Farm Interest Buydown Program

January 1988

Program Evaluation Division
Office of the Legislative Auditor
State of Minnesota

Veterans Service Building, Saint Paul, Minnesota 55155 • 612/296-4708

Program Evaluation Division

The Program Evaluation Division was established by the Legislature in 1975 as a center for management and policy research within the Office of the Legislative Auditor. The division's mission, as set forth in statute, is to determine the degree to which activities and programs entered into or funded by the state are accomplishing their goals and objectives and utilizing resources efficiently. Reports published by the division describe state programs, analyze management problems, evaluate outcomes, and recommend alternative means of reaching program goals. A list of past reports appears at the end of this document.

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STATE OF MINNESOTA
OFFICE OF THE LEGISLATIVE AUDITOR
VETERANS SERVICE BUILDING, ST. PAUL, MN 55155 • 612/296-4708
JAMES R. NOBLES, LEGISLATIVE AUDITOR

January 27, 1988

Representative Phillip J. Riveness, Chairman
Legislative Audit Commission

Dear Representative Riveness:

In July 1987 the Legislative Audit Commission directed the Program Evaluation division to evaluate the Farm Interest Buydown Program in Minnesota. There was legislative concern about whether the program was effective and should be continued.

The evaluation studied a sample of farmers participating in the program in 1987. The report describes the financial status of participants and recommends ways, if the program is to continue, to ensure that future subsidies are targeted to farmers who are most in need of state assistance.

We received the full cooperation of the Commerce Department, which administers the program, and numerous state lending institutions which give subsidized loans to farmers.

This report was researched and written by Tom Walstrom (project manager) and Edward Burek.

Sincerely yours,

James R. Nobles
Legislative Auditor

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Deputy Legislative Auditor
for Program Evaluation

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FARM INTEREST BUYDOWN PROGRAM

Executive Summary

In the early 1980s the financial situation of many farmers in Minnesota and across the nation began to deteriorate rapidly. Agricultural commodity prices were low and interest rates were high. Many farmers were squeezed by declining income and increasing costs of production. To make matters worse, declining land prices left many farmers with assets and collateral that could not offset a growing debt burden.

The strategies available for states to address these conditions are limited. One of the few things a state can do for farmers is to make credit cheaper. In 1985 the Minnesota Legislature initiated a farm interest buydown program which lowered the interest rates participating farmers had to pay on operating loans. To qualify, farmers had to have a debt-asset ratio of 50 percent or higher. Participating banks voluntarily accepted a slightly reduced interest payment from the farmer, and the state provided a subsidy for further interest rate reductions. The program was supposed to improve access to credit and to help financially stressed farmers overcome financial hardships. Since the program was initiated, the state has provided over $22 million in subsidies, and banks have provided an additional $10 million.

In July 1987, the Legislative Audit Commission requested a program evaluation of the 1987 buydown program. In order to decide if the program should continue, legislators' wanted to know what types of farmers had participated and if the program had been effective. The evaluation examined the following questions:

- **What kinds of farmers have participated in the program?**

- **What is the extent of buydown participants' financial stress? How well targeted is the program toward farmers who are most financially stressed?**

We studied this program by selecting a random sample of 239 participants, reviewing their bank loan files, interviewing bankers and program administrators at the Department of Commerce, and studying the farm financial situation in general. Overall, we found that the program is not well targeted toward the farmers who need it most and that it has not significantly improved access to credit. But the program has helped participating farmers to weather declines in land prices and income. If the program is to continue, we think that alternative targeting strategies will help the program better reach its goals.

Buydown Participants' Financial Status

We found wide variation in the financial situations of buydown program participants, including the degree of financial stress they experience.

We found a wide variation in the financial situation of the 1987 buydown recipients in our sample. Most buydown participants were young family farmers. The average participant in 1986 farmed 417 acres and had gross cash receipts from farming of $117,090. Seventy-five percent of participants had at least some off-farm income; the average amount was $10,950. We found that the median debt-asset ratio of participants was 67 percent, far higher than the average figure for the farm population at large. Twenty-one percent of all program participants had debt-asset ratios of less than 55 percent and 58 percent had ratios of less than 70 percent.

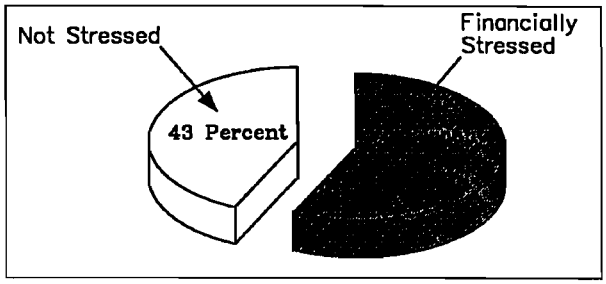
There was considerable variability in other financial measures as well. Net worth varied from a negative net worth of over $130,000 to a positive net worth over $850,000. Net cash farm income varied from a negative $67,000 to over $133,000. Ability to service debt also varied in 1986 from those with no ability to make debt payments to those who could meet all their debt service payments more than 3 times over.

Unexpectedly, we also found considerable variation in the extent of financial stress experienced by the interest buydown participants. We found that buydown recipients range from farmers with large, profitable operations to farmers who are technically bankrupt.

"Financial stress" is difficult to define with precision. In common use it implies that farmers are having trouble paying all their bills. However, this definition may be too simplistic since it ignores major factors affecting a farmer's financial well-being. For example, if a farmer retains sufficient wealth (net worth) and has additional borrowing capacity, he may be able to get through short-term difficulties. On the other hand, if the farmer has accumulated significant debt obligations, even a large net worth may not prevent financial stress because the higher the debt, the higher the cash flow necessary to service the debt. Consequently, a useful definition of "financial stress" should incorporate several inter-related financial variables.

In our evaluation we measured "financial stress" in terms of the farm's profitability, the farmer's net worth, the farm's debt-asset ratio, and the ability of the farmer to make payments on that debt. Categorizing stress in terms of these variables, we found that:

- **As many as 43 percent of farm interest buydown participants are not severely financially stressed.**



Almost half of the farmers we categorized as not severely stressed could meet all their debt payments and family living expenses, had debt-asset ratios less than 70 percent, and had a net worth between $50,000 and $600,000. Other non-stressed farmers had higher debt-asset ratios (between 70 and 100 percent), but could meet all expenses and had a minimum

net worth of over $100,000. The last group of farmers we categorized as non-stressed could not quite pay all expenses from current income (they paid between 75 and 100 percent), but they had a net worth over $100,000 and a debt-asset ratio less than 70 percent indicating additional borrowing capacity.

Farmers we categorized as severely stressed ranged from those that could make no debt service payments to those that were technically bankrupt. However, most financially stressed farmers could at least partially service their debt. We also categorized all farmers with a net worth of less than $50,000 as financially stressed, even if they were currently making all their debt payments. The table below shows some examples of farmers we categorized as stressed and not stressed.

Category	Ratio	Debt-Asset Net Worth	Debt Coverage Ratio	Net Cash Farm Income	Off-Farm Income
STRESSED					
Farmer 1	53	$182,250	.57	-$ 10,016	$16,867
Farmer 2	55	59,300	- .12	- 5,558	12,677
Farmer 3	73	307,316	.59	29,997	7,810
Farmer 4	74	110,500	.29	- 13,155	0
Farmer 5	102	- 6,315	.60	17,666	1,844
NOT STRESSED					
Farmer 6	51	$237,553	.81	$ 18,874	$ 3,514
Farmer 7	59	666,758	1.44	133,145	0
Farmer 8	60	236,245	2.14	100,462	22,486
Farmer 9	67	117,769	2.11	- 8,679	63,227
Farmer 10	78	65,729	1.54	73,155	8,888

Examples of Buydown Participants' Financial Stress Using Legislative Audit Criteria

The wide variation in financial stress experienced by buydown participants suggests that:

- **The buydown program is not well targeted toward those farmers that have the most adverse financial situations and need state assistance the most.**

The wide variation in financial stress is explained by the fact that debt-asset ratios are not good indicators of stress.

We conclude that debt-asset ratios alone are not reliable indicators of financial stress. They do not reflect current profitability or total net worth, and they can over- or under-estimate the financial hardships experienced by farmers.

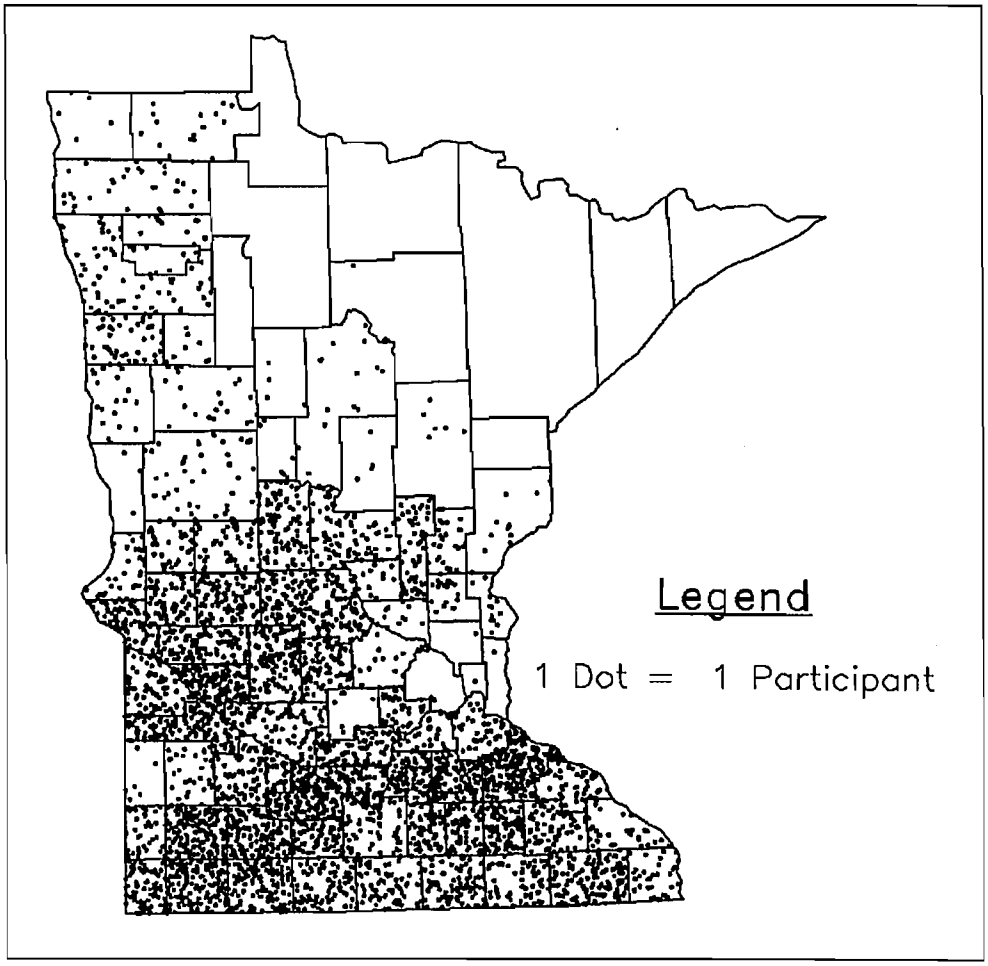
It was originally hoped that Minnesota's interest buydown program would provide increased access to credit for farmers, while at the same time subsidizing financially stressed farmers' incomes until they could restructure or adjust to the new farm economic conditions. However, we found that:

- **The interest buydown program is not accomplishing its goal of insuring access to credit.**

Bankers told us that those farmers in the program would have received operating loans regardless of whether they received an interest subsidy. Indeed, the program allows participating farmers to receive subsidies for pre-existing loans, and we found many examples of such cases in the loan files.

The buydown program has helped raise participants' net incomes.

Of course, the interest subsidy did help participants lower their production costs and therefore raised their net income by the amount of the subsidy. However, we conclude that the average 1987 interest subsidy of $1,258 will not significantly affect whether participants remain in farming. Likewise, although 28 percent of the participants had restructured their farming operations, bankers told us that the interest subsidy was not large enough to be a significant factor in that decision.



Interest Buydown Program
Number of Participants by County
1987

Program Administration

Whatever its other shortcomings, Minnesota's interest buydown program is relatively simple for the state to administer. The Department of Commerce is responsible for program operation, including making payments to lenders and general financial control. Under the terms of the program, the lender selects clients meeting the eligibility criteria, prepares applications, and processes the loans.

The buydown program's simplicity and speed of administration produce several advantages:

- **Farmers receive prompt assistance.**
- **Lender participation is encouraged by the department's quick turnaround and the minimal paperwork and verification required.**
- **State administrative costs are low.**

But the approach also has disadvantages:

- **Requiring the bank to share in subsidizing the farmer reduces lender participation, limiting the state's ability to ensure that eligible farmers have access to the program.**
- **Because the lender determines who can apply, the state has no direct control over who receives the subsidy, and little ability to ensure that assistance will be available where it is needed.**
- **The lack of verification and the limited review by the Department of Commerce weakens the state's ability to deter program abuse.**

Without review, farmers can be certified for participation in the program even though they may not meet eligibility criteria. We found 7 cases in our sample of 239 where farmers' financial statements showed a debt-asset ratio less than 50 percent, indicating the farmer may not have been eligible for the program.

Also, despite a requirement that the lender assess the current financial condition of the farmer, in 12 cases the most recent financial statement reflected the farmer's previous operating cycle and many were over a year old. Because eligibility is declared by the lender with no review by the Department of Commerce, questionable practices concerning eligiblity or program administration may currently go undetected.

Discussion and Recommendations

The decision facing the 1988 Legislature is whether to continue this program for another year. Approximately $14 million remains from previous years. Some legislators have suggested that the programs should continue, but they

ask whether changes are necessary. Others wonder if the remaining funds might be put to better use in other programs, either in rural Minnesota or statewide.

If the program is continued, changes should be considered.

If the Legislature chooses to continue the interest buydown program, changes should be considered in the targeting of the assistance, the delivery system, and in the program's administration.

Specifically, the program could be better targeted by:

- **requiring a cash flow test, and/or**
- **including a net worth limit.**

Including these factors as criteria for eligiblity would better ensure that state aid was directed toward those farmers who are most in need of help.

In addition, we believe that as the general farm economy improves, lenders will be increasingly reluctant to participate in the program. Less lender participation may mean that some financially stressed farmers are unable to receive the program's benefits. Increasing the state-paid portion and decreasing the lender portion of the subsidy might increase the lenders' willingness to continue the program. If this step is taken, the Legislature may choose to require lenders who participate to extend the program to all farmers who meet the eligibility criteria.

In addition to changes in eligibility, several administrative reforms should also be considered. We believe that several simple steps could help to minimize program abuse and at the same time keep administrative costs low:

- **Bankers' eligibility decisions should be based on current financial statements.**
- **The Department of Commerce should review a random sample of program participants annually to ensure that eligibility criteria are being observed.**
- **The Department of Commerce should collect at least a minimal set of information about the characteristics of those participating in the program. This would allow the Legislature and others to assess the program's success.**

In considering whether to continue the program for another year it is important to know what the prospects are for current participants. In general, we found that farm incomes are higher, land prices appear stable, and the income projections for most 1987 buydown participants are up. We found that cash flow estimates for 1987 participants showed that about 75 percent will be able to meet all their debt obligations and family living expenses in 1987.

Given these improved prospects, the Legislature may decide not to renew the program and to use the funds remaining from previous years for another purpose. If the goal is to channel some state funds into rural Minnesota (which

has been generally affected by the farm income downturn), there might be better alternatives through the use of the tax system or some other program targeted at rural areas of the state.

BACKGROUND

Chapter 1

Like the country as a whole, Minnesota experienced a significant decline in farm incomes and farmland prices in the early 1980s. By 1985 conditions had deteriorated to the point that Minnesota lawmakers established a program to subsidize farm loan interest rates for certain distressed farmers. The purpose of the program was to aid distressed farmers by insuring access to credit, and to lower production costs, thereby helping farmers gain time necessary to restructure their operations.

By design this *interest rate buydown program* was made simple to administer. There was to be a minimal amount of recordkeeping. As a consequence it is not easy to know what type of farmers have been served by the program in the last three years, nor is it easy to assess whether the program has had the effects that were sought. Because of this lack of information, the Legislative Audit Commission requested an evaluation of the program.

