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An accurate portrayal of late-nineteenth-century U.S. financial history is necessary to provide material for testing theories of the role of financial institutions in economic development, growth, and business cycles. The few recent works on the behavior of financial institutions during this period have relied almost exclusively on data from the reports of the Comptroller of the Currency.[1] These reports do not include information on state banks. Since most of the banks existing in this period were state rather than federally chartered, a potentially significant bias has been introduced into these studies.

This essay explores the mobility of capital in California between 1878 and 1905 using state banking data. The results indicate that changes in the California economy cannot be explained by obstacles to financial flows. The results also indicate the direction of bias in previous studies of financial history and provide access to statistics on California banking history.

The 1965 article by Lance Davis is the most important study of U.S. banking in this period. Davis characterizes the late nineteenth century as a period during which barriers to the flow of financial capital between regions decreased. His findings indicate that capital flows improved over time, although the Pacific coastal regions remained isolated from sources of funds even as late as 1914.[2]

Richard Sylla also has written a widely accepted article on nineteenth-century U.S. financial history. Sylla concluded that the federal government and provisions of the National Banking Act served to restrain the growth of the financial industry. Specifically, Sylla feels the tax on bank notes and

the requirements for minimum levels of paid-up capital created a two-tiered system. Banking in the cities was competitive, but rural bankers monopolized their local market. The situation caused the movement of capital from rural to urban areas, as rural bankers restricted local lending to keep interest rates high and deposited their excess funds in city banks.[3]

In the present study, the first step was to handle the problem of inaccessible data for state chartered banks. California statistics were collected for six years, between 1878 and 1905, from the reports of the California Board of Bank Commissioners. For our purposes, the years corresponding to population census data (1879, 1889, and 1899) were judged to have the most interest, and the data base was increased by adding 1884, 1894, and 1905 (the 1904 report was not published).

The most direct evidence on the structure of an industry is obtained by comparing the prices charged for a particular product. If no monopoly power exists, differences in the price will reflect only differences in the cost of producing the good. Differences in price caused by transportation cost, transaction costs, or risk are compatible with a competitive industry structure. In banking, the interest rate charged on loans and paid on deposits represents the price of the firm's product. Past studies of the banking industry have attempted to use the interest rate or estimates of it to test for competitive structure.

Very little direct information on interest rates charged by U.S. lenders is available for the late nineteenth century. The California Board of Bank Commissioners requested this information in only one year, 1879, and 39 banks responded. Only one San Francisco bank was among the respondents, and the interest rate that bank charged is one of the lowest reported. It appears that interest rates increased with the distance from San Francisco, and a curious pattern emerges when the banks are grouped geographically (in northern, southern, or central California). Table 1 shows the interest rates reported in 1879. Most banks in any one segment of the state charged identical interest rates.

Because 1879 is the only year for which interest charges are reported, other attempts were made to discern differences in interest rates among regions. Most of the individual savings banks reported the interest they paid to their depositors every year. This information was collected for the three census years and for the three years midway between them. The mean interest paid on savings and on demand deposits was computed for each region, and the difference in the mean interest rates among areas was tested for significance. The results, shown in Table 2, revealed no consistent differences, and the scattered differences did not decrease in frequency over time. These results support neither the Sylla nor the Davis hypothesis.

Differences are more frequently significant when a proxy for interest rates is used. The proxy developed by Davis and modified very slightly in this study is the ratio of gross earnings to earning assets. Calculation of this proxy for banks in California for the six selected years reveals scattered significant differences among regions within the state. These differences disappear suddenly by 1905, providing some support for the contention that capital flows improved over time. (See Table 3.)

An examination of the pattern of real estate lending also was made using the detailed information available in the Board of Bank Commissioners' reports.

