

Trends Affecting and Exhibited by Commercial Banks
in Agricultural Areas

Agricultural Communities: The Interrelationship of Agriculture,
Business, Industry, and Government in the Rural Economy

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Of the trends affecting commercial banks in agricultural areas, the most important is the trend in the prosperity of the primary industry in these areas--agriculture. Agricultural income affects the growth of deposits at these banks as well as the demand for and condition of their loans, and thus is a primary influence on bank profits and capital growth. Conversely, net income of indebted farmers has been greatly affected by changes in interest rates on farm loans, including the new cyclicity in loan rates of rural banks that has resulted from changed regulations governing interest rates paid on bank deposits. Therefore I find it essential to consider agricultural and banking experience jointly, and to discuss longer-term trends as well as current conditions.

False impressions of trends and conditions

Unfortunately, many persons have acquired false impressions of several key trends and relationships that affect the progress and viability of banks in agricultural areas. Here is a typical set of such impressions of the farm sector:

Except for short-lived bulges in the 1970s, real farm income has shown little growth, and furthermore has currently sunk to Depression levels. Over time, net farm income has shrunk to a smaller fraction of gross income, which has increased its volatility and thus added to risk in farm lending. The price of farm land has for years risen in the face of stagnant net income, producing low rates of return to farm assets and posing the threat of eventual collapse of a speculative spiral.

Given these impressions of farm sector profits and values, what does one think about banks whose assets consist in large part of loans to such an industry and its suppliers? The erroneous conclusion is reinforced by additional prevalent but false impressions of rural bank experience:

With farm profits generally low, bank deposits of farmers have grown relatively slowly, which is confirmed by USDA estimates of these deposits. Thus farmers' liquid assets have decreased relative to their total assets, adding further to risk in farm lending. And, with slow growth in farmers' deposits holding down growth of rural banks, the size of loans that these banks can make has not kept up with growth of individual farm loan demands. In recent years, the loss of deposits to money-market mutual funds has worsened this situation, especially since small banks cannot raise funds in money markets to supplement their local deposit growth.

What does one conclude about the condition and viability of banks operating in such a dismal deposit and loan environment? Fortunately, in spite of the familiarity of many of the foregoing statements, they are false.

Farm profit trends

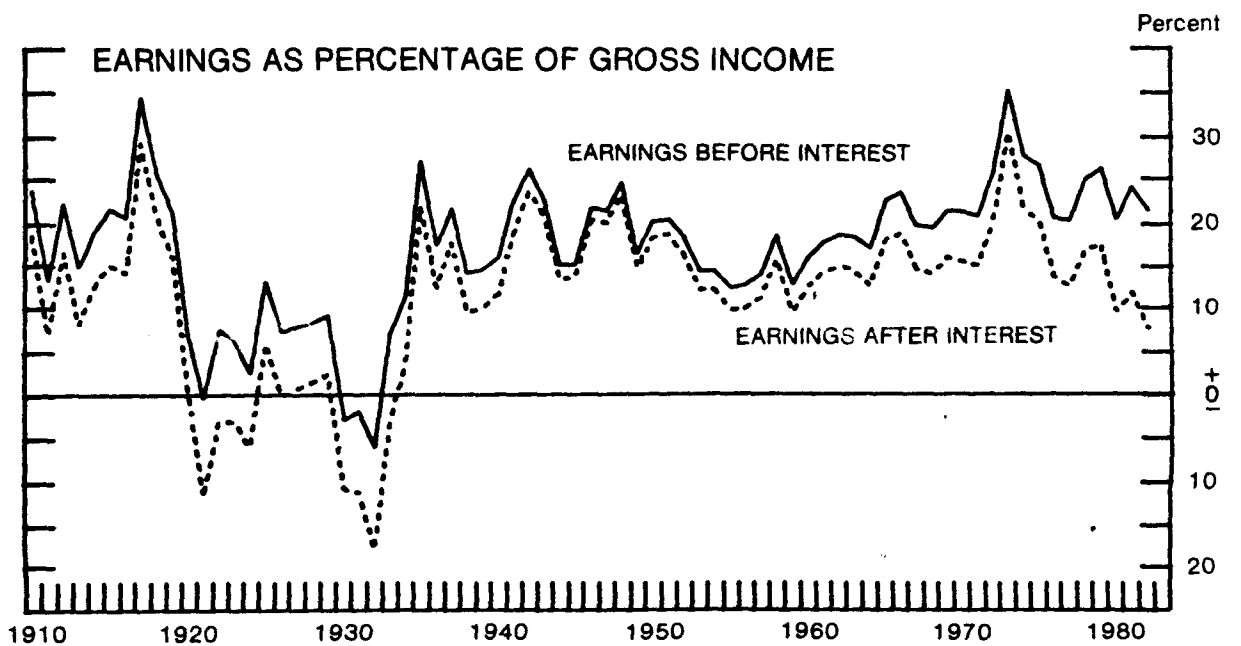
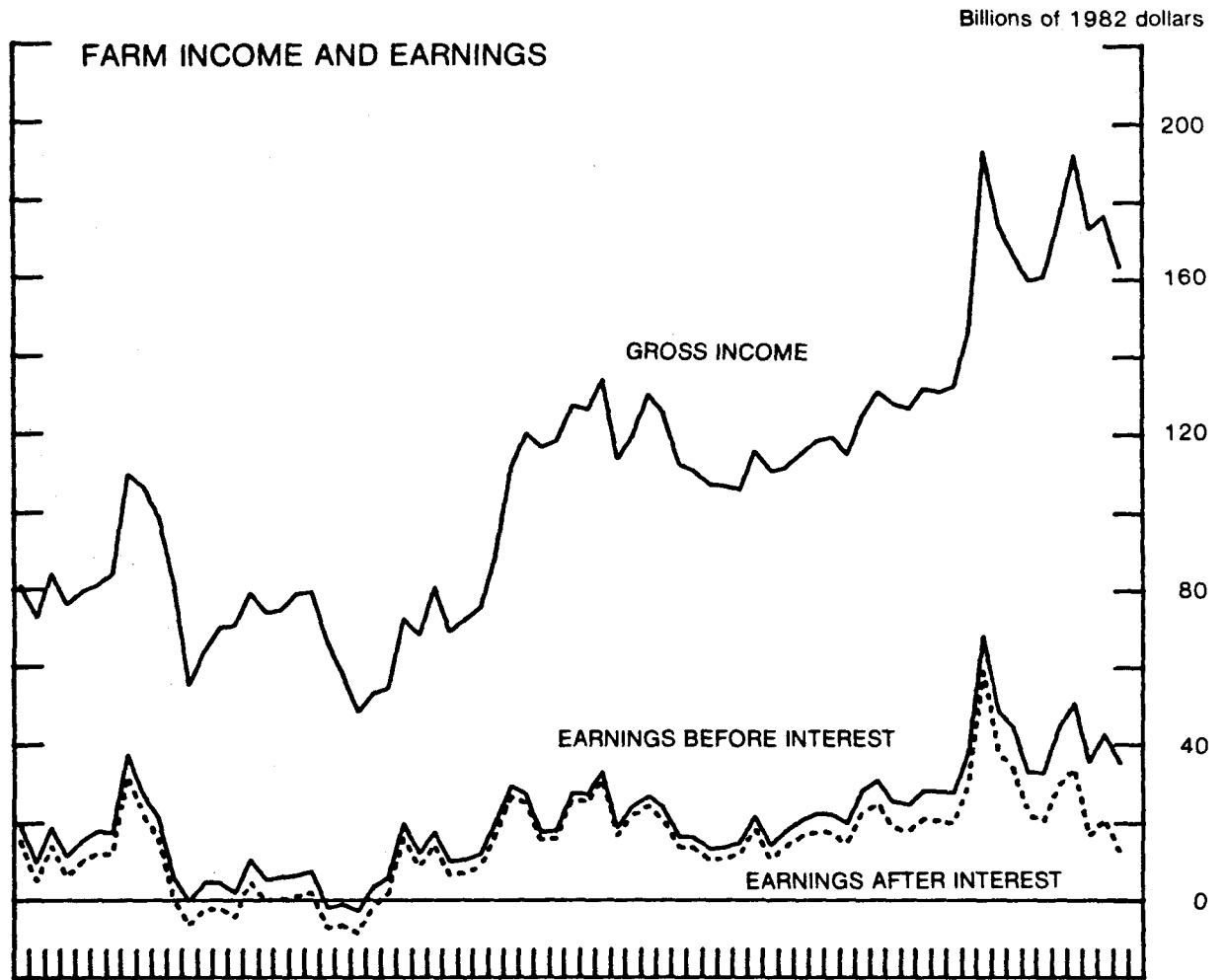
To the thoughtful rural observer, the foregoing impressions are at odds with the new bank buildings prominent in rural towns, as well as with the excellent growth and profit records reported by these banks. But how did rural banks achieve such results in the face of the poor financial experience of farming--the primary industry they serve? The answer is that they did not have to do so. Agriculture also has shown excellent profit growth over time. Indeed, the financial record posted by agricultural banks surely reflects that posted by agriculture,