We studied the financial records of a random sample of 239 farmers who participated in 1987.

The focus of our study was the major interest subsidy program operated in 1987.[1] We studied the financial records of a random sample of 239 farmers who participated in the 1987 program. In our study, we asked:

- **What are the characteristics of farmers participating in the 1987 interest buydown program? How do the program's participants vary in terms of debt-asset ratios, net worth, size and type of farming operation, profitability, and ability to service debt?**

- **How has the interest buydown program helped alleviate the financial stress experienced by participants? What are the prospects for farmers participating in the program?**

This report discusses the concept of interest subsidies, describes Minnesota's interest rate buydown program, provides information on the financial characteristics of those being served, and assesses whether the program is meeting the goal of aiding financially stressed farmers.

The report is presented in three chapters. Chapter 1 reviews the onset of fiscal stress nationally and in Minnesota and discusses how interest subsidy programs were thought to help. Chapter 2 reviews the interest subsidy programs that Minnesota has operated in 1985, 1986, and 1987. Chapter 3

1 We did not explicitly study any of the programs requiring the participation of the Farmers Home Administration (FmHA) because they have been little used. The FmHA programs are described in Appendix A.

sets forth the characteristics of the participants in the 1987 program, assesses how the program has worked, and discusses possible changes.

THE ONSET OF FISCAL STRESS

The Prosperous 1970s

The 1970s were generally prosperous years for American agriculture. The prosperity was driven by several factors. First, between 1970 and 1980 the real value of U.S. farm exports almost tripled. Exports of agricultural products were strong for a variety of reasons, including poor foreign crops, strong economic growth abroad, and a weak U.S. dollar. Strong foreign demand for U.S. farm products helped buoy commodity prices.

The 1970s were prosperous years for American agriculture with strong exports holding up commodity prices.

Second, in the 1970s American farmers produced more agricultural goods. This was the result of strong foreign demand, increased productivity among farmers, and a more intensive use of farmland. According to one Federal Reserve Bank economist:

> Substantial acreage previously used for pasture or held out of production -- under government programs to sop up the excess production capacity of U.S. agriculture -- came into grain and row crop production in an effort to capitalize on the booming export trade.[2]

Farmers also increased trends toward more capital intensive production techniques such as hog farrow and finish facilities, feedlots, and increased chemical use.

Third, farmland prices rose more rapidly than inflation throughout the decade, adding to farmers' wealth. Land prices rose rapidly because land was seen by many as a hedge against inflation. Some farmers took advantage of the seemingly favorable trends in farmland values to expand their operations. According to economists at the University of Minnesota:

> Presumably, farmers rationalized their behavior by their expectation that export demand for U.S. agricultural products would remain strong, that land prices would continue to appreciate in real terms, and that real interest rates would remain low.[3]

Lenders were willing to loan funds to buy land or expand operations. Many banks and other farm credit sources based lending decisions on expectations that the tremendous increases in land values could be realized.

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2 Gary L. Benjamin, "The Financial Stress in Agriculture", *Economic Perspectives* (Federal Reserve Bank of Chicago), 1985, p. 3.

3 Ian Bain and Joann Paulson, "Financial Stress in Agriculture: Its Causes and Extent", *Minnesota Agricultural Economist* (June 1986), p. 2.

Factors Leading to Financial Stress

Expectations that the 1970s' agricultural prosperity would continue into the 1980s were wrong. Export markets for agricultural commodities shrank. The Carter grain embargo, a U.S. dollar that appreciated 75 percent between 1980 and 1985, and increased production by foreign competitors have limited American commodity exports. Thus, while increased agricultural production was encouraged in the 1970s, decreased demand for that production in the 1980s has resulted in excess capacity and a decline in commodity market prices. Not unexpectedly, the decline in commodity prices led to a decrease in farm net income.

Farmers were also adversely affected by a dramatic increase in nominal and real interest rates. Financial deregulation has also led agricultural banks to shorten the term of loans and increase the use of variable rate loans. As a result, farmers in the 1980s have been faced with very high interest rates on debt contracts negotiated in the 1970s. So, at the same time that farmers were facing lower farm revenues because of lower commodity prices, their debt service requirements increased dramatically and further depressed farm income.

At the same time farmers were facing lower farm revenues, their debt service requirements increased.

Lower farm incomes, and a growing pessimism about near term prospects, triggered a dramatic decline in farm asset values. Figure 1.1 shows the decline in Minnesota asset values between 1981 and 1986. This decline added to financial stress. Since a large percentage of farm equity is in the value of farmland, the erosion of land equity has accelerated the number of farmers going into technical insolvency. Many farmers found themselves with land worth less than they paid for it in the late 1970s or early 1980s.

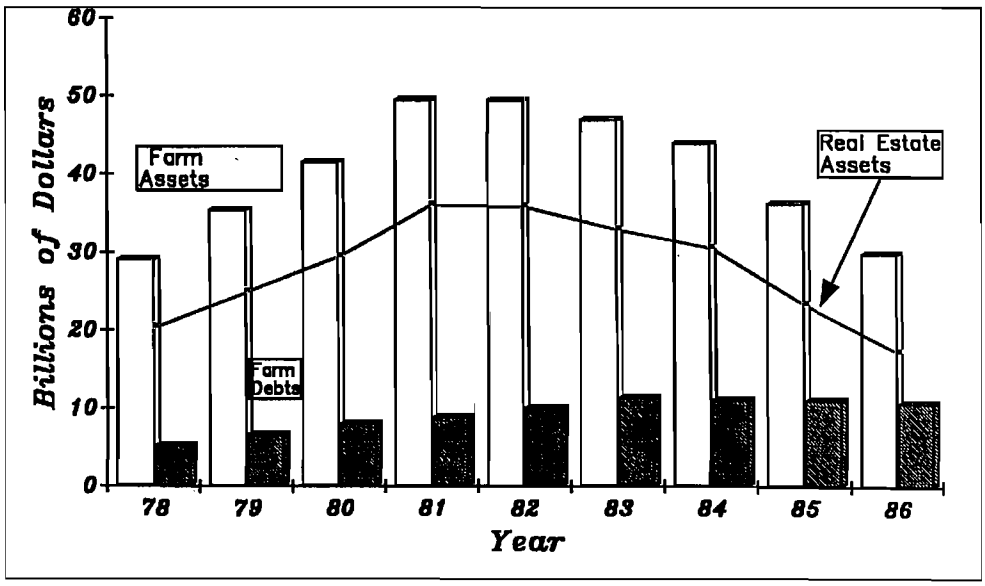

Figure 1.1: Minnesota Total Farm Assets and Debts 1978-86

Note: The data source for Figures 1.1 to 1.4 is the Minnesota Department of Agriculture.

Financial Stress in Minnesota

Minnesota, and the midwest in general, was affected seriously by these economic forces. Between 1973 and 1983 total Minnesota farm debt grew 287 percent (a compound annual rate of over 14 percent). Rising real estate values provided the collateral for this rapid rise in lending. As Figure 1.2 shows, the price of Minnesota farmland rose from an average of $423 per acre in 1974 to over $1,300 per acre at the peak of land values in 1981.

Farmland values and farm income dropped in the 1980s.

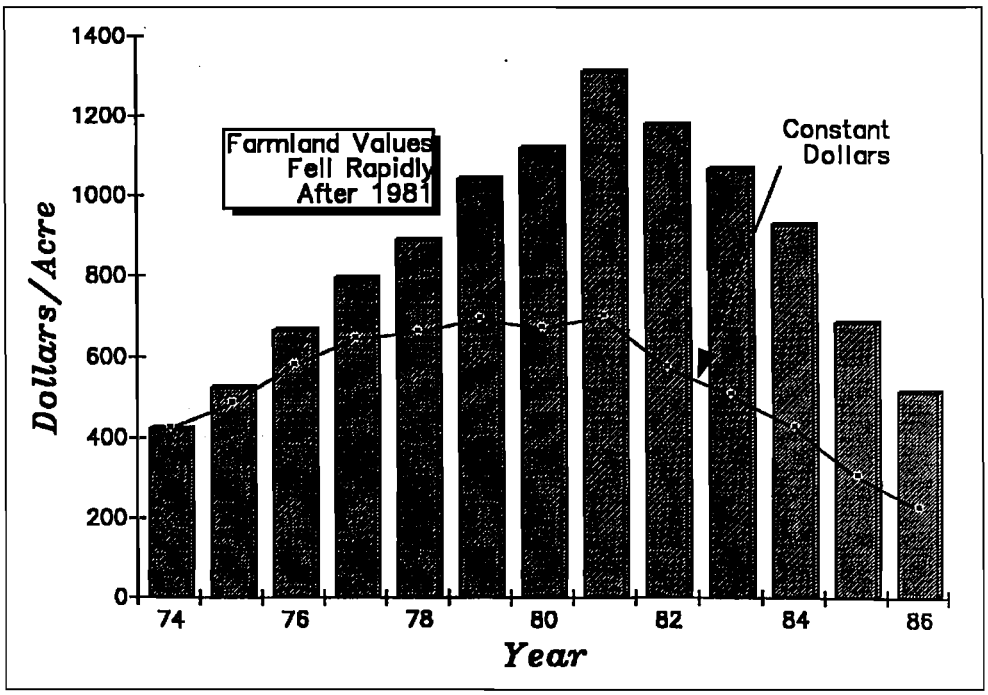

Figure 1.2: Minnesota Average Farmland Values Nominal and Constant Dollars 1974-86

Farm incomes did not keep pace with the rapid growth in debt. Figure 1.3 shows the changes in net farm income from the 1970s into the 1980s, when ad-

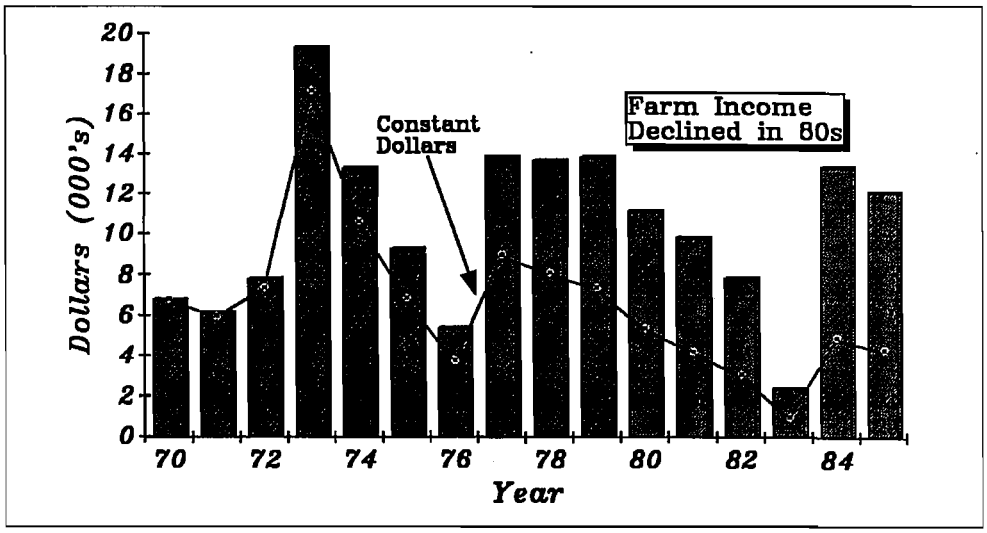

Figure 1.3: Average Net Cash Farm Income in Minnesota

With historically high interest rates, increased debt to service, and low commodity prices, many farmers were financially stressed.

justed for inflation. As one can see, in constant dollars incomes have been much lower in the 1980s. Also, the ratio of average total farm debt to average net farm income increased in Minnesota from 3.0 in 1970-73 to 8.2 in 1980-83. This increase in debt relative to income raised serious questions about how land bought in the late 1970s or early 1980s could ever be paid for from the income it generated. Partially as a result, farmland values have now declined over 50 percent from the 1981 peak.

With historically high interest rates, increased debt to service, and low commodity prices, many Minnesota farmers were under severe financial stress. Partially as a result, the trend toward fewer farms in the state continued during the period 1981-86, with the state losing over 11,000 farms during that

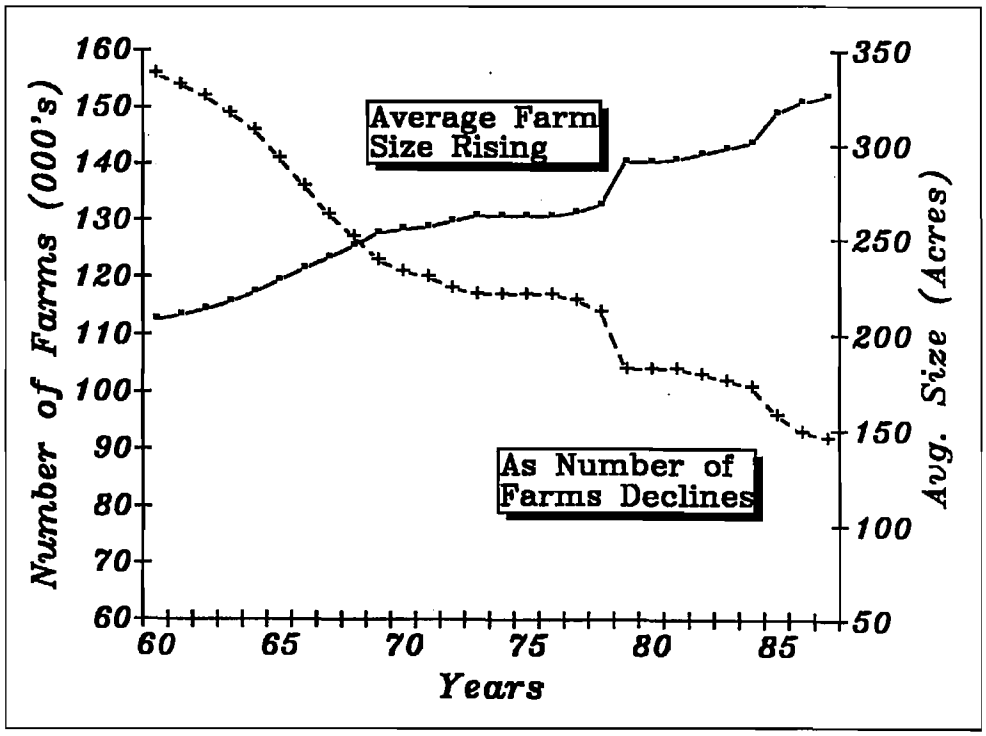

Figure 1.4: Number of Minnesota Farms and Average Size 1960-87

period. State Department of Agriculture officials note that this is a continuation of a trend that began in the 1930s, and it is expected to continue:

> Certainly it will continue until the year 2000 because we have more ag production than we can sell, here or overseas. Prices are low and farmers just aren't making a great deal of money.[4]

4 Carroll Rock, quoted in *St. Cloud Daily Times*, August 22, 1987, p. B1.

INTEREST SUBSIDY PROGRAMS

Because most of the factors that influence farmers' revenues and costs are national and international in scope, the effect that state government can have on the farm crisis is limited. The state can do little about farm prices, excess commodity supplies, and most production costs. However, many legislatures have felt states could play a role in providing access to more reasonably priced credit. In this section, we examine the concept of interest subsidy programs and their rationale.

The state can do little about farm prices, excess supplies, and most production costs. But it can provide access to cheaper credit.

Concept of Interest Subsidy

Interest expense became a more important cost of production for farmers as interest rates rose to record levels in 1980 and 1981. Although interest rates have declined from the record levels of 1981, real interest rates (the spread between nominal interest rates and inflation) have remained at high levels. Some estimates show that interest expense has roughly doubled in importance as a production cost for highly leveraged farmers.

The cost of borrowing is one component of production costs that is more amenable to control than many others. The basic concept of interest subsidy programs is that the effective interest rate to the farmer will be reduced by a state and/or lender subsidy that lowers the prevailing market interest rate. By lowering the interest rate the farmer pays, the farmer's cash flow and ability to service debt will be improved.

Rationale for Interest Subsidy Programs

Providing interest subsidies to farmers was a response to a number of problems being experienced in the early 1980s. First, many farmers faced immediate problems in repaying their large debt. Debt payment pressures were so severe for some farmers that they faced foreclosure.

