Staff Paper Series

Staff Paper P73-19 July 1973

MINNESOTA'S BANK STRUCTURE

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STAFF PAPER P73-19 JULY 1973

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Staff Papers are published without formal review within the Department of Agricultural and Applied Economics.

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I. The Evaluation of Bank Structure

To properly estimate the impact of a particular bank structure, one must keep in mind the special characteristics which distinguish banks from other firms, for it is the special function of financial intermediation (and money creation) that makes the performance of banks crucial to the well-being of the entire community. Thus, if this or that firm does not perform up to its potential, the impact is a loss of jobs and income that might otherwise be generated. However, when the banking system does not perform up to its potential, the impact is much more serious and complex in that the well-being of the entire community depends on the financial resources which banks and other financial institutions provide. Although the traditional methods of evaluating performance, cost efficiency, service dimension and market structure must be analyzed, these cannot be separated from the fundamental issue of the role of banks in the development of the community.

In terms of evaluating a particular bank structure, the current unit banking structure of Minnesota, one is really asking the question of how a change in bank structure would change bank performance both individually and collectively. In other words, the cost of the current system is measured by the improvement in performance that would occur under alternative structures. This is dependent on two interpretations: (1) that of banking performance and (2) that of bank structure.

The determination of optimal performance -- a standard against which we can judge any system -- is a function of what objectives are desired. In the case of banking, at least two perspectives can be identified. From the social perspective, there are four goals: (1) productive efficiency, (2) allocative neutrality, (3) absence of exploitation of consumers or suppliers of inputs and (4) responsivity to changes in technology and in the demand for banking services. Under these conditions, the banking market would be performing perfectly and any economic patterns observed such as differential rates of growth in income are the result of factors operating outside the banking community. However, when banking performance is less than perfect, it influences, in its allocative function, the flow of goods and services and thus relative economic development. It is in this sense that poor banking performances is of significance to us.

The banking industry has another perspective, and that is to maintain competitiveness with other financial institutions and profitability of banking. In the case that banks are performing ideally, there is no conflict apparent or real between the social objectives of banking and that of the banking community. However, when banking performance is less than ideal potential conflicts can arise because of the uncertainty introduced by changes in the existing structure. However, as I will show, the long range implications of poor banking performance are just as severe for bankers as for the public.

Thus the issue of evaluating a bank structure reduces to the question of in what ways does the current banking structure prevent the achievement of either the social or private objectives for banking.

To determine this, we will examine the trends in banking in Minnesota over the last decade as well as evaluate the evidence and arguments in favor of a change in banking structure.

II. Minnesota's Bank Structure

In this section, several ways of evaluating Minnesota's bank structure will be investigated. These are of two kinds: (1) those that directly relate to the performance of the banking system and (2) those that relate to the economic environment of Minnesota. Each of these will be dealt with in turn.

A. Population Per Bank Office

Although Minnesota is well below the average of population per bank office nationally, this is largely explained by the demographic pattern of our state. From 1960 to 1970, when the total population increased by ten percent, 49 out of the 87 counties in Minnesota had net decreases in population. At the same time, the seven counties of the Twin Cities Metropolitan area had an average county increase of 43 percent.

Between 1960 and 1971 the number of banking offices increased from 679 to 726, an increase of less than seven percent. Over the same period, although Minnesota averaged approximately 20% more bank offices per capita than the U.S. average, the Twin Cities metropolitan area had less than half that number (see Table 1). Further, comparing the number of bank offices per capita of large unit banking cities such as the Twin Cities, Chicago, Denver and Houston against large branching cities such as Los Angeles, Phoenix

TABLE 1

POPULATION PER FULL-SERVICE
COMMERCIAL BANKING OFFICE

State, Area or City	Banking Structure	Persons Per Office
United States		6,000
Minnesota	Unit	4,914
Colorado	Unit	9,111
Montana	Unit	5,140
Nebraska	Unit	3,319
North Dakota	Unit	3,639
South Dakota	State-wide branching	3,051
Idaho	State-wide branching	4,181
Arizona	State-wide branching	5,862
California	State-wide branching	6,117
Twin Cities metropolitan area	Unit	12,792
Balance of Minnesota	Unit	3,139
Chicago	Unit	23,440
Denver	Unit	11,922
Houston	Unit	13,813
Sioux Falls	Branching	3,850
Los Angeles	Branching	7,857
Phoenix	Branching	5,801
Portland	Branching	7,800

Source: Eugene H. Adams;
Bureau of the Census;
FDIC Annual Report, 1967;
Minnesota Department of Health Estimates; and
Polk's World Bank Directory, 1969.

and Portland, the same magnitude of difference occurs: unit banking cities have approximately twice the population per bank office as branching cities (14,000 to 7,000 respectively).

Although one would expect there to be some difference between rapidly growing population areas and declining population areas, the very large differences noted above imply a serious lack of adaptability of unit systems. The reasons for this is readily apparent. Bank chartering agencies are extremely conservative in allowing the creation of new banks. This is somewhat understandable since they are acting to minimize the possibility of bank failure. On the other hand, they are less likely to restrict the opening of a branch office, since the likelihood of a single branch office bankrupting an entire system is very small. This is reflected in the fact that as of April 1969, there were 30 communities in the Twin Cities area with population greater than 1000 with no commercial bank (see Table 2).

This leads to the fundamental issue of bank entry and competition. It can be argued that potential competition as well as actual competition is a stimulus to improved performance. However, unit banking systems, by their very nature, tend to be very restrictive of bank entry and thus reduce potential competition to a minimum. However, the restrictions on entry in branching systems is much less severe. This is undoubtedly one reason why banks tend to perform better in an environment where branching is permitted than where it is not.

1/ I will return to this point in Section V when I consider branch banking performance more explicitly.