plus a fillip from recent fortuitous interest rate relationships. Only very recently has that financial record begun to be adversely affected by the severe financial problems of heavily-indebted farmers.

In much aggregative analysis in which the key factor is the return to farm capital, many writers look instead at operators' net farm income, which includes returns to operators' labor and management work as well to their capital investment. But over time, capital has been substituted for labor in farm production, and the amount of operators' labor has decreased drastically. Consequently, even though real net income has not grown over time, the real return to capital--the "earnings before interest" plotted in the top panel of Chart 1--has posted a strong uptrend. Note that the farm programs in place during the aftermath of the farm booms of the 1940s and 1970s helped to prevent a repetition of the collapse of earnings that followed the boom of World War I, which would probably again have been the market's way of forcing farm production to adjust to lower post-boom demand for farm products. Also note, in the lower panel, that farm profit margins--net earnings before interest payments as a percentage of gross income--have not declined over time.

The strong long-term uptrend in real earnings goes a long way toward explaining the relatively low rate of return to farm assets, shown in the lower panel of Chart 2. That kind of earnings record produces expectations that it will continue, causing the assets to sell at a relatively high price/earnings ratio as buyers pay in advance for the expected earnings growth. In the top panel of Chart 2, earnings and assets are plotted with the scale for assets set at 1/25 of the scale for earnings, so that, if the lines are at the same level, it means that

Chart 1

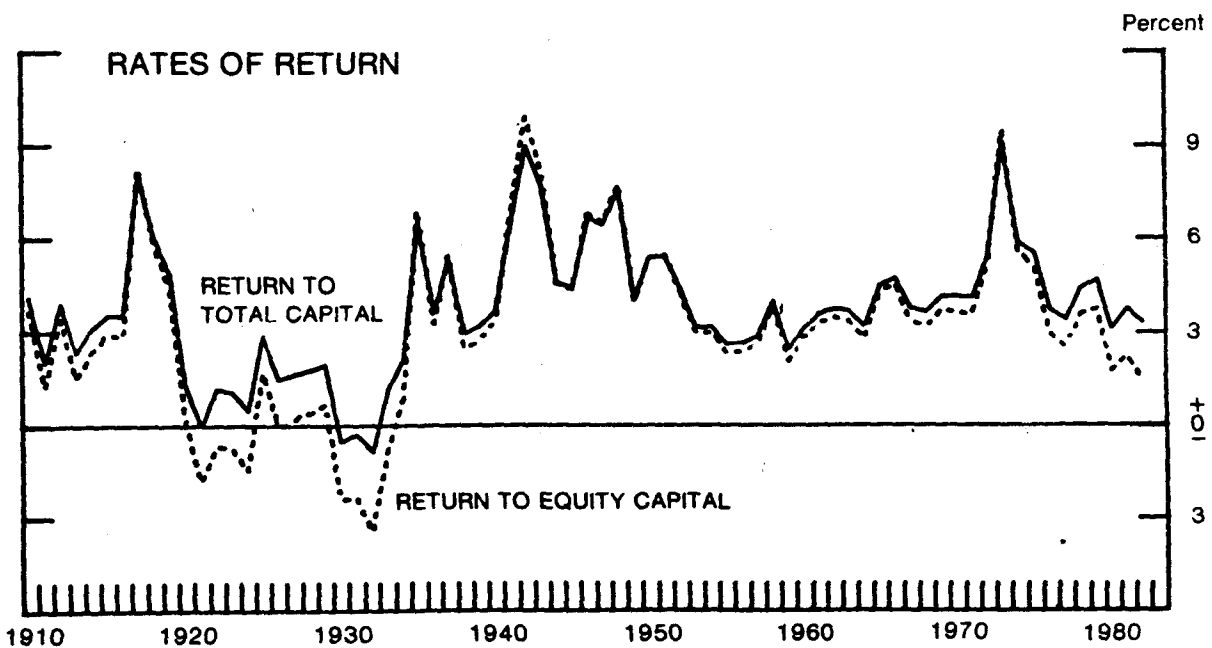
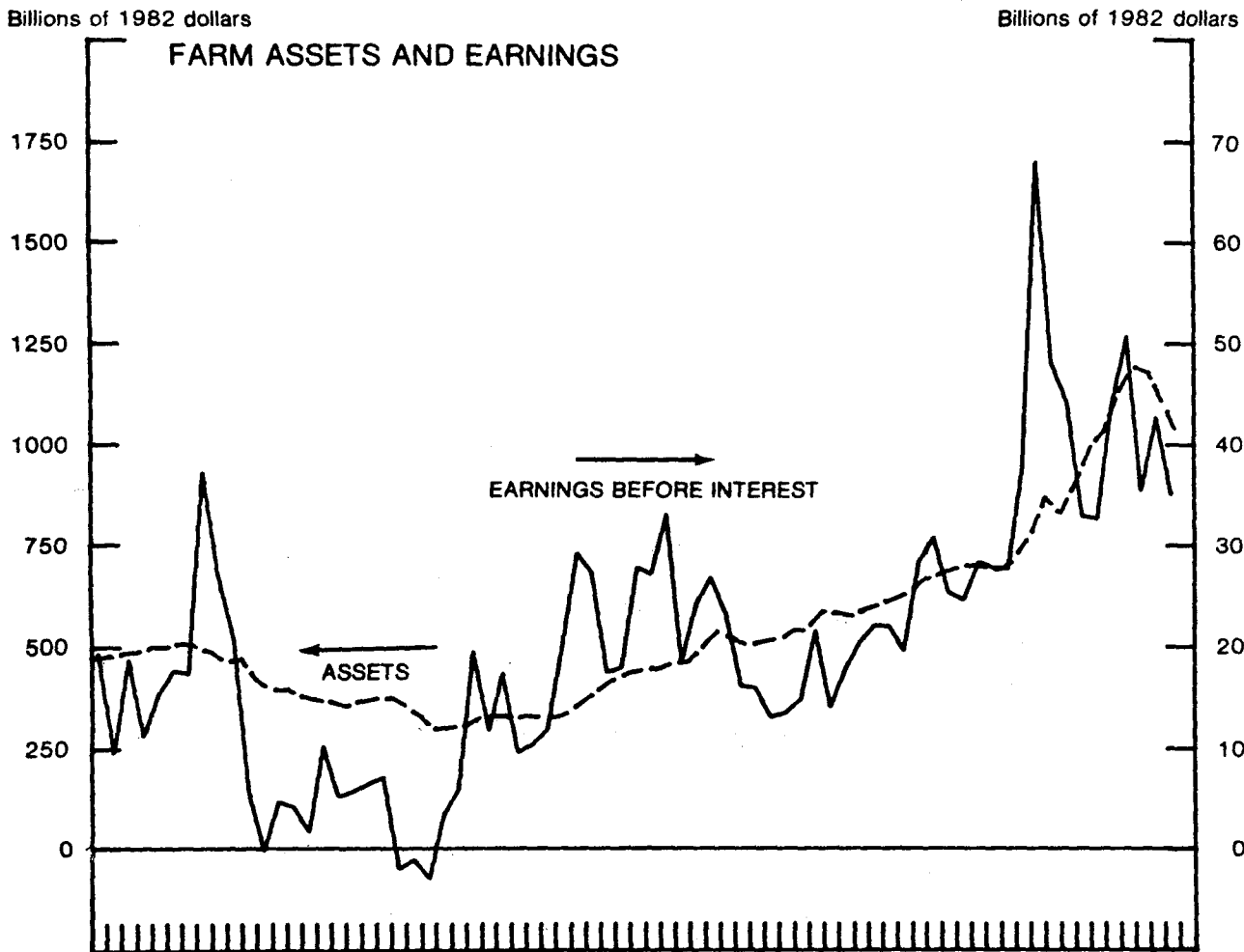