Second, many rural banks also faced financial stress because of the increased risk of their agricultural lending portfolios. Because of the stress on rural agricultural banks and farmers' difficulty in meeting debt service requirements, there was concern that banks would not provide operating loans to many farmers.

Third, there was also a concern that unless farmers received assistance in restructuring their operations into viable enterprises, many young farmers would be forced out of farming.

Interest subsidies were thought to be helpful in the following ways:

- Reducing interest expense results in an increase in cash farm income, as would any expense reduction. By reducing the cash flow pressures on the farmer, the interest subsidy program may help "buy time" for longer term debt restructuring to occur.

- The interest subsidy may allow farmers to make increased payments on their bank debt principal, thus lowering the loan's risk to the bank and reducing the debt servicing requirements of the farmer.

- In cases of severe financial stress, the subsidy may postpone the necessity for the bank to write-down or foreclose on the loan. Thus, it helps the bank adjust its loan portfolio and lending practices to the current farm lending situation.

- The subsidy program may also allow the bank to extend credit to farmers who might not otherwise be able to secure loans.

Although these purposes are laudable, we shall see in the next sections that it is not easy to design a program that can equitably achieve them.

Equity Considerations

A number of equity questions are raised when considering who, if anyone, should receive state assistance through an interest subsidy program.

General Equity Questions

Why should assistance be provided to some, but not all farmers?

One equity question is: Why should assistance be provided to some, but not all farmers? Most farmers did not borrow heavily against the value of their land in the late 1970s or early 1980s and therefore they do not have high debt. Many of these farmers question whether the state should provide assistance to those farmers who made poor business decisions. One has to keep in mind that the problems which cause financial stress for highly leveraged farmers affect all farmers. That is, farm profits have been squeezed for *all* farms, and farmland price declines have resulted in equity declines for *all* farmers who owned farmland.

A second equity problem arises when banks are participating in the interest subsidy. Farmers that did not increase their debt as much feel that they are paying higher interest rates because their bank is participating in the subsidy program.

It is not clear whether non-subsidized farmers actually pay higher interest rates. However, any bank participating in a subsidy program is financially pressured to raise the interest rates the bank charges on other farm loans in order to maintain its profitability targets. To the extent a subsidized loan is similar in risk to a non-subsidized loan, the effect of the bank providing a subsidy is to redistribute income (i.e., the bank paid portion of the subsidy) from farm operators with lower debt to those with greater debt.

On the other hand, some advocates of interest subsidies argue that there is no adverse affect on the overall rates the bank must charge because the bank's alternatives of writing down the loans or foreclosing are expensive. The extent to which this argument is true depends on the severity of buydown participants' financial stress. If the bank's loans are adequately collateralized

and/or the farmer is able to make loan payments, then this argument is less persuasive.

Another reason why other farmers' interest rates may not increase as a result of a subsidy program is the availability of capital from other sources to fund lending to low debt farmers. Therefore, in order to be competitive and not lose valued low debt customers, banks do not raise rates. Banks may view the expense of participating in the interest subsidy program at least partially as a public relations measure to keep existing customers, while at the same time lowering the risk of their loan portfolio.

A third, more general, equity question is why farmers should be treated differently than other citizens. Some would argue that there is a social welfare safety-net in place for all state citizens and that farmers should not receive special treatment. These critics would argue that this is especially true for those farmers who may be experiencing financial difficulty, but who still retain significant assets. When farmers who maintain a significant amount of wealth are subsidized, the question boils down to: Is it equitable to give subsidies to farmers who are more wealthy than many other state citizens who receive no subsidies and who are taxed to provide farmers' subsidies?

In practice, the effect of interest subsidy programs is to raise state taxes only slightly for the average citizen. Proponents of the interest subsidies maintain that there may actually be a savings to the state. They argue that by helping farmers stay on the farm, the state avoids some social welfare costs it would otherwise incur.

Problems in Defining Financial Stress

The idea behind interest subsidy programs is that assistance will be targeted to those farmers experiencing financial distress. Even if one believes that the unusual farm situation of the 1980s justifies providing subsidies to some farmers, deciding who should receive assistance is difficult in practice. Financial stress has been defined in Minnesota and several other states in terms of a high debt-asset ratio. However, as one observer notes:

Debt-asset ratios are not a good indication of stress.

> ....financial distress is not perfectly reflected by debt/asset ratios. While it may be a very good indicator of high debt payment burdens, it does not measure these burdens against the ability of the farm to carry it -- the income or profitability of the operation.[5]

Because debt-asset ratios are not a very good indicator of stress, farmers with lower debt-asset ratios may actually be experiencing greater short-term financial stress than those receiving a subsidy. For example, a farmer with a 30 percent debt-asset ratio may actually have greater difficulty with debt servicing than a farmer with a 60 percent debt-asset ratio. In 1986 approximately half of all U.S. commercial farms with high debt-asset ratios (over .4) had positive cash flows, while 27.5 percent of those with lower debt-asset ratios had negative cash flows.[6] This suggests that from a strictly cash flow standpoint, many farmers with lower debt ratios are experiencing greater financial stress than

5 Mark Popovich, *State Emergency Farm Finance* (Council of State Planning Agencies, January 1986), p. 15.

6 USDA, *Financial Characteristics of U.S. Farms, January 1, 1987*, p. 75.

farmers with higher debt ratios. Thus, when the debt-asset ratio alone is used as an eligibility criterion, assistance may actually be going to those in less financial stress.

TYPES OF INTEREST SUBSIDY PROGRAMS

Figure 1.5 presents a summary of interest subsidy programs operating in other midwestern states in recent years. Three common types of subsidy programs exist: linked deposit, interest deferral, and interest buydown.

Linked Deposit Programs

Linked deposit programs allow farmers to borrow funds at lower-than-market rates.

Linked deposit programs provide interest relief for farmers by allowing them to borrow funds at lower-than-market rates. Linked deposit programs are also quick to establish and easy to administer, because banks select clients and do most of the program administration.

Initial financing for linked deposit programs can come from bond sale proceeds, direct appropriation, or state investment funds. State funds are deposited in rural banks. The banks must use these deposits to make operating loans to farmers at a specified markup above the interest rate paid to the state.

Illinois and Indiana, the two midwest states with active programs, restrict the size of the operating loans to $50,000 per farmer, and require that the lenders markup the loan rate no more than 2.5 percent above the rate the state receives. Illinois deposits funds with the banks at a rate established by a weekly survey of certificate of deposit interest rates. The state of Indiana receives a fixed return of 5.5 percent.

Linked deposit programs have several disadvantages. First, depending on their design, linked deposit programs can be costly to the state. The state loses investment income when the interest rate the state earns on the linked deposit is lower than alternative investments the state might make. For example, the state of Indiana could receive a rate higher than 5.5 percent by investing in certificates of deposit or other safe investment vehicles. Thus, the loss Indiana incurs by not investing in higher yielding securities of comparable risk should properly be viewed as a program expense.

Second, of the three types of programs, linked deposit programs require the largest commitment of state funds. With interest deferral and buydown programs, state financial involvement is limited to paying a portion of the interest due. In contrast, with linked deposit programs the state provides the funds to make the loans, and then provides farm relief by accepting a low interest rate for the use of its funds. Figure 1.5 shows that the money committed to the Illinois and Indiana linked deposit programs dwarfs the total funding commitment for all other programs combined.

FIGURE 1.5
EMERGENCY FARM OPERATING LOAN PROGRAMS

State	Program Type	Description	Eligibility Requirements	Status	Number of Participants 1985	1986	1987	State Money ($ Million) 1985	1986	1987
Illinois	Interest Deferral	State pays 1/2 interest on up to $150,000 loan. Farmer reimburses state through five equal annual payments. Collateral required to cover state's commitment.	Principal operator; debt-asset ratio > 50%	Terminated	480	258	--	1.25	1.48	--
	Linked Deposit	State loans general fund money to banks at CD interest rate. Banks must pledge full collateral and loan money to farmers at CD rate + 2.5%. Maximum loan $50,000	Established by lenders	Active	9,960	7,300	6,617	176	215	146
Indiana	Linked Deposit	Using state investment funds, money is loaned to banks at 5.5%, banks must loan to farmers at 8%. Maximum loan $50,000.	Net worth < $250,000; 3/4 of gross income must come from farming; debt-asset > 55%; debt-net worth > 1.25.	Active, may be terminated	1,007	1,457	1,137	34.0	53.1	40.2
Iowa	Interest Buy-Down	FmHA and lender each write down 2%, state writes down 3%. If no FmHA assistance, state and lender each write down 3%.	Negative cash flow	Terminated	--	650	--	--	1.5	--
North Dakota	Interest Deferral	65% of loan provided by Bank of North Dakota. Other participating banks must make loan at <12.7% interest. Portion of interest to the Bank of North Dakota is deferred. Repayment terms on deferred amount (spread over 5 years) vary with size of loan.	Debt-asset ratio > 50%	Active	211	241	149	.3	.4	*
Wisconsin[a]	Interest Buy-Down	Loan capped at 10%, with farmer paying 8% interest and state 2%. Maximum loan $20,000. Lender receives 90% principal guarantee.	Debt-asset ratio > 40; bank must be unwilling to provide loan without state involvement.	Active, may be terminated	849	1,399	1,560	.14	.25	.28

Sources: Telephone interviews and "Agricultural Policy Initiatives in the Midwest," by Jeff McGuire, Minnesota Department of Agriculture, December 1986, pp 16-23, and "State Emergency Farm Finance," Mark G. Popovich, Council of State Policy and Planning Agencies, Washington, D.C., January 1986, pp 26-42.

[a]The state cost for Wisconsin's program is estimated for 1986 and 1987 and includes only the amount of interest subsidy, not the amount of loan guarantees.
*Data not available.

Third, unless the permitted spread between the rate paid to the state for use of the funds and the loan rate to the farmer is carefully monitored, the state may find loan volume decreasing just when economic conditions are placing increasing stress on farmers. Banks may not participate unless the spread is advantageous. Banks will consider the cost of other fund sources and interest rates permitted on unrestricted loans in deciding the extent of their participation in a linked deposit program. These factors will be compared to the bank's ability to make loans of acceptable risk and profit through the state program, given the permitted spread.

Fourth, as with other programs, targeting who will receive assistance is a potential problem with linked deposit programs. The Indiana Legislature has made targeting efforts, requiring a debt-asset ratio of 55 percent, debt-net worth ratio exceeding 1.25, and total net worth less than $250,000. On the other hand, the Illinois program -- by far the largest in terms of dollar commitment -- is poorly targeted, with all eligibility requirements established by the lenders. This clearly encourages banks to participate, but favors farmers in least financial difficulty.

Interest Deferral

Interest deferral programs pay part of the interest due on an operating loan, but the farmer is expected to repay the deferred interest.

Interest deferral programs provide interest relief to farmers by directly paying a portion of the interest due on the operating loan. Over the course of several years, the farmer is expected to repay the state.

In the Illinois interest deferral program, discontinued after 1986, the state paid half the interest due on farm loans of up to $150,000. The farmer then reimbursed the state, without interest, over five years.

Under the North Dakota program, the Bank of North Dakota provides 65 percent of the operating loan and the participating bank provides the remaining 35 percent. A portion of the interest payable to the Bank of North Dakota is deferred for five years. Specific payment terms vary depending on the size of the loan.[7] Interest on the participating lender portion is not deferred. However, the lender must make funds available at a rate no higher than the Bank of North Dakota base rate plus 2 percentage points. As a result, the lender earns somewhat less than the market interest rate.

Interest deferral programs can provide sizable relief at low cost to the state. The interest subsidy is not a grant; rather, it is a loan to be repaid, possibly with interest, depending on the specific requirements of the program. Also, fewer state funds are required, since the state is not providing the loan principal. One disadvantage is that more state administration is required because of the repayment provisions.

7 The Bank of North Dakota currently makes these loans at 8 percent interest. On loans of less than $50,000, 3 percent is due currently and 5 percent is deferred until 1991. On loans up to $75,000, 4 percent is due currently and 4 percent is deferred. And on loans up to $125,000, 5 percent is due currently and 3 percent is deferred.

Interest Buydown Programs

Interest rate buydown programs are basically interest deferral programs without the payback requirement. The subsidy consists of a grant by the state and interest forgiveness by the lender.

The Wisconsin buydown program is limited to operating loans of $20,000. The state will pay up to a 2 percent interest subsidy, providing the bank shares in the subsidy by charging 10 percent interest, or less. The farmers must have a debt-asset ratio greater than 40 percent, and not meet the lender's credit standards for its base lending rate.

Interest buydown programs pay part of the interest on operating loans without a payback requirement.

The Iowa program subsidized interest rates only for farmers with negative cash flows. Interest rates were subsidized either 6 or 7 percentage points, depending on whether the Farmers Home Administration (FmHA) participated. If FmHA participated, the state paid 3 percent, FmHA paid 3 percent, and the bank paid 2 percent. If FmHA declined to participate then the state and lender each subsidized the rate 3 percentage points. The Iowa program was used less than anticipated in 1986 and only $1.5 million of a $5 million appropriation was expended. The Iowa Governor and Legislature could not agree on adding various provisions to the program, and as a result the Governor vetoed the 1987 Iowa program.

Minnesota's program, discussed extensively in Chapter 2, has provided subsidies on operating loans of varying amounts in each of the last three years. In 1987, Minnesota provided a 2.8 percent interest subsidy and the bank provided a 1.7 percent subsidy on loans of up to $60,000 for up to an 18 month term.

Interest buydown programs share the advantage of simplicity of administration. Banks are relied on for administration and client selection. Buydown programs cost more than interest deferral programs because the subsidy is never repaid. Again, targeting is a concern, due to conflicts between bank financial incentives and program goals. The bank has an incentive to, within the eligibility guidelines, put only their best risk customers into the program. As a result, the farmers put into the program by the bank may not be the most financially stressed.

Targeting is difficult with all three types of interest subsidy programs because of the the heavy reliance on banks for implementation, and because of the difficulty in defining financial stress. Thus:

- **The dilemma a state faces in providing interest relief is to define the target group as precisely as possible, while still maintaining administrative simplicity and adequate financial inducements to encourage bank participation.**

As shown in this chapter, states have adopted a variety of means to help farmers adjust to the new and difficult circumstances on the farm. We will discuss the interest subsidy approach that Minnesota has used in 1985, 1986, and 1987 in Chapter 2. In Chapter 3, we will examine who has participated in Minnesota's program and how successful the program has been in meeting its stated goals.

MINNESOTA INTEREST SUBSIDY PROGRAMS

Chapter 2

In 1985 the Legislature took emergency action to aid farmers. One response was the Minnesota Emergency Farm Operating Loan Act, which started two *buydown* programs.[1] The first required state, lender, and FmHA participation. The second program provided new subsidized operating loans and involved only the state and private lenders. When the initial programs expired, the Legislature continued them in modified form in 1986 and 1987.

The programs requiring FmHA participation have been little used. These are discussed in Appendix A. This chapter and the one following concentrate on the state/lender subsidized operating loan programs.

In this chapter we discuss the design and intent of the 1985, 1986, and 1987 state/lender interest subsidy programs. We also review the administrative roles of the Department of Commerce and private lenders, and comment on the department's performance. The department is responsible for setting necessary policies, developing forms and instructions, processing applications, and making state subsidy payments. The department administers the buydown programs through private lenders. The lender selects clients meeting the eligibility criteria, prepares applications, and processes the loans.

PROGRAM INTENT AND DESIGN

Figure 2.1 summarizes major provisions of the Minnesota state/lender programs which provided interest relief on new operating loans.

1985 Interest Buydown Program

The Minnesota buydown program was enacted by the Legislature in March 1985. To be eligible, the farmer had to be a Minnesota resident and have a

1 *Minn. Laws* (1985), Chapter 4.

