
FRBSF WEEKLY LETTER

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Geographic Deposit Competition

In this *Letter*, we summarize several pieces of empirical evidence on the geographic scope (i.e., the size) of deposit markets for money market deposit accounts (MMDAs) and Super NOW accounts. In particular, we focus on whether the competition for these two types of deposit accounts is statewide or confined within metropolitan areas.

Knowing a deposit market's geographic scope is important because it is a key influence on the degree of competition for deposits, and thus the level of deposit rates, in a market. If markets were small in scope — limited to metropolitan areas or towns, for example — competition might be limited, at least in areas with very few banks. However, if deposit markets were statewide in scope, deposit competition in states with a large number of banks likely would be intense even in towns with only a few banks because each bank would be in competition with every other bank in the state.

The definition of a market

In a geographic deposit market, the forces of supply and demand interact to determine the deposit interest rate, fees or other nonrate terms, service levels, and the quantity of deposits in that market. Depositors supply deposit funds to earn interest (and to receive services) and banks demand funds to make loans. Within a deposit market, arbitrage will tend to force banks' deposit rates toward uniformity. Thus, if two regions were in the same market, interest rates in the two areas would tend to be equal.

A market includes the suppliers (depositors) and demanders (depository institutions, hereafter referred to as banks) that are important components of the determination of deposit rates. For example, if depositors at location A found banks at locations B and C to be equally convenient, then locations A, B and C would be in the same market because banks at locations B and C would have to compete with one another for deposits from location A. In economic terms, banks in locations B and C would be good substitutes for the depositors in location A.

However, even if depositors found only banks near them to be good substitutes, deposit markets would not necessarily be small. Entry and threat of entry by banks not currently in the area, competition by nondepository institutions (such as money funds) offering substitute services, or competition by institutions on the border of a region may result in a significant degree of competition among local areas even though these local "markets" are somewhat insulated from one another. Thus, the behaviors of both banks and depositors play key roles in determining the size of deposit markets.

For some types of deposits, such as those with a large transaction service component (e.g., the Super NOW), a depositor may consider only banks within a small region to be good substitutes. Markets for transaction accounts are likely to be smaller than for other types of accounts because of the high value depositors may place on the convenience of local banks' check clearing, depositing, and cashing services. Thus, the supply of these types of deposits may be local. However, as discussed above, a local supply of deposits alone does not mean the deposit market itself is necessarily local.

An analysis of markets

Most previous researchers studying competition in retail banking have assumed that deposit markets are local — a local market being proxied by a metropolitan area. However, at least in states that permit unrestricted branching, we think that competition for some types of deposits may take place in statewide markets.

Through a survey, we have determined that virtually all multiple-branch banks in the West pay common rates on deposits at all branches. This suggests that either there are no local differences in competition or, even if there were, banks with large branch networks do not find it worthwhile to exploit them. One reason why it may not be worthwhile to pay different rates at different branches is that a depositor can open an account at the branch with the highest rate yet use deposit and transaction services at the most convenient branch. Such uniform pricing by several of the large

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banks with branches in many areas may make it unprofitable for other banks to price differently. However, since branching across state lines is not currently permitted, markets in different states may be somewhat insulated from one another.

Within a deposit market, supply and demand determine the deposit interest rate. Thus, a difference in the levels of deposit interest rates in two areas suggests the areas are in separate markets (because either supply or demand is different). Likewise, since shifts in either supply or demand within a market would affect all banks' deposit interest rates similarly, deposit rates within a market should be more highly correlated with one another than with rates in other markets. In our analysis of the geographic scope of deposit markets, we looked at both sorts of evidence.

Our study is based on an analysis of explicit deposit interest rates on MMDAs and Super NOWs — two accounts that have been free of interest ceilings since their inceptions and which now account for 21 and 2 percent of total domestic deposits, respectively. (A more detailed analysis appears in this Bank's 1985 Summer *Economic Review*.) The data are from a monthly Federal Reserve survey of 59 commercial banks in the Twelfth Federal Reserve District.

Charts 1 and 2 summarize how deposit rates at the state level and at the metropolitan area level within California behave for the MMDA and Super NOW accounts, respectively. We used the Rand McNally definition of metropolitan areas known as RMAs.

