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Financial Restraint, Banking
and Rural Development

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by
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The effects of financial market performance on the rate and

distribution of economic growth is an issue which has long been

debated $\underline{/}$ 2, 3, 7 $\underline{/}$. Since the financial markets play a central role

in both the mobilization of saving and the allocation of investment

funds, any imperfection which occurs in these markets must influence

the saving and investment flow and thus indirectly the course of

economic growth. Although this seems to be a rather obvious proposition,

evidence on either the nature of financial market imperfections or

their impacts on growth is difficult to obtain. In a paper by

Darrell $\underline{/}$ 2 $\underline{/}$ it is concluded that there does not appear to be "any

systematic relationship between ... style of banking structure and ...

tempo of economic growth."

In this paper, arguments and evidence is presented which leads

the author to conclude that the structure and imperfections of the

financial markets does influence the course of economic growth. In

particular, it is concluded that due to a monopoly structure in rural

banking, an agricultural credit system which has helped induce a

labor saving agricultural technology, and private and public flow of

funds that impediments to rural development and incentives for rural

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out migration have been created. Although this is only one of a number of forces operating to cause the post war growth pattern, this financial structure is a key causative element and must be dealt with to initiate a successful rural development strategy.

Central to this argument is the demonstration that a financial market restraint in the form of a rural banking monopoly is binding. Thus the next section will develop analytically and test empirically the implications of monopoly performance in banking. Then given this basic restraint, and some well known features of the rural economy, the general proposition on rural growth is developed.

I. Banking Monopoly and Performance

It is a well known feature of U.S. banking that rural banks tend to have lower loan-to-deposit ratios than urban banks $\underline{/}$ 6, 8 $\underline{/}$. Table 1 which summarizes key banking statistics for the Upper Midwest region[2] by rural to urban categories aptly indicates this. L/D ratios are approximately ten percent lower in the 0-999 population located banks than in the largest urban reserve city banks.

Several explanations have been proposed for this. There are those who maintain that because of the unit banking structure and limited banking competition in the rural community that the low L/D ratios reflect the monopoly power of rural banks in the loan market. Others, still relating the low L/D ratios to a supply problem, point out that rural banks have an asset diversification problem since such a large percentage of their assets are tied to a single

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2/ The data was obtained from the Federal Reserve Bank of Minneapolis. The states of Minnesota, North Dakota, South Dakota and Montana are included.

TABLE 1:

RATIOS DERIVED FROM 1968 CALL AND INCOME REPORTS CHARACTERIZED BY BANK CATEGORY
AND POPULATION CLASS OF BANK LOCATION FOR COMMERCIAL BANKS IN THE TOTAL 4 STATE AREA**

