative importance is. With this limitation in mind the study now moves to exploring these relationships at the individual bank level.

**V. REGIONAL CONDITIONS, BANK PORTFOLIOS, AND PERFORMANCE**

In this section a regression model using pooled time-series cross-section data for community banks is used to test for relationships between small bank performance in California and bank location, regional economic factors, and bank real estate loan portfolio decisions. The regressions estimate two of the measures of community bank performance that were used at the regional level—asset quality is measured by the problem real estate loan ratio, and earnings are measured by ROA. The model is estimated using ordinary least squares regressions and individual bank data from a panel of at least 310 California community banks that were in operation during the five years from 1990 to 1994.

The initial set of regressions controls only for regional location. As noted earlier, this test is not possible for most of the state's largest banks, because they operate in all regions of the state and report only statewide performance figures. A second set of regressions adds economic conditions and loan portfolio concentration variables. The third set breaks down the portfolio concentration into the construction and non-construction components of commercial real estate lending.

### *Control Variables*

Several variables are included in the regressions to control for bank attributes that may create either cross-sectional or time-series influences on bank performance that are distinct from regional or real estate effects. These variables include: the logged asset size of the bank at the end of the quarter preceding the sample period (to control for differences in bank size); the growth rate of assets for the bank over the preceding three-year period (because rapid changes in bank size may reflect changes in lending standards that may lead to changes in asset quality and/or earnings); the capital-to-asset ratio at the end of the prior year (to control for differences across banks and over time in a bank's level of capitalization, leverage, and risk); the bank's loan-to-asset ratio (because it measures the bank's portfolio mix between loans and securities, which generally are lower-risk and lower-return assets).<sup>21</sup>

Differences in individual bank performance also may be related to other structural or organizational attributes. A dummy variable is included to control for whether a community bank is part of a bank holding company whose combined financial resources may be greater than that of the typical community bank. Banks that are part of such holding companies may have better monitoring capabilities and/or more ability to transfer problem assets to the holding company or an affiliate. Data on the number of branches a bank operates are used to proxy for differences in the provision of retail banking services across banks.<sup>22</sup> In the rapidly changing banking environment of the 1990s, these "brick and mortar" investments by community banks may temporarily increase overhead expenses, because

banks may not be able to open, close, or adjust the level of their branch services quickly and easily as market conditions change.<sup>23</sup> A larger number of branches for these small banks also may increase the difficulty of evaluating lending conditions across a wider geographic market.

### *Performance Indicators*

The regressions were run estimating two dependent variables that are indicators of bank performance, ROA and the problem real estate loan ratio. The first set of regressions included only the control variables for differences in bank attributes and dummy variables for Southern California, Northern California, and the Central Valley. If these dummy variables are significant, then the individual bank data provide additional support for the observations advanced earlier in the paper, that location is an important influence on performance at community banks in California. The results of the regressions are in Appendix A.

### *Location Is a Factor*

The results from Set 1 using the three dummy variables for location and controlling for the bank attributes described above suggest that bank location was an important factor in determining performance. Two of the three location dummies, Southern California and Northern California, are statistically significant; the third—the Central Valley—is not statistically different from the omitted category, all community banks outside of the three major regions. In addition, all three location variables are significantly different from each other.<sup>24</sup> These results suggest that location in the key Southern California and Northern California regions, at least during the 1990–1994 period, was an important factor in community bank asset quality and earnings.<sup>25</sup> These results also are consistent with the aggregated series for community banks by region.

The coefficients for the dummy variables indicate that between 1990 and 1994, the ratio of problem real estate loans for community banks located in Southern California was 3.72 percentage points above the ratio for community banks outside of the three major regions of the state, the

21. At year-end 1990 the average size of the 385 community banks in operation at that date was nearly \$86 million, and banks ranged from under \$1 million to \$293 million in assets. Assets at the average community bank grew at a 13.4 percent annual rate over the prior three years. The average capital-to-assets ratio was 10.0 percent and the mean loan-to-asset ratio was nearly 70 percent.

22. Only 32 banks were holding company affiliates. The number of branches ranged from 0 to 19; on average each bank had two branches.

23. Furlong and Zimmerman (1995).

24. The models were estimated with both unrestricted values for the dummy variables and versions where pairs of the dummy variables were restricted to be equal to each other. All combinations of the parameters were statistically different.

25. Samolyk (1994), p. 13, also finds that, "Bank performance does appear to reflect local economic conditions, particularly in regard to bank profitability and asset quality."

omitted group which recorded the strongest performance over the period. Northern California community banks also had a higher problem real estate loan ratio, 1.82 percentage points, and this difference also was statistically significant.