assets are selling at 25 times earnings--which puts the rate of return at 4 percent. These have been the approximate long-term average values.

Chart 2 indicates that asset values, dominated by real estate prices, tend to follow the trend in earnings. During the 25-year period preceding 1980, annual increases in both real earnings and real asset values averaged over 4 percent. When one adds, to this return in the form of a real capital gain, the earnings return which also averaged 4 percent, farm assets are seen to have produced a total return of about 8 percent. If this return was competitive with other investments during this period and if expectations generally held that the prevailing growth of real earnings would continue, then farm assets were "correctly" priced rather than overvalued. But with roughly half of asset values pegged on such expectations (to produce the same total return of 8 percent in the absence of earnings growth, farm assets would sell at 12.5 times earnings), buyers of farm land and their lenders were staking much on the achievement of the future earnings growth for which the buyers were making advance payment.

The historical record in Chart 2 also illustrates the key role that expectations of the future trend of earnings play in the reaction of asset prices to ongoing changes in earnings. During the farm earnings boom of World War II and the second boom that soon followed during Marshall Plan exports to Europe, an eventual postwar collapse in earnings was widely expected. Consequently, the rise in asset prices was relatively moderate. In contrast, during the mid- and late 1970s there was widespread optimism regarding future growth in farm earnings because of fundamentally favorable worldwide supply-demand relationships for farm products, and farm asset prices were bid up to a level that can be viewed

Chart 2



as fully reflecting expectations that earnings would continue rising along the relatively steep 1954-79 trend.

Farm financial stress

Although the return to total capital has been fairly well supported, its current level of 3.3 percent is far below interest rates being paid by indebted farmers. As rising interest rates opened this gap in recent years, the average return to equity was depressed as indicated in the lower panel of Chart 2. In this respect the present period differs from the last post-boom experience, in the 1950s, when interest rates were not much higher than the return to capital. Now indebted farmers are generally experiencing much greater financial strain than those without debt, whereas, in earlier decades, farmers using credit had generally made the faster financial progress.

Table 1 illustrates the present importance of a farmer's relative debt level on his rate of profit or loss after payment of interest, and it also shows the difference made by the rate of interest being paid. The table assumes a farm with the sector-average return to total capital, 3.3 percent, which is also the return to equity if the farmer has no debt. At the sector-average debt/asset ratio of 20 percent, and paying the sector-average interest rate of 11 percent on outstanding debt, the return to equity is 1.4 percent. At debt/asset ratios above 40 percent, increasingly stressful losses are sustained--moderate, if debt consists mainly of old long-term fixed-rate loans at an interest rate such as 7 percent, more severe if debt is composed of short-term bank loans at last year's average loan rate of 17 percent. And because similar tables for 1980 and 1981 would look much the same as this one for 1982, highly-leveraged operators have probably sustained cumulative losses.

Table 1

Effect of alternative debt leverage and cost on profitability of a farm in 1982

Debt/asset ratio (percent)	Interest rate on outstanding debt (percent)		
	7	11	17
	<u>Return to equity capital in 1982 (percent)</u>		
0.....	3.3	3.3	3.3
10.....	2.9	2.4	1.8
20.....	2.4	1.4	.0
30.....	1.7	.0	-2.6
40.....	.8	-1.8	-5.8
50.....	-.4	-4.4	-10.4
60.....	-2.2	-8.2	-17.2
70.....	-5.3	-14.7	-28.7
80.....	-11.5	-27.5	-51.5
90.....	-30.0	-66.0	-120.0

This farm had the farm sector average rate of return to total capital (before interest payments on any borrowed capital), 3.3 percent.

If it also had the farm sector average debt/asset ratio of 20 percent and the average interest rate of 11 percent on that debt, its return to equity capital was 1.4 percent (row 3, column 2).

Agricultural banks and other farm lenders are greatly affected by the distribution of farmers and farm debt among the various debt positions. The top panel of Table 2 shows such information derived from the recently available 1979 Farm Finance Survey, adjusted and updated to be indicative of current conditions. These estimates indicate that a majority of farm operators have relatively little or no debt. The last column shows that only 18 percent of all operators now have debt/asset ratios over 40 percent--the relative level of indebtedness that the preceding table indicated to be associated with unprofitable operations.

For banks and other lenders, however, the amount of debt owed by farmers experiencing financial stress is more important than farm numbers, and from this perspective the picture looks much different. The middle panel of Table 2 indicates that about five-eighths of the total debt is owed by operators with debt/asset ratios over 40 percent, and thus lenders see much of their money in the hands of operators who are experiencing financial difficulties. Viewed in another way, an estimated 84 percent of total operator debt is owed by the 30 percent of operators with debt/asset ratios that are above the all-operator average of 23.5 percent. Thus the bulk of farm debt is owed by a sizable minority of operators whose relative debt is large enough that, at current interest rates, scheduled debt service may easily exceed recent earnings before interest.

