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A SURVEY OF AGRICULTURAL LENDING ISSUES

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A Survey of Agricultural Lending Issues

Eddy L. LaDue and Greg Hanson¹

Some lenders, particularly commercial banks and insurance companies, must decide whether, and how much, to lend to agriculture. Loan funds can be allocated in a number of different ways. Loan policies can be developed to include or exclude any industry depending on how the characteristics of that industry fit with the overall strategy of the institution and the rest of the loan portfolio.

In this article we identify some of the characteristics of agriculture that may make it a good industry to include in a loan portfolio. In particular, we discuss lending costs, relative interest rates, profitability, risk diversification, deposit base and cross selling of trust and investment services as well as the profitability, size and value added characteristic of agriculture.

Agricultural Loans Have Lower Costs

Two studies have tried to directly assess the profitability of agricultural loans compared to other types of loans. One was done at Cornell and the other, which replicated the Cornell study, at Auburn University. Both of these studies focused on the cost side of the profitability equation.

These studies found that the net loan loss and loan service costs (i.e., noninterest costs) connected with agricultural loans were lower than similar costs for installment loans or commercial (nonfarm) loans and higher than mortgage loans (Figure 1). Costs connected with farm loans were one-half to three-quarters of a percent below the costs for commercial loans. The banks included in these studies were primarily small and midsize banks and their commercial loans were to small and midsize firms. They did not include many of the huge loans that can have very low service costs. Thus, the comparison is between agriculture and other small and medium sized businesses that are typical of rural areas.

The main reason that agricultural loans were lower cost was the lower level of net loan loss experienced. Although the studies varied somewhat in the level of loan losses found for commercial loans, a high proportion of the difference in total costs results from differences in loan losses (Figure 2). Gross loan losses, or gross loan write-offs, for farm loans were only one-quarter to one-third that found for other loan types. The Cornell study also found a higher recovery rate for farm loans than for other loans.

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There are at least two reasons why loan losses are lower for farm loans. First, a farmer's home and his hobbies are frequently part of the farm business. Thus, bankruptcy represents an immense personal loss, making the process a personal defeat rather than a chance to wipe his or her business slate clean in preparation for a fresh start.

Second, farm assets normally represent salable assets that frequently increase in value over time. Except for a brief period in the 1980's, farm real estate values have been increasing over the last 50 years. Under reasonable management, livestock inventories also tend to increase over time.

One of the problems with these studies of bank profitability is that they were conducted in the mid 1970's. Both the agricultural and banking industries have changed since that time. Whether the results of these studies still hold has not been tested with more recent studies. The basic characteristics of farmers have not changed; so we would expect that the difference between farm and nonfarm loan losses would still be similar. Some recent anecdotal data on individual banks with large farm loan portfolios that show lower losses on agricultural loans than other types of loans. If the lower loss levels still exist, since most of the difference in costs observed in the two studies reflected lower loan losses, the lower cost of farm loans would still hold.

The only statistical evidence that we have of what has happened since the mid 1970's comes from the data provided by the Board of Governors of the Federal Reserve System on the performance of agricultural versus other small banks. The Board of Governors defines an agricultural bank as one that has a higher than national average percent of loans to farmers. Currently the average percentage is 17. Nationally, most of the banks that meet the agricultural bank definition are small banks. Thus, the Board of Governors provide comparison data for agricultural and other small banks.

The basic problem with these data is that the effects of the characteristics of agricultural loans are somewhat masked by the fact that the data are for the whole bank which include a considerable amount of nonagricultural loans. The magnitude of difference that we observe between agricultural and other small banks is likely less than the difference between agricultural and nonagricultural loans.

The data do show lower loan losses for agricultural banks in the late 1970's (Figure 3). This result confirms the results of the Cornell and Auburn University studies discussed above. During the agricultural recession of the mid 1980's losses of agricultural banks were higher than experienced by other banks. However, since 1989 the agricultural banks have experienced much lower net loan charge-offs than the other banks. These data imply that the cost advantages experienced with agricultural loans in the mid 1970's appears to also exist in the 1990's, even though they did not exist during the 1982 through 1987 period.

Interest Rates are as High or Higher

The other side of the profit equation is income. Interest rates charged to agriculture vary considerably from farm to farm. There is a tendency to remember the very high quality loan to a leading farmer where the competition forced for lender rates down to the bear minimum. The loan was made because it still provided a small profit and to keep leading farmers in the portfolio. However, at a national level, the average rates paid by farmers compare favorably, from the lenders point of view, to somewhat comparable loans made to others.

The data on relative rates comes from the quarterly survey of terms of bank lending conducted large banks, for our comparison banks. Since the data reported for nonagricultural loans is divided into many categories, none of which has characteristics comparable to farm loans, these data were combined to provide rates for loans with maturities and proportion at variable rates that were the same as farm loans. Because the average size of all nonfarm loans over \$100,000 is much larger than the average for farm loans, large loans are also adjusted for loan size.²

Farm interest rates are generally higher than nonfarm rates on small loans of less than \$100,000 (Figure 4). From 1985 through Second Quarter 1995, farm rates were higher than nonfarm rates in all except four quarters. For the 42 quarters, farm rates averaged 11.0 percent compared to 10.6 percent for nonfarm loans, a difference of 0.4 percent (40 basis points). A similar picture emerges for large loans (Figure 5). Farm loan rates on large loans are generally greater than nonfarm rates. During the 1985-95 period, farm rates on large loans were above nonfarm rates in all but one quarter. Average rates were 0.6 percent (60 basis points) higher for farm rates over the 42 quarters, with farm rates averaging 9.7 percent compared to 9.1 percent for nonfarm rates.

Loans are Profitable

With lower costs and as high or higher interest rates, agricultural loans are clearly profitable. That fact is illustrated by the ROA's obtained by agricultural and other comparable size banks (Figure 6). Except for the period of the agricultural recession of the mid 1980's agricultural banks were more profitable than other banks. From a more recent perspective, agricultural banks have been more profitable for the last eight years. For the entire 1970 through 1994 period, including the agricultural recession period of the 1980's, the average return on assets at agricultural banks has averaged 1.00 percent compared to .86 percent for small nonagricultural banks.

² The data and procedure used are presented in LaDue, E.L., "Why Lend to Agriculture," Department of Agricultural, Resource and Managerial Economic Staff Paper 94-13, Cornell University, December 1994.

One of the questions that the national data raise is how often conditions like the 1980's occur? What made the mid 1980's a recession for agriculture was the combination of significant declines in both income and asset values. Farmers could not make their debt payments and the collateral value of the assets used to secure those loans declined precipitously. Either of those occurrences by itself has historically engendered only modest farm loan losses. For example, income declined during the late 1940's and early 1950's, but asset values continued to rise. Fortunately, occurrences like the mid 1980's have historically occurred very infrequently (Figure 7). The most recent occurrence prior to the 1980's was the 1930's. Some writers have observed that prior severe stress periods for agriculture occurred in the 1870's and 1820's and suggested that these financial stress periods occur about every 50 years as the result of a regular boom and bust cycle³. If we could believe that, we should expect agricultural loans to be profitable for the next few decades.

We do know, however, that the decline of agricultural asset prices in the 1980's removed most of the speculative, or asset price inflation, expectations from asset prices. Most prices are now at levels that can be sustained by cash flows from the assets. This provides a strong foundation for sound lending in the near future.

Diversifies Portfolio Risk

Although agriculture is not considered a counter-cyclical industry, it generally does not move with the general business cycle. The cyclical nature of industries influences the demand for loans and the ability of borrowers to repay loans. A major part of both farm and nonfarm investment, and thus demand for loans, is represented by durable equipment and structure purchases. Figure 8 indicates the percent change in investment in the farm and nonfarm economy. Presumably, an increase in the rate of investment would imply increased loan demand while a decrease would indicate a decrease in loan demand. Clearly, farm and nonfarm investment frequently, but not always, go in different directions. Thus, including agricultural loans in a portfolio would tend to level out loan demand and provide opportunities for lending in some years when demand from the rest of the economy is lagging.