The model was then reestimated using the bank earnings indicator, ROA, rather than the asset quality measure, as the dependent variable. Not only were asset quality problems more severe at Southern California and Northern California community banks, but ROA also was significantly worse over the 1990–1994 period. The coefficient for the Southern California community dummy variable indicates that ROA for these banks was 103 basis points below that of the omitted category, all community banks outside of the three key regions, while Northern California banks were only 59 basis points lower. In the Central Valley region, ROA, like asset quality, was not statistically different from the omitted group.

These results suggest that community bank location was a key factor in determining regional bank performance in California. However, because portfolio composition also varies across regions, this form of the model does not address whether the potential causes for the significant deterioration in community bank performance were related to economic conditions, portfolio decisions, or other factors.

### *Regional Conditions and Real Estate Concentration*

Set 2 of the regressions adds variables related to regional economic conditions and bank portfolio decisions to the model with regional dummy variables. The economic condition variable is the growth rate of nonagricultural payroll employment over the prior year for the county where the bank is headquartered. Growth in employment, reflecting favorable economic conditions, is expected to result in both improved bank performance, i.e., a higher ROA and a lower problem loan ratio.

The next two variables in Set 2 control for a bank's portfolio decisions with respect to real estate lending. One is the ratio of total residential real estate loans to total loans, a measure of a bank's concentration in residential real estate lending, defined here to include mortgages on 1- to 4-family homes and home equity lines of credit. The second portfolio choice variable is the ratio of commercial real estate loans to total loans, the measure of a community bank's total concentration in commercial real estate lending, including construction lending. This concentration measure serves as a proxy for a community bank's exposure to default risk and weakened performance from these relatively higher risk commercial real estate loans. As shown in Figure 5, relatively large net real estate loan charge-offs in

both commercial real estate and construction lending have plagued commercial banks over the last several years.<sup>26</sup>

The regression results indicate that employment and portfolio concentration both appear to play important roles in community bank performance in this model. Regional employment conditions are a significant contributing factor for both community bank asset quality and ROA. Over the sample period there is a significant negative relationship between employment growth and problem real estate loan ratios and a positive significant relationship between employment growth and return on assets. This finding is consistent with the observations of others and with the history of employment by region in California over the course of the recession. As employment declined in the various regions of California community bank performance also suffered.

The significant effects of community banks' concentration in real estate lending appears to be more closely tied to banks' asset quality rather than the current year's ROA. At least in this simple model of bank performance, neither of the concentration measures was statistically significant in estimating ROA. However, there is a significant positive relationship between a community bank's concentration in commercial real estate lending and its level of problem real estate loans. This finding is consistent with the strong upward trend in concentration in commercial real estate for all community banks in the 1984–1994 period and the weak performance of community banks since 1990, when the real estate market deteriorated.

These results suggest that in addition to total real estate concentration, the mix of real estate lending also is important. While commercial real estate loan concentration is consistent with higher problem real estate loan levels, the results suggest that concentration in residential real estate lending resulted in fewer asset quality problems.

### *Construction Lending's Role*

Finally, an additional refinement of the model was used to estimate performance by specifying as control variables the two main components of commercial real estate lending, loans for construction and land development and for non-construction commercial real estate purposes, and dropping the variable for total commercial real estate loans (Set 3).

This model also was estimated over the 1990–1994 period for the panel of community banks, both for the asset quality and ROA measures. As with the second set of re-

26. See Freund and Seelig, (1993) for an estimate of the huge decline in collateral values, by loan type and by region, for real estate assets under FDIC management.

gressions that included the real estate concentration variables, the concentration measures were not significant in estimating ROA. However, these regressions identify community banks' concentration in construction loans as a key source of the deterioration in asset quality. Furthermore, the ratio of concentration of construction loans to total loans was a highly significant factor in determining asset quality—the coefficient for the concentration of commercial real estate loans excluding construction loans was not statistically different from zero.

This specification provides strong evidence that community banks' concentration in construction lending was not only a key factor in asset quality problems in the 1990s, but it was significant even though the regional employment measure was not, at least at the 10 percent level. The regional dummy variables, however, continued to maintain their significance in this version of the model, suggesting that there are other regional factors in addition to the employment growth indicator that have influenced community bank asset quality performance during this period.