	********* INDEPENDENT BANKS *********					********* HOLDING AFFILIATES *********				
	0-999	1-4999	5-9999	10000+	R.CITY	0-999	1-4999	5-9999	10000+	R.CITY
TOTAL ASSETS (IN THOUSANDS OF DOLLARS)	1490339	2042889	633799	1736552	N.A.	29837	410221	514851	3339554	3418074
PERCENT OF TOTAL ASSETS										
GOVERNMENT SECURITIES	28.36	25.47	20.53	19.72	11.38	28.88	24.74	22.13	16.09	7.73
OTHER SECURITIES	17.60	19.45	18.58	15.29	9.21	20.23	16.99	15.63	16.11	11.84
LOANS (NET)	43.79	43.82	47.62	50.79	52.38	40.30	46.49	48.73	51.87	51.43
CASH ASSETS	9.45	9.97	11.02	11.87	25.20	9.55	8.63	9.75	12.85	25.83
REAL ESTATE ASSETS	0.71	1.02	1.18	1.32	0.90	0.56	1.25	1.42	1.75	0.80
ALL OTHER ASSETS	0.09	0.28	1.07	1.01	0.93	0.48	1.90	2.33	1.33	2.37
TOTAL DEPOSITS (IN THOUSANDS OF DOLLARS)	1357891	1872258	583941	1585922	N.A.	27307	373918	471207	3024127	2995995
PERCENT OF TIME TO TOTAL DEPOSITS	54.65	53.79	56.05	53.50	36.32	54.54	56.22	58.19	54.50	30.62
PERCENT OF TOTAL LOANS TO TOTAL DEPOSITS	48.06	47.81	51.68	55.61	57.61	44.04	51.00	53.24	57.28	58.68
TOTAL LOANS (IN THOUSANDS OF DOLLARS)	652655	895093	301792	881960	N.A.	12025	190703	250892	1732251	1758083
PERCENT OF TOTAL LOANS										
REAL ESTATE LOANS	16.02	23.47	31.20	29.90	16.07	15.14	25.74	34.87	38.37	14.92
SECURED BY RESIDENTIAL PROPERTIES	12.65	17.72	24.29	21.04	8.41	12.07	20.53	28.10	29.83	10.89
SECURED BY OTHER PROPERTIES	3.37	5.75	6.91	8.87	7.66	3.07	5.21	6.76	8.55	4.04
FINANCIAL LOANS	0.68	1.15	1.14	3.22	21.99	0.11	0.26	0.34	2.07	16.53
AGRICULTURAL LOANS	59.30	43.21	23.54	11.40	1.10	71.13	45.93	26.23	10.67	0.72
LOANS TO FARMERS	49.02	35.19	19.97	9.81	0.80	57.58	42.27	23.05	10.02	0.72
REAL ESTATE LOANS SECURED BY FARMLAND	10.28	8.02	3.57	1.59	0.31	13.55	3.66	3.18	0.65	0.00
COMMERCIAL LOANS INCLUDING OPEN MARKET PAPER	9.33	13.95	19.84	24.78	28.26	7.09	12.57	18.82	24.21	45.65
LOANS TO INDIVIDUALS	15.12	19.22	25.23	30.70	33.33	9.31	17.47	21.55	26.26	18.73
OTHER LOANS	2.28	2.75	2.33	3.29	2.99	3.44	3.05	2.69	2.93	6.85
ALL OTHER LOANS	0.92	0.88	0.69	1.64	1.12	0.33	0.54	0.44	0.67	5.15
VALUATIONS RESERVE	1.36	1.87	1.64	1.65	1.87	3.11	2.51	2.25	2.25	1.70
INTEREST AND DISCOUNT ON LOANS	6.88	6.76	6.68	6.62	6.44	7.14	7.00	6.83	6.59	5.99
NUMBER OF BANKS IN THIS GROUP	502	325	54	109	2	7	53	34	92	6

agricultural area. The natural response to such a portfolio risk

problem is to diversify by reducing the percent of portfolio in loans

and increasing that in bonds. Finally, a third group insists that

the problem has its root in inadequate loan demand derived from the

lack of investment opportunities in the rural area.

As stated, and by merely looking at the descriptive data, there

is no way to distinguish between these alternative explanations. Indeed,

it appears that, perhaps, a little bit of all three are involved. For

instance, one of the most pronounced rural to urban trends evident in

Table 1, is the very sharp reduction in the percent of agricultural

loans from 59% and 71% in the most rural located banks to approximately

1 percent in the larger urban reserve city banks.

Of course, people have been talking about the lack of opportunity

in the rural areas for years. What is involved here is what economists

refer to as a classic identification problem or how to distinguish

between effects of supply and that of demand. In what follows, applying

the theory of monopoly to banking, I will show how it is possible to

distinguish these. In order to do this, I must reformulate the problem.

If the monopoly explanation is correct, than we are observing a

reduction in L/D ratio due to an increase in monopoly power. To

derive the implications of this, it is only necessary to compare a bank

operating competitively with a bank operating monopolistically in the

loan market.