Effect of farm profits on rural bank deposits

Given both the strong longer-term growth of real farm earnings and the maintenance of earnings of the less-indebted majority of farmers during recent years, it is logical that agricultural banks have

Table 2

Estimated distribution of farms by relative debt level within farm-size groups, January 1, 1983

Size of farm (annual sales, \$000)	Relative debt level of farm operator (debt/asset ratio, percent)					Percentage distribution in classes with debt/asset ratio over 40 percent, by farm-size groups
	Total	0-10	11-40	41-70	71 and over	
	<u>Percentage distribution of operators</u>					<u>Operators</u>
All farm operators.....	100	58	24	11	7	100
Large farms (200 and over)....	100	20	36	25	19	10
Medium farms (40 to 199).....	100	34	35	18	13	39
Small farms (10 to 39).....	100	55	26	11	8	23
Very small farms (under 10)...	100	73	16	7	4	29
	<u>Percentage distribution of debt</u>					<u>Debt</u>
All farm operators.....	100	5	32	32	31	100
Large farms (200 and over)....	100	3	26	33	38	40
Medium farms (40 to 199).....	100	5	34	33	29	42
Small farms (10 to 39).....	100	7	37	29	26	10
Very small farms (under 10)...	100	8	37	32	23	8
	<u>Percentage distribution of assets</u>					<u>Assets</u>
All farm operators.....	100	47	31	14	8	100
Large farms (200 and over)....	100	26	38	22	14	38
Medium farms (40 to 199).....	100	38	37	16	8	43
Small farms (10 to 39).....	100	61	26	8	4	10
Very small farms (under 10)...	100	73	18	6	3	9

Data from the 1979 Farm Finance Survey, Bureau of the Census, as tabulated by ERS, USDA, and (a) adjusted for probable underreporting on the survey date and (b) updated to reflect changes during 1980-82, including increases in total debt and assets, an increase in the number of indebted operators, and liquidation by some operators with high debt/asset ratios. A description of the adjustment and updating will be available from the author.

experienced substantial deposit growth over time as well as recently. Table 3 shows the deposit growth record each year at banks grouped into 18 classes based on the relative importance of farm lending at the bank. Nonagricultural banks are in the top few lines, and as one goes down each column, the banks are progressively more dependent on the farm economy. Note that deposit growth at agricultural banks was terrific during the super farm income year 1973, and was lower but still positive during a poorer income year such as 1976. During the past five years, deposit growth at agricultural banks has been close to 10 percent each year, or about the same as at other small banks. These gains contrast sharply with the popular impression that, because such banks were "losing deposits to money-market mutual funds," their total deposits were falling.

Current USDA estimates of annual growth in bank deposits of farmers are much lower than the growth of deposits at agricultural banks at which farmers are the primary clientele. Chart 3 illustrates how I have used data such as that in Table 3 to make improved estimates of annual changes in farmers' deposits. On Chart 3, a simple regression estimate indicates that if 100 percent of a bank's customers were farmers, the bank's demand deposits would have increased by 25 percent during 1973. In contrast, current USDA series show an increase of 4 percent in farmers' demand deposits that year. Table 4 shows a 20-year summary of the new and old estimates. During 1963-82, bank deposits of farmers are estimated to have increased by 497 percent rather than by the 118 percent of the old USDA estimate. At the beginning of this year, farmers are estimated to have owned \$37 billion in bank deposits, rather than \$15 billion. Analysts who have noted the apparent pronounced decline over time in liquid asset holdings of farmers have

Table 3

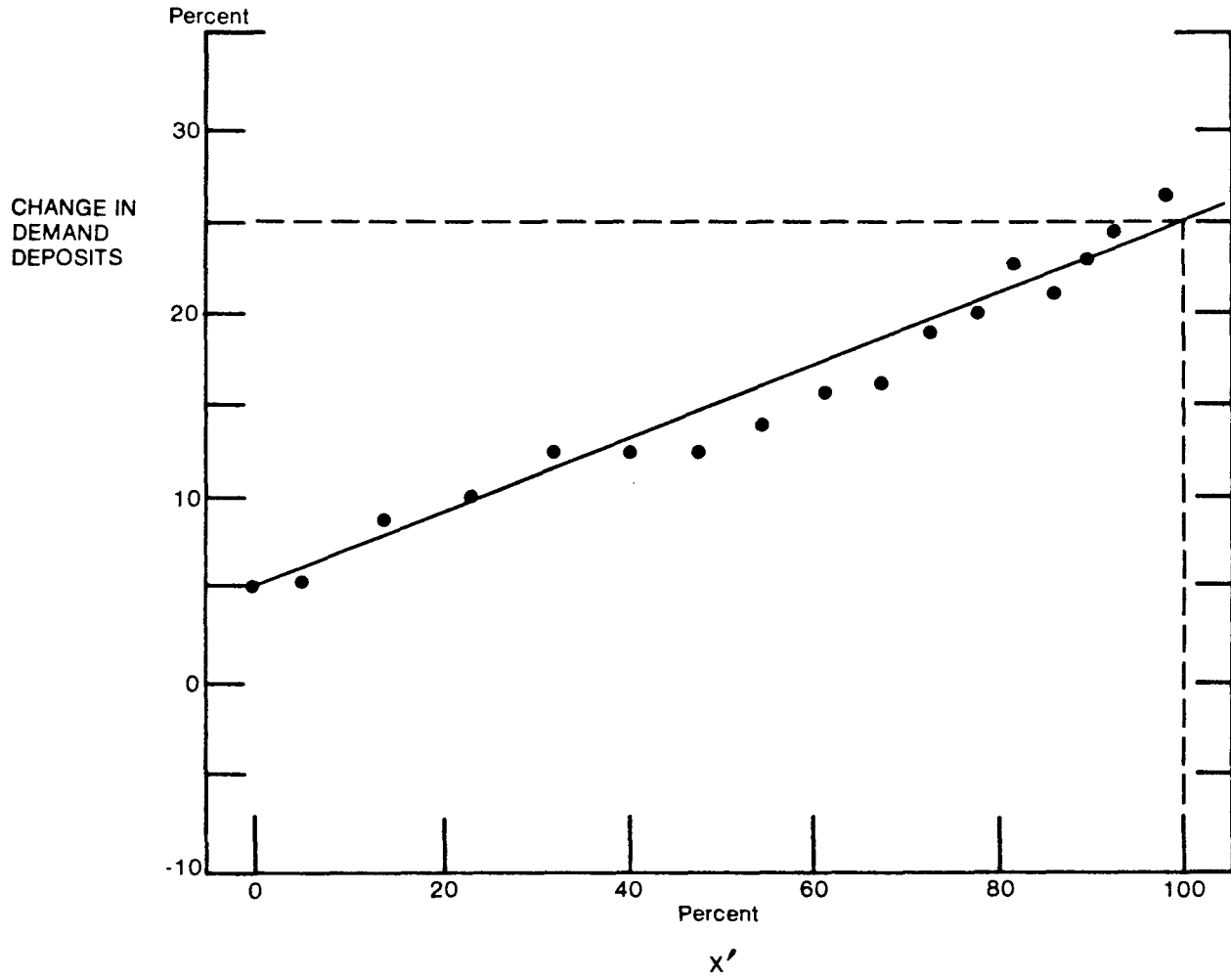
Percentage change in total deposits, by farm loan ratio classes
(Banks with total assets under \$500 million)