Earnings performance does not appear to be as closely driven by the commercial real estate loan concentration measure as was asset quality. This may be related to the lags between the time a loan might become delinquent, when it might be classified as a problem loan, when expenses for loss provisions are taken, and when it might actually result in a charge against earnings. It also may reflect a bank's ability to charge higher rates on higher-risk loans over the business or real estate cycles. In addition, aggregate community bank data suggest that overhead costs for small banks also rose over this period as these banks faced a higher level of problem loans and a rise in workout and foreclosure situations. This might be an interesting area for additional research.

Finally, in addition to the pooled time-series cross-sectional regressions, the models also were estimated as a series of five year-by-year cross-sectional regressions.<sup>27</sup> These regressions yielded very similar results to the time-series cross-sectional results.<sup>28</sup> The similarity of these results suggests that the findings are robust with respect to the pooling approach, the sample composition, and the period estimated.

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27. The year-by-year results include all community banks each year, so unlike the pooled time-series cross-sectional results for the consistent panel of banks, the year-by-year results are not biased by leaving out new banks, banks that were merged out of existence, or banks that failed. The latter two cases are of particular concern given the problems in the industry over the sample period. Still, despite the potential bias, the results for both the year-by-year and the pooled time-series regressions were similar.

28. Similar models estimating a series of annual regressions also found that location for both Southern California and Northern California were

## VI. OBSERVATIONS

These results suggest that the trends observed in the aggregate regional community bank data for California during the 1990–1994 period are significant factors in determining community bank performance at the individual bank level as well. Overall economic conditions, especially the major recession in Southern California and the downturn in the California real estate market, have played an important role in determining community bank performance across three key regions of the state. Asset quality, a key factor in community bank performance, also appears to have a strong negative relationship to a bank's concentration on commercial real estate lending, and especially construction lending.

The results also suggest that while all banks face the risks associated with an economic downturn, the risks may have a more dramatic impact on smaller banks holding loan portfolios that are generally less well-diversified on a geographic basis than larger institutions with a broader branch network and access to larger regional or national credits. As the performance data for community banks over the 1990s clearly show, when California suffered a long and relatively severe recession, as a group the state's community banks were hurt much more severely than the state's larger banks.

Furthermore, in addition to facing adverse national and regional economic conditions, community banks also must face the risks associated with their own portfolio choices. Managements' decisions with respect to their banks' loan portfolio composition also appear to play a role in community bank performance. Community banks' increased reliance on real estate lending over the last decade, and especially higher-risk commercial real estate lending for construction, clearly played a key role in driving down asset quality over the 1990–1994 period.

These results also suggest that the regional indicators of community bank performance can provide industry analysts with a better understanding of community bank performance in California, especially at the regional level where comparable information on a historical basis has not

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significantly related to community bank performance. Replacing the regional dummies with regional employment and portfolio concentration measures also generated similar results—growth in the employment rate had the correct sign and was significant in estimating both asset quality and ROA. The portfolio concentration measures likewise generated similar results, especially for the asset quality measure, where higher residential real estate concentration reduced asset quality problems significantly in 1990 and 1991, while higher concentration in commercial and construction lending increased it significantly in 1992 and 1993.

been previously available. Such information should prove to be important in evaluating bank performance on a regional basis and in comparing community bank performance with larger California banks.

Finally, as banking industry consolidation continues, even in California, information on the performance of community banks over time may help analysts better understand overall conditions at the state's smaller banks. In particular, it helps determine whether ups and downs in community bank performance are related to cyclical factors, regional conditions, and portfolio choices, or whether they might be associated with evolving financial services products or changing competitive circumstances.