Figure 1 presents a hypothetical commercial bank loan market in

relative terms under conditions of monopoly. Notice the horizontal

axis is in percentage terms and thus that the L/D supply function

Interest
Rate on
Loans

r^m

r^c

L/D supply

L/D demand

L/D Marginal
Revenue
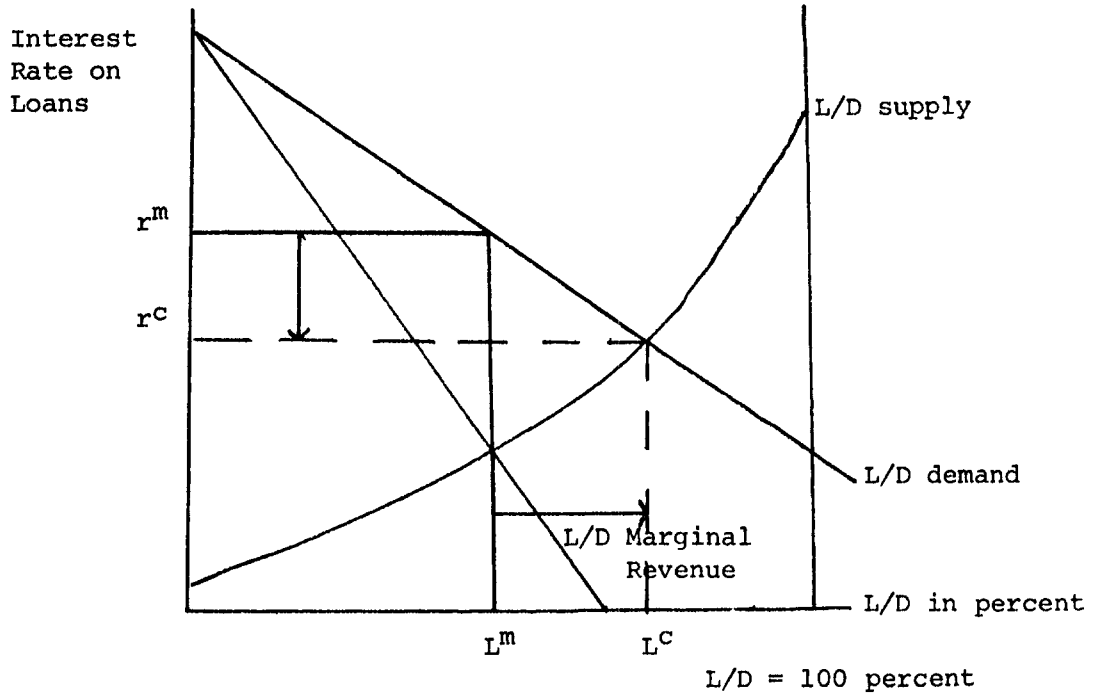
L/D in percent

L^m L^c

L/D = 100 percent

Figure 1: The Commercial Bank Relative Loan Market under Conditions of
Monopoly

achieves a maximum at 100 percent. Using traditional monopoly analysis,

the bank provides loans upto L^m percent and charges an interest rate of

r^m. Under competitive conditions market supply and demand determine

the L/D ratio and as drawn this would occur at loan percent L^c and

interest rate r^c. In other words, we would expect to see a decrease

in the L/D ratio and an increase in the loan interest rate associated

with an increase in monopoly power in the commercial bank loan market.

How does this differ from a situation in which the relative

demand for loans in the rural area is less than that in urban areas?