Table 1. Interest Charged on Loans in 1879 by California Commercial Banks

Bank	Percent per month
San Francisco	
Wells Fargo & Co.	1.00
Northern counties	
Bank of Chico	1.25
Citizen's Bank, Nevada City	1.25
Colusa County Bank, Colusa	1.25
Farmer's Savings Bank, Lakeport	1.25
Humboldt County Bank, Eureka	1.38
Mendocino Discount Bank	1.25
Bank of Napa	1.00
Bank of Tehama, Red Bluff	1.25 & 1.5
Bank of Woodland	1.00
Central counties	
Bank of Dixon	1.00
Farmers & Mechanics Bank, Heraldsburg	1.00
Bank of Fresno	1.25
Bank of Gilroy	1.25
Bank of Heraldsburg	1.01
Bank of Hollister	1.01, 1.25, 1.5
Bank of Martinez	1.00
Petaluma Savings Bank	.88
Sacramento Bank	.88
Salinas City Bank	1.25
Bank of Santa Cruz County	1.19
Santa Rosa Bank	1.01
Bank of Santa Rosa	1.01
Sanoma Valley Bank	1.01
Bank of Suisun	1.01
Bank of Tomales	1.00
Bank of Vallejo	1.01
Bank of Visalia	1.50
Southern counties	
Bank of Anaheim	1.50
Commercial Bank of San Diego	1.38
Commercial Bank of Los Angeles	1.25
Farmers & Merchants Bank, Los Angeles	1.01
Kern Valley Bank, Bakersfield	1.50
Santa Barbara County Bank	1.01
Bank of San Diego	1.50
Bank of San Luis Obispo	1.50
Bank of Ventura	1.50

Table 2. Differences in Mean Interest Rates Paid on Deposits in California, 1879-1905

Test	1879	1884	1889	1894	1898	1905
	Term					
Between rural areas						
North versus central	*	-	-	0	0	0
North versus south	0	-	-	0	*	*
South versus central	0	-	0	0	0	*
Between San Francisco and						
Rural north	*	*	-	0	0	0
Rural south	*	-	0	0	*	0
Rural central	*	0	0	0	*	0
Between urban and rural	*	0	0	0	0	*
San Francisco Bay area versus other counties	*	*	*	0	0	*
All other counties versus San Francisco	*	0	0	0	*	0
	Ordinary					
Between rural areas						
North versus central	0	0	0	0	0	0
North versus south	0	-	0	*	*	*
South versus central	0	-	0	*	*	0
Between San Francisco and						
Rural north	0	*	*	*	0	0
Rural south	*	-	0	*	*	0
Rural central	0	*	0	0	*	0
Between urban and rural	*	*	*	0	0	0
San Francisco Bay area versus other counties	*	*	0	*	0	0
All other counties versus San Francisco	*	*	0	0	0	0

- : Insufficient data.
0 : Difference not significant.
* : Difference significant at the 90 percent level of confidence.

Each bank or savings bank reported its total amount of loans on real estate in each county in the state. Collection and processing of this information for the six selected years allowed the reconstruction of lending and capital flows. The data reveal several trends in the market.

In the late nineteenth century, most California banks participated in real estate lending. Savings banks committed a large percentage of their

Table 3. Differences in Mean Gross Earnings/Earning Assets in California, 1879-1905

Test	1879	1884	1889	1894	1898	1905
North versus central	0	-	-	0	0	0
North versus south	0	-	-	0	*	0
Central versus south	0	-	*	0	*	*
San Francisco versus north	0	-	-	0	0	0
San Francisco versus central	0	-	*	*	*	0
San Francisco versus south	0	-	*	*	0	0
San Francisco versus all others	0	0	*	*	*	0

- : Insufficient data.
0 : Difference not significant.
* : Difference significant at the 90 percent level of confidence.

assets to real estate loans, but the larger resources of the commercial banks made them an equally important loan source. Private and foreign banks participated in real estate lending less frequently.

There is little support for the contention that banks were prevented by transaction or information costs from lending outside their immediate neighborhoods. Most California counties encompass a large geographical area, and banks loaned outside their home county with great frequency. Even as early as 1878, 67 percent of the banks were lending outside their home territory, and 30 percent listed real estate loans in at least five different counties. The data rather conclusively dispel the image of the rural banker limited to allocating his funds between the local farmers and the big city banks. (See Table 4.)