TABLE 2

TWIN CITIES METROPOLITAN AREA
CITIES AND VILLAGES OVER 1,000 POPULATION
WITH NO COMMERCIAL BANK

	1960	4/1/69
Anoka County		
Blaine[a]	7,577	18,672
Circle Pines	2,789	3,764
East Bethel	1,408	2,296
Hilltop	607	1,099
Lino Lakes	2,329	3,409
Dakota County		
Apple Valley	585	6,871
Burnsville[b]	2,716	17,402
Inver Grove Heights	6,466	11,552
Mendota Heights[c]	5,028	6,552
Hennepin County		
Brooklyn Park	10,197	22,661
Champlin	1,271	2,529
Corcoran	1,237	1,454
Deephaven	3,286	3,593
Eden Prairie	3,233	6,581
Independence	1,446	2,123
Maple Grove	2,213	5,377
Medina	1,472	2,293
Minnetrista	2,211	2,873
New Hope[d]	3,552	20,380
Orono	5,643	6,459
Plymouth[e]	9,576	17,054
Shorewood	3,197	4,078
Spring Park	668	1,212
Tonka Bay	3,219	4,349

TWIN CITIES METROPOLITAN AREA
CITIES AND VILLAGES OVER 1,000 POPULATION
WITH NO COMMERCIAL BANK
(continued)

	1960	4/1/69
Ramsey County		
Arden Hills	3,930	5,103
Lauderdale	1,676	2,663
Little Canada	3,512	3,692
Maplewood	18,519	24,666
Moundsview	6,416	8,991
North Oaks	803	1,608
Shoreview	7,157	10,159
Vadnais Heights	2,459	3,113
Washington County		
Cottage Grove[f]	4,850	12,113
Mahtomedi	2,127	2,480
Oakdale	4,297	7,648
Oak Park Heights	914	1,072
Oneka Township	898	1,653
St. Paul Park	3,267	5,506
Woodbury	3,014	5,863

[a]Application received for state bank charter - April 10, 1969.
[b]Application received for state bank charter - November 20, 1969.
[c]Application received for state bank charter - July 29, 1968.
[d]Application received for state bank charter - January 7, 1969.
[e]Application received for state bank charter - August 20, 1969.
[f]National bank charter approved.

Source: Bureau of Census and Metropolitan Council Estimates.

B. Size and Efficiency of Banking

A second major issue facing the Minnesota banking system is the very substantial percentage of small banks. In 1971, 523 of the 726 banks had on average substantially less than ten million dollars in deposits (see Table 5). Although the studies differ as to the optimal bank size, they all agree that there are very substantial economies to be obtained up to the ten million deposit size (see Greenbaum, p. 38).

This very large number of small banks which dominate rural banking in Minnesota has the following implications for bank performance. The increasing scale of agriculture, the largest category of rural borrower, with 54 and 35 percent of the loans in the smallest population classes in 1971 (Table 5), not only requires a larger total credit demand, but also a larger average credit demand. The very low loan limits of small rural banks make it exceedingly difficult for small banks to finance commercial agricultural units. Further, the smaller banks cannot afford to provide specialize personnel and service. Thus, for instance, it has been estimated that fewer than 10 percent of rural banks in Minnesota have trained agricultural loan officers. It becomes exceedingly difficult to provide managerial and financial analysis assistance to their rural customers and they are unable to utilize the very large body of computer programs for financial analysis. In this way, it became increasingly difficult to evaluate loan applications on the basis of the merits of the investment and its

Table 3

RATIOS DERIVED FROM 1960 CALL AND INCOME REPORTS CHARACTERIZED BY POPULATION CLASS OF BANK LOCATION FOR COMMERCIAL BANKS IN MINNESOTA*

	SIZE OF COMMUNITY					
	0-999	1-4999	5-9999	10000+	R. City	Total Minnesota
PERCENT OF TIME TO TOTAL DEPOSITS	51.77	49.69	45.36	41.77	16.69	48.73
PERCENT OF TOTAL LOANS TO TOTAL DEPOSITS	49.82	47.22	48.50	50.50	53.19	49.06
PERCENT OF TOTAL LOANS REAL ESTATE LOANS	20.01	22.42	37.88	39.23	16.86	25.17
AGRICULTURAL LOANS	60.23	38.30	24.41	6.31	.38	41.59
COMMERCIAL LOANS INCLUDING OPEN MARKET PAPER	6.43	9.21	13.49	19.89	43.18	10.27
LOANS TO INDIVIDUALS	12.26	18.74	23.00	38.29	23.08	18.05
INTEREST AND DISCOUNT ON LOANS	6.11	5.99	6.10	5.94	5.78	6.04
NUMBER OF BANKS IN THIS GROUP	303	207	55	107	6	678

*SOURCE: Federal Reserve Bank of Minneapolis

NOTE: Ratios are derived on a per bank basis

Table 4

RATIOS DERIVED FROM 1968 CALL AND INCOME REPORTS CHARACTERIZED BY POPULATION CLASS OF BANK LOCATION FOR COMMERICAL BANKS IN MINNESOTA

	SIZE OF COMMUNITY					
	0-999	1-4999	5-9999	10000+	R. City	Total Minnesota
PERCENT OF TIME TO TOTAL DEPOSITS	59.14	58.51	57.99	55.69	34.86	58.01
PERCENT OF TOTAL LOANS TO TOTAL DEPOSITS	49.25	48.81	51.71	56.30	59.88	50.68
PERCENT OF TOTAL LOANS						
REAL ESTATE LOANS	19.05	30.68	37.51	36.04	15.83	27.02
AGRICULTURAL LOANS	53.78	34.15	18.87	4.17	1.00	35.73
COMMERCIAL LOANS INCLUDING OPEN MARKET PAPER	9.21	13.08	17.76	22.94	42.01	13.83
LOANS TO INDIVIDUALS	16.86	28.63	24.58	30.12	18.09	20.99
INTEREST AND DISCOUNT ON LOANS	6.88	6.61	6.66	6.44	6.12	6.69
NUMBER OF BANKS IN THIS GROUPS	311	214	59	128	7	719