The income side of the picture shows some of the same characteristics; farm income is frequently up when nonfarm income is down and vice versa (Figure 9). During the 1960 to 1993 period farm and nonfarm income went in opposite directions, one up and the other down or vice versa, in 15 of the 34 years. On the negative side, however, agriculture also appears to have more income variability. Part of this, of course, occurs because the farming is being compared to an aggregation of a multitude of other industries, each of which may also have their ups and downs that are partially offset by different experiences

³ McKinzie, L., T.G. Baker and W.E. Tyner. "A Perspective on U.S. Farm Problems and Agricultural Policy." Westview Press. 1987

of other industries. But, at least some of the agricultural income fluctuation is likely the result of weather variability, which has little affect on most other industries.

Clearly, agriculture does provide diversification opportunities.

Helps Build the Deposit Base

The Cornell study reported earlier found farmer deposit balances were about 23 percent of their loan balances. The Auburn University study found average dollar deposit balances that were over twice as much as the Cornell study, but did not report average farmer loan balances. About half of the deposits were in checking accounts with the remainder in savings accounts and certificates of deposit (CD's). We know deposit relationships and products have changed since the 1970's. So, these relationships may no longer hold. However, we do know that farms handle fairly large sums of money during the year. For example, in 1993 U.S. commercial farms had cash income in excess of \$250,000 per year⁴. The largest 312,000 farms had average sales of \$435,000 each. This money has to sit somewhere from the time it is received until it is spent. Putting that amount of money through a checking account can result in significant average deposit balances.

The 1970's studies found that retired farmers had average deposit balances that were about twice the active farmer balances. Farmers tend to retire on or near the farm business. They are less likely than the general population to make a permanent move to Florida or Arizona. They visit those locations for a while during the winter but return to the home town for most of the year. This means that their accounts stay in the local community. They are most likely to leave that money in the bank that served them while they were farmers.

Clearly, the combined balances of the active and retired farmers will contribute positively to the bank's deposit base, even though we do not have any recent measures of the exact magnitude of these deposits. One way to get those deposits is to require that the checking account be transferred to your institution as a condition of the loan.

A Market for Trust and Investment Services

As farms get larger and more complex, the process of transfer of either the farm or the net asset value of the farm to the next generation becomes more difficult, and the amount of money involved gets greater. Over the last 20 years the average assets has

⁴ ERS, USDA, Economic Indicators of the Farm Sector, National Financial Summary, ECIFS 13-1, p. 66, January 1995. Commercial Farms defined as those with over \$40,000 gross sales.

increased from about \$100,000 per farm to nearly \$500,000⁵. Further, about a quarter of all farms with over \$50,000 in sales have primary operators over 60 years of age⁶. A high proportion of these farms will be transferred or sold over the next few years.

Many large farm operators will need to employ financial advisors to assist them with the design and conduct of the transfer. They will frequently need someone to serve as executor, trustee, investment advisor or investment manager. These are services that the trust department provides on a regular basis. Many of these businesses will need other nonloan products such as Individual Retirement Accounts (IRA's) and Keogh plans. These products all contribute fee income to the bank. With the increased focus by many banks on fee income, this could be an important plus for agriculture⁷. The institution that has provided funds and financial advice for the farming operation is likely to have the inside track in obtaining the trust and investment service business.

Agriculture is Profitable

A lot has been written about the low rates of return to agriculture. The USDA routinely publishes data showing rates of return for farm income of four to six percent, or less. This has led many people with modest agricultural backgrounds to conclude that agriculture is basically unprofitable when compared to nonfarm businesses that report higher income levels. There are two basic problems with the rate of return numbers provided by the USDA. First, the data include everyone with over \$1,000 in farm sales. Many of these small operations, which make up a large portion of the total number of farms, are part time or hobby operations where the primary objective is something other than making money. The larger commercial farms have much higher rates of return than these small entities (Table 1). Loans to these small businesses would normally be made on a consumer loan or home equity line of credit basis. Loans to the larger commercial farm businesses come closer to representing what most of us think about when we consider lending to agriculture, and these businesses have much better rates of return.

Second, the rate of return data published by the USDA are based on the market value of the assets in the business, where most of the rate of return data for other kinds of businesses is based on book value. Recent studies indicate that the book value of farm

⁵ ERS, USDA, Economic Indicators of the Farm Sector, National Financial Summary ECIFS 13-1, ERS, USDA, January 1995.

⁶ 1987 Census of Agriculture.

⁷ For a discussion of these opportunities, see LaDue, E.L. "Partnership Agreements and Inter-Generational Transfer: Opportunities for Agricultural Banks." Cornell University, Department of Agricultural, Resource, and Managerial Economics, Staff Paper No. 93-22, November 1993.

assets may be about half of the market value⁸. This large discrepancy in the way the assets are valued means that the two sets of reported rates of return are not comparable.

One measure of profitability often used by nonfarm businesses, that may provide a more comparable basis of comparison, is earnings as a percent of sales. Data to calculate this measure are available for both farm businesses and manufacturing corporations (Figure 10). Except for the 1980's agricultural recession period, farm businesses compare very favorably using this measure. Earnings as a percent of sales does not have the data comparability problems that we observed with rate of return values. We should recognize, however, that this measure favors highly capitalized industries such as agriculture.

At a minimum, it is clear that many farm businesses achieve rates of return that make them good loan prospects from a business profitability point of view.

Value-Added Strength in 1990's Agriculture

Value-added measures the combined contribution of farm proprietors, farm laborers and agricultural landlords to the U.S. economy. Real-value added in agriculture rose substantially in the 1980's and early 1990's, reaching about \$72 billion in 1992 (Table 2). Value-added is a commodity-based indicator of the efficiency of farmers to produce crop and livestock products. Growth in agricultural value-added is consistent with the perspective that U.S. agriculture is a technically advanced and highly competitive sector of the economy. The farm sector has generated greater physical amounts of commodities with improved technology and management in recent years. Clearly, the agricultural sector is a vital and competitive part of the U.S. economy. The production efficiency shown by the agriculture sector has made commercial farmers more viable longrun borrowers and customers of bank services in the 1990's.

Growth in Agricultural Loans at Commercial Banks

Full-service banks have become the dominant lender to agriculture, increasing outstanding loan volume from \$44 billion in 1985 to \$58 billion in 1994 (Table 3). Between 1986, the low-point in the most recent lending cycle and 1996, bank loans to agriculture will likely have increased by about 50 percent. Growth in bank loans has been offset by declines in loans from other major lenders to agriculture. The Farm Service Agency of the U.S. Department of Agriculture (FSA/USDA), has reduced its outstanding loan volume from \$24.5 billion in 1985, to \$11.5 billion in 1994. By the late 1990's, FSA/USDA lending to farmers may consist largely of guarantees of loans made primarily by banks and the FCS. Banks and other lenders have found that USDA guaranteed loans

⁸ LaDue, E.L. "Deferred Taxes: Estimation Errors and Effects on Analytical Ratios." *Agr. Fin. Rev.* 54(1994):24-38.

are marketable in the second securities market. The Farm Credit System (FCS), a nationwide system of cooperative banks originally established by the federal government, has experienced a 44 percent decline in loans to agriculture from a peak of \$65 billion in 1984 to about \$36 billion in 1994.

The full-service, diversified loan portfolio, business approach of commercial banks has proven to be a strength in agricultural lending in the 1990's. Agricultural loans from banks are increasingly competitive since FSA/USDA direct lending has been curtailed by Government deficit reduction policies and FCS lenders have reduced their loans to farmers.