The data do not, however, support the contention that the market improved over time. Lending to other counties should increase as developments in transportation and communication facilitate loans on distant property. Except for 1889 and 1905, the percentage of banks lending in only the home county remains constant. In 1905, more banks loaned in only one county, although the percentage drops if the newer banks in the very large southern counties are excluded. This indicates increased self-sufficiency of counties rather than increased lending among areas.

The number of banks in each region has often been used as a measure of monopoly power.[4] In this study, the number of banks making real estate loans on property in each county was determined from the reports of the banks. It is apparent that Californians were not restricted to borrowing from the neighborhood bank. Although many counties had only one bank, few counties show loans on real estate from only one source (see Table 5). The estimated number of loans originating from outside the county ranged from 71.6 percent to 82.1 percent of the total number of loans estimated for the six sample years between 1878 and 1905. (See Table 6.)

Although the percentage of the total loan funds from banks outside the county is uniformly lower than the percentage of lenders, it is also consistently significant. The average percentage of loan funds reported as originating outside the county ranges from 68.1 percent to 49.9 percent over the

Table 4. Real Estate Lending by California Banks According to Number of Counties, 1878–1905

Year	Number of banks reporting loans in 1 county	2 counties	3 counties	4–10 counties	11–20 counties	More than 20 counties
1878	26 (33%)	17	6	22	6	3
1884	28 (32%)	12	21	20	7	0
1889	81 (48%)	31	14	31	9	4
1894	94 (37%)	51	39	50	14	6
1899	79 (34%)	56	34	52	10	0
1905	159 (46%)	78	32	62	8	4
1905 (without southern counties)	(40%)					

six-year sample. Most counties received more than 50 percent of their funds from banks in other counties. (See Table 7.)

The study of intracounty real estate lending does not reveal a pattern consistent with the Sylla model. Rural bankers could not maintain monopoly power against this large amount of lending from banks in other parts of the state, and, at least in real estate lending, capital funds seem to have moved chiefly from urban to rural areas, rather than the reverse. The study of real estate lending also reveals the danger of using traditional measures of bank concentration, which assume that lending sources are limited to local banks.

Other tests also cast doubt on the appropriateness of the Sylla model for California. It does not appear that California state banks were kept from joining the national banking system by the high capital requirements, for 80 percent of the state banks would have been able to meet them in 1879. Sylla theorizes that the mechanism for channeling funds from rural to urban

Table 5. California Counties with Only One Real Estate Lending Source, 1878-1905

1878	1884	1889	1894	1899	1905
8 (15.4%)	7 (13.5%)	4 (7.5%)	2 (3.5%)	1 (1.8%)	3 (5.3%)

Table 6. Average Percentage of Lenders Located Outside County, 1878-1905

1878	1884	1889	1894	1899	1905
82.1%	73.5%	71.0%	74.3%	76.8%	71.6%

Table 7. California Counties Receiving More Than Half Their Real Estate Loan Funds from Outside the County, 1878-1905

1878	1884	1889	1894	1899	1905
69.8%	67.4%	61.7%	63.5%	78.8%	49.1%

areas is the rural banker's deposit in city banks, and he predicts that rural as opposed to urban bankers would have held a larger percentage of their assets in the form of deposits at other banks.[5] In California, the balance statement item "funds due from other bankers" as a percentage of total assets is virtually identical for urban and rural banks in 1889 and 1899.

If the rural areas were characterized by monopolist bankers, and if competitive conditions existed in urban areas, then rural bankers should show a higher level of profit than their urban counterparts. An estimated profit margin can be determined by comparing the interest received on loans with the interest paid on deposits. In 1889, 23 savings banks supplied information sufficient to estimate profit margins. The interest received on loans was estimated for each bank by dividing gross earnings by earning assets. The average rate of interest paid on deposits was calculated from information supplied by the banks. The difference between the interest on loans proxy and the interest paid is the gross profit margin. These gross profit margins were grouped by bank location, and average profit margins of

the groups were compared. For 1889, there were no significant differences. (See Table 8.)