For the MMDA, there are some differences in the level as well as the time pattern of rates among western states. Both suggest that MMDA markets are not larger than states. Hawaii, in particular, with a low and relatively constant rate, appears to be in a different market. Statistical analysis of these data confirms that the differences in the average level of MMDA rates among the states are statistically significant, even with Hawaii excluded.

However, as Chart 1 Panel B shows, there are virtually no differences in the average level of MMDA rates among RMAs (an average of rates paid by all banks with offices in an RMA) in California. Moreover, MMDA rates among California RMAs

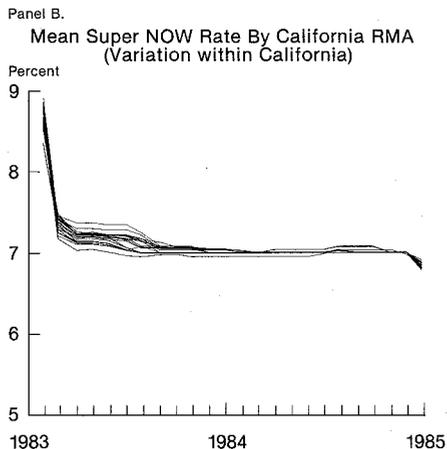
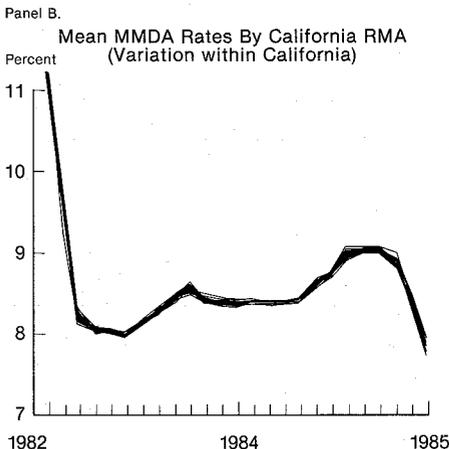
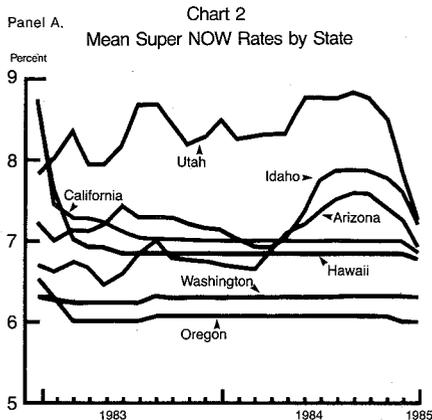
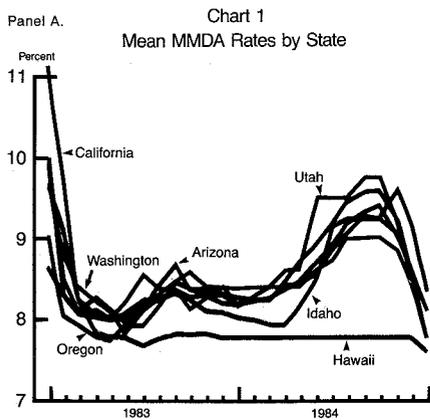
are almost perfectly correlated with one another and evidence not presented in the charts indicates that they are much more highly correlated with one another than with rates in RMAs outside the state. This is further evidence of statewide but not local MMDA deposit markets. In sum, for the MMDA, we find no evidence of local markets but strong evidence of statewide markets.

For the Super NOW (see Chart 2), differences in the level of rates among the states is staggering, averaging a difference of over 200 basis points between the highest and lowest. Moreover, there is a marked difference in the time pattern of rates among the states, that is, mean rates in each state are not highly correlated with mean rates in the other states. Thus, the evidence suggests that Super NOW markets also are not larger than states.

However, as Chart 2 Panel B shows, there are apparent differences in the level of Super NOW rates among RMAs in California, especially during the February-September 1983 period. Statistical analysis confirms these differences are significant. Thus, these inter-RMA differences in rates suggest the markets for Super NOWs are local. However, as Chart 2 shows, the rate differences among RMAs are small compared to the interstate differences. Thus, although there may be distinct local markets for Super NOWs, there is apparently a much higher degree of competition among them than among the states.