*SOURCE: Federal Reserve Bank of Minneapolis

NOTE: Ratios are derived on a per bank basis

Table 5

RATIOS DERIVED FROM 1971 CALL AND INCOME REPORTS CHARACTERIZED BY POPULATION CLASS OF BANK LOCATION FOR COMMERCIAL BANKS IN MINNESOTA

	SIZE OF COMMUNITY					
	0-999	1-4999	5-9999	10000+	R. City	Total Minnesota
DEPOSITS/BANK OFFICE (IN MILLIONS OF DOLLARS)	3.355	7.794	15.303	24.434	321.461	14.501
PERCENT OF TIME TO TOTAL DEPOSITS	62.87	61.29	57.92	56.24	33.74	60.47
PERCENT OF TOTAL LOANS TO TOTAL DEPOSITS	82.67	52.60	53.31	56.43	62.82	53.50
PERCENT OF TOTAL LOANS						
REAL ESTATE LOANS	19.32	29.10	38.86	37.14	14.12	26.86
AGRICULTURAL LOANS	54.47	33.50	18.02	3.62	0.92	41.64
COMMERCIAL LOANS INCLUDING OPEN MARKET PAPER	10.90	15.89	18.74	25.92	47.87	16.19
LOANS TO INDIVIDUALS	18.96	22.01	27.66	32.88	17.81	23.17
INTEREST AND DISCOUNT ON LOANS	7.39	7.35	7.37	7.48	6.64	7.38
NUMBER OF BANKS IN THIS GROUP	309	214	60	136	7	726

* SOURCE: Federal Reserve Bank of Minneapolis

NOTE: Ratios are derived on a per bank basis

potential return. Personal association and security agreements become the important criteria for loans. This has the net effect of restraining innovative individuals in favor of those more firmly established.

One further attribute of small banks which severely limits their ability to serve their community relates to their limited capacity to obtain and utilize non-local resources. Several factors enter into this: (1) there is a large fixed investment in time involved in learning how to utilize national money markets; (2) funds obtained on the Federal Funds and other national markets are usually in large fixed denominations which are generally more than a small local bank can utilize effectively at any one time; and (3) funds from correspondent banks usually require compensating balances and are obtained at such a high cost that the return to the local banker is substantially below what he normally receives.

C. Loan-to-Deposit Ratios

This leads us into a discussion of the loan-to-deposit ratio of Minnesota banks. The loan-to-deposit ratio, the percent of total deposits used for loans, is the single most important measure of bank performance. Later in the report, I will analyze the direct connection between lending performance and economic growth. At this point, I will outline the underlying reason for this assertion.

Deposits are one of the financial assets in which a community holds its surplus resources, that is savings. When a bank loans funds to a local enterprise or individual, these savings resources are introduced into the income stream of the community either by an investment say for agriculture or business or to an individual for consumption purposes. In either case, the resources are used for increasing the demand for or supply of local business. This has the net effect of increasing employment and income in the local community. On the other hand, if the local bank uses the savings resource for the purchase of government securities, the local savings are lost to the community and the income generating mechanism is never initiated. This is always a relative process since all banks have portfolios with both loans and securities.

One other element of analysis must be made clear. Under conditions of perfect financial markets, we would expect rates of interest and operating ratios to be identical. Thus, the existence of differentials in operating ratios is one means of detecting imperfections in the market.

Tables 3 to 5 present evidence on Minnesota's bank portfolios for December 1960, 1968, and 1971. Notice that although there have been some changes over the period, the basic pattern is unchanged. The loan-to-deposit ratios of banks in the larger sized towns (more than 10,000 population) and the Reserve City banks consistently exceed that of the banks in smaller towns. Tables 6 and 7 summarize these differences for the four states of the Upper Midwest region over the period, holding bank category (holding affiliate and other independent banks) and time constant. Banks in the 10,000 plus category had an average 6.5 percent higher and Reserve City banks

TABLE 6

AVERAGE PERCENT CHANGE BETWEEN 0-999 AND 10000+ , CHARACTERIZED BANK DATA
FOR THE NINTH FEDERAL RESERVE DISTRICT HOLDING TIME AND BANK CATEGORIES CONSTANT

	MONTANA	S. DAKOTA	N. DAKOTA	MINNESOTA
PERCENT OF TOTAL ASSETS				
GOVERNMENT ASSETS	-6.71	-11.26	-5.97	-8.08
OTHER SECURITIES	-6.60	-.67	-4.84	-1.75
LOANS (NET)	10.29	8.07	6.16	5.58
CASH ASSETS	.49	2.93	2.70	2.84
REAL ESTATE ASSETS	1.44	.60	1.23	.87
ALL OTHER ASSETS	1.08	.34	.65	.53
PERCENT OF TIME TO TOTAL DEPOSITS	2.28	6.16	1.28	-4.76
PERCENT OF TOTAL LOANS TO TOTAL DEPOSITS	12.06	7.71	6.00	6.34
PERCENT OF TOTAL LOANS				
REAL ESTATE LOANS	13.79	18.66	19.76	21.29
SECURED BY RESIDENTUAL PROPERTY	10.67	14.16	15.37	16.65
SECURED BY OTHER PROPERTIES	3.12	4.50	4.38	4.64
FINANCIAL LOANS	2.46	1.70	1.78	2.87
AGRICULRURAL LOANS	-48.42	-45.12	-59.17	-58.94
LOANS TO FARMERS	-43.02	-41.71	-49.71	-48.82
REAL ESTATE LOANS SECURED BY FARMLAND	-5.39	-3.41	-9.46	-10.12
COMMERCIAL LOANS INCLUDING OPEN MARKET PAPER	13.03	11.20	16.52	14.94
LOANS TO INDIVIDUALS	18.83	13.70	20.45	19.30
OTHER LOANS	.71	1.11	.86	.60
ALL OTHER LOANS	.30	-.14	.66	.54
VALUATIONS RESERVE	.41	1.25	.20	.06
INTEREST AND DISCOUNT ON LOANS	-.37	-.31	.06	-.30