FIGURE 2.1

FARM INTEREST BUYDOWN:
SUBSIDIZED OPERATING LOANS

YEAR	TITLE	PURPOSE	ELIGIBLE GROUP	ELIGIBLE LENDERS	PROCESS
1985	Minnesota Emergency Farm Operating Loan Act[a]	Emergency program to reduce effective interest rates on new operating loans of one year or less duration, enabling farmers to obtain credit and avoid partial or total liquidation of farm assets	Farmers who are state residents, partnerships if 50% or more owned by Minnesota residents, or a Minnesota family-owned farm corporation. Farmer must have debt-asset ratio $\geq$ 50% and demonstrate ability to repay the subsidized loan	State or federal chartered banks, savings and loans, credit unions, or a farm credit system lender	The lender offers the farmer an operating loan with a net interest rate between 7% and 10%. The state pays 2/3 of the difference between the net rate and the commissioner's interest rate (defined as the lending rate of the Federal Intermediate Credit Bank to the Production Credit Association, plus 2.3%). The subsidy applies to the first $75,000 of loan principal, and the maximum payment per farmer must not exceed $3,750. The lender receives half the estimated subsidy within 10 days of application, the remainder when the loan is due.
1986	Farm Loan Interest Buydown	To reduce effective interest rates on new operating loans of one and one-half year duration or less. Eligible loans include lines of credit and extended or renegotiated loans or lines of credit	Farmers who are state residents, partnerships if 50% or more owned byMinnesota residents, or a Minnesota family-owned farm corporation. Farmer must have debt-asset ratio $\geq$ 50%, and have a reasonable chance of long-term financial viability	State or federal chartered banks, savings and loans, credit union, farm credit system lender, plus other financial institutions that the Commissioner of Commerce deems appropriate	The lender offers the borrower a loan with total interest rate (prior to buy-down subsidy) comparable to rates offered to farmers with comparable security and financial status. This interest rate cannot exceed the commissioner's interest rate, now defined as the lending rate of the Federal Intermediate Bank to the Production Credit Association, plus 3%. The state pays 37.5% of the total contract interest, the bank pays (forgives) 12.5% of the total contract rate, and the borrower pays the remaining 50%. The subsidy applies to the first $100,000 of loan principal. The lender receives half the estimated subsidy within 10 days of application, the remainder when the loan is due.
1987	Farm Loan Interest Buydown	Same	Same	Same	Similar to 1986 program, except: (1) Commissioner's interest rate defined as the lending rate of the Federal Intermediate Bank to the Production Credit Association, plus 3.3% (2) State subsidy set at 2.8% on the first $60,000 of loan principal, with per farmer maximum payment of $2,520. The bank must forgive at least 1.7% on first $60,000 of loan principal.

Source: Minn. Laws (1985), Chapter 4 and Chapter 114; Minn. Laws (1986), Chapter 398, Article 23; Minn. Laws (1987), Chapter 15.

[a]This description incorporates the program changes required by Minn. Laws (1985), Chapter 114.

debt-asset ratio of at least 50 percent.[2] Also, the farmer had to be unable to repay the loan at market interest rates, but able to repay at the program's subsidized interest rate. The lender and borrower stated on the application form that the farmer would have a positive cash flow at the subsidized interest rate, or would be able to repay with the aid of debt restructuring, new loans, outside income, or other means.

The state and a participating lender jointly provided the interest subsidy. The lender set the net interest rate to the farmer within a range of 7 to 10 percent. The state paid two-thirds of the difference between the farmer's net interest rate and a rate established by the Commissioner of Commerce.[3] The bank absorbed the remaining share through interest forgiveness.

Besides subsidizing the farmer through interest forgiveness, an additional requirement added to the lender's cost of participation. The lender had to encourage the farmer to attend approved farm management courses, and the lender had to cover all tuition fees.[4]

The maximum combined state/lender subsidy (ignoring the cost to the lender of farm management course tuition) was about $5,025. The law limited the maximum state share to $3,750 per farmer.[5] The program was enacted in early March 1985 and loans had to mature by March 1, 1986, resulting in a maximum term of one year. The maximum principal subject to the interest subsidy was $75,000.[6]

The Legislature required the Department of Commerce to report periodically on program results. In its first report, thirty days after the program's inception, the department criticized the program's ability to get assistance to the farmers most in need. The department concluded:

- **Participation was below expectations, and it tended to be low in the most financially stressed areas.**

- **Lenders were reluctant, or unable, to provide reduced rate loans to financially marginal farmers.**

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2 *Minn. Laws* (1985), Chapter 4, Sec. 3, subd. 5 defines eligible farmers as resident individuals engaged in farming or Minnesota family farm corporations. Partnership eligibility is not explicitly covered in the law. However, the application forms developed by the Department of Commerce permit a partnership to participate if it is at least 50 percent owned by Minnesota residents.

3 The commissioner's interest rate approximated the market, and was defined as the lending rate of the Federal Intermediate Credit Bank to the Production Credit Associations, plus 2.3 percent.

4 *Minn. Laws* (1985), Chapter 4, Sec. 6, subd. 2(c).

5 Given the commissioner's interest rates that existed during 1985, and the maximum principal and loan term, the highest state payment was nearly $400 lower.

6 While larger loans could be included in the program, the portion above $75,000 was not to receive a subsidy.

- **Many farmers who were receiving subsidies were not financially highly stressed and did not need the subsidy in order to obtain operating loans.**[7]

In response to these findings the Legislature changed the focus of the program. In May 1985, the Legislature amended the law to encourage broader lender participation by lowering their effective cost and improving their cash flow.[8] Instead of paying the full state share to the bank at loan maturity, the lender could request immediate payment of 50 percent of the expected subsidy with the remainder due at maturity. While this change might enable lenders to better serve the most financially stressed clients, the change was not focused on this group. Rather, the cost to the lender of serving any eligible client was reduced. At the same time, the Legislature enlarged the eligible group by eliminating the various cash flow restrictions. Farmers who had a positive cash flow and could obtain operating loans without a subsidy were now clearly eligible. As a result:

- **The focus of the program shifted from providing emergency, stopgap funding, to providing income support.**

The legislative changes in May were probably too late to have much impact on the 1985 farm operating cycle. Although $25 million was available, only $2.6 million was needed to cover the interest subsidies.

1986 Interest Buydown Program

The Legislature changed the program in 1986 to encourage participation and to broaden eligibility.

The evolving nature of the operating loan buydown program is suggested by the change of name from the 1985 Minnesota Emergency Farm Operating Loans Act to the 1986 Minnesota Farm Loan Interest Buydown.[9] In designing the 1986 program, the Legislature expanded on the 1985 amendments to further encourage participation and to broaden eligibility. First, the Legislature partially addressed lender cost concerns by modifying the farm management course requirement. Under the 1986 law the farmer had to enroll in a course only if the lender required it as a condition of receiving the loan, and the lender covered half the tuition cost, rather than the full amount.[10] Second, a wider variety of financing arrangements could be subsidized. The definition of eligible loans was changed to include original, extended, or renegotiated loans and lines of credit. Third, the Legislature increased average subsidies by extending the maximum loan term from 1 year to 1 1/2 years, increasing the eligible loan amount to $100,000, up from $75,000 the prior year, and revising the procedure for determining subsidy shares.

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7 "1985 Minnesota Emergency Farm Operating Loan Act, Program #2, 30-Day Report" (Minnesota Department of Commerce, April 15, 1985), pp. 13-14.

8 *Minn. Laws* (1985), Chapter 114.

9 *Minn. Laws* (1986), Chapter 398, Article 23.

10 *Minn Laws* (1986), Chapter 398, Article 23, Sec. 2, subd. 3, and Sec. 3, subd. 2.

The subsidy became a fixed portion of the total interest rate, with the state paying 37.5 percent of the total interest and the bank absorbing 12.5 percent, leaving the farmer to pay half the initial total interest amount. The total interest rate had to be comparable to that offered to farmers with similar security and financial status, but the maximum could not exceed the commissioner's interest rate.[11]

Another change from 1985 was that loans written between January 1 and December 31, 1986 were eligible for the subsidy. Thus, bankers could submit loans that had already been made for participation in the program.

Given these changes, the average state subsidy rose from $1,374 in 1985 to $2,215 in 1986. The average interest rate paid by the farmer fell from 8.87 percent to 6.44 percent. The maximum total state/lender subsidy could be as high as $10,200, nearly twice the previous year's maximum.[12]

Participation nearly tripled, increasing from 2,277 loans in 1985 to 6,463 in 1986. The Legislature only appropriated $5 million in 1986 because of the low demand the previous year. The appropriation was exhausted within seven days of passage. On April 26, 1986 Governor Perpich announced that the Department of Commerce would continue to take applications and that the Legislature would be asked for a deficiency appropriation in the 1987 session.

1987 Interest Buydown Program

The 1987 program contains changes making it less attractive to farmers and lenders.

The 1987 buydown program contains changes making it less attractive to farmers and lenders than in 1986. This has contributed to lower participation.

Changes in the 1987 Program

The 1987 program provides lower interest subsidies than the previous program. Under the 1986 program, the state and lender combined to pay half the interest on loans up to $100,000. In 1987, only $60,000 of loan principal is eligible and the subsidy is less than half the interest. The state subsidy is 2.8 percent of the interest while the lender forgoes 1.7 percent, creating a combined 4.5 percent subsidy. Thus the proportion of state-paid interest relief is less than in 1986 whenever the total interest rate is greater than 9 percent.[13] Loans must mature by June 30, 1988, but the subsidy may be applied for retroactively. That is, the lender may submit an application for program par-

11 The commissioner's rate was revised to be the lending rate of the Federal Intermediate Credit Bank plus 3 percent, rather than the previous year's 2.3 percent.

12 This result assumes the farmer borrowed $100,000 without repaying any principal for one and one half years, and the loan is written at the commissioner's interest rate of 13.6 percent, the maximum rate for much of 1986. Total interest would be $20,400. The farmer would pay half, or $10,200; the state would pay 37.5 percent of the total interest, or $7,650; and the lender would forgo the remaining $2,550.

13 The commissioner's interest rate has ranged between 11.5 and 12 percent during 1987. The 1987 commissioner's rate is defined as the lending rate of the Federal Intermediate Credit Bank plus 3.3 percent, rather than the previous 3 percent.

ticipation after the loan has already been made to the farmer as long as the loan matures before July 1988.

The maximum state and bank subsidy is $4,050, much less than the potential $10,200 subsidy in 1986. The 1987 law set the maximum state payment at $2,520, which equals 2.8 percent interest on a $60,000 loan for 18 months.[14] Combining this with a lender share of $1,530 (by foregoing interest of 1.7 percent on $60,000 for 18 months), gives a total subsidy of $4,050.

Both the 1986 and 1987 laws require the lender to pay half the tuition for farm management courses. Under the 1986 legislation, farmers had to enroll if required by the lender. In contrast, the 1987 law states that the farmer must enroll if he or she would benefit. If the lender concludes that the farmer would not benefit, it must provide a written statement to the farmer explaining the reasons, and must indicate the determination on the buydown application form.

Our discussions with bankers and our 1987 buydown sample suggest that few lenders are encouraging enrollment in farm management courses. Mandatory bank payment of tuition has been, and remains, controversial. A few lenders told us that, particularly on smaller loans or on large loans which are repaid prior to maturity, the tuition paid by the bank can be almost as high as the interest received from the loan. Some bankers contend that the cost should be borne entirely by the farmer since the farmer is the primary beneficiary.

Changes in Participation

In 1987 farmer participation dropped about 20 percent, and state costs dropped by an even larger proportion.

Figure 2.2 shows the geographic distribution of farmers participating in the 1987 buydown.[15] Applications were down about 20 percent in 1987. When we spoke with bankers, they cited several reasons for the decline, including:

- Fewer farmers qualified for the program.
- Bankers were unwilling to subsidize some applicants for an additional year, and fewer banks participated.[16]
- Some previous participants left farming.
- There was less need for operating loans because federal farm program payments were received early.

State Cost and Average Subsidy

While farmer participation dropped about 20 percent in 1987, the state cost of the program dropped by a much larger proportion, reflecting the change in subsidy procedure and the lower eligible principal ceiling. Total state sub-

14 The 1985 maximum state subsidy was $3,750, while the 1986 law set no subsidy maximum.

15 Appendix B compares the number of participants in each county in 1986 and 1987.

16 369 lending institutions participated in 1987, a 13 percent drop from the 420 participating in 1986.

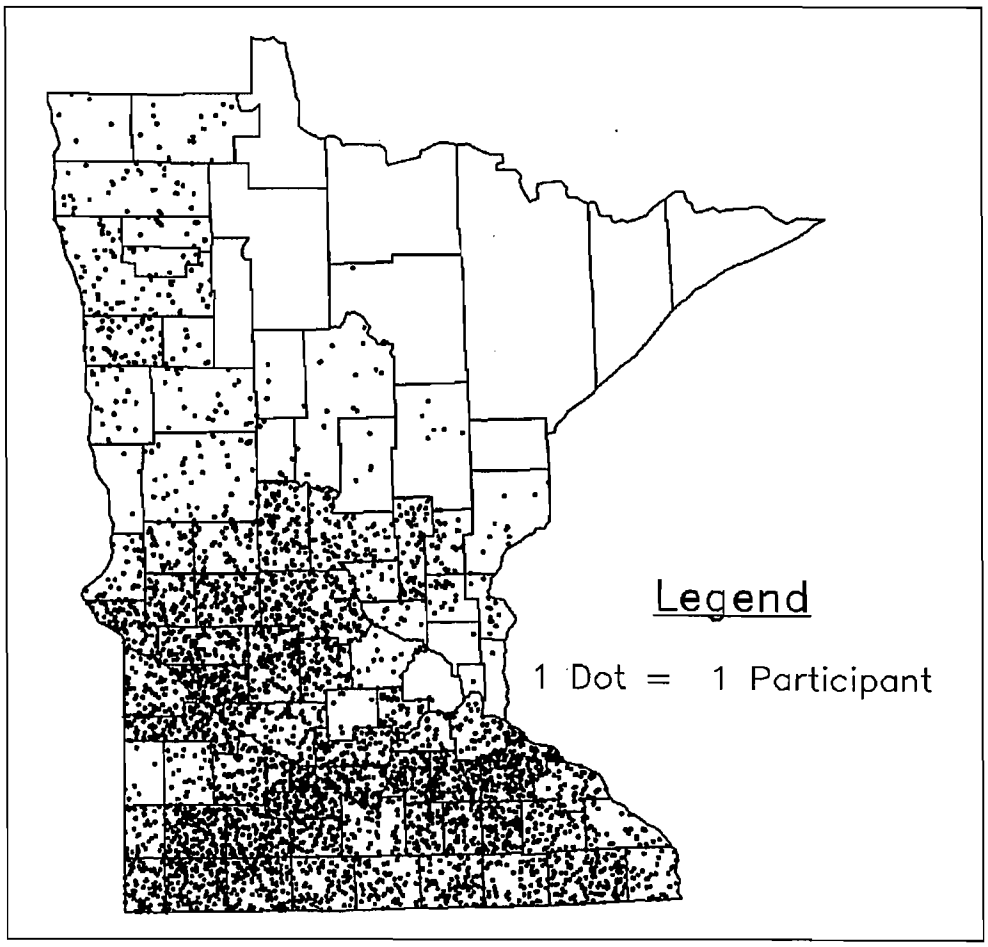

Figure 2.2: Interest Buydown Program Number of Participants by County 1987

The average interest subsidy in 1987 was $1,258, down from $2,215 in 1986.

sidies for the program in 1987 are estimated at $6.3 million, less than half that required in 1986.

Table 2.1 shows the number of loans made, average subsidies, and the highest subsidies paid in 1987, compared with corresponding data for the 1986 program. The average state subsidy declined nearly $1,000, down from $2,215 in 1986 to an estimated $1,258 in 1987. In contrast, the median subsidies differ by about $500. This result is caused in part by the much higher principal and subsidy amounts available through the 1986 program. The highest state paid subsidy under the 1986 program was $7,559, compared to $2,520 in 1987.

PROGRAM ADMINISTRATION

In this section we first describe the important administrative features of the operating loan buydown program. Then we note implications of this ad-

	1986 Program	1987 Program[a]
Maximum State Payment Permitted	No Maximum	$2,520
Maximum Potential State Subsidy	$7,650[b]	2,520
Maximum Actual State Subsidy	7,559	2,520
State Subsidy-Arithmetic Mean	2,215	1,258
State Subsidy-Median	1,820	1,339
Number of Loans Made	6,463	5,007[c]

Source: Department of Commerce case records.