A reduction in demand either under monopoly or competitive conditions would lead to a reduction in the L/D ratio, but also a reduction in loan interest rate. This is indicated in Figure 2. Notice that the effect of monopoly even under conditions of reduced demand is to raise the loan interest rate from the comparable competitive case.
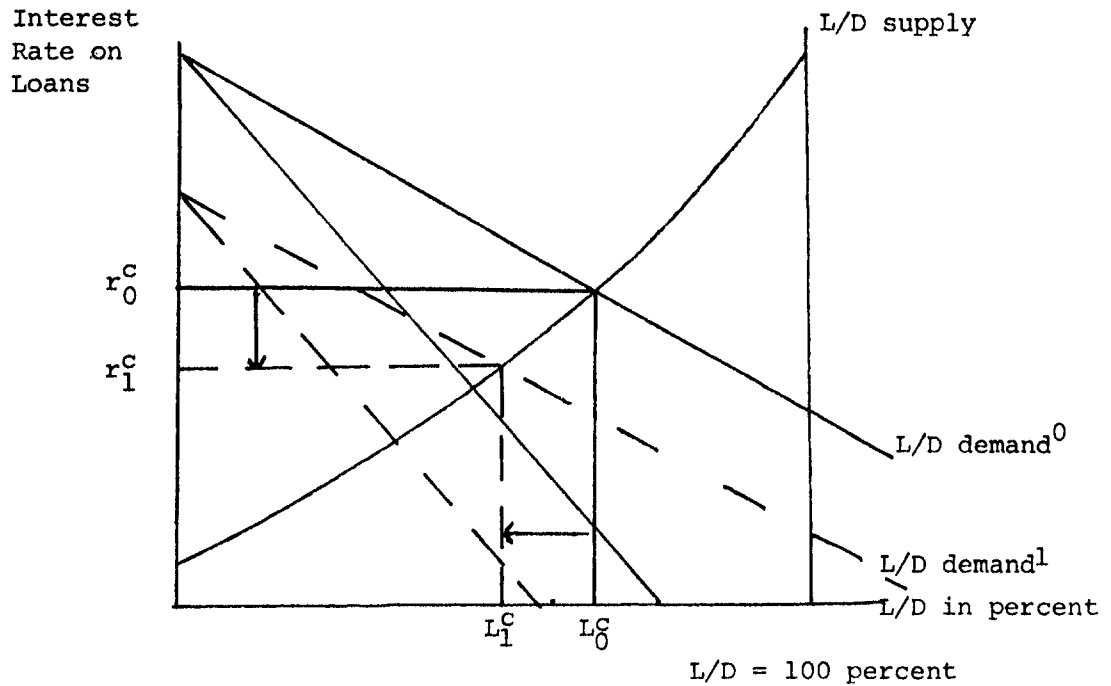

Figure 2: Commercial Bank Relative Loan Market with a Reduction in Demand

To test these alternative hypothesis about banking behavior, cross sectional grouped data was analyzed for four states in the Upper Midwest for the years 1960, 1964, 1968 and 1971. The data although on an individual state basis is similar to that presented in Table 1. Each column is treated as a separate observation. In total,

there were 118 nonzero observations out of a possible 160 columns.[3]/

The data is characterized by state, size of town of bank location, type

of bank affiliation and date.

The following linear regression was estimated based on this data

to test the hypothesis:[4]/

$$\frac{L}{D} = 107.79 - 1.02 \frac{GS}{A} - 1.04 \frac{OS}{A} - .98 \frac{C}{A}$$
$$(45.897) \quad (45.079) \qquad (46.295) \qquad (22.936)$$

$$+ .03 \frac{TD}{D} - .03 \frac{RE}{L} + .02 \frac{FL}{L} - .00 \frac{CL}{L}$$
$$(2.036) \qquad (1.205) \qquad (1.186) \qquad (.125)$$

$$- .95 \frac{IL}{L} + .0002 \frac{A}{BN}$$
$$(7.281) \qquad (1.608)$$

Number of observations = 118

R^2 adjusted   = .979692

F statistic   = 628.133006

where L/D is the loan-to-deposit ratio. GS/A, OS/A and C/A are the

percent of government securities, other securities and cash to total

assets. TD/D is the ratio of time to total deposits. RE/L, FL/L and

CL/L are the ratios of real estate loans, farm loans and commercial

loans to total loans while IL/L is the ratio of interest and discounts

on loans to total loans. A/BN is the average assets per bank category.