TABLE 7

AVERAGE PERCENT CHANGE BETWEEN 0-999 AND R. CITY , CHARACTERIZED BANK DATA
FOR THE NINTH FEDERAL RESERVE DISTRICT HOLDING TIME AND BANK CATEGORIES CONSTANT

	MONTANA	S. DAKOTA	N. DAKOTA	MINNESOTA
PERCENT OF TOTAL ASSETS				
GOVERNMENT ASSETS	-3.30	0.00	0.00	-18.28
OTHER SECURITIES	-11.44	0.00	0.00	-6.21
LOANS (NET)	-.37	0.00	0.00	7.93
CASH ASSETS	9.80	0.00	0.00	15.09
REAL ESTATE ASSETS	4.96	0.00	0.00	.33
ALL OTHER ASSETS	.37	0.00	0.00	.97
PERCENT OF TIME TO TOTAL DEPOSITS	-9.53	0.00	0.00	-26.74
PERCENT OF TOTAL LOANS TO TOTAL DEPOSITS	.79	0.00	0.00	9.90
PERCENT OF TOTAL LOANS				
REAL ESTATE LOANS	13.51	0.00	0.00	-.91
SECURED BY RESIDENTUAL PROPERTY	8.17	0.00	0.00	-2.40
SECURED BY OTHER PROPERTIES	5.34	0.00	0.00	1.49
FINANCIAL LOANS	3.99	0.00	0.00	14.53
AGRICULRURAL LOANS	-55.10	0.00	0.00	-63.50
LOANS TO FARMERS	-51.07	0.00	0.00	-52.58
REAL ESTATE LOANS SECURED BY FARMLAND	-4.02	0.00	0.00	-10.92
COMMERCIAL LOANS INCLUDING OPEN MARKET PAPER	8.56	0.00	0.00	34.62
LOANS TO INDIVIDUALS	27.14	0.00	0.00	9.38
OTHER LOANS	2.94	0.00	0.00	5.96
ALL OTHER LOANS	1.89	0.00	0.00	5.88
VALUATIONS RESERVE	1.05	0.00	0.00	.08
INTEREST AND DISCOUNT ON LOANS	.30	0.00	0.00	-.74

had 10 percent higher loan-to-deposit ratios than banks in towns of less than one thousand population. This was fairly consistent across the region.

In terms of the portfolio composition, the trends are also fairly straight forward. There is an increase in real estate loans of 21 percent, a decrease in agricultural loans of 59 percent and a corresponding increase in commercial and loans to individuals of 15 and 19 percent respectively as one goes from the 0-999 located banks to the 10,000 plus located banks. The trend for the 0-999 as compared to the Reserve City banks is similar except for real estate category where there is basically no change. This difference is accounted for by the increase in loans of a financial nature and the other loan category.

Table 8 presents the comparison of the operating ratios for the holding affiliate banks and other independent banks holding time and population categories constant. The most surprising result is the very small differences observed for Minnesota. Notice, however, that in the case of South Dakota, the only branching state of the region, that the loan-to-deposit ratio difference is of the same magnitude as between the less than one thousand and greater than 10,000 located banks. This table strongly supports the contention that the holding affiliates are restricted to perform like the other unit banks of the state. The major difference is the locational bias of the holding affiliates to the larger population centers.

The existence of loan-to-deposit ratio differentials is not enough by itself to argue that a change in the existing structure would lead to more uniform and higher loan-to-deposit ratios. It first must be shown that the differences are the results of supply restraints rather than of inadequate demand. As a means of determining this, an estimate of the relationship between the loan-to-deposit ratio and nine call report items was conducted. The results of this estimation are extremely interesting and point to a new interpretation of loan-deposit ratios difference. Of the nine items, only the asset composition, the percent of residential real estate loans and loan interest rate were significant.[2/] The asset composition items need little comment. If you increase loans as a percent of assets, you must decrease other asset items in relative terms. The residential real estate item would provide a partial measure of rural-urban differences, but notice that the coefficient is very small (-.14) and consequently, it has a relatively small affect on the loan-to-deposit ratio.

2/ The regression equation estimated with $R^2 = .989$, and $S = .573$ was:

$$\frac{L}{D}(t) = \underset{(-18.7)}{-.92GS} - \underset{(-17.8)}{1.02OS} - \underset{(-6.7)}{.92CA} + \underset{(.97)}{.04TD} - \underset{(-2.8)}{.14RRE}$$

$$- \underset{(-1.6)}{.06LF} - \underset{(-1.1)}{.09CL} - \underset{(-3.3)}{1.18IL} + \underset{(.6)}{1.5 \times 10^{-6}TA}$$

where GS = government securities, OS = other securities, CA = cash assets (all as a percent of total assets), TD = time to total deposit rate, RRE = residential real estate loans as a percent of total loans, LF = loans to farmers as a percent of total loans, CL is commercial loans as a percent of total loans, IL = the interest rate on loans and TA is total assets per bank.