Farm loans as percentage of total loans at bank	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	Addenda: December 1982	
														Number of banks	Average deposits (\$ millions)
Under 1.....	11	15	16	9	6	9	11	14	9	10	9	9	12	3,956	66
1 to 4.....	11	14	15	10	7	9	11	13	9	9	8	9	10	1,959	58
5 to 9.....	10	14	15	11	7	9	11	12	10	10	9	9	9	1,306	43
10 to 14.....	10	13	16	12	8	10	12	12	9	10	8	9	9	886	38
15 to 19.....	10	14	15	13	8	11	12	12	9	9	9	10	9	816	34
20 to 24.....	10	14	15	13	8	10	11	12	9	10	9	10	8	671	29
25 to 29.....	9	14	15	14	9	11	12	11	9	12	9	10	9	581	29
30 to 34.....	9	13	16	15	10	12	11	12	10	10	10	9	8	523	27
35 to 39.....	9	14	15	15	9	12	12	11	8	11	10	10	8	479	23
40 to 44.....	10	12	16	16	9	10	11	11	10	10	10	10	9	436	22
45 to 49.....	8	11	16	16	9	12	10	11	9	10	10	10	9	347	21
50 to 54.....	8	12	16	17	9	11	10	10	9	11	10	10	9	346	20
55 to 59.....	9	12	16	18	10	11	9	10	11	10	10	10	9	311	18
60 to 64.....	8	12	16	18	8	11	8	10	11	11	12	10	9	282	18
65 to 69.....	8	12	16	19	10	11	8	9	10	10	9	10	9	271	15
70 to 74.....	8	12	16	21	10	11	8	10	12	10	10	10	10	192	15
75 to 79.....	9	10	16	20	8	10	8	8	11	10	11	10	9	162	13
80 and over...	8	11	18	21	8	11	6	9	11	9	10	10	10	158	12
All banks.....	10	14	15	11	7	9	11	13	9	10	9	9	10	13,682	44

Note: In each year, banks are classified according to their farm loan ratio at the end of that year.

Chart 3

Average Experience at 18 Classes of Small Banks
Demand Deposits, 1973



where $x' = x + x(1 - x)$
and $x = \text{Farm loans} / \text{Total loans at bank}$

Table 4

Estimated percentage changes in bank deposits of farmers

Year or period	Type of deposit				Bank deposits, USDA Balance Sheet series
	Demand	Savings	Time	Total	
1963.....	1	5	22	5	6
1964.....	2	8	19	6	4
1965.....	6	8	17	9	5
1966.....	1	2	15	5	4
1967.....	2	2	19	7	6
1968.....	6	0	23	11	6
1969.....	6	0	19	10	4
1970.....	-1	8	14	6	5
1971.....	6	13	16	10	6
1972.....	18	24	15	17	7
1973.....	25	26	16	21	7
1974.....	-2	24	15	8	-6
1975.....	4	27	14	11	5
1976.....	-2	25	11	7	3
1977.....	4	15	9	8	3
1978.....	12	12	9	11	3
1979.....	5	-11	21	9	2
1980.....	-4	-6	24	9	2
1981.....	8	-21	18	10	4
1982p.....	7	12	9	9	3
1963-67.....	13	26	133	36	28
1968-72.....	38	51	122	66	32
1973-77.....	30	186	84	68	12
1978-82.....	31	-17	108	58	15
1963-82.....	165	352	1884	497	118
Addendum: Amount as of December 1982, billions of dollars.....	11.5	3.3	22.2	37.0	15.3

Note: ATS and NOW accounts are included in demand deposits.

been misled; bank deposits have remained at about 3.5 percent of total farm assets since 1960. The farming sector is correspondingly more resilient financially than these analysts have supposed.

Effect of farm financial stress on bank loan losses

During the 1970s, loan losses reported by agricultural banks (banks with a farm loan ratio of 25 percent or more) clearly reflected the favorable financial results of most farm borrowers and farm-related rural businesses. As shown in Table 5, loan losses averaged 0.2 percent of outstanding loan volume at agricultural banks during that decade, well below the average at other smaller banks. In addition, loan losses at agricultural banks rose little during the farm income downturns of 1970-71 and 1976-77 or the general business recession of 1974-75, whereas loan losses at nonagricultural banks rose substantially during the latter period. This favorable farm loan record, however, must be qualified to the extent that an unknown number of bank borrowers with financial problems, some of which might eventually have led to loan losses for the banks, were refinanced by the Farmers Home Administration through disaster loans (made mostly to farmers with crop losses due to drought), the Emergency Livestock Credit Act of 1974, and economic emergency loans available in 1978-81.

The loan-loss picture at agricultural banks changed significantly during 1980-82 as increasing numbers of farm borrowers experienced financial stress and farm-related rural businesses were hit by both the farm income downturn and two general business recessions. By 1982, loan losses at these banks reached 0.7 percent of outstanding loan volume, a slightly higher level than at nonagricultural banks. As in previous years, however, the distribution of banks by loan losses was

Table 5

Loan losses charged to reserve (allowance), less recoveries credited, as a percentage of total loans
(Banks with total assets under \$500 million)

Farm loans as percentage of total loans at bank	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Under 1.....	.4	.3	.2	.3	.4	.6	.6	.4	.3	.3	.4	.4	.6
1 to 4.....	.3	.3	.2	.2	.3	.4	.4	.3	.3	.3	.4	.4	.6
5 to 9.....	.3	.2	.2	.2	.3	.4	.3	.3	.3	.2	.4	.4	.6
10 to 14.....	.3	.3	.2	.2	.3	.3	.3	.2	.3	.3	.4	.4	.7
15 to 19.....	.2	.2	.2	.2	.3	.3	.3	.2	.2	.2	.3	.4	.6
20 to 24.....	.2	.3	.2	.2	.3	.3	.2	.2	.2	.3	.3	.4	.7
25 to 29.....	.3	.2	.2	.2	.3	.3	.3	.2	.2	.2	.3	.4	.6
30 to 34.....	.2	.2	.2	.2	.3	.2	.3	.2	.2	.2	.4	.5	.6
35 to 39.....	.2	.3	.2	.2	.2	.2	.2	.2	.2	.2	.3	.4	.8
40 to 44.....	.3	.2	.1	.2	.2	.2	.2	.2	.2	.2	.3	.4	.6
45 to 49.....	.3	.2	.2	.1	.3	.2	.2	.2	.2	.1	.3	.3	.8
50 to 54.....	.3	.3	.1	.1	.2	.2	.2	.2	.2	.2	.4	.4	.8
55 to 59.....	.2	.2	.1	.1	.2	.2	.2	.2	.1	.1	.3	.5	.6
60 to 64.....	.2	.2	.1	.1	.2	.1	.2	.2	.2	.1	.3	.4	.7
65 to 69.....	.3	.2	.1	.2	.2	.2	.2	.2	.2	.1	.2	.4	.7
70 to 74.....	.2	.1	.1	.0	.2	.1	.1	.2	.1	.1	.3	.4	.5
75 to 79.....	.1	.2	.1	.1	.2	.2	.2	.2	.1	.1	.2	.3	.9
80 and over...	.2	.2	.1	.1	.2	.1	.2	.2	.2	.1	.3	.4	.7
All banks.....	.3	.3	.2	.2	.4	.4	.4	.3	.3	.3	.4	.4	.6
Under 25.....	.3	.3	.2	.2	.4	.5	.4	.3	.3	.3	.4	.4	.6
25 and over...	.2	.2	.1	.2	.2	.2	.2	.2	.2	.2	.3	.4	.7
Addendum: Provision for loan losses as a percentage of total loans													
All banks.....	.3	.3	.2	.3	.4	.5	.5	.4	.4	.4	.5	.5	.7
Under 25.....	.3	.3	.2	.3	.4	.5	.5	.4	.4	.4	.5	.5	.7
25 and over...	.3	.2	.2	.2	.3	.2	.3	.3	.3	.3	.4	.5	.8