Since 1986, improvement in the financial position of agriculture has corresponded with growth in bank lending to farmers (Table 4). The debt financed share of farm assets has fallen from 23 percent in 1985 to about 16 percent. The liquidity of the farm sector, as measured by the Times Interest Earned ratio, and efficiency, as measured by the Interest to Gross Cash Income ratio and the Asset Turnover ratio, are also much improved since the mid-1980's.

Summary

There are a number of reasons for lending to agriculture. Research studies indicate that agricultural lending can be lower cost than other commercial lending or installment lending, primarily because of the lower loan losses generally experienced with farm loans. Interest rates are generally higher than charged on nonfarm loans. The lower costs and higher rates result in agricultural loans being profitable for lenders. Except for the mid 1980's agricultural recession period, agricultural banks tend to be more profitable than other banks of similar size. Historically, conditions like the mid 1980's have occurred in agriculture about every 50 years.

Agricultural investment and income tend not to move with the general business cycle, indicating that including agricultural loans in a portfolio could be expected to provide more stable loan demand and diversification of risk. Because of the high cash throughput of operating farm businesses and the tendency of retired operators with large deposit balances to retire near the farmstead, agricultural loans can help build deposit balances. The increasing size of farm businesses and the aging of farm operators provides a market for cross-selling of trust, investment and other services that could result in considerable fee income for an institution that is able and willing to capitalize on the opportunity.

Because farming is made up of a number of small to mid-sized businesses that are geographically dispersed, the size of the industry tends to be underestimated. In spite of much press that indicates or implies to the contrary, many commercial farm businesses are profitable entities that provide solid lending opportunities.

Table 1. Rates of Return by Farm Size
United States, 1987-90

Measure and Gross Sales	Year		
	1988	1989	1990
<i>Rate of Return on Assets (percent)</i>			
Over 500,000	8.2	9.6	8.2
250,000 - 499,999	4.4	4.2	5.7
50,000 - 249,999	1.4	2.1	1.5
49,999 and under	-3.0	-2.2	-2.2
All Farms	0.5	1.2	1.0
<i>Return on Equity (percent)</i>			
Over 500,000	7.6	9.3	7.3
250,000 - 499,999	2.9	2.7	4.5
50,000 - 249,999	-0.3	0.8	-0.2
49,999 and under	-4.1	-3.2	-3.2
All Farms	-1.1	-0.0	-0.4

Source: The Economic Well-Being of Farm Operator Households, 1988-90. Agricultural Economic Report Number 666, USDA, ERS, January 1993, pp. 25-31.

Table 2. Value-Added for the U.S. Agricultural Sector, by Region

Region	1960	1970	1980	1990	1992
			(billion dollars)		
North Atlantic	2,432	2,086	1,867	3,120	3,492
North Central	13,193	14,726	14,546	26,453	29,771
Southern	10,128	12,183	10,540	19,513	24,061
Western	6,829	8,399	11,145	15,329	15,283
United States	32,644	37,394	38,116	64,415	72,606

Source: Dr. Gregory Hanson, Penn State University: Value-added statistics compiled with the assistance of the Economic Research Service, U.S. Department of Agriculture.

Note. Value-added, a commodity based measure, is in real terms after adjustment for inflation.

Table 3. U.S. Farm Business Debt Outstanding by Lender, 1980-94

Year	All Operating Banks	Farm Credit System	FSA/ USDA	Life Insurance Companies	Individuals Other Lenders	Total
------(billion dollars)-----						
1980	37.8	53.0	17.5	12.0	46.6	166.8
1981	38.8	61.6	20.8	12.2	49.1	182.4
1982	41.9	64.2	21.3	11.8	49.6	188.8
1983	45.4	63.7	21.4	11.7	48.8	191.1
1984	47.2	64.7	23.3	11.9	46.7	193.8
1985	44.5	56.2	24.5	11.3	41.2	177.6
1986	41.6	45.9	24.1	10.4	34.9	157.0
1987	41.1	40.0	23.6	9.4	30.3	144.4
1988	42.7	37.1	21.9	9.0	28.6	139.4
1989	44.8	36.2	19.0	9.0	28.2	137.2
1990	47.4	35.6	17.0	9.6	27.8	137.4
1991	50.2	35.4	15.2	9.5	28.5	138.8
1992	51.6	35.6	13.5	8.7	29.2	138.6
1993	54.5	35.4	12.1	9.0	30.9	141.9
1994	57.9	35.9	11.5	9.1	32.8	147.2

Source: Economic Indicators of the Farm Sector: National Financial Summary. U.S. Department of Agriculture, 1993-94.

Note: FSA/USDA was formerly the Farmers Home Administration of the U.S. Department of Agriculture. The "Other" category includes individuals and all other lenders to agriculture.

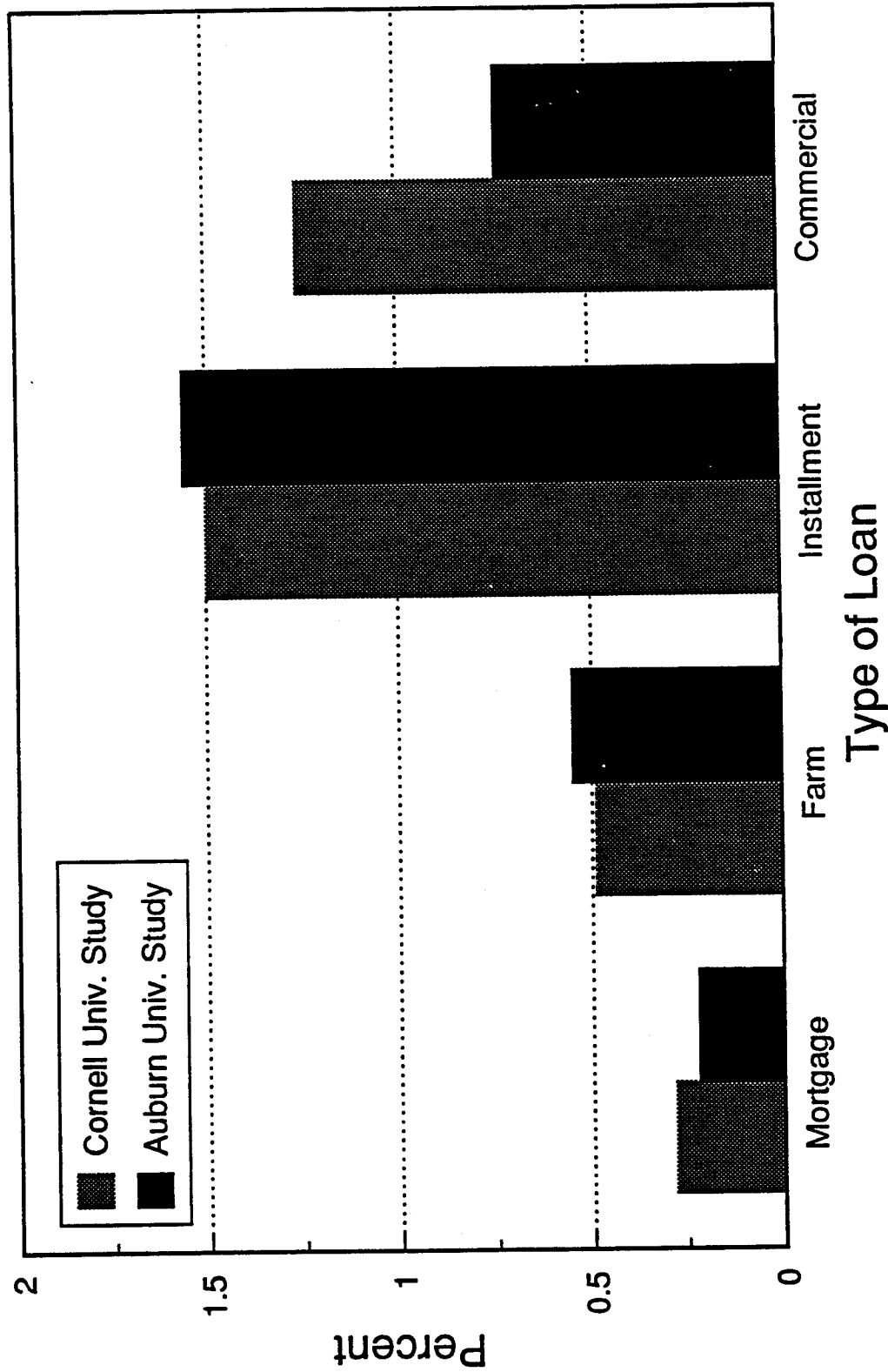
Table 4. Financial Ratios for the U.S. Farm Sector