[a]The 1987 figures are estimates based on the amount requested by lenders. The exact figures will not be known until after all loans mature (June 30, 1988), and lenders submit final reconciliation forms.

[b]Assumes maximum permitted principal, term, and interest rate (13.6 percent).

[c]Loans made through November 10, 1987.

Table 2.1: State Subsidy Payment Comparisons: 1986 and 1987 Operating Loan Buydown Programs

ministrative process for financial control, targeting, and program oversight. We conclude with comments on the department's performance.

Department of Commerce and Lender Responsibilities

The Department of Commerce is responsible for program operation, including making payments to lenders and general financial control. The department administers the buydown program through private lenders. The lender selects clients meeting the eligibility criteria, prepares applications, and processes the loans. Since the Legislature requires the department to bypass the standard rulemaking procedure, the department establishes needed policies through the design and content of instructions and application forms.

If the lender is willing to participate in the program, the bank and farmer complete the buydown form, certifying that the farmer meets the residency and debt-asset requirements, and specifying the amount of the operating loan and the estimated state subsidy. The buydown form is then submitted to the Department of Commerce.

The department must meet tight processing time requirements. If the lender has not been notified within seven working days after the department receives the application, the buydown is deemed to be approved.

The lender can request payment of half the expected subsidy when the department accepts the application. The state pays the remaining share when the loan matures. Because the farmer may repay a loan early or may not borrow the full limit under a line of credit, the total state subsidy can only be estimated at the time of initial application. As a result, when the loan matures

or is paid off by the farmer, the lender submits a final reconciliation form to the state, noting the additional state payment needed.

Advantages and Disadvantages

The buydown program's simplicity and speed of administration create several advantages:

- **Farmers receive prompt assistance.**
- **Lender participation is encouraged by the department's quick turnaround and the minimal paperwork and verification required.**
- **State administrative costs are low.**

The buydown program is simple to administer but the state has little control over participation.

The key role played by private lenders in loan review and client selection relieves the state of these duties, saving considerable state expense. Appropriations for administrative costs were $50,000 for the 1985 programs, $75,000 for the 1986 programs, and $100,000 for the 1987 programs.

The approach also has disadvantages:

- **Requiring the bank to share in subsidizing the farmer reduces lender participation, limiting the state's ability to ensure that eligible farmers have access to the program.**

An eligible farmer can not receive assistance unless the lender is willing and financially able to participate. Lender participation can not be required; it can only be encouraged through offering incentives.[17] As a result:

- **The state has no direct control over who receives the subsidy, and little ability to ensure that assistance will be available where it is needed.**

Some eligible farmers are not served because their lenders do not participate. Some banks are unwilling to accept the lower profits that result from providing reduced interest rate loans. Other lenders might want to participate, but if the bank's financial condition is weak, it may be unable to offer the required subsidies. Even among lenders that use the program, bank procedures vary, causing some of their eligible clients to be served while others are not. In discussions with participating lenders, some say the programs provide excellent good will for the bank, and they are aggressive in notifying and extending assistance to eligible farmers. Other lenders do not inform any clients, but the lender will participate if a farmer requests the program. Finally, given profit

17 The streamlined state review process and many of the changes in recent buydown programs were efforts to meet lender concerns and encourage their participation. These actions include early payment of half the state subsidy share, changes in subsidy burdens, changes in total assistance levels, and reductions in farm management course tuition costs to be paid by the lender.

incentives, many lenders may offer the program only to the lowest risk clients who qualify.

In efforts to extend, or at least maintain the current level of participation, the state must contend with lender perceptions of the need for this program.

- **Despite inducements, lenders may become less willing to contribute toward subsidized loans, given improvements in the general farm economy.**

This may already be occurring and may partially explain why participation fell in the 1987 programs. While banks could be encouraged to continue by reducing the required lender-provided subsidy, or by taking other steps to reduce lender participation costs, at some point lessening their financial stake in the program would significantly reduce incentives for careful client selection.

Another weakness of the program is that:

- **The lack of verification and the limited review by the Department of Commerce weakens the state's ability to deter program abuse.**

Basic financial data needed to assess the impact of the program are not collected.

Basic financial data needed to assess the impact of the program are not obtained by the Department of Commerce. The 1987 legislation states that the lender's determination of the financial viability and debt-asset ratio of the farmer are deemed accurate without further audit or substantiation. [18] The application forms developed by the Department of Commerce request no financial data beyond the debt-asset ratio.[19] As a result, under the program's current guidelines:

- **The Department of Commerce and the Legislature do not receive data on the net worth, income, and cash flow of the subsidy recipients.**

- **Neither the department or the Legislature can assess the impact of the program, or adequately assess the impact of potential program changes.**

Problems in Deterring Program Abuse

The department's review cannot focus on ensuring the accuracy of information because of the seven-day processing time constraint. Rather, the review is limited to checking that forms are complete and that applications are consistent with eligibility criteria. As a consequence:

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18 Minn. Laws (1987), Chapter 15, Section 2, subd. 1 and 2. Similar language is found in earlier buydown legislation.

19 For the 1986 program, the department did not even obtain the exact ratio. The lender simply stated in the application that the ratio was at least 50 percent.

- **The Department of Commerce lacks the information and procedures to verify eligibility and deter abuse.**

The department needs more information and a more extensive review process to ensure program requirements are met. In developing our 1987 buydown sample, discussed extensively in the next chapter, we requested that the lender provide financial statements, tax returns, and cash flow information on the borrowers. Lenders are required by the program to assess the **current** financial viability of the borrower. However, in reviewing the financial data we found that:

- **In about five percent of the cases in our sample, the most recent financial statement reflects the previous rather than the current operating cycle.**

Many of these statements were over one year old. In some cases, the same financial statement appears to have been used to qualify for both the 1986 and 1987 interest buydown programs.

- **In seven cases out of 239, the current financial statements showed the debt-asset ratio was less than 50 percent.**

In cases where the debt-asset ratio appeared too low to qualify, we contacted lenders. One lender acknowledged that the bank was in error, and it is reimbursing the Department of Commerce for the state subsidy received. In the other cases the lenders contend that the farmers are eligible, but this is not reflected in the financial statements because the assets are overvalued.

Department of Commerce Performance

The department deserves credit for operating under tight time constraints. We found that:

- **Bankers gave the department high marks for its handling of inquiries and its prompt processing of the buydown applications.**

On the negative side, however:

- **The department was slow to develop good fiscal and operating controls.**

Problems in ensuring eligibility can be blamed in part on operating constraints placed on the department by the legislation. On the other hand, operating and financial controls also were weak in an area where the department has full discretion--the process for ensuring payment of correct subsidy amounts. In a financial audit of Department of Commerce operations, our office found

numerous incorrect subsidy payments for the 1985 and 1986 programs.[20] Many of the final reconciliation forms submitted by the lenders were incorrect and the department was not adequately reviewing them, leading to improper payments. From a sample of files and final reconciliation forms, our auditors estimated that total overpayments on the 1985 program may have been as high as $230,000. Our auditors could not estimate total dollar losses in the 1986 program payments because many loans were still outstanding, but they found similar problems.

Our financial auditors brought these problems to the attention of the department, and Commerce promptly began a review of 1986 program payments. When the department reviewed the 1986 cases, they found extensive errors. Some lenders overstated the state subsidy by assuming that the farmer borrowed the maximum amount permitted on their line of credit for the maximum duration, when farmers did not actually borrow the full amount or paid off loans early. Other lenders miscalculated the number of days that loan balances were outstanding or used incorrect interest rates in calculating amounts due.

Funds Remaining From Earlier Programs

When demand for the 1986 program quickly exceeded the funds available, the Governor kept the program open and requested an appropriation in 1987 to cover the deficiency. The estimated amount needed for the deficiency appropriation was not adjusted for early repayment of principal, or for farmers not borrowing the full amount available through lines of credit. The Legislature appropriated $14 million to cover the deficiency, but only about $10 million was used.

Decreased participation in the 1987 programs has led to additional unused funds. The Legislature expected that as many as 10,000 farmers would participate in the 1987 operating loan programs, but the actual number was half that. Low participation combined with a decrease in the average subsidy amount has created a projected surplus of $10 to $11 million out of the $17 million appropriated for the 1987 programs.

Approximately $14 to $15 million remains from previous buydown programs.

Thus, approximately $14 to $15 million remains from previous buydown programs. Some legislators have suggested that the programs should continue, but they ask whether changes are necessary. Others wonder if the remaining funds might be put to better use in other programs, either in rural Minnesota or statewide. In this context, information about the financial characteristics of current interest subsidy participants, and how they have benefited from the program becomes more important. In the next chapter we describe the financial characteristics of farmers in the 1987 interest buydown program.

20 "Department of Commerce Financial and Compliance Audit for the Period July 1, 1983 Through June 30, 1986" (Financial Audit Division, Office of the Legislative Auditor, State of Minnesota, August, 1987), pp. 2-5.

1987 INTEREST BUYDOWN PARTICIPANTS

Chapter 3

In this chapter we discuss the financial condition of farmers participating in the 1987 farm interest buydown program. We report the results of a review of financial records for a sample of participants.

In our study, we examined the following questions:

- **What are the characteristics of the farmers participating in the 1987 farm interest buydown program?**
- **How do the participants vary in terms of debt-asset ratios, net worth, size and type of farming operation, cash receipts, and profit or loss from farming?**
- **How much financial stress are participants in the program experiencing and how much does it vary?**
- **How much of a difference has the interest buydown program made in farmers' adjustments to the situation they face in the 1980s?**
- **What are the prospects for interest buydown participants?**

We collected financial information from banks for a random sample of 239 farmers.

To answer these questions we conducted a series of interviews with Department of Commerce and Department of Agriculture staff, agricultural economists, and lenders across the state, as well as with legislators and other interested parties. In order to gather information about those farmers participating in the interest buydown program we collected financial information (financial statements, cash flows, and tax records) for a random sample of farmers from the banks that participated in the program. The sample of 239 is representative of the 4,892 farmers participating in the program as of July 28, 1987.

The scope of our review was largely limited to the 1987 operating loan program. However, we did collect information about the farmers' financial condition for the last three years. Because about 80 percent of our sample also participated in the 1986 program, we can make some statements about the effects of the previous programs.

In general, this data set provides a good base of information for assessing the financial status of those farmers participating in the program. However, the

answers to the questions posed about how much difference the program has made and what the prospects are for participants are not definitive and should be regarded only as indications of the financial condition of buydown participants.

GENERAL CHARACTERISTICS

In analyzing the financial records of our sample group, we gathered a certain amount of general information about the characteristics of the farmers in the program. In this section we report that information.

Type and Size of Farms

A vast majority of participants were family farmers.

A vast majority (almost 93 percent) of the participants in the 1987 interest buydown program were family farmers. Approximately 6 percent of those sampled were partnerships and 1 percent were incorporated. This is similar to the distribution of farm ownership types in the state as a whole.

Table 3.1 shows the type of farming operation being conducted by those in the program. We categorized the type of farm based on the amount of 1986 revenue from crop or livestock sources. If over 50 percent of 1986 receipts came from one source we categorized the farm as being of that type, e.g., if over 50 percent of revenue came from cash grain sales the farm was classified as a cash grain farm. Many of the farmers had more than one source of revenue, but one source usually dominated.

Type[1]	Number	Percent
Cash Grain	84	35.2%
Dairy	67	28.0
Hog	44	18.4
Cattle	16	6.7
Diversified[2]	18	7.5
Specialty[3]	7	2.9
Small Grain	3	1.3
	239	100.0%

[1]The farm operation type was categorized on the basis of 50 percent or more of gross receipts from one type of farming in 1986.

[2]Diversified means no one line of business provided more than 50 percent of revenues. Thus, farms classed as diversified had at least three product lines.

[3]Sunflowers and/or sugarbeets.

Table 3.1: Types of Farms Operated by 1987 Buydown Program Participants

Interest buydown participants farm slightly more land than the average farmer. The average amount of land farmed by buydown participants in 1986 was 416.7 acres, compared with the statewide average of 326 acres. One-half of the buydown farmers operated more than 320 acres in 1986. The average number of acres buydown participants own is 190.5, with half of the farmers owning more than 155 acres. Most of the farmers in the sample rented some or all of their land in 1986. Table 3.2 shows the distribution of 1987 buydown participants by the number of acres they farmed in 1986.

Acres	Percent
0-40	5.9%
40-100	6.3
100-250	28.0
250-375	18.0
375-500	12.1
500-650	12.6
650-800	7.1
Over 800	10.0
	100.0%

Table 3.2: Number of Acres Farmed in 1986 by 1987 Buydown Program Participants

Farm receipts of buydown participants were larger than average.

Another common way to categorize farm size is by cash receipts from farming. Table 3.3 shows gross cash receipts from farming in 1984, 1985, and 1986 compared with data gathered from the 1986 Farm Financial Survey of the Minnesota Department of Agriculture. Farm receipts of those participating in the buydown program are higher than the average farm in the state. Buydown participants average receipts in 1985 were $117,090, compared with an average of $100,292 from the Farm Financial Survey of all state farmers.

		1987 Buydown Sample:		
Cash Receipts	Farm Survey: 1985	1984	1985	1986
Less Than $40,000	31.4%	17.4%	13.8%	13.1%
$ 40,000-$100,000	35.6	40.2	40.3	38.4
$100,000-$250,000	25.1	33.7	36.7	40.9
Over $250,000	7.9	8.7	9.2	7.6
	100.0% n=430	100.0% n=172	100.0% n=196	100.0% n=198
Average	$100,292	$113,965	$117,090	$117,743
Median	----	87,598	93,273	96,663

Source: 1986 Farm Financial Survey and 1987 Program Evaluation Division buydown sample.

Table 3.3: Cash Farm Receipts: Comparison of Buydown Sample With Farm Financial Survey

- **Most interest buydown participants operated mid-sized commercial farms slightly larger in size and sales than the average farm in the state.**

However, approximately 13 percent of the buydown sample were operating smaller farms with sales of less than $40,000. The U.S. Department of Agriculture (USDA) categorizes farms of this scale as non-commercial farms. From a review of tax records, we also found that at least 4 of the 239 (1.6 percent) in our sample were what could be categorized as hobby farmers. In these cases farming was not the major economic activity of the participants. One example is a farmer with sales of farm goods between $4-5,000 each of the last three years, who had an off-farm job paying over $32,000 per year.

We found over 75 percent of participants, including a few hobby farmers, had off-farm income.

While there are only a few hobby farmers participating in the program, many of the participants had off-farm income. Over 75 percent of those for whom information was available had more than $1,000 in off-farm income, with the average amount being approximately $10,950, and the maximum over $100,000. Other studies have shown a trend toward greater numbers of farmers and/or farm spouses with off-farm jobs. This trend is especially true of farms experiencing financial stress. According to the USDA, the average amount of non-farm income in Minnesota in 1986 was $17,799, with farms they defined as distressed having an average of $28,586 in off-farm income.[1]

It was not possible to gather information systematically on the age of the buydown program participants or tenure in farming from the financial records provided to us. However, we had the general impression, from those cases where information was present in the files, that the buydown participants were mostly younger (in their 30's and 40's) than average farmers. This coincides with other information collected by the USDA and the Minnesota Department of Agriculture on the age of farmers most experiencing financial stress. For example, USDA found an average age of 48 years for non-stressed farmers compared with an average of 38 years for stressed farmers.[2] We were able to ascertain that at least 19 of the 239 in our sample (8 percent) had just begun farming in the last 4 years. Since they are just starting out, it is not surprising that this group would have high debt-asset ratios and would be eligible for the program.

General Financial Characteristics

Table 3.4 shows the average assets, debts, and net worth of those participating in the interest buydown program compared with all farmers in the lake states of Minnesota, Wisconsin, and Michigan. The table shows that interest buydown participants have approximately the same assets and net worth as other farmers with similar debt-asset ratios. It also shows that those buydown participants that are technically insolvent are closer to being solvent than the comparable group in the lake states as a whole.

1 U.S. Department of Agriculture, *Farm Costs and Returns Survey, 1986 Summary: Minnesota*, p. 1. USDA defined stressed farms in this publication as having high debt (debt-asset ratios above .4) and negative net cash income.