Note: In each year, banks are classified according to their farm loan ratio at the end of that year.

highly skewed, with most banks reporting relatively low losses but the average raised by a few banks with exceptionally high losses. Thus in 1982 one-fourth of agricultural banks had no or very low loan losses--under 0.1 percent--and two-thirds of the banks were under the average of 0.7 percent. However, 5 percent of agricultural banks reported losses greater than 2.5 percent of outstanding loans--the level at which losses would begin to exceed pre-loss net income at a typical agricultural bank. In contrast, during the 1970s the percentage of agricultural banks reporting that high a level of loan losses was consistently under 1 percent.

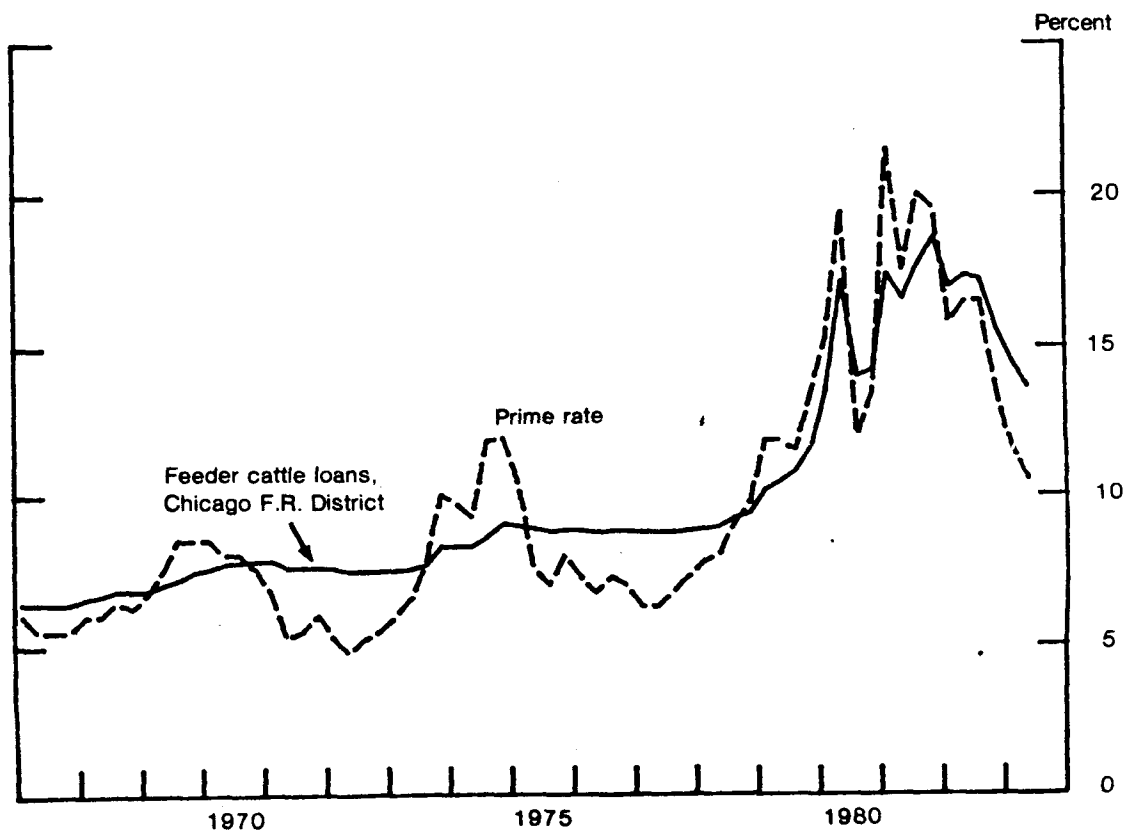
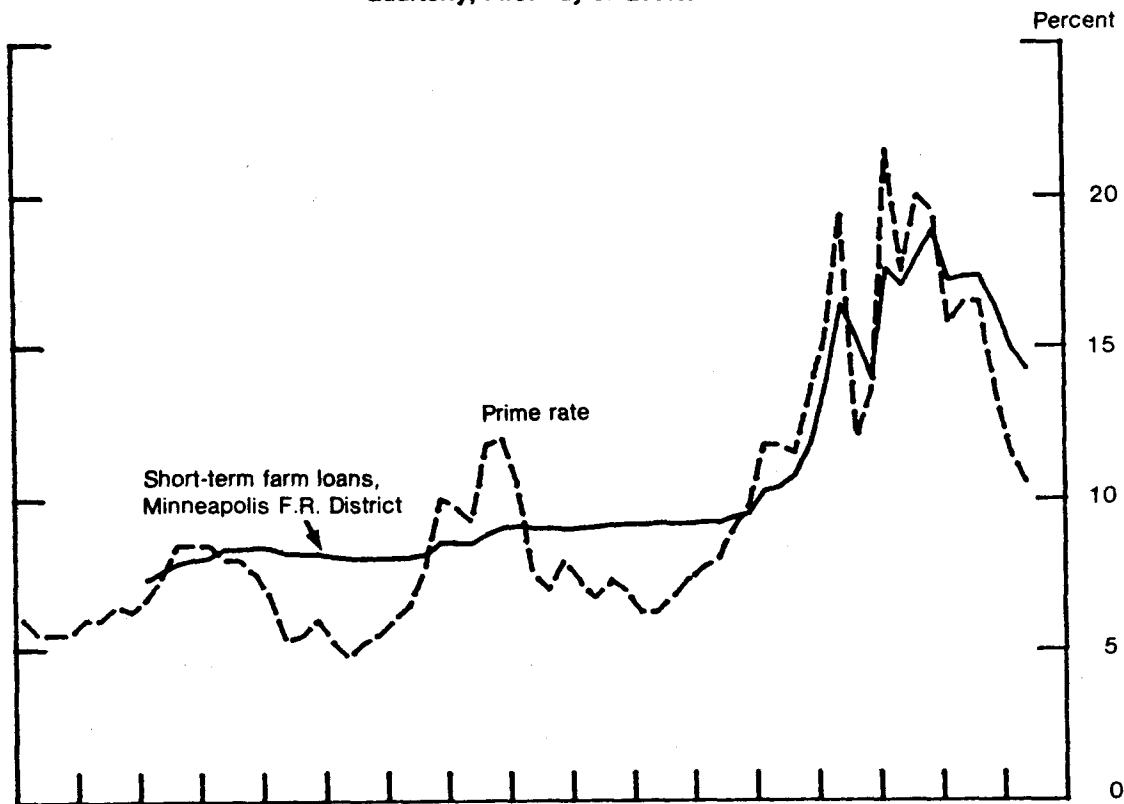
Profit experience of rural banks