Year	Debt to Assets	Times Interest Earned	Interest to Gross Cash Income	Asset Turn- over
	------(percent)-----			
1980	17.0	2.23	10.9	15.2
1985	23.0	2.79	11.3	19.4
1990	16.2	4.93	6.8	22.3
1991	16.5	4.87	6.2	21.9
1992	16.1	6.01	5.6	22.6
1993	16.0	5.58	5.2	22.6
1994P	16.1	5.8	5.4	22.8

P=projected.

Source: Economic Indicators of the Farm Sector: National Financial Summary. U.S. Department of Agriculture, 1993-94.

**Figure 1. Loan Loss and Loan Service Costs
by Type of Loan**

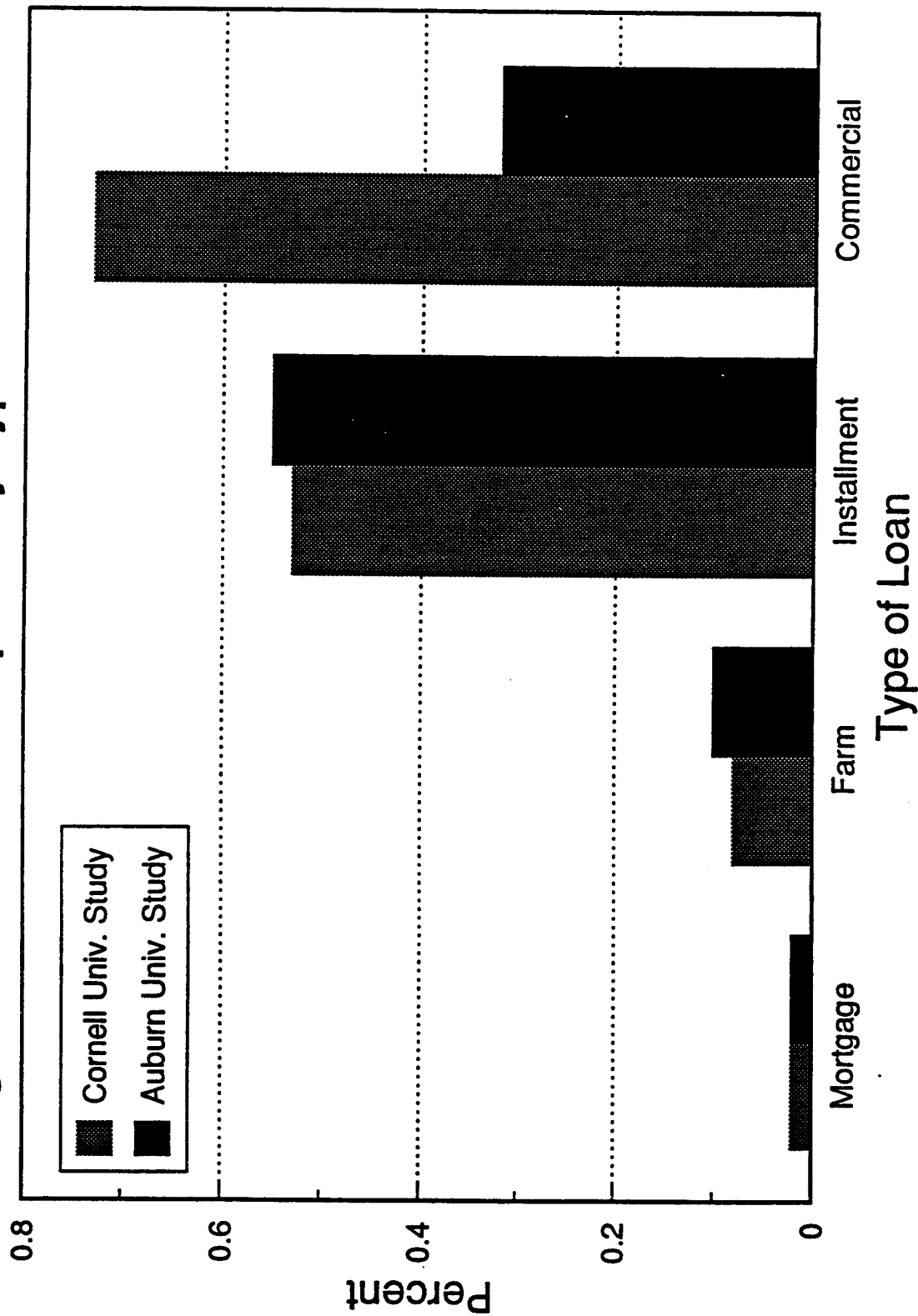


Source: LaDue, Moss, and Smith. "The Profitability of Agricultural Loans for Commercial Banks."

Cornell University A.E. Res. 77-12, July 1977.