TABLE 8

AVERAGE PERCENT CHANGE BETWEEN INDEPENDENT BANKS AND HOLDING AFFILIATES, CHARACTERIZED BANK DATA FOR THE NINTH FEDERAL RESERVE DISTRICT HOLDING TIME AND POPULATION CATEGORIES CONSTANT

	MONTANA	S. DAKOTA	N. DAKOTA	MINNESOTA
PERCENT OF TOTAL ASSETS				
GOVERNMENT ASSETS	2.18	-3.84	-.38	-1.00
OTHER SECURITIES	-.77	-.75	-1.00	-.39
LOANS (NET)	.79	5.33	1.84	.69
CASH ASSETS	-1.89	-2.29	-.66	.16
REAL ESTATE ASSETS	-.53	.70	-.10	.12
ALL OTHER ASSETS	.23	.84	.30	.39
PERCENT OF TIME TO TOTAL DEPOSITS	.99	2.28	3.05	-2.24
PERCENT OF TOTAL LOANS TO TOTAL DEPOSITS	1.11	6.25	1.66	.50
PERCENT OF TOTAL LOANS				
REAL ESTATE LOANS	3.88	3.05	.63	-.64
SECURED BY RESIDENTUAL PROPERTY	3.76	3.45	-.05	.32
SECURED BY OTHER PROPERTIES	.12	-.39	.68	-.96
FINANCIAL LOANS	-.94	-.22	-.21	-.08
AGRICULRURAL LOANS	-.18	-3.15	.85	2.63
LOANS TO FARMERS	.66	-.51	1.57	2.84
REAL ESTATE LOANS SECURED BY FARMLAND	-.84	-2.64	-.72	-.21
COMMERCIAL LOANS INCLUDING OPEN MARKET PAPER	-.16	-.49	-.93	.44
LOANS TO INDIVIDUALS	-2.42	.92	-.19	-2.25
OTHER LOANS	.53	.55	1.17	.29
ALL OTHER LOANS	-.19	-.11	-.15	-.11
VALUATIONS RESERVE	.72	.66	1.32	.40
INTEREST AND DISCOUNT ON LOANS	-.07	.39	.41	.06

The last significant variable provides the discriminating test. The interest rate on loans is negative (-1.18) and significant at the one percent level. The negative sign implies that the differences observed in the loan-to-deposit ratio are caused by supply restraints rather than demand restraints, that the estimated equation is a demand rather than supply equation. This result must lead us to conclude that the present banking structure is acting to restrain loan performance.

The implications of this supply restraint can be considered in two ways: first by examining the relative performance of banks to other savings and lendings institutions and secondly, by considering the impact which bank loan performance has on the economic growth of the state.

III. Commercial Banks and Other Financial Institutions

In this section, we will consider three separate comparisons of commercial banks and other financial institutions in Minnesota. First, we will compare the growth in deposits of three types of savings institutions (savings and loan associations, credit unions and Farmers and Mechanics Savings Banks) with that of commercial banks. Second, we will consider the relative position of commercial banks in financing agriculture. And, third, the loan performance and the share of the agricultural loan market in 61 agricultural counties in Minnesota.

A. Deposit Growth: Savings Institutions and Commercial Banks

Table 9 represents the levels and rates of growth of savings institution's deposits compared with that of commercial banks between December 1961 and December 1971. Over this period, although there

Table 9

TOTAL DEPOSITS IN SAVINGS AND LOAN ASSOCIATION,
CREDIT UNIONS, FARMERS AND MECHANICS SAVINGS BANK AND COMMERCIAL BANKS IN MINNESOTA,
YEAR END TOTALS 1961-1971 (IN MILLIONS OF DOLLARS)

YEAR	SAVINGS AND LOAN ASSOC. LEVEL	SAVINGS AND LOAN ASSOC. % CHANGE	CREDIT UNIONS LEVEL	CREDIT UNIONS % CHANGE	FARMERS & MECHANICS LEVEL	FARMERS & MECHANICS % CHANGE	TOTAL SAVINGS LEVEL	TOTAL SAVINGS % CHANGE	COMMERCIAL BANKS LEVEL	COMMERCIAL BANKS % CHANGE
1961	1,420		155		341		1,916		4,495	
1962	1,668	17.5	176	13.5	375	10.0	2,219	15.8	4,814	7.1
1963	1,826	9.5	201	14.2	402	7.2	2,429	9.5	5,043	4.8
1964	1,974	8.1	227	12.9	439	9.2	2,640	8.7	5,611	11.3
1965	2,091	5.9	235	3.5	466	6.1	2,792	5.8	6,045	7.7
1966	2,178	4.2	230	-2.1	470	0.9	2,887	3.4	6,463	6.4
1967	2,340	7.4	246	7.0	504	7.2	3,090	7.0	7,350	13.7
1968	2.479	5.9	246	0.0	535	6.2	3,260	5.5	8,543	16.2
1969	2,570	3.7	273	11.0	554	3.6	3,397	4.2	8,320	-2.6
1970	2,859	11.2	291	6.6	577	4.2	3,727	9.7	9,131	9.7
1971	3,370	17.9	312	7.2	674	16.8	4,356	16.9	10,537	15.4
AVERAGE YEARLY PERCENT CHANGE										
1961-1966		9.03		8.40		6.68		8.63		7.46
1966-1971		9.22		6.36		7.60		8.67		10.50
1961-1971		9.13		7.38		7.13		8.65		8.98

SOURCE BY COLUMN: (1) Home Loan Bank, Des Moine, Iowa
(2) National Credit Union Association, Madison, Wisconsin
(3) Farmers and Mechanics Savings Bank
(4) Federal Reserve Bank of Minneapolis

were some differences between institutions and between the first and second half of the period, there was no basic change in the relative competitive position of banks and these other financial institutions.[3/] However, commercial banks achieved this relative constancy of position by competing more effectively for saving and time deposits. This can be seen in Table 3-5 where the relative share of total deposits increased from 49 percent in 1960 to more than 60 percent in 1971. Thus viewed from this perspective commercial banks are at least maintaining a constant share of the savings market. However, as we will now see, this favorable assessment of bank competitive performance cannot be asserted in all areas.