2 *Ibid.*

LAKE STATES[a]

1987	All Farms	.41-.70 Debt-Asset Ratio	.71-1.0 Debt-Asset Ratio	Over 1.0
Assets	$252,018	$313,663	$238,453	$176,193
Debt	66,500	163,740	192,947	233,386
Net Worth	185,518	149,924	45,506	(57,193)

MINNESOTA INTEREST BUYDOWN

	All Farms	.5-.7 Debt Ratio	.71-1.00 Debt Ratio	Over 1.0 Debt Ratio
Assets	$319,990	$354,415	$266,898	$319,072
Debt	217,824	204,135	214,080	323,965
Net Worth	102,166	150,280	52,818	(4,893)

Source: Financial Characteristics of U.S. Farms, January 1, 1987, USDA, Economic Research Service; and Program Evaluation Division calculations.

[a]Minnesota, Wisconsin, and Michigan.

Table 3.4: Average 1987 Farm Assets, Debts, and Net Worth (By Debt-Asset Ratio)

The net worth of buydown participants varied widely.

Net worth is an important indicator of how long a farmer can withstand adverse farm operating conditions, in a sense, how much of an asset "cushion" exists. The net worth of the interest buydown sample varies widely, from a minimum of -$130,000 to a maximum of $883,000. As Table 3.5 shows, over 63 percent of the interest buydown sample had a net worth of less than $100,000 in 1987, including almost seven percent that were technically insolvent. However, over 36 percent had a net worth of over $100,000 and over 12 percent had a net worth over $200,000.

Net Worth	1985 Percent	1986 Percent	1987 Percent
Negative	1.8%	6.9%	6.9%
$ 0- 50,000	22.2	32.2	31.2
50,000-100,000	14.6	16.3	24.7
100,000-150,000	20.5	19.4	15.1
150,000-200,000	8.2	7.4	9.5
Over $200,000	32.7	17.8	12.6
	100.0%	100.0%	100.0%

Table 3.5: Net Worth of 1987 Buydown Participants In 1985, 1986, and 1987

Debt-Asset Ratios

A farmer's debt-asset ratio is the primary eligibility criterion for the interest buydown program. The debt-asset ratio is simply the farmer's total debt divided by the total assets. The debt-asset ratio is one measure of financial solvency and represents the degree to which the farmer has leveraged the farm with borrowed money. Debt-asset ratios are always approximations, because assets are subject to valuation error. For most farms, the bulk of farm assets are in the form of land and machinery. Depending on the value placed on these fixed assets by the bank, the debt-asset ratio can vary substantially.

The average debt-asset ratio for all participants in the 1987 program is 71.2 percent, with a median ratio of 67.0 percent.[3] Table 3.6 shows the distribution of debt-asset ratios for all participants in the 1987 program.[4] Approximately 21 percent of the farmers in the 1987 program had debt-asset ratios of between 50 and 55 percent. Approximately 58 percent had ratios between 50 and 70 percent and slightly over 5 percent of the farmers were technically insolvent.

The median debt-asset ratio for 1987 participants was .67.

Debt-Asset Ratio	Percent
.50-.60	35.1
.60-.70	22.5
.70-.80	17.8
.80-.90	11.5
.90-1.00	8.1
More than 1.00	5.2
Total[a]	100.2%
Average debt-asset ratio = .712	
Quartiles	
Lower Quartile	.57
Median	.67
Upper Quartile	.80

Source: Calculated from Department of Commerce data files as of November 10, 1987.

[a]Rounding difference.

Table 3.6: Debt-Asset Ratios: 1987 Buydown Participants

By comparison, many farmers in the state operate with very little or no debt. Table 3.7 shows estimates of debt-asset ratios for all farmers in the state and region. As one can see from the table, the majority of Minnesota and regional farmers had debt-asset ratios less than .40. Half of all Minnesota farmers had a debt-asset ratio less than .36 in 1986.

3 Assets were evaluated on an estimated market value basis.

4 These figures are calculated from Department of Commerce data. As we noted in Chapter 2, some applicants debt-asset ratios on their most recent financial statements were below .50.

Debt-Asset Ratio	Percent of Farms: Minnesota[a] 1986	Percent of Farms: Lake States[b] 1987
No Debt	--	30.3%
0-10%	41.6%	13.5
11-40	19.1	24.6
41-70	16.3	18.1
71-100	12.8	8.4
Over 100	10.2	5.1
	100.0%	100.0%

Source: Minnesota Farm Finance Survey 1986 and Financial Characteristics of U.S. Farms, January 1, 1987, USDA, Economic Research Service, 1987.

[a]Minnesota farms with no debt are included in 0-10% category.

[b]Lake states are Minnesota, Wisconsin, and Michigan.

Table 3.7: Debt-Asset Ratios: Minnesota (1986) and Lake States (1987)

In conclusion, the following general statements may be made about 1987 interest buydown participants:

- **Most participants are younger family farmers.**
- **Buydown participants operate mostly mid-sized family commercial farms slightly larger in both size and sales than the average farm in the state.**
- **Buydown participants by definition have higher debt than farmers in general.**
- **The net worth of participants varied widely, from the technically insolvent to large wealthy operators.**

In the next section, we discuss the general question of how much financial stress farmers participating in the buydown program are experiencing.

FINANCIAL STRESS

Introduction

The interest buydown program was established by the Legislature to aid farmers facing "extreme financial hardship or possible foreclosure in 1985 because of their inability to obtain farm operating loans at affordable rates of interest." This was the result of the unfavorable prices for farm commodities and increases in interest and other production costs brought about by the economic forces described in Chapter 1. In this section we examine to what extent farmers participating in the program remain financially stressed.

Farm financial stress is reflected in a cash flow that is insufficient to meet all the cash demands of the farm household.

The concept of farm financial stress has different meanings to different people. The common sense use of the term is that farmers are having difficulty paying all of their bills. In general, farm financial stress is reflected in a cash flow that is insufficient to meet all of the debt service required of the farm operation plus the other cash demands of the farm and household.

Farmers may be financially stressed in the short-term but still be solvent and not faced with a decision to leave farming. This is an important concept to grasp, as farmers may be having difficulties meeting their obligations from current income, but still retain sufficient wealth (net worth) to get through their short-term difficulties. On the other hand, financial stress is related to the amount of debt that the farmer has taken on, because the higher the debt, the higher the cash flow necessary to service that debt. Put another way, farmers may have a relatively high debt load and also be generating sufficient income to make payments on the debt. However, it becomes increasingly difficult to generate the necessary cash flow for debt service the more debt the farm enterprise takes on.

Thus, important factors in measuring farm financial stress are the profitability of the farm, the net worth of the farmer, the amount of debt (often expressed as a debt-asset ratio), and the ability of the farm family to service that debt. In the next section we examine each of these factors.

Measures of Financial Stress

In order to measure financial stress one must refer to various financial ratios and other financial measures. Figure 3.1 and 3.2 provide definitions of some of the most commonly used ratios and measures. Financial measures express relationships between the balance sheet, cash flow statements, and income statement and provide a basis for comparing the financial strength of farm businesses. The most serious constraints of this type of analysis are the lack of well established standards for comparison and the lack of agreement in what constitutes acceptable deviation from the standards. Nonetheless, ratios and other measures are commonly used by farmers and lenders to summarize financial information, and some general standards exist as shown in Figure 3.2.

BALANCE SHEET

TOTAL FARM ASSETS minus including:	TOTAL FARM DEBT equals held by:	NET WORTH (Equity)
Land and buildings Farm equipment Value of livestock inventory Value of crop inventory Value of purchased inputs on hand Other assets	Production Credit Associations Farmers Home Administration Commercial banks, savings and loan associations Federal land banks Merchants, dealers, and co-ops Life insurance companies Individuals who sell land Commodity Credit Corporation Any other	

CASH FLOW

Crop and livestock sales	+ Other farm income (Net CCC loan transactions, Government payments, custom income, other farm wages, etc.)	= Gross cash income from farm operation
Gross cash income from farm operation	- Cash operating expenses before interest payments	= Net cash income before interest payments
Net cash income before interest payments	- Interest expense	= Net cash farm income (NCFI)
Net cash farm income (NCFI)	- Estimate of debt repayment	= Net cash farm income after subtracting debt repayments
Net cash farm income after subtracting debt repayment	+ Nonfarm income	= Cash available to farm household from all sources
Cash available to farm household from all sources	- Estimate of cash family living allowance	= Net cash household income (NCHI) before taxes, other accrued liabilities and noncash adjustments

Source: USDA.

Figure 3.1: Definitions
Farm Balance Sheet and Cash Flow

Ratio	Definition	Interpretation
Interest/Sales	Total interest expense divided by total commodity sales.	This measure is similar to the debt-asset ratio in that it provides an indicator of debt burden while controlling for farm size. The higher the value the more of farm gross income is committed to interest payments.
Times Interest Earned	Net cash farm income + interest - depreciation divided by interest paid.	This measure shows the ability of the farm business to meet interest expenses and replace capital assets. Lenders generally prefer ratios of 2.0 or greater.
Household debt service coverage	Net cash household income (NCHI) plus interest payments divided by interest expense plus estimated principal repayments.	A value greater than 1.0 indicates that the farm (considering all sources of income) is liquid. A ratio below 1.0 indicates problems in meeting family living, taxes, and other expenses.
Farm business debt service coverage	Net cash farm income (NCFI) plus interest pay ments divided by interest expenses plus estimated principal repayments.	A value greater than 1.0 indicates that the farm business (considering only farm earnings) is liquid. A value greater than 1.0 indicates the farm business is making a net positive contribution to the household's cash income.

Source: USDA.

Figure 3.2: Definitions of Farm Financial Ratios

Change in Farm Profits

Farm profits in Minnesota were lowered in 1981 - 1984 because of depressed commodity prices and rising input costs. Farm profits improved somewhat in 1985 and 1986, but many farm enterprises continued to lose money.

Net cash **farm** income, or net returns, is one of the principal measures of short-term financial health. Table 3.8 shows an estimate of the last three years' net cash farm income for the 1987 interest buydown participants. The table shows that in 1984 over 30 per cent of the sample had negative cash in-

	Percent of Sample		
Net Cash Farm Income[a]	1984	1985	1986
$ Negative	30.4%	21.9%	13.0%
$0 - $10,000	24.7	22.5	28.1
$10-$20,000	19.0	23.5	25.5
$20-$30,000	10.8	11.2	15.1
$30-$40,000	6.3	10.7	7.3
$40-$50,000	5.7	3.2	2.6
More than $50,000	3.2	7.0	8.3
Total[b]	100.1%	100.0%	99.9%
Buydown Sample			
Mean	$10,277	$14,983	$17,290
Median	$ 7,974	$11,323	$14,725
Lake States (all farms)[c]			
Mean	$ 7,350	$13,329	$15,311
Percent Negative Cash Income	--	47.25%	31.25%

Source: Program Evaluation Division calculations and USDA Farm Financial Summary, 1985, 1986, 1987.

[a] Gross cash receipts minus total cash farm expenses including interest.

[b] Difference due to rounding.

[c] Minnesota, Wisconsin, Michigan.

Table 3.8: Distribution of Net Cash Farm Income For 1987 Buydown Participants In 1984, 1985, and 1986

come from farming. In 1986, 13 percent had negative net cash farm income. Between 1984 and 1986, the median net cash farm income increased from $7,974 to $14,725 and the average increased from $10,277 to $17,290. This compares to the USDA Lake States average net cash farm income increasing from $7,350 to $15,311 in the same period.

Net cash **household** income presents a different picture. Table 3.9 shows farm cash household income after deducting an estimate of cash family living expenses and adding off-farm income. Over 54.6 percent of interest buydown participants had negative net cash household incomes in 1986. A net cash household income greater than zero means the household has paid all of its debts from current farm and off-farm income. A number of the farm households participating in the interest buydown program have been paying down their total debt with every available dollar, and despite the fact that they are profitable and can service their debt load, they have low or slightly negative net household incomes.

Net Cash Household Income 1986	Percent of Participants
Less than -$20,000	15.7%
-$20,000 to -$10,000	15.8
-$10,000 - $0	23.1
$0 - $10,000	17.6
$10,000 - $20,000	12.1
Over $20,000	15.7
	100.0%
Mean 1986 Net Cash Household Income	($1,124)
Quartiles	
Lower Quartile	($12,567)
Median	($ 3,021)
Upper Quartile	$12,424

Table 3.9: 1986 Net Cash Household Income For 1987 Buydown Participants

Change in Net Worth

Land devaluation accounts for much of the decrease in farmers' net worth between 1985 and 1987.

Farmland value has dropped significantly since the peak of land prices in 1981. This loss of value is reflected in farmers' debt-asset ratios, which have ballooned upward. Tables 3.10 and 3.11 show the dollar and percent changes in net worth between 1985-86 and 1986-87. As one can see from the tables, some farmers' net worth declined dramatically. However, for most farmers, land devaluations account for the decrease in net worth between 1985 and 1987. In total, during this period land values actually went down **more than** net worth for the interest buydown participants.

Change in Net Worth	Percent of Sample 1985-86	1986-87
More than $100,000 loss	19.6%	6.7%
$50-100,000 loss	12.7	10.9
$0-50,000 loss	50.0	36.8
$0-20,000 gain	10.7	24.9
More than $20,000 gain	7.0	20.7
	100.0%	100.0%
	n = 158	n = 193
Lower Quartile	($71,998)	($29,032)
Median	($21,409)	($ 1,613)
Upper Quartile	($ 3,337)	$12,260

Table 3.10: Dollar Change in Net Worth Between 1985-86 and 1986-87 For 1987 Buydown Participants

	Percent of Sample	
Percent Change	1985-1986	1986-1987
More Than Minus 100%	5.7%	6.7%
Minus 50-100%	17.1	9.8
Minus 25-Minus 50%	25.3	14.4
0-Minus 25%	33.5	28.4
0-25%	8.9	19.6
25-50%	5.7	7.2
More Than 50%	3.8	13.9
	100.0%	100.0%
Quartiles		
Lower Quartile	-47.43%	-35.5%
Median	-23.1	- 8.6
Upper Quartile	- 4.6%	18.2%

Table 3.11: Percent Change in Net Worth Between 1985-86 and 1986-87 For 1987 Buydown Participants

Land prices on 1987 balance sheets were consistent with other market value estimates.

It has taken bankers several years to reflect this decrease in land asset values on the balance sheets of their farm borrowers. Some banks wrote down the value of assets earlier than others. Our review of land valuations for the interest buydown sample indicated that approximately one-half had land devaluations in 1986, and one-half had devaluations in 1987. However, our review of the 1987 balance sheets of the farm interest buydown participants revealed that land was, for the most part, fairly valued.[5] Thus, if land prices stabilize, the deterioration in asset values should largely end.

In spite of large equity losses in the last five years, some of the interest buydown participants have significant remaining net worth, as we saw in Table 3.5. Still, the decreases in equity have lessened the potential for a farmer's net worth to serve as a buffer in future periods of cash flow shortage.

Debt Service Coverage

Another key aspect of financial stress is the ability of the farm operation to meet debt principal and interest payments from current farm earnings. If the farm operation cannot meet debt payment requirements from current earnings, it must rely on off-farm income, sales of assets, or increased borrowing to pay the debt, or else default on debt obligations.

Interest as a percent of sales is a measure of how much of the farm's gross cash income is devoted to interest payments. The higher the value, the more fixed is the expense structure of the farm. Table 3.12 shows the variation in amount of interest paid as a percent of sales. As one would expect, the table shows that the buydown sample has a higher interest-to-sales ratio than the

5 The market value estimates are comparable to land value estimates gathered by the University of Minnesota.

Interest buydown participants spent more on interest payments than the average farmer.

Interest/Sales Ratio	1987 Buydown Participants In 1984	1985	1986	1985 Farm Financial Survey
0-5%	3.5%	2.1%	4.6%	35.1%
5-10	11.7	11.3	13.8	14.7
10-15	14.0	15.5	19.5	13.6
15-20	15.8	19.1	24.1	11.2
20-25	17.0	20.6	14.9	9.2
25-30	11.7	14.4	10.8	5.0
Over 30	26.3	17.0	12.3	11.2
	100.0%	100.0%	100.0%	100.0%
Lower Quartile	30.5%	26.7%	24.2%	20.1%
Median	21.1	20.5	17.6	10.2
Upper Quartile	12.3	13.3	11.7	.6

Table 3.12: Interest as a Percent of Sales for 1987 Buydown Participants and 1986 Minnesota Farm Financial Survey

general farm population, although there are some interest buydown participants that do not have very high ratios. The table also shows that the percent of sales devoted to interest payments has declined in both 1985 and 1986, but in 1986 almost 40 percent of the buydown participants still were devoting high percentages (over 20 percent) of their gross sales to paying interest.