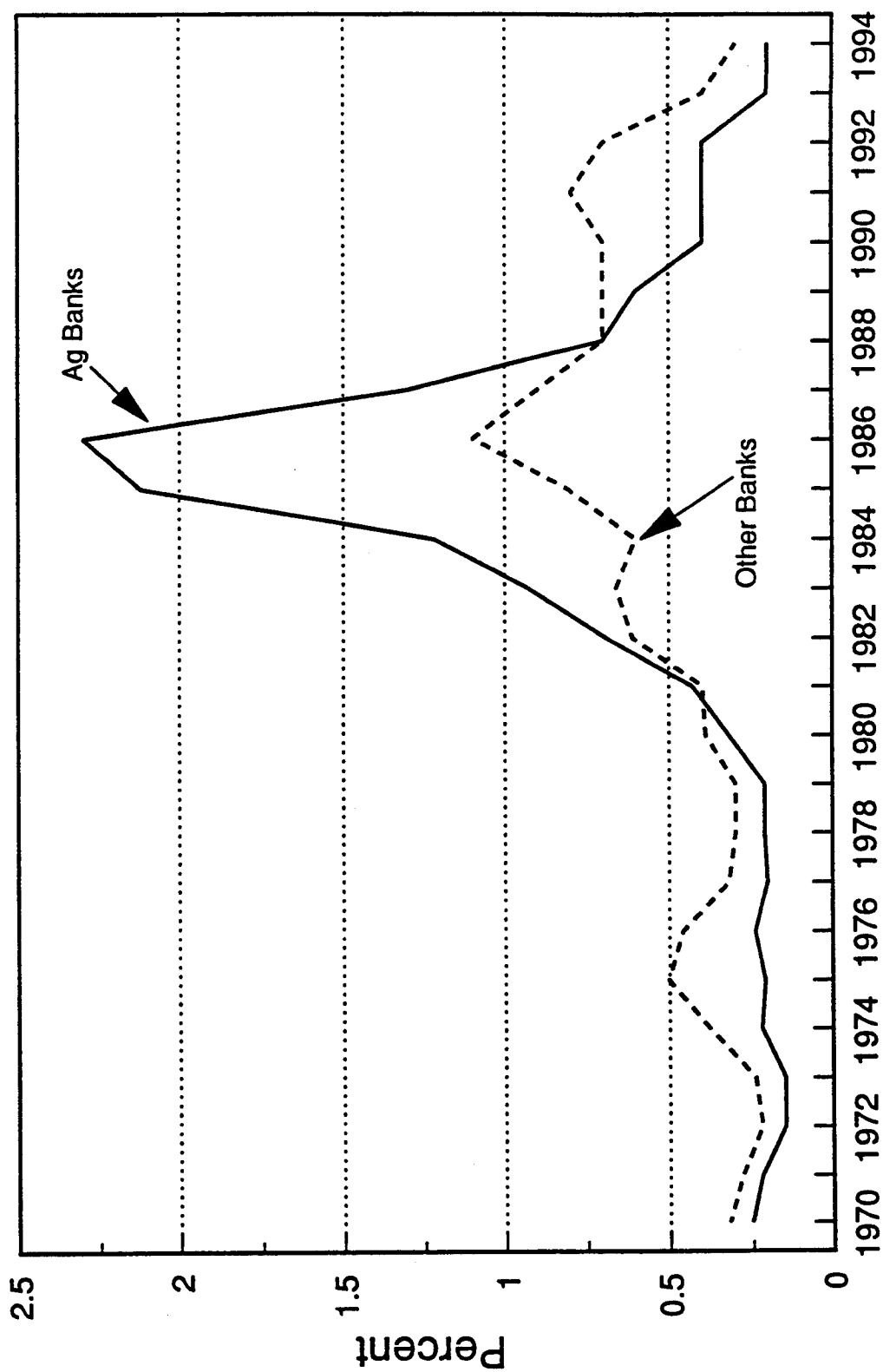
Moore. "An Evaluation of Agricultural Loan Profitability for Commercial Banks in Alabama."
M.S. Thesis, Auburn University, August 1979.

Figure 2. Loan Loss Expense by Type of Loan



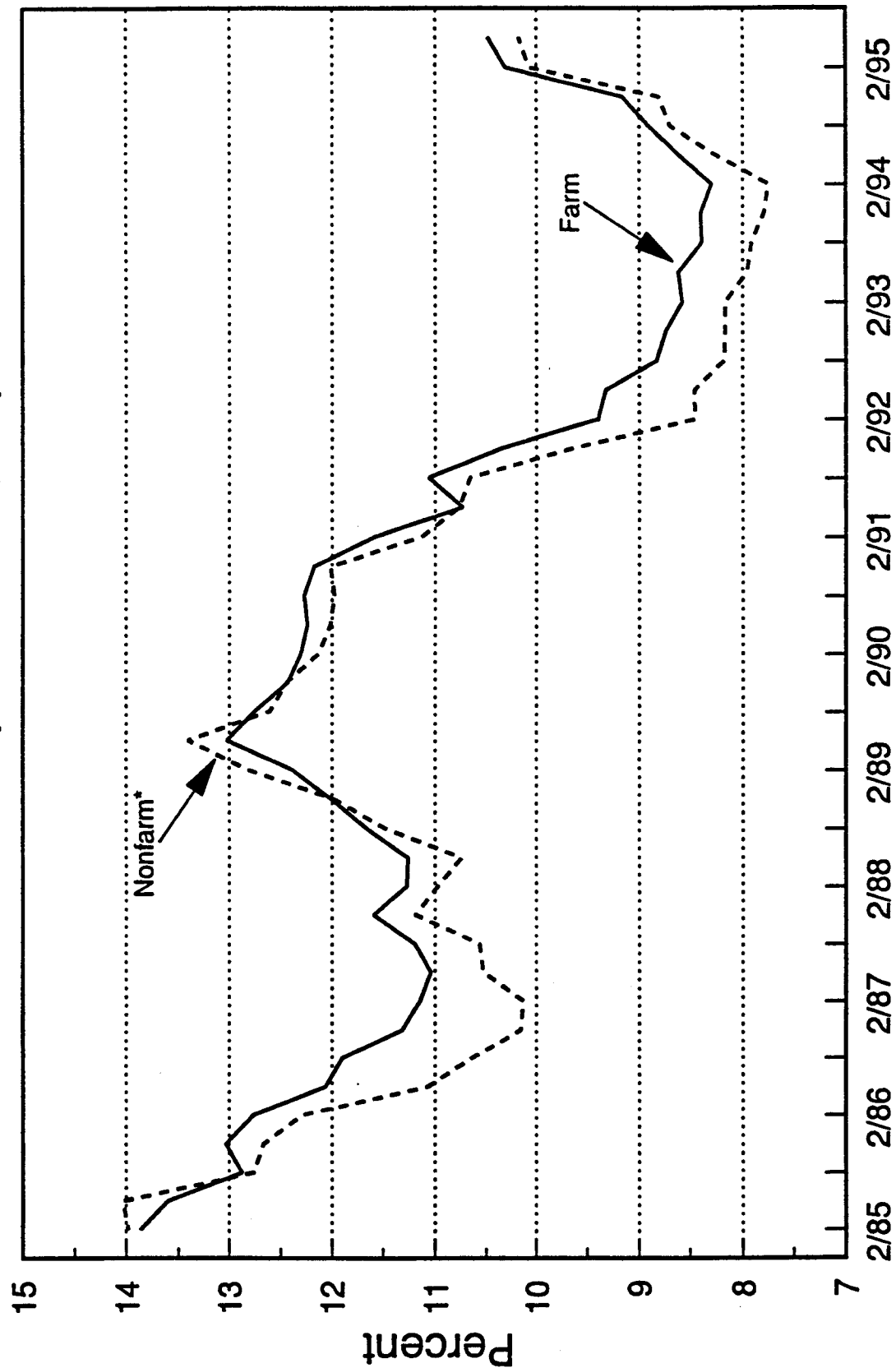
Source: LaDue, Moss, and Smith. "The Profitability of Agricultural Loans for Commercial Banks."
 Moore. "An Evaluation of Agricultural Loan Profitability for Commercial Banks in Alabama."

Figure 3. Net Charge-Offs as a Percentage of Total Loans



Source: Agricultural Finance Databook.