B. Commercial Banks and the Financing of Agriculture

The one area where banks do not seem to be competing effectively is in the agricultural loan market. Table 10 presents a breakdown of the sources of agricultural debt for the four states of the Upper Midwest. Both the Federal Land Bank and the Production Credit

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3/ However, over the period 1960 to 1971, the holding company affiliates increased their share of Minnesota commercial bank deposits from 59 to 62 percent as follows:

TOTAL DEPOSITS ($1,000,000)

	Holding Affiliates (1)	All Commercial Banks (2)	(1)/(2)x100
1960	2,486	4,177	59
1968	5,309	8,543	62
1971	6,399	10,537	62

TABLE 10

REAL ESTATE AND NON-REAL ESTATE AGRICULTURAL DEBT BY SOURCE OF FUNDS AS OF JANUARY 1, 1971 AND JANUARY 1, 1970 FOR MONTANA, NORTH DAKOTA, MINNESOTA AND FOUR STATE REGION*

		Montana		North Dakota		South Dakota		Minnesota		Four State Region		United States	
		1970	1971	1970	1971	1970	1971	1970	1971	1970	1971	1970	1971
Real Estate Total Amt. ($1,000,000)		537	557	514	539	432	438	1,149	1,157	2,632	2,691	28,387	29,506
Percent Change		3.7		4.5		1.4		0.7		2.21		3.9	
% Distribution:	Federal Land Bank	32.7	33.8	29.5	28.6	36.7	37.8	23.9	24.7	28.7	29.5	23.5	24.2
	Insurance Companies	20.5	19.7	5.1	4.5	20.0	18.6	18.7	17.6	16.6	15.6	20.2	19.0
	Commercial Banks	2.8	2.9	13.5	14.6	6.8	7.3	11.6	12.1	9.4	9.9	14.5	15.0
	Farmers Home Admin.	1.2	.7	2.9	2.0	3.3	2.5	1.2	.9	1.9	1.8	1.6	1.2
	Individuals	42.7	42.9	50.1	50.3	33.3	33.8	44.6	44.7	43.4	43.7	40.2	40.6
Non-Real Estate Total ($1,000,000)		530	619	874	649	749	879	1,260	1,402	3,113	3,549	27,044	29,738
Percent Change		15.8		13.1		17.4		11.3		14.0		10.0	
% Distribution:	Production Cred. Ass.	17.8	19.1	17.5	18.0	11.4	12.2	15.6	16.4	15.3	16.6	16.6	17.8
	Other Finan. Instit.	--	--	.7	.8	.2	.1	.6	.6	.4	.4	.8	.7
	Farmers Home Admin.	3.3	2.6	4.7	4.7	5.0	4.4	2.1	1.9	3.5	3.2	2.9	2.7
	Commercial Banks	37.4	36.6	35.6	34.9	41.9	41.8	41.1	39.5	39.2	38.7	38.2	37.3
	Indiv. & Other[a]	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5
Total Debt		1,067	1,176	1,088	1,188	1,181	1,317	2,409	2,559	5,745	6,240	55,434	59,245
Percent Change		10.2		9.2		11.5		6.2		8.6		6.8	

*Source: Farm Credit Administration, "Farm Real Estate Debt, 1969-1971" and "Non-Real Estate Farm Debt, 1969-1971" Washington, D.C.

a/ Assumed to be equal to national level of 41.5.

Associations increased their percent of the agricultural market over the two years while commercial banks reduced their share of the non-real estate market and increased their share of the real-estate market. On average over the decade of the 1960's, the Farm Credit Institutions have been growing at a rate of almost twice that of commerical banks in Minnesota (14 compared with 8.6 percent). Since agricultural loans accounted for more than .15 percent of total loans on an aggregate basis in December 1970 ($675.8 million compared with 5,473.7 million) and averaged 41.6 percent on a per bank basis, this is obviously a measure for concern.

C. Agricultural Loan Performance and the Loan-to-Deposit Ratios

Looking at the relative breakdown of agricultural debt sources provided one measure of the competitive position of banks in this market. However, what is even more instructive is a comparison of relative performance of PCA's and FLB's with respect to commercial banks in high and low loan-to-deposit ratios counties.

Table 11 presents such a comparison for Minnesota from 1960 to 1968. The magnitude of the results are very substantial. There was more than a twelve percent difference between the high and low loan-to-deposit counties with respect to production loans and a nine percent difference between real estate loans. This provides additional support for the contention that it is supply rather than demand conditions which account for the difference in loan-to-deposit ratios. In those counties where bank lending policies are conservative PCA loans expanded at a much more rapid rate than in

Table 11

Percent Increase in New Farm Loans, Production Credit Associations and Federal Land Banks Compared to Commercial Banks Ranked by Loan-To-Deposit Ratios *

(Sixty-one rural Minnesota counties)**
1960-1968

	% New Farm Production Loans PCA/Banks 1960-1964 (1)	1964-1968 (2)	1960-1968 (3)	% New Farm Real Estate Loans FLB/Banks 1964-1968 (4)	% Total PCA+FLB/Banks 1964-1968 (5)
Group 1 Average L/D = 53.50	24.3	32.8	30.4	66.4	48.6
Group 2 Average L/D = 48.58	33.7	40	36.3	55.8	46
Group 3 Average L/D = 41.31	36.7	45.7	44.2	57.5	46.9

* source by column:

Column (1) - (3) - Data on PCA loans for 1960, 1964 and 1968 was obtained from the St. Paul Federal Intermediate Credit Bank by Minnesota county. Data on farm production loans obtained from Federal Reserve Bank of Minneapolis. Included was net new agricultural real estate. The PCA data was then divided by commercial bank plus PCA data to obtained the relative share of the PCA's between the years stated. These were then averaged on a county basis for each group.

Column (4) - Farm real estate loans obtained from Federal Land Bank of St. Paul on a county basis. This was then divided by bank farm real estate loans plus FLB loans in percent terms. This was then averaged for each group on a county basis.

Column (5) - Derived from the sum of columns (2) and (4).