Loan losses can thus significantly affect bank profits, and, as earlier discussion of farm borrowers indicated, some loan losses can be traced to the sharp rise in interest rates to which borrowers were suddenly subjected. Except for this indirect adverse effect, however, rising and relatively high interest rates have noticeably enhanced profits of agricultural banks in 1973-74 and again in 1979-82

Chart 4 is useful in showing how the level and behavior of interest rates at rural banks have either resembled or differed from the prime rate at large banks, which closely follows money-market rates. From data shown for the period before 1979, it is clear that the farm loan rates charged by rural banks are set with reference to the banks' internal cost of funds plus a mark-up, rather than with reference to what such funds could earn at the moment if invested in money-market securities. Prior to 1979, the internal cost of funds at rural banks was relatively stable, with perhaps a moderate upward trend as time deposits represented a gradually increasing share of total deposits. Farm loan

Chart 4

Average Farm Loan Interest Rates at Rural Banks Compared with Prime Rate
Quarterly, First Day of Quarter



rates were thus also relatively stable, while the national prime and money-market rates fluctuated considerably.

Interest rate patterns for depositors and borrowers at rural banks changed drastically after 1978, when banks were allowed to accept smaller and shorter-term deposits bearing market-related rates, and competitive factors led them to do so. As market rates of interest rose during 1979-81, rural depositors shifted a large proportion of their deposits into the newly-authorized six-month money-market certificates, which by mid-1981 constituted about 30 percent of total resources of agricultural banks. In addition, large certificates of deposit, also bearing money-market rates, represented another 7 percent of total resources, and banks were also paying market-related rates on another category of deposits not separately itemized on their reports, the 30-month small-saver certificates. Thus, as a large proportion of the internal funds of rural banks rather quickly came to bear market-related yields, farm and other loan rates at these banks necessarily began to track market rates, as shown by Chart 4.

Although the set of interest-rate relationships faced by rural banks was much different after 1978, Table 6 indicates that their profits were again enhanced during this period of relatively high money-market rates, as they had been earlier during 1973-74. In addition, average relative profits of agricultural banks were distinctly higher than those of other smaller banks in each year after 1972, when the farm boom got under way, after being roughly equal during 1970-72. Average return to equity reached 16 percent in 1974 and again in 1979-80, and the decline to 14 percent in 1982 primarily reflected increased provision for the loan losses being experienced.

Table 6

Net income as a percentage of equity
(Banks with total assets under \$500 million)

Farm loans as percentage of total loans at bank	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Under 1.....	13	12	12	12	11	10	10	11	12	14	14	13	12
1 to 4.....	13	13	13	13	12	12	12	13	14	14	14	12	12
5 to 9.....	13	13	13	14	13	12	13	13	14	15	14	13	12
10 to 14.....	13	13	13	14	14	13	13	14	14	14	14	12	11
15 to 19.....	13	14	14	15	15	13	14	14	14	15	14	14	12
20 to 24.....	13	12	13	15	15	13	14	14	14	15	15	14	13
25 to 29.....	13	14	13	15	15	14	14	14	14	15	15	14	13
30 to 34.....	14	13	13	15	15	14	14	14	14	15	15	14	14
35 to 39.....	13	13	13	16	16	14	14	14	14	16	16	15	13
40 to 44.....	13	13	13	15	16	15	15	14	14	15	16	15	14
45 to 49.....	12	13	13	15	16	15	15	14	14	16	16	16	14
50 to 54.....	13	12	12	15	16	14	14	14	14	16	16	16	14
55 to 59.....	13	12	12	16	16	15	15	14	14	16	17	16	15
60 to 64.....	12	13	12	16	16	14	15	13	13	16	17	17	15
65 to 69.....	12	12	12	15	16	14	15	13	14	16	18	17	15
70 to 74.....	13	12	11	15	16	14	14	14	13	16	18	18	17
75 to 79.....	14	12	12	14	16	15	15	13	13	15	18	18	15
80 and over...	12	12	11	15	16	14	14	14	13	17	19	18	16
All banks.....	13	13	13	13	13	11	12	12	13	14	14	13	12
Under 25.....	13	13	13	13	12	11	11	12	13	14	14	13	12
25 and over...	13	13	13	15	16	14	14	14	14	16	16	15	14

Addendum: Net income as a percentage of total assets

All banks.....	.9	.9	.9	.9	.9	.8	.8	.9	.9	1.0	1.1	1.0	.9
Under 25.....	.9	.9	.8	.9	.8	.8	.8	.8	.9	1.0	1.0	1.0	.9
25 and over...	1.0	1.0	.9	1.0	1.1	1.0	1.1	1.1	1.1	1.2	1.3	1.3	1.2

Note: In each year, banks are classified according to their farm loan ratio at the end of that year.

In any given year, those agricultural banks reporting relatively low or negative profits have almost always experienced extraordinarily high loan losses. In 1982, for instance, 3 percent of agricultural banks reported a loss, and at these banks the provision made for loan losses averaged 4.2 percent of outstanding loan volume. The proportion of banks reporting a loss was up from an average of 1 percent during the 1970s. Nevertheless, 77 percent of agricultural banks in 1982 achieved a return of 10 percent or more on equity, which, while down from 91 percent of these banks in 1979, was a generally enviable financial result during a year of farm and business recession.

Capital condition and progress of rural banks

A considerable portion of the profits of agricultural banks--about two-thirds in 1982--are added to bank capital rather than paid out as stockholder dividends. Thus growth of these banks and their lending capability is supported without need for continual sale of new stock. Over the last nine years, agricultural banks increased their equity faster than their deposits and assets were growing, and thus strengthened their relative capital position as shown in Table 7. By the end of 1982, capital and surplus at agricultural banks averaged 8.9 percent of assets, up from a cyclical low of 7.4 percent in 1973.