## APPENDIX A

## REGRESSION RESULTS SUMMARY

| DEPENDENT VARIABLES      | ASSET QUALITY INDICATOR        |                          |                          | EARNINGS INDICATOR       |                          |                          |
|--------------------------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                          | Problem Real Estate Loan Ratio |                          |                          | Return on Assets         |                          |                          |
| INDEPENDENT VARIABLES    | Set 1                          | Set 2                    | Set 3                    | Set 1                    | Set 2                    | Set 3                    |
| Intercept                | 12.542103***<br>(4.350)        | 17.324202***<br>(5.810)  | 16.896745***<br>(5.746)  | -0.08557***<br>(-6.400)  | -0.090475***<br>(-9.495) | -0.088094***<br>(-9.362) |
| Growth Rate of Assets    | 0.002260<br>(1.355)            | 0.003612**<br>(2.165)    | 0.003257**<br>(1.966)    | 0.000002316<br>(0.319)   | -0.000005628<br>(-1.158) | -0.000004427<br>(-0.914) |
| Capital/Assets Ratio     | -0.144336***<br>(-2.803)       | -0.146015***<br>(-2.865) | -0.125538**<br>(-2.477)  | -0.000142<br>(-1.261)    | 0.000805***<br>(7.420)   | 0.000786***<br>(7.277)   |
| Bank Holding Company     | -1.560512**<br>(-2.536)        | -1.865731***<br>(-3.052) | -2.117027***<br>(-3.476) | -0.003817<br>(-1.287)    | -0.003011<br>(-1.530)    | -0.003397*<br>(-1.728)   |
| Number of Branches       | 0.133829**<br>(2.138)          | 0.171703***<br>(2.754)   | 0.210577***<br>(3.372)   | -0.000482<br>(-1.608)    | -0.000395**<br>(-1.972)  | -0.000309<br>(-1.532)    |
| Employment Growth Rate   |                                | -0.220786***<br>(-3.698) | -0.064476<br>(-1.565)    |                          | 0.000517***<br>(2.673)   | 0.000207<br>(1.543)      |
| Dummy 1990               | -1.385562***<br>(-2.911)       | -1.468434***<br>(-3.068) | -2.314795***<br>(-4.610) | 0.003176<br>(1.416)      | 0.004622***<br>(3.027)   | 0.003746**<br>(2.335)    |
| Dummy 1991               | 1.178046**<br>(2.493)          | 1.016886**<br>(2.124)    | 0.535885<br>(1.102)      | -0.000028273<br>(-0.013) | 0.000134<br>(0.088)      | -0.000937<br>(-0.603)    |
| Dummy 1992               | 1.310582***<br>(2.777)         | 0.461896<br>(0.857)      | 0.679458<br>(1.349)      | -0.005264**<br>(-2.349)  | -0.000645<br>(-0.373)    | -0.002612<br>(-1.615)    |
| Dummy 1993               | 1.396022***<br>(2.938)         | 0.934938*<br>(1.900)     | 1.116692**<br>(2.340)    | -0.004321*<br>(-1.912)   | -0.00304*<br>(-1.932)    | -0.004143***<br>(-2.706) |
| Log of Bank Assets       | -1.141838***<br>(-4.889)       | -1.454862***<br>(-6.132) | -1.528723***<br>(-6.466) | 0.008414***<br>(7.709)   | 0.007314***<br>(9.613)   | 0.00728***<br>(9.595)    |
| Loans/Assets Ratio       | 5.068071***<br>(3.847)         | 4.567352***<br>(3.494)   | 4.639855***<br>(3.576)   | 0.004857<br>(0.850)      | 0.015241***<br>(3.730)   | 0.014435***<br>(3.553)   |
| Location: Southern CA    | 3.721931***<br>(8.570)         | 3.273016***<br>(7.123)   | 4.049738***<br>(9.031)   | -0.010274***<br>(-4.891) | -0.009768***<br>(-6.564) | -0.010312***<br>(-7.092) |
| Location: Northern CA    | 1.816038***<br>(3.540)         | 1.696128***<br>(3.252)   | 2.20122***<br>(4.279)    | -0.005893**<br>(-2.393)  | -0.006559***<br>(-3.916) | -0.00679***<br>(-4.098)  |
| Location: Central Valley | -0.329489<br>(-0.544)          | -0.365161<br>(-0.607)    | -0.292002<br>(-0.489)    | 0.001407<br>(0.478)      | 0.000792<br>(0.406)      | 0.001233<br>(0.635)      |
| 1-4 Fam. Mortgages/Loans |                                | -0.037192***<br>(-3.715) | -0.029469***<br>(-2.944) |                          | 0.000038867<br>(1.214)   | 0.000038346<br>(1.196)   |
| Commercial RE/Loans      |                                | 0.016319*<br>(1.844)     |                          |                          | -0.000017677<br>(-0.631) |                          |
| Construction/Loans       |                                |                          | 0.086838***<br>(5.763)   |                          |                          | 0.000004504<br>(0.093)   |
| Other Comm. RE/Loans     |                                |                          | -0.006266<br>(-0.659)    |                          |                          | -0.000021409<br>(-0.708) |
| Adjusted R <sup>2</sup>  | 0.1286                         | 0.1471                   | 0.1591                   | 0.0824                   | 0.1337                   | 0.1353                   |

NOTE: *t*-statistics are in parentheses.

\*\*\* Significant at the 1% level.

\*\* Significant at the 5% level.

\* Significant at the 10% level.

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