Table's 3.13 and 3.14 present three measures of the interest buydown sample's ability to meet debt service requirements. Table 3.13 presents a measure of the number of times the farm earns revenue equal to its required interest payments, sometimes refered to as "times interest earned". This ratio presents the net cash farm income plus interest paid minus depreciation divided by interest paid. This ratio measures longer term debt payment ability, because depreciation is subtracted. Because depreciation is not a cash expense, in the short term more cash is available for debt service than this ratio indicates. However, in the longer term, farm capital assets must be replaced and, therefore, subtracting depreciation gives a picture of the ability of the farm to replace those capital assets and pay interest expenses. Ratios greater than 1.0 indicate all interest can be paid. In general, lenders prefer ratios of 2.0 or higher. The table shows that the ratio improved from 1985 to 1986, but that still in 1986 only 15.8 percent of interest buydown participants had more than their interest expense in profits.

Table 3.14 presents the distribution of interest buydown participants' debt service coverage ratios for 1986. The farm business coverage ratio does not consider off-farm income or family living expenses and measures the contribution

Number of Times Interest Earned[a]	Percent of Sample 1985	1986
Negative	14.2%	12.1%
0-.5	14.2	10.5
.5-1.0	25.8	22.7
1.0-1.5	24.7	26.8
1.5-2.0	10.0	12.1
Over 2.0	11.1	15.8
Mean	.865	1.17
Quartiles		
Lower Quartile	.43	.60
Median	.97	1.07
Upper Quartile	1.37	1.60

[a]Profit or loss plus interest paid divided by interest paid.

Table 3.13: Times Interest Earned For 1987 Buydown Participants

In 1986, 45 percent of participants were able to meet all expenses from the combination of farm and off-farm income.

Debt Service Coverage Ratio	Farm Business Debt Service Coverage[a] 1986	Household Debt Service Coverage[b] 1986
Negative	3.5%	7.4%
0-.5	11.3	13.0
.5-1.0	25.2	34.2
1.0-1.5	27.0	23.2
1.5-2.0	21.7	11.1
Over 2.0	11.3	11.1
Mean	1.17	1.01
Quartiles		
Lower Quartile	.73	.59
Median	1.12	.90
Upper Quartile	1.61	1.41

[a]Net cash farm income plus interest payments divided by interest expense plus principal repayments.

[b]Household debt service coverage equals net cash farm income plus off-farm income and interest, minus estimated cash family living expenses divided by interest expense plus principal repayment.

Table 3.14: 1986 Farm Business Debt Service Coverage Ratio and Household Debt Service Coverage Ratio For 1987 Buydown Participants

of the farm business to household income. A ratio over 1.0 indicates that the farm is positively contributing to the household's income. The household debt coverage ratio measures the ability of the household to pay both farm expenses (including principal and interest) and family living expenses, when considering both farm and off-farm income.[6] A ratio over 1.0 indicates that the farm is generating sufficient cash to meet its liquidity needs. A ratio below 1.0 indicates difficulties in meeting cash expenses during the year.

60 percent of farm businesses contributed positively to farm household income in 1986.

The table shows that 60 percent of the farm businesses are contributing positively to farm household income in 1986. The table also shows that approximately 45 percent of the households in the interest buydown program in 1986 were able to meet family living expenses and debt repayments from the combination of farm and off-farm income without dipping into other sources of capital.

Categorizing Financial Stress

In the early 1980s many economists and others categorized farmers with high debt-asset ratios as experiencing financial stress. Recent studies by the USDA and others have refined the concept of financial stress to consider additional factors besides debt-asset ratios.[7] In this section we consider how the financial stress of those in the farm interest buydown program can be categorized.

Figure 3.3 shows one categorization scheme for financial stress used by the USDA. Table 3.15 shows how interest buydown participants fit into the

USDA considered farmers to be financially stressed if their debt burden and debt service met one of the following conditions: they were technically insolvent and obviously in danger of financial failure; they had very high debts and could not fully service their interest and principal payments; or they had high debts and could not service any of their debt payment obligations.

Debt burden is the ratio of debt to assets. It is categorized as no debt (0), low debt (0-0.4), high debt (0.4-0.7), very high debt (0.7-1.0), and technically insolvent (more than 1.0).

Debt service is the ability of farmers to meet their cash-flow requirements, including interest, principal payments, and family living expenses. It equals cash-flow plus interest expenses divided by interest expenses plus estimated principal payments due on outstanding loans.

Cash-flow is gross cash farm income plus off-farm income less cash farm expenses, capital expenditures, and a family living allowance.

Source: U.S. Department of Agriculture, Economic Research Service, 1987.

Figure 3.3: What is Stress?

6 These ratios were calculated using 1987 principal due as an estimate of 1986 principal paid. The 1986 interest paid, farm income, and off-farm income were actual. An estimate of $13,500 was used for cash family living expenses. Projected cash family living expenses on 1987 cash flow statements averaged $13,100.

7 See for example, USDA, *Financial Performance of Specialized Corn Farms, Financial Performance of Specialized Dairy Farms*, and *Financial Performance of Specialized Wheat Farms*, Economic Research Service, August 1987.

Debt Service Category	Debt-Asset Ratio: High Debt .5 - .7	Very High .7 - 1.0	Insolvent Over 1.0
Fully Able to Service Debt	29.6%	15.8%	0
	Not Stressed		
Partially Able to Service Debt	23.1%	20.4%	3.7%
		Financial Stress	
Not Able to Service Debt	2.8%	4.6%	0

Table 3.15: Financial Stress Among 1987 Buydown Participants Categorized by USDA Criteria

USDA model of financial stress. This categorization considers farmers financially stressed when they cannot meet their debt service obligations, or when they can only partially meet them and they are insolvent or have a very high debt-asset ratio.[8]

Approximately one-third of interest buydown participants were financially stressed using USDA criteria.

As this table shows, approximately one-third of the participants in the interest buydown program fit the definition of financial stress in this USDA classification scheme. However, we believe this classification scheme underestimates the extent of financial stress. We believe most of the participants that can only partially cover their debts are financially stressed, as are some who can fully service debt. They are faced with the necessity of increasing their borrowing (if possible), selling assets, and cutting back on living and other expenses in order to meet their debt obligations. In some cases, where the farmer has a low net worth, it may not be possible to increase borrowing, and so the farmer is forced to sell assets or undergo some other kind of restructuring to lower costs.

However, in some cases where the farmer is not fully covering his debt service obligation from current income, sufficient assets remain on the farm so that solvency is not an issue. In other words, the farmer's net worth, built up in previous years, is sufficient to help him get by in the short term. That is, in some cases, net worth is a measure of ability to borrow additional funds, or of the ability to liquidate other assets to meet all cash expenses.

We modified the USDA analysis in Figure 3.4, to show what we believe is a more realistic appraisal of the degree of financial stress experienced by

8 The USDA makes no differentiation regarding the level of debt service payments made. If the farmer had a debt service coverage ratio between 0 and 1.0 they were considered to have partially serviced debt.

We considered farmers financially stressed if: 1) They were not able to make debt payments; or 2) They could not fully service debt and they had a net worth less than $100,000; or 3) They could service less than 75 percent of their debt, and their net worth was between $100,000 and $200,000, and their debt-asset ratio was over .70; or 4) They could fully service their debt but their net worth was less than $50,000 and their debt-asset ratio was greater than .70. The most important dimension of this classification scheme is the ability to meet debt and other obligations, measured by the debt service coverage ratio. Generally, when the ratio was between .75 and 1.00, we considered both net worth and debt-asset ratios to assess the ability to meet the cash deficit.

Figure 3.4: Legislative Audit Definition of Financial Stress

About 57 percent of buydown participants were financially stressed using Legislative Audit criteria.

farmers in the interest buydown program at the beginning of 1987. Our analysis takes into account the debt-asset ratio, a measure of debt service coverage considering off-farm income, and the net worth of the farmer.

Table 3.16 shows these variables for 10 interest buydown participants--five of whom we categorized as stressed. The characteristic that farmers 1-5 share is an inability to meet all their debt and other payments. Farmer 6 also did not have enough income to pay all debt obligations and living expenses, but had sufficient net worth and borrowing capacity to make up the shortfall. Farmers 7-10 could meet all their debt payments and living expenses from the combination of farm and off-farm income, thus we categorized them as not stressed. As Figure 3.5 shows:

- **Approximately 57 percent of the buydown participants were financially stressed under our classification at the end of the 1986 operating cycle.**

Category	Debt-Asset Ratio	Net Worth	Debt Coverage Ratio	Net Cash Farm Income	Off-Farm Income
STRESSED					
Farmer 1	53	$182,250	.57	-$ 10,016	$16,867
Farmer 2	55	59,300	- .12	- 5,558	12,677
Farmer 3	73	307,316	.59	29,997	7,810
Farmer 4	74	110,500	.29	- 13,155	0
Farmer 5	102	- 6,315	.60	17,666	1,844
NOT STRESSED					
Farmer 6	51	$237,553	.81	$ 18,874	$ 3,514
Farmer 7	59	666,758	1.44	133,145	0
Farmer 8	60	236,245	2.14	100,462	22,486
Farmer 9	67	117,769	2.11	- 8,679	63,227
Farmer 10	78	65,729	1.54	73,155	8,888

Table 3.16: Examples of Buydown Participants' Financial Stress Using Legislative Audit Criteria

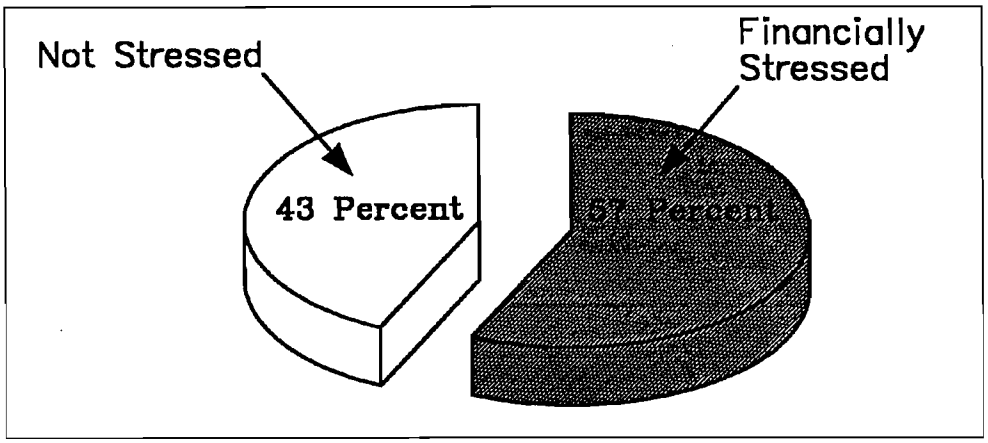

Figure 3.5: 1987 Interest Buydown Participants Financial Stress After 1986 Operations

It is difficult to classify financial stress into discrete categories.

It is difficult to classify financial stress into discrete categories. However one might draw lines separating stressed from non-stressed farmers, what should be clear from examining these data is that:

- **There is a great deal of variation in the amount of fiscal stress experienced by interest buydown participants. Some participants have severe current financial stress and solvency problems, while others have no current financial stress and their solvency situation is much more promising.**

- **Over one-third of interest buydown participants are not financially stressed, despite relatively high debt-asset ratios over 50 percent.**

- **Debt-Asset ratios alone are not reliable indicators of financial stress. Debt-asset ratios do not reflect current profitability or total net worth, and thus can over or underestimate financial stress if other factors are not considered.**

Although some of the interest buydown participants are not financially stressed by these definitions, the majority of them are stressed. In the next section we examine to what extent the financial assistance provided by the interest buydown program has made a difference.

HAS THE INTEREST BUYDOWN PROGRAM HELPED?

Access to Credit

In the original 1985 interest buydown law, the program was an effort by the Legislature to improve access to credit and to buy time for farmers by reducing cash flow requirements. As we pointed out in Chapter 2, the change in farmers' eligibility and incentives for banks in 1985 (changes continued in 1986 and 1987), changed the program's focus away from farmers that were at the margin and needed access to credit. In fact, bankers told us that almost all of the participants in the 1987 program would have received operating loans regardless of the interest buydown. Many of the loans subsidized by the program had in fact already been made by the banks before the interest buydown was applied for.[9] Thus we conclude:

- **The interest buydown program does not insure farmers' access to credit, as originally intended by the Legislature.**

Cash Flow Improvements

The primary effect of the program is to increase incomes of the farmers that participate. Since the programs inception in 1985, approximately $23 million in state paid subsidy and over $33 million in total subsidy has been provided to farmers. Thus, since farmers would not have received this interest subsidy without the program:

- **The buydown program is successful insofar as it raises the well-being of farmers who participate by reducing cash interest expenses.**

The interest subsidy has helped many farmers weather income declines, but has not significantly affected solvency.

Although farmers are better off because of the interest subsidy, in general the subsidy alone will not significantly affect their solvency, because the amount of the interest subsidy is small in relation to the debt of most of the farmers in the program. In 1987 the projected average state-paid interest subsidy is $1,258. In 1986 the average state paid subsidy was higher, $2,214, but still low in relation to the amount of interest farmers paid, and compared with the total amount of farm debt. We examined the farmers in our sample who also participated in the 1986 buydown program (about 80 percent) and found that one-half of them received a subsidy of less than 1.3 percent of their total debt in 1986. Eighty percent of the sample received a subsidy of less than 3 percent of total debt. The subsidy was less than 8 percent in all cases.

For over half of the sample interest buydown participants, the interest subsidy in 1986 represented less than 20 percent of their net cash farm income. For

9 Department of Commerce operating guidelines have allowed retroactive applications in both 1986 and 1987.

the other half, the interest buydown represented a larger percent of their current farm income.

In 1987, because the maximum and average subsidy amounts are much smaller than in 1986, the subsidy will be less important than in 1986.

As we found in measuring financial stress, how much the interest subsidy matters to individual participants varies widely. However, in our view, the interest subsidy alone is unlikely to significantly influence the farmer's decision about whether to remain in farming. There are very few farmers in the program that are so close to the margin that not receiving the interest subsidy would force a decision to leave farming.

Restructuring

Over 28 percent of 1987 buydown participants had restructured their farming operations.

One of the original thoughts behind the interest buydown program was that many farmers would need to restucture their operations to adjust to the changed agricultural environment of the 1980s. Many farmers, especially those who had purchased land in the late 1970s or early 1980s, found themselves in the position of owing more on the land than it was worth. We found that over 28 percent of farmers in our sample had substantially restructured their farming operations in the last three years. This probably somewhat underestimates the extent of restructuring since the Federal Land Bank began a large loan restructuring program early in 1987. The most common form of restructuring was a renegotiation of the purchase price on contracts for deed. Other common restructuring moves were to sell or deed land back to the financial institution and either decrease the scale of operation or rent the same or other land.

Although there was a significant amount of restructuring among interest buydown program participants, the restructuring was probably not directly related to the interest buydown program. Bankers that we spoke with viewed the interest buydown as one piece in a much bigger picture for those who had restructured.

- **The interest buydown program has helped participating farmers to weather declines in land prices and income. Over 28 percent of buydown participants have restructured their farming operations. However, for most participating farmers, the interest buydown was a relatively insignificant factor in such restructurings.**

PROSPECTS

In considering whether to continue the program for another year it is important to know what the prospects are for current participants. Of course this is difficult to establish with a large degree of precision, but there are some fundamental differences between the situation in 1985 and 1988.

Farm Incomes are Higher

The economic picture for farming in general is better than it was in 1985. Farm income rose in 1985 and 1986 and is projected to rise again substantially in 1987.