The tests were repeated with data reported by savings banks in 1899. With the increased number of banks reporting that year, 50 profit margins were calculated. Comparison of profit in the reputedly most competitive area, San Francisco, with the remainder of the state reveals higher profit rates in rural areas, but the difference is not significant at the 90 percent level of confidence. When the definition of urban areas is broadened to include Los Angeles, and then Oakland and Alameda, the differences become significant. When Los Angeles is compared with the rural banks in Southern California, the differences in mean profit rates are not significant.

These comparisons among regions reveal differences significant to the monopoly hypothesis only if the costs of servicing loans and deposit accounts are similar in urban and rural areas; there is strong indication that this is not the case. Banks may have economies of scale for both the size of loans and deposit accounts. No information exists on loan size, but in 1899 banks reported the average deposit per account. It is evident that urban banks had higher average deposits than did rural ones. Comparison of the average, by area, of the reported deposit sizes reveals significantly larger deposits in the urban areas, which had lower gross profit margins. (See Table 9.) Therefore, the apparent differences in gross profit could have been caused by differences in cost and do not necessarily support the hypothesis of rural monopolies.

This study adds little support to Davis's hypothesized improvement in the capital market during the late nineteenth century. An improvement would be indicated by declining differences in interest rates throughout the state and by increased capital flows to areas in which interest rates are higher. This study of California does not indicate a trend of this type. There is some hint of a decline in interest rate differentials when the Davis proxy is used,

Table 8. Difference in Mean of Average Profit Margins for California Banks, 1889 and 1899

Groups compared	t value 1889	1899
San Francisco versus all other	-0.77	-1.44
San Francisco and Los Angeles versus all other	1.72	*-1.90
Bay Area plus Los Angeles versus all other[a]	0.47	*-2.03
Los Angeles versus other Southern California	--	-0.26

* : Difference significant at the 90 percent level of confidence.
[a]Bay Area includes San Francisco, Oakland, and Alameda.

Table 9. Difference in Mean of Average Deposits in California, 1899

Groups compared	t value
San Francisco versus all other	*4.95
San Francisco and Los Angeles versus all other	*3.25
Bay Area and Los Angeles versus all other[a]	*3.34
Los Angeles versus other Southern California	*1.96

* : Difference significant at the 90 percent level of confidence.
[a]Bay Area includes San Francisco, Oakland, and Alameda.

but the trend is not revealed in differences in interest paid to depositors. The real estate study does not indicate increasing mobility of capital. Funds flowed throughout the state with comparative ease in all years studied.

Although the tests do not disprove the Sylla model, they do raise some strong doubt about its validity. When combined with other works also critical of Sylla,[6] the results discussed here can be seen as part of a growing body of evidence against the accuracy of Sylla's portrayal of the U.S. financial structure in the late nineteenth century.

NOTES

1. Lance Davis, "The Investment Market, 1870-1914: The Evolution of a National Market," Journal of Economic History 25 (September 1965): 355-99; Richard Sylla, "Federal Policy, Banking Market Structure, and Capital Mobilization in the United States, 1863-1913," Journal of Economic History 19 (December 1969): 657-86; and Gene Smiley, "Interest Rate Movement in the United States, 1888-1913," Journal of Economic History 35 (September 1973): 591-620.

2. Davis, "Investment Market," pp. 392-93.

3. Sylla, "Federal Policy," pp. 657-60.

4. John James uses this measure in "Banking Market Structure, Risk, and the Pattern of Local Interest Rates in the United States 1893-1911," Review of Economics and Statistics 58 (November 1976): 453-62.

5. Sylla, "Federal Policy," p. 680.

6. Richard H. Keehn, "Federal Bank Policy, Bank Market Structure and Bank Performance: Wisconsin, 1863-1914," Business History Review 48 (Spring 1974): 1-27; James, "Banking Market Structure"; and Smiley, "Interest Rate Movement."