Service competition

The analysis of markets illustrated by Charts 1 and 2 is based solely on explicit deposit rates. However, competition in the services offered (non-rate competition) also may be important, especially for transaction accounts. Since we are unable to measure service competition, it is possible that differences in the total return (implicit plus explicit) to depositors would be either larger or smaller than the differences in explicit rates shown in the chart. Moreover, differences in fees or minimum balances (which we do not observe) also could lead to either larger or smaller differences in true (net of fees) deposit rates than in the explicit rates we observed. However, as long as nonpriced service levels or fees do not vary rapidly over time relative to explicit rates, the correlation of rates within relative to among areas would not be affected.



Conclusions

Both differences in levels and differences in the time patterns of MMDA and Super NOW rates among western (Twelfth Federal Reserve District) states suggest that the markets for both of these deposit accounts are no larger than states.

For the Super NOW, there are also small (but statistically significant) differences in rates among California RMAs, which suggest Super NOW deposit markets may be local, although these differences could be due to unmeasured differences in fees or service competition. This suggests that if differences in explicit rates are due to the existence of local Super NOW markets, these local markets are not well insulated from one another. However, the differences in rates among RMAs are much smaller than the interstate differences.

For the MMDA, we find no evidence of local deposit markets — mean rates are virtually the same in all California RMAs, are almost perfectly corre-

lated with one another, and are more highly correlated with one another than with rates in other states. Thus, it appears there is a higher degree of competition among California RMAs for MMDA deposits than for Super NOW deposits, perhaps because the supply of transaction deposits is more local than savings deposits.

These results may not be surprising given the unrestricted statewide branch banking in California and the uniform pricing by multiple branch banks. In California especially, where the five largest banks have huge branch networks and are represented in virtually all of the RMAs, it is likely that competition among RMAs would be intense. Moreover, if unrestricted branching within a state does in fact lead to statewide MMDA deposit markets, then regional or nationwide MMDA deposit markets. Thus, as interstate banking progresses, we would expect to see MMDA deposit markets expanding geographically.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount	Change	Change from 8/22/84	
	Outstanding 8/21/85	from 8/14/85	Dollar	Percent ⁷
Loans, Leases and Investments ^{1 2}	192,372	241	11,530	6.3
Loans and Leases ^{1 6}	173,870	307	11,916	7.3
Commercial and Industrial	50,490	- 174	1,277	2.5
Real estate	64,285	79	3,426	5.6
Loans to Individuals	35,368	74	6,074	20.7
Leases	5,426	6	387	7.6
U.S. Treasury and Agency Securities ²	11,501	- 103	- 349	- 2.9
Other Securities ²	7,001	38	- 36	- 0.5
Total Deposits	196,711	- 1,323	8,750	4.6
Demand Deposits	45,751	- 1,155	2,698	6.2
Demand Deposits Adjusted ³	31,095	46	3,226	11.5
Other Transaction Balances ⁴	13,637	- 351	1,443	11.8
Total Non-Transaction Balances ⁶	137,322	183	4,608	3.4
Money Market Deposit Accounts—Total	44,880	- 151	7,181	19.0
Time Deposits in Amounts of \$100,000 or more	38,104	148	- 3,074	- 7.4
Other Liabilities for Borrowed Money ⁵	22,103	- 232	2,713	13.9
Two Week Averages of Daily Figures	Period ended 8/12/85	Period ended 7/29/85		
Reserve Position, All Reporting Banks				
Excess Reserves (+)/Deficiency (-)	12	67		
Borrowings	59	19		
Net free reserves (+)/Net borrowed(-)	- 46	47		

¹ Includes loss reserves, unearned income, excludes interbank loans

² Excludes trading account securities

³ Excludes U.S. government and depository institution deposits and cash items

⁴ ATS, NOW, Super NOW and savings accounts with telephone transfers

⁵ Includes borrowing via FRB, TT&L notes, Fed Funds, RPs and other sources

⁶ Includes items not shown separately

⁷ Annualized percent change