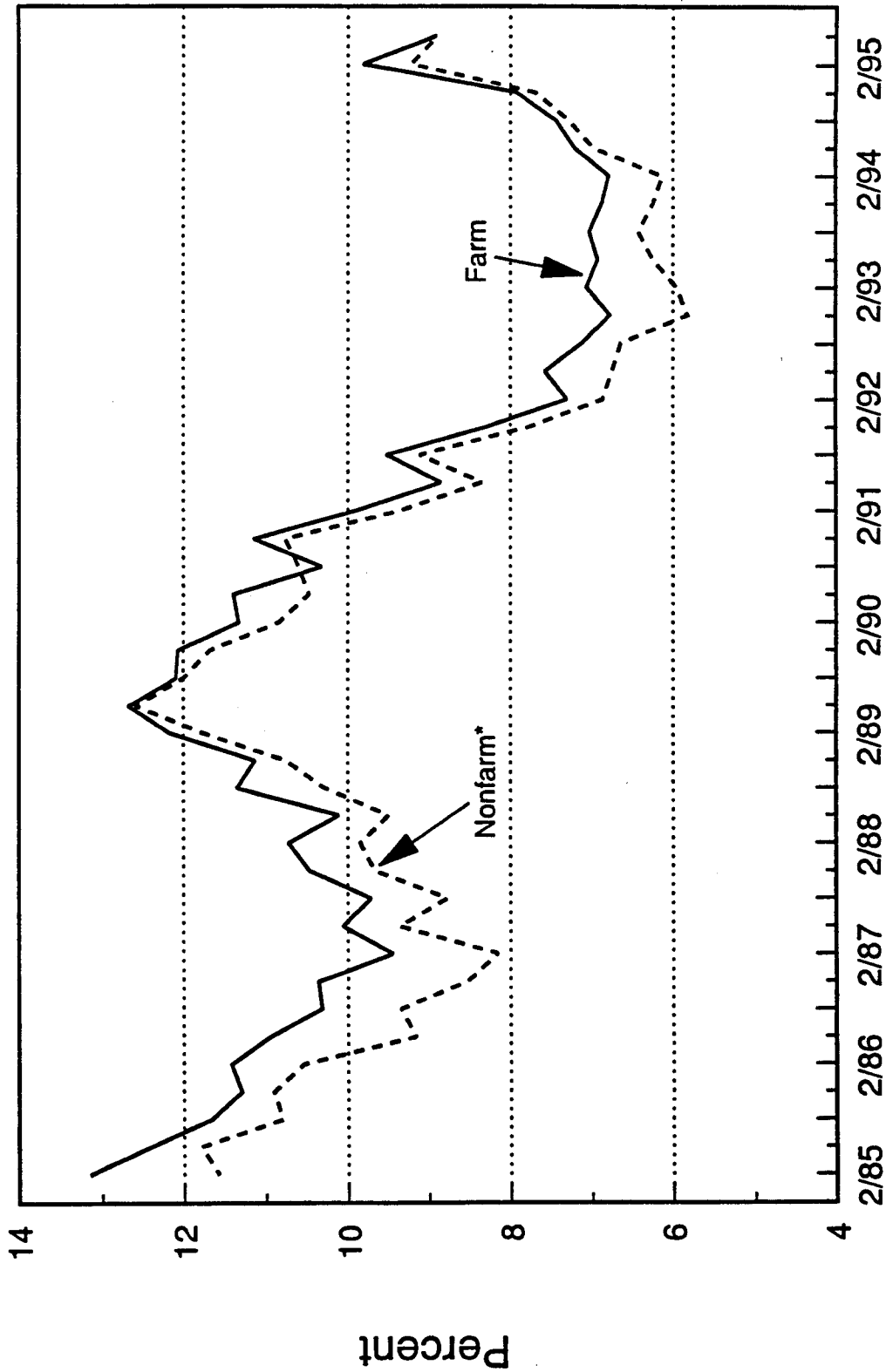
**Figure 4. Interest Rates Charged on
Small Loans (Under \$100,000)**



*Same maturity and proportion at variable rates as for farm loans.

Source: Agricultural Finance Databook and Federal Reserve Bulletin.

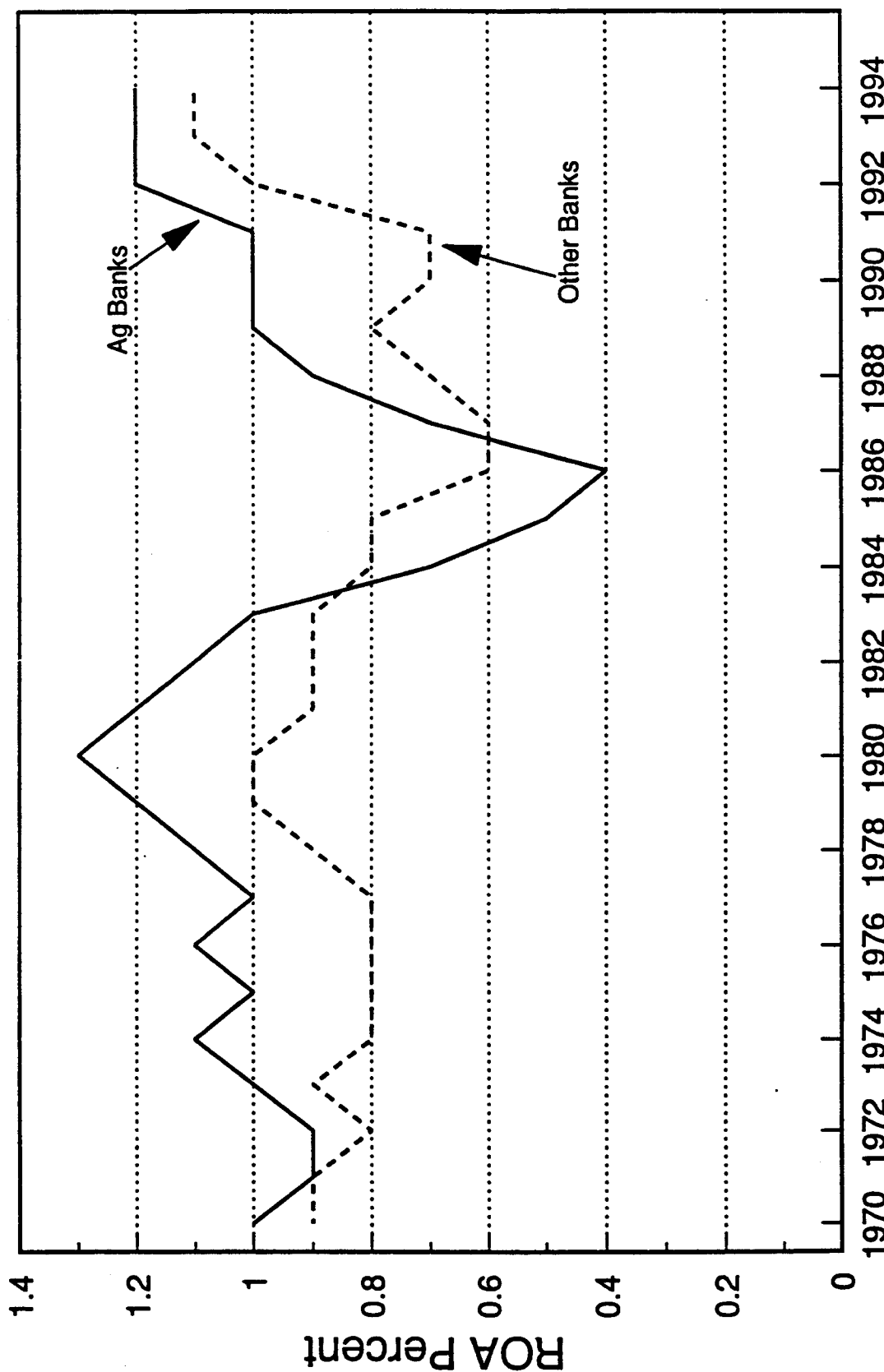
Figure 5. Interest Rates Charged on Large Loans (\$100,000 and Over)



*Same loan size, maturity and proportion at variable rates as for farm loans.