Table 11 (Cont):

Percent Increase in New Farm Loans, Production Credit Associations and Federal Land Banks Compared to Commercial Banks Ranked by Loan-To-Deposit Ratios *

(Sixty-one rural Minnesota counties)**
1960-1968

** The following were the county groups used in Table 5:

Group 1

Blue Earth	Freeborn	Meeker	Sibley	Waseca
Carlton	Le Sueur	Olmsted	Stevens	Winona
Clay	Lyon	Rice	Todd	Wright
Fillmore	McLeod	Scott	Wabasha	Kanabec-Pine

Group 2

Beltrami	Chisago	Goodhue	Kandiyohi	Pope
Benton	Cottonwood	Grant	Lincoln	Redwood
Brown	Dodge	Isanti	Morrison	Sherburne
Chippewa	Faribault	Itasca	Mower	Swift
				Watonwan

Group 3

Big Stone	Jackson	Mille Lacs	Wadena	Kittson-Roseau
Cass	Lac Qui Parle	Ottertail	Wilkin	Koochiching-Lake O'Woods
Clearwater	Marshall	Renville	Yellow Medicine	Mahnomen-Norman
Houston	Martin	Traverse	Aitkin-Crow Wing	Pennington-Red Lake

those counties with aggressive commercial banks. The relationship was reversed with respect to real estate loans. Thus the overall effect was more a compositional problem than one of relative size. Banks with lower loan-to-deposit ratios were not only lending at a lower rate but also making more secured (less productive) loans.

IV. Bank Performance and Economic Growth

This leads us to the issue of whether the current banking structure and performance has influenced the economic environment of Minnesota and particularly whether it has led to a reduction in economic growth. Although this issue is rather more complex than the previous issues, enough elements of the analysis are available to provide a preliminary conclusion.[4/] This question is the key to evaluating the present banking structure.

There is a very close association between changes in population and bank performance as measured by the loan-to-deposit ratios. If one correlates the percent change in population by county against the average deviation from the Minnesota loan-to-deposit ratio, then the correlation coefficient is positive and equal to .9. In other words, relatively low loan-to-deposit counties tend to be associated with declining populations.

4/ As far as I can tell, I am the only researcher who has made a serious effort at analyzing the relationship between banking performance and economic growth. As stated in the Golembe Report (p. 5): "Observations to the effect that branch banking contributes to more rapid economic development are largely impressionistic, there being little systematic and rigorous study of this question." I hope that what I present is viewed as more than just impressionistic.

We observed in the previous section that a relatively low loan-to deposit ratio tends to be associated with an expansion in lending by other financial insitutions at least in the case of agriculture. Also we observed that differences in loan-to-deposit ratios were caused by supply (substitute banking) restraints rather than by inadequate demand. In the sense that a sector or region has alternative sources of credit to banking, it is hard to argue that restraints in banking alone necessarily leads to a reduced level of financing. However, if a sector or region is particularly dependent on bank financing and to the degree that it can be shown that bank financing is restricted or rationed, to that degree a financial restriction will lead to a reduced rate of economic growth and becomes a causative factor for migration patterns observed.

The key, then, is whether we can identify areas dependent on bank financing. There is, in fact, one particular area which appears to be almost totally reliant on bank financing. This area is the rural non-farm sector. Thus a good case can be made that the rural non-farm sector is underfinanced.

There is one further element which needs to be introduced. Technological change in agriculture has been labor saving. This can be readily observed in Table 12. At the same time that total employment in Minnesota and the Upper Midwest Region increased by approximately 20 percent (between 1960 and 1971), agricultural employment decreased by 25 percent. Thus the net effect of the agricultural development of the region has been a surplus of agricultural labor (170 thousand for

TABLE 12

TOTAL EMPLOYMENT AND AGRICULTURAL EMPLOYMENT FOR MONTANA, NORTH DAKOTA, SOUTH DAKOTA, MINNESOTA AND FOUR STATE REGION, 1960, 1965 and 1971*

	Montana	North Dakota	South Dakota	Minnesota	4 State Region
1960					
Ag. Employment	39,000	91,750	81,400	267,000	479,150
Total Employment	233,863	235,761	245,804	1,328,987	2,044,415
Ratio	.17	.39	.33	.20	.23
1965					
Ag. Employment	35,200	74,750	66,450	229,400	405,800
Total Employment	243,429	237,312	238,126	1,426,976	2,145,843
Ratio	.14	.31	.28	.16	.19
1971					
Ag. Employment	28,142	54,321	48,428	178,000	308,891
Total Employment	273,686	258,346	247,875	1,631,400	2,411,307
Ratio	.10	.21	.20	.11	.13

*Source: The 1960 and 1965 data were obtained from Henderson and Krueger, "Economic Growth and Adjustment in the Upper Midwest: 1960-1975" Upper Midwest Reseaarch and Development Council, 1967. The 1971 data was obtained from state departments of employmnnt and agriculture.

the region and 79 thousand for Minnesota). If employment opportunities of an equal magnitude are not generated in the local community, then migration to large urban centers occurs. It is the lending pattern of commercial banks which provides the resources for employment growth. A restrictive policy will lead to fewer jobs being created and thus migration as observed.

It should not be concluded that banking performance alone is sufficient to generate the migration and development pattern. However, the argument as presented above is strongly indicative that banking performance is a significant causative factor in this process. More analysis needs to be conducted to determine just how important this element is relative to the other differentials which exist.

V. Branch Banking and Banking Performance

In this section, I will cite the fundamental evidence on the "Impact of Branch Banking on Bank Performance."

Table 13 summarize the available evidence on branch and unit banks. In all cases, branch banks maintain higher loan-to-asset ratios, pay slightly higher interest on time deposits and charge lower or equal rates on loans. An interesting point is the implication of the existance of a branch system on unit bank performance. Unit banks had on average higher loan-to-asset ratios, paid higher rate on time deposits, but charged slightly more for loans when they were in branching states rather than unit states.