Table 8 summarizes the rapid growth of the equity of agricultural and other smaller banks over longer periods as well as recently. In this table, the number of banks was held constant during each period for which a percentage change was calculated, and so capital and surplus per bank also changed by the same percentage. Thus the table indicates that over the last 20 years the average percentage increase in capital and surplus of agricultural banks fell only slightly short of

Table 7

Capital and surplus as a percentage of total assets
(Banks with total assets under \$500 million)

Farm loans as percentage of total loans at bank	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Under 1.....	7.6	7.4	7.2	7.4	7.7	7.7	7.9	7.7	7.7	7.9	8.0	8.0	7.8
1 to 4.....	7.5	7.4	7.2	7.4	7.6	7.6	7.9	7.8	7.9	7.9	8.1	8.0	7.9
5 to 9.....	7.6	7.4	7.2	7.3	7.6	7.6	8.0	7.8	7.9	8.0	8.2	8.2	8.3
10 to 14.....	7.5	7.5	7.2	7.4	7.5	7.6	7.9	7.8	8.1	8.3	8.4	8.4	8.4
15 to 19.....	7.5	7.3	7.2	7.3	7.6	7.6	7.9	8.0	8.0	8.3	8.5	8.4	8.4
20 to 24.....	7.7	7.6	7.3	7.3	7.6	7.7	8.2	8.1	8.3	8.3	8.6	8.5	8.4
25 to 29.....	7.7	7.5	7.3	7.4	7.6	7.5	7.8	7.9	8.1	8.4	8.5	8.5	8.5
30 to 34.....	7.8	7.6	7.3	7.2	7.6	7.6	8.0	8.2	8.3	8.3	8.7	8.6	8.7
35 to 39.....	7.8	7.7	7.3	7.3	7.6	7.8	8.1	8.0	8.3	8.5	8.5	8.8	8.7
40 to 44.....	8.0	7.8	7.5	7.4	7.7	7.7	8.1	8.3	8.3	8.5	8.7	8.6	8.8
45 to 49.....	8.1	7.9	7.5	7.4	7.7	7.7	8.1	8.2	8.4	8.6	8.9	8.8	9.0
50 to 54.....	8.3	7.9	7.6	7.2	7.7	7.7	8.1	8.3	8.5	8.7	8.8	9.1	9.2
55 to 59.....	8.1	8.0	7.7	7.2	7.7	7.6	8.3	8.4	8.5	8.8	9.1	9.1	9.3
60 to 64.....	8.2	8.1	7.7	7.5	7.8	7.8	8.2	8.7	8.6	8.8	9.1	9.2	9.3
65 to 69.....	8.5	8.3	7.9	7.5	7.6	7.9	8.4	8.7	8.7	9.0	9.1	9.3	9.3
70 to 74.....	8.8	8.5	8.1	7.7	8.0	8.2	8.7	8.7	8.8	8.8	9.6	9.4	9.7
75 to 79.....	7.8	8.9	8.4	7.5	8.1	8.0	8.6	9.2	9.0	9.6	9.7	10.0	10.1
80 and over...	9.6	9.3	8.5	8.1	8.6	8.6	9.4	9.6	9.6	9.8	10.0	10.5	10.6
All banks.....	7.6	7.5	7.3	7.4	7.6	7.6	8.0	7.8	7.9	8.0	8.2	8.2	8.1
Under 25.....	7.5	7.4	7.2	7.3	7.5	7.6	7.9	7.8	7.8	8.0	8.1	8.1	8.0
25 and over...	8.0	7.9	7.5	7.4	7.7	7.7	8.1	8.3	8.4	8.6	8.8	8.9	8.9

Note: In each year, banks are classified according to their farm loan ratio at the end of that year.

the increase of 591 percent in average assets of all U.S. farms. Furthermore, when one takes into account that the increase in average size of farms substantially overstates the growth of the typical farm--because smaller farms have been more prone to disappear from the count of farms, by redefinition as well as in reality--it appears likely that increases in the size of loans banks can make have kept up with increases in the average size of loans demanded by farmers, even after allowing for a rise in typical farm debt/asset ratios. Furthermore, the ability of national banks to make larger loans was recently enhanced by legislation which raised the maximum amount of loans to one borrower from 10 to 15 percent of capital and surplus (loans secured by livestock continue to enjoy a special higher limit of 25 percent).

Should local deposit growth be at times inadequate to meet loan demand, small banks now for the first time find themselves with an effective mechanism for obtaining funds in the national money market. When Federal insurance on individual deposits was raised to \$100,000, this had the incidental effect of making the negotiable certificates of deposit of small banks saleable to national investors in these bank instruments, through agencies that ensure that each investor holds no more than one certificate of each bank. Furthermore, because most growth in local deposits is now in accounts and certificates that bear interest related to money-market rates, there is now little difference in cost to the bank of raising additional funds through promoting local deposit growth or by selling negotiable certificates, whereas in the past the latter was a much more costly source of funds during periods of monetary restraint. Thus the ability of small banks to respond to seasonal, cyclical, or unusual changes in loan demand has been improved.

Table B

Percentage change in capital and surplus
(Banks with total assets under \$500 million)

Farm loans as percentage of total loans at bank	1963-82	1963-67	1968-72	1973-77	1978-82	1978	1979	1980	1981	1982
Under 1.....	499	48	69	63	66	12	12	11	10	9
1 to 4.....	554	43	68	70	63	12	11	12	9	8
5 to 9.....	587	42	62	77	67	12	12	12	9	9
10 to 14.....	562	38	66	78	65	12	12	11	9	8
15 to 19.....	585	40	62	85	67	12	12	12	10	9
20 to 24.....	589	40	62	90	73	12	13	12	10	9
25 to 29.....	565	35	59	82	70	12	13	13	11	9
30 to 34.....	591	34	61	89	75	12	12	12	11	11
35 to 39.....	576	36	58	90	72	12	13	12	10	9
40 to 44.....	544	34	55	88	73	12	14	13	12	10
45 to 49.....	570	33	50	89	78	12	13	12	12	10
50 to 54.....	578	33	51	89	77	12	14	14	12	10
55 to 59.....	576	34	49	84	80	12	14	14	12	11
60 to 64.....	558	31	48	85	84	11	14	14	13	12
65 to 69.....	528	30	46	87	83	12	14	15	13	11
70 to 74.....	543	31	45	88	87	12	13	15	14	13
75 to 79.....	518	30	46	82	81	11	14	15	14	12
80 and over...	497	29	42	82	80	10	14	14	12	12
All banks.....	543	42	65	72	68	12	12	12	10	9
Addendum: Percentage change in average assets per farm.....	591	47	49	116	46	19	15	8	0	-2

Note: In each year or period, banks are classified according to their farm loan ratio at the end of that year or period.

In summary, data reviewed in this paper indicate that agricultural banks have been more competitive and successful than many agricultural observers have supposed, in large part because financial results in agriculture have also been better than commonly thought. Strong capital positions of most farmers and agricultural banks, a legacy of past favorable results, are providing financial resilience during the current farm recession. Future results for these banks and farming will remain correlated. Agricultural banks now have the capital, liquidity, and access to funds that will enable them to respond vigorously to increased loan demand from farmers and other rural enterprises.

Related papers by E. Melichar

"Farm Profits and Financial Distress," Workshop on Credit and Tax Policies for the Family Farm, Committee on Small Business, U.S. Senate, April 27, 1983.

Statement on the farm income situation, State of the Farm Economy, Hearing before the Committee on Agriculture, House of Representatives, 97th Congress, 2nd Session, September 28, 1982.

"Developments in Agricultural Finance," presented at the meeting of the Newspaper Farm Editors of America, Washington, D.C., April 27, 1982.

"Farm Sector Financial Experience," presented at the Faculty Seminar, Department of Agricultural Economics, University of Maryland, November 6, 1981.

"Capital Gains versus Current Income in the Farming Sector," American Journal of Agricultural Economics, December 1979, pp. 1085-1106.

"The Relationship Between Farm Income and Asset Values, 1950-1977," Food and Agricultural Policy Issues, Special Report 71, Agricultural Extension Service, University of Minnesota, 1978.

Copies of the above papers are available from the author.

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