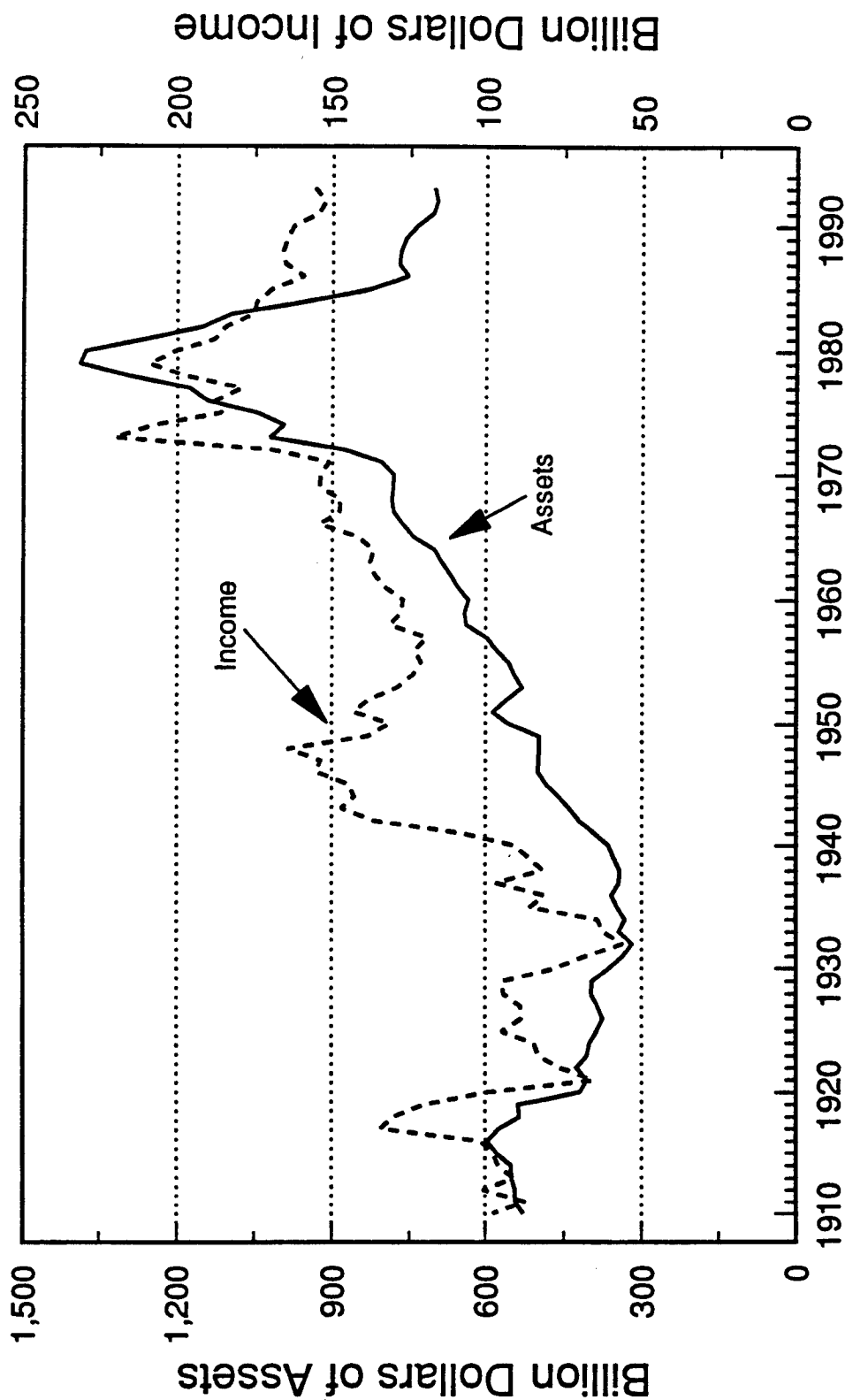
Source: Agricultural Finance Databook, and Federal Reserve Bulletin.

**Figure 6. Rate of Return on Assets for
Agricultural and Other Small Banks**



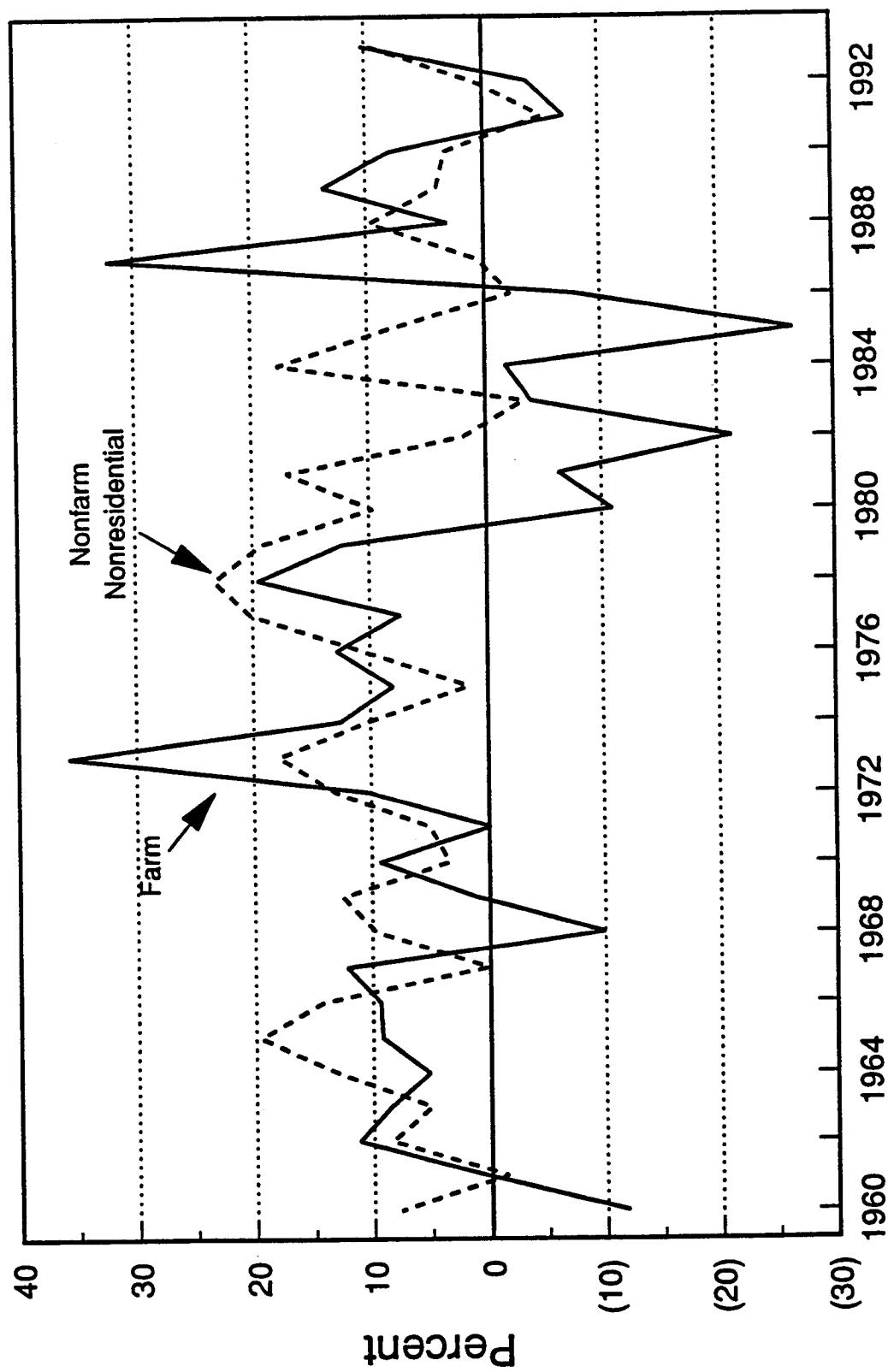
Source: Agricultural Finance Databook, Board of Governors of the Federal Reserve System.