Table 14, which provides evidence on how unit banks in rural areas might respond to the legalization of branching, presents similar interesting

Table 13

PERFORMANCE CHARACTERISTICS OF BRANCH AND UNIT BANKS
IN BRANCH AND UNIT BANKING STATES, 1962-1963
(MEANS OF RATIOS FOR INDIVIDUAL BANKS IN PERCENTAGE FORM)

PERFORMANCE CHARACTERISTIC	BRANCH BANKS IN BRANCH BANKING STATES		UNIT BANKS IN BRANCH BANKING STATES		UNIT BANKS IN UNIT BANKING STATES	
	1963	1962	1963	1962	1963	1962
INTEREST ON TIME DEPOSITS	3.24	3.17	3.24	3.05	3.13	2.75
TIME DEPOSITS TO TOTAL DEPOSITS	40.31	38.62	45.86	45.08	34.46	31.67
INTEREST ON TIME DEPOSITS TO TOTAL DEPOSITS	1.31	1.22	1.49	1.37	1.08	.87
INTEREST ON LOANS	6.83	6.91	7.06	6.87	6.79	6.76
LOANS TO ASSETS	52.74	50.22	46.06	44.51	41.76	39.98
NET CURRENT EARNINGS TO CAPITAL ACCOUNTS	18.13	18.06	12.52	12.92	13.89	14.50
NET INCOME TO TOTAL ASSETS	.69	.73	.67	.67	.73	.79
NET CURRENT EARNINGS TO ASSETS	1.40	1.40	1.15	1.16	1.21	1.26
NUMBER OF BANKS	110	110	250	249	2817	2817

SOURCE: Paul Horvitz and Bernard Shull, "The Impact of Branch Banking on Bank Performance," National Bank Review, March 1964, Table 8.

Table 14

PERFORMANCE CHARACTERISTICS CLASSIFIED BY STRUCTURAL CHARACTERISTICS FOR UNIT BANKS IN ISOLATED ONE- AND TWO-BANK TOWNS (MEANS OF RATIOS, 1959-1962)

PERFORMANCE CHARACTERISTIC	ALL BANKS	NUMBER OF BANKS IN TOWN		BRANCH BANKING		BRANCH OFFICE	
		ONE	TWO	NOT PERMITTED	PERMITTED	NOT PRESENT IN TOWN	PRESENT
INTEREST ON TIME DEPOSITS TO TIME DEPOSITS	.0237	.0223	.0248	.0211	.0261	.0226	.0279
TIME TO TOTAL DEPOSITS	.4475	.4113	.4785	.3550	.5332	.4320	.5099
INTEREST ON TIME DEPOSITS TO TOTAL DEPOSITS	.0111	.0098	.0122	.0080	.0139	.0103	.0144
INTEREST AND CHARGES ON LOANS	.0601	.0595	.0606	.0585	.0616	.0596	.0623
LOANS TO ASSETS	.3897	.3826	.3959	.3430	.4331	.3824	.4194
NET CURRENT EARNINGS TO ASSETS	.0118	.0121	.0114	.0114	.0121	.0118	.0116
NUMBER OF BANKS	106	49	57	51	55	85	21

SOURCE: Horvitz and Shull, <u>op. cit.</u>, Table 11.

NOTE: Towns are isolated in the sense that there are no commercial banking offices within a radius of five miles. A Branch office is defined as the office of a bank having at least 4 offices whose main office is located in a town or city over 5 miles away. Other savings institutions include savings and loan associations and mutual savings banks.

results. There was a 9 percent increase in the loan-to-asset ratio in unit banks where branching is permitted compared to where it was not. The results in other ways is similar to what was stated above. Thus the existence of potential competition alone was sufficient to improve the performance of unit banks.

In closing let me cite some of the conclusions reached by other researchers in the area. First, Mote (1969)

> "Branch banks have higher loan-asset ratios and a higher proportion of consumer loans, charge lower interest rates on installment and real estate loans, and pay higher interest rates on time and savings deposits than do unit banks of similar size and/or location. They provide greater mobility of funds from "surplus" to "deficit" communities. Moreover, they offer a broader variety of services and provide greater convenience in that branching results in somewhat more numerous banking facilities in moderate and large-sized." communities.

In another article by Greenbaum (1967), where the author is evaluating the efficiency of banking, the following statement is made:

> "The inefficiency of smaller banks [. . ., i.e., under 10 million in deposits] may be attributable to their inability to spread overhead costs, limitations to specialization among employees, high transaction costs of moving funds in small amounts, loan risk interdependencies and limitations of risk pooling." (p. 38)

This leads the author to conclude:

> "The evidence on the effects of consolidating unit banks into branch systems suggests that important savings result even if the output of the consolidated banks does not exceed the output of the components."

The weight of evidence in support of the improved performance of branching systems over unit system is very strong. This does not mean that the limitations of the current systems could not be overcome in other ways. However, the implication is that if the solution does not occur within the banking system, the solution will come outside of the banking system and provide additional competition. In fact, pressure is already mounting for such changes, and the Rural Development Act and the new Farm Credit Administration legislation must be viewed as movements in that direction. Thus a lack of adaptability on the part of bankers will probably be self-defeating.

Let me end by citing an observation on a former period in history which has interesting parallel implications for our current situation:

> "In 1890, when Breckenridge examined the interregional interest rate differentials, he concluded that they were permanent and attributed them to the legal barriers that prohibited branch banking in the United States. With the omniscience of hindsight, it is obvious that these differentials have been reduced. Moreover, the reduction did not result from passage of laws permitting interstate branching. Instead a series of new financial institutions capable of surmounting the barriers raised by distance and by the lack of branch-banking legislation were innovated. (Lance Davis, p. 368).

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