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[3]/ Because of space, this data could not be presented here. However,
anyone interested in seeing the total set can obtain a copy by
writing the author.

[4]/ The numbers in parenthesis are t-ratios. In general, the higher
the ratio the more significant the coefficient. For a coefficient
to be significant at the 5% level the t-ratio must be greater than
1.98.

The regression estimates are interesting in several regards. The most important for this context is that the coefficient on the interest rate term is negative and very significant at well above the one percent level, that is, interest rates tend to rise as the L/D ratio falls. This strongly supports the hypothesis that monopoly power of rural banks exceeds that of urban banks. In other words, that there is a binding financial restraint operating in the rural community, and that it is supply factors rather than demand which accounts for the lower L/D ratios in rural banks.

The regression results also shed light on the issue of portfolio diversification. None of the loan composition terms is a significant explanatory variable for the loan-to-deposit ratio. The farm loan term (FL/L) is positively related to L/D, just the reverse of its expected sign while the coefficient of the commercial loan term (CL/L) is approximately zero. Thus we reject the risk portfolio problem as an explanation of low L/D ratios in rural banks at least to the degree that the loan composition would measure this.

Based on the evidence presented in this section, we must conclude that there is a binding financial restraint operating in the rural community in the form of rural banking monopolies.

Financial Restraint and Rural Development

Although a supply restraint in the rural bank loan market would in and of itself have a restrictive impact on rural development, it is the combination of this financial restraint and other peculiar features of the rural economy which in concert act to impede rural development

and stimulate rural out migration. These other features which are
particularly relevant here are: (1) rural dependence on commercial
bank financing, (2) institutional factors which encourage outflows
of funds from the rural area, and (3) technical change in agriculture
which is highly labor saving and dependent on a competitive agricultural
loan market. It is to these factors which we now turn.

A.   The Importance of Rural Banking

Commercial banks play a dominant role in the rural financial market.
No other institution either operates in almost all segments of the rural
economy or provides as large a share of rural credit. In agriculture,
which is probably the most competitive of the rural loan markets,
bank loans account for approximately 25 percent of agricultural finance
both nationally and regionally $\overline{/\ 5\ \overline{/}}$. In the non-agricultural rural
sector, data is not readily available. However, very few institutional
lenders outside of commercial banks operate in a significant way in
the rural non-farm area. The national money and security markets which
primarily serve large corporations play an insignificant part in non-
farm rural finance. Insurance companies which at one time were an
important rural financer have been restricting their non-urban financing.
The small business administration operates somewhat but again because
of the ease of operation probably utilizes the preponderance of their
funds for urban financial support. Savings and loan associations which
are primarily mortgage lenders are very heavily concentrated in the
urban areas of the Upper Midwest. And so on. Thus, although this must

be viewed as highly preliminary, I would propose that 50% or more of the rural non-farm sector is dependent on bank financing.

How important is the rural non-farm sector? In the Upper Midwest region, which is substantially more dependent on agriculture than the country as a whole, 13% of total employment is in agriculture while only slightly less than half of the total population lives in large urban metropolitan areas of 50,000 or more. Thus this rural non-farm sector accounts for approximately one-third of total employment $\sqrt{10}\sqrt{}$.

B. Other Institutional Factors

There are a whole set of private and public institutional biases which have the tendency to generate a flow of funds from the rural to the urban areas. Some of these flows do not appear to be moving in response to economic factors but rather are due to the structure of institutions $\sqrt{8, 9}\sqrt{}$. The cummulative effect of these factors is to further worsen the financial restraint on rural economic activity.

The most notable, if not the most important, is a common feature of a correspondent banking system. Rural banks hold deposits in large urban correspondent banks in return for services performed. In the Upper Midwest over $350 million worth of correspondent balances were held in Twin Cities banks as of December 1969 $\sqrt{9}\sqrt{}$. This represented approximately nine percent of total deposits and was concentrated in 16 metropolitan banks. No county in the two state region studied outside of the Twin Cities had a net inflow of these balances.