> Net cash farm income in 1987 (inflation adjusted) is expected to reach the highest level since 1975, rebounding 30 percent from the 1980-1984 average and 13 percent above the level prevailing in the 1960s. The rebound in farm earnings reflects sharply lower production expenses, unprecedented government subsidies, and hefty livestock profits.[10]

It has been widely reported that farmers are holding down production costs through reduced costs for fertilizer, feed, and fuel.[11]

Land Prices Appear Stable

There are a number of indications that the tremendous decline in land values that has occurred since 1981 may be over. Recent surveys by the Federal Reserve and Norwest Bank found that land values have stabilized in the second half of 1987. As Federal Reserve economist Emmanuel Melichar recently observed:

> Real capital gains on farmland during the 1970s totaled about $500 billion, when you measure them in 1986 dollars. Real capital losses during 1980-1986 were about $450 billion. It is likely that farmland values have nearly completed their adjustment to this decade's less-exuberant expectations for farm income. If that is so, farm financial stress has entered its final stages.[12]

Buydown participants' land was realistically valued on balance sheets.

Farm Credit Services' Minnesota land sale prices in early 1987 were also very encouraging. Farm Credit Services sold 98,473 acres in Minnesota at an average price of $602 per acre, or 104 percent of the appraised value.

We found from our farm buydown sample that raw land was realistically valued on balance sheets at between $250 and $800 per acre depending on location. The implication of a stabilization in land values for interest buydown farmers is that debt-asset ratio increases due to land devaluation may be a thing of the past.

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10 Economic Indicators, Norwest Corporation, October 13, 1987, p. 1.

11 Ibid., and *Agricultural Outlooks*, USDA, Economic Research Service, August 1987, p. 1.

12 Linda Schotsch, "Why There is a Future in Farming", *Farm Journal*, August 1987, p. 18.

Restructure and Exit From Farming

Another positive trend from the standpoint of financially stressed farmers is the increased willingness of many lenders to restructure their farm's underlying financing. Most significantly, the Federal Land Bank has embarked on a two-year program of actively rewriting over $1 billion in problem loans. We believe the prospects for those that have restructured have been significantly improved.

Despite all of these positive trends for the future of farming, the fact remains that many farmers have not yet recovered from the effects of the farm income collapse of the early 1980s. There are some farmers in the interest buydown program that will probably never recover. Unfortunately, some farmers in the program would probably be better off financially if they would leave farming, or drastically restructure their operations, because the economic prospects in their current farming enterprise are very limited. For example, 38 of the 239 farmers in our sample lost money in each of the last three years.

1987 Buydown Participants Income Projections

Some indication of 1987 income prospects can be gained from those farmers in our sample for whom bankers estimated cash flow statements for 1987. Table 3.17 shows the cash flow from farming after all scheduled interest and principal payments, but before adding off-farm income or family living and

Buydown participant income projections are up in 1987.

Amount	Percent
Negative	13.0%
$ 0-$10,000	24.0
$10,000-$20,000	27.4
$20,000-$30,000	13.7
$30,000-$40,000	6.8
$40,000-$60,000	10.3
Over $60,000	4.8
	100.0%
Mean: $24,701	
Quartiles	
Lower Quartile	$ 6,021
Median	14,475
Upper Quartile	28,995

[a]Cash flow (after all scheduled principal and interest payments) before considering off-farm income, capital purchases, and family living expenses.

Table 3.17: Projected 1987 Cash Flow After Debt Payments For 1987 Buydown Program Participants

capital expenditures. This measure gives one a sense of the ability of the farm enterprise to generate sufficient income to service debt. As one can see, 1987 estimates show a smaller group than in the past is still having difficulty generating enough income from the farm to cover farm expenses and principal and interest payments. Table 3.18 shows debt service coverage ratios have also improved compared to 1986, when off-farm income and estimated family expenses are considered. Approximately 75 percent of participants show estimated income sufficient to service their debts in 1987. Although these figures are based on estimates, early indications from around the state are for record yields for corn and soybeans, so for many farmers these income estimates are probably conservative.

Approximately 75 percent of participants show estimated income sufficient to meet 1987 expenses.

Debt Service Coverage Ratio	1986 Percent	1987 Percent
Negative	7.4%	.9%
0 - .5	13.0	1.8
.5 - 1.0	34.2	17.7
1.0 - 1.5	23.2	40.7
1.5 - 2.0	11.1	22.1
Over 2.0	11.1	16.8
Total	100.0%	100.0%
Mean	1.01	1.46
Quartiles		
Lower Quartile	.59	1.03
Median	.90	1.33
Upper Quartile	1.41	1.67

Table 3.18: Household Debt Service Coverage Ratios Actual 1986 and Projected 1987 for Buydown Participants

We interviewed bankers participating in the program about the future prospects for the farmers that they had placed in the program. Bankers we spoke with felt that a high percentage of the farmers that were in the 1987 program would still be in farming in 5 years. Bankers estimated that approximately 10 percent of the farmers would be out of farming. As one western Minnesota banker said: "This year crops look pretty good, but the first bad year that we have will cause some of these farmers to get out of farming."

DISCUSSION

The farm interest buydown program was conceived in the crisis atmosphere of 1985. It was originally thought to provide access to credit for farmers who would not otherwise get it, and to help farmers adjust to decreased prospects for farm income. As we have seen, the program is contributing some income to the more highly leveraged farmers who participate. In general, the income

of interest buydown participants and their ability to meet their dept payments has improved from 1985. Many of the participants in the program have restructured their operations, and according to bankers, many have also restructured their approach to farming. In short, the bankers say farmers are becoming better businessmen.

The decision facing the Legislature is whether to continue the program for another year.

The decision facing the 1988 Legislature is whether to continue this program for another year. Given the improvements shown in interest buydown participant's financial condition, the Legislature may decide not to renew the program and to use the funds remaining from previous programs for another purpose. For example, if the goal is to channel some state funds into rural Minnesota (which has been generally affected by the farm income downturn), there might be better alternatives through the use of the tax system or some other program targeted at rural areas of the state.

If the Legislature chooses to continue the interest buydown program, changes might be considered in the targeting of the assistance, the delivery system, and in the program's administration.

As demonstrated earlier, the program is not currently targeted only toward the most financially stressed farmers. Because the debt-asset ratio is the only eligibility criterion used, and because bankers are free not to participate or to pick and choose who is in the program, interest buydown participants have a wide variation in their level of financial stress. Many of those receiving assistance are profitable and are not in any immediate danger of being forced out of farming. Others have still not recovered from the financial downturn that began in the early 1980s.

Legislators and others have indicated that this program was thought to serve those farmers who were more financially marginal. If the Legislature wants to serve this group, then a better targeting of assistance should be considered. The program could be better targeted by:

If the program is continued, changes should be considered.

- **requiring a cash flow test, and/or**
- **including a net worth limit.**

One possibility to better target the program is to set up a cash flow criterion for the farmer's eligibility. Cash flow as a criterion has the advantage of being more directly related to financial stress than a debt-asset ratio. Iowa's interest buydown program used a criterion of a negative cash flow in 1986. Cash flow has the disadvantage of being administratively more difficult to calculate and check. There is also a difficulty in choosing exactly what cash flow measure to use. It might be possible to require use of an already widely used tool, such as the Agricultural Extension Service's FINFLO model.

Requiring a net worth test makes sense from several perspectives. First, farmers with higher net worth have built up equity in better times and are less vulnerable to short-term reversals in farm income. Second, from the standpoint of which farmers to assist, giving assistance to less wealthy farmers is preferable to subsidizing the income of already wealthy farmers. A net worth test (sometimes called an asset test) is a common feature of many state social welfare programs. Third, a net worth test is as easy to administer as a debt-asset ratio. The level at which a net worth limit should be set is a matter

of judgment. Indiana uses a net worth limit of $250,000 for its interest deferral program. A disadvantage of a net worth limit is that it might exclude some farmers that have a higher net worth but are currently financially stressed. For example, we categorized five of the 30 farmers with net worth greater than $200,000 as financially stressed.

In addition, we think that:

- **Changes in the delivery system should be considered.**

One of the attractions of the interest buydown program is that the participation of lenders in delivering the program has kept it relatively simple and easy to administer. However, as we have noted elsewhere, because the banks make the choice of who participates, there is no guarantee that all financially stressed farmers will be able to receive the interest subsidy. We found that banks' policies on who was put in the program varied from bank to bank. Also, as farm profits improve, we expect bankers to be less willing to participate. Changing the split between the state and bank paid portions of the subsidy might have to be considered to keep banks participating in the program. Another disincentive to bank participation that might be eliminated is the requirement to pay for one-half of farm management courses.

One possibility might be to make the incentives for bank participation more favorable, but to require that banks offer the state program to all viable farmers that meet the eligibility criteria. This would help to ensure bank participation while at the same time making sure that eligible farmers were served.

- **In addition to changes in eligibility, administrative changes should also be considered if the program is continued.**

As we discussed in Chapter 2, the program's simplicity makes control over program abuse difficult to achieve. For example we noted several cases where out-of-date financial statments and financial statements that showed debt-asset ratios less than 50 percent were used as the basis for program participation.

We believe that several simple steps could help to minimize any abuse and at the same time keep administrative costs low. First, bankers eligibility decisions should be based on current financial statements, prepared within the previous six months. Second, the Department of Commerce should review a random sample of program participants to ensure that eligibility criteria are being observed. Third, the Department of Commerce should collect at least a minimal set of information about the characteristics of those participating in the program. This would allow the Legislature and others to assess the program's success.

STATE/LENDER/FmHA PROGRAMS

Appendix A

The legislation that created the Minnesota state/lender buydown programs described in Chapter 2 also established state/lender/Farmers Home Administration (FmHA) programs. The programs involving FmHA are described below.

1985 STATE/LENDER/FmHA PROGRAM

This program encouraged lenders to apply to FmHA for guarantees and loan restructuring, rather than to foreclose on delinquent operating and real estate loans. To take part in the program, the lender had to review all classified farm loans within sixty days and decide which would be submitted to FmHA. The lender agreed not to foreclose on the loans while FmHA reviewed the cases, or for ninety days, whichever came first. The state paid all interest for sixty days on up to $25,000 of existing operating loans and $25,000 of ownership loans to provide lenders an incentive to submit loans to FmHA.

The Legislature overestimated the willingness of bankers to participate. Many lenders are reluctant to take part in FmHA programs, claiming excessive paperwork and delays. This may have contributed to low usage. Only 402 loans were made in 1985, requiring a state interest subsidy of $254,084.

1986 STATE/LENDER/FmHA PROGRAM

The 1986 program was virtually the same as the 1985 program, and was almost unused. The department accepted only twenty-two applications, requiring $11,711 in state subsidy.

1987 STATE/LENDER/FmHA PROGRAM

The 1987 program involving FmHA is similar to the state/lender buydown described in Chapter 2, except that the farmer must show a negative cash flow without the subsidy in addition to meeting the standard residency requirement

and having at least a 50 percent debt-asset ratio. The state provides a 2.8 per cent interest subsidy on up to $60,000 in loan principal. If the bank completes the FmHA form and the client is accepted by FmHA, the lender and FmHA provide a combined 1.7 percent or greater lender subsidy. To encourage lenders to submit applications to FmHA, the state pays the lender $50 for each application submitted. If the application is rejected by FmHA, the state will automatically consider the farmer for the state/lender 1987 Interest Buydown Program.

Like the previous programs envolving FmHA, participation is low. Only 51 applications have been accepted as of September 30, 1987, requiring an estimated state interest subsidy of $132,189.

1986 AND 1987 INTEREST BUYDOWN PARTICIPANTS BY COUNTY

Appendix B

	1986	1987[a]		1986	1987[a]
Aitkin	10	6	Martin	137	94
Anoka	1	1	McLeod	21	10
Becker	10	23	Meeker	97	84
Beltrami	1	0	Mille Lacs	78	62
Benton	16	15	Morrison	72	94
Big Stone	93	92	Mower	133	60
Blue Earth	163	72	Murray	172	160
Brown	213	194	Nicollet	115	101
Carleton	2	0	Nobles	155	161
Carver	67	42	Norman	31	46
Cass	26	16	Olmsted	89	65
Chippewa	177	171	Ottertail	57	47
Chisago	9	11	Pennington	13	13
Clay	33	19	Pine	30	13
Clearwater	0	0	Pipestone	44	40
Cook	0	0	Polk	52	62
Cottonwood	203	135	Pope	99	93
Crow Wing	3	5	Ramsey	1	2
Dakota	54	50	Red Lake	12	10
Dodge	104	92	Redwood	216	126
Douglas	54	44	Renville	176	91
Faribault	171	77	Rice	137	132
Fillmore	180	145	Rock	95	79
Freeborn	141	98	Roseau	39	16
Goodhue	247	239	Scott	29	25
Grant	52	29	Sherburne	12	12
Hennepin	2	2	Sibley	96	104
Houston	24	36	Stearns	216	184
Hubbard	16	4	Steele	92	70
Isanti	40	21	Stevens	77	72
Itasca	0	1	St. Louis	0	0
Jackson	168	140	Swift	144	101
Kanabec	29	27	Todd	147	102
Kandiyohi	210	149	Traverse	49	31
Kittson	18	6	Wabasha	48	48
Koochiching	0	0	Wadena	17	9
Lac Qui Parle	120	71	Waseca	115	76
Lake	0	0	Washington	1	1
Lake of the Woods	1	0	Watonwan	131	92
Le Sueur	145	108	Wilkin	6	4
Lincoln	24	8	Winona	22	30
Lyon	80	32	Wright	25	20
Mahnomen	3	8	Yellow Medicine	202	143
Marshall	47	33	County not specified	6	0
			TOTAL	6,463	5,007

Source: Department of Commerce case files.

[a]Applications as of November 10, 1987.

SELECTED PROGRAM EVALUATIONS

Board of Electricity, January 1980	80-01
Twin Cities Metropolitan Transit Commission, February 1980	80-02
Information Services Bureau, February 1980	80-03
Department of Economic Security, February 1980	80-04
Statewide Bicycle Registration Program, November 1980	80-05
State Arts Board: Individual Artists Grants Program, November 1980	80-06
Department of Human Rights, January 1981	81-01
Hospital Regulation, February 1981	81-02
Department of Public Welfare's Regulation of Residential Facilities for the Mentally Ill, February 1981	81-03
State Designer Selection Board, February 1981	81-04
Corporate Income Tax Processing, March 1981	81-05
Computer Support for Tax Processing, April 1981	81-06
State-sponsored Chemical Dependency Programs: Follow-up Study, April 1981	81-07
Construction Cost Overrun at the Minnesota Correctional Facility - Oak Park Heights, April 1981	81-08
Individual Income Tax Processing and Auditing, July 1981	81-09
State Office Space Management and Leasing, November 1981	81-10
Procurement Set-Asides, February 1982	82-01
State Timber Sales, February 1982	82-02
Department of Education Information System,* March 1982	82-03
State Purchasing, April 1982	82-04
Fire Safety in Residential Facilities for Disabled Persons, June 1982	82-05
State Mineral Leasing, June 1982	82-06
Direct Property Tax Relief Programs, February 1983	83-01
Post-Secondary Vocational Education at Minnesota's Area Vocational-Technical Institutes,* February 1983	83-02
Community Residential Programs for Mentally Retarded Persons,* February 1983	83-03
State Land Acquisition and Disposal, March 1983	83-04
The State Land Exchange Program, July 1983	83-05
Department of Human Rights: Follow-up Study, August 1983	83-06
Minnesota Braille and Sight-Saving School and Minnesota School for the Deaf,* January 1984	84-01
The Administration of Minnesota's Medical Assistance Program, March 1984	84-02
Special Education,* February 1984	84-03
Sheltered Employment Programs,* February 1984	84-04
State Human Service Block Grants, June 1984	84-05
Energy Assistance and Weatherization, January 1985	85-01
Highway Maintenance, January 1985	85-02
Metropolitan Council, January 1985	85-03
Economic Development, March 1985	85-04
Post Secondary Vocational Education: Follow-Up Study, March 1985	85-05

County State Aid Highway System, April 1985	85-06
Procurement Set-Asides: Follow-Up Study, April 1985	85-07
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Tax Increment Financing, January 1986	86-02
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Variation in Educational Curricula, Forthcoming	
Welfare Aid Coordination, Forthcoming	

Evaluation reports can be obtained free of charge from the Program Evaluation Division, 122 Veterans Service Building, Saint Paul, Minnesota 55155, 612/296-4708.

*These reports are also available through the U.S. Department of Education ERIC Clearinghouse.