**Figure 7. Farm Assets and Income
United States, 1987 Dollars**



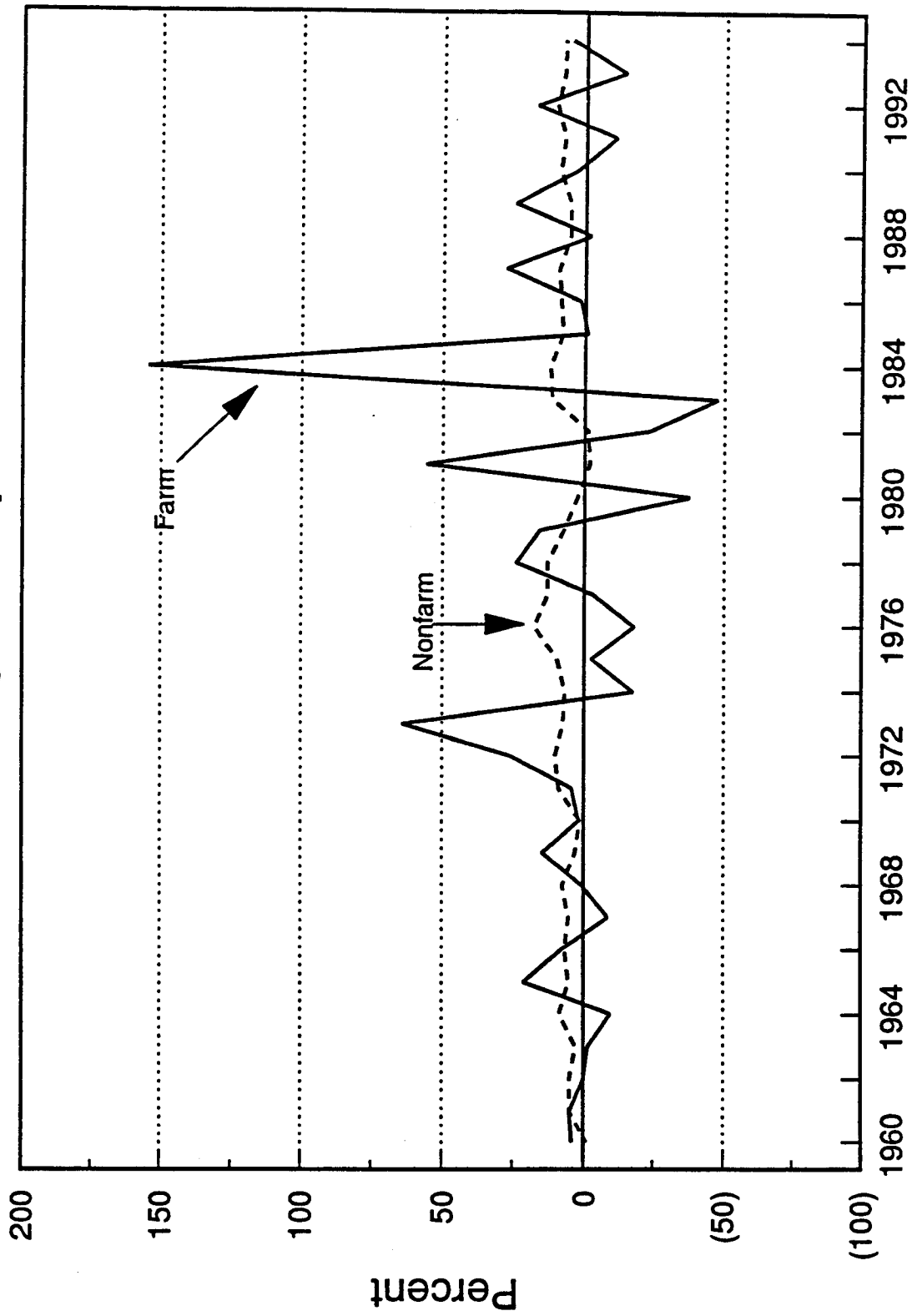
Source: Economic Indicators of the Farm Sector; Agricultural Finance Databook,
and Economic Report of the President.

**Figure 8. Percent Change in Durable Equipment
and Structures Investment**



Source: Agricultural Resources, Inputs, and Economic Report of the President.

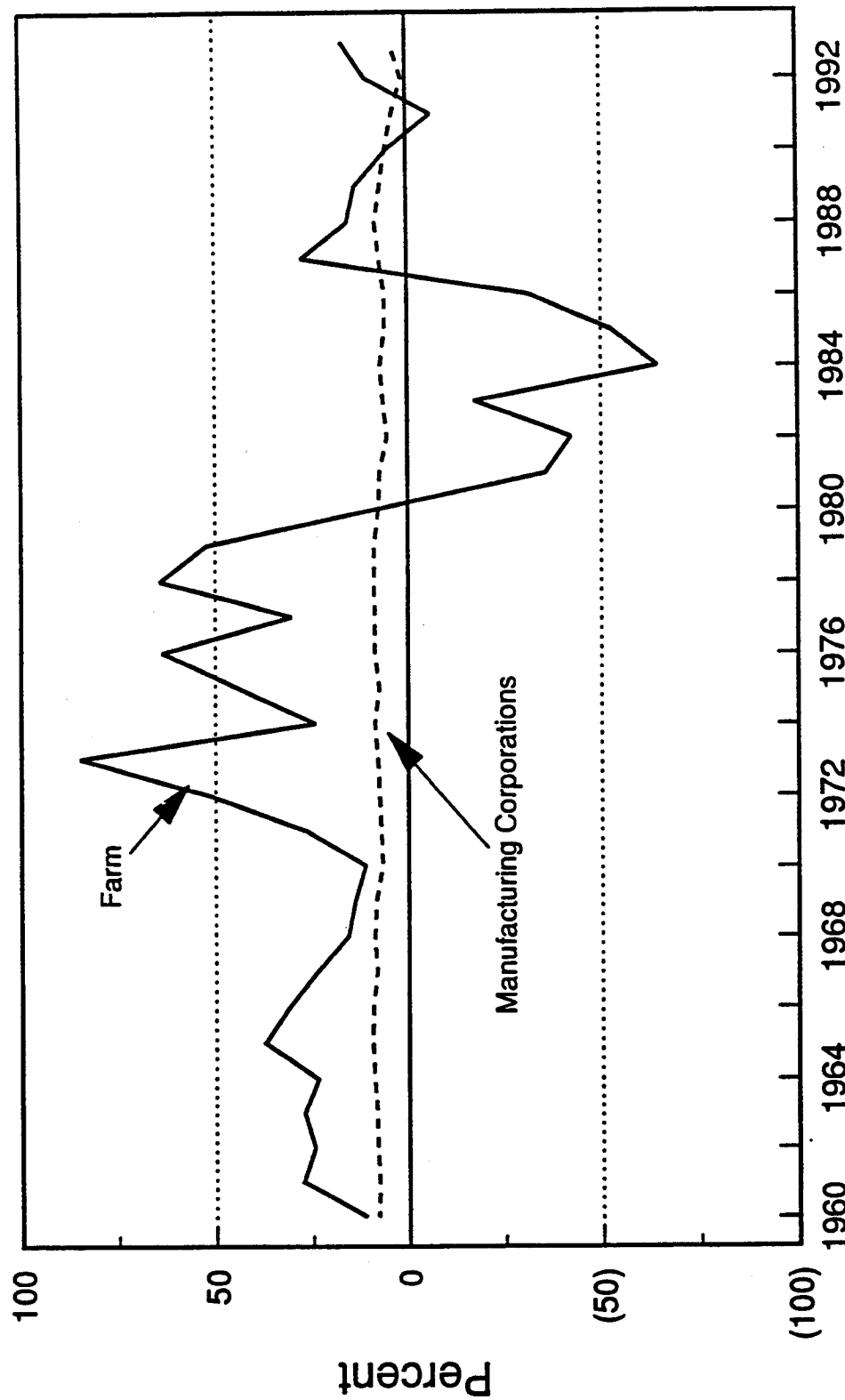
Figure 9. Percent Change in Proprietor's Income



*Includes inventory valuation adjustment but excludes capital consumption adjustment.

Source: Economic Report of the President.

**Figure 10. Before Tax Earnings as
Percent of Sales***



*Returns to equity divided by sales for manufacturing corporations and returns to equity divided by gross cash income for farm.

Source: Economic Indicators of the Farm Sector, and Economic Report of the President.