A second institutional factor relates to the spacial distribution of savings and loan associations and savings banks in the Upper

Midwest. These are very heavily concentrated in the major metropolitan

areas and because of the higher interest rates paid on deposits, this

has generated a large outflow of funds from rural areas. It has been

estimated $\underline{/\,4\,\underline{/}}$ that approximately $600 million worth of rural deposits

are held by Twin Cities S & L's.

Other financial purchases on the savings side tend to lead to

outflow of rural funds although the magnitudes are difficult to estimate.

Purchases of insurance and securities might account for substantial

outflows. The uses of funds in these institutions is dominated by the

urban sector.

However, the movement of funds to the cities through the private

financial markets is not the only way that funds are redistributed away

from the rural area. In a study of the "Financing of Public Services

in West Minnesota" $\underline{/\,11\,\underline{/}}$ it was shown that the net outflow of

funds through the state and federal government taxing and expenditure

pattern was $61 million in that region alone. This seems like a

relatively small amount, but it represented almost 38 percent of state

and federal tax collections or $270 per person. If this is at all

indicative of the net impact (expenditure minus taxes) throughout the

rural area, then this is a major financial deterrent to rural development.

C.   Agricultural Technology and Finance

Studies of agricultural development in the U.S. conclude that

technical change has been highly labor saving $\underline{/\,1\,\underline{/}}$. This is not a

surprising result and on an intuitive level follows from the rather

dramatic drops in labor input in U.S. agriculture. For instance, in

the four states studied in this paper there was a 35.6 percent drop in

agricultural employment between 1960 and 1971 while there was a 17.9

percent increase in total employment $\underline{/\ 10\ \underline{/}}$. The main effect of invest-

ment in agriculture has been a steady release of surplus rural labor,

a labor group which must find alternative employment elsewhere.

Supportive of this trend is a competitive agricultural loan market

which provides the investment resources necessary for that technical

change. Central to this credit market is the Farm Credit System a

psydo-government agency which was set up for the sole purpose of providing

competitive credit to agriculture. Of all agricultural lenders, this

institution is growing most rapidly (regionally at a rate exceeding 10

percent over the decade of the sixties and 14 percent between 1970-1971

$\underline{/\ 10\ \underline{/}}$). The key to this institutions success is heavily dependent on being

able to finance their loans through the issuance of bonds on the

national bond market at U.S. Agency rates. For instance, in the fall

of 1973 when prime lending rates were between 9.5 and 10.25%, the

Farm Credit System was lending at approximately 8.5 percent.

Conclusion

Putting together the features of the rural economy noted above,

we are now in a position to analyze the effects which financial restraint

has on rural development.

First, there is the existence of a rural financial restraint in

banking, the main empirical effect of which is substantially lower

loan-to-deposit ratios and higher interest rates. This has the effect

of restricting credit to the entire rural community, but particularly

the rural non-farm sector which is heavily dependent on bank financing. The major effect of this is an underinvesting in the rural area, a force to reduce the rate of growth and employment creation.

Next, there are the institutional forces which tend to move funds into the urban areas. Again these have the effects of reducing lendable funds for rural investment and thus further restraining the availability of rural finance.

Lastly, there is a dynamic agriculture supported in large measure by a competitive financial market which has resulted in a sizable surplus labor force in the rural area.

If employment opportunities were available in the rural area, then undoubtedly some of the surplus labor would shift from agriculture to non-agriculture work in the rural area. Ironically, however, the very sector which needs the financing is the most restrained and the tendency are effects which we are all aware of -- low rural per capita income, rural outmigration, stagnant and dying rural communities.

The factors I have analyzed in this paper are only one of a host of forces operating in the rural area to induce these patterns. Low social investment, poor public services, inadequate transportation and financial restraints all combine to create these patterns. Rural development will only occur when these disincentives for growth are removed and central is the financial restraint on